AITKIN COUNTY ZONING

PERMIT NUMBER **43901**

PARCEL NUMBER 29-1-329500

Location LOT 15 Bellhorn Heights Second Addition 17 49 23
Lot Block Gov't. Lot Section Twp. Rge.

Issued September 18, 2018 To Michael Stras + Lurae Melaas

Nature of Authorization 600 GPD Commercial Other Mound System with OP# 603

New Construction _____ Alteration _____

Sewer Installation ✓

Flood Plain and Lowest Floor Elev. _____

This permit expires one year from date of issuance
NOT TRANSFERABLE

NOTE:
This permit must be posted in a conspicuous place on premises on which work is to be done and remain until work has been completed and inspected.

S. Wusterlund
ZONING ADMINISTRATOR

No Portion of any Sewage Disposal System shall be Covered Prior to Inspection.

Septic Only
Permit # 2018-3424

Aitkin County Planning & Zoning / Environmental Services
209 2nd Street NW, Room 100
Aitkin, MN 56431
Phone: 218-927-7342
Fax: 218-927-4372
Email: aitkinpz@co.aitkin.mn.us

Project Location Search

Property: **Selected:**

Property Location			Property Address	Legal Description	Property Attributes		Owner Information	Tax Payer Information
Parcel Number	Section-Township-Range	Township or City Name	Property Address	Legal Description	Lake Number	Lake Name	Owner Name(s)	Taxpayer Name(s)
29-1-329500	S:17 T:49 R:23	SHAMROCK TWP	49482 202nd Pl MCGREGOR, MN 55760	LOT 15	1,906,200	BIG SANDY - BACK LOT	STRAS, MICHAEL & MELAAS, LURAE	STRAS, MICHAEL & MELAAS, LURAE

Driving Directions to the project location.: St Highway 210 to McGregor, Go North on Highway 65 approximately 7 miles to County Road 14 to 202nd Place. Go left approximately 1/4 mile--establishment on right

Does your property have an E911 address assigned? Yes

Designer/Installer

Designer Name:	Septic Check
Installer:	Licensed Septic Professional
Installer Name:	Septic Check

System Information

Please attach a septic system design.:	File 1: 20180918130150.pdf
Please select all that apply:	Commercial/Cluster 501-1000 gallons/day Commercial/Cluster Operating Permit

Terms

General Terms Zoning Permits

Defining and staking the property lines, road right-of-ways, septic sites, and wells are the responsibility of the property owner. In some cases, a registered survey may be required to verify setbacks before granting a permit.

Land Use/Septic General Terms

Zoning permits and Subsurface Sewage Treatment System permits are valid for one (1) year (unless the sewage permit is to upgrade an Imminent Threat to Public Health or Safety system, which is then valid for ten (10) months).
All corners of the proposed structure(s) need to be staked with visible flags, ribbon, or lathes prior to onsite inspection by Aitkin County.
If property lines are not clearly marked and visible, then they need to be staked with visible flags, ribbon, or lathes prior to onsite inspection by Aitkin County.
It shall be a violation of the Aitkin County Zoning Ordinance to commence construction before the permit application is approved by Aitkin County.
The landowner or authorized agent may make application for a zoning permit agreeing to do such work in accordance with all Aitkin County Ordinances. The landowner or authorized agent agrees that the application, site plan, and all other attachments submitted herewith are true and accurate and shall become a part of the permit. The landowner or authorized agent agrees that, in making application for a zoning permit, the landowner grants permission to Aitkin County, at reasonable times, to enter the property to determine compliance of the application with applicable Local, County or State Ordinances or Statutes. It is the applicants sole responsibility to contact other Local, County or State agencies to ensure the applicant has complied with all relevant Local, County or State Ordinances or Statutes.
After a complete application is submitted and reviewed, an on-site inspection may be conducted; a permit may be issued describing the proposed construction that may take place on the property. Changes to a project may require a permit application to be resubmitted.
The septic installer shall notify Aitkin County Environmental Services a minimum of twenty-four (24) hours before the covering of any portion of the septic installation. Changes from the approved septic design will require approval by the County prior to construction.
Applicants are responsible for getting all applicable entrance permits from the appropriate road authority.
Applicants acknowledge that they are in compliance with MN Contractor Licensing laws per MN Statute 326B.85.

Invoice 09/18/2018

Charge	Cost	Quantity	Total
Commercial/Cluster 501-1000 gallons/day added 09/18/2018 1:07 PM $600 Flat Fee	$600.00	x 1	$600.00
Commercial/Cluster Operating Permit added 09/18/2018 1:07 PM $100 Flat Fee	$100.00	x 1	$100.00
Grand Total			
		Total	**$700.00**
		Payment 09/18/2018	**$700.00**
		Due	**$0.00**

Approvals

Approval	Signature
Applicant	LuRae Melaas - 09/18/2018 1:14 PM - witnessed by Kristi Kunz 69edd6e0c28936c3d5d8f436dcbe2695 7d5656d2c5da48e807c6aacf740da384
#1 Adminstrative Approval Group	Shannon Westerlund - 09/18/2018 1:31 PM 2f23a4a9b5b068b23a1944054e509c28 c247090ab4bbe5952ae0187fff2d433a
#2 Inspector Group	Shannon Westerlund - 09/18/2018 1:32 PM 1f90a419de6d418bdab72e2f978824e8 85b651c0de0d85e8683f6f463e3a3b57
#3 Final Approval	Shannon Westerlund - 09/18/2018 1:32 PM cc07e86d2031210f27a2047175f4c16a 1313981de6211c25fd77a484fab011c8

Public Notes

Text: P#43901 approved for 600GPD Commercial Other system w/ OP# 603
OP#603 attached.

File(s): File 1: 20180918131129.pdf

20180918131129.pdf

File 2: 20180918132601.pdf
20180918132601.pdf

Admin Checklist

Date application was complete:	09/18/2018
This application has been started by:	Kristi Kunz
Zoning District of project location:	Shoreland
Required OWHL setback distance:	75 ft.
"Other" OHWL setback distance is:	
Pumping Agreement Attached?	No
Low Interest Loan or SSTS Grant project?	No
Is this an After-The-Fact application?	No

DESIGN REVIEW CHECKLIST

Zoning Inspector:	Terry Neff
SSTS Type:	Type III
SSTS Design:	"Other"/Performance System
New or Replacement SSTS:	Replacement SSTS
gpd:	1-2,499 gpd
# of bedrooms:	0
Does this system require an Operating Permit?	Yes
Operating Permit #:	603
Attach appropriate inspection forms.:	

Does this system belong to an other establishment? Yes

Is this a Cluster System? No

Numbers

	Current Number		Next from Sequence
UID #	196642		*not applicable*
App. #	App-2018-003834	««	App-2018-003837
Permit #	2018-3424	««	2018-3427

Print View

Septic System Design

202 Bar

Owner Address:
Michael Stras & Lurae Melaas
31183 180th Street
Underwood, MN 56586

Installer:
Craig Karjalahti

Project Information:
202 Bar
49482 202nd Place
McGregor, MN 55760
Section 17, Township 49, Range 23
PID# 29-1-329500
Aitkin County

Septic System Design Completed By:
Brian Koski
Septic Check
6074 Keystone Road
Milaca, MN 56353
Lic # 2624
Phone: 888-983-2447

APPROVED
___ ONSITE INSPECTION
___ NO ONSITE INSPECTION
SIGN _____ DATE 9/18/18

Septic System Design
Additional Information

SEPTIC CHECK

Property Owner: 202 Bar – 49482 202 Place McGregor, MN 55760

Description of Wastewater Treatment and Dispersal System

This design is for a septic system update at 202 Bar in McGregor, MN. The property was recently sold and the existing septic system is non-compliant. A new drain field and pretreatment system will be installed as part of the upgrade to bring the system back into compliance with current code requirements.

Summary: The existing system includes a non-compliant septic tank and in ground drainfield. The existing system will be properly abandoned in place as part of the upgrade. The new system will include installing a new gravity collection line from the building foundation to a series of new tanks installed south of the existing system. A 1500 gallon two compartment septic tank will collect sewage from the new gravity line. An effluent filter will be installed on the outlet of the tank. This tank will be followed by a 2500 gallon two compartment septic tank that will include a Mini MBBR aerobic treatment unit to reduce the waste strength below level C. The treatment units will be installed in the first compartment. The second compartment will act as a final clarifier and will also be installed with an effluent filter. A 1000 gallon pump tank will follow the final septic tank with a time dose pumping system. A 10' x 50' rockbed mound is proposed as the drainfield.

Flow and Loading Estimates:

Estimated daily flow was calculated using code book values. The new owner is intending on re-opening the bar to include up to 30 seats and will serve short order items such as pizza in addition to beverages.

Estimated flow value: 30 seats open less than 16 hours a day (single item orders) = 20 GPD/seat

Flow calculation: 30 seats x 20 GPD/seat = 600 GPD

Total Design Flow = 600 GPD

Waste strength:

Water use at this facility includes bathroom use, light food preparation, and bar use. The food served at the facility includes mostly pizza and other single service items. It is expected that some of the waste strength will also come from bar cleaning and left over beverages.

It is estimated, based on the previous experience with similar establishments, that the CBOD will be approximately 500 mg/l after the new septic tank and effluent screen.

The following waste strength calculation was used for the design of the pretreatment system:

600 GPD x 500 mg/l CBOD = 2.5 lbs CBOD/day

Tanks and collection:

The existing septic tank and drainfield will be properly abandoned in place. The installer is to use the MPCA tank abandonment form to document this after the project is completed.

New tanks will be installed south of the existing tanks, 85' from the south side of the bar. Backfill material around the tanks should be granular without excessive moisture content. Granular backfill shall be compacted in lifts to prevent pipes from settling. Existing soils may be used for backfill if they are granular in nature and free of rocks and debris over 2" in size.

It is important the top of the risers are installed slightly above grade so that manhole covers seal properly. Insulated synthetic manhole covers with foam or rubber gaskets are recommended to prevent odors from escaping though the lids.

Collection system:

- 85 LF - 4" sch 40 sewer line from building foundation to new tanks
- Designed with 2% slope, minimum slope is 1%.
- Install a 2 way cleanout at building to provide access
- The installer is to comply with all local plumbing and building sewer code requirements and shall apply for a plumbing inspection permit if required by the local jurisdiction.

Septic tank 1:

- 1500 gallon two compartment tank
- PVC riser to grade with sealed lids
- PL 525 effluent screen on outlet of tank

Septic Tank 2:

- 2500 gallon two compartment tank
- PVC riser to grade with sealed lids
- Mini MBBR installed in first compartment of septic tank
    - See specs in equipment spec section.
- PL 525 effluent screen on outlet of tank

Mound Dose tank:

- 1000 gallon pump tank
- PVC riser to grade with sealed lids
- Simplex time dose pump 29 GPM 20.3 TDH
- SJE Rhombus time dose panel with CC/ETM

Mound Drainfield:

The soils investigation for the proposed mound drainfield site was completed in the proposed drainfield location. Native soil below the drainfield appear to be sandy loam soils. Redox features were found at 5" to 10" in the soil borings and were verified with the contractor at the time of design. A conservative soil loading rate of 0.78 gpd/ft2 was used due to the sandy loam soils.

Some tree removal may be required near the tank location. The installer is to only remove trees from the site is the soil is below the plastic limit, and should limit equipment traffic on the site. Cut stumps down to within 2" of grade, remove any vegetative debris, and scarify the entire mound adsorption area prior to placing clean mound sand. Installer is to maintain 36" of vertical separation.

A 3' sand lift mound is proposed with a 10' x 50' rockbed. Lateral line cleanouts are to be installed at the end of each lateral to grade inside an irrigation box.

Additional Notes:

Keep all vehicles and construction equipment off septic area. Rutting and/or compacting the soil will change the percolation rates and may lead to system failure.

Owner and installer to verify all property lines. Specifically the east property line.

Bench mark is referenced to the top of the existing cleanout on the south side of the bar.

Installer to verify all elevations, dimensions, and ensure proper fall to pipes.

Establish turf to prevent erosion and freezing. Final restoration includes seeding and straw mulch over the disturbed areas.

Each tank is to be pumped through the maintenance cover when serviced. Do not pump through inspection pipes.

Owner is responsible for all costs involved in servicing, monitoring, and mitigating the system.

All construction to be performed in accordance with MN Rule 7080, and the Aitkin County ordinance.

Maintenance Requirements

Annual maintenance is recommended for this system. Level C treatment was used in this design.

Location	*Description*	*Frequency*
Septic tanks	Inspect manholes for infiltration	Annual
Septic tanks	Inspect inlet and outlet for infiltration	Annual
Septic tanks	Inspect and clean effluent filters	Annual
Septic tanks	Sample sludge and scum levels	Annual
Septic tanks	Pump tanks when solids level exceeds 33% of tank volume	As needed
Septic tanks	Inspect baffles and tank integrity	Annual

Location	*Description*	*Frequency*
Pretreatment	Inspect effluent quality and odor	Annual
Pretreatment	Adjust blower and sludge return pump	As - Needed
Pretreatment	Inspect and clean media retention sieve	Annual
Pretreatment	Inspect media for plugging	Annual
Pretreatment	Inspect and clean effluent filters	Annual
Pretreatment	Sample sludge and scum levels	Annual
Pretreatment	Pump tanks when solids level exceeds 33% of tank volume	As needed
Pretreatment	Inspect baffles and tank integrity	Semi-annual

Location	*Description*	*Frequency*
Lift Stations	Inspect manholes for infiltration	Annual
Lift Stations	Inspect inlet and outlet for infiltration	Annual
Lift Stations	Inspect pumps and floats for proper operation	Annual
Lift Stations	Inspect panel and alarm system for proper operation	Annual
Lift Stations	Record water meter, cycle counters and/or elapsed timer meters.	Weekly by owner
Lift Stations	Sample sludge and scum levels	Annual
Lift Stations	Pump tanks when solids level exceeds 6" in depth	As needed
Lift Stations	Sample effluent CBOD, TSS, FOG	Annual

Location	*Description*	*Frequency*
Drainfield	Inspect for ponding or seepage	Annual
Drainfield	Mow the mound system	As Needed
Drainfield	Clean lateral lines	As Needed

Mitigation:
If the mound rockbeds are ponding or treatment levels are not met, install additional pretreatment in the treatment tank to reduce waste strength. If flow is exceeded, investigate for signs of infiltration, reduce flow into the system, hire a pumper to haul out additional flow. If the drainfield ponds, reduce flow into the drainfield or install a new drainfield.

*** See the operating permit for additional maintenance information.

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Septic System Management Plan for Above 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	202 Bar	Email	
Property Address	49482 202nd Place McGregor	Property ID	29-1-329500
System Designer	Septic Check	Contact Info	320-983-2447
System Installer	Craig Karjalahti	Contact Info	320-983-2447
Service Provider/Maintainer	Septic Check	Contact Info	320-983-2447
Permitting Authority	Aitkin County	Contact Info	218-927-7342
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

Version: August 2015

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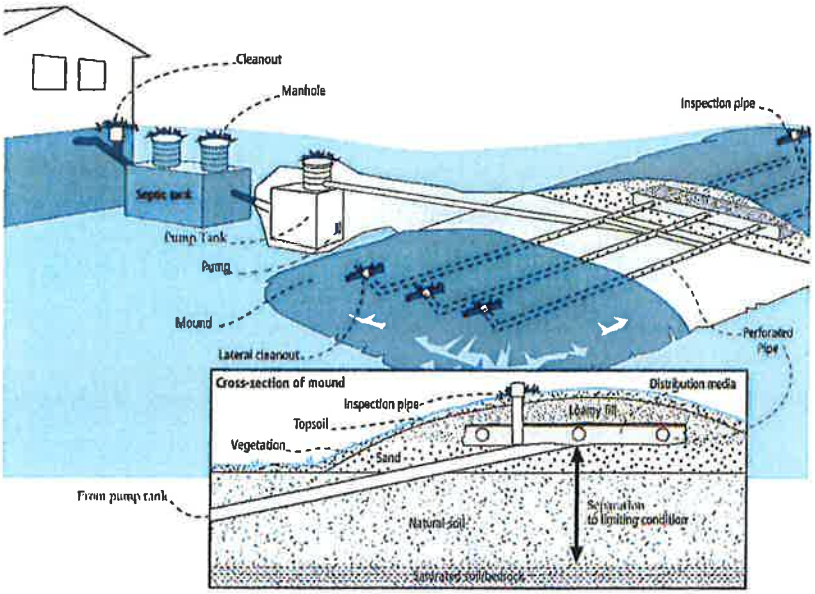
Septic System Management Plan for Above Grade Systems

Your Septic System



Septic System Specifics

System Type: ◯ I ◯ II ◉ III ◯ IV* ◯ V*

(Based on MN Rules Chapter 7080.2200 – 2400)

**Additional Management Plan required*

☒ System is subject to operating permit*

☐ System uses UV disinfection unit*

Type of advanced treatment unit _____

Dwelling Type

Number of bedrooms: _____

System capacity/ design flow (gpd): 600

Anticipated average daily flow (gpd): _____

Comments _____

Business? : ◉ Y ◯ N What type? Bar

Well Construction

Well depth (ft): _____

☒ Cased well Casing depth: _____

☐ Other (specify): _____

Distance from septic (ft): +50'

Is the well on the design drawing? ◉ Y ◯ N

Septic Tank

☐ First tank *Tank volume:* 1500 *gallons*

Does tank have two compartments? ◉ Y ◯ N

☐ Second tank *Tank volume:* 2500 *gallons*

☐ Tank is constructed of Concrete

☐ Effluent screen: ◉ Y ◯ N Alarm ◉ Y ◯ N

☐ Pump Tank 1000 *gallons*

☐ Effluent Pump *make/model:* Goulds PE 51

Pump capacity 29.0 GPM

TDH 20.3 Feet of head

☐ Alarm location Outdoor Powerpost

Soil Treatment Area (STA)

Mound/At-Grade area (width x length): 48.5 ft x 88.8 ft

Rock bed size (width x length): 10 ft x 50 ft

Location of additional STA: _____

Type of distribution media: 1 1/2" Washed Rock

☑ Inspection ports ☑ Cleanouts

☐ Surface water diversions

☐ Additional STA not available

Homeowner Management Tasks

These op*eration and maintenance ac*tivities 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 12 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.

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Septic System Management Plan for Above Grade Systems

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*										
Effluent screen (if owner-maintained)***										
Alarm**										
Check annually:										
Water usage rate (maximum gpd _____)										
Caps: inspect, replace if needed										
Water use appliances – review use										
Other:										

*Monthly

**Quarterly

***Bi-Annually

Notes: If flow exceeds system capacity, check for and repair any leaks into the system, including household plumbing fixtures. If system ponds or otherwise cannot handle flow, repair options include; add time dosing, adding pre-treatment, or expanding the system.

"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: _____ Date _____

Management Plan Prepared By: Brian Koski Certification # 2624

Permitting Authority: Aitkin County

Minnesota Pollution Control Agency

OSTP Design Summary Worksheet

University of Minnesota

Property Owner/Client: 202 Bar | **Project ID:** | v 07.14.15

Site Address: 49482 202nd Place McGregor, MN 55760 | **Date:** 9/7/18

1. DESIGN FLOW AND TANKS

A. *Design Flow:* 600 Gallons Per Day (GPD)

Note: The estimated design flow is considered a peak flow rate including a safety factor. For long term performance, the average daily flow is recommended to be < 60% of this value.

B. *Septic Tanks:*

Minimum Code Required Septic Tank Capacity: 1800 Gallons, in 1 Tanks or Compartments

Recommended Septic Tank Capacity: 4000 Gallons, in 4 Tanks or Compartments

Effluent Screen: | Alarm:

C. *Holding Tanks Only:*

Minimum Code Required Capacity: Gallons, in Tanks

Designer Recommended Capacity: Gallons, in Tanks

Type of High Level Alarm:

D. *Pump Tank 1* Capacity (Code Minimum): 600 Gallons | *Pump Tank 2* Capacity (Code Minimum): Gallons

Pump Tank 1 Capacity (Designer Rec): 1000 Gallons | *Pump Tank 2* Capacity (Designer Rec): Gallons

Pump 1 29.0 GPM Total Head 20.3 ft | Pump 2 GPM Total Head ft

Supply Pipe Dia. 2.00 in Dose Volume: 150.0 gal | Supply Pipe Dia. in Dose Volume: gal

2. SYSTEM TYPE

○ Trench ○ Bed ◉ Mound ○ At-Grade | ○ Gravity Distribution ◉ Pressure Distribution-Level ○ Pressure Distribution-Unlevel

○ Drip ○ Holding Tank ○ Other | * Selection Required

Benchmark Elevation: 100.00 ft

Benchmark Location: Top of Existing cleanout

System Type

☐ Type I ☐ Type II ☑ Type III ☐ Type IV ☐ Type V

Type of Distribution Media:

☑ Drainfield Rock ☐ Registered Treatment Media:

3. SITE EVALUATION:

A. Depth to Limiting Layer: 5 in 0.4 ft

B. Measured Land Slope %: 1.0 %

C. Elevation of Limiting Layer: 97.1

D. Soil Texture: Sandy Loam

E. Loc. of Restricive Elevation: Soil Boring 1

F. Soil Hyd. Loading Rate: 0.78 GPD/ft²

G. Minimum Required Separation: 36 in 3.0 ft

H. Perc Rate: MPI

I. Code Maximum Depth of System: Mound in

Comments:

4. DESIGN SUMMARY

Trench Design Summary

Dispersal Area ft² | Sidewall Depth in | Trench Width ft

Total Lineal Feet ft | Number of Trenches | Code Maximum Trench Depth in

Contour Loading Rate ft | Designer's Max Trench Depth in

Bed Design Summary

Absorption Area ft² | Depth of sidewall in | Code Maximum Bed Depth in

Bed Width ft | Bed Length ft | Designer's Max Bed Depth in

Minnesota Pollution Control Agency

OSTP Design Summary Worksheet

University of Minnesota

Mound Design Summary

Absorption Bed Area	500.0	ft²	Bed Length	50.0	ft	Bed Width	10.0	ft
Absorption Width	15.0	ft	Clean Sand Lift	3.0	ft	Berm Width (0-1%)		ft
Upslope Berm Width		ft	Downslope Berm Width		ft	Endslope Berm Width	19.4	ft
Total System Length	88.8	ft	Total System Width	48.5	ft	Contour Loading Rate	12.0	gal/ft

At-Grade Design Summary

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

Level & Equal Pressure Distribution Summary

No. of Perforated Laterals	3		Perforation Spacing	3	ft	Perforation Diameter	7/32	in
Lateral Diameter	1.50	in	Min. Delivered Volume	63	gal	Maximum Delivered Volume	150	gal

Non-Level and Unequal Pressure Distribution Summary

	Elevation (ft)	Pipe Size (in)	Pipe Volume (gal/ft)	Pipe Length (ft)	Perforation Size (in)	Spacing (ft)	Spacing (in)
Lateral 1							
Lateral 2							
Lateral 3							
Lateral 4							
Lateral 5							
Lateral 6							

Minimum Delivered Volume: _____ gal

Maximum Delivered Volume: _____ gal

5. Additional Info for Type IV/Pretreatment Design

A. *Calculate the organic loading*

1. *Organic Loading to Pretreatment Unit* = *Design Flow* X *Estimated BOD* in mg/L in the effluent X 8.35 ÷ 1,000,000

600 gpd X 500 mg/L X 8.35 ÷ 1,000,000 = 2.51 lbs BOD/day

2. Type of Pretreatment Unit Being Installed: Mini MBBR

3. Calculate *Soil Treatment System Organic Loading: BOD concentration after pretreatment ÷ Bottom Area* = lbs/day/ft²

125 mg/L X 8.35 ÷ 1,000,000 ÷ 500 ft² = 0.000 lbs/day/ft²

Comments/Special Design Considerations:

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

Brian Koski		2624	09/07/18
(Designer)	(Signature)	(License #)	(Date)

Minnesota Pollution Control Agency

OSTP Mound Design Worksheet >1% Slope

University of Minnesota

1. SYSTEM SIZING:

Project ID:

v 07.14.15

A. Design Flow:	600	GPD
B. Soil Loading Rate:	0.78	GPD/ft^2
C. Depth to Limiting Condition:	0.4	ft
D. Percent Land Slope:	1.0	%
E. Design Media Loading Rate:	1.2	GPD/ft^2
F. Mound Absorption Ratio:	1.50	

Table I
MOUND CONTOUR LOADING RATES:

Measured Perc Rate	OR	Texture - derived mound absorption ratio		Contour Loading Rate:
≤ 60mpi	OR	1.0, 1.3, 2.0, 2.4, 2.6	›	≤12
61-120 mpi	OR	5.0	›	≤12
≥ 120 mpi*		>5.0*	›	≤6*

TABLE IXa

LOADING RATES FOR DETERMINING BOTTOM ABSORPTION AREA AND ABSORPTION RATIOS USING PERCOLATION TESTS

Percolation Rate (MPI)	Treatment Level C: Absorption Area Loading Rate (gpd/ft^2)	Treatment Level C: Mound Absorption Ratio	Treatment Level A, A-2, B,: Absorption Area Loading Rate (gpd/ft^2)	Treatment Level A, A-2, B,: Mound Absorption Ratio
<0.1	-	1	-	1
0.1 to 5	1.2	1	1.6	1
0.1 to 5 (fine sand and loamy fine sand)	0.6	2	1	1.6
6 to 15	0.78	1.5	1	1.6
16 to 30	0.6	2	0.78	2
31 to 45	0.6	2.4	0.78	2
46 to 60	0.45	2.6	0.6	2.6
61 to 120	-	5	0.3	5.3
>120	-	-	-	-

*Systems with these values are not Type I systems. Contour Loading Rate (linear loading rate) is a recommended value.

2. DISPERSAL MEDIA SIZING

A. Calculate Dispersal Bed Area: Design Flow ÷ Design Media Loading Rate = ft^2

600 GPD ÷ 1.2 GPD/ft^2 = 500 ft^2

If a larger dispersal media area is desired, enter size: _____ ft^2

B. Enter Dispersal Bed Width: 10.0 ft *Can not exceed 10 feet*

C. Calculate Contour Loading Rate: Bed Width X Design Media Loading Rate

10 ft^2 X 1.2 GPD/ft^2 = 12.0 gal/ft *Can not exceed Table 1*

D. Calculate Minimum Dispersal Bed Length: Dispersal Bed Area ÷ Bed Width = Bed Length

500 ft^2 ÷ 10.0 ft = 50.0 ft

3. ABSORPTION AREA SIZING

A. Calculate Absorption Width: Bed Width X Mound Absorption Ratio = Absorption Width

10.0 ft X 1.5 = 15.0 ft

B. For slopes >1%, the Absorption Width is measured downhill from the upslope edge of the Bed.

Calculate Downslope Absorption Width: Absorption Width - Bed Width

15.0 ft - 10.0 ft = 5.0 ft

4. DISTRIBUTION MEDIA: ROCK

A. Media Volume: Media Depth X Length X Width

0.75 ft X 50.0 ft X 10.0 ft = 375 ft^3 ÷ 27 = 14 yd^3

5. DISTRIBUTION MEDIA: REGISTERED TREATMENT PRODUCTS: CHAMBERS AND EZFLOW

A. Enter Dispersal Media: [ ]

B. Enter the Component: Length: [ ] ft Width: [ ] ft Depth: [ ] ft

C. Number of Components per Row = Bed Length divided by Component Length (Round up)

[ ] ft ÷ [ ] ft = [ ] components/row

D. Actual Bed Length = Number of Components/row X Component Length:

[ ] components X [ ] ft = [ ] ft

E. Number of Rows = Bed Width divided by Component Width (Round up)

[ ] ft ÷ [ ] ft = [ ] rows *Adjust width so this is an whole number.*

F. Total Number of Components = Number of Components per Row X Number of Rows

[ ] X [ ] = [ ] components

6. MOUND SIZING

A. Calculate Minimum Clean Sand Lift: 3 feet minus Depth to Limiting Condition = Clean Sand Lift

3.0 ft - 0.4 ft = 2.6 ft Design Sand Lift (optional): 3 ft

B. Calculate Upslope Height: Clean Sand Lift + media depth + cover (1 ft.) = Upslope Height

3.0 ft + 0.8 ft + 1.0 ft = 4.8 ft

C. Select Upslope Berm Multiplier (based on land slope): 3.85

Land Slope %		0	1	2	3	4	5	6	7	8	9	10	11	12
Upslope Berm Ratio	3:1	3.00	2.91	2.83	2.75	2.68	2.61	2.54	2.48	2.42	2.36	2.31	2.26	2.21
	4:1	4.00	3.85	3.70	3.57	3.45	3.33	3.23	3.12	3.03	2.94	2.86	2.78	2.70

D. Calculate Upslope Berm Width: Multiplier X Upslope Mound Height = Upslope Berm Width

3.85 ft X 4.8 ft = 18.3 ft

E. Calculate Drop in Elevation Under Bed: Bed Width X Land Slope ÷ 100 = Drop (ft)

10.0 ft X 1.0 % ÷ 100 = 0.10 ft

F. Calculate Downslope Mound Height: Upslope Height + Drop in Elevation = Downslope Height

4.8 ft + 0.10 ft = 4.9 ft

G. Select Downslope Berm Multiplier (based on land slope): 4.17

Land Slope %		0	1	2	3	4	5	6	7	8	9	10	11	12
Downslope Berm Ratio	3:1	3.00	3.09	3.19	3.30	3.41	3.53	3.66	3.80	3.95	4.11	4.29	4.48	4.69
	4:1	4.00	4.17	4.35	4.54	4.76	5.00	5.26	5.56	5.88	6.25	6.67	7.14	7.69

H. Calculate Downslope Berm Width: Multiplier X Downslope Height = Downslope Berm Width

4.17 x 4.9 ft = 20.2 ft

I. Calculate Minimum Berm to Cover Absorption Area: Downslope Absorption Width + 4 feet

5.0 ft + 4 ft = 9.0 ft

J. Design Downslope Berm = greater of 4H and 4I: 20.2 ft

K. Select Endslope Berm Multiplier: 4.00 *(usually 3.0 or 4.0)*

L. Calculate Endslope Berm X Downslope Mound Height = Endslope Berm Width

4.00 ft X 4.9 ft = 19.4 ft

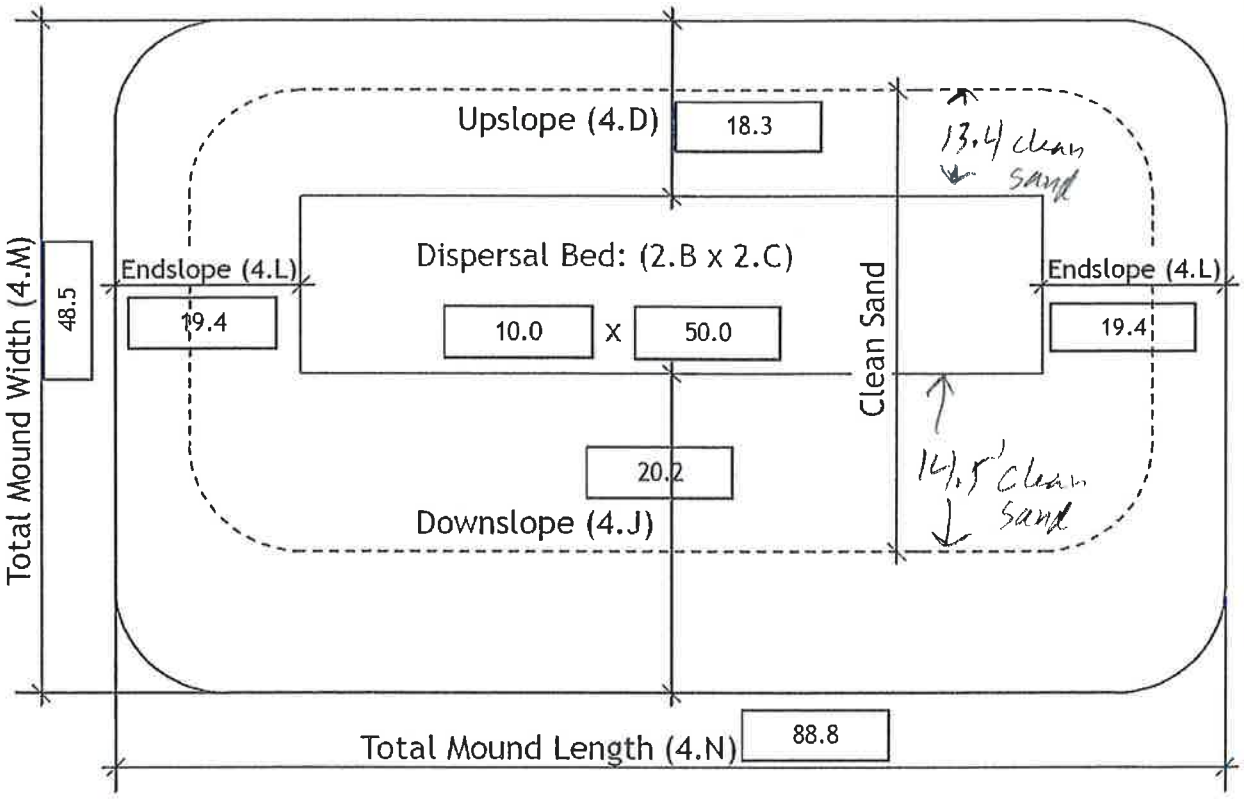
M. Calculate Mound Width: Upslope Berm Width + Bed Width + Downslope Berm Width

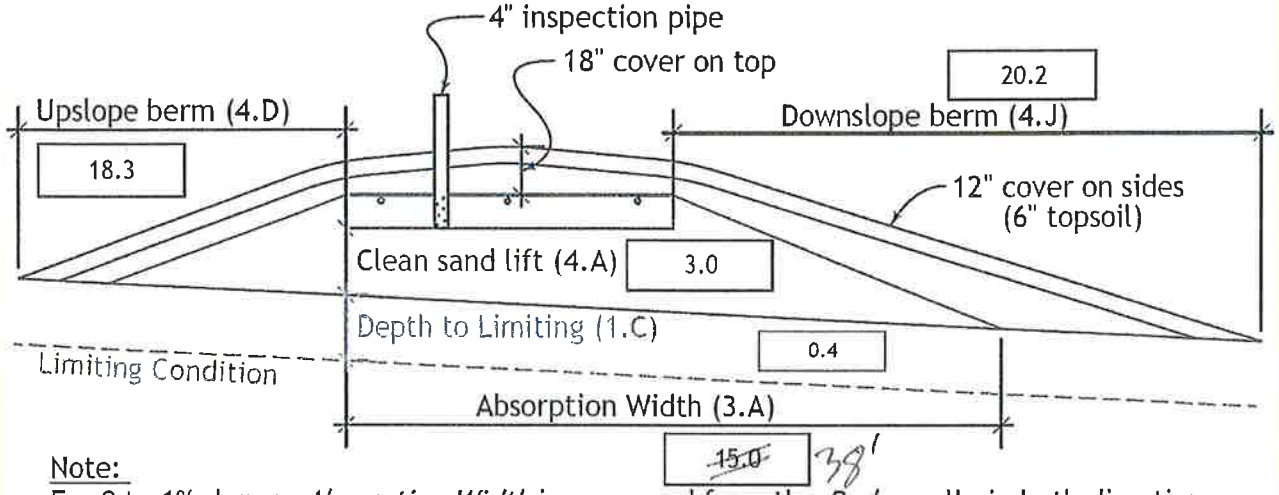
18.3 ft + 10.0 ft + 20.2 ft = 48.5 ft

N. Calculate Mound Length: Endslope Berm Width + Bed Length + Endslope Berm Width

19.4 ft + 50.0 ft + 19.4 ft = 88.8 ft

7. MOUND DIMENSIONS





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*.

Comments:

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OSTP Pressure Distribution Design Worksheet

University of Minnesota

Project ID: v 07.14.15

1. Media Bed Width: 10 ft

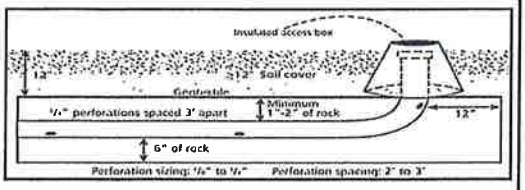
2. Minimum Number of Laterals in system/zone = Rounded up number of [(Media Bed Width - 4) ÷ 3] + 1.

(10 - 4) + 1 = 3 laterals *Does not apply to at-grades*

3. Designer Selected *Number of Laterals*: 3 laterals
Cannot be less than line 2 (accept in at-grades)

4. Select *Perforation Spacing*: 3.0 ft

5. Select *Perforation Diameter Size:* 7/32 in



6. *Length of Laterals* = Media Bed Length - 2 Feet.

50 - 2ft = 48 ft *Perforation can not be closer then 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 = 48 ft ÷ 3 ft = 16 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 = 16 Spaces + 1 = 17 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	1¼	1½	2	3		1	1¼	1½	2	3
2	10	13	18	30	60	2	11	16	21	34	68
2½	8	12	16	28	54	2½	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	1¼	1½	2	3		1	1¼	1½	2	3
2	12	18	26	46	87	2	21	33	44	74	149
2½	12	17	24	40	80	2½	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.*

17 Perf. Per Lat. X 3 Number of Perf. Lat. = 51 Total Number of Perf.

10. Select *Type of Manifold Connection* (End or Center): ☑ End ☐ Center

11. *Select Lateral Diameter (See Table)*: 1.50 in

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OSTP Pressure Distribution Design Worksheet

University of Minnesota

12. 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)

10	ft	X	50	ft	=	500	ft^2

b. *Square Foot per Perforation* = *Bed Area* divided by the *Total Number of Perforations*.

500	ft^2	÷	51	perforations	=	9.8	ft^2/perforations

13. Select *Minimum Average Head*: 1.0 ft

14. Select *Perforation Discharge* (GPM) based on Table: 0.56 GPM per Perforation

15. Determine required *Flow Rate* by multiplying the *Total Number of Perfs.* by the *Perforation Discharge.*

51	Perfs	X	0.56	GPM per Perforation	=	29	GPM

16. *Volume of Liquid Per Foot of Distribution Piping (Table II)*: 0.110 Gallons/ft

17. *Volume of Distribution Piping* =

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

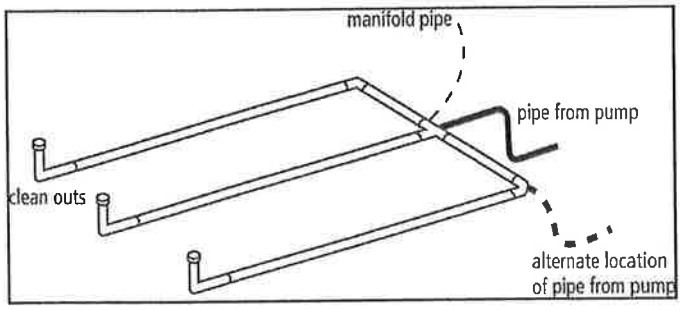
3	X	48	ft	X	0.110	gal/ft	=	15.8	Gallons

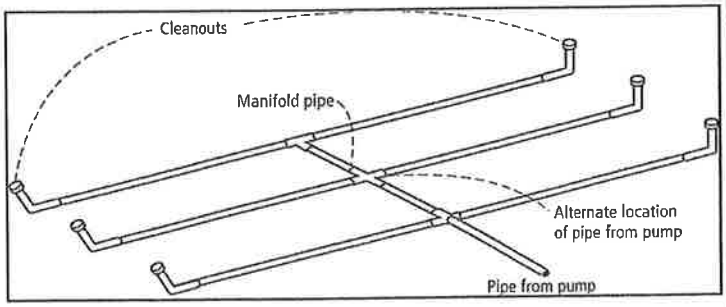
18. Minimum Delivered Volume = Volume of Distribution Piping X 4

15.8	gals	X	4	=	63.4	Gallons

Table II
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





Comments/Special Design Considerations:

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OSTP Basic Pump Selection Design Worksheet

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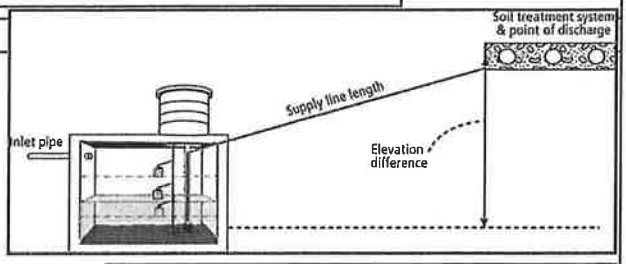
1. PUMP CAPACITY

Project ID:

Pumping to Gravity or Pressure Distribution: ○ Gravity ◉ Pressure **Selection required**

1. If pumping to gravity enter the gallon per minute of the pump: _____ GPM *(10 - 45 gpm)*
2. If pumping to a pressurized distribution system: 29.0 GPM
3. Enter pump description: Time Dosing Soil Treatment

2. HEAD REQUIREMENTS



A. Elevation Difference between pump and point of discharge: 12 ft

B. Distribution Head Loss: 5 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: 2.0 in

2. Supply Pipe Length: 117 ft

E. **Friction Loss in Plastic Pipe per 100ft** from Table I:

Friction Loss = 2.23 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 (D.2)* X 1.25 = *Equivalent Pipe Length*

117 ft X 1.25 = 146.3 ft

G. Calculate *Supply Friction Loss* by multiplying *Friction Loss Per 100ft* (Line E) by the *Equivalent Pipe Length* (Line F) and divide by 100.

Supply Friction Loss =

2.23 ft per 100ft X 146.3 ft ÷ 100 = 3.3 ft

H. *Total Head* requirement is the sum of the *Elevation Difference* (Line A), the Distribution Head Loss (Line B), Additional Head Loss (Line C), and the Supply Friction Loss (Line G)

12.0 ft + 5.0 ft + _____ ft + 3.3 ft = 20.3 ft

3. PUMP SELECTION

A pump must be selected to deliver at least **29.0** GPM (Line 1 or Line 2) with at least **20.3** feet of total head.

Comments:

Minnesota Pollution Control Agency

OSTP Pump Tank Design Worksheet

University of Minnesota

DETERMINE TANK CAPACITY AND DIMENSIONS | Project ID: | v 07.14.15

1. A. *Design Flow (Design Sum.1A)*: 600 GPD

   B. Min. required pump tank capacity: 600 Gal C. Recommended pump tank capacity: 1000 Gal

   D. Pump tank description: Time to Pressure

MEASURED TANK CAPACITY (existing tanks):

2. A. Rectangle area = Length (L) X Width (W)

   ____ ft X ____ ft = ____ ft^2

   B. Circle area = $3.14r^2$ (3.14 X radius X radius)

   3.14 X ____ ^{2} ft = ____ ft^2

   C. Calculate Gallons Per Inch. Multiply the area from 1.A or 1.B, by 7.5 to determine the gallons per foot the tank holds and divide by 12 to calculate the gallons per inch.

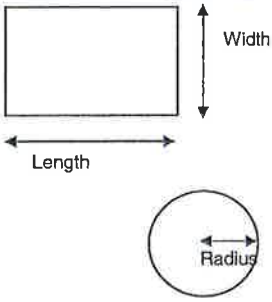
   ____ ft^2 X 7.5 gal/ft^3 ÷ 12 in/ft = ____ Gallons per inch

   D. Calculate *Total Tank Volume*

   Depth from bottom of inlet pipe to tank bottom: ____ in

   Total Tank Volume = *Depth from bottom of inlet pipe* (Line 4.A) X *Gallons/Inch* (Line 2)

   ____ in X 23.1 Gallons Per Inch = ____ Gallons



MANUFACTURER'S SPECIFIED TANK CAPACITY (when available):

3. A. Tank Manufacturer: Brown Wilbert

   B. Tank Model: 1000 gallon single

   C. Capacity from manufacturer: 1001 Gallons

   D. Gallons per inch from manufacturer: 23.1 Gallons per inch

   E. Liquid depth of tank from manufacturer: 43.3 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

4. 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* (2C or 3E)

   (12 in + 2 inches) X 23.1 Gallons Per Inch = 323 Gallons

5. *Minimum Delivered Volume* = 4 X Volume of Distribution Piping:

   - *Line 17 of the Pressure Distribution or Line 11 of Non-level* 63 Gallons (minimum dose)

6. Calculate *Maximum Pumpout Volume* (25% of Design Flow)

   Design Flow: 600 GPD X 0.25 = 150 Gallons (maximum dose)

7. *Select a pumpout volume that meets both Minimum and Maximum:* 150 Gallons

8. Calculate *Doses Per Day* = Design Flow ÷ *Delivered Volume*

   600 gpd ÷ 150 gal = 4 *Doses*

9. Calculate Drainback:

   A. *Diameter of Supply Pipe* = 2 inches

   B. Length of Supply Pipe = 117 feet

   C. *Volume of Liquid Per Lineal Foot of Pipe* = 0.170 Gallons/ft

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

   117 ft X 0.170 gal/ft = 19.9 Gallons

10. *Total Dosing Volume = Delivered Volume* plus *Drainback*

    150 gal + 19.9 gal = 170 Gallons

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

    3 in X 23.1 gal/in = 69.3 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

Minnesota Pollution Control Agency

OSTP Pump Tank Design Worksheet

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TIMER or DEMAND FLOAT SETTINGS

Select Timer or Demand Dosing: ◉ Timer ○ Demand Dose

A. Timer Settings

12. Required *Flow Rate*:

A. From Design (Line 12 of Pressure, Line 10 of Non-Level or Line 6 of Pump*): 29 GPM

B. Or calculated: GPM = Change in Depth (in) x Gallons Per Inch / Time Interval in Minutes

[ ] in X [23.1] gal/in ÷ [ ] min = [ ] GPM

**Note: This value must be adjusted after installation based on pump calibration.*

13. Flow Rate from Line 12.A or 12.B above. 29 GPM

14. Calculate **TIMER ON** setting:

Total Dosing Volume/GPM

[170] gal ÷ [29.0] gpm = [5.9] Minutes ON

15. Calculate **TIMER OFF** setting:

Minutes Per Day (1440)/*Doses Per Day* - Minutes On

1440 min ÷ [4] doses/day - [5.9] min = [354.1] Minutes OFF

16. Pump Off Float - Measuring from bottom of tank:

Distance to set Pump Off Float=Gallons to Cover Pump / Gallons Per Inch:

[323.4] gal ÷ [23.1] gal/in = [14.0] Inches

17. Alarm Float - Measuring from bottom of tank:

Distance to set Alarm Float = Tank Depth(4A) X 90% of Tank Depth

[43.25] in X 0.90 = [38.925] in

B. DEMAND DOSE FLOAT SETTINGS

18. Calculate *Float Separation Distance* using *Dosing Volume*.

Total Dosing Volume /Gallons Per Inch

[ ] gal ÷ [ ] gal/in = [ ] Inches

19. Measuring from bottom of tank:

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

[ ] in + [ ] in = [ ] Inches

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

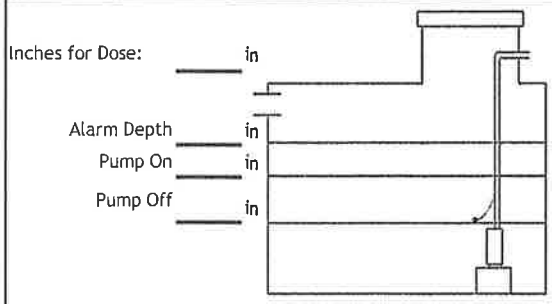
[ ] in + [ ] in = [ ] Inches

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

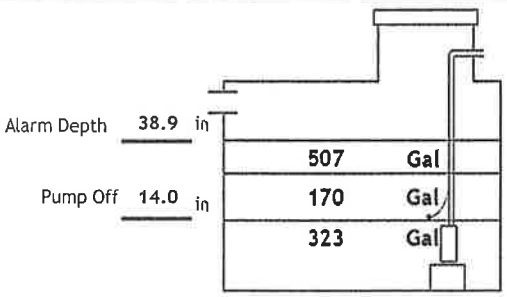
[ ] in + [ ] in = [ ] Inches

FLOAT SETTINGS

DEMAND DOSING



TIMED DOSING



Soil Profile Description

Last updated: 1/15/18

Date Completed :	7/26/2018	**Observation # :**	Soil Borings 1-3
Completed By :	Travis Johnson	**Equipment :**	Auger
Client / Project :	Cajun Queen	**Limiting Layer :**	5"
andscape position :	Toe slope	**Vegitation :**	Wooded
Mapped soil type :	204B	**Weather :**	Cloudy

Observation # : 1	*Primary Site*					
Horizon Depth	**Soil Texture**	**Matrix Color**	**Redox features**	**Shape**	**Grade**	**Consistence**
0" - 3"	Loam	10YR 3/2		Granular	Strong	Friable
3" - 7"	Sandy Loam	10YR 4/4	Redox at 5"	Granular	Strong	Friable

Observation # : 2	*Primary Site*					
Horizon Depth	**Soil Texture**	**Matrix Color**	**Redox features**	**Shape**	**Grade**	**Consistence**
0" - 8"	Sandy Loam	10YR 3/2		Granular	Strong	Friable
8" - 13"	Sandy Loam	10YR 4/4	Redox at 10"	Blocky	Strong	Friable

Observation # : 3	*Primary Site*					
Horizon Depth	**Soil Texture**	**Matrix Color**	**Redox features**	**Shape**	**Grade**	**Consistence**
0" - 6"	Loam	10YR 3/2		Granular	Strong	Friable
6" - 12"	Sandy Loam	10YR 4/4	Redox @ 10"	Blocky	Strong	Friable

SEPTIC CHECK
6074 Keystone Rd Milaca, MN 56353
Phone: (320)-983-2447 Fax: (320)-983-2151 info@septiccheck.com www.SepticCheck.com

Aitkin County, Minnesota

204B—Branstad loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: gjfx
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

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

Description of Branstad

Setting

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

Typical profile

A - 0 to 2 inches: loam
E,Bw,E',E/B - 2 to 17 inches: fine sandy loam
Bt1,Bt2 - 17 to 36 inches: loam
Bt3 - 36 to 43 inches: loam
C - 43 to 60 inches: loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: About 30 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Available water storage in profile: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Forage suitability group: Sloping Upland, Neutral (G090AN002MN)
Hydric soil rating: No

Minor Components

Cromwell and similar soils
Percent of map unit: 3 percent
Hydric soil rating: No

Cutaway and similar soils
Percent of map unit: 3 percent
Hydric soil rating: No

Alstad and similar soils
Percent of map unit: 3 percent
Hydric soil rating: No

Talmoon and similar soils
Percent of map unit: 2 percent
Landform: Swales
Hydric soil rating: Yes

Seelyeville and similar soils
Percent of map unit: 2 percent
Landform: Bogs
Hydric soil rating: Yes

Hamre and similar soils
Percent of map unit: 2 percent
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

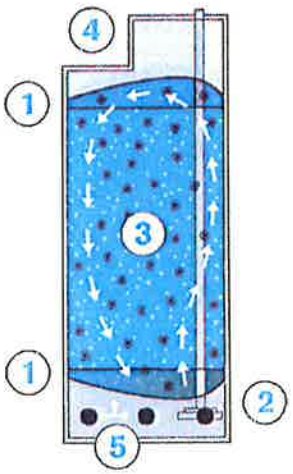
Soil Survey Area: Aitkin County, Minnesota
Survey Area Data: Version 18, Oct 4, 2017

DESIGN OUTLINE SUMMARY & PROPOSAL

Date:	9/5/2018
Project Name:	202 Bar
Project Location:	49482 202nd Place McGregor MN 55760
Design Outline Name:	Mini MBBR
Designer/Engineer:	Septic Check

Project Summary:
The 202 Bar will be completing a septic system update. The new update will include all new tanks and a new mound system for a 600 GPD design flow. This facility will also need to pretreat prior to discharge to the drainfield system to meet the code required level C treatment levels.

Proposed Biofilm Process:
For this application, we offer our Mini MBBR retrofit treatment process. The reactor will house BWT-X biofilm carriers, which have a high specific surface area of 650 m^2/m^3 for biofilm growth. Solids generated from this treatment process will require clarification to settle any remaining solids before the final dosing tank. The directional flow opening should be pointed back towards the inlet of the tank in which it will be installed.



1. ROUNDED SIEVE CAP INSERT 2. AIR DIFFUSER 3. BIOCARRIERS 4. DIRECTIONAL FLOW OPENING
5. INFLUENT ENTERS IN THROUGH BOTTOM

DETAILS

- Custom designed and built to match your existing or new tank.
- With a 16" diameter, this unit can fit down standard manholes.
- Directional flow provides gentle mixing of the tank, which increases settling of solids.
- Remove up to 1.5 lbs BOD/day/unit.
- Economical for systems up to 6 lbs BOD with up to 4 units in one tank.
- Can be used as pre-aeration to struggling treatment systems.
- High efficiency aeration provides low operating cost.

The Biofilm Carrier:
The surface area for the support of biofilm growth consists of high-density polyethylene (HDPE) carriers with approximate dimensions of 14.5 mm high by 14.5 mm wide and 8 mm long (Figure 2). The interstitial openings have small fins on the interior square areas and nine cells. The biofilm carrier has an effective surface area for biofilm growth of 198.1 ft^2/ft^3 (650 m^2/m^3) and is used in reactors at fill rates of up to 70%. A specification sheet for the BWT-X carrier and a general brochure are included.

Biofilm Carrier

Design Criteria:

Parameter	Influent to MBBR	Effluent Requirements/Limits
Design Flow:	600 GPD	600 GPD
cBOD5:	500 mg/l	125 mg/l
TSS:	125 mg/l	60 mg/l
FOG:	100 mg/l	25 mg/l
Temp F :	45˚F Min. (estimated)	
pH:	7-8 (estimated)	

Proposed Treatment system: The new system will consist of a 1500 gallon septic tank followed by a 2500 gallon 2 compartment tank and a final dose tank. The Mini MBBR system will be installed in the inlet end of the 2500 gallon septic tank. The directional flow opening will point back towards the inlet of the septic tank. A double unit is proposed with an energy efficient linear compressor installed in a weather resistant housing at grade. The second chamber of the 2500 gallon tank will act as a clarifier. This tank will also require an effluent screen on the outlet to assist with solids retention.

Design parameters used:	
CBOD loading to reactor: 600 GPD x 500 mg/l CBOD =	2.5 lbs CBOD / day
Total Biowater BTX media	9 cu ft
Media loading rate (SALR)	1.44 Lbs./1000 ft2
Media Fill Fractions	75%
Aeration Requirements per reactor	6.7 CFM 2.0 psi
Reactor tank Sizing	1650 gallons
Clarifier tank Sizing	900 gallons

Electrical requirements:

A single 120v GFI plug in receptacle with outdoor weatherproof enclosure is required at the blower location. A 15 amp circuit is recommended.

O&M Requirements:

Annual requirements

- Monitor solids levels in all tanks and pump tanks when solids exceed 25% of tank volume. If tanks are pumped, spray down MBBR insert inside the tank and clean off media. The media does not need to be cleaned unless the tank is pumped.
- Clean effluent screen in clarifier
- Check amperage on aerator and clean or replace air filter.
- Check effluent for visual clarity and odors. Sample effluent per system permit.
- Monitor media and water flow through the unit. A slow rolling of the effluent through the unit and out the directional flow opening should be verified at each inspection.

System budget:

Item Description	QTY	Cost Estimate
Outdoor Aerator Housing	1	
Aerator piping	1	
Compressor – HIBLOW 150	1	
Mini MBBR Insert to Match Sather 2500 dimensions	1	
Onsite installation	1 hr.	
Start Up and O&M training	1 hr.	

***Does not include sales tax**

Provided by Wexco Environmental

- Final specifications and plan drawings will be available upon acceptance of the proposal.
- MBBR equipment
- Installation assistance and system startup as needed onsite
    - Install air distribution piping
    - Install retrofit unit in tank
    - Install blowers
    - Labor to install system

Excluded or by owner

- Electrical connections
- Effluent Screens
- System design and Permits

Terms:
50% down to order, balance due net 30 days of invoice. A 1-½% service charge per month will be applied to balance due after 30 days.

Quote valid for 30 days.

WEXCO Environmental

Brian Koski
O: 320-983-2447
C: 218-428-0391

Aitkin County Environmental Services
Wastewater Treatment and Dispersal Operating Permit Application

Permit Number: _____ Date: _____

Facility Information

Permittee name: 202 Bar Phone number: _____

Mailing address: 49482 – 202nd Place

City: McGregor State: MN Zip code: 55760

Property ID number (GPS location): 29-1-329500

Aitkin County authorizes the Permittee to operate a wastewater treatment and dispersal system at the address named above in accordance with the requirements of this operating permit. The attached Management Plan is hereby incorporated as part of the requirements of this operating permit.

Issuance date: Date of Installation Expiration date: 5 years from date of installation

System type: Mini MBBR (2) retro units Treatment level: C or better

System design flow: 600 GPD PEAK Residential/Commercial: Commercial

System Components: 1500 gallon 2-comp tank with effluent screen, 2500 gallon 2-comp tank with MBBR unit in first chamber and effluent filter in second chamber, 1000 gallon pump tank with time dose system to 10' x 50' rockbed mound on 3' sand lift.

Initial timer settings per design; calibrate pumps after install to verify correct timer settings.

Monitoring Requirements

Parameter	Effluent limits	Frequency	Location
Design flow (gpd)	600	Weekly / Daily	Water Meter
Average flow (gpd)	450	Weekly / Daily	Water Meter
$CBOD_5$ (mg/L)	125 or less	Annual	Dosing Tank
TSS (mg/L)	60 or less	Annual	Dosing Tank
FOG (mg/l)	25 or less	Annual	Dosing Tank
Ponding/Surfacing in soil treatment	none	Annual	Drainfields

Maintenance Requirements

Maintenance requirements shall be performed as specified in the Management Plan as prepared by the system's Advanced Designer.

System component	Maintenance	Frequency
Grease Trap	Check monthly, pump as needed	Annual
Septic tank/Trash tank	Check monthly, pump as needed	Annual
Pump tank and controls	Check monthly, pump/replace as needed	Annual
Effluent screen	Check monthly, clean as needed	Annual
Advanced treatment product	Per Service Plan	Annual
Soil treatment and dispersal	Clean/jet laterals	As needed – 1st cleaning not expected for 3-5 years, maybe longer
Ponding/Surfacing in soil treatment	Check yearly, repair as needed.	Annual

Instructions for Completing an Operating Permit

The following instructions provide an explanation for local units of government to complete the operating permit template. This is intended to provide guidance to local units of governments (LGU) in developing operating permits for Type IV and Type V systems, including both residential and commercial systems. The template could be modified for holding tanks. Since the Management Plan is considered part of the operating permit, it needs to be attached to the operating permit. A signed contract, between the owner and Service Provider, should be attached to the operating permit to help ensure the owner has made the necessary arrangements to have the system maintained and monitored.

LGU Name, Department and Address – fill in the name, department and address of local unit of government at the top of the operating permit.

Wastewater Treatment and Dispersal Operating Permit No. – assign an operating permit number to be able to track the system over the years.

Permittee Name, Telephone Number, and Address – fill in the name, address and phone number of the owner.

Property Id. Number (GPS Location) – these are simply identifiers used by local units of government in the event the property address changes over time.

Name of Local Unit of Government – fill in the name of the local unit of government. This authorizes the Permittee to operate the wastewater treatment system at the address named above, according to the operating permit, attached Management Plan and contract with the Service Provider.

Issuance Date – fill in the date the operating permit is issued. The operating permit should not be issued until all required information is submitted.

Expiration Date – fill in the date when this operating permit expires. The first time an operating permit is issued to an owner, it should be issued for one (1) year. This helps ensure the owner actually does the required maintenance and monitoring during the first year. If the owner complies, the operating permit can then be issued for a longer period of time as determined by the local unit of government (typically 3 to 5 years). However, if the owner does not comply the first year, the second operating permit could, again, be issued for a period of one (1) year.

System Type – fill in as Type IV or Type V system. Holding tanks also require operating permits (Type II system).

Treatment Level – specify Treatment Level A, B, C, TN or TP. Treatment Level A = Carbonaceous Biochemical Oxygen Demand, five day ($CBOD_5$) 15 milligrams per liter (mg/L), Total Suspended Solids (TSS) 15 mg/L, Fecal Coliform Bacteria 1000 per 100 milliliter (mL); Treatment Level B = $CBOD_5$ 25 mg/L, TSS 30 mg/L, Fecal Coliform Bacteria 10,000 per 100 mL; Treatment Level C = $CBOD_5$ 125 mg/L, TSS 80 mg/L, Oil and Grease 20 mg/L; TN = 20 mg/L, or TP = 2 mg/L.

System Design Flow – fill in the design flow specified on the construction permit for the system, along with the projected average daily flow for the system. Average daily flow is generally 60 to 70 percent of design flow.

Residential/Commercial – specify if the system is residential or commercial. You may specify additional information, such as classification of dwelling, number of bedrooms; or type of commercial establishment.

System Components – provide a brief description of the system components. An example would be the following: 600 gallon trash tank, 600 gallon ECOPOD treatment device, 1 Salcor Ultra Violet (UV) light disinfection unit, 500-gallon pump tank, pump, floats and controls, and 250-foot shallow trenches using pressure distribution.

Monitoring Requirements (Table)

The monitoring requirements specified in an operating permit are unique to the site and soil conditions of the property (its environmental sensitivity) and system complexity. The monitoring requirements include specific parameters to be monitored, target limits and the frequency and location of monitoring. The monitored parameters, at a minimum, would include: 1) wastewater flow - the most basic parameter to know in understanding system performance, 2) ponding in the soil treatment system and 3) surfacing of the soil treatment system. Monitoring for $CBOD_5$, TSS, fecal coliform bacteria and nitrogen are unique to the site, its receiving environment and complexity of the wastewater system. Field tests for temperature, pH and dissolved oxygen can be performed by the Service Provider to serve as general indicators of system performance.

1. **Flow** – flow to each system needs to be determined as specified in the Management Plan or as determined by the local unit of government. Flow can be determined several ways, using water meters, event counters, and running time clocks. Telemetry can also be used and has the advantage that flow can be determined continually.

   The determination for the frequency of flow measurement is done on a case-by-case basis. At first, daily flow monitoring may be needed to determine average flow and peak flows to a system. After a period of time, weekly or monthly flow determination may be acceptable. Flow determinations once a year generally provide limited information.

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

It is hereby agreed this 18th day of Sept, 2018 by and between Septic Check (Inspector) and _____ (client)

(Client) Name & Address LuRAE MELAAS

Street Address 49482 - 202nd PL

City, State, Zip McGREGOR MN 55760

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.

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 Oct 1, 2018

and Ending Oct 1, 2019

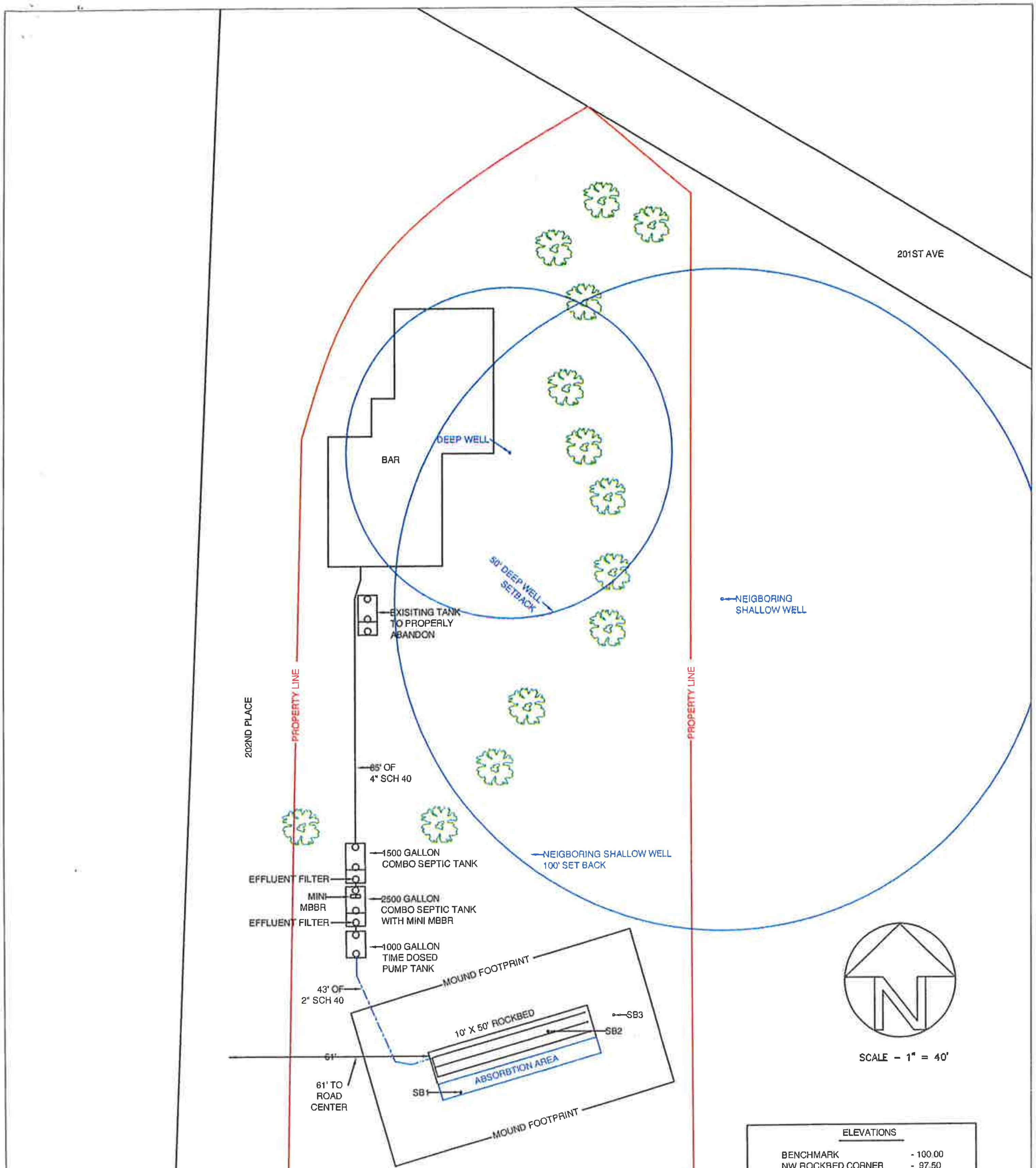
Cost for Maintenance Service, Monitoring and Inspection Contract is:

$350.00 /yr. For 1 years totaling $350.00

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 upon completion of service

Client:	**Inspector:**
Sign: [signature]	Sign: [signature]
Print: LUKAS MELAAS	Print: Brian Kosiw
Date: 9-18-18	Date: 9/18/18



ELEVATIONS

BENCHMARK	- 100.00
NW ROCKBED CORNER	- 97.50
SW ROCKBED CORNER	- 97.50
NE ROCKBED CORNER	- 97.50
SE ROCKBED CORNER	- 97.40
BOTTOM OF ROCKBED	- 100.40
INLET OF TANK # 1	- 94.40
EST. PUMP ELEVATION	- 89.60
EXISTING SEPTIC INLET	- 95.90

** EXISTING TANK TO BE PUMPED AND PROPERLY ABANDON. ALL COMPONENTS OF THE PROPOSED SEPTIC SYSTEM ARE GREATER THAN 20' FROM ALL PROPERTY LINES.*

PREPARED FOR	PROPERTY LOCATION	LEGAL DESCRIPTION			PAGE TITLE	SHEET NUMBER
CAJUN QUEEN	[illegible] 202nd Place McGregor, MN 55760	Aitkin County, Minnesota [illegible]	SEPTIC CHECK 8074 KEYSTONE RD MILACA, MN 56353 (320)-983-2147 (FAX) (320)-983-2191	I hereby certify that this site plan was prepared by me or under my direct supervision [illegible] DATE 9/7/18	Septic Design	1 OF 1

AITKIN COUNTY ENVIRONMENTAL SERVICES

OPERATING PERMIT FOR WASTEWATER TREATMENT AND DISPERSAL

OPERATING PERMIT #: 603
ZONING PERMIT #: ~~TBD~~ 43901
PARCEL #: 29-1-329500
PERMITTEE: 202 Bar

ORGINAL DATE ISSUED: 9 /18/2018
RENEWAL PERIOD:
RENEWAL EXPIRATION: 5 /31/2018

MAILING ADDRESS: 49482 202nd Place
McGregor, MN 55760

PROPERTY ADDRESS:
49482 202nd Place
McGregor, MN 55760

TELEPHONE:
LEGAL: BELLHORN HEIGHTS SECOND ADDITION LOT 15
FEE PAID: 100 **DATE PAID:** 9 /18/2018 **RECEIPT:** online **CK #:** 1327

Aitkin County Environmental Services authorizes the Permittee to operate a wastewater treatment and dispersal system located on the above described property in accordance with the requirements of this permit.

This permit is effective on the issuance date identified above.

This permit and the authorization to treat and disperse from the above system shall expire on the above expiration date. The Permittee is not authorized to discharge after the date of expiration. The Permittee shall submit such information and forms as required by Aitkin County Environmental Services no later than thirty (30) days prior to the expiration date. When the required information is submitted and approved by Aitkin County Environmental Services, the permit may be renewed. This permit is not transferable from owner to owner.

I hereby certify with my signature as the permittee that I understand the provisions of this permit including the maintenance and monitoring requirements. I agree to indemnify and hold Aitkin County harmless from all loss, damages, costs and charges that may be incurred by use of this system and if I fail to comply with the provisions of this Operating Permit. If I sell this property during the life of the permit, I will inform the new owner(s) of the permit requirements and the need to renew the permit.

Signature of Permittee **Date** 9/18/18

Signature of Permitting Authority **Date** 9/18/18

If you have any questions regarding this permit, including the specific permit requirements, permit reporting or permit compliance status, please contact Aitkin County Environmental Services at 218-927-7342.

D. MONITORING AND REPORTING REQUIREMENTS:

Monitoring results obtained during each calendar year shall be submitted no later than May 31st of that year to:

Aitkin County Environmental Services
209 2nd Street NW, Room 100
Aitkin, MN 56431

The monitoring reports shall be signed by the Permittee. Copies are to be retained by the Permittee.

The Permittee shall notify Aitkin County Environmental Services within thirty (30) days when monitoring results do not meet the monitoring plan requirements of this permit.

Monitoring plans may be modified as necessary and reapproved by Aitkin County Environmental Services.

Sampling and laboratory testing procedures shall be performed in accordance with Standard Methods and shall be performed by a Minnesota Department of Health approved laboratory. All sampling and testing costs shall be the responsibility of the Permittee.

Monitoring will be performed by: Brian Koski

E. MITIGATION PLAN:

See Contigency Plan in Design and Permit Application

AITKIN COUNTY

CERTIFICATE OF INSTALLATION/~~NOTICE OF NONCOMPLIANCE~~

This certificate of installation/~~notice of noncompliance~~ has been issued this _____ day of _____, 20____ to certify compliance\~~noncompliance~~ with Aitkin County's Subsurface Sewage Treatment System Ordinance.
The premises covered by this certificate are legally described as:_____
_____
_____

Section _____ Township _____ Range _____ Lake _____
PERMIT NO. _____ Owner Name _____
Address _____
Installer Name _____
Type of System Inspected _____
Parcel Number_____

The certificate of installation/~~notice of noncompliance~~ was based on No ___ of the following:

1) Inspection of the installation or construction as in accordance with the above referenced permit and application design.

2) Review of as-built plans submitted in accordance with Subdivision 9.2 D of Aitkin County's Subsurface Sewage Treatment System Ordinance.

If the above permitted subsurface sewage treatment system is in noncompliance with Aitkin County's Subsurface Sewage Treatment System Ordinance, then the following shall serve as a Notice of Violation:

1) Statement of the findings of fact through inspections or investigations:
_____
_____

2) List of specific violations of Ordinance:_____
_____
_____

3) Requirements for correction or removal of violations: _____
_____
_____

4) Time schedule for compliance: _____

Failure to correct or remove the above violation(s) will result in this matter being turned over to the Aitkin County Attorney's Office for further legal action, which may result in revocation of licenses or registrations, fines and/or imprisonment.

INSPECTOR SIGNATURE_____

SUBSURFACE SEWAGE TREATMENT SYSTEM INSPECTION FORM
AITKIN COUNTY, MINNESOTA

Township Shamrock Date of Inspection Initial: 9/27/2018 Final: 10/16/2018 App. Number 43901

Owner Michael Stras & Lurae Melaas Parcel Number 29-1-329500

Project Address 49482 202nd Pl Installer CK Service

City McGregor Zip Code 55760

Craig Karjalahti
T3 600GPD Mound

New [✓] Repair [ ]

DIST. or DROP BOX & TYPE —

SETBACKS:

Buildings to tank(s) 51'

Buildings to drainfield 133'

Well(s) 50' or 100' DW; 89' to tank

Lake/Creek/Wetland —

SEPTIC TANKS: New [✓] Existing [ ]

Number of tanks installed 3 total

Liquid capacity and type 1500 Sather combo / 2450 Sather combo

Type of baffle Plastic

Inspection pipes —

Manholes size 24"

Manhole to grade Yes [✓] No [ ]

PUMPS: New [✓] Existing [ ]

Tank capacity and type Sather 1000G

Pump manufacturer & model # Gould PES1

Horsepower & GPM ½ HP 29GPM min.

Feet of head 20.3' min.

Gallons per cycle 150 GPC

Size of discharge line 1.5"

Type & location of alarm Rhombus electric

Water meter Event counter

TRENCHES, BEDS, OR GRAVELLESS LEACHFIELD:

Trench/Bed depth

Trench/Bed length

Trench/Bed bottom width

Trench spacing

Drainfield rock below pipe

Size of gravelless pipe

Depth of backfill

Absorption area: square feet

lineal feet

MOUNDS:

Percent slope 1%

Upslope sand width 18.3'

Downslope sand width 20.2'

Sideslope sand width 18.3'

Drainfield rock below pipe 9"

Depth of sand below rock 36"

Perforation size & spacing 7/32" / 36" sp

Pipe size & spacing 1.5" / 36" sp.

Dimensions of rock bed 10' x 50'

Dimensions of sand base 38' x 77'

Final cover 12" cover over rb; 6" TS

DRAWING OF SYSTEM: (include soils)

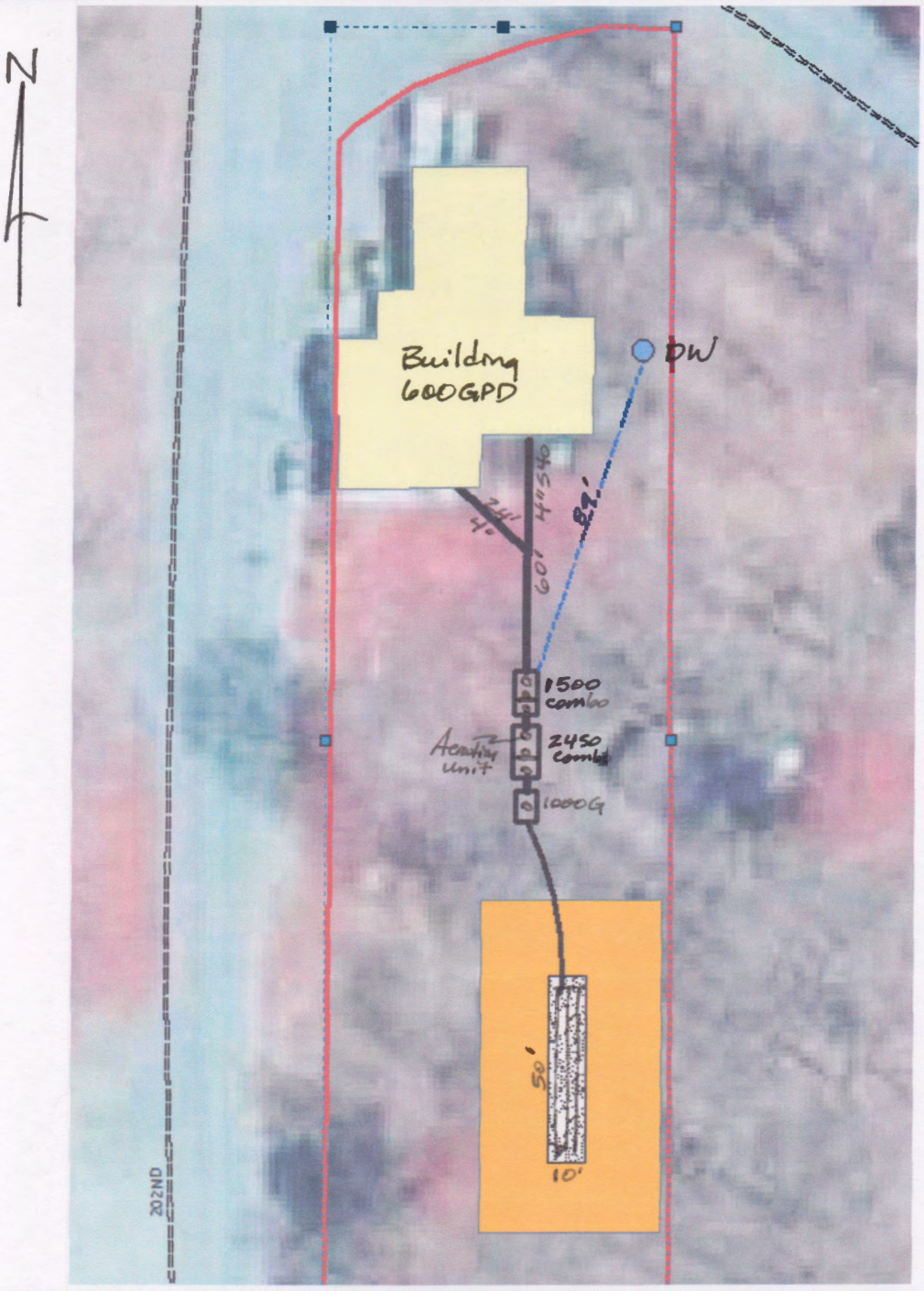
See attached site plan.

Inspector's Comments: Aeration unit installed in 2450 G tank. System is time-dosed

Inspector's Signature Bryan Hargrave Installer's Signature

Rev:1/13 White – County Yellow – Applicant Pink - Installer

Site Drawing



Soils

System is a Type 3. There is 36" of clean sand under rockbed, which meets the separation requirements.

Notes

System is timedosed 4 times daily 150 GPD Aeration unit in 2450 tank


2018/09/27

2018/09/27


HITACHI
2018/09/27


HITACHI
2018/09/27


PE51P1
UP
2018/09/27


2018/09/27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Dat
ALL WEATHER
PVC
2018/09/27


2018/09/27


2018/09/27


CONTROL POWER
ALARM POWER
PUMP RUN
EZ SERIES
SIMPLEX CONTROL PANEL
TEST/ SILENCE
SJE RHOMBUS
⚠ WARNING / AVERTISSEMENT
ELECTRICAL SHOCK HAZARD
More than one disconnect switch may be required to de-energize the equipment before servicing.
RISQUE D'ÉLECTROCUTION
Il est possible que ce panneau de contrôle soit alimenté par plusieurs sources. Assurez-vous que toutes les alimentations sont débranchées avant d'ouvrir.
2018/09/27


2018/10/03


2018/10/03


2018/10/03


2018/10/03


EZ
SERIES
SIMPLEX CONTROL PANEL
SJE RHOMBUS
2018/10/03


2018/10/03

Aitkin County Environmental Services – Planning & Zoning
307 2nd Street NW, Room 219
Aitkin, MN 56431
(P) (218) 927-7342
(F) (218) 927-4375
(E) aitkinpz@co.aitkin.mn.us

July 31, 2023

Re: Operating Permit # 603
Zoning Permit # 43901
Parcel # 29-1-329500

202 Bar - Lurae Melaas & Michael Stras
49482 202nd Place
McGregor, MN 55760

Dear Permittee:

This letter is to remind you that the Operating Permit for the septic system at the above-mentioned parcel is due for renewal by September 30, 2023. The enclosed Operating Permit was issued as part of the permit for your non-standard septic system and it must be renewed.

All information listed in the application enclosed must be submitted to our office by the expiration date. Incomplete applications will be returned. We are notifying you to give you sufficient time to contact your service provider/inspector for the monitoring/maintenance activities that are required under this operating permit.

If your service provider/inspector finds the system is operating in conformance with the Operating Permit, please have them submit a letter requesting to have term of the operating permit extended for a longer period or to request terminating the operating permit. Our office will determine if this is possible.

The performance and life expectancy of this septic system is dependent on regular monitoring and maintenance of all parts of the system. Your compliance with the operating permit will ensure continued performance of the system. Failure to perform the monitoring and maintenance of this system could cause costly repairs and/or replacement of this system. Failure to comply with the monitoring, maintenance and reporting of the septic system is a violation of the Aitkin County Subsurface Sewage Treatment System Ordinance and could result in prosecution by the County Attorney's office.

Please contact our office with any questions regarding the renewal of this operating permit and your septic system.

Sincerely,

Shannon Wiebusch
Office Assistant
Aitkin County Planning & Zoning
shannon.wiebusch@co.aitkin.mn.us
218-927-7342

Enclosure: Operating Permit Renewal Application

Invoice #58763 (09/26/2023)
Misc. (OFFICE USE ONLY) App. # App-2023-001111, UID # 209078
202 TAVERN
(218) 770-3161
49482 202ND PLACE, MCGREGOR, MN 55760

Aitkin County Planning & Zoning / Environmental Services
307 Second St. NW Room 219
Aitkin, MN 56431
Phone: 218-927-7342
Fax: 218-927-4372
Email: aitkinpz@co.aitkin.mn.us

Charge	Cost	Quantity	Total	Note
Operating Permit Renewal added 09/26/2023 1:11 PM	$150.00	x 1	$150.00	
Grand Total				
		Total	**$150.00**	

Payment #51646

Method: Check 1678
Date: 09/26/2023 **Note:** OP 603 2023 RENEWAL

Made By: 202 TAVERN

Confirmed By: Shannon Wiebusch

Aitkin County Environmental Services
Planning & Zoning
307 Second St. NW Room 219
Aitkin, MN 56431
218-927-7342
aitkinpz@co.aitkin.mn.us

Subsurface Sewage Treatment System
Operating Permit Renewal Application

Use this application to renew an operating permit.

Operating Permit #	603	**Zoning Permit #**	43901		
Issuance Date:	9/30/2023	**Expiration Date:**	9/30/2024	**Renewal Term:**	ANNUALLY

Site Information

Property ID:	29-1-329500				
Property Address:	49482 202nd Place	City:	McGregor	Zip:	55760
Service Provider or Inspector Name:	Septic Check	License #:			

Contact Information

Permittee Name:	202 Bar - Lurae Melaas & Michael Stras						
Mailing Address:	49482 202nd Place	City:	McGregor	State:	MN	Zip:	55760
Email:				Phone:			

Include with this completed renewal application the following items:

- ☐ Table of Water Usage (Flow Monitoring Report)
- ☐ Maintenance & Monitoring Report by your Service Provider/Inspector
- ☑ Renewal Fee: **$150** Due Date: **9/30/2023** Please make check payable to: Aitkin County

  Notice of Late Fee: If your completed application and renewal fee are not received or postmarked by the due date, add a $50.00 late fee.

Monitoring Protocol

Any sampling and laboratory testing procedures shall be performed in accordance with the proprietary treatment product's protocol, Standard Methods, and at a Minnesota Department of Health approved laboratory. Results shall be submitted to the permitting authority at: Aitkin County Environmental Services, 307 2nd St NW, Room 219, Aitkin, MN 56431 no later than the expiration date listed.

Contingency Plan

In the event the wastewater treatment system does not meet required performance requirements as contained in this operating permit, the owner shall notify Aitkin County Environmental Services within thirty (30) days of receiving non-compliant information. The owner is responsible to obtain the services of a Minnesota Pollution Control Agency (MPCA) licensed Service Provider or other qualified inspector to complete the required corrective measures.

Authorization

Aitkin County Environmental Services authorizes the Permittee to operate a wastewater treatment and dispersal system at the address named above in accordance with the requirements of this operating permit, attached Management Plan and contract with the Service Provider/Inspector.

Pd CK# 1678 9/18/23

This permit is effective on the issuance date and term identified above. This permit and the authorization to treat and disperse wastewater shall expire on the expiration date identified above. The Permittee is not authorized to discharge after the above date of expiration. The Permittee shall submit monitoring and maintenance information on forms as required by Aitkin County Environmental Services prior to the above date of expiration for operating permit renewal. If not renewed within ninety (90) calendar days of the expiration date, it may be required that the system be abandoned in accordance with MN Rule 7080.2500. This permit is not transferable as to person or place.

The owner is required to obtain the services of a Minnesota Pollution Control Agency (MPCA) licensed and trained: 1) Service Provider or Inspector to provide ongoing system operation, maintenance, and monitoring and 2) Maintainer to pump the system's sewage tanks and components. The owner is responsible to provide the name of the Service Provider or Inspector business prior to the issuance of this operating permit. The owner has secured the services of **Septic Check** as the Service Provider or Inspector for this system. The Service Provider or Inspector is hereby authorized to provide the required monitoring data and routine maintenance service records to both Aitkin County Environmental Services.

[For systems that generate high strength wastewater, the following items should be added to the operating permit: "If there is a change of use within the facility (i.e., change in menu, increase in food capacity, change in water use fixtures, etc.), the permittee is required to notify Aitkin County Environmental Services and the Service Provider before any changes occurs. Changes to the facility that could potentially impact performance of the wastewater treatment and dispersal system shall not take place until appropriate evaluation has been completed."]

I hereby certify with my signature as the Permittee that I understand the provisions of the wastewater treatment and dispersal system operating permit including maintenance and monitoring requirements. I agree to indemnify and hold Aitkin County harmless from all loss, damages, costs and charges that may be incurred by the use of this system. If I fail to comply with the provisions of this operation permit, I understand that penalties may be issued. If I sell this property during the life of the permit, I will inform the new owner(s) of the permit requirements and the need to renew the operating permit.

Permittee (please print):		Permitting Authority (please print):	PTZ / Shannon Wiebusch
Title:	Date: 9/18/23	Title: Office Assistant	Date: 9-26-23
Permittee Signature:	X LuRae L. Melaas	Permitting Authority Signature:	X Shannon Wiebusch
	Permitee Signature		Aitkin County Representative Signature

AITKIN COUNTY ENVIRONMENTAL SERVICES-PLANNING & ZONING
307 Second Street NW Room 219
Aitkin, Minnesota 56431
Phone: (218) 927-734
Email: aitkinpz@co.aitkin.mn.us

9/26/2023

202 Bar - Lurae Melaas & Michael Stras
49482 202nd Place
McGregor, MN 55760

Re: Operating Permit # 603
Zoning Permit # 43901
Parcel # 29-1-329500

Dear Permittee:

This letter is to inform you that your Operating Permit has been renewed until 9/30/2024 .

Please adhere to your monitoring and maintenance contract including monitoring your water use. Failure to do so would violate the agreement to operate your system and could void the operating permit. You should contact your Service Provider/Inspector directly with questions that you may have during the year.

Thank you for your good stewardship and we hope that your system continues to operate well, protecting groundwater for you and the environment.

Sincerely,

Shannon W.

Aitkin County Planning & Zoning

SAMPLING REPORT

Location: 49482 202nd Place
McGregor
29-1-329500

Owner: 202 Tavern LLC
Use: Food Establishment

Service Company:

Septic Check
6074 Keystone Rd
Milaca, MN 56353
320-983-2447

Sample Date: 11/16/2023 **Sample entered by: Heather Johnson** **Report submitted: 11/16/2023**

Notes:

ONSITE SEWAGE SYSTEM SAMPLING DETAIL

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Pump Tank 1000 Gal Dose Tank	Effluent	Flow	600 GPD	29
Pump Tank 1000 Gal Dose Tank	Effluent	CBOD	125 mg/l	-
Pump Tank 1000 Gal Dose Tank	Effluent	FOG	25 mg/l	-
Pump Tank 1000 Gal Dose Tank	Effluent	TSS	60 mg/l	-