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911 ADDRESS (See)	/ / /	897
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7.7	SE 26	NG NAV
(circle) RESIDENTIAL COMMERCIAL , ACCESSORY	NEW BUILDING ALTERATION	
BUILDING CONTRACTOR AND LICENSE NUMBER: LONEW	ansol .	
SIZE OF ALL BUILDINGS COVERED BY THIS APPLICATION	x65 - Residence (4-1/ex)
	9 6 Eunits 21-	24}, /
(a) OHA	er septic 800 ge	rf/day_
COMMENTS: PUD approved		100 mm
		<u> </u>
		31. 35. 37.
3		
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20.11		/
	495000016	COD SILCIAN
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	ELOW THIS LINE	GPD_X/000_
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EXPIRES IN ONE YEAR

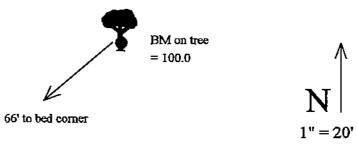
FIELD EVALUATION SHEET

NAME	PERMIT #
PARCEL#	PERMIT # SECTION
CHECK THE FOLLOWING PRIOR TO IN	
	NAME OF SITE EVALUATOR
	NAME OF DESIGNER
	NAME OF INSTALLER
LOT OF RECORD REFORE 1	-21-92 (SL) IR 1-10-95 (NSL), IF NO, ALT.SITE?
SITE PLAN WITH SETRACE	DISTANCES AND DIMENSIONS
	FROM DAMAGE? IF NOT, WHEN
DESIGN DEDCTES	re con dodinge a ded citte
NUMBER OF BEDROOMS (IN	SOIL BORINGS, 2 PER SITE
CDOSS SECTION SHEET	CLUDE FUTENTIAL)
MOUND DESIGN SHEET	TRENCH DESIGN SHE OTHER OR PERFORM HEET PUMP CALC. TEST
DDECCIDE DICTDIDITION C	UTHER OR PERFURIY
WATER HER CALCIDATION S	HEET PUMP CALC. TEST
WATER USE CALCULATION	
GARBAGE DISPOSAL	
	, IS ROAD PUBLIC OR PRIVATE SEE DEED/PL
NATURAL LANDSCAR	'E PROTECTION PLAN
STAKING DIJI DINGS DD.	INFIELD DODINGS MELT
DITUDING CETPACKS, BOAD	AINFIELD, BORINGS, WELL_ SIDE, REAR, BLUFF,
LAKE/RIVER	DIDE, REAR, BLUFF,
COMPLETE DURING SITE EVALUATION	
BUILDINGS STÅKEDDRAINFIEL	
WELL STAKEDDRAINFIEL	D STAKEDBUKINGS STAKED
WELL STAKED	
SETBACKS (MEASURE DISTANCE)	
SEIDACKS (MEASURE DISTANCE)	<u>DRAINFIELD</u> HOUSE
FLOOD PLAIN	
WETLANDS	
LAKE, RIVER, PROTECTED WATERS	YES/NO YES/NO
ROAD RIGHT OF WAY	750' 750'
BLUFF	
SIDE LOT LINE	NO NO
REAR LOT LINE	
	OR OR
HOUSE OR OTHER STRUCTURE	16'74 Si'Dave
WELL	None None
EASEMENTS	
NEIGHBORING WELL (S) TO ISTS	(1) (2) (3) (4)
DRAINFIELD AREA DISTURBED	1
CONFORMING SEPTIC SYSTEM:	YES NO If no, list reasons below
COMMENTS OR PROBEMS (drainage, swa	les, wetlands, need gutters, etc.) 10 be DUSTALL
	·
APPROVED: YESOR NO	
$\mathcal{A}h$	
INSPECTORS NAME MANUE	DATE 6 - そ - 02 # PICTURES
INSTRUCTORS NAME / VI/V/V/V/(/	DATE ゼラG つコ # PICTURES

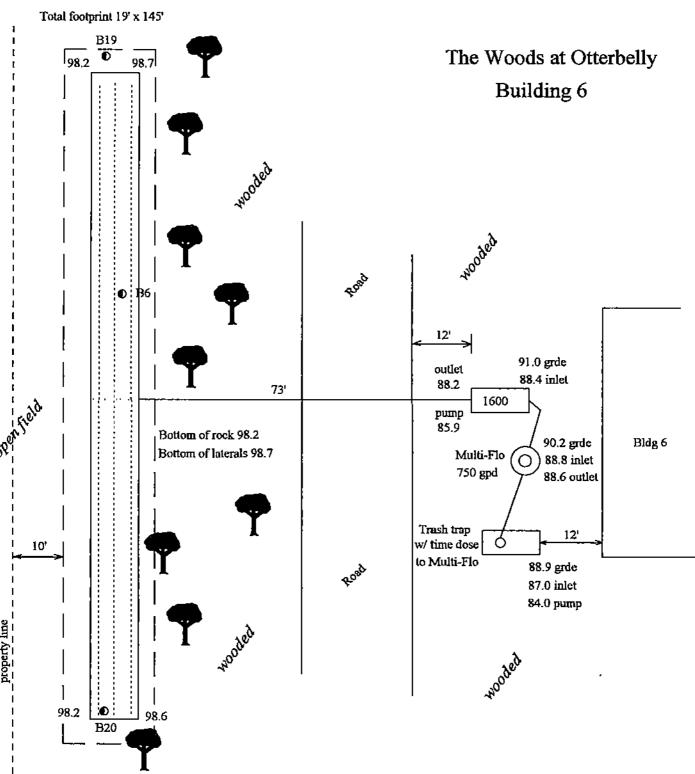
SOIL BOR	ING LOG #1		SOIL BOR	ING LOG #2	
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_	- /a > " = 2				
5	-44 TUSUZ 12_31" SAND	Y. Colony			
pe	177ClS@ 254				
					1
					

IDENTIFY LOCATIONS OF: (BORINGS, NEIGHBORING STRUCTURES, WELLS,

AINFIELDS, DRA E). 	INAGE PATTERN	S, OR OTHER FEA	TURES THAT MAY IM	PACT THE



10' x 135' rockbed w/ 3 laterals



SUPPLEMENTAL DATA FOR LAND USE PERMITS

Page 1 of 2

*** COMPLETE BOTH SIDES ***

Α.	PLANNING CHECKLIST (required):			
		YES	NO	???
1.	Are you aware of setback requirements and will your project meet them? Note: Setback distances are taken from	凶.		
2.	Have you taken in consideration locations for future buildings, septic systems, decks, driveways, etc?	. <mark></mark>		
3.	Are there any lowlands or wetlands on or near the site project?	\boxtimes		
4.	Is there a steep slope or bluff on or near the site?(If yes, complete Section D)		X	
5.	Will the project involve the clearing of trees or shrubs within the Shore Impact Zone of a lake or river? (If yes, complete Section D)	. 🗆	Ø	
6.	Will the project involve grading, filling or landscaping within the shoreland district of a lake or river? (If yes, complete Section D)	. 🗆	Ø	
If it	Is your property in a floodplain?			
В.	PRE-EVALUATION INSPECTION REQUEST (requi	ired):		
	ining and staking the property lines, road right-of-ways, septic sites, and wells are the perty owner. In some cases, a registered survey may be required to verify setbacks be			
CO	L PROPOSED DEVELOPMENT REQUESTS MUST BE CLEARLY STAKED RNERS IF APPLICABLE, IF STAKES ARE NOT PRESENT OR VISIBLE IT DITIONAL FEES OR A DELAY IN THE PERMIT PROCESS.			IN
info	undersigned hereby makes application for a pre-evaluation permit inspection, agreein formation and delineation of property lines, well location, road setbacks, and developm perly marked in accordance with the standards and requirements of the Aitkin County	ent corne	rs have l	
Tel	ephone Number between the hours of 8:00 A.M. and 4:00 P.M. $927-4$	974	<u>- </u>	_
	ndowner: 100211 Gillem Date:			-
Adı	Aitten, Mr. 36831			-
LA	NDOWNER SIGNATURE: X GUERRE COOO	- \		_

If you have any questions please contact the Planning and Zoning office at (218) 927-7342
Ordinances and Publications are available FREE online at: www.co.aitkin.mn.us

Page 2 of 2 *** COMPLETE BOTH SIDES ***

C	Directions to your Property (required):
	From Hung 169 Toke Hong 47 East 3.5 miles to from
D Co	NATURAL LANDSCAPE PROTECTION PLAN: mplete this section only if you were directed to in Section A <u>OR</u> if you are working near a lake or stream.
1.	Description of proposed construction:
2.	Existing vegetative cover (e.g., forested, grass, shrub, lawn, etc.)?
3.	Setback from the Ordinary High Water Level (OHW) for proposed construction?
4.	How much excavation or fill work is being done inside the Shore Impact Zone (SIZ)?
5.	How much excavation or fill work is being done <u>outside</u> the Shore Impact Zone (SIZ)?(If excavation or fill work greater than 50 cu yds is being done, supply copy of Site review from SWCD*)
б.	What percent slope of the land currently exists on the construction site? (If the percent slope is greater than 20%, supply copy of Site review from SWCD)
7.	How much clearing of trees and shrubs will be done inside the Shore Impact Zone (SIZ)?(If vegetation will be cleared in the SIZ, supply copy of Site review from SWCD)
8.	How will erosion be controlled during construction?
9.	What will be done after construction to control erosion?
	ave read the above and I understand the Natural Landscape Protection Plan as prepared. I hereby agree implement this plan as part of the Land Use Permit.
X	7
	ndowner Signature Date Zoning Official Date

*The Aitkin County Soil and Water Conservation District (SWCD)
130 Southgate Center, Aitkin MN 56431 - Telephone (218) 927-6565 or swcd@mlecmn.net

Septic Design Additional Information Multi~Flo with Pressure Bed Distribution Overview of Installation

The Woods at Otterbelly

The Woods at Otterbelly proposes 6 buildings with four 2 bedroom residences in each building. The site contains a variety of slopes and is mostly wooded. Predominant soils are Duluth series fine sandy loam.

Preliminary design of standard mound septic systems found that 125+ trees would be removed, many of them mature hardwoods. We selected pre-treatment with pressure beds for distribution to reduce the negative impact and save all but perhaps 5 trees.

This design utilizes pre-treatment with Multi-Flo Aerobic Treatment Plants and pressure beds to disperse effluent into the soil. Joint collection will be used for buildings 1 & 2, and also for 3 & 4. Effluent will flow by gravity to a 2000 gallon trash trap (pre-tank), and from there be time dosed to the treatment plants. Design flow is based on 100 gallons per day per bedroom for soil sizing. We will time dose at slightly under design flow for treatment. From the Multi-Flos it will gravity flow into pump tanks which will dose the beds. There are two beds for Bldgs 1 & 2 which will be dosed alternately. There will be one bed for Bldgs 3 & 4. Building 5 and Building 6 will have stand alone systems. For these two effluent will flow by gravity to 1600 gallon trash traps, be time dosed to the Multi-Flos, and gravity flow to the pump tanks for dosing to the beds.

All dosing tanks will be outfitted with alternating pumps to assure continued operation in event of pump failure and to allow additional time for repair. Effluent pumps in trash traps shall be placed on 8" high blocks and protected by Orenco Effluent screens or equivalent to prevent clogging of pumps. Alternating pumps that feed a single force main shall be protected from back flow with check valves.

Design Notes

Use care when clearing sites to avoid compacting the soil. Compaction may lead to system failure. Use only tracked vehicles on sites.

Use washed sand to build pressure beds to level and grade. Bottom of rock elevations provide 18" minimum separation.

Overfill beds with a minimum of 6" loamy cover material and finish grade as necessary to minimize water retention on beds.

Design Notes Continued

Laterals will have 1/8" orifices to minimize pump size. Provide lateral flush capability by installing vertical ball valves (on sweeps or two 45's) at the end of each lateral. Protect in 10" or larger valve boxes to provide good working access.

Homeowner to verify all property lines.

Elevations are referenced to lath and flag Bench Marks on several trees throughout the site

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

Pitch pump chamber outlets to assure complete drainback to pump chambers.

Insulate pipes that pass under roads or areas expected to be kept free of snow.

Establish turf to prevent erosion and freezing.

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

Seal existing well by east end of beds 1 & 2. Seal to Minnesota Department of Health specifications.

Do not pile snow on or around tanks.

Property Owners are responsible for recording water meter readings on a monthly basis.

Property Owners accept the responsibility of all costs involved for servicing, monitoring, maintenance and mitigation of this system.

All construction to be performed in accordance with MN Rule 7080.

Aitkin County Environmental Services

Application for an Operating Permit for Wastewater Treatment And Dispersal

Permittee: Lowell & Kathleen Gillem Parcel Number: 31-0-066201

The Woods at Otterbelly

Address: 37704 Dove Street

Aitkin, MN 56431

Legal Description: That Portion N of County Rd 17 in the SE 1/4 of SW1/4, Sec 33

T47 R26 Spencer Township

Telephone # 218-927-4974

GIS Location

A. Description of Wastewater Treatment and Dispersal System:

This Planned Community Development will utilize Multi-Flo Aerobic Treatment Plants to pretreat waste, pressure beds will be used for dispersal. Effluent will flow by gravity into trash traps (pretanks). From there it will be time dosed into the aerobic plants, then gravity flow to pump tanks and be dosed to the fields.

Number of Bedrooms = 48

Flow = 4800 gallons per day

Hydraulic Loading Rate = 0.6 gpd/sqft

Organic Loading Rate = .000025 BOD/sqft

Estimated Cost of:

System Construction = TBD

Operation = \$50 per month

Monitoring & Servicing: first year No Charge, after first year
\$125/yr for 750 gpd units, \$250/yr for 1500 gpd units. Total \$750

Testing = \$800 first year, then \$400/yr 2 years

Anticipated System Life = 25 - 30 years

B. Performance Standard Requirements:

During the period beginning on the date of the Operating Permit and lasting until the Permit's expiration date, the Permittee is authorized to discharge from the wastewater treatment unit to subsurface dispersal. No surface discharge is permitted. The following parameters must be monitored and the results must be found within the compliance limits.

Parameter	Compliance Limit	Sample Location	Sample Frequency	Sample Type	Reporting Frequency
BOD5	75 mg/l	Distribution Box	Bi-annual Ist year		Annual
Fats, Oil and Greases	30 mg/l	Distribution Box	Bi-annual 1st year		Annual
Fecal Coliform	<2500 cfu/100ml	Distribution Box	Bi-annual 1st year		Annual
TSS	22 mg/l	Distribution Box	Bi-annual Ist year		Annual
Flow	4800 GPD		Monthly F (or weekly)	Record on log sheet	Annual

C. Maintenance Requirements:

Parameter	Location	Frequency
Daily Flow	Water Meters (various)	Monthly (record on log sheet)
Sludge and scum level	Septic Tank	Annually
Pump, Timer, Alarms, Floats, etc.	Tanks	Annually
Multi-Flo	Multi-Flo	Bi-annually
Surfacing effluent, landscaping etc.	Total system	Annually

D. Monitoring and Reporting Requirements:

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

Aitkin County Environmental Services 209 - 2nd Street NW Aitkin, MN 56341

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 the testing 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 done by:

Eric Larson, 6549 Keystone Road, Milaca, MN 56353 320-983-2447 Lic #1767

E. Mitigation Plan:

If surfacing occurs: reduce water use, increase absorption and distribution area.

Waste strength: if fecals exceed limit, add disinfection or increase separation. If BOD, TSS or FOG exceed limit, reduce influent strength.

Reserve sites are available for replacement septic systems.

I hereby certify with my signature as the designer, that all data for the operating application is true and correct to the best of my knowledge.

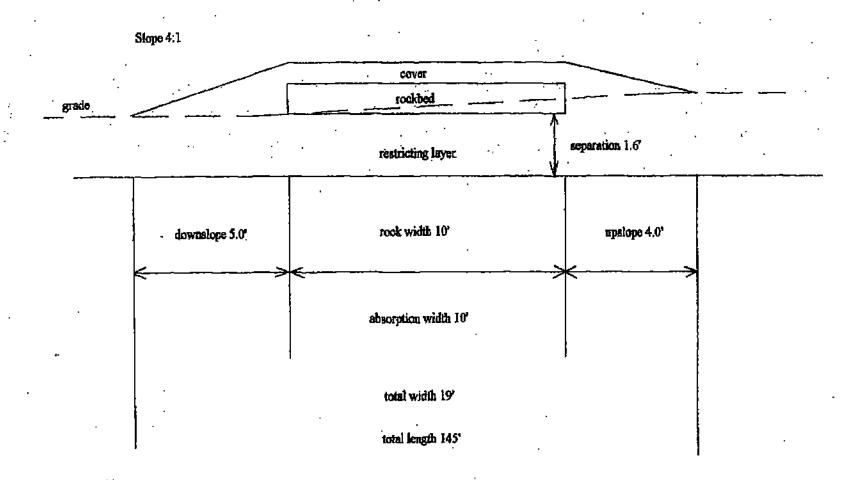
License #1767

5-31-02

Eric Larson 6549 Keystone Rd, Milaca, MN 56353

320-983-2447

Building 6 cross section



harmony equipment 6549 KEYSTONE ROAD MILACA, MN 56353

PHONE: (320) 983-2447 FAX: (320) 983-2151

FAX COVER SHEET

DATE: 6-25-02

PLEASE DIRECT THE FOLLOWING PAGES TO:

NAME: Rich Courtemanche

FIRM: Aitkin County Environmental Services

FAX# 218-927-4372

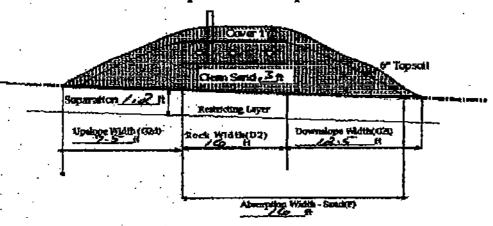
FROM: ERIC LARSON

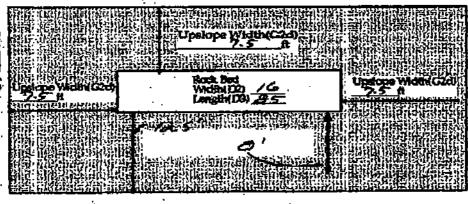
TOTAL NUMBER PAGES SENT INCLUDING COVER SHEET: 5

Cross sections follow for Otterbelly

Buildings 1+2

Landslope > 1% slope





Total Langth (COb) /CO ft

Design Notes Specific to Buildings

Buildings 1 & 2

Provide upslope diversion to protect trash trap from run on.

Subsoil below approximately 18" is a silty clay loam with an estimated absorption rate of .45 gpd/ft2. Distance between the beds provides the additional area required for complete absorption to assure that linear loading rate is not exceeded.

Buildings 3 & 4

There is a long force main to the pressure bed. Field verify elevations and install tanks as shallow as possible due to wet soils. Assure complete drainback, however, and overfill as necessary to prevent freezing.

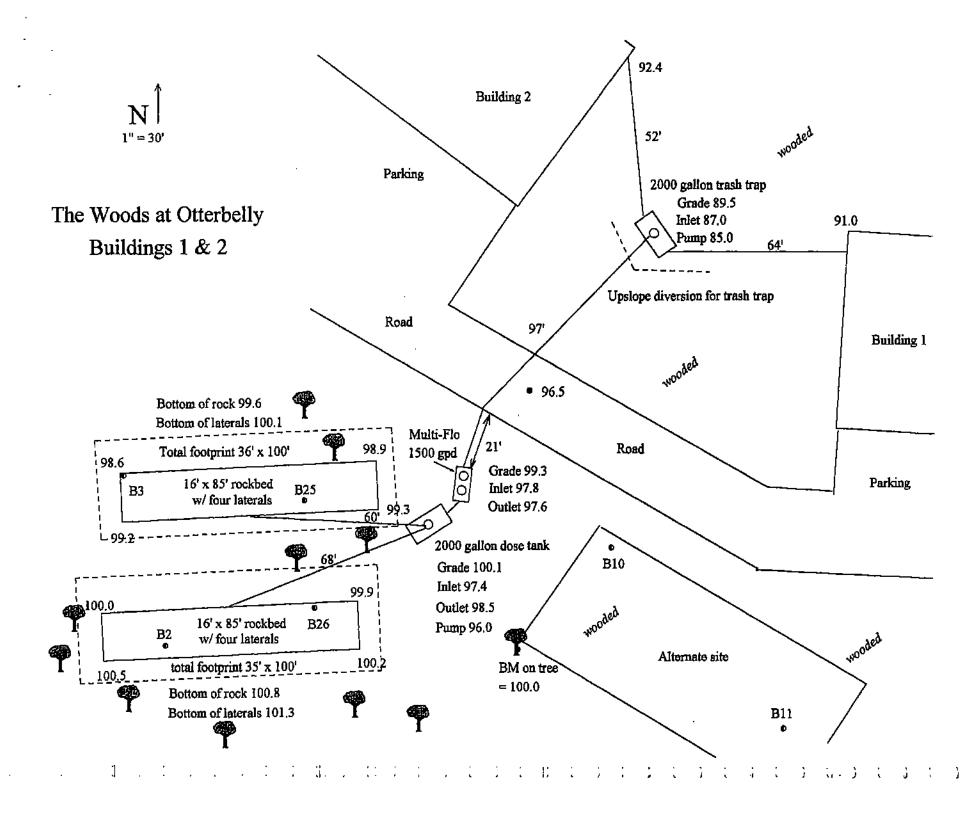
After site is cleared minor adjustment of bed to more closely follow contour may be possible. If so, toes may be more uniform.

Building 5

This bed is located in a patch of aspen saplings at the top of a rise. Grade falls away at the SE corner and will require extra washed sand fill to level.

Building 6

Bottom of rock is at grade with west edge of bed. Overfill as indicated.



PUMP SELECTION PROCEDURE

Buildings 1 & 2 Dose to Multi-Flo

All boxed rectangles must be entered, the rest will be calculated.

1.	Determine pump capacity:					
	A. Gravity Distribution					
	Minimum required discharge is 10 gpm					
	Maximum suggested discharge is 45 gpm					
	For other establishments at least 10% greater than the water					
	supply rate, but no faster than the rate at which effluent will flow					
	out of the distribution device.					
	B. Pressure Distribution - see pressure design worksheet			- 8 թ <u>ամ</u> ո	alment sy t of disch	iot3e Asjeur
	Selected Pump Capacity: 25 gpm	1010l j lengti	2		(18)18-9-114	
2.	Determine head requirements: Intel Transmission	18	2A. ele diffe	steuce Mailou		
A.	Elevation difference between pump and point of discharge.	-[]		1		
	13 feet					
	Special bond requirements (See Floure Devotet Man & Devote Man & Devot	- -				
В.	Special head requirement? (See Figure - Special Head Requirements)	-				
	<u>0</u> feet		ial Head R		<u>กโร</u>	
_	Frinting Inne		ity Distribu		Off	- 1
C.		Pres	sure Distrib	ийол	5ft	<u>t </u>
	1. Select pipe diameter 2 in					
	2. Enter Figure E-9 with gpm (1A or B) and pipe diameter (C1)	E-9: Frict	lon Loss	n Olastk	o Dino	
	Read friction loss in feet per 100 feet from Figure E-9	L- 7, FIRC	Per 100		CHIPE	
	Friction loss= 1.11 ft/ 100 ft of pipe	ļ				
]	ola	e ažām. Kauluai	eter	
	3. Determine total pipe length from pump discharge to soil system discharge point	flow rate	1.5	2	3" }	
	Estimate by adding 25 percent to pipe length for fitting loss.	opm .	10.00			
	Equivalent pipe length times 1.25 = total pipe length	20 :•\+:::::::::::::::::::::::::::::::::::	2.47	0.73	0.11	
	102fft x 1.25 =127.5feet	25			250216	
		30	5.23	1.55	0.23	
	4. Calculate total friction loss by multiplying friction loss (C2)	35	6.96	2.06	0.30	
	by the equivalent pipe length (C3) and divide by 100.				0.39	
	FL= <u>1.11</u> R/100R X <u>127.5</u> R / 100: 1.4 feet	45	111.07	3.28	0.48	
	·	50	13.46	3.99	0.58	
D.	Total head requirement is the sum of elevation difference (A), special	55 %	别不知为	4.70.	£0.70±	
	head requirements (B), and total triction loss (C4).	60	1	5.60	0.82	
	13 ft + 0 ft + 1.4 ft	65	1	6.48	0.95	
		70		7.44	1.09	
	Total Head: 14.4 feet					
						
3.	Pump Selection					
	A pump must be selected to deliver at least 25 gpm (1A or B)	_				
	with at least 14.4 feet of total head (2D).					
l he	reby certify that I have completed this work in accordance with all applicable ordinar	coc miles o	nd brue			
1	cos) coret) ener i nere combreted ens work in doctionice with an abbicable didital	ives, luico a	HA WALL			
_	7/					
2	(signature) 1767 (ficense		18/00	? (date)		

	PRETREATMENT WORK SHEET			oge Rove in Gol	kons per Day		•
	All boxed rectangles must be entered, the rest will be calculated.	number o		SS 1 Closs II	Ooss III	Closs IV	
	1. FLOW Buildings 1 & 2	2	30	0 223	160	60%	
	A. Estimated 1600 gpd (see figure A-1)] 3	45		2)8 255	of the	
	measured x 1.5(safety factor): 0 gpd	5	75	0 450	29#	Infhe	
	· · · · · · · · · · · · · · · · · · ·	9	105		332 370	Classi, I, or lii	
	B. SEPTIC TANK CAPACITY 2000 gallons (see figure C-1)	_ • _	120		408	columns	
• •	2. SOILS (Site evaluation data)						
	C. Depth to restricting layer= 1.2 feet	- 1	C-1: Sepl	k Tank Capacille	(in gillions)		
-	D. Texture fine sand Perculation rate MPI						Liquid capacity
			Number of			parity with	with disposalde
•	E. SSF 1.67 Rt / gpd (see downsizing or < 3ft tigure)		Bedroams	Capacity	Sare?	Se (gaboar)	list inside
	F. Land Slope 3 %	i	2 car lèus	7.50		1125	1500
		- 1	344 500	1500 1500		1500	3000
	Pressure Distribution Trench Bottom Area	1	7, 8 or 9	29300	Į.	2250 3000	3000 4000
	H. For trenches with 6" of rock below the pipe, Area = Flow (1A) divided by SSF (2E)=		· · · · ·			-4021
	<u>1600</u> god x1.67 ft²/god = 2700.0 ft²						
	 For trenches with 12° of rock below the pipe, Area = Flow (1A) divided by SSF (2) 	E) x 0.8			Downsizir	ıg Chart	
-	$\operatorname{gpd} x \qquad \operatorname{ft}^2/\operatorname{gpd} x \cdot 0.8 = \qquad \operatorname{ft}^2$	•	•	Soil C	hunderistics	and Recycle	d Areas
			Į.		retreated Sec	valle (g. echai	zirina)
	4. ORGANIC LOADING			Percetation Kale in Minutes per Instit (LPD)	Sod Karturo	boz gal- beggini pobrasa yang be	r Urgens (order) point per day per lock
	J. 1. Organic loading = flow (A) x estimated BOD in mg/L leaving the		ŀ	Farner (han 0.11	Charge Savd		
-	pretreatment unit x 8.35 / 1,000,000			61102	Course Sand Maximum Sand Lourny Sand Pine Sand	0.83	10.720 11101.5
_	1600 gpd x 5 [mg/L x 8.35 / 1,000,000 = 0,0668 lbs	BVD		0 103 3 013	Satal Vision	טיגט נ	0.0012 0.0011 0.0010
-	2. System loading = organic loading(J1) / area (H or I)	BOD		16 (c,7) 31 (c.45	Loga Sil Loga Sit	0xi3 1.00	0.007
:				W 1000		1.10	amme.
	0.0668 bs BOD / 2700.0 ft ² = $2E.05$			00 to 120	Sandy CT Sandy CT	2.50 3.25	11 CENTS
-	Check system loading rate on chart. Should be less than value.		ļ				
•					il too committee	r sewage breaks skily parmoshic archeig of Oras films sand	· -
	5. ROCK VOLUME		Į.		picave	Disc sand	-
	K. Rock depth below distribution pipe plus 0.5 foot times bottom area;						
	da 1 1 1						
:	= (Rock depth + 0.5 foot) x Area (H, I, J, K, L)						
:	(0.5) ft + 0.5 ft) x 2700.0 ft ² = 2700 R ³			Less Than	3 feet of S	Separation	Chert
:			_				
:	(0.5 If + 0.5 ft) x 2700.0 If $^2 = 2700$ R ³ L. Volume in cubic yards = volume in cubic feet divided by 27		ſ				
:	(0.5 If + 0.5 ft) x 2700.0 ft ² = 2700 R ³ L. Volume in cubic yards = volume in cubic feet divided by 27 K / 27 = cubic yards 2700 / 27 = 100 yd ³		F	D-15: Soil C	harkterish ga Treatmu	ics and Required	uired Areas aration)
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MIFYCY WIG 20323 0246 KEXZLONE BOYD

EVX: (370) 383-2447

FAX COVER SHEET,

DATE: 6-27-02

PLEASE DIRECT THE FOLLOWING PAGES TO.

NAME: Rich Courtenanche

FIRM: Aitkin County Zoning

FAX # 218-927-4372

FROM ERIC LARSON

TOTAL NUMBER PAGES SENT INCLUDING COVER SHEET: 8

Rich. I increased the total footprint of Building 5 slightly.

Rich. I increased the total footprint of Building 5 slightly.

Call with any questions.

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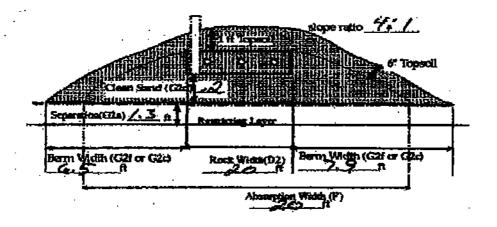
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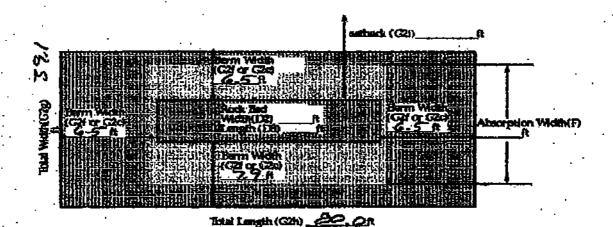
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TWO TWO COVINGS COVING	900 023 233 1952 952	900 900 900 900 900 900 900 900 900 900	200 (00)	ACT SOL	TO SECO	2 ¹³ 1	0.6 gpd 9.6 gpd 9.6 gpd 1.50 gpd	Table of the state	Site evaluation datas inestrating teneral inestration inestration inestration inestration inestration inestration inestration inestration inestration inestration inestration inestration inestration inestration inestration inestration inestration inestration inestration in	t about the control of the control o	I S A S C	
CONTINUE CON	900 900 900 900 900 900 900 900 900 900	900 900 900 900 900 900 900 900 900 900	1000 1000	ACT SOL	A SE-C	2 ¹¹ (1-<	bent Str fori 3.0 bent 3.0 const 3.0 const 3.0 const 3.0 const 3.0 const 3.0	TOTAL ACTION OF THE POST OF TH	TANK CHORNO VOIL TOTO TOTO TOTO TOTO TOTO TOTO TOTO	EGCK 1 200.0	I S A S C	
COVIUM COVIUM CAR CAR CAR CAR CAR CAR CAR CAR CAR CAR	900 043 200 200 100 100 100 100 100 100 100 100	900 900 900 900 900 900 900 900	200 A	S COLUMN	Police of the control	2 ¹³ (1-2	bent Str forti 600) enoi forti 3,0 bent 3,0 bent 61,0 bent 61,0 be	Maren (sanda)	TANK CERENTS VOL. TANK CERENTS AND THE STORY TOTO T	EGCK I 200.0	I S A S C	
CONTINUE CON	900 900 900 900 900 900 900 900 900 900	900 900 900 900 900 900 900 900 900 900	1000 1000	STOROGOUS STOROG	Police of the control	2 ¹¹ (1-<	bent Str forti 600) enoi forti 3,0 bent 3,0 bent 61,0 bent 61,0 be	TOTAL ACTION OF THE POST OF TH	AYEN DIMENSION 1900 1900 1900 1900 1900 1900 1900 19	EGCK I 2 on 2 3 on 4 2 on 6 3 on 4 3 on 6 3 on 6	L 2 8 A S C L	1
COPILE CO	800 800 800 800 800 800 800 800 800 800	900 900 900 900 900 900 900 900 900 900	AND 4444 AND 44	STOOMER STOOME	Police of the control	2 ¹³ (1-2	bent Str forti 600) enoi forti 3,0 bent 3,0 bent 61,0 bent 61,0 be	Maren (sanda)	TANK CERENTS VOL. TANK CERENTS AND THE STORY TOTO T	EGCK I 200.0	L 2 8 A S C L	5
COPILE CO	800 800 800 800 800 800 800 800 800 800	900 900 900 900 900 900 900 900 900 900	200 A	STOOMER STOOME	Police of the control	2 ¹³ (1-2	beg 3.0	Maren (sanda)	AVER DIMENSION AVER DIMENSION 1,200	ECCK 1 2 on 2 3 on 4 2 on 2 3 on 4 3 on 4 3 on 6 2 on 6 3	L 2 8 A S C L	1
CONTINUE CON	800 800 800 800 800 800 800 800 800 800	900 900 900 900 900 900 900 900 900 900	AND 4444 AND 44	STOOMER STOOME	Police of the control	2 ¹³ (1-2	beg 3.0	(1-A enuga ses) bage Rabest (setes) & 1 x Resolve (see appear) ya Resolve (see appear) (see appear) ya Resolve (see appear) (see appear) (see appear) ya Resolve (see appear) (see appear) (see appear) ya Resolve (see appear) (see appe	AVER DIMENSION AVER DIMENSION 1,200	ECCK 1 2 on 2 3 on 4 2 on 2 3 on 4 3 on 4 3 on 6 2 on 6 3	L 2 8 A S C L	1

	Fireion	pin Tot	į Toks	1. 5.06	n. Do	g. Do	et do			B	<u>.</u>				<u> </u>	<u>ы</u> , <u>ч</u> .	•1	雜	ا ا	.	Saker	P. N.	# 5	2	
	T COLON	k. Total mound length is the sizm of upetage width (CSA) plus rock leyer plus upstage width (CSA) 8.5 ft + 67.0 ft+	Total mound width to the austr of upo	i. Soliot greater of G1 and G2h as the downslope width	h. Downstope width ≐ downstope mattiplies(C22) times downstope mound height(C2) 4.17 × 1.9 ≂ 7.9	majope t	f. Downstope mound fielight or depth of classe sand for slope difference (GGe) at describings rock edge plus the mound height at the upstope edge of rock layer (2b) 0.26 th + 1.7 th = 1.9	26 R x 1 % /100°	DOMASLOPE	12	£ !	2	1	1	2	<u> </u>	<u> </u>	+	SHIVE BUTTALLYON BAONS ARC	. Upolope width = berm multiplier(G2b) times upstage mound height(G2b):	c, Upskipe benn multiplier besed on land slope (see figure 0-34) Select benn multiplier of 3.85	b. Mound height at the implope edge of rock layer = depth of clean eand for expect upstope edge plus depth of rock layer (1 foot) to depth of cover (1 foot) 0.2 th + 75ft + 75ft 1.7 feet	UPSLOPE 8. Determine depth of clean sand at upsicpe edge of rock layer = 3 feet minus distance to restricting layer(C1) 1.5 ft 1.3 ft 2 0.2 feet	25	
·		1 60 EB	1 m	्वंदा ब	THE PERSON NAMED IN	lape berm multiplier besied on petraint land slope (see Figure D-34)		· [3	ş		E E		2 4	5 t	6	4	DPS MO	\$ - Dest	in sandari Tarangan d	nt set the	- 1 degree		
•,			6,5	M CO	Denstop 4,17		e plus the	25		ř	ĕ		5 8	•	6.8	5 §	ž k	開網	TATES	3.85	* Ser 200	lapahopa 0.2	an sa	-	
				20 Fre C	Zeron Zeron	9	emound To de d				5	•	F 8				•		LAZ AZ	(C2)	3.5	ndga q	nd eat upersk	13	
			type (G2d) width plas rock layo		(623) (623)	dercodul	36 B	.	3	. 8	\$ (·		7 2		1.6	times s	5 0 8000	700k By	Siope ed		
		6.13 4.6023) 4	middle plan	1	ternes do		7.00 etc. 1.7			1	•		5 5				C F	1		pelage n	(See 25)	ar = day	स्त्र के का अंदर्भ स्त्र का		
	8		to rock		Odenskop	1888 1888	tope et			3	* 8						e II	l		nownd b	73 O 34	th of cla th of cou	A PER MAN		•
•	×	7. × 1. × 1. × 1. × 1. × 1. × 1. × 1. ×	3			Tgene D	amance (G	6/100		1 2	11.1						2 2	TO STATE OF		agantic:	•	es (1 for	3 ag	0	
		. 8.5 . 8.5	27.9 7.9	7.9	7.9	\$	1.9 1.9 1.9	2	È	1 2	2 1				-		2 2			85 85		7 TO 1		15 SE	L
	18		idh (DQ) pius da	}			[[2] 86 84	1	•	\$ 2	20.42			1	- /-		2 2	1		Ī		¥			
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		*	39.1										•								-		برها ورمته		
	Ш	96 C	}									•					•				,		, (C3)		
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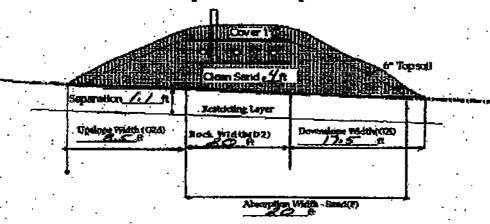
<=1% land slope

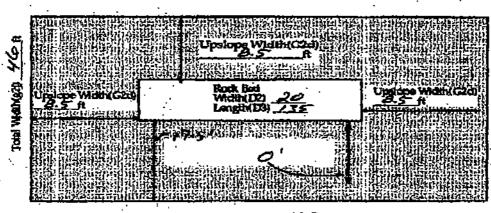




Buildings 3 & 4 cross section

Landslope > 1% slope





Total Length (GZk) 152 ft

DOSING CHAMBER SIZING Buildir	ngo 1 2 2 daga ta fiald
All boxed rectangles must be entered, the rest will be calculated.	ngs 1 & 2 dose to field
Determine area A. Rectangle area = L x W	
ft x ft = $\frac{0}{10}$ ft = $\frac{1}{10}$ ft = $$	Length
3.14 x $\frac{ft}{ft} = 0.0$ ft ² C. Get area from manufacture $\frac{ft^2}{ft}$	Radius
 Calculate gallons per inch There are 7.5 gallons per cubic foot of volume, therefore multiply the area (1A, B or 0 times the conversion factor and divide by 12 inches per foot to calculate gallon per inches area x 7.5 / 12 =	ch. rinch Legal Tank:
O Calculate hadden bearing	500 gallons or
Calculate total tank volume A. Depth from bottom of inlet pipe to tank bottom = in	100% the daily flow or Alternating Pumps
B. Total tank volume = depth from bottom of inlet pipe to tank bottom(3A) x gal/in(2)	
= <u>0</u> in x <u>0</u> galfin ≠ <u>0.0</u> galfons	Turnition of Class Class Class Class V C
4. Calculate gallons to cover pump (with 2-3 inches of water covering pump) (Pump and block height + 2 inches) x gallon per inch (14	5 450 300 218 of the 4 608 375 256 volues 5 750 450 296 in the 6 900 525 332 Case 7 1050 600 370 R or U
5. Calculate total pumpout volume A. Select pump size for 4-5 doses per day. Gallon per dose = gpd (see Figure A-1) / 1500 gpd / 8 doses/day ≈ 187.5 gallons B. Calculate drainback	
1. Determine total pipe length 42.0 ft 2. Determine liquid volume of pipe, 0.17 gal/ft (see figure E-20) 3. Drainback quentity = 72.0 ft (5B1) x 0.17 gal/ft(5B2) 12.2 C. Total pump out volume = dose volume(5A) + drainback (5B3) 187.5 gallons + 12.2 gallons = 199.7	V E-20: Volume of Liquid in Pipe Pipe Diameter Gallons per foot inches 0.045
6. Calculate float separation distance (using total pumpout volume) Total pumpout volume(5C) / gal/inch(2) 199.7 gal / 46 gal/in = 4.3 inch	1.25 0.078 1.5 0.11 2 0.17 2.5 0.25 3 0.38 4 0.66
7. Calculate volume for alarm (typically 2 - 3 inches) Alarm depth (inch) x gallon/inch(2) = 3 in x 46 gal/in	= <u>138</u> gal
8. Calculate total gallons = gallons over pump(4) + gallons pumpout(5C) + gallons elam 736.0 gal + 199.7 gal + 138 gal = 1073.7	n(7) 'gal
	itiol tuttimaatutatii ita
736.0 gal + 199.7 gal + 138 gal = 1073.7 9. Total tank depth = total gallons(8) / gallon/m(2) 1073.7 gallons / 46 gal/in = 23.3 Recommended	1001 1001 100 100 100 100 100 100 100 1

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PRESSURE	DISTRIBUT	ON SYS	TEM
1/50001/5			, , , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

Buildings 1 & 2

		G 	eowxille Or more	(20m)				
All I	boxed rectangles must be entered, the rest will be calculated.	Marier Inch Derice	VIII CO SECUL	eri # T] . 12			
	Ł.	Did!	izina 3/1		<u> </u>			
1.	Select number of perforated laterals:	Perf S	izing 2/1 ipacing 1.	ar s. , .				
2.	Select perforation spacing = 2.5 ft			bie numboro so <10% disc				
3.	Since perforations should not be placed closer that 1 foot to	perforation	ļ —		<u> </u>			
	the edge of the rock layer (see diagram), subtract 2 feet from	spacing (locit)	1.inch	1,25 Inch	1,5 Inch	20 Inch		
	the rock layer length	25	В	14	18			
	85 -2 ft = 83 ft	3.0	8	13	17	28 26		
	rock layer length	3.3 4.0	7	12	16 15	25		
		5.0	6	10	14	22		
4	Determine the number of spaces between perforations.							
	Divide the length (3) by perforation spacing (2) and round dow			number.				
	Perforation spacing = 83 ft / 2.5 ft =	33sp	aces					
5.	Number of perforations is equal to one plus the number of per	foration ena-	(A) 200					
٠.	* Check figure E-4 to assure the number of perforations per la	ioradon spar deral austor	ues (4). Nees					
	< 10% discharge variation.	norar guarar	NCC3					
	33 spaces + 1 = 34 perforations/lateral							
	,							
6.	A. Total number of perforations = perforations per lateral (5) ti	mes number	of late	rals (1).				
	34 perfs/ lat x 4 laterals = 136 perforations							
			E-6: F	'enforcific	Discha	nde vi egr	1	Į.
	B. Calculate the square footage per perforation.			Toer	foration	n diamet	<u> </u>	ĺ
	Should be 6-10 sqft/perf. Does not apply to at-grades.		hea	. 1	(Inch		e	
	1. Rock bed area = rock width (ft) x rock length (ft)		(fee		8 3/1	6 7/32	1/4	
	16 ft x 85 ft = 1360 ft ²		3 1.0	0.1	8 0.4	2 0.56	0.74	
	2. Square foot per perforation = Rock Bed Area / number of p	oerfs (6) 🌊	2.0	0.2	6 0.5	9 0.80	1.04	l
	1360.0 ft^2 / 136 perfs = 10.0 ft^2 / perf		1	1	1	1		
7.	Determine required flow rate by multiplying the total number		5.0	0.4	<u></u>		1.65	ŀ
٠.	of perforations(6A) by flow per perforations (see figure E-6)		Κ°°	Use 1.0 fee Use 2.0 fee	l for single	-forrily horns	ia.	l
	136 perfs x 0.18 gpm / perfs = 24.5	anm		065.570:66	rio di Aii	ing etsa.		i
				· · · · · ·			_	
8.	If laterals are connected to header pipe as shown	ł			ومحتدم	EGA	_	
	in Figure E-1, to select minimum required lateral	4,3,607	وليبيه شاسته للنات	المنافعة المنافعة المنافعة			•	
	diameter; enter figure E-4 with perforation spacing (2) and	34,0602		-	لنصيب فيت متامنات	THE TAXABLE TO		
	number of perforations per lateral (5).		•		_		COLUMN CO	
	Select minimum diameter for perforated laterals = xxx	inches	I: NanBold	Loca led at	End of Bys	lem .		
_		·	_					
9.	If perforated lateral system is attached to manifold pipe	Agun In the	E-2: Manh Center of E	nid Loosied he Bysiem		المتبعثين يتعتبن	വക	
	near the center, like Figure E-2, perforated lateral length (3)				**************************************			
	and number of perforations per lateral (5) will be approximately one half of that in step 8. Using these values, select	/	فاست سيسينوس	نيسب		مستنين مستند	ويتناعين للمناهبين	^
		السيقة ا				O'D'UL	lacation Oriciday	- 1
	minimum diameter for perforated lateral = 2 inches	,	يو.	ومستندة متشيبية بماتين	2.54	PLE POT	wy.	
							 -	
l he	reby certify that I have completed this work in accordance with a	all applicable	ordina	nces nul	l bas se	2)UE		
	2			_				
سا	(signature) 1767 (licens	e#) (@//&	102	(date)	ı		
		,	, , , ,		- ((+)			

PUMP SELECTION PROCEDURE

Buildings 1 & 2 Dose to Field

All boxed rectangles must be entered, the rest will be calculated.

4	The A	
1	Determine	アクアククリカバ
	Deferming	Capacity.

- A. Gravity Distribution
- 1. Minimum required discharge is 10 gpm

Friction loss= 1.11 R/ 100 ft of pipe

2, Maximum suggested discharge is 45 gpm

For other establishments at least 10% greater than the water supply rate, but no faster than the rate at which effluent will flow out of the distribution device.

	B. Pressure Distribution - see pressure design worksheet	mejsys inemipest fice grandos <u>jo ining</u> 8
	Selected Pump Capacity: 25 gpm	37.3 total pipe
2.	Determine head requirements:	Injet Sandaus 2A. elevation ploe
A.	Elevation difference between pump and point of discharge.	
	7feet	Sign-o-summer Color

В.	Special head requirement? (See Figure - Special Head Requirements)		
	5 feel	Special Head Requirements	
		Gravity Distribution	Of
C.	Friction loss	Pressure Distribution	Sf
	Select pipe diameter 1. Select pipe diameter		
	2. Enter Figure E-9 with gorn (1A or B) and pipe diameter (C1)		
	Read friction loss in feet per 100 feet from Figure E-9	E-9: Friction Loss in Plastic Pi	be l

3. Determine total pipe length from pump discharge to soil system discharge	e point
Estimate by adding 25 percent to pipe length for fitting loss.	
Equivalent pipe length times 1.25 = total pipe length	
70 ft x 1.25 = 87,5 feet	
4. Calculate total friction loss by multiplying friction loss (C2)	
by the equivalent pipe length (C3) and divide by 100.	
FL= 1.11 ft/100ft X 87.5 ft / 100: 1.0	feel
by the equivalent pipe length (C3) and divide by 100.	feel

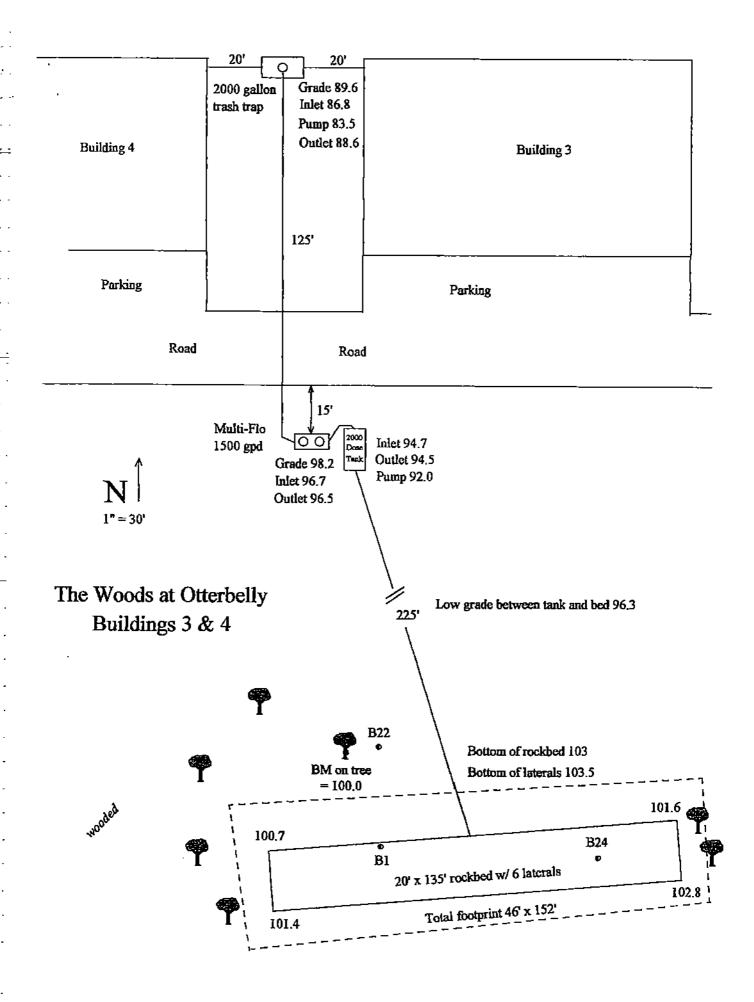
	P	er 100	f aç l	}
int	flowrate gpm	pip 1.6	e diam 2	eter 3*
	20	2.47	0.73	0.11
	25美元联系	3.73	MATE	# 0 # 5 2
	30	5.23	1,55	0.23
	35	6,96	2.05	0.30
	40 2000	8.91	204	20.893
. !	45	11.07	3.28	0.48
٠	50	13.46	3,99	0.58
	55 3883848		34765	#0.70
1	60	1	5.60	0,82
	65	1	6.48	0,95
	70		7.44	1.09

D.	Total head requirement					fifference (A), special 4).
	7	ft +	5	_ ft	+	ft
	Total Head:		13.0	feet		

13.0 feet

3.	Pump Selection		
	A pump must be selected to deliver at least	25	gpm (1A or B)
	with at least 13 // foot of fofal board (20)		

I hereby certify that I have completed this work in accordance with a	I applicable ordinances	rules and laws.	
(signeture)	1767 (license #)	<u> </u>	-



PUMP SELECTION PROCEDURE

Buildings 3 & 4 Dose to Multi-Flo

All boxed rectangles must be entered, the rest will be calculated.

1.	Determine pump capacity: A. Gravity Distribution			
	1. Minimum required discharge is 10 gpm			
	2. Maximum suggested discharge is 45 gpm			
	For other establishments at least 10% greater than the water			
	supply rate, but no faster than the rate at which effluent will flow			
	out of the distribution device.			
	out of the most bound deside.			
	B. Pressure Distribution - see pressure design worksheet		soli frec & point 밝해	ilmeni sysler of discharg
	Selected Pump Capacity: 25 gpm	total pi		
2.	Determine head requirements:		difference	
	Elevation difference between pump and point of discharge.	- 4		
	13 feet	J		
	The state of the s	****		
Ð.	Special head requirement? (See Figure - Special Head Requirements)			
	0 feet	Specia	l Head Requiremen	ıts
			Distribution	Oft
Ç.	Friction loss	, ,	re Distribution	5R
	1. Select pipe diameter 2 in	ļ.,		
	2. Enter Figure E-9 with gpm (1A or B) and pipe diameter (C1)			
	Read friction loss in feet per 100 feet from Figure E-9	E-9: Friction	on Loss in Plastic	Pipe
	Friction loss= 1.11 ft/ 100 ft of pipe	i 1	Per 100 feet	1
	Thousands Titt Is too to pape	ŀ	nominal	. !
	3. Determine total pipe length from pump discharge to soil system discharge point	flowrate	pipe digme	iter S
	Estimate by adding 25 percent to pipe length for fitting loss.	gpm .		
	Equivalent pipe length times 1.25 = total pipe length	20	2.47 0.73	0.11
	130 ft x 1.25 = 162.5 feet	25页影响等	3.73 (\$101) 65	0.16
		30	5.23 1.55	0.23
	4 Autoritate table frotten have been abled in finite to 1000	35	6.96 2.06	0.30
	4. Calculate total friction loss by multiplying friction loss (C2)	4000000	891 264	
	by the equivalent pipe length (C3) and divide by 100.	45	11.07 3.28	D.48
	FL= <u>1.11</u> ft/100ft X <u>162.5</u> ft / 100: 1.8 feet	50	13.46 3.99	0.58
_		55 (10 10 10 10 10 10 10 10 10 10 10 10 10 1		L
D.	Total head requirement is the sum of elevation difference (A), special	60	5.60	0.82
	head requirements (B), and total friction loss (C4).	65	6.48	0.95
		70	7.44	1.09
	Total Head: 14.8 feet		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
3.	Pump Selection			
	1. A pump must be selected to deliver at least 25 gpm (1A or B)			
	with at least 14.8 feet of total head (2D).	- 1		

1767 (license #) 6/18/02 (date)

U. Divide total trench width (P) by SSF (F) = gallons per foot	•	PRETREATMENT WORK SHEET	Al: Est	naled Sew	oge Rove in Gal	lone per Doy		
A Estimated 1600 gpd (see figure A-1) gpd (see figu	·	All boxed rectangles must be entered, the rest will be calculated.		s C40	ssi Clossii	Closes III	Clossiv	
R. SEPTIC TANK CAPACITY (1960b) 2000 1980 (see figure C-1) 2 1000 1900 1								
B. SEPTIC TANK CAPACITY Z000 garbors (see Rejuro C-1) 2. SOUS (Site evaluation data) C. Depth to restricting leyers 1.1 See 1.2 1.1 See 1.2 See 1.2 See S	•							
2. SOLLS (Site evaluation data) C. Depth to restricting layer 1.1 feet MPI E. SSF 1.87 ff/gpd (see downsizing or < 3f figure) F. Land Slope 5 9, F	<u>:-</u> :		6	90	0 525	332	Cost	
C. C. Expirit for restricting layers 1.1 leet D. Texture fine sand Percolation rate E. SSF 1.87 https://dx.com/percolation/per		B. SEPTIC TANK GAPACITY 2000 ganons (see figure C-1)						
D. Texture Ensigned Freedom Fr	٠.	2. SOILS (Site evaluation data)					_	
E. SSF F. Land Slope 5 F. Land Slope 6 F. Land Slope 1 F. Land		C. Depth to restricting layer= 1.1 feet		C-1; Sep	ic Tank Capacille	(la gallons)		
F. Land Slope 3. Pressure Distribution Trench Bottom Area H. For trenches with 6° of rock below the pipe, Area = Flow (1A) divided by SSF (2E)= 1800 ppd x 1.67 tiffyad z 200.0 tif 1. For trenches with 12° of rock below the pipe, Area = Flow (1A) divided by SSF (2E) x 0.8 gpd x 1.67 tiffyad z 200.0 tif 1. For trenches with 12° of rock below the pipe, Area = Flow (1A) divided by SSF (2E) x 0.8 gpd x 1.67 tiffyad x 0.8 = 11² 1. Organic loading = flow (A) x estimated BOD in mgt. leaving the pretreatment unit x 8.35 / 1.000,000 1.600 ppd x 5 mgt. x 2.35 / 1.000,000 = 0.0688 lbs BOD 2. System loading = organic loading/11/ area (H or I) 0.0838 bs BOD (2 2700.0) R² = 2E.05 3. Check system loading rate or check. Should be less than value. 5. ROCK VOLUME K. Ruck depth below distribution pipe plus 0.5 foot times bottom area: (Rock depth + 0.5 foot) x Area (H, 1, 1, K, 1) L. Volume in cubic yards = volume in cubic test ed divided by y x 1.67 times are completed with the complete test of the complete test divided by x 1.67 times are completed with the complete test divided by x 1.67 times are completed with the complete test divided by x 1.67 times are completed with the complete test divided by x 1.67 times are completed with the complete test divided by x 1.67 times are completed with the complete test divided by x 1.67 times are completed with the complete test are proported to scale; one inch = 1.00 x 1.4 = 1.35 meal feet 2700.0 pt / 20 nt = 1.35 meal feet To Divide bottom area by with: (H, 1) divided by N = linear feet Show perfinent properly boundaries, rights of-way, assements. Show location of house, garage, driveway, and all other improvements, existing or proposed. Show location of house, garage, driveway, and all other improvements, existing or proposed. Show location of house, garage, driveway, and all other improvements, existing or proposed. Show location of house, garage, driveway, and all other improvements, existing or proposed. Show location of house, garage, driveway, and all other impr			i	Number o		prád Liquáda	apacity with	Liquid capacity
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K. Rock depth below distribution pipe plus 0.5 foot times bottom area: = (Rock depth + 0.5 foot) x Area (ft, i, J, K, L) (4 <u>5</u>	biga sasa Sasana 202 c	rmore of Rec w fine word	
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1.	Determine area							1 1		
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	72 TOOLLINGIO GIGGI - 2 X	ΪŧxΙ		lπ = o) ft²	4	b	-		
	B. Circle area = 3.14 x ra			Ji' - <u></u>	' "	Len	igth		_	
			2	0.0 ft ²			/			
	3.14 x		² ft =				(
	C. Get area from manufa	acture		ft²				Ra	dius	
2.	Calculate gallons per inci There are 7.5 gallons per times the conversion fact	r cubic foot of v or and divide I	by 12 inches	per foot to calcula	ate gazon per inc	h.	46 gallons p		_	n tank
	Surface area x 7.5 / 12 =	0	,ff x 7.5 /	12in/ft = 0	gellon per	inch	_	Legal		
							5	i00 gall	ons or	
3. (Calculate total tank volume	•					100	% the d	faily flo	W
	A. Depth from bottom of	inlet nine to ta	ank bettom	= lin			or A	lternati	ng Pun	nos
	B. Total tank volume = d				(3A) x nal/in(2)	A 1. Cotes	ated Sevage F		_	<u> </u>
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4.					imp)	3 4	450 600	300 375	218 256	of the voluce
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	(14		- 40	gaviii - <u>130</u>	gallutis	7	1050 1200	600 675	370 408	il, or ill columns.
	A. Select pump size for 4 1500 gpd / B. Calculate drainback 1. Determine total plp 2. Determine liquid vo 3. Drainback quantity	6 e length olume of pipe, = 235.0	235.0 0.17 ft (581) x	250 gallon fit gal/fit (see figure 0.17 gal/fit)	E-20)	v	E-20: Vol			
	C. Total pump out volum	e = dose volui 0 gallons +	те(5A) + dra 40.0	inback (5B3) _gallons = <u>290</u>	0.0		Pipe Dia: inche 1 1.25	5	0.04 0.07	5
6. (Calculate float separation of Total pumpout volume (50 gal /			oul volume)6.3inch			1.5 2 2.5 3 4		0.11 0.11 0.23 0.34 0.64	7 5 3
7.	Calculate volume for alar Alarm depth (inch) x gall]in x4	B gal/in :	= <u>138</u>	gal ·			
		on/inch(2) =	3 ump(4) + gall	• —	+ gallons alarm	 (7)	gal·			
3.	Alarm depth (inch) x gall Calculate total gallons = 9	gallons over pi 290.0 allons(8) / gall	3 ump(4) + gall gal +	ons pumpout(5C)	+ gallons alarm	(7) gal				alow
8. 9.	Alarm depth (inch) x galicons = 9 736.0 gal + Total tank depth = total g	gallons over pi 290.0 allons(8) / gall	3 ump(4) + gall gal + lon/in(2)	ons pumpout(5C) 138gal =	+ gallons alarm = <u>1164.0</u>	(7) _gal inei_fi pipe (ii	ceserve			
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8. 9. Cal	Alarm depth (inch) x galicons = 9 736.0 gal + Total tank depth = total g 1164.0 galicons /	gallons over pr 290.0 allons(8) / gall 46	3 ump(4) + gall gal + lon/in(2) gal/in =	ons pumpout(5C) 138gal =	+ gallons alarm = 1164.0	(7) _gal inei_fi pipe (ii	ceserve	cupacil		⊸ contic
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	Select number of perforated laterals: 6	Pari s Peri s	gizing 9/1 Spacing 1.	6 - 1 / 4 * 5 - 5			
<u>.</u>	Select perforation spacing = 3 ft	E-4: Moxim	ura dilowa	ionumbere o <00% disc	1/4-Inch p	enformations	
3.	Since perforations should not be placed closer that 1 foot to	perforation spacing		a consider	KINGO VIII KI		
	the edge of the rock layer (see diagram), subtract 2 feet from the rock layer length	(feet)	Lineh	1.25 inch),5 lnch	20 inch	
	135 - 2 ft = 133 ft	25	8	14	18	28	
	rock layer length	3.0	8 7	13 12	17 16	26 25	
	rock layer length	4.0	,	17	16	23	
	Determine the number of season between a set of	5.0	٥	10	14	22	
	Determine the number of spaces between perforations.						
	Divide the length (3) by perforation spacing (2) and round down			number.			
	Perforation spacing = 133 ft / 3 ft =	<u>44</u> sp	aces				
	Number of perforations is equal to one plus the number of perfo * Check figure E-4 to assure the number of perforations per late < 10% discharge variation.	ration spar eral guarar	ces (4). ntees				
	44 spaces + 1 =45 perforations/lateral						
	A Total number of perferations = perferations per lateral (5) time	oo sumba	- of late	rala (4)			
	A. Total number of perforations = perforations per lateral (5) tim 45 perfs/ lat x 6 laterals = 270 perforations	es numbe			Dischor	ge in gpm	
	45 perfs/ lat x 6 laterals = 270 perforations B. Calculate the square footage per perforation.	es numbei		erforator			
	45 perfs/ lat x 6 laterals = 270 perforations B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades.	es number	E-6: P	per	foration	diamete	
	45 perfs/ lat x 6 laterals = 270 perforations B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft)	es numbe	E-6: P	per	foration (Inche	diamete	€1
	45 perfs/ lat x 6 laterals = 270 perforations B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20 ft x 135 ft = 2700 ft ²		E-6; F hea (fee	per	foration (Inche 3 3/1	n diamete es) 6 7/32) 1/4
	45 perfs/ lat x 6 laterals = 270 perforations B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft)		E-6: P	per	foration (Inche 3 3/1	n diamete es) 6 7/32	€1
	45 perfs/ lat x 6 laterals = 270 perforations B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20 ft x 135 ft = 2700 ft ² 2. Square foot per perforation = Rock Bed Area / number of per		E-6; F hea (fee	per 1/0	foration (Inche 3 3/1. 8 0.42	o diamete es) 6 7/32 2 0.56) 1/4
	45 perfs/ lat x 6 laterals = 270 perforations B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20 ft x 135 ft = 2700 ft ² 2. Square foot per perforation = Rock Bed Area / number of per		F-6: F hea (fee 1.00 2.00	per 0.1 0.1 0.2	foration (Inche 3 3/1. 8 0.4:	o diamete es) 6 7/32 2 0.56 9 0.80	1/4 0.74 1.04
	45 perfs/ lat x 6 laterals = 270 perforations B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20 ft x 135 ft = 2700 ft ² 2. Square foot per perforation = Rock Bed Area / number of perforation is given by the state of the square foot per perforation is given by the square foot per perforation is given by the square foot per perforation is given by the square foot per perforation is given by the square foot per perforation is given by the square foot perforation is given by the square fo		F-6: F hea (fee 1.0° 2.0° 5.0	per 0.1 1/0 0.1 0.2 0.4	foration (Inche 3 3/1- 8 0.4: 6 0.5: 1 0.9:	o diameters) 6 7/32 2 0.56 9 0.80 4 1.26	1/4 0.74 1.04 1.65
	45 perfs/ lat x 6 laterals = 270 perforations B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20 ft x 135 ft = 2700 ft ² 2. Square foot per perforation = Rock Bed Area / number of per		fee: F hea (fee 1.04 2.04 5.0	per 0.1 1/0 0.1 0.2 0.4	foration (Inche 3 3/1- 8 0.4: 6 0.5: 1 0.9:	1 diamete 38) 6 7/32 2 0.56 9 0.80 4 1.26	1/4 0.74 1.04 1.65
	45 perfs/ lat x 6 laterals = 270 perforations B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20 ft x 135 ft = 2700 ft ² 2. Square foot per perforation = Rock Bed Area / number of performine required flow rate by multiplying the total number	rfs (6)	fee: F hea (fee 1.04 2.04 5.0	per 0.1 1/0 0.1 0.2 0.4	foration (Inche 3 3/1- 8 0.4: 6 0.5: 1 0.9:	1 diamete 38) 6 7/32 2 0.56 9 0.80 4 1.26	1/4 0.74 1.04 1.65
	B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20 ft x	rfs (6)	fee: F hea (fee 1.04 2.04 5.0	per 0.1 1/0 0.1 0.2 0.4	foration (Inche 3 3/1. 8 0.4: 6 0.5: 1 0.9: 1 0.9: 1 0.9:	1 diamete 28) 6 7/32 2 0.56 9 0.80 4 1.26 102089 home	1/4 0.74 1.04 1.65
	B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20 ft x	rfs (6)	fee: F hea (fee 1.04 2.04 5.0	per 0.1 1/0 0.1 0.2 0.4	foration (Inche 3 3/1- 8 0.4: 6 0.5: 1 0.9:	1 diamete 28) 6 7/32 2 0.56 9 0.80 4 1.26 102089 home	1/4 0.74 1.04 1.65
-	B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20 ft x	rfs (6)	fee: F hea (fee 1.04 2.04 5.0	per 0.1 1/0 0.1 0.2 0.4	foration (Inche 3 3/1. 8 0.4: 6 0.5: 1 0.9: 1 0.9: 1 0.9:	1 diamete 28) 6 7/32 2 0.56 9 0.80 4 1.26	1/4 0.74 1.04 1.65
	B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20 ft x	rfs (6)	fee: F hea (fee 1.04 2.04 5.0	per 0.1 1/0 0.1 0.2 0.4	foration (Inche 3 3/1. 8 0.4: 6 0.5: 1 0.9: 1 0.9: 1 0.9:	1 diamete 28) 6 7/32 2 0.56 9 0.80 4 1.26	1/4 0.74 1.04 1.65
	B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20 ft x	rfs (6)	F-6: F head (fee 1,00 2,00 5.0 6	per 0.1 // 0.1 0.2 0.4 0.4 0.5 2.0 res	foration (Inches 3 3/1). 8 0.45 6 0.55 1 0.96 Iterative angles	0 diamete es) 0 7/32 0.56 0 0.80 4 1.26 diamete harrier harrier	1/4 0.74 1.04 1.65
	B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20 ft x	rfs (6)	F-6: F head (fee 1,00 2,00 5.0 6	per 0.1 1/0 0.1 0.2 0.4	foration (Inches 3 3/1). 8 0.45 6 0.55 1 0.96 Iterative angles	0 diamete es) 0 7/32 0.56 0 0.80 4 1.26 diamete harrier harrier	1/4 0.74 1.04 1.65
	B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20	rfs (6)	F-6: F head (fee 1,00 2,00 5.0 6	per 0.1 // 0.1 0.2 0.4 0.4 0.5 2.0 res	foration (Inches 3 3/1). 8 0.45 6 0.55 1 0.96 Iterative angles	0 diamete es) 0 7/32 0.56 0 0.80 4 1.26 diamete harrier harrier	1/4 0.74 1.04 1.65
	B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20 ft x	ofs (6)	F-6: P hear (fee 1,00 5.0 5.0	perforation per d 1/0 0.1 0.2 0.4 Use 1.0 (%)	foration (Inches 3 3/1). 8 0.45 6 0.55 1 0.96 Iterative angles	0 diamete es) 0 7/32 0.56 0 0.80 4 1.26 diamete harrier harrier	1/4 0.74 1.04 1.65
	B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20	ofs (6)	F-6: F head (fee 1,00 2,00 5.0 6	perforation per d 1/0 0.1 0.2 0.4 Use 1.0 (%)	foration (Inche 3 3/1). 8 0.49 6 0.59 1 0.99 Iteratingle (Inche 3 3/1). End or Byst	0 diamete es) 0 7/32 0.56 0 0.80 4 1.26 diamete harrier harrier	1/4 0.74 1.04 1.65
	B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20	ofs (6)	F-6: P hear (fee 1,00 5.0 5.0	perforation per d 1/0 0.1 0.2 0.4 Use 1.0 (%)	foration (Inches 3 3/1). 8 0.45 6 0.55 1 0.96 Iterative angles	0 diamete es) 0 7/32 0.56 0 0.80 4 1.26 diamete harrier harrier	1/4 0.74 1.04 1.65
	B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20	ofs (6)	F-6: P hear (fee 1,00 5.0 5.0	perforation per d 1/0 0.1 0.2 0.4 Use 1.0 (%)	foration (Inche 3 3/1). 8 0.49 6 0.59 1 0.99 Iter single- Iter only in	0 diamete es) 0 7/32 0.56 0 0.80 4 1.26 diamete harrier harrier	1/4 0.74 1.04 1.65
	B. Calculate the square footage per perforation. Should be 6-10 sqft/perf. Does not apply to at-grades. 1. Rock bed area = rock width (ft) x rock length (ft) 20	ofs (6)	F-6: P hear (fee 1,00 5.0 5.0	perforation per d 1/0 0.1 0.2 0.4 Use 1.0 (%)	foration (Inche 3 3/1). 8 0.49 6 0.59 1 0.99 Iter single- Iter only in	0 diamete es) 0 7/32 0.56 0 0.80 4 1.26 diamete harrier harrier	1/4 0.74 1.04 1.65

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

1767 (license #)

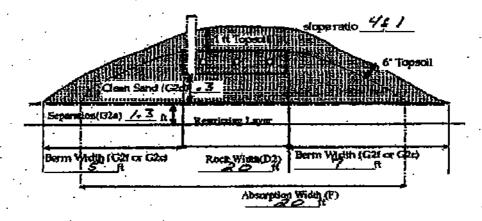
<u>Ce/18/02</u> (date)

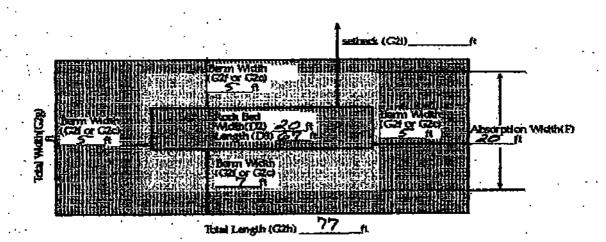
8.

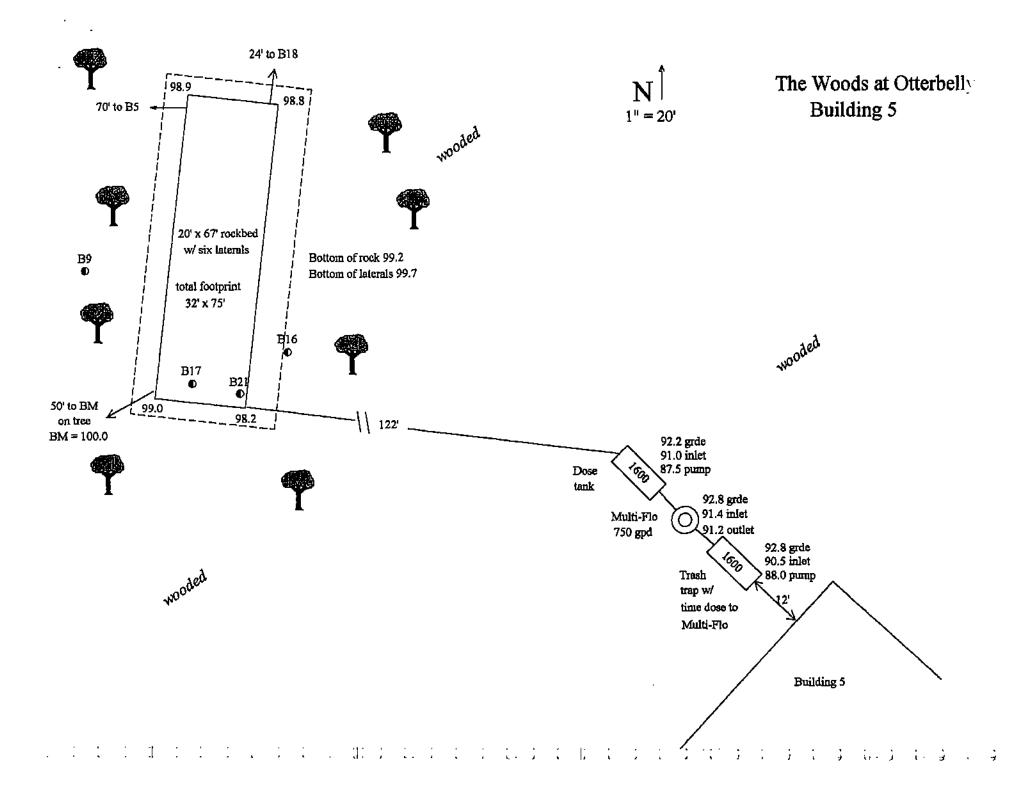
All boxed rectangles must be enlered, the rest will be calculated.

	Determine pump capacity:				
	A. Gravity Distribution				
	1, Minimum required discharge is 10 gpm				
	2. Maximum suggested discharge is 45 gpm				
	For other establishments at least 10% greater than the water				
	supply rate, but no faster than the rate at which effluent will flow				
	out of the distribution device.				
	B. Pressure Distribution - see pressure design worksheet			& point	ilmeni s of disci
	Selected Pump Capacity: 49 gpm	fold pi	2A, elev	ĺ	21111 11
2.	Determine head requirements: Intel Parameter		differ	ence	
A.	Elevation difference between pump and point of discharge.	-			
İ	12 feet	<u></u>			
В.	Special head requirement? (See Figure - Special Head Requirements)				
	5 feet	Specia	l Head Re	quiremer	ıts
			/ Distribution		0
C.	Friction loss	Pressu	re Distribu	tion	5
	Select pipe diameter 3 in				
	2. Enter Figure E-9 with gpm (1A or B) and pipe diameter (C1)	E O CHAR	na I con le		· ·
	Read friction loss in feet per 100 feet from Figure E-9	E-9: Fricito	per 100 fi		Pipe
	Friction loss= 0.58 ft/ 100 ft of pipe	'			
			nt Parke	organie Organie	160
	3. Determine total pipe length from pump discharge to soil system discharge point	etcowoll	1.6	2	3.
	Estimate by adding 25 percent to pipe length for fitting loss.	gpm	72.5	~ ~~	بييد
	Equivalent pipe length times 1.25 = total pipe length	20	2.47	0.73	Q.7] ~-465001
	232 ft x 1.25 = 290 feet	25美国中国			
	<u></u>	30	5.23	1.55	0.23
	4. Calculate total friction loss by multiplying friction loss (C2)	35	6.96	2.06	0.30
	by the equivalent pipe length (C3) and divide by 100.	10 1133 (32)		2.64	
	FL= 0.58 R/100ft X 290 ft / 100 1.7 feet	45	11.07	3.28	0.48
		50	13.46	3.99 (0.5B
D.	Total head requirement is the sum of elevation difference (A), special	D			
	head requirements (B), and total friction loss (C4).	60	•	5.60	0.82
	12 ft + 5 ft + 1.7 ft	65	1	6.48	0.95
		70	Į	7.44	1.09
	Total Head: 18.7 feet				
_	Pump Selection				
	A pump must be selected to deliver at least 49 gpm (1A or B)				
	with at least 18.7 feet of total head (2D).				
l					

<=1% land slope







PUMP SELECTION PROCEDURE

Building 5 Dose to Multi-Flo

All boxed rectangles must be entered, the rest will be calculated.

1. Determine pump capacity:
A. Gravity Distribution

1. Minimum required discharge is 10 gpm 2. Maximum suggested discharge is 45 gpm	
For other establishments at least 10% greater than the water	
supply rate, but no faster than the rate at which effluent will flow	
out of the distribution device.	
8. Pressure Distribution - see pressure design worksheet	soft soft lied ments
Selected Pump Capacity: 25 gpm	total pipe length 2A. elevation
Determine head requirements:	difference
Elevation difference between pump and point of discharge,	₩
5 feet	
Special head requirement? (See Figure - Special Head Requirements)	
0 feet	Special Head Requirements
Fristing (see	Gravity Distribution 0
Friction loss	Pressure Distribution 5
1. Select pipe diameter 2 in	
Enter Figure E-9 with gpm (1A or B) and pipe diameter (C1)	E-9: Friction Loss in Plastic Pipe
Read friction loss in feet per 100 feet from Figure E-9	Per 100 feet
Friction loss≈ 1.11 ft/ 100 ft of pipe	nominal
A Bernett Add to be the first of the second	pipe diameter
3. Determine total pipe length from pump discharge to soil system discharge poir	ni flowrate 1.5" 2" 3"
Estimate by adding 25 percent to pipe length for fitting loss.	20 [2.47 0.73 0.11
Equivalent pipe length times 1.25 = total pipe length 10 It x 1.25 = 12.5 feet	25 373 373 3171 370 167
10 ft x 1.25 = 12.5 feet	30 5.23 1.55 0.23
4. Calculate total friction loss by multiplying friction loss (C2)	35 6.96 2.06 0.30
by the equivalent pipe length (C3) and divide by 100.	891 264 0.39
	45 11.07 3.28 0.48
FL= <u>7.17</u> N/100H X <u>12.5</u> H / 100; <u>0.1</u> feet	50 13.46 3.99 0.58
Total head requirement is the sum of elevation difference (A), special	55 20 20 20 20 20 20 20 20 20 20 20 20 20
head requirements (B), and total friction loss (C4).	60 5,60 D.82
5 ft + 0 ft + 0.1 ft	65 6.48 0.95
	70 7.44 1.09
Total Head: 5.1 feet	ead
Pump Selection	
1. A pump must be selected to deliver at least 25 gpm (1A or B)	
with at least 5.1 feet of total head (2D).	
	
mby portific that I have a secolated this was to a second-security off a Co. U	nances, rules and laws.
reby certify that I have completed this work in accordance with all applicable ordin	
	" [from lenz.
(signature) 1767 (licen	nse#) <i></i>

PRETREATMENT WORK SHEET	A-1: Estin	natod Sowi	oge Rows in Gal	lars per Do	,	
All boxed rectangles must be entered, the rest will be calculated.	number o		al Ciosell	Closs III	Class IV	
1. FLOW Building 5	2 3	309 451		160 216	60% of the	
A. Estimated 800 gpd (see figure A-1)	4 5	750		256 204	volues in the	
measured x 1.5(safety factor)= 0 gpd B. SEPTIC TANK CAPACITY 1600 loations (see figure C-1)	6	105) 525	332 370	Clorsi, florifi	
B. SEPTIC TANK CAPACITY 1600 gallons (see figure C-1)		120		406	совитть.	
2 SOILS (Site evaluation data)	,					
C. Depth to restricting layer 1.3 feet	ŀ	C-I: Sept	k Tank Capadile	r (to gallons)		
D. Texture fine sand Percolation rate MPI	ŀ	Number of	Minimum Lie		capacity with	Liquid capacity with disposal &
E. SSF 1.67 ft ² /gpd (see downsizing or < 3ft figure) F. Land Slope 1 %	ļ	Bedrooms	Сарьсту	gar):	क्ष्र व्हर्भक्टा	liftinside
7. CATIC SIGNE	- 1	2 or less 3 or 4	750 1990		1125 1500	1500
3. Pressure Distribution Trench Bottom Area	į	5 or 6 7.8 or 9	1500 2000		2250 3000	2000 3000
H. For trenches with 6" of rock below the pipe, Area = Flow (1A) divided by SSF (2E)	₎₌	7.047	200	—-	3000	4000
- <u>800 g</u> pd x <u>1.67</u> ft²/gpd = <u>1336.0</u> ft²						
 For trenches with 12" of rock below the pipe, Area = Flow (1A) divided by SSF (2B) 	8.0 x (=	_		Downsizi	ng Chart	
gpd xft²/gpd x 0.8 =ft²			Soil C	Autacleristic referated Sc	s and Require	d Arras Mode
4. ORGANIC LOADING		•	Paratellos Kale m Vánulos cay Both (ASP)	-		tames beach.
J. 1. Organic loading = flow (A) x estimated BOD in mg/L leaving the					per day	per keut
pretreatment unit x 8.35 / 1,000,000			Faster than 0.1* 0.1 to 5 0.1 to 3	Coarse Sand Medium Sand Accept Sand Rose Sand	083 083 083	0000 00015
	BOD		5 to 15 16 to 30 31 40 45	South Louis Libert Sil Louis	090 083 1,00	0.0032 0.071 0.070 0.007
System loading = organic loading(J1) / area (H or f)		- 1	40 EU CEL	SA Clay Lorange		nutro
0.0334 lbs BOD / 1340.0 lf ² = $2E-05$		1	40(01원) Gwer (원)	Suby CL Sensity CL, Clay	2.50 3.25	2005
Check system loading rate on chart. Should be less than value.		- }		VI Ionaro E		0000
5. ROCK VOLUME			⊩ ise	Typicato For CA	pidly permeable er truce of file a y time pand.	mile.
K. Rock depth below distribution pipe plus 0.5 foot times bottom area:				- passed	A TRUE BON MY	
= (Rock depth + 0.5 foot) x Area (H, I, J, K, L)						
$(0.5 \text{ ft} + 0.5 \text{ ft}) \times 1340.0 \text{ ft}^2 = 1340 \text{ ft}^3$			Less Than	3 feet of 9	Separation	Chart
L Volume in cubic yards = volume in cubic feet divided by 27			D-15: Soft C	haracterist	ics and Dea	rdeat # roso
. K / 27 = cubic yards <u>1340</u> / 27 = <u>50</u> yd ³ M. Weight of rock in tons = cubic yards times 1.4		<u> </u>			ent (<3 aeç	hation)
: Lx1.4 = tons 50 x1.4= 69 tons		- 1	intolinates been inch (tels)	502 40019	per gation per duty	Sdrate ival
<u></u> km <u></u>			SECTION OF	Course sur Mediata sa		1.20 1.20
6. SYSTEM LENGTH		- }	01165	LOGAY MAG BOX 140 IT	1 I	
N. Select width = 20 ft		Ţ	6 to 15 16 to 30 31 to 45	Street Process	LIST .	0.60 0.79 0.60 0.50
O. Divide bottom area by width: (H, I) divided by N = lineal feet		- 1	45160	CN tem an an an	2.30	0.45
1336.0ft =ft =fineat feet		- 1	owne)***	Strong Chi		1 1
· 7. LAYOUT		j	374.01	Strings of the Strings of the CONS	į	i l
Select an appropriate scale; one Inch = feet		ī	"Sell background "Sell background "Sell background		Atmirine	·
Show pertinent property boundaries, rights-of-way, easements.		ĺ	"Seil having 80" "Seil having 160 r of a standard	The state of the s	Seal clay at	y rime rand. Lastadation
Show location of house, garage, driveway, and all other improvements, existing or						
Show location and layout of sewage treatment system, well and dimensions of all	elevation:	s, setbac	ks and separa	tion distan	ces.	
8. SYSTEM LLR						
P. Draw a line downhill though soil treatment system drawn in layout.						
How many trenches does it cross? Add their widths together.						
width 1 + width 2 + width 3 +						
	= <u> </u>	<u>20 </u>				
	_	_				
	uis per lo	σŲ				
I hereby certify that I have completed this work in accordance with all applicable ordinance		ond ler-		 -		
	حص, ال اال ات	anu nawa	1			
(signature) 1767 (Boense #) Ce/	118/0	<u>/2 (</u> da	le)			
<u> </u>		,	•	- 1		

	DOSING CHAMBER SIZING Building	ng 5 dose	to fiel	ď		
All :	boxed rectangles must be entered, the rest will be calculated.			1	Width	
1.	Determine area A. Rectangle area = L x W fit x fit = 0 ft ²	↓ Leng	th]		
	B. Circle area = 3.14 x radius ² 3.14 x 2ft = 0.0 ft ² C. Get area from manufacture ft ²		(-	
2.	Calculate gallons per inch There are 7.5 gallons per cubic foot of volume, therefore multiply the area (1A, B or C times the conversion factor and divide by 12 inches per foot to calculate gatton per inconstructions are $\frac{1}{2} \times \frac{1}{2} = 0$ or $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = 0$ gallon per	ch.	gallons p	Ra er inch 1 Legal	600 gallo	n tank
	galon per			_	ons or	
3. (Calculate total tank volume			_	laily flo	w
	A. Depth from bottom of inlet pipe to tank bottom =in		ог А	lternati	ng Pun	ps
	B. Total tank volume = depth from bottom of inlet pipe to tank bottom(3A) x gal/in(2) = 0 in x 0 gal/in = 0.0 gal/ons	A-1: Estimate	ed Sawago R	love in Gal	kara per Do	,
4.	Calculate gallons to cover pump (with 2-3 inches of water covering pump) (Pump and block height +2 inches) x gallon per inch (14 + 2 in) x 35 gal/in = 560.0 gal/ons	bootnome 2 3 4 5 6 7	Closs I	Class II 225 300 375 450 525 600 675	Cicas III 180 218 256 294 332 370 409	Closs IV 60% of the values in the Closs t it, or fil
5. (Calculate total pumpout volume A. Select pump size for 4-5 doses per day. Gallon per dose = gpd (see Figure A-1) / 750 gpd / 6 doses/day = 125 gallons B. Calculate drainback		•	979	- 4u ⁰ 1	conmra)
	1. Determine total pipe length 2. Determine liquid volume of pipe, 3. Drainback quantity = 127.0 ft (581) x 0.17 gal/ft(582) 21.6 C. Total pump out volume = dose volume(5A) + drainback (583) 125 gallons + 21.6 gallons = 146.6	v -	E-20: Vol Pipe Diar inche I 1.25	neter C	_	er foot
6. (Calculate float separation distance (using total pumpout volume) Total pumpout volume(5C) / gal/mch(2) 146.6 gal / 35 gal/in = 4.2 inch		1.5 2 2.5 3 4		0.07 0.17 0.24 0.38 0.66	5
7.	Calculate volume for alarm (typically 2 - 3 inches) Alarm depth (inch) x gallon/inch(2) = 3 in x 35 gal/in	= <u>105</u> ga	I			
8.	Calculate total gallons = gallons over pump(4) + gallons pumpout(5C) + gallons alarm 560.0 gal + 146.6 gal + 105 gal = 811.6	(7) gal				
9.	Total tank depth = total gallons(8) / gallon/in(2) 811.6 gallons /35 gal/in =23.2	pipe	eserve			
	ommended		<u> </u>		<u></u>	diaim on − contidi
	culate reserve capacity (75% of the daily flow) y flow \times 0.75 = 750 \times 0.75 = 562.5 gallons	rou! valime	council dumpi		(A)	imp on Inirol
		<u>.</u>				
her	eby certify that I have completed this work in accordance with all applicable ordinance: (signature) 1767 (license #)	s, rules and la <u>6/19</u>		(date)		
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PRESSURE DISTRIBUTION SYSTE	M B	uildi otende fi	ក្មថ្ម 5			
red reclangles must be entered, the rest will be calculated.	der unch perdicer	Uran Targ	el ar T]12 12	5 % : 35	
elect number of perforated laterals:	Peri Si Peri Si	zing 3/16 pacing 1.5)-51/4"		<u></u> -	
elect perforation spacing = 3 ft	E-4: Maximu por lateral to	m allowab	le number d a <10% disci	i 1/4 inch p harge varia	ertarations flan	•
nce perforations should not be placed closer that 1 foot to e edge of the rock layer (see diagram), subtract 2 feet from	perforation specing ((901)	1 inch	1,25 inch	1,5 Inch	20 inch	
e rock layer length 67 -2 ft = 65 ft rock layer length	25 30 33 40	8 8 7 7	14 13 12 11	18 17 16 15	28 26 25 23	
etermine the number of spaces between perforations. ivide the length (3) by perforation spacing (2) and round down Perforation spacing = 67 ft / 3 ft =		whole races	10 1umber.	1.5	22	
10% discharge variation. 22 spaces + 1 = 23 perforations/lateral Total number of perforations = perforations per lateral (5) tim 23 perfs/ lat x 6 laterals = 138 perforations	es number	of late	rals (1).			
		E-& P	erioralio	n Discha	mato vii eta	
Calculate the square footage per perforation. hould be 6-10 sqft/perf. Does not apply to at-grades. Rock bed area = rock width (ft) x rock length (ft) 20 ft x 67 ft = 1340 ft ²		head (fee:	d 17	(Inch	6 7/32	≥r 1/4 0.74
Square foot per perforation = Rock Bed Area / number of pe 340.0 ft ² / 138 perfs = 9.7 ft ² / perf	rfs (6)	2.0		=	_	1.04
etermine required flow rate by multiplying the total number		5.0	0.4	0.9	4 1.26	1.65
perforations(6A) by flow per perforations (see figure E-6) 138 perfs x 0.18 gpm / perfs = 24.8 g	ıpm		Use 1,0 (co Use 2,0 (es		-farrily home ing essa,	4
laterals are connected to header pipe as shown Figure E-1, to select minimum required lateral ameter; enter figure E-4 with perforation spacing (2) and umber of perforations per lateral (5).	Fore F-	ger er e	e services	manylas		one me
elect minimum diameter for perforated laterals = 2 i	nches			. Sing or oyl	·· -··	
perforated lateral system is attached to manifold pipe ear the center, like Figure E-2, perforated lateral length (3) and number of perforations per lateral (5) will be approximately ne half of that in step 8. Using these values, select	Regum in the	• F-2-M gnik • Conter of 5	aid Loomed to System			40(30

All

1.

2.

3.

5.

7.

8.

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

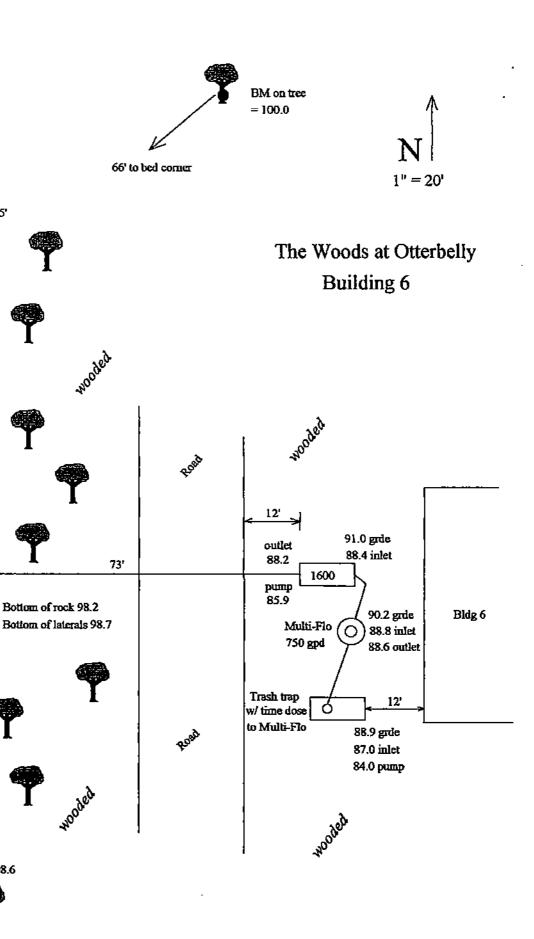
(signature) 1767 (license #) 6/18/02 (date)

Building 5 Dose to Field

PUMP SELECTION PROCEDURE
All boxed rectangles must be entered, the rest will be calculated.

, a	boxed rectanges fillox be entitled, the rest will be calculated.			
1.	Determine pump capacity: A. Gravity Distribution 1. Minimum required discharge is 10 gpm 2. Maximum suggested discharge is 45 gpm For other establishments at least 10% greater than the water supply rate, but no faster than the rate at which effluent will flow out of the distribution device.			
	B. Pressure Distribution - see pressure design worksheel Selected Pump Capacity: 25 Japan 36.2	4-4-1	& point	lmeni syslem of discharge
		totol pin length		
	Determine head requirements: Elevation difference between pump and point of discharge.		2A. elevation difference	
B.	Special head requirement? (See Figure - Special Head Requirements)			
	5 feet	Special	Head Requirement	ls I
		Gravity	Distribution	Oft
C.	Friction loss	Pressur	e Distribution	5ft
	1. Select pape diameter 2 in			
	2. Enter Figure E-9 with gpm (1A or B) and pipe diameter (C1)	E A E L W.		
	Read friction loss in feet per 100 feet from Figure E-9		n Loss in Plastic	Hipe
	Friction loss= 1.11 ft/ 100 ft of pipe		er 100 feet	}
		}	nominat pipe alamet 1.5 2	ter
	3. Determine total pipe length from pump discharge to soil system discharge point	flow rate	1.5" 2"	~3°
	Estimate by adding 25 percent to pipe length for fitting loss.	20 20	2.47 0.73	0.13
	Equivalent pipe length times 1.25 = total pipe length	25年至19年		0.11 :nerza
	128ft x 1.25 =160feet	3D	5.23 1,55	0.23
		35	6.96 2.06	0.30
	4. Calculate total friction loss by multiplying friction loss (C2)	40 100 100	8.91 x 2.64 ax	
	by the equivalent pipe length (C3) and divide by 100.	45	11.07 3.28	0.48
	FL= <u>1.11</u> ft/100ft X <u>160</u> ft / 100: <u>1.8</u> feet	50	13.46 3.99	0.58
_	Trade (Co.) Co. (Co.) Co. (Co.)	55 [2][2][2]	\$355°476%	
D,	Total head requirement is the sum of elevation difference (A), special	60	5,60	0.82
	head requirements (B), and total friction loss (C4).	65	6,48	0.95
		70	7.44	1.09
	Total Head: 19.8 feet			
3.	Pump Selection			
	1. A pump must be selected to deliver at least 25 gpm (1A or B)			

I hereby certify that I have completed this work in accordance with all applicable ordinances, rules and laws.								
(signature)	1767_(license #)							



10' x 135' rockbed

w/3 laterals

Total footprint 19' x 145' B19

Вб

B20

PUMP SELECTION PROCEDURE

Building 6 Dose to Multi-Flo

All hoxed rectangles must be entered, the rest will be calculated.

1. Determine pump capacity:

::

A. Gravity Distribution			
Minimum required discharge is 10 gpm			
2. Maximum suggested discharge is 45 gpm			
For other establishments at least 10% greater than the water			
supply rate, but no faster than the rate at which effluent will flow			
out of the distribution device.			
B. Pressure Distribution - see pressure design worksheet		oeit fios jągą &	ilment syr of discha
Selected Pump Capacity: 25 gpm	total pla length	De	413-419-63
Determine head requirements:	The second second	2A. elevation difference	
Elevation difference between pump and point of discharge,	}-[]	i	
5 feet		l,,	
Special head requirement? (See Figure - Special Head Requirements)			
0 feet	Special	Head Requiremen	its
		Distribution	Oft
Friction loss	Pressu	re Distribution	5ft
Select pipe diameter 2 In			
2. Enter Figure E-9 with gorn (1A or 8) and pipe diameter (C1)	E G Edogo	n Loss in Discric	Diam.
Read friction loss in feet per 100 feet from Figure E-9	,	n Loss in Plastic Per 100 feet	Pipe
Friction loss= 1.11 ft/ 100 ft of pipe	1 7		- 1
	1	nominal pipe diame	ter
 Determine total pipe length from pump discharge to soil system discharge point 	flowrate	1.5	3-
Estimate by adding 25 percent to pipe length for fitting loss.	20	2,47 0,73	0.11
Equivalent pipe length times 1.25 = total pipe length	26 CE E E E E		
28 ft x 1.25 = 31.25 feet	30	5.23 1.55	0.23
	35	6.96 2.06	0.30
4. Calculate/total friction loss by multiplying friction loss (C2)	40700.李安美	8.91 2.64	
by the equivalent pipe length (C3) and divide by 100.	45	111.07 3.28	0.48
FL= <u>1.11</u> ft/100ft X <u>31.25</u> ft / 100: <u>0.3</u> feet	50	13.46 3.99	0.58
	55 /4/6/6/4/8	•	
Total head requirement is the sum of elevation difference (A), special	90 90	5.60	0.82
head requirements (B), and lotal friction loss (C4).	65		1
5 ft + 0 ft + 0.3 ft	70	6,48 7,44	0.95
Total Head: 5:3 feet	(70	<u> </u>	7.09_1
Pump Selection			
1. A pump must be selected to deliver at feast 25 gpm (1A or B)			
with at least 5.3 feet of total head (2D).			
ereby certify that I have completed this work in accordance with all applicable ordina	nces, rules and	i laws.	
		•	
(signature) 1767 (licens	a#) 6/1	9/02 (date)	
	·,		

•	PRETREATMENT WORK SHEET	A-I: Estin	nated Sewa	find Sewago Rove in Gallons per Day				
	All boxed rectangles must be entered, the rest will be calculated.	bedroom		al Clossii	Closs(i)	Ciass IV		
	1. FLOW Building 6	2	301 450	226	160	60%		
•	A. Estimated 800 gpd (see figure A-1)	3	601	375	216 256	of the volues		
	measured x 1.5(safety factor): 0 gpd	5 6	750		294 332	In the Clost		
	B. SEPTIC TANK CAPACITY 1600 gallons (see figure C-1)	7	1050 1200	600	370	ii, or iii		
٠.		L	1200	0/3	400	comme.		
	2 SOILS (Site evaluation data)		El to Cool	e Tank Capacities	dH>			
	C. Depth to restricting layers 2 feet	ŀ	C-1: Srp.	K TADA CAPADRE	(ID ETPODA)			
	D. TextureMPI		Number of		ád Liquide	pecity with	Liquid capacity with disposal &	
	E. SSF 1.57 ft ² /gpd (see downsizing or < 3ft figure)		Bedrooms	Capacity	Sarpas	disposal	lift inside	
, .	F. Land Slope 5 %	- [2 or less	750		125	1500	
	A Branco Bratin at a Bratin A	- 1	3 or 4 5 or 6	1000 1500		500 250	2000	
	3. Pressure Distribution Trench Bottom Area	_ [7, 8ar 9	2000		000	3000 4000	
	H. For trenches with 8" of rock below the pipe, Area = Flow (1A) divided by SSF (2b)	=)=						
• •	800 gpd x 1.67 ft²/gpd = 1336.0 ft²							
	 For trenches with 12" of rock below the pipe, Area ≈ Flow (1A) divided by SSF (2) 	2E) x 0.8	_		Downstzin			
	gpd xft²/gpd x 0.8 =ft²			Soil C	uracteriatics : retreated Sew	and Require	d Areas adime)	
	4 ARCHUOLOGRUMA		ŀ	Portolation Kate		Saumini n	or Organic loading	
===	4. ORGANIC LOADING		L	in Minutes por Inch (MPI)	Sai Toture	Par gal	bar (cor	
• -	J. 1. Organic loading = flow (A) x estimated BOD in mg/L leaving the			Fagur (bin 0.1* 0.1 to 5	Ozens Sand Modeum Sand	C.EC	0.0020 0.0015	
	pretreatment unit x 8.35 / 1,000,000	000		0.1 to 3 6 to 15	Lowny Sand Rice Sand ** Sondy Loan	0.83	00012 00011	
- '		ROD	- 1	161030	Lium	0.65 0.55 1.00	0.0011 0.0010 0.0007	
			1	40 1067	Sili Cay Loan (CL) Silv (CL Sandy CL Cay Clay	1.10	4000	
	0.0334 lbs BOD / 1350.0 ft ² = 2E-05			80 LD 120	Sandy CL.	250 333	0 2003 0 0003	
• -	Check system loading rate on chart. Should be less than value.		- 1				4	
	5. ROCK VOLUME			. Sc Sc	il top course for systems for capt il having 10% or	ewage treatm Py permeable More of fine a	ent. ent	
• •	K. Rock depth below distribution pipe plus 0.5 foot times bottom area:		Ĺ		přavoy	tor rand.		
	= (Rock depth + 0.5 foot) x Area (H, I, J, K, L)							
-	$(0.5 \text{ ft} + 0.5 \text{ ft}) \times 1350.0 \text{ ft}^2 = 1350 \text{ ft}^3$			Lass The-	^		~ .	
ī.	L. Volume in cubic yards = volume in cubic feet divided by 27			Less Than	s reet of Si	paration	Chart	
	•		Г	D-15: Soil C	naracteristic	s and Reo	triced Areas	
÷ .	K / 27 = cubic yards <u>1350</u> / 27= <u>50</u> yd ³ M. Weight of rock in tons = cubic yards times 1.4		⊢	D-15: Soil C for Sewa	ge Treatmer	it (<3 sep	aration)	
==			- 1	partolation cale in minutes pec arch (mpi)	Soil Noduce	bat gall bat 8 mou contra (4-4)	dey bic gallous bar	
	L x 1.4 = tons <u>50</u> x 1.4= <u>70</u> tons		-	fester than 0.1"	Cosperant	0.83		
	6. SYSTEM LENGTH		- 1	0.1165	Madigra sand	283	120 120	
	N. Select width = 10 l ft		- 1	0.1 10 5 6 to 18	Loany sand Bos sani" sandy barn	馁	0.60 0.79	
• •	Divide bottom area by width: (H, I) divided by N = lineal feet		- 1	16 10 50 31 to 45	Sit ioun	145 145	0.60 0.50	
	1336.0 R ² / 10 ft = 135 lineal feet		- !	44 to 60	Silt Clay loan Sachadas	220	UE	
-	1 1000.0 R 7 10 R - 100 III eat		- 1	over 61	Sandy clay Silty day Clay		1 1	
٠.	7. LAYOUT				Sundy clay Sulty clay		1 1	
	Select an eppropriate scale; one inch =			'देखी १५० का सका से		ment .	<u> </u>	
	Show pertinent property boundaries, rights-of-way, essements.		- 1	"Soil two creases to use systems." "Soil leaving 90% "Soil twith too h of a standard	or mices give a	Readle soils. each plus ver	fine wind.	
	Show location of house, garage, driveway, and all other improvements, existing of	ar nimmasei	a L	of a standard	pictomic sing	en creak tot	EMSCATULCION.	
٠.	Show location and layout of sewage treatment system, well and dimensions of a			es and senace	ion distant	00		
		II CICTESON	o, some	es and sopera		.		
	8. SYSTEMILE							
_,	P. Draw a line downhill though soil treatment system drawn in layout.							
	How many trenches does it cross? Add their widths together.							
	width 1 + width 2 + width 3 +							
	10 ft +ft +ft	=	<u>10</u> ft					
	Q. Divide total trench width (P) by SSF (F) = gallions per foot							
	10ft /1.67ft ² /gpd = 6.0gal/ft (Should be <12_gal	lons per fo	ol)					
-		-	-					
La	I hereby certify that I have completed this work in accordance with all applicable ordinar	near sules	and lave	 -				
		_			-			
• •	(skmature) 1767 (ficense #)	/19/0	12 in	-)	ł			
				E2 8	1			
L 6				-,	1			

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	DOSING CHAMBER SIZING Buildin	<u>g 6 dos</u>	<u>se tank t</u>	o field	1	
ΑII	boxed rectangles must be entered, the rest will be calculated.	1		1	Width	
	n			11		
1.	Determine area A. Rectangle area = L x W	1		↓		
	· — — ,	4		- ·		
	B. Circle area = 3.14 x radius ²	Ler	ngth		_	
			/			
	3.14 x $\frac{^2 f_1}{1 - 2} = \frac{0.0}{1 - 2} f_1^2$		(
	C. Get area from manufacture ft ²			Ra	dius	
2.	Calculate gallons per inch There are 7.5 gallons per cubic foot of volume, therefore multiply the area (1A, B or C)		35 gallons p	er inch 1	600 aalla	n tank
	times the conversion factor and divide by 12 inches per foot to calculate gallon per incl		00 3220110 P	01 111012 1	oue gand	,, (21111
	Surface area $\times 7.5 / 12 = 0$ ft ² $\times 7.5 / 12$ in/ft = 0 gallon per i			Legal	Tank:	
			5	_	ons or	
3.	Calculate total tank volume			_	daily flo	w
	A. Depth from bottom of inlet pipe to tank bottom = in				ing Pun	
	B. Total tank volume = depth from bottom of inlet pipe to tank bottom(3A) x gel/in(2)		oted Sewage R			
	= 0 in x 0 gal/m = 0.0 gallons	number of				<u> </u>
4	Calculate gallons to cover pump (with 2-3 inches of water covering pump)	bedrooms 2	i 300 i	Closs II . 225 300	Closs III 160	Closs R
•	(Pump and block height +2 inches) x gallon per inch	4	450 600	375	219 256	oi ine value:
	(14 + 2 in) x 35 gal/in ≈ 560.0 gallons	5 b	750 900	450 525	294 332	in the Cossi
-	· · · · · · · · · · · · · · · · · · ·	3 8	1050 1200	600 675	370 408	L or II
ο.	Calculate total pumpout volume <u>A. Select pu</u> mp size for 4-5 doses per day. Gallon per dose = gpd (see Figure A-1) / c	lococ por		_		
	750 gpd / 6 doses/day = 125 gallons	icaes hei i	uay –			
	B. Calculate drainback					
	Determine total pipe length 85.0 ft				г-	-
	2. Determine liquid volume of pipe 0,17 gal/ft (see figure E-20)	ſ				
	3. Drainback quantity = 85.0 ft (5B1) x 0.17 gal/ft(5B2) 14.5	v ·	E-20: Vol			
	C. Total pump out volume = dose volume(5A) + drainback (5B3)	_	Pipe Diar inche	neter C	iallons p	er foot
	125 gallons +14.5gallons =139.5		L		0.04	
	Calculate floot and artifact finding to the state of the	-	1.25 1.5		0.07 0.11	
J. '	Calculate float separation distance (using total pumpout volume) Total pumpout volume(5C) / gal/inch(2)		2 25		0.13 0.25	
	139.5 gal / 35 gal/in = 4.0 inch		3		0.3	}
		ι	- 4		0,6	<u> </u>
7.	Calculate volume for alarm (typically 2 - 3 inches)					
	Alarm depth (inch) x gallon/inch(2) = 3 in x 35 gal/in =	105	gal			
			_			
3.	Calculate total gallons = gallons over pump(4) + gallons pumpout(5C) + gallons elarm(
	560.0 gal + 139.5 gal + 105 gal = 804.5	_gal				
).	Total tank depth = total gallons(8) / gallon/in(2)			51	HUE 52	
•	804.5 gailons / 35 gal/in = 23,0	11(6)	THEFT	मासी	-	
_		bibe [reserve	copocit	가 <u>能</u>	atain
	commended	ह्य Tukov tuoo	≱-5 nef		丰工	⊸ conti
	culate reserve capacity (75% of the daily flow) y flow x 0.75 = 750 x 0.75 = 562.5 gallons		pump	1 1 10		imp on Micl
<i>7</i> a i	y now x 0.75 = 750 x 0.75 = 5025 gasquis	P.	COU	tot. √₩		
		μį	- CHICAGO CONTRACTOR	arei/III	-uuced	
L						
ne	reby certify that I have completed this work in accordance with all applicable ordinances	, rules and	laws			
-	(signature) 1767 (license #)	121	18/02	(data)		
_	(incense #)	_9/	100 V	(ngiệ)	- }	
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	PRESSURE DISTRIBUTION SYSTE	M E	Buildi	ក្ខខ្ម 6	····		
All b	oxed rectangles must be entered, the rest will be calculated.	ier uich geerle		F or rock	<u>j - 12 - 1</u>	4 (a) - (a) - (a) - (a)	
1.	Select number of perforated laterals:	Part :	Spacing 1/1 Spacing 1.	6" - 1/4" 8'- 5'			
2.	Select perforation spacing = 3 ft			o todanun ek ba do 2001> a			
3.	Since perforations should not be placed closer that 1 foot to the edge of the rock layer (see diagram), subtract 2 feet from the rock layer length 135 -2 ft = 133 ft rock layer length	perfection spacing (feet) 25 3.0 3.2 4.0	1 Inch 8 8 7 7	1.25 inch 14 13 12 11	1.5 (mch 18 17 16 15	20 mmh	
4	Determine the number of spaces between perforations. Divide the length (3) by perforation spacing (2) and round down Perforation spacing = 133 ft / 3 ft =		t whole .	number.	14	<u> 22 </u>	
5.	Number of perforations is equal to one plus the number of perforations ber late < 10% discharge variation. 44 spaces + 1 = 45 perforations/lateral	eral guara	ntees				
6.	A. Total number of perforations = perforations per lateral (5) time 45 perfs/ lat x 3 laterals = 135 perforations	es numbe	r of late	rals (1).			
	B. Calculate the square footage per perforation.		E-6: F			ide ju ôbw	
	Should be 6-10 sqft/perf. Does not apply to at-grades.		hea	аĽ	(inch		
	1. Rock bed area = rock width (ft) x rock length (ft) 10 ft x		(fee	ภ <u>ิ</u> [1/			1/4
	2. Square foot per perforation = Rock Bed Area / number of pe 1350.0 ft ² / 135 perfs = 10.0 ft ² / perf	rfs (6)	1.0 2.0				0.74 1.04
	1350.0 k / 155 pens = 10.0 k / pen		5.0	0.4	1 0.9	4 1.26	1.65
7.	Determine required flow rate by multiplying the total number of perforations (6A) by flow per perforations (see figure E-6) 135 perfs x 0.18 gpm / perfs = 24.3 g	ıpm	ь	Use 1.0/co Use 2.0/ee	i for angle i for anyli	Harrily hame ing else.	
8.	If laterals are connected to header pipe as shown in Figure E-1, to select minimum required lateral diameter, enter figure E-4 with perforation spacing (2) and number of perforations per lateral (5).	\$41 CP			n-wipide	A Obligation of the Control of the C	poalen
	Select minimum diameter for perforated laterals =	rches	1: Manifel	d Loodled &	End of By	ilem	
9.	If perforated lateral system is attached to manifold pipe near the center, like Figure E-2, perforated lateral length (3) and number of perforations per lateral (5) will be approximately one half of that in step 8. Using these values, select minimum diameter for perforated lateral = 2 inches.	Regularity in F	ns 6.2 Month	old Located the System	779400	Date:	NAME OF THE PARTY

7 7

I hereby certify that I have completed this wo	rk in accordance with all appli	cable ordinances, rules and laws.	
(signature)	1767_(license #)	<u>6/18/02</u> (date)	

PUMP SELECTION PROCEDURE

Building 6 Dose to Field

All boxed rectangles must be entered, the rest will be calculated.

1. Determine pump capacity:
A. Gravity Distribution

::

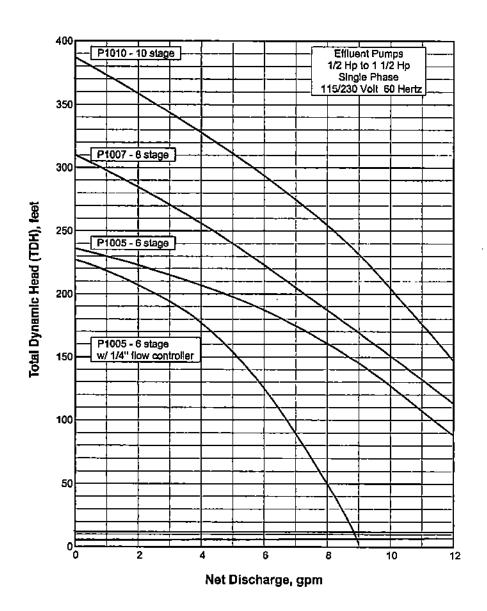
1. Minimum required discharge is 10 gpm

	Maximum suggested discharge is 45 gpm				
	For other establishments at least 10% greater than the water				
	supply rate, but no faster than the rate at which effluent will flow				
	out of the distribution device.				
	B. Pressure Distribution - see pressure design worksheet		soli ti	ealment sy	elem
			8 pg	nl of disch	aide
	Selected Pump Capacity: 25 gpm 37.6	fotel pi		<u>://:213-112611</u> !	
	1. 1	length			
2.	Determine head requirements:		2A. elevation difference		
		[.[
A.	Elevation difference between pump and point of discharge.	- HB			
	13 feet	31			
_	A 111 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				
В.	Special head requirement? (See Figure - Special Head Requirements)				
	5 feet	Specia	Head Requirem	ents	\neg
		Gravity	Distribution	08	
C.	Friction loss		re Distribution	5f1	
	Select pipe diameter 2 in				
	2. Enter Figure E-9 with gronn (1A or B) and pipe diameter (C1)				
	Read friction loss in feet per 100 feet from Figure E-9	E-9: Fricile	on Loss in Plas	ic Pipe	
	Friction loss= 1.11 ft/ 100 ft of pipe	,	Per 100 feet	i	
	1 100 K of pipe		nomina	n i	
	2 Determine total nine length from some factors to a 2 motors 5. 1		pipe dion 1.5° 2°	neler	
	3. Determine total pipe length from pump discharge to soil system discharge point	flowrate gpm	1.5 2	3.	
	Estimate by adding 25 percent to pipe length for fitting loss.	20	2.47 0.73	0,11	
	Equivalent pipe length times 1.25 = total pipe length	25			
	60ft x 1.25 =100feet	3D	I _		
		35		0.23	
	4. Calculate total friction loss by multiplying friction loss (C2)	4	6.96 2.06	0.30	
	by the equivalent pipe length (C3) and divide by 100.			2.039	
	FL= <u>1.11</u> fl/100ft X <u>100</u> ft / 100: 1.1 feet	45	11.07 3.28	0.48	
		50	13.46 3.99	0.58	
D.	Total head requirement is the sum of elevation difference (A), special	552%/00%	图图绘制76	0.70	
	head requirements (B), and total friction loss (C4).	60	5.60	0.82	
	13 ft + 5 ft + 1.1 ft	65	6.48	0,95	
		70	7.44	1.09	
	Total Head: 19.1 feet 19.7				
	10.1 ldd: 1 1 / /				
3.	Pump Selection				
•		 -			
	1. A pump must be selected to deliver at least 25 gpm (1A or B)	ı			
	with at least 19.1 feet of total head (2D).				
<u> </u>					
he	eby certify that I have completed this work in accordance with all applicable ordinal	icas, rules and	l laws.		\neg
l			_		
17	(signature) 1767 (license	# 6/	18/02 (date	a)	-
		,	<u> </u>	7	-

P mp Selection for a Pressurized System

r to out Parameters ————————————————————————————————————		
Orifice Size	1/8	linches
Residual Head at Last Orifice	2.0	feet
Orlfice Spacing	2.5	feet
Number of Laterals per Ceil	4	
Lateral Length	83.0	feet
Lateral Line Size	2.00	Inches
Lateral Pipe Class/Schedule	40	
Distributing Valve Model	None	
Manifold Length	14.0	feet
Manifold Line Size	2.00	Inches
Manifold Pipe Class/Schedule	40	
Lift to Manifold	5.3	feet
Transport Length	88.0	feet
Transport Line Size	2.00	Inches
Transport Pipe Class/Schedule	40	
Discharge Assembly Size	2.00	Inches
Flow Meter	None	Inches
'Add-on' Friction Losses	0.0	feet

(.culations		
	Minimum Flow Rate per Orifice	0.27	gpm g
	Number of Orlflœs per Zone	136	5
	Total Actual Flow Rate	37.3	gpm
	Number of Lines per Zone	4	ļ
	Flow Differential 1st and Last Orifice	1.3	1 %
	Lift to Manifold	5,3	feet
	Residual Head at Last Orifice	2.0	feet
	Head Loss in Laterals	0.1	feet
	lead Loss Through Distributing Valve	0.0	feet
	Head Loss in Manifold	0,1	l feet
	Head Loss In Transport Pipe	1.6	feet
	Head Loss Through Discharge	2.6	feet
	Head Loss Through Flow Meter	0.0	feet
	'Add-on' Friction Loases	0.0) feet
	Total Flow Rate	37.3	gpm
	TDH	11.8	





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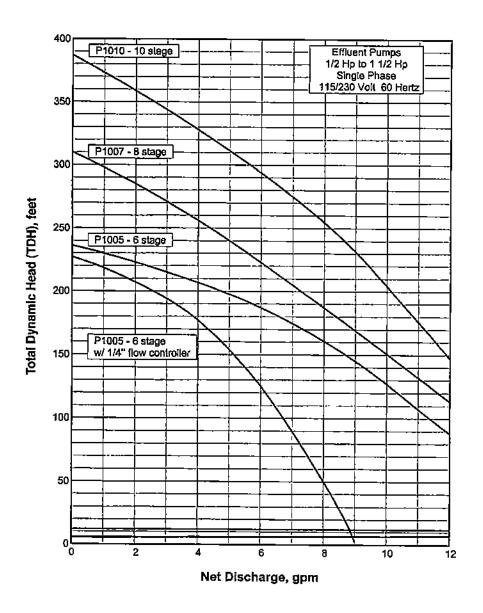
(541) 459-4449

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Pump Selection for a Pressurized System

_ Input Parameters		
Orifice Size	1/8	Inches
Residual Head at Last Orifice	2.0	feet
Oritice Spacing	2.5	feet
Number of Laterals per Cell	4	
Lateral Length	83.0	feet
Lateral Line Size	2.00	Inches
Lateral Pipe Class/Schedule	40	
Distributing Valve Model	None	
Manifold Length	14.0	feet
Manifold Line Size	2.00	Inches
Manifold Pipe Class/Schedule	40	
Lift to Manifold	5.3	feet
Transport Length	68.0	feet
Transport Line Size	2.00	Inches
Transport Pipe Class/Schedule	40	
Discharge Assembly Size	2.00	Inches
Flow Meter	None	inches
'Add-on' Friction Losses	0.0	feet

Calculations —————		
Minimum Flow Rate per Orifice	0.27	gpm
Number of Orifices per Zone	138	
Total Actual Flow Rate	37.3	gpm
Number of Lines per Zone	4	
% Flow Differential 1st and Last Orifice	1.3	%
Lift to Manifold	5.3	feet
Residual Head at Last Orifice	2.0	feet
Head Loss in Laterals	0,1	feet
Head Loss Through Distributing Valve	0.0	feet
Head Loss in Manifold	0.1	feet
Head Loss in Transport Pipe	1.6	feet
Head Loss Through Discharge	2.8	feet
Head Loss Through Flow Meter	0.0	feet
'Add-on' Friction Losses	0.0	feet
Total Flow Rate TDH	37.3 g 11.8 f	•





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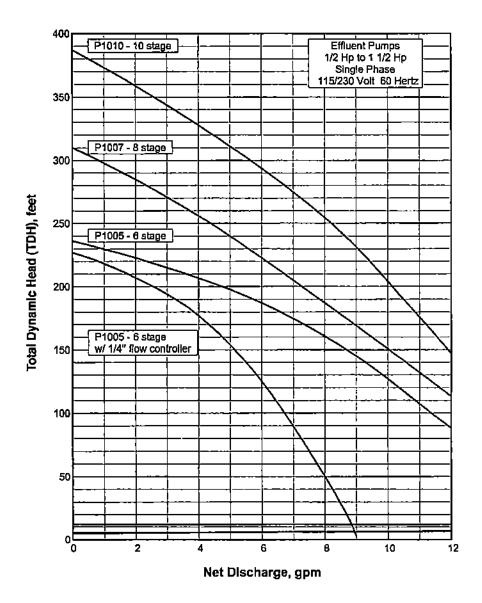
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Pamp Selection for a Pressurized System

- li	ıt Parameters ——		
"	Orifice Size	1/8	Inches
	Residual Head at Last Orifice	2.0	feet
	Orifice Spacing	2.5	feet
	Number of Laterals per Ceil	4	
	Látéral Length	83.0	feet
	Lateral Line Size	2.00	Inches
	Lateral Pipe Class/Schedule	40	
	Distributing Valve Model	None	
	Manifold Length	14.0	feet
	Manifold Line Size	2.00	Inches
}	Manifold Pipe Class/Schedule	40	
	Lift to Manifold	5.3	feet
	Transport Length	68.0	feet
	Transport Line Size	2,00	Inches
	Transport Pipe Class/Schedule	40	
	Discharge Assembly Size	2.00	inches
	Flow Meler	None	Inches
	'Add-on' Friction Losses	0.0	feet
L			

culations		
Minimum Flow Rate per Orifice	0.27	gpm
Number of Orifices per Zone	136	
Total Actual Flow Rate	37.3	gpm
Number of Lines per Zone	4	
Flow Differential 1st and Last Orifice	1.3	%
Lift to Manifold	5.3	feet
Residual Head at Last Orlfice	2.0	feet
Head Loss in Laterals	0.1	feel
ead Loss Through Distributing Valve	0.0	feet
Head Loss in Manifold	0.1	feet
Head Loss In Transport Pipe	1.8	feet
Head Loss Through Discharge	2.8	feet
Head Loss Through Flow Meter	0.0	feet
'Add-on' Friction Losses	0.0	feet
Total Flow Rate		pm eet
	Minimum Flow Rate per Orifice Number of Orifices per Zone Total Actual Flow Rate Number of Lines per Zone Flow Differential 1st and Last Orifice Lift to Manifold Residual Head at Last Orifice Head Loss in Laterals ead Loss Through Distributing Valve Head Loss in Manifold Head Loss in Transport Pipe Head Loss Through Discharge Head Loss Through Flow Meter 'Add-on' Friction Losses	Minimum Flow Rate per Orifice 0.27 Number of Orificas per Zone 136 Total Actual Flow Rate 37.3 Number of Lines per Zone 4 Flow Differential 1st and Last Orifice 1.3 Residual Head at Last Orifice 2.0 Head Loss In Laterals 0.1 Head Loss In Manifold 0.1 Head Loss In Transport Pipe 1.8 Head Loss Through Discharge 2.8 Head Loss Through Flow Meter 'Add-on' Friction Losses 0.0 Total Flow Rate 37.3 §





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Input Parameters	- <u>1000 y</u> - 575 55			Calculation		Size Pump For
Orlfice Size	1/8	∑ Inc	hes.	Minimum Flow Rate per Orlfic	0.27 gpm	Design Flow Rate 37.3 gpm
Residual Head at Last Orifice	20	fee		Number of Orlfices per Zonc	136	Total Dynamic Flear 11.8 feet
u. Orlfice Spacing	25	▼ fee	/-	Total Flow Rate per Zone	37.3 gpm	
Number of Laterals per Cel		4 % %		Number of Laterals per Zone	4	
Lateral Length		83.0 fee		% Flow Differential 1st and East	1.3 %	Pressure head desired at most distant- orifice in distribution lateral. Typical
Lateral Pipe Class/Schedule	40				<u> 1960. (1967)</u> Harris Harris	values range from 1-foot to 5 feet depending upon orifice size,
⇒ Lateral Line Size	200	▼Jinc	ies:	-Static Heads		
Distributing Valve Mode	None	Y		Lift to Manifold	5.3 reet	
Manifold Length	Sec. 27.4.2	140 -fee		Residual Head at Last Orifice	20 feet	
Manifold Pipe Class/Schedulc	40					
Manifold Line Size	200	∑ ind	es	-Enctional Head Losses		
Lift to Manifold	90 1977-11	5.3 (ee		Head Loss In Lateral	0.1_feet	Calculate
Transport Length		68.0 fee		Head Loss through Distributing Valvis	0.0 feet	
Transport Pipe Class/Schedule	40			Head Loss In Manifold	0.1 sfeet	
Transport Line Size	2.00		es	Head Loss In: Transport Ploc	1.6 feet	Generate Chart
Discharge Assembly Size.	200		es i	(Head Loss through Discharge	2.8 Feet	
Row Meter	None	Incl	es	Head Loss through Flow	0.0 feet	
Add-on Friction Losses	RTAS	0.0 feet		Add-on' Eriction Losse	0.0 feet	
THE STATE OF THE S		22 AST 25	CL next			

Soil Boring Log The Woods at Otterbelly

Buildings 1 & 2 Primary Sites

B 3	0-4"	loam	10YR 3/2	
	4-13	sandy loam	10YR 4/3	
	13-16	sandy loam	10YR 5/3	Mottled at 15"
B25	0-9	loam	10YR 3/2	
	9-18	sandy loam	10YR 5/3	Mottled at 14"
B2	0-5	sandy loam	10YR 3/2	
	5-15	sandy loam	10YR 5/4	
		strong, medium	, blocky, friable	
	15-19	sandy loam	10YR 5/4	Mottled at 15"
	19-27	silt loam	10YR 6/2	

Buildings 3 & 4 Primary Site

ι.

В1	0-8	loam	10YR 3/2	
	8-16	sandy loam	10 YR 5/4	Mottled at 15"
	16-20	sandy clay loam	10YR 5/4	
		strong, medium, s	ub. blocky, firm	
	20-28	clay loam	10YR 5/4	
		moderate, mediun	a,blocky, very fi	m
	28-32	sandy clay loam	10YR 5/4	
		moderate, medium	n,blocky, firm	
B24	0-11	loam	10YR 3/2	
	11-18	sandy loam	10YR 5/4	Mottled at 13"

Building 5 Primary Site

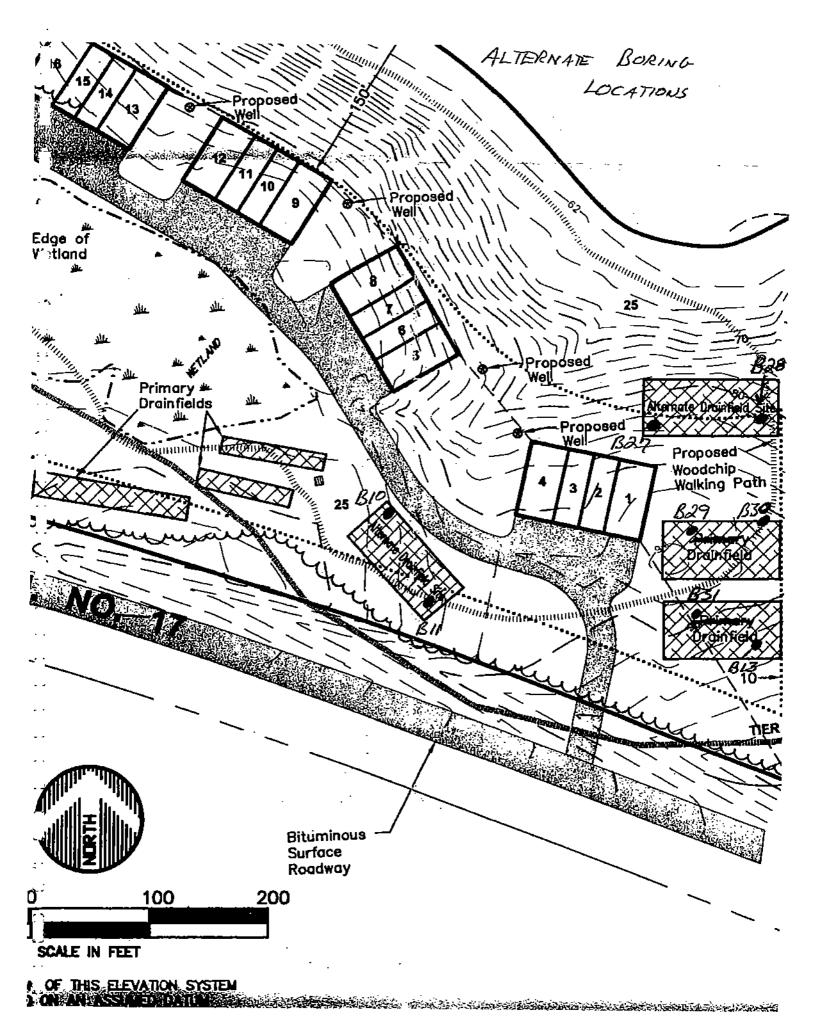
BI7	0-4	sandy loam	10YR 3/2	
	4-24	sandy loam	10YR 5/4	Mottled at 16"
B21	0-10	sandy loam	10YR 3/2	
	10-16	sandy loam	10YR 5/4	Mottled at 12"
B18	0-5	sandy loam	10YR 3/2	
	5-18	sandy loam	10YR 5/4	Mottled at 15"
В9	0-4	sandy loam	10YR 3/2	
	4-21	sandy loam	10YR 4/3	Faint mott at 16"
Build	ling 6 Primar	y Site		
B19	0-11	sandy loam	10YR 3/3	
	11-18	sandy loam	10YR 4/4	
	18-24	sandy loam	10YR 5/4	
	24-30	silty clay loam	10YR 5/4	Rust at 24"
	30-32	clay loam	10YR 5/4	
В6	0-13	sandy loam	10YR 3/2	
	13-24	sandy loam	10YR 4/4	
	24-30	sandy loam	10YR 5/3	Mottled at 25"
B20	0-4	sandy loam	10YR 3/2	
	4-16	sandy loam	10YR 3/3	
	16-48	sandy loam	10YR 4/4	Mottled at 32"
	48-54	silty clay loam	10YR 5/4	

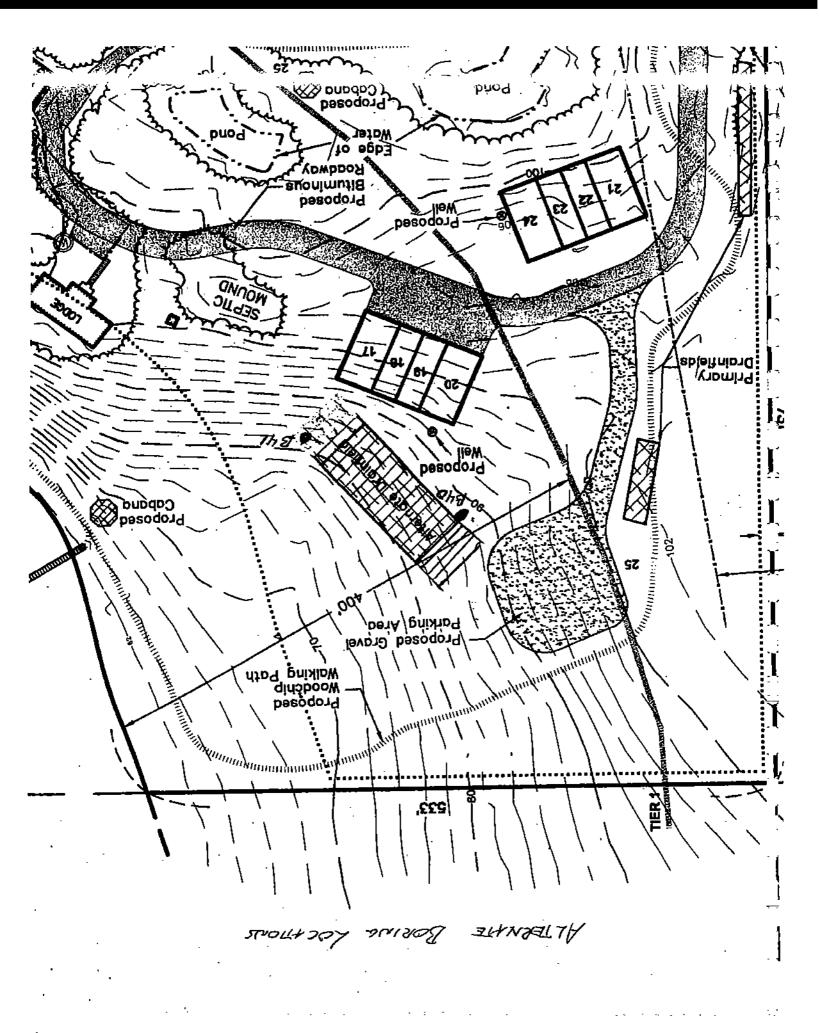
Soil Boring Log Alternate Septic Sites Buildings 1-4

• •	B27	0-8" 8-15 15-20	loam sandy loam silt loam	10YR 3/1 10YR 5/3 10YR 5/3	Mottled at 12"					
• · · · · · · · · · · · · · · · · · · ·	B28	0-8 8-11 11-18 18-28	sandy loam sandy loam silt loam clay loam	10YR 3/2 10YR 4/3 10YR 5/3 7.5YR 4/4	Mottled at 12"					
· · ·	B29	0-11 11-18	loam silt loam	10YR 3/2 10YR 5/4	Mottled at 12"					
::	В30	0-7 7-28 28-32	sandy loam sandy loam clay loam	10YR 3/2 10YR 4/3 7.5YR 4/4	Mottled at 28"					
	B31	0-7 7-14 14-24 24-32	sandy loam silt loam sandy loam sand	10YR 3/2 10YR 5/4 10YR 5/4						
· · · · · · · · · · · · · · · · · · ·	В13	0-6 6-18	loam sandy loam	10YR 3/2 10YR 4/3	Mottled at 16"					
••	B10	0-4 4-18	sandy loam sandy loam	10YR 3/2 10YR 4/3	Mottled at 15"					
	B11	0-6 6-12 12-16	sandy loam sandy loam sandy loam	10YR 3/2 10YR 4/3 10YR 5/3	Mottled at 13"					
4.			Alternate Site	andy loam It l						
	B40	0-5 5-10 10-14 14-18	sandy loam sandy loam sandy loam clay loam	10YR 3/3 10YR 5/3	Mottled at 13"					
4.3 - -	B41	0-4 4-19 19-24	silt loam sandy silt loam sandy loam	10YR 3/2 10YR 3/3 10YR 5/4	Mottled at 19"					

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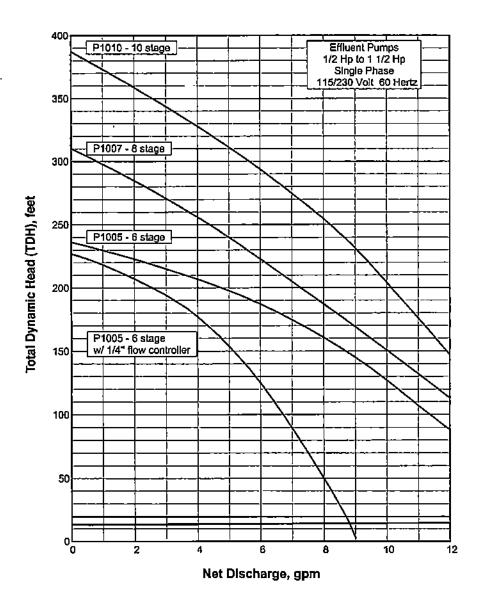
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A	Disco.	ransport Line Size 20				Manifold Pipe Class/Scheduic 40				Lateral Pipe Class/Schedule 40		Number of Laterals per Cel		Residual Head at Last Orifice	
]]		Man	Plpe C	ă	Bulling	Ē	Pipe Ci		ر او	o O	Head	
iction	Sem		ransport Length	6	E.	<u>F</u> X	Manifold Length	Valve	<u>a</u> ⊑	PS/Sc	Laberal Length	erals	Ting S	, E	Onno
Add-on-Friction Losses	Discharge Assembly Step 200	Transport Line Size 200		LIR to Manifold	Manifold Line Size 200	hedul	ength	Mode	ateral Line Size 5200	nedule	engt	S e	Ordice Spacing	O O	Onnoe Size
I consider None	200	200		3	200	8	1	Distributing Valve Mode None	200	•		1	3.00	20	7
# elle	ellian	K	730	13.0		4	8	180	13	Į.	67.5	6	198	180	
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nead Loss Intrough Flow 'Add an'/Eriction Losse	Head Loss through Discharg	Head L Loss In	Head Loss through Distributing Valv	Head (Frictional Head Losses		a Head		(07)		ferenti	a Of La	al Flow	er of O	n Flow
Fiction		oss In I		28 T	9580	1000	a 145	∃			11St a	iga Japan	Rain P	18 18	20 60 90
ead Loss inrollign Flow Add on "Friction Losse:	scharge	Head Loss in Manifok Head Loss in Transport Pipe	o (alv	Head Loss in Lateral	6		Residual Head at Last Onfice	Lift to Manifolic			% Flow Differential 1st and Last	Number of Laterals per zone	Total Flow Rate per Zons	Number of Orlfices per Zone	Minimum Flow Rate per Orific
			# 74 A(4) 10 2 7								12.50	576			
0.0 reer	29 feet	: ⊆		밁			20	<u> </u>			05		<u> 37.8</u>		027
reer feer		Per Per	e	ee			feet	B					900	76.50 16.50	gm
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		Generale Char									sembly				<u>, हिं</u>
		1 10								je Prim	discharge assembly to header.			197	37.B
					Male of				- 23 () - 23 ()	e e e in	ello			Teet	9

•

Pump Selection for a Pressurized System

- lucut Dacamotore		
Orifice Size	1/8	Inches
Residual Head at Last Orifice	2.0	feet
Orifice Spacing	3.00	feet .
Number of Laterals per Cell	6	
Lateral Length	67.5	feet
Lateral Line Size	2.00	inches
Lateral Pipe Class/Schedule	40	
Distributing Valve Model	Моле	
Manifold Length	8.0	feet
Manifold Line Size	2.00	Inches
Manifold Pipe Class/Schedule	40	
Lift to Man\fold	13.0	teet
Transport Length	73.0	feet
Transport Line Size	2.00	Inches
Transport Pipe Class/Schedule	40	
Discharge Assembly Size	2.00	inches
Flow Meter	None	Inches
'Add-on' Friction Losses	0.0	feet
•		

- C	culations ———		
	Minimum Flow Rate per Orifice	0.27	gpm
	Number of Orifices per Zone	138	
	Total Actual Flow Rate	37.B	gpm
	Number of Lines per Zone	6	
	Flow Differential 1st and Last Orifice	0.5	%
	Lift to Manifold	13.0	feet
	Residual Head at Last Orifice	2.0	feet
	Head Loss in Laterals	0.0	feet
	read Loss Through Distributing Valve	0.0	feet
	Head Loss in Manifold	0.1	feet
	Head Loss in Transport Pipe	1.8	feet
	Head Loss Through Discharge	2.9	feet
	Head Loss Through Flow Meter	0.0	feet
	'Add-on' Friction Losses	0.0	feet
	Total Flow Rate	37.8	gpm
	TOH	19.7	eet





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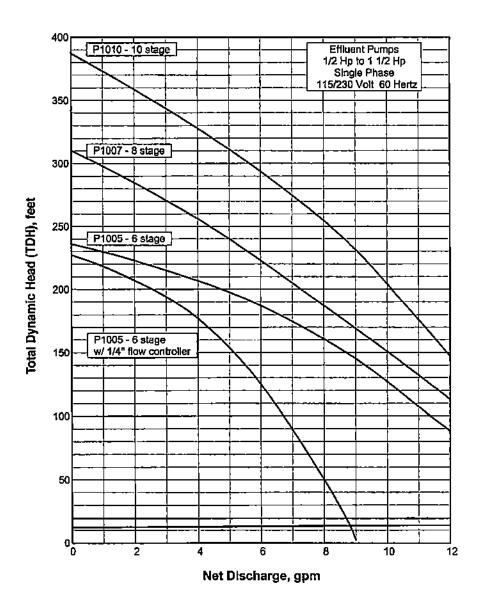
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Size PumpiFor Design Flow Rafe 36.2 gpm Total Dynamic Hear 13.6 (each The total length of panishing pube from pumpi discharge assembly to header of the control of the c	
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88.2	
Size Pump For Design Fow Rate: Total Dynamic Head Dump distribution of the pump discharge asset of the pump disch	Celculate 7
	4.5 证明的 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5
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	- B 3 3 3 5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
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0.27 gpm 132 gpm 6 gpm 10.4 % 122 feet	000 (eec. 000) (eec. 0
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Michigan Row Rate per Ordic Number of Ordices per Zonic Total Flow Rate per Zonic Number of Laterals per Zonic Winner of Laterals per Zonic Mumber of Laterals and Last Ophice	mai flead Lossess
1000 1000 1000 1000 1000 1000 1000 100	
	lead Lossess Head Loss In Jaler Thead Loss In Manife Head Loss In Transport Pl Loss In Transport Pl Loss through Dischart ead Loss through Eloss Add-on Friction Loss
	8 8 2 6 2
Cediculation Minmum Number Total Number % Flow Diff Static Heads	Friction all Flead Lossess Friction all Flead Loss In Lateral Head Loss In Marino (1994) Head Loss In Transport Ploumer Ploum Cost In Transport Ploumer Loss In Transport Ploumer Ploumer Loss In Transport Ploumer Ploumer Ploum
	本 是 可能是要認識的學術。
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·세계 시 시스시 캠프리 기술레일레드웨	
178 200 200 200 200 1	200 200 200 200 None
Jurit Perameters Office Size Sidulal Head at Last Office Orifice Specing Unificial Columbia of Laterals per Col Lateral Langth Lateral Line Size Lateral Line Size Distributing Valve Mode	Manifold Line State Lift to Manifold Transport Length sport Pipe Class Schedule Transport Line State Transport Lin
	。 一 是 一 一 是 一 一 是 一 一 是 一 是 一 是 一 是 一 是 一 是 一 是 一 是 一 是 一 是 一 是 一 是 一 是 一 是 一 是 一 是 是 是 是 是 是 是 是 是 是 是 是 是
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Confice Size Confice Size Confice Size Confice Spacing Number of Laterals per Cel Number of Laterals per Cel Lateral Lingth Lateral Pine Class/Schedule Lateral Lingth Lateral Lingth Mahifuld Length Mahifuld Dine Class/Schedule	Manifold Une Size Lift to Manifold Transport Pipe Class/Schedule Transport Line Size Discharge Assembly Size Mad-on: Friction: Losse
Imputifican maters Onfice Size Residuish Head at Last Onfice Number of Laterals per Cel Number of Laterals per Cel Lateral Langth Lateral Pige Class/Scheduile Distributing Valve Mode Nahifold Length Manifold Distributing Valve Mode	Manifold Line State Lift to Manifold Transport Pipe Class/Schedule
Free See Self-english Controlled Controlled Self-english Self-engli	The second of the second secon
 In the control of the c	■ Case Calling は ないことないたい 17日 アロディ サブジン アプリン ちょうごうきり ラブ・ とりご 行学 (2011)

Pu ap Selection for a Pressurized System

_ Inj Parameters —————		
Orllice Size	1/8	Inches
Residual Head at Last Orifice	2.0	feet
Orifice Spacing	3.00	feet
Number of Laterals per Cell	6	•
Lateral Length	65.0	feet
Lateral Line Size	2.00	Inches
Lateral Pipe Class/Schedule	40	
Distributing Valve Model	None	
Manifold Length	18.0	feet
Manifold Line Size	2.00	Inches
Manifold Pipe Class/Schedule	40	
Lift to Manifold	12.2	feet
Transport Length	122.0	feet
Transport Line Size	2.00	Inches
Transport Pipe Class/Schedule	40	
Discharge Assembly Size	2.00	Inches
Flow Meter	None	Inches
'Add-on' Friction Losses	0.0	feet
<u> </u>		

Ct. ulations		
Minimum Flow Rate per Orlfice	0.27	gpm
Number of Orlices per Zone	132	
Total Actual Flow Rate	36.2	gpm
Number of Lines per Zone	6	
% Flow Differential 1st and Last Orifice	0.4	%
Lift to Manifold	12.2	feet
Residual Head at Last Orifice	20	feet
Head Loss in Laterals	0.0	feet
ad Loss Through Distributing Valve	0.0	feet
Head Loss in Manifold	0.1	feel
Head Loss In Transport Pipe	2.7	feet
Head Loss Through Discharge	2.6	feet
Head Loss Through Flow Meter	0.0	feet
'Add-on' Friction Losses	0,0	feet
Total Flow Rate	36.2 ç	
TDH	19.6 f	eet





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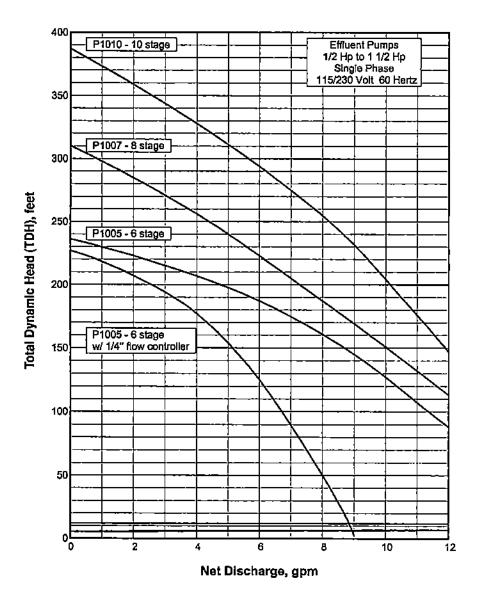
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Input Parameters	anda. Minara	4 <u>, - 1, 500</u> 3, 17, 4 , 61	Calculation		Size Pump For
Ortfice Size	1/8	Inches	Minimum Flow Rate per Orific	0.27 gpm	Design Flow Rate: 37.3 gpm
Residual Réad at Last Orifice	2.0 -	feet	Number of Orlices per Zon	136	Total Dynamic Hear 11.8 feet
Orifice Spacing	2.5	feet	Total Flow Rate per Zone	37.3 gpm	
Number of Laterals per Cel	COLUMN TANK	1	Number of Laterals per-Zone:	4	
Lateral Length	B3.0) feet	% Flow Differential 1st and Last	1.3 %	Pressure head desired at most distant orifice in distribution lateral. Typical
Lateral Pipe Class/Schedule	40 <u>*</u>				values range from 1 foot to 5 feet depending upon orifice size.
Lateral Line Size	2.00 👱] Inches	Static Heads		
Distributing:Valve Mode	None 🔄		Lift to Manifold	5.3 feet	
Manifold Length	14.0) reet	Residual Head at Last Orlfice	2.0 feet	
Manifold Pipe Class/Scheduk	40 👱				
Manlfold Line Size	200 🚡	inches	Frictional Head Losses	7 to 1 to	
Lift to Manifold	5.3	feet	Head Loss In Laterak	0.1 (eet	Ealcutate
- Transport-Length	68.0	feet =	Head Loss-through Distributing Valvi-	0.0 reet	Control of the contro
Transport Pipe Class/Schedule	40 📓		Head Coss in Manifold	0.1 reec	
Transport Line Size	200 😤	Inches	Head Loss In Transport Pipe	1.6 reet	Generate Chart
Discharge Assembly Size	2.00 🕃	inches	Head Loss through Discharge	2.8 feet	
Ji Flow Meter	None 🔻	Inches:	Head Loss Urrough: Flow	0.0 feet	
'Add-on' Friction Losset	0.0	feet	Add-on Friction Losse	0.0 feet	
THE PROPERTY OF THE PROPERTY O					

Pump Selection for a Pressurized System

_ Input Parameters ————		
Orifice Size	1/8	Inches
Residual Head at Last Orifice	2.0	feet
Orlfice Spacing	2,5	feet
Number of Laterals per Cell	4	
Lateral Length	83.0	feet
Lateral Line Size	2.00	Inches
Lateral Pipe Class/Schedule	40	
Distributing Valve Model	None	
Manifold Length	14.0	feet
Manifold Line Size	2.00	Inches
Manifold Pipe Class/Schedule	40	
Lift to Manifold	5.3	feet
Transport Length	68.0	feet
Transport Line Size	2,00	Inches
Transport Pipe Class/Schedule	40	
Discharge Assembly Size	2.00	Inches
Flow Meter	None	Inches
'Add-on' Friction Losses	0.0	feet

zulations —		
Minimum Flow Rate per Orifice	0.27	gpm
Number of Orlfices per Zone	136	
Total Actual Flow Rate	37.3	gpm
Number of Lines per Zone	4	
Flow Differential 1st and Last Orifice	1.3	%
Lift to Manifold	5.3	feet
Residual Head at Last Orifice	2.0	feet
Head Loss in Laterals	0.1	feet
ead Loss Through Distributing Valve	0.0	feet
Head Loss in Manifold	0.1	feet
Head Loss In Transport Pipe	1.6	feet
Head Loss Through Discharge	2.8	feet
Head Loss Through Flow Meter	0.0	feet
'Add-on' Friction Losses	0.0	feet
Total Flow Rate	272	
	37.3(11.8(gþiu





Orenco Systems* Incorporated

814 AIRWAY AVENUE

SUTHERUN, OREGON

97479-9012

TELEPHONE:

(541) 459-4449

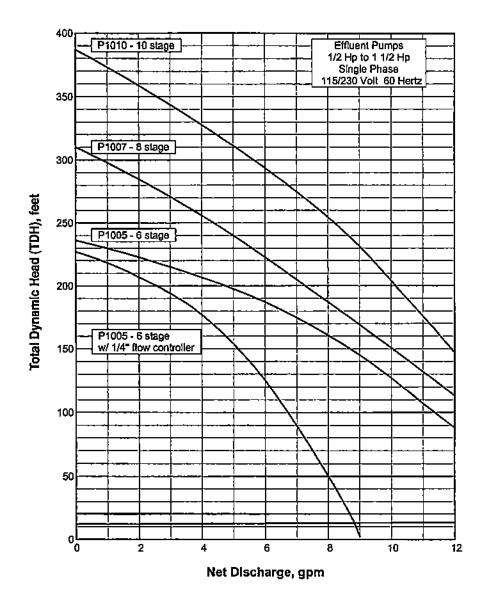
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		In put Pariameters Orifice Size Residual Head at Last Orifice Provide Spacing Number of Laterals per Cel Lateral Length Lateral Pipe Class/Schedule Lateral Une Size Distributing Valve Mode Manifold Pipe Class/Schedule
	Manifold Une Size Lift to Manifold Transport Length Transport Line Size port Ripe Class/Schedule Transport Line Size Disdiarge Assembly Size Disdiarge Assembly Line Flow Meter Add-on Friction Lossee	Portresize Onfice-Size esidual:Head at Last Office Confice-Spacing Number of Lateral Length Lateral Proc Class/Schedule Lateral Une Size Lateral Une Size Distributing Valve Mode Manifold Length
	المتحدث والمتحد والمتحدد	28 1 4 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5 1 5
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	inches	feet feet feet
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	Frictionel Head Losses Head Loss through Distributing Valve Head Loss through Distributing Valve Head Loss in Transport Properties Head Loss through Distribution Head Loss through Distribution Add on Friction Losses	Celculetion Minimum How Rate per Orific Number of Orifices per Zone Total Flow Rate per Zone Number of Laterals per Zone Number of Orifices Residual Head at Laterals per Zone
	nell-Head Loss in Lateral Head Loss in Manifor Head Loss in Manifor Head Loss in Transport Pro Head Loss through Discharge Head Loss through Discharge Head Loss through Discharge Add on Friction Losse	liation Minimum How Rate; per 20nf. Number of Orifices per 20nf. Total Flow Rate per 20nf. Number of Laterals per 20nf. Flow Differential 1st and Last Flow Differential 1st and Last Heads Lift w Manifold. Residual Head at Last Orifice
	end Losses Head Loss in Lateral Head Loss in Manifot ugh Distributing Valv Head Loss in Manifot Oss in Transport Pricioss in Transport Pricioss through Distribution ad Loss through Distribution add-on Friction Losses dd-on Friction Losses	Rate per Oiffices per Zone. Rate per Zone. Rate per Zone. Iterials per
	0.0 0.0 0.0 0.0 0.0 0.0 0.0 0.0	0.19 276 276 53.5 12 0.5
		6 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
	Calculate Circulate Chall Congressed Chall	Size Pump For Design flow Rate 53.5 gpm Total Dynamic Head 20.5 feet The total of any losses mot already accounted for above
	Calculate Concrete Chail	
		53.5 gpm 20.5 fger moralizatory
		3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1

Pump Selection for a Pressurized System

r In∈at Parameters		
Orifice Size	1/8	Inches
Residual Head at Last Orifice	1.0	feet
Orifice Spacing	3.00	feet
Number of Laterals per Cell	12	
Lateral Length	67.0	feet
Lateral Line Size	2.00	Inches
Lateral Pipe Class/Schedule	40	
Distributing Valve Model	None	
Manifold Length	18.0	feet
Manifold Line Size	2.00	Inches
Manifold Pipe Class/Schedule	40	
Lift to Manifold	12,0	feet
Transport Length	225.0	feet
Transport Line Size	3.00	Inches
Transport Pipe Class/Schedule	40	
Discharge Assembly Size	2.00	Inches
Flow Meter	None	Inches
'Add-on' Friction Losses	0.0	feet

Calculations		
Minimum Flow Rate per Orifice	0.19	gpm
Number of Orifices per Zone	276	
Total Actual Flow Rate	53.5	gpm
Number of Lines per Zone	12	
9 Flow Differential 1st and Last Orifice	0.5	%
Lift to Manifold	12.0	feet
Residual Head at Last Orifice	1.0	feet
Head Loss In Laterals	0.0	feet
⊸ead Loss Through Distributing Valve	0.0	feet
Head Loss in Manifold	0.2	feet
Head Loss In Transport Pipe	1.5	feet
Head Loss Through Discharge	5.7	feet
Head Loss Through Flow Meter	0.0	feet
'Add-on' Friction Losses	0.0	feet
Total Flow Rate	53.5	mqp
TDH	20.5	





814 AIRWAY AVENUE

SUTHERUN, OREGON

97479-9012

TELEPHONE:

(541) 459-4449

FACSIMILE:

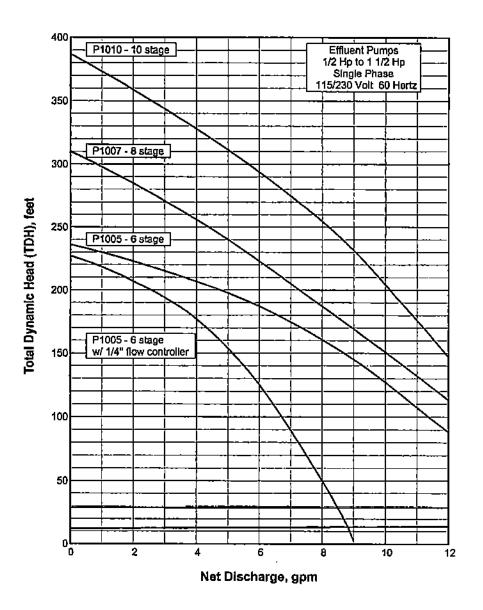
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Input Parameters	Ž	74:-1	7	Calculation			-Size Pump For-
Orifice Size	1/8		Inches	Minimum Flow Rate per Orific	0.27	gpm	Design Flow Rate 75.6 gpi
Residual Head at Last Orlfice	2.0	Σ	feet	Number of Orifices per Zonu	276		Total Dynamic Hear 28.7 fee
Orlfice Spacing	3.00	<u>.</u>	feet	Total Flow Rate per Zone	75.6	gpm.	
Number of Laterals per Cel		12		Number of Laterals per Zone	12		Pressure head desired at most distar
Lateral Length		67.0	feet	% Flow Differential 1st and Last	0.5	.%	orifice in distribution lateral. Typical
Lateral Pipe Class/Schedule	40	×					values range from 1 foot to 5 feet depending upon orifice size:
Lateral Line Size	2.00	₹	Inches	Static Heads			
Distributing Valve Mode	None			Lift-to Manifold	12.0	feet	
Manifold Length	· · · : · ,	18.0	feet	Residual Head at Last Onfice	20	ſeet	
Manifold Pipe Class/Scheduk	40	<u>.</u>			<u>박 (각 한))</u> (2) 왕(() () () () 왕(()	2002 D	
Manifold Line Size	200		inches.	Frictional Head Losses	<u>11 86.</u> 35 48.		
Lift to Manifold		12.0	feet	Head Loss in Laterale	0.0	feet	Calculate
Transport Length	seg in	225.0	feet	Head Loss through Distributing Valve	0.0	feet	
ansport Pipe Class/Schedulε	40	3		Head Loss In Manifold	0.4	feet	
fransport Line Size	·	2	inches	Head Loss in Transport Pipe	2.8	feet	Generale Chait
Discharge Assembly Size		<u> ,, </u>	Inches	Head Loss through Discharge	11.4	feet	
Flow Meter	None		inches	Head Loss through Flow	0.0	feet	
'Add-on' Friction Losses	3133.51 3133.51	0.0	feet :	Add-on Friction Losser	0.0	feet	

Pump Selection for a Pressurized System

1/8	Inches
2.0	feet
.00	feet
12	
7.0	feet
.00	Inches
40	
ОΠΘ	
8.0	feet
.00	Inches
40	
2.0	feet
5.0	feet
.00	Inches
40	
.00	Inches
ne	Inches
0.0	feet
	2.0 .00 12 7.0 .00 40 .00 40 2.0 40 .00 40

-C. culations		
Minimum Flow Rate per Orifice	0.27	gpm
Number of Orifices per Zone	276	
Total Actual Flow Rate	75.6	gpm
Number of Lines per Zone	12	
 Flow Differential 1st and Last Orifice 	0.5	%
Lift to Manifold	12.0	feet
Residual Head at Last Orifice	2.0	feet
Head Loss in Laterals	0.0	feet
ead Loss Through Distributing Valve	0.0	feet
Head Loss in Manifold	0,4	feet
Head Loss in Transport Pipe	2.8	feet
Head Loss Through Discharge	11.4	feet
Head Loss Through Flow Meter	0.0	feet
'Add-on' Friction Losses	0.0	feet
Total Flow Rate TDH	75.6 g 28.7 f	••





Orenco Systems* Incorporated

814 AIRWAY AVENUE

SUTHERLIN, OREGON

97479-9012

TELEPHONE

(541) 459-4449

FACSIMILE:

MULTI-FLO

of the sewage water And hadke to the digitality. In the digitality, lightweight constant of early in any location, even those will lighting factors.

But most of all Multi-Flo offers the highest quality of any wastewater treatment system in its class. It is simply the best.

Clean, Odorless **Effluent**

A unique feature of the Multi-Flo System. is that the entire process taxes place in a single tank, Multi-Flo has been Tested and Certified under ANSI/NSF Standard 40 as a Class I System — the Highest Rating, Because of the high degree of treatment, the Multi-Fig. effluent is allowed by some states and local agencies for surface discharge as well as recycle and irrigation use.

Founded in 1970, Multi-Flo has set the standard in wastewater treatment. From the day of its inception, Multi-Flo was developed with the highest efficiency - consequently we have never had to chance to meet standards required by NSF International (NSF). Initially tested by NSF in 1973, again in 1981, and most recently in 1991, we have always maintained those high standards to guarantee a Class I rating.

Multi-Fig has sold thousands of units across the country. This success is due not only to the outstanding product, but also to the people involved with Multi-Flo. We take. price in our product and stand behind it. Multi-Flo is a company built on reputation. We are committed to our product; our :: customers, and the environment.







Five Stress 500, 600, 760, 1000, and 1500 gallons per day.

Electrical Regularements 120 volts/2,8 amps single phase 60 cycle





MULTI-FLO

Cule to Operation

(i) is so can describe that your open and so can describe that you may be so can describe the control of th mounted sensions and subpliery compressors which must be located in or near the flores.

Low Operating Cost

This newly redesigned serator costs only a · few cents a day to operate. This is less than the cost to operate most common household acelloness.

No Owner Maintenance

Although periodic, routing maintenance is nocessary to insure continuous, iroubin-free operation, all service is provided by local factory-trained representatives. The Multi-Fle alarm system alone the homeowner of any pending problem.

Low Installation Cost

The lightweight, single tank design allows for simple installation without the need for heavy, exponsive equipment. The durable fiberglass tank can be transported in a pick-up truck.

Minimal Space Requirements

The Multi-File requires only a small space (opproximately 6 in diameter) for installation, in addition, deponding on local and state regulations, it may be parmisable to reduce normal drainfield sizing requirements or to discharge the affluent (with disklection) directly to an approved incoming stream. CHECK WITH YOUR STATE, COUNTY, OR LOCAL REQUESTORY OF F) CAL TO DETERMINE IF SUCH REDUCTIONS ARE PERMITTED:

Eary Access for Service.

The low porter id allows in median access bits to all of the Multi-Floromponents-Alloressessy inspection and malmonance can bit do in quickly and maily without dioping up 1 to year of a concernor, because a prevent that place of the more into the unit.

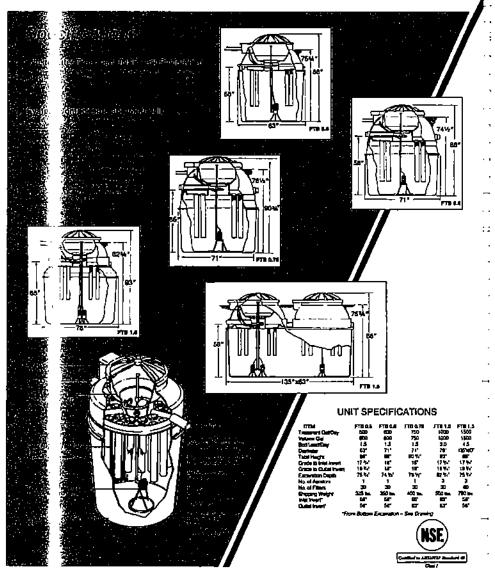
Several Plant Sizes Available

Multi, No previous hearts, notificial mathemati-plant capacities (500, 500, 750, 7000 and 1500 palane portal) (GRO). The allowards proper-string of the plant based upon actual (or) emicipated) sewage flows.

NSF Tested and Certified Class I System

Multi-Fio has achieved the blohest performance rating from the NSF. Based upon their leating results, the Multi-Flo is one of the most afficient treatment plants in the market.

N. ULTI-FLO



MULTI-FLO

Telepoliteinen sapi Tilleranamanni Telepoliteinen var Handelanden en en Repoliteinen all Misser News

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Jan Karantin (1966) and Spirit

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Simply The Best

MUL: •FLO 1501 Commerce Center Drive • Franklin, Ohio 45005 • 513/746-2727 • Fax513/746-1446

Rich Courtemanche stated units 21-24 could be shifted to make the 100-foot buffer between the property lines. He further stated there is a septic site in the northwest quarter. The septic site would have to be cleared of vegetation.

Dale Jesser asked if the Fire Department had been notified.

Rich Courtemanche stated yes, the Fire Department had been notified.

Mr. Gillem stated the Fire Chief's only concern was that the project has an access for the trucks. He further stated there is a pond on the property.

Dave Jesser stated the value of his property had not been discussed. He further stated once the project is completed no one would want to buy is property.

The chair asked the Board if they would like to discuss this issue. She further stated public testimony is closed.

Kathy Galliger stated the findings of fact would address Mr. Jesser's concerns.

The chair called for a motion.

Mike Murphy made a motion to approve with 6 conditions.

The chair called for the FINDINGS OF FACT:

1. The requested use will not be injurious to the use and enjoyment of the environment or of other property in the immediate vicinity, nor diminish substantially, nor impair property values within the surrounding neighborhood.

Nancy Eddy	Kathy Galliger	Bill Renstrom	Mike Murphy
Yes, the density is less than what would be allowed. The project would be controlled.	Yes, based on the site visit and testimony provided. The covenants indicate the project would be single family owned dwellings.	Absent	Yes

The requested use will not increase local or state expenditures in relation to costs of servicing or maintaining neighboring properties.

Nancy Eddy	Kathy Galliger	Bill Renstrom	Mike Murphy
Yes	Yes, based on	Absent	Yes
	testimony.	<u> </u>	

 The location and character of the requested use are considered to be consistent with a desirable pattern of development for the locality in general.

Nancy Eddy	Kathy Galliger	Bill Renstrom	Mike Murphy
Yes	Yes, based on testimony provided that the units would be single family owned.	Absent	Yes
	Lowined.	<u></u>	

4. The requested use conforms to the comprehensive land use for the County.

Yes, requested use is allowed as a Conditional Use Permit.

5. Proper notice has been given to those people required under Minnesota Statutes, Chapter 394, of the propose requested use and of the hearing planned before the planning commission.

Yes

6. That other applicable requirements of this ordinance, or other ordinances of the County have been met.

Nancy Eddy	Kathy Galliger	Bill Renstrom	Mike Murphy
Yes	Yes	Absent	Yes

7. The requested use is not injurious to the public health, safety and general welfare.

Nancy Eddy	Kathy Galliger	Bill Renstrom	Mike Murphy
Yes	Yes, based on	Absent	Yes
	testimony.		

The chair called for a second. Kathy Galliger supported the motion The chair called the question. Motion carried unanimously **3.0** to approve with **6 conditions**.

- 1. Downward directed lighting required.
- 2. 150 foot building setback from Tributary Stream maintained.
- 3. 100-foot natural vegetated buffer to be managed to maintain vegetation to the North, West and East property lines, excluding the road.
- 4. Constructed as proposed.
- 5. An erosion control plan is established between the buildings and Otterbelly pond from the Soil and Water Conservation District.

6. Must adhere to all Local, State and Federal rules.

Mr. Gillem signed the Notice of Decision.

The chair called for a motion to approve the March 18, 2002 minutes as submitted.

Nancy Eddy moved to approve the March 18, 2002 minutes. Mike Murphy seconded the motion. Kathy Galliger was absent the March 18, 2002 Planning Commission meeting. The chair called the question. Motion carried unanimously 2.0 to approve the March 18, 2002 minutes.

Kathy Galliger moved to adjourn. Mike Murphy seconded the motion. The chair called the question. Motion carried unanimously **3.0** to adjourn.

Meeting adjourned at 5:30 p.m.

Respectfully submitted,

Missy Kingsley Secretary/Clerk

Last Revision:

April 30, 2002

Approved:

May 20, 2002

AITKIN COUNTY CERTIFICATE OF COMPLIANCE/NOTICE OF NONCOMPLIANCE

This certificate of compliance/notice of noncompliance has been issued this 23
day of September Zon3to certify compliance\noncompliance with
Aitkin County's Individual Sewage Treatment System and Wastewater Ordinance No.
The premises covered by this certificate are legally described as:
SE SW
Section 33 Township 47 Range Z6 Lake Tributary
PERMIT NO. 30675 Owner Name
Address 37769 - Dove St., Altkin MN 56431
Incialiat Name 14 () 83
Type of System Inspected "Other "performance based pressure be w/ aerobic tanks
w/aerobic tanks
The certificate of compliance/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 4.21 C.
Of Aitkin County's Individual Sewage Treatment System and Wastewater
Ordinance No. 1.
If the above permitted individual sewage treatment system is in noncompliance with
Aitkin County's Individual Sewage Treatment System and Wastewater Ordinance No.
1, then the following shall serve as a Notice of Violation:
Statement of the findings of fact through inspections or
investigations:
List of specific violations of Ordinance:
Requirements for correction or removal of violations:
4) Time schedule for compliance:
Failure to correct or remove the above violations 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, fine's and/or
imprisonment.
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NSPECTOR SIGNATURE Sulf prustamanch
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AITKIN COUNTY ENVIRONMENTAL SERVICES-PLANNING & ZONING

209 Second Street, NW Aitkin, Minnesota 56431

PH: (218) 927-7342 FX: (218) 927-4372



November 10, 2003

RE: Septic System, permit #30675

LOWELL & KATHLEEN GILLEM 37704 DOVE ST AITKIN MN 56431

To Whom It May Concern:

Our office inspected the installation of your septic system on August 21, 2003. During that inspection the following inconsistencies with your Operating Permit and State Septic Codes were observed:

- 1) A water meter needs to be installed and water usage recorded on a monthly basis
- 2) Septic system needs electrical hookup

Therefore, your septic system has not received a Certificate of Compliance. Our office has received no correspondence from your septic installer or you regarding the water meter installation.

The use of your septic system is conditional under a valid Operating Permit and the septic is not in compliance without the water meter. It is requested that you submit documentation of the water meter installation within 30 days of receipt of this letter. Without this documentation a Compliance Certificate can not be issued and your septic system will be deemed <u>not in compliance</u>. Please submit the requested documentation or contact our office at your earliest convenience. I appreciate your anticipated assistance in bringing your septic into compliance.

Sincerely,

Richard Courtemanche

Assistant Zoning Administrator

Aitkin County

INDIVIDUAL SEWAGE TREATMENT SYSTEM INSPECTION FORM AITKIN COUNTY, MINNESOTA

ATTURE GOOK!	
Township Spencer Date of Insp	pection $9/3/03$ Permit Number 30675
owner Lowell Gillem CA	Parcel Number 31-1-083600
Project Address S & 1/4 SW 1/4 , Sec	0.0
Project Address SE14 SW14 JEC	33 Installer KoM
city ANN zip Code 56	143) New X Repair
0 11.	
Building 6 Septic	DIST. or DROP BOX & TYPE
SETBACKS:	TRENCHES, BEDS, OR GRAVELLESS LEACHFIELD:
Buildings to tank(s)	Trench depth 8-10"
Buildings to drainfield	Trench length 133
Well(s) 50' or 100'	Trench bottom width 10
Lake/Creek/WetlandNONe	Trench bottom level
SEPTIC TANKS:	Trench spacing
Liquid capacity 1650	Drainfield rock below pipe 9"
Manufacturer & type Banevly Cement Champor	Size of gravelless pipe
Type of baffle Fibera Yack	Depth of backfill
Inspection pipes 3@44V	Absorption area: square feet 1.333
Manholes access Q Q Q U"	lineal feet 1233
No. & height of risers	
No. & height of risers 10/37 MOUNDS: 26 253 Liberty /3 HP	PUMPS:
Percent slope	Tank capacity
Upslope dike width	Tank manufacturer & type Bouerly
Downslope dike width	No. & height of risers 10 36 26
Sideslope dike width	Pump manufacturer & model# 20 4 herty 283
Drainfield rock below pipe 9 "	Horsepower & GPM /a H /
Depth of sand below rock	Feet of head 14
Perforation size & spacing 1/8" 036"	Cycles per day 9
Pipe size & spacing 2"C33"	Gallons per cycle 0.5 qq
Dimensions of rock bed 10 X 133	Size of discharge line 2"
Dimensions of sand base	Type of electrical hookup OUSING POST (Khombus)
Final cover	Type & location of alarm in mutil four eleccontrol
DRAWING OF SYSTEM	Cycle counter (commercial) 1 kg
	end Rhompus, con (X) Solt 14
Soil Pit Log / Herough	w I I
0-6" tossil 1 com)
Due 34 Jane	111 / 11 1 1 5 7
0-6" topsoil Loam 104R3/2 Loose 0	1 (
6-24" Loany sand	RT)
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24-30 Sand Loose 1 0 1	/ ELL III
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30-46" med stud	, /
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1007e 50}	// //!!// ` / 🏏
House	
Inspector's Comments Sugstantial In Sugar	ow,
Cover of insulate drainGeld	
	·
Corrective Action Required	
Inspector's Signature	lystaller's Signature AM Cah
White-County Yellow-A	
U William Callette	THE RESERVE OF THE PROPERTY.

30675 31-1-08360C AITKIN COUNTY ENVIRONMENTAL SERVICES-PLANNING & ZONING

909 Second Street NW

209 Second Street, NW Aitkin, Minnesota 56431

PH: (218) 927-7342 FX: (218) 927-4372



June 2, 2005

RE: Renewed Operating Permit

To Whom It May Concern:

This letter is to inform you that your Operating Permit (No. 119__) has been renewed until May 31, 200 (a). You should note that all renewal dates that were formerly on December 31 have been moved forward to allow your Operation and Maintenance provider suitable time to complete the monitoring report.

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 Operation and Maintenance provider directly with questions that you may have during the year.

Sincerely

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

Richard Courtemanche

Assistant Zoning Administrator

Aitkin County

Rct 6639

AITKIN COUNTY ENVIRONMENTAL SERVICES

OPERATING PERMIT FOR WASTEWATER TREATMENT AND DISPERSAL

OPERATING PERMIT #:

119

FEE: \$50.00

PERMITTEE:

Lowell & Kathleen Gillem

PHONE:

(218) 927-4974

ADDRESS: 37704 Dove Street

Aitkin, MN 56431-

31-1-083600

ZONING PERMIT # 30675

PARCEL #: 31-0-066201_

LEGALDESCRIPTION:

That Portion North of Co. Rd. 17 in SE 1/4 of SW 1/4, Sec 33 Twsp 47.

ISSUE DATE

1/ 1/05

EXPIRATION DATE

A. 6639

12/31/05

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

ermitting Authority

5/10/05 Date 5-00-05

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.

A. DESCRIPTION OF WASTEWATER TREATMENT AND DISPERSAL SYSTEM

Planned Community Development will utilize Multi-Flo Aerobic treatment plants to pretreatwaste. Pressure beds will be used for disposal. Effluent will flow by gravity into trash traps (pretanks). From there it will be time dosed into the aerobic treatment plants, then gravity flow to pump tanks and be dosed to the fields. Sized for 48 bedrooms (4,800 gallons per day). Anticipated System life (25-40 years). Operational Cost = 450/mo. Monitoring and Servicing = First year - no charge, \$150/yr for 750 gpd units, \$300/yr for 1,500 gpd units {Total \$900}. Testing = \$900 first year then \$450/yr for 2 years.

B. PERFORMANCE STANDARD REQUIREMENTS:

During the period beginning on the effective date (issuance date) of this permit and lasting until this permits expiration date, the Permittee is authorized to discharge from the wastewater treatment unit to subsurface dispersal. No surface discharge is permitted. The following parameters must be monitored and the reuslts must be found within the compliance limits.

PARAMETER	COMPLIANCE LIMIT	SAMPLE LOCATION	SAMPLE FREQUENCY	SAMPLE TYPE	REPORTING FREQUENCY
BOD5	75 mg/l	Aerobic Tank Effluent	EVERY 6 MONTHS	Grab	ANNUALLY
Fats, Oil and Greases	< 30 mg/l	Aerobic Tank Effluent	EVERY 6 MONTHS	Grab	ANNUALLY
Fecal Coliform	<2,500 cfu/100 ml	Aerobic Tank Effluent	EVERY 6 MONTHS	Grab	ANNUALLY
Flow	4,800 gpd	Water Meter	EVERY 6 MONTHS	Record on Log Sheet	ANNUALLY
TSS	22 mg/l	Aerobic Tank Effluent	EVERY 6 MONTHS	Grab	ANNUALLY

C. MAINTENANCE REQUIREMENTS:

LOCATION	FREQUENCY	
Aerobic Tank	ANNUAL	
Water Meter	MONTHLY	
Pump Chamber	ANNUAL	
Septic tank(s)	ANNUAL	
Dispersal System	ANNUAL	
	Aerobic Tank Water Meter Pump Chamber Septic tank(s)	Aerobic Tank Water Meter MONTHLY Pump Chamber ANNUAL Septic tank(s) ANNUAL

D. MONITORING AND REPORTING REQUIREMENTS:

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

> Aitkin County Environmental Services 209 2nd Street NW 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 the testing and shall be performed by a Minnesota Department of Health approved laboratory. All sampling and testing costs shall be the responibility of the Permittee.

Monitoring will be done by Eric Larson

E. MITIGATION PLAN:

If surfacing should occur: reduce water use, increase absorption and distribution area. Waste strength: if fecals exceed limit, add disinfection or increase separation. If BOD, TSS, or FOG exceed limit, reduce effluent strength. Reserve sites available for replacemnt systems.

F. SPECIAL REQUIREMENTS:

* A WATER METER MUST BE INSTALLED BEFORE COMPLIANCE CERTIFICATE CAN BE ISSUED **



Septic Check,™ Inc.

Septic System Management Services

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

RE: Operating Permit for Parcel #31-0-066201

Lowell & Kathleen Gillem The Woods at Otterbelly 37704 Dove Street Aitkin, MN 56431

Parameter	Compliance Limit	Actual
I alamotol	Computation Limit	1 70000

Fecal <2500 CFU/100ml No test in 2004 because system use began late fall.

Daily Flow 800 GPD 47 GPD (Sept - Dec 13)

Eric Larson Lic 2624 Lowell Gillem

well Colle

Septic Check, Inc.

AITKIN COUNTY ENVIRONMENTAL SERVICES

209 SECOND STREET NW AITKIN, MN 56431 218-927-7250

Wednesday, March 15, 2006

Lowell & Kathleen Gillem

Re: Operating Permit #: 119

37704 Dove Street

Parcel Identification #: 31-1-083600

Aitkin, MN 56431-

Dear Resident:

This letter is to remind you that the Operating Permit for the septic system on the above listed parcel of land will expire on May 31, 2006. The operating permit (OP) was issued as a MN Pollution Control Agency requirement to allow the installation of your septic system and must be renewed annually until the County and your Compliance Inspector agree that the system is being properly maintained and is operating appropriately. As a condition of the OP, your septic system must be monitored for the following performance standards:

PARAMETER	COMPLIANCE LIMIT	SAMPLE LOCATION	SAMPLE FREQUENCY	SAMPLE TYPE	REPORTING FREQUENCY
BOD5	75 MG/L	AEROBIC TANK EFFLUENT	EVERY 6 MONTHS	GRAB	ANNUALLY
FATS, OIL AND GREASES	< 30 MG/L	AEROBIC TANK EFFLUENT	EVERY 6 MONTHS	GRAB	ANNUALLY
FECAL COLIFORM	<2,500 CFU/100 ML	AEROBIC TANK EFFLUENT	EVERY 6 MONTHS	GRAB	ANNUALLY
FLOW	4,800 GPD	WATER METER	EVERY 6 MONTHS	RECORD ON LOG SHEET	ANNUALLY
TSS	22 MG/L	AEROBIC TANK EFFLUENT	EVERY 6 MONTHS	GRAB	ANNUALLY
L		<u> </u>			

In addition, the following maintenance practices must be performed:

PARAMETER	LOCATION	FREQUENCY	
Aerobic Tank Function	Aerobic Tank	ANNUAL	
Flow	Water Meter	MONTHLY	
Pumps, Floats & Alarms	Pump Chamber	ANNUAL	
Solids Removal & Water Tightness	Septic tank(s)	ANNUAL	
Vegetative Cover	Dispersal System	ANNUAL	,

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 high performance of the system. Failure to perform the monitoring and maintenance of this system could cause costly repairs or replacement and is a violation of the Aitkin County Individual Sewage Treatment System and Wastewater Ordinance.

A copy of this letter will be sent to Eric Larson

AITKIN COUNTY ENVIRONMENTAL SERVICES

OPERATING PERMIT FOR WASTEWATER TREATMENT AND DISPERSAL

\$50.00

OPERATING PERMIT #: 119

PERMITTEE: Lowell & Kathleen Gillem PHONE: (218) 927-4974

ADDRESS: 37704 Dove Street

Aitkin, MN 56431-

ZONING PERMIT # 30675 **PARCEL #**: 31-1-083600

LEGALDESCRIPTION: That Portion North of Co. Rd. 17 in SE 1/4 of SW 1/4, Sec 33 Twsp 47,

ISSUE DATE 5/31/2006 **EXPIRATION DATE** 5/31/2007

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	5/4/86 Date
Signature of Permitting Authority	Date

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.

A. DESCRIPTION OF WASTEWATER TREATMENT AND DISPERSAL SYSTEM

Planned Community Development will utilize Multi-Flo Aerobic treatment plants to pretreatwaste. Pressure beds will be used for disposal. Effluent will flow by gravity into trash traps (pretanks). From there it will be time dosed into the aerobic treatment plants, then gravity flow to pump tanks and be dosed to the fields. Sized for 48 bedrooms (4,800 gallons per day). Anticipated System life (25-40 years). Operational Cost = 450/mo. Monitoring and Servicing = First year - no charge, \$150/yr for 750 gpd units, \$300/yr for 1,500 gpd units {Total \$900}. Testing = \$900 first year then \$450/yr for 2 years.

B. PERFORMANCE STANDARD REQUIREMENTS:

During the period beginning on the effective date (issuance date) of this permit and lasting until this permits expiration date, the Permittee is authorized to discharge from the wastewater treatment unit to subsurface dispersal. No surface discharge is permitted. The following parameters must be monitored and the reuslts must be found within the compliance limits.

PARAMETER	COMPLIANCE LIMIT	SAMPLE LOCATION	SAMPLE FREQUENCY	SAMPLE TYPE	REPORTING FREQUENC
BOD5	75 mg/l	Aerobic Tank Effluent	EVERY 6 MONTHS	Grab	ANNUALLY
Fats, Oil and Greases	< 30 mg/l	Aerobic Tank Effluent	EVERY 6 MONTHS	Grab	ANNUALLY
Fecal Coliform	<2,500 cfu/100 ml	Aerobic Tank Effluent	EVERY 6 MONTHS	Grab	ANNUALLY
Flow	4,800 gpd	Water Meter	EVERY 6 MONTHS	Record on Log Sheet	ANNUALLY
TSS	22 mg/l	Aerobic Tank Effluent	EVERY 6 MONTHS	Grab	ANNUALLY

C. MAINTENANCE REQUIREMENTS:

PARAMETER	LOCATION	FREQUENCY	
Aerobic Tank Function	Aerobic Tank	ANNUAL	
Flow	Water Meter	MONTHLY	
Pumps, Floats & Alarms	Pump Chamber	ANNUAL	
Solids Removal & Water Tightness	Septic tank(s)	ANNUAL	
Vegetative Cover	Dispersal System	ANNUAL	

D. MONITORING AND REPORTING REQUIREMENTS:

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

Aitkin County Environmental Services 209 2nd Street NW 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 the testing and shall be performed by a Minnesota Department of Health approved laboratory. All sampling and testing costs shall be the responibility of the Permittee.

Monitoring will be done by Eric Larson

E. MITIGATION PLAN:

If surfacing should occur: reduce water use, increase absorption and distribution area. Waste strength: if fecals exceed limit, add disinfection or increase separation. If BOD, TSS, or FOG exceed limit, reduce effluent strength. Reserve sites available for replacemnt systems.

F. SPECIAL REQUIREMENTS:

* A WATER METER MUST BE INSTALLED BEFORE COMPLIANCE CERTIFICATE CAN BE ISSUED **

Mail To: Otterbelly South System 37760 Dove Street #24

Aitkin, MN

56431

6549 Keystone Rd Milaca, MN 56353

320-983-2447

Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24

Aitkin

PARCEL (APN): 31-0-066201

Use: Residential, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: Multi-Flo Pretreatment & Pressur

Owner: Otterbelly South System

Fold Here

ONSITE SEWAGE SYSTEM INSPECTION REPORT

Inspected: 04/25/2011 - Inspection Type: ROUTINE - Correction Status: No corrections needed

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COMMENTS &	GENERAL INSPECTION NOTES
Vo Deficiencies	Noted

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify ommitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

SERVICE INFORMATION

Company: Septic Check, Inc. Work Performed By: Jared Deboer Submitted 03/01/2012 by: Greg Sokoloski

This report indicates certain characteristics of the onsite sewage system at the time of visit. in no way is this report a guarantee of operation or future performance

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
All required baffles in place (N/A = No baffles required):	YES	
Effluent level within operational limits (if NO explain in comments)	YES	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	11	
Pumping recommended:	NO	
Aerobic Treatment Unit: ATU, Manufacturer= Consolidated Treatment Systems - Multi-Flow FTP-0.75 750 GPD N	Nulti-Flo	
Manufacturer: Consolidated Treatment Systems Model: Multi-Flow FTP-0.75		
This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments)	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash	YES	
compartment):	10.0000	
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic chamber):	YES	
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying	N/A	
chamber):		
Pumping recommended:	NO	
FANK: Pump Tank, Manufacturer= Local Manufacturer - Concrete 1600 Gallon		
Anvix: Fump rank, Manufacturer Local Manufacturer - Concrete 1800 Ganon		
This component was:	Fully Inspected	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Studge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	
Pump: Effluent Pump Primary Pump		
This component was:	Partially Inspected	
Controls functioning:	YES	
Fested gallons per minute flow:	N/A	
CONTRACTOR OF THE PROPERTY OF		100
Pump: Effluent Pump Effluent Pump	Partially Inspected	
This component was:	YES	
Controls functioning:	N/A	
ested gallons per minute flow:	N/A	
Panel: Control - 2 Pumps Multi-Flo Panel	Bodlelly Innected	
This component was:	Partially inspected	_
Panel functioning (including alarm):	YES	
Pump 1: on minutes (override in parentheses - if present):	N/A	
Pump 1: off hours (override in parentheses - if present):	N/A	
Pump 1: gallons per dose (override in parentheses - if present):	N/A	
Pump 1: ETM hours (override in parentheses - if present):	N/A	
Pump 1: Cycle Count (override in parentheses - if present):	22695	
Pump 2: on minutes (override in parentheses - if present):	N/A	
Pump 2: off hours (override in parentheses - if present):	N/A	
Pump 2: gallons per dose (override in parentheses - if present):	N/A	
Pump 2: Cycle Count (override in parentheses - if present):	22690	
Pump 2: ETM hours (override in parentheses - if present):	N/A	
rainfield: Pressure Bed Rockbed 10' X 135' w/3 laterals		
This component was:	Partially Inspected	
	NO	
ateral lines flushed:	NO	
ateral lines flushed: verage squirt height (if performed) (Feet, if other specify):	N/A NO	

Mail To: Otterbelly South System 37760 Dove Street #24

Aitkin, MN

56431

6549 Keystone Rd Milaca, MN 56353 320-983-2447 Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System Location: 37760 Dove St #24

Aitkin

PARCEL (APN): 31-0-066201

Use: Residential, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: Multi-Flo Pretreatment & Pressur

Owner: Otterbelly South System

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ONSITE SEWAGE SYSTEM INSPECTION REPORT

Inspected: 11/17/2011 - Inspection Type: ROUTINE - Correction Status: No corrections needed

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-	COMMENTS	8	GENERAL	INSPECTION	NOTES

No Deficiencies Noted

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify ommitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

SERVICE INFORMATION

Company: Septic Check, Inc. Work Performed By: Greg Sokoloski Submitted 03/01/2012 by: Greg Sokoloski

This report indicates certain characteristics of the onsite sewage system at the time of visit, in no way is this report a guarantee of operation or future performance

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

TANK: Trash Tank, Manufacturer= Local Manufacturer - Concrete 2000 Gallon Manufacturer: Local Manufacturer Model: Concrete		
	Fully Inspected	
This component was:	YES	
All required baffles in place (N/A = No baffles required):	YES	_
Effluent level within operational limits (if NO explain in comments)	0	
Compartment 1 Scum accumulation (Inches, if other specify):	8	
Compartment 1 Sludge accumulation (Inches, if other specify):	NO NO	
Pumping recommended:		
Aerobic Treatment Unit: ATU, Manufacturer= Consolidated Treatment Systems - Multi-Flow FTP-0.75 750 C	SPD Wulti-Fio	
Manufacturer: Consolidated Treatment Systems Model: Multi-Flow FTP-0.75	Fully Inspected	_
This component was:	YES	
Effluent level within operational limits (if NO explain in comments)	YES	_
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Frash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash	152	
compartment):	YES	
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic chamber):	N/A	
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying	IN/A	
chamber):	NO	
Pumping recommended:	NO	
ANK: Pump Tank, Manufacturer= Local Manufacturer - Concrete 1600 Gallon		
lanufacturer: Local Manufacturer Model: Concrete	Fully Inspected	_
his component was:	Pully Inspected	
Compartment 1 Scum accumulation (Inches, if other specify):	6	_
Compartment 1 Sludge accumulation (Inches, if other specify):	YES	_
Pumping recommended:	YES	-
Pump: Effluent Pump Primary Pump		
This component was:	Partially Inspected	
Controls functioning:	YES	
ested gallons per minute flow:	N/A	_
Pump: Effluent Pump Effluent Pump		
This component was:	Partially Inspected	
Controls functioning:	YES	
ested gallons per minute flow:	N/A	
anel: Control - 2 Pumps Multi-Flo Panel		
This component was:	Partially Inspected	
Panel functioning (including alarm):	YES	
Pump 1: on minutes (override in parentheses - if present):	N/A	
Pump 1: off hours (override in parentheses - if present):	N/A	
Pump 1: gallons per dose (override in parentheses - if present):	N/A	
Pump 1: ETM hours (override in parentheses - if present):	N/A	
	21943	
rump 1: Cycle Count (override in parentheses - if present):		
	N/A	
Pump 2: on minutes (override in parentheses - if present):	N/A N/A	
tump 2: on minutes (override in parentheses - if present): tump 2: off hours (override in parentheses - if present):	- 000	
Pump 2: on minutes (override in parentheses - if present): Pump 2: off hours (override in parentheses - if present): Pump 2: gallons per dose (override in parentheses - if present):	N/A	
Pump 2: on minutes (override in parentheses - if present): Pump 2: off hours (override in parentheses - if present): Pump 2: gallons per dose (override in parentheses - if present): Pump 2: Cycle Count (override in parentheses - if present):	N/A N/A	
Pump 1: Cycle Count (override in parentheses - if present): Pump 2: on minutes (override in parentheses - if present): Pump 2: off hours (override in parentheses - if present): Pump 2: gallons per dose (override in parentheses - if present): Pump 2: Cycle Count (override in parentheses - if present): Pump 2: ETM hours (override in parentheses - if present): Pump 2: ETM hours (override in parentheses - if present):	N/A N/A 21938	<i>bo</i>
Pump 2: on minutes (override in parentheses - if present): Pump 2: off hours (override in parentheses - if present): Pump 2: gallons per dose (override in parentheses - if present): Pump 2: Cycle Count (override in parentheses - if present): Pump 2: ETM hours (override in parentheses - if present): Pump 2: ETM hours (override in parentheses - if present): Prainfield: Pressure Bed Rockbed 10' X 135' w/3 laterals	N/A N/A 21938 N/A	
Pump 2: on minutes (override in parentheses - if present): Pump 2: off hours (override in parentheses - if present): Pump 2: gallons per dose (override in parentheses - if present): Pump 2: Cycle Count (override in parentheses - if present): Pump 2: ETM hours (override in parentheses - if present): Prainfield: Pressure Bed Rockbed 10' X 135' w/3 laterals This component was:	N/A N/A 21938	
Pump 2: on minutes (override in parentheses - if present): Pump 2: off hours (override in parentheses - if present): Pump 2: gallons per dose (override in parentheses - if present): Pump 2: Cycle Count (override in parentheses - if present): Pump 2: ETM hours (override in parentheses - if present): Pump 2: ETM hours (override in parentheses - if present): Prainfield: Pressure Bed Rockbed 10' X 135' w/3 laterals	N/A N/A 21938 N/A Partially Inspected	

atkin Co. Envis. Services

RE! Otterbelly Foundomes Zoning Dermet 30675-Operating Permet 119

I called Septer Cherk today as they take care of our Systems I was told all testings are done a have been reported They also said to send 4100 Cherh and it is

Despe Smith Ser Iv. Otterbelly Homeviner assin

Septio Check 1-888-983-2447 att: Eric Lawon on Shelly

AITKIN COUNTY ENVIRONMENTAL SERVICES

AUG 17 2014

OPERATING PERMIT FOR WASTEWATER TREATMENT AND DISPERSAL

OPERATING PERMIT #: 119 FEE:

100

PERMITTEE: Woodlands National Bank Onamia

PHONE: (218) 927-4974

ADDRESS: 424 Main Street, PO BOX

Onamia, MN 56359-

PARCEL #: 31-1-083600

ISSUE DATE: 6/30/2011

RENEW DATE:

5/31/2012

LEGALDESCRIPTION:

ZONING PERMIT # 30675

That Portion North of Co. Rd. 17 in SE 1/4 of SW 1/4, Sec 33 Twsp 47,

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 Sec. Is.

8-15-11 Date 8/23/11

Signature of Permitting Authority

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.

CK# 1264 dated 8/15/11 Receipt 169765 KK from: The Words at Otherbelly Homeowner's Assac.)

AITKIN COUNTY ENVIRONMENTAL SERVICES-PLANNING & ZONING

209 Second Street, NW Aitkin, Minnesota 56431

PH: (218) 927-7342 FX: (218) 927-4372



August 23, 2011

RE: Renewed Operating Permit #119

Parcel 31-1-083600

Dear Woodlands National Bank:

This letter is to inform you Operating Permit (No. _____119__) has been renewed until May 31, 2012.

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 Operation and Maintenance provider 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,
Aitkin County Planning & Zoning

AITKIN COUNTY ENVIRONMENTAL SERVICES OPERATING PERMIT FOR WASTEWATER TREATMENT AND DISPERSAL RENEWAL

ISSUANCE DATE: 5/31/2013 RENEWAL PERIOD: ANNUALLY OPERATING PERMIT #: 119 ZONING PERMIT #: 30675 PARCEL #: 31-1-083601

PERMITTEE: Chester & Dixie Smith

TELEPHONE:

MAILING ADDRESS: 37760 Dove St. #24 Aitkin, MN 56431PROPERTY ADDRESS: 33760 Dove St. Unit 24 Aitkin, MN 56431

LEGAL DESCRIPTION: That Portion North of Co. Rd. 17 in SE 1/4 of SW 1

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 is valid through the renewal period identified above. The Permittee is not authorized to discharge after the renewal period. 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
By Llife Smith, Sew- Treas.

Date 5-3-13

Signature of Permitting Authority

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.

CK# 1335, Receipt 374745, 5/13/13 \$ 100



31-1-083601 00#119 P#30675 12/31/2012

6074 Keystone Rd Milaca, MN 56353

Mail To: Otterbelly South System

Aitkin, MN

56431

37760 Dove Street #24

320-983-2447 Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System Location: 37760 Dove St #24

Aitkin

PARCEL (APN): 31-0-066201

Use: Residential, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: Multi-Flo Pretreatment & Pressur

Owner: Otterbelly South System

Fold Here

ONSITE SEWAGE SYSTEM INSPECTION REPORT

Inspected: 10/30/2012 - Inspection Type: ROUTINE - Correction Status: Corrections in progress

Fold

COMMENTS & GENERAL INSPECTION NOTES

Deficiencies Were Noted: Corrections are in progress.

Replaced aerator alarm cap and aerator vent cap. Both were missing. New support legs will need to be installed on the aerator at the next service visit. The aerator alarm does not work and it is recommended that it be replaced.

Contact Dean at 320-630-3276 with any questions.

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully inspected
Components accessible for service:	YES
All required service performed (if no - specify ommitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

-CEDIMOE	INFORMATIO	A
SPRVILE	INFORMATIO	ľ¥

Company: Septic Check Work Performed By: Dean Nelson Submitted 12/31/2012 by:

Dean Nelson

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

TANK: Trash Tank, Manufacturer= Local Manufacturer - Concrete 2000 Gallon	, 1 to 1 f 1 to 2 to 1 to 2	
Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
All required baffles in place (N/A = No baffles required):	YES	
Effluent level within operational limits (if NO explain in comments)	YES	
Compartment 1 Scum accumulation (Inches, if other specify):	SKIM	
Compartment 1 Sludge accumulation (Inches, if other specify):	12	
Pumping recommended:	NO	
Aerobic Treatment Unit: ATU, Manufacturer= Consolidated Treatment Systems - Multi-Flow FTP-0.75 750 GPD Mu	ılti-Flo	
Annufacturer: Consolidated Treatment Systems Model: Multi-Flow FTP-0.75	14	
This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments)	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	NO	In Progress
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash	YES	
compartment):		
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic chamber):	YES	
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying	YES	
chamber):		1
Pumping recommended:	NO	
ANK: Pump Tank, Manufacturer= Local Manufacturer - Concrete 1600 Gallon	THE RESERVE OF THE PERSON OF	
Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	1	
Pumping recommended:	NO	
Pump: Effluent Pump Primary Pump	PARTY SERVICE	- Transaction
This component was:	Partially Inspected	
Controls functioning:	YES	
Tested gallons per minute flow:	NO	
Pump: Effluent Pump Effluent Pump		
This component was:	Partially Inspected	
Controls functioning:	YES	
Fested gallons per minute flow:	NO.	
Panel: Control - 2 Pumps Multi-Flo Panel		
This component was:	Partially Inspected	-
Panel functioning (including alarm):	YES	
Pump 1: on minutes (override in parentheses - if present):	1 MIN	
Pump 1: off hours (override in parentheses - if present):	0.22 HRS	
Pump 1: gallons per dose (override in parentheses - if present):	N/A	
Pump 1: ETM hours (override in parentheses - if present):	N/A N/A	
Pump 1: Cycle Count (override in parentheses - if present):	24612	
Pump 2: on minutes (override in parentheses - if present):		
Pump 2: off hours (override in parentheses - if present):	1 MIN 0.22 HRS	
Pump 2: gallons per dose (override in parentheses - if present):		
Pump 2: Cycle Count (override in parentheses - if present):	N/A	
ump 2. Gyare Count (override in parentineses - in present);	24608	
Pump 2: ETM hours (override in parentheses - if present):	N/A	
rainfield: Pressure Bed Rockbed 10' X 135' w/3 laterals	# 15 - La 10 10 10 10 10 10 10 10 10 10 10 10 10	and the second
This component was:	Partially Inspected	
ateral lines flushed:	NO	
	AI/A	
Average squirt height (if performed) (Feet, if other specify): Ponding Present:	N/A NO	

SAMPLING REPORT

Y8 10 N. 3

Location: 37760 Dove St #24

Aitkin

31-0-066201

Owner: Otterbelly South System

use: Multi Family

Service Company:

Septic Check

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

10/30/2012sample entered by :Dean Nelson

Notes

ONSITE SEWAGE SYSTEM SAMPLING DETAIL

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Effluent Pump Effluent Pump	Effluent	"Other"	800 GPD	256.5 gpd

Mail To: Otterbelly South System

Aitkin, MN

56431

37760 Dove Street #24

6074 Keystone Rd Milaca, MN 56353 320-983-2447 Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24

Aitkin

PARCEL (APN): 31-0-066201

Use: Residential, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: Multi-Flo Pretreatment & Pressur

Owner: Otterbelly South System

Fold Here

ONSITE SEWAGE SYSTEM INSPECTION REPORT

Inspected: 06/05/2012 - Inspection Type: ROUTINE - Correction Status: No corrections needed

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		22		the same and the same as a single	
-	COMMENTS	R	GENERAL	INSPECTION	NOTES

No Deficiencies Noted

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GENERAL	SILE	ď.	SYSIEM	CONDI	IUNS

[
The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify ommitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

SERVICE	INFORM/	ATION

Company: Septic Check Work Performed By:

Submitted 06/22/2012 by:

Jared Deboer Brian Koski

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

TANK: Trash Tank, Manufacturer= Local Manufacturer - Concrete 2000 Gallon Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Partially Inspected	
All required baffles in place (N/A = No baffles required):	YES	
Effluent level within operational limits (if NO explain in comments)	YES	_
Compartment 1 Scum accumulation (Inches, if other specify):	n/a	
Compartment 1 Sludge accumulation (Inches, if other specify):	n/a	
Pumping recommended:	NO NO	
Aerobic Treatment Unit: ATU, Manufacturer= Consolidated Treatment Systems - Multi-Flow FTP-0.75 750 GPD		
Manufacturer: Consolidated Treatment Systems Model: Multi-Flow FTP-0.75	Walti-Fio	
This component was:	Partially Inspected	
Effluent level within operational limits (if NO explain in comments)	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash	YES	
compartment):	123	
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic chamber):	YES	
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying	YES	
chamber):	163	
Pumping recommended:	NO	
TANK: Pump Tank, Manufacturer= Local Manufacturer - Concrete 1600 Gallon	NO	
Manufacturer: Local Manufacturer Model: Concrete		-8
This component was:	Partially Inspected	
Compartment 1 Scum accumulation (Inches, if other specify):	n/a	
Compartment 1 Sludge accumulation (Inches, if other specify):	n/a	
Pumping recommended:	NO NO	
Pump: Effluent Pump Primary Pump		_
This component was:	Partially Inspected	
Controls functioning	YES	_
Tested gallons per minute flow:	n/a	
Pump: Effluent Pump Effluent Pump	TVa .	-
This component was:	Partially Inspected	
Controls functioning:	YES YES	
Fested gallons per minute flow:	rES c/a	_
Panel: Control - 2 Pumps Multi-Flo Panel	IVa	_
This component was:	Postially becomed	
Panel functioning (including alarm):	Partially Inspected YES	
Pump 1: on minutes (override in parentheses - if present):		
Pump 1: off hours (override in parentheses - if present):	n/a	
Pump 1: gallons per dose (override in parentheses - if present):	n/a	
Pump 1: ETM hours (override in parentheses - if present):	n/a	
	n/a	
Pump 1: Cycle Count (override in parentheses - if present):	106	
Pump 2: on minutes (override in parentheses - if present):	n/a	
Pump 2: off hours (override in parentheses - if present):	n/a	
Pump 2: gallons per dose (override in parentheses - if present):	n/a	
Pump 2: Cycle Count (override in parentheses - if present):	113	
Pump 2: ETM hours (override in parentheses - if present):	n/a	
rainfield: Pressure Bed Rockbed 10' X 135' w/3 laterals		
his component was:	Partially Inspected	
ateral lines flushed:	NO	
Average squirt height (if performed) (Feet, if other specify):	n/a	
Ponding Present:	NO	

AITKIN COUNTY ENVIRONMENTAL SERVICES-PLANNING & ZONING

209 Second Street, NW Room# 100 Aitkin, Minnesota 56431

PH: (218) 927-734 FX: (218) 927-437

5/22/2013

Otterbelly Homeowner's Associati 37760 Dove St. #24 Aitkin, MN 56431Re: Operating Permit # 119
Zoning Permit # 30675
Parcel # 31-1-083601

Dear Permittee:

This letter is to inform you that your Operating Permit has been renewed until 5 /31/2014.

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 Operation and Maintenance provider 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,

Knisti K.

Aitkin County Planning & Zoning

AITKIN COUNTY ENVIRONMENTAL SERVICES

APR 28 2014

OPERATING PERMIT FOR WASTEWATER TREATMENT AND DISPERSAL

OPERATING PERMIT #: 119

ZONING PERMIT #: 30675

PARCEL #: 31-1-083601

PERMITTEE: Otterbelly Homeowner's Association

MAILING ADDRESS: 37760 Dove St. #24

Aitkin, MN 56431-

ORGINAL DATE ISSUED: 6 /30/2011

RENEWAL PERIOD:

RENEWAL EXPIRATION: 5 /31/2014

PROPERTY ADDRESS:

33760 Dove St. Unit 24

Aitkin, MN 56431

TELEPHONE:

LEGAL: That Portion North of Co. Rd. 17 in SE 1/4 of SW 1

FEE PAID: 100

DATE PAID:

RECEIPT:

CK #:

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

Signature of Permittee

Signature of Permitting Authority

4-24-1 Date \$5-2-14

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.

Septice System is taking care of all texts etc. Ripie Ck#1380/Receipt#199122

-pupet of to move to a suear.

A. DESCRIPTION OF WASTEWATER TREATMENT AND DISPERSAL SYSTEM

Planned Community Development will utilize Multi-Flo Aerobic treatment plants to pretreatwaste. Pressure beds will be used for disposal. Effluent will flow by gravity into trash traps (pretanks). From there it will be time dosed into the aerobic treatment plants, then gravity flow to pump tanks and be dosed to the fields. Sized for 48 bedrooms (4,800 gallons per day). Anticipated System life (25-40 years). Operational Cost = 450/mo. Monitoring and Servicing = First year - no charge, \$150/yr for 750 gpd units, \$300/yr for 1,500 gpd units {Total \$900}. Testing = \$900 first year then \$450/yr for 2 years.

B. PERFORMANCE STANDARD REQUIREMENTS:

During the period beginning on the effective date (issuance date) of this permit and lasting until this permit's expiration date, the Permittee is authorized to discharge from the wastewater treatment unit to subsurface dispersal. No surface discharge is permitted. The following parameters must be monitored and the results must be found within the compliance limits.

PARAMETER	COMPLIANCE LIMIT	SAMPLE LOCATION	SAMPLE FREQUENCY	SAMPLE TYPE	REPORTING FREQUENC
Flow	4,800 gpd	Water Meter	EVERY 6 MONTHS	Record on Log Sheet	ANNUALLY
TSS	22 mg/l	Aerobic Tank Effluent	EVERY 6 MONTHS	Grab	ANNUALLY
Fecal Coliform	<2,500 cfu/100 ml	Aerobic Tank Effluent	EVERY 6 MONTHS	Grab	ANNUALLY
Fats, Oil and Greases	< 30 mg/l	Aerobic Tank Effluent	EVERY 6 MONTHS	Grab	ANNUALLY
BOD5	75 mg/l	Aerobic Tank Effluent	EVERY 6 MONTHS	Grab	ANNUALLY

C. MAINTENANCE REQUIREMENTS:

PARAMETER	LOCATION	FREQUENCY
Aerobic Tank Function	Aerobic Tank	ANNUAL
Flow	Water Meter	MONTHLY
Pumps, Floats & Alarms	Pump Chamber	ANNUAL
Solids Removal & Water Tightness	Septic tank(s)	ANNUAL
Vegetative Cover	Dispersal System	ANNUAL

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: Eric Larson

E. MITIGATION PLAN:

If surfacing should occur: reduce water use, increase absorption and distribution area. Waste strength: if fecals exceed limit, add disinfection or increase separation. If BOD, TSS, or FOG exceed limit, reduce effluent strength. Reserve sites available for replacement systems.

Kristi Kunz

OP# 119 / P# 30675 / 31-1-083601

Subject:

FW: Aitkin County Operating Permit Renewals

From: Brian Koski [mailto:Brian@septiccheck.com]

Sent: Friday, April 18, 2014 5:31 PM

To: Kristi Kunz

Subject: RE: Aitkin County Operating Permit Renewals

Kristi,

I would recommend the following go to 5 year renewal: I can write letters for these if you would like.

- Otterbelly
- Robert Dotzler
- Gary Hill
- Ukuras
- · Eastside marina
- Luke lucas

Let me know if you need anything else,

Thanks,

6074 Keystone Rd Milaca, MN 56353

320-983-2447 Fax: 320-983-2151

Fold

Here

PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w test 5 yr

Owner: Otterbelly South System

Fold

ONSITE SEWAGE SYSTEM INSPECTION REPORT

Inspected: 10/31/2013 - Inspection Type: ROUTINE - Correction Status: No corrections made

Company:

Work Performed By:

Submitted 11/19/2013 by:

Septic Check

Mail To: Otterbelly South System 37760 Dove Street #24

Aitkin, MN

56431

Dean Nelson

Ann Flann

COMMENTS & GENERAL INSPECTION NOTES

Deficiencies Noted: deficiencies must be corrected to ensure proper longevity of the Onsite Sewage System.

System was pumped by Goble's Sewer Service today. Multi-flo primary sensor needs to be replaced; Dean has ordered the part and will replace it at the next service visit.

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	
Surfacing effluent from any component (including mound seepage):	YES
Components appear to be watertight - no visual leaks:	NO
mproper encroachment (structures/impervious surfaces); cover; or settling problems observed:	YES
mpset one oderment (structures/impervious surfaces), cover, or settling problems observed:	NO

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

TANK: Trash Tank, Manufacturer= Local Manufacturer - Concrete 2000 Call

Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
All required baffles in place (N/A = No baffles required):	YES	
Effluent level within operational limits (if NO explain in comments)	YES	
Compartment 1 Scum accumulation (Inches, if other specify):	skim	
Compartment 1 Sludge accumulation (Inches, if other specify):	2"	
Pumping recommended:	NO	
Aerobic Treatment Unit: ATU, Manufacturer= Consolidated Treatment Systems - Multi-Flo FTP-0.75 750 GPD	Multi-Flo	
wanuracturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75	mant-10	
This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments)	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash compartment):	N/A	
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic chamber):	YES	
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying chamber):	YES	

This report indicates certain characteristics of the onsite sewage system at the time of visit. In no way is this report a guarantee of operation or future performance.

NK: Pump Tank, Manufacturer= Local Manufacturer - Concrete 1600 Gallon	Yest The Control of t	1.2.4
anufacturer: Local Manufacturer Model: Concrete	Fully Inspected	
his component was:	0"	
ompartment 1 Scum accumulation (Inches, if other specify):	0"	
ompartment 1 Sludge accumulation (Inches, if other specify):	NO	
umping recommended:		*** \ L, M.
ump: Effluent Pump Primary Pump	Fully Inspected	
his component was:	YES	
controls functioning:	N/A	
ested gallons per minute flow:		
ump: Effluent Pump Effluent Pump	Fully Inspected	
his component was:	YES	
Controls functioning:	N/A	
ested gallons per minute flow:		
anel: Control - 2 Pumps Multi-Flo Panel	Fully Inspected	
This component was:	NO	Deficient
Panel functioning (including alarm):	N/A	
Pump 1: on minutes (override in parentheses - if present):	N/A	
oump 1: off hours (override in parentheses - if present):	N/A	
Pump 1: gallons per dose (override in parentheses - if present):	N/A	
Pump 1: ETM hours (override in parentheses - if present):	27303	
Pump 1: Cycle Count (override in parentheses - if present):	N/A	
Pump 2: on minutes (override in parentheses - if present):	N/A	
Pump 2: off hours (override in parentheses - if present):	N/A	
Pump 2: gallons per dose (override in parentheses - if present):	27295	
Pump 2: Cycle Count (override in parentheses - if present):	N/A	
Pump 2: ETM hours (override in parentheses - if present):	73.70	
Orainfield: Pressure Bed Rockbed 10' X 135' w/3 laterals	Fully Inspected	
This component was:	NO	
Lateral lines flushed:	N/A	
Average squirt height (if performed) (Feet, if other specify):	NO	==
Ponding Present? If YES explain in comments:		

Location: 37760 Dove St #24 Aitkin

31-0-066201
owner: Otterbelly South System

Use: Multi Family

Service Company: Septic Check

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

Laboratory: A.W. Research Lab

10/31/2013sample entered by :Ann Flann

Notes:

ONSITE SEWAGE SYSTEM SAMPLING DETAIL

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT	
Effluent Pump Effluent Pump	Effluent	*Other*	800 GPD	241	
Pump Tank 1600 Gallon	Effluent	Fecal	<2500 cfu/100m	1,960	

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

Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm maint 2 w Test 5 yr

Owner: Otterbelly South System

Fold

ONSITE SEWAGE SYSTEM INSPECTION REPORT

Inspected: 05/31/2013 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:

Mail To: Otterbelly South System 37760 Dove Street #24

Aitkin, MN

56431

Work Performed By:

Submitted 07/23/2013 by:

Septic Check

Jared Deboer

Ann Flann

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

lanufacturer: Local Manufacturer Model: Concrete	
This component was:	Fully Inspected
All required baffles in place (N/A = No baffles required):	YES
Effluent level within operational limits (if NO explain in comments)	YES
Compartment 1 Scum accumulation (Inches, if other specify):	N/A
Compartment 1 Sludge accumulation (Inches, if other specify):	N/A
Pumping recommended:	NO

Manufacturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75		
This component was:	Fully inspected	
Effluent level within operational limits (if NO explain in comments)	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash	YES	
compartment):		
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic	YES	
chamber):		
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying	YES	
chamber):		
Pumping recommended:	NO	

This report indicates certain characteristics of the onsite sewage system at the time of visit. In no way is this report a guarantee of operation or future performance.

ANK: Pump Tank, Manufacturer= Local Manufacturer - Concrete 1600 Gallon anufacturer: Local Manufacturer Model: Concrete	
his component was:	Fully Inspected
Compartment 1 Scum accumulation (Inches, if other specify):	N/A
Compartment 1 Sludge accumulation (Inches, if other specify):	N/A
Pumping recommended:	NO
ump: Effluent Pump Primary Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Fested gallons per minute flow:	N/A
Pump: Effluent Pump Effluent Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	N/A
Panel: Control - 2 Pumps Multi-Flo Panel	
This component was:	Fully Inspected
Panel functioning (including alarm):	YES
Pump 1: on minutes (override in parentheses - if present):	N/A
Pump 1: off hours (override in parentheses - if present):	N/A
Pump 1: gallons per dose (override in parentheses - if present):	N/A
Pump 1: ETM hours (override in parentheses - if present):	N/A
Pump 1: Cycle Count (override in parentheses - if present):	26149
Pump 2: on minutes (override in parentheses - if present):	N/A
Pump 2: off hours (override in parentheses - if present):	N/A
Pump 2: gallons per dose (override in parentheses - if present):	N/A
Pump 2: Cycle Count (override in parentheses - if present):	26144
Pump 2: ETM hours (override in parentheses - if present):	N/A
Drainfield: Pressure Bed Rockbed 10' X 135' w/3 laterals	
This component was:	Fully Inspected
Lateral lines flushed:	NO
Average squirt height (if performed) (Feet, if other specify):	N/A
Ponding Present? If YES explain in comments:	NO

1/17/2014

Location: 37760 Dove St #24

Aitkin

31-0-066201

owner: Otterbelly North System

use: Multi Family

Service Company: Septic Check

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

Laboratory: A.W. Research Lab

10/31/2013sample entered by :Ann Flann

Notes: New cycle counter was installed at 10/31/13 service visit.

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Effluent Pump Effluent Pump	Effluent	Flow	1200 GPD	no flow
Pump Tank 1600 Gallon Effluent	Effluent	Fecal	<1000 cfu/100m	<5

Kristi Kunz

From:

Brian Koski [Brian@septiccheck.com]

Sent:

Friday, May 02, 2014 2:48 PM

To:

Kristi Kunz

Subject:

RE: Otterbelly Homeowner's Association

Follow Up Flag:

Follow up

Flag Status:

Flagged

Kristi,

10-3-14 Spoke with Terry Neff-Ok to Move to Syn. Change BOD, TSS, FOG'S to Syn check for visual /sneed.

I have reviewed the Otterbelly operating permit. At this point it is my opinion that the sampling requirements for BOD, TSS, and FOG are not necessary. The performance of the system since the original installation has been under these limits regularly. I would however recommend to continue sampling flow and fecal coliform as part of the operating permit renewal.

Please contact me with any questions,

Brian Koski



A Division of WEX Companies, Inc. www.SepticCheck.com

6074 Keystone Road Milaca, MN 56353 Phone: 320.983.2447 Cell: 218-428-0391 Fax: 320.983.2151 brian@septiccheck.com

From: Kristi Kunz [mailto:kristi.kunz@co.aitkin.mn.us]

Sent: Friday, May 02, 2014 2:23 PM

To: Brian Koski

Subject: Otterbelly Homeowner's Association

Attached is a scanned copy of the OP Contract we have. Let me know if you have any changes you would like made to the contract.

Thanks again!

Kristi K. Aitkin County Planning & Zoning 218-927-7342

AITKIN COUNTY ENVIRONMENTAL SERVICES-PLANNING & ZONING

209 Second Street, NW Room# 100

Aitkin, Minnesota 56431

PH: (218) 927-7342 FX: (218) 927-4372



5/2/2014

Re: Operating Permit #119 Zoning Permit #30675 Parcel #31-1-083601

Otterbelly Homeowner's Associatio 37760 Dove St. #24 Aitkin, MN 56431-

Dear Permittee:

This letter is to inform you that your Operating Permit has been renewed until 5/31/2019 and the Operating Permit renewal period has been moved to a 5 YEAR based on the recommendation from your Operating and Maintenance provider.

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 Operation and Maintenance provider 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,

Aitkin County Planning & Zoning

Kristi K.

6074 Keystone Rd Milaca, MN 56353

320-983-2447

Fold Here

Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w test

Owner: Otterbelly South System

Fold

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 10/27/2014 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company: Septic Check

Mail To: Otterbelly South System 37760 Dove Street #24

Aitkin, MN

56431

Work Performed By:

Submitted 11/07/2014 by:

Scott Shelito

Angie Stafford

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed;	NO

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

TANK: Trash Tank, Manufacturer= Local Manufacturer - Concrete 2000 Gallon		
Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
All required baffles in place (N/A = No baffles required):	YES	
Effluent level within operational limits (if NO explain in comments):	YES	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	11	
Pumping recommended:	YES	
Aerobic Treatment Unit: ATU, Manufacturer= Consolidated Treatment Systems - Multi-Flo FTP-0.75 750 GPD	Multi-Flo	
Manufacturer: Consolidated Treatment Systems Model: Multi-Fio FTP-0.75		
This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments):	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash	N/A	
compartment):		
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic	YES	
chamber):		
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying	YES	
chamber):		
Pumping recommended:	NO	

ANK: Pump Tank, Manufacturer= Local Manufacturer - Concrete 1600 Gallon	
This component was:	Fully Inspected
Compartment 1 Scum accumulation (Inches, if other specify):	0
Compartment 1 Sludge accumulation (Inches, if other specify):	0
Pumping recommended:	NO
ump: Effluent Pump Primary Pump	
his component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	N/A
ump: Effluent Pump Effluent Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Fested gallons per minute flow:	N/A
Panel: Control - 2 Pumps Multi-Flo Panel	
This component was:	Fully Inspected
Panel functioning (including alarm):	YES
Pump 1: on minutes (override in parentheses - if present):	1 min
Pump 1: off hours (override in parentheses - if present):	0.4 hrs
Pump 1: gallons per dose (override in parentheses - if present):	N/A
Pump 1: ETM hours (override in parentheses - if present):	N/A
Pump 1: Cycle Count (override in parentheses - if present):	29969
Pump 2: on minutes (override in parentheses - if present):	N/A
Pump 2: off hours (override in parentheses - if present):	N/A
Pump 2: gallons per dose (override in parentheses - if present):	N/A
Pump 2: Cycle Count (override in parentheses - if present);	N/A
Pump 2: ETM hours (override in parentheses - if present):	29957
Drainfield: Pressure Bed Rockbed 10' X 135' w/3 laterals	
This component was:	Fully Inspected
Lateral lines flushed:	NO
Average squirt height (if performed) (feet, if other specify):	N/A
Ponding present? If YES explain in comments:	NO

6074 Keystone Rd Milaca, MN 56353

320-983-2447

Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w test

Owner: Otterbelly South System

Fold Here

ONSITE SEWAGE SYSTEM INSPECTION REPORT

Inspected: 05/21/2014 - Inspection Type: ROUTINE - Correction Status: Some Corrections Made

Company: Septic Check

Mail To: Otterbelly South System 37760 Dove Street #24

Aitkin, MN

56431

Work Performed By:

Scott Shelito

Submitted 06/05/2014 by:

Devon Schmitz

COMMENTS & GENERAL INSPECTION NOTES

Deficiencies Noted: deficiencies must be corrected to ensure proper longevity of the Onsite Sewage System.

The control switch was off which caused a high water level in the pump tank. To resolve this issue, a new aerator was installed. Date Code 12/13 Serial # 0024325

GENERAL SITE & SYSTEM CONDITIONS

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

TANK: Trash Tank, Manufacturer= Local Manufacturer - Concrete 2000 Gallon		
Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
All required baffles in place (N/A = No baffles required):	YES	
Effluent level within operational limits (if NO explain in comments):	YES	
Compartment 1 Scum accumulation (Inches, if other specify):	0.5"	
Compartment 1 Sludge accumulation (Inches, if other specify):	13"	
Pumping recommended:	NO	
Aerobic Treatment Unit: ATU, Manufacturer= Consolidated Treatment Systems - Multi-Flo FTP-0.75 750 GPD	Multi-Flo	
Manufacturer: Consolidated Treatment Systems Model: Multi-Fio FTP-0.75		
This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments):	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	NO	See Comments
ATU serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash	N/A	

ATO serviced per manufacturers requirements including cleaning of applicable filter(s):	YES	
Trash Compartment solids accumulation within operational limits per manufacturer (n/a = no trash	N/A	
compartment):		
Aerobic Chamber solids accumulation within manufacturer operational limits (n/a = no aerobic	YES	
chamber):		
Clarifying Chamber solids accumulation within manufacturer operational limits (n/a = no clarifying	YES	
chamber):		
Pumping recommended:	NO	

TANK: Pump Tank, Manufacturer= Local Manufacturer - Concrete 1600 Gallon

Manufacturer:	Local	Manufacturer	Model:	Concrete	
-					

This component was:	Fully Inspected	
Compartment 1 Scum accumulation (Inches, if other specify):	O ^M	
Compartment 1 Sludge accumulation (Inches, if other specify):	1"	
Pumping recommended:	NO	

This report indicates certain characteristics of the onsite sewage system at the time of visit. In no way is this report a guarantee of operation or future performance.

Pump: Effluent Pump Primary Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	N/A
Pump: Effluent Pump Effluent Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	N/A
Panel: Control - 2 Pumps Multi-Flo Panel	
This component was:	Fully Inspected
Panel functioning (including alarm):	YES
Pump 1: on minutes (override in parentheses - if present);	N/A
Pump 1: off hours (override in parentheses - if present):	N/A
Pump 1: gallons per dose (override in parentheses - if present):	N/A
Pump 1: ETM hours (override in parentheses - if present):	N/A
Pump 1: Cycle Count (override in parentheses - if present):	28631
Pump 2: on minutes (override in parentheses - if present):	1 min
Pump 2: off hours (override in parentheses - if present):	.42 hrs
Pump 2: gallons per dose (override in parentheses - if present):	N/A
Pump 2: Cycle Count (override in parentheses - if present):	28619
Pump 2: ETM hours (override in parentheses - if present):	N/A
Orainfield: Pressure Bed Rockbed 10' X 135' w/3 laterals	
This component was:	Fully Inspected
Lateral lines flushed:	NO
Average squirt height (if performed) (feet, if other specify):	N/A
Ponding present? If YES explain in comments:	NO

10/28/201:

Location: 37760 Dove St #24

Aitkin

31-0-066201

owner: Otterbelly South System

use: Multi Family

Service Company:

Septic Check

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

Laboratory: A.W. Research Laboratories

07/23/2014sample entered by :Angie Stafford

Notes: Septic Check will re-sample.

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT	
Pump Tank 1600 Gallon	Effluent	Fecal	2500 cfu/100i	4500	-Limit Exceeded

Fold

Here

Septic Check

6074 Keystone Rd Milaca, MN 56353

320-983-2447 Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w 5 yr test

Owner: Otterbelly South System

Mail To: Otterbelly South System 37760 Dove Street #24 Aitkin, MN 56431

Fold

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 05/12/2016 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:

Work Performed By:

Submitted 05/18/2016 by:

Septic Check

Torrey Boser

Angie Stafford

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

TANK: Trash Tank, Manufacturer= Lo	cal Manufacturer - Concrete 2000 Gallon
------------------------------------	---

Fully Inspected	
YES	
YES	
0	
0	
NO	
	YES YES 0

Aerobic Treatment Unit: ATU - Consolidated Treatment Systems - Multiflo, Manufacturer= Consolidated Treatment Systems -Multi-Flo FTP-0.75 750 GPD Mul

Manufacturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75

This component was:	Fully Inspected	
Unit alarms functioning:	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
Impeller assembly removed and cleaned:	YES	
Previous signs of foaming overflow noted on Weir Plate:	YES	
Filter Socks cleaned:	YES	
Filter Socks were partially changed out:	NO	
Filter Socks were completely changed out:	NO	
Gaskets on Surge Bowl need replacing:	NO	
Digester settleable solids test resulted in greater than 40% settleable solids: (If Yes, pumping needed)	NO	
Pumping needed:	NO	
FANIX. Down Tank Manufa to a Land Control of the Co		

Manufacturer:	Local Manufacturer	Model: Concrete

This component was:	Fully Inspected
Compartment 1 Scum accumulation (Inches, if other specify):	0
Compartment 1 Sludge accumulation (Inches, if other specify):	0
Pumping recommended:	NO

Pump: Effluent Pump Primary Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	N/A
Pump: Effluent Pump Effluent Pump	
This component was:	Fully Inspected
Controls functioning:	YES
ested gallons per minute flow:	N/A
Panel: Control - 2 Pumps Multi-Flo Panel	
This component was:	Fully Inspected
Panel functioning (including alarm):	YES
Pump 1; on minutes (override in parentheses - if present):	1 MIN
Pump 1: off hours (override in parentheses - if present):	0.4 HRS
Pump 1: gallons per dose (override in parentheses - if present):	N/A
Pump 1: ETM hours (override in parentheses - if present):	N/A
Pump 1: Cycle Count (override in parentheses - if present):	33452
Pump 2: on minutes (override in parentheses - if present):	N/A
Pump 2: off hours (override in parentheses - if present):	N/A
Pump 2: gallons per dose (override in parentheses - If present):	N/A
Pump 2: ETM hours (override in parentheses - if present):	N/A
Pump 2: Cycle Count (override in parentheses - if present):	33444
rainfield: Pressure Bed Rockbed 10' X 135' w/3 laterals	30777
his component was:	Fully Inspected
ateral lines flushed:	NO NO
verage squirt height (if performed) (feet, if other specify):	N/A
Ponding present? If YES explain in comments:	NO NO

Location: 37760 Dove St #24

Aitkin

31-0-066201

owner: Otterbelly South System

Use: Multi Family

Service Company: Septic Check

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

Laboratory: A.W. Research Laboratories

05/12/2016sample entered by :Angie Stafford

Notes:

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Pump Tank 1600 Gallon	Effluent	Fecal	2500 cfu/100i	1,900

6074 Keystone Rd Milaca, MN 56353

320-983-2447

Fold Here

Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w 5 yr test

Owner: Otterbelly South System

Fold Here

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 11/10/2016 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company: Septic Check

Mail To: Otterbelly South System 37760 Dove Street #24

Aitkin, MN

56431

Work Performed By:

Submitted 11/30/2016 by:

Brian Koski

Angie Stafford

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

Manufacturer: Local Manufacturer Model: Concrete	
This component was:	Fully Inspected
All required baffles in place (N/A = No baffles required):	YES
Effluent level within operational limits (if NO explain in comments):	YES
Compartment 1 Scum accumulation (Inches, if other specify):	0
Compartment 1 Sludge accumulation (Inches, if other specify):	5"
Pumping recommended:	NO

Multi-Flo FTP-0.75 750 GPD Mui

Manufacturer: Consolidated	Treatment Systems	Model: Multi-Flo FTP-0.75

This component was:	Fully Inspected	
Unit alarms functioning:	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
Impeller assembly removed and cleaned:	NO	
Previous signs of foaming overflow noted on Weir Plate:	NO	
Filter Socks cleaned:	NO	
Filter Socks were partially changed out:	NO	
Filter Socks were completely changed out:	NO	
Gaskets on Surge Bowl need replacing:	NO	
Digester settleable solids test resulted in greater than 40% settleable solids: (If Yes, pumping needed)	NO	
Pumping needed:	NO	-
TANK B T. I.M. C		

Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
Compartment 1 Scum accumulation (Inches, if other specify):	0 -	
Compartment 1 Sludge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	

Pump: Effluent Pump Primary Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	N/A
Pump: Effluent Pump Effluent Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	N/A
Panel: Control - 2 Pumps Multi-Flo Panel	
This component was:	Fully Inspected
Panel functioning (including alarm):	YES
Pump 1: on minutes (override in parentheses - if present):	1 MIN
Pump 1: off hours (override in parentheses - if present):	0.4 HRS
Pump 1: gallons per dose (override in parentheses - if present):	N/A
Pump 1: ETM hours (override in parentheses - if present):	N/A
Pump 1: Cycle Count (override in parentheses - if present):	34719
Pump 2: on minutes (override in parentheses - if present):	N/A
Pump 2: off hours (override in parentheses - if present):	N/A
Pump 2: gallons per dose (override in parentheses - if present):	N/A
Pump 2: ETM hours (override in parentheses - if present):	N/A
Pump 2: Cycle Count (override in parentheses - if present):	34711
Drainfield: Pressure Bed Rockbed 10' X 135' w/3 laterals	
This component was:	Fully Inspected
Lateral lines flushed:	NO
Average squirt height (if performed) (feet, if other specify):	N/A
Ponding present? If YES explain in comments:	NO

6074 Keystone Rd Milaca, MN 56353

320-983-2447

Fold

Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24 Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w 5 yr test

Owner: Otterbelly South System

Fold

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 05/04/2017 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company: Septic Check

Mail To: Otterbelly South System 37760 Dove Street #24

Aitkin, MN

56431

Work Performed By:

Submitted 05/23/2017 by:

Blesener Dave

Angie Tvedt

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

During the site inspection I installed a new circuit board in the panel and now the panel is functioning properly.

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

This component was:	Fully Inspected
All required baffles in place (N/A = No baffles required):	YES
Effluent level within operational limits (if NO explain in comments):	YES
Compartment 1 Scum accumulation (Inches, if other specify):	1"
Compartment 1 Sludge accumulation (Inches, if other specify):	4*
Pumping recommended:	NO

Manufacturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75		
This component was:	Fully Inspected	
Unit alarms functioning:	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
Impeller assembly removed and cleaned:	NO	
Previous signs of foaming overflow noted on Weir Plate:	NO	
Filter Socks cleaned:	YES	
Filter Socks were partially changed out:	NO	
Filter Socks were completely changed out:	NO	
Gaskets on Surge Bowl need replacing:	NO	
Digester settleable solids test resulted in greater than 40% settleable solids: (If Yes, pumping needed)	NO	
Pumping needed:	NO	
An annual version in the		

TANK: Pump	Tank, Manufacturer=	Local Manufacturer	Concrete 1600 Gallon

Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	

Pump: Effluent Pump Primary Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	N/A
Pump: Effluent Pump Effluent Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	N/A
Panel: Control - 2 Pumps Multi-Flo Panel	
This component was:	Fully Inspected
Panel functioning (including alarm):	YES
Pump 1: on minutes (override in parentheses - if present):	1 MIN
Pump 1: off hours (override in parentheses - if present):	0.4 HRS
Pump 1: gallons per dose (override in parentheses - if present):	N/A
Pump 1: ETM hours (override in parentheses - if present):	N/A
Pump 1: Cycle Count (override in parentheses - if present):	35852
Pump 2: on minutes (override in parentheses - if present):	1 MIN
Pump 2: off hours (override in parentheses - if present):	0,4 HRS
Pump 2: gallons per dose (override in parentheses - if present):	N/A
Pump 2: ETM hours (override in parentheses - if present):	N/A
Pump 2: Cycle Count (override in parentheses - if present):	35843
Orainfield (disposal): Pressure Bed Rockbed 10' X 135' w/3 laterals	
This component was:	Fully inspected
Lateral lines flushed;	NO
Average squirt height (if performed) (feet, if other specify):	N/A
Ponding present? If YES explain in comments:	NO

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6074 Keysic Rd Milaca, MN 56353

Mail To: Current Resident

Aitkin, MN

56431

320-983-2447

Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w 5 yr test

Fold Here

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 11/16/2017 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:

Septic Check

37760 Dove Street #24

Work Performed By:

Submitted 12/06/2017 by:

Blesener Dave

Angie Tvedt

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
All required baffles in place (N/A = No baffles required):	YES	
Effluent level within operational limits (if NO explain in comments):	YES	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	6"	
Pumping recommended:	NO	

Multi-Flo FTP-0.75 750 GPD Mul

This component was:	Fully Inspected	
Jnit alarms functioning:	YES	
verobic Mechanism appears to be functioning per manufacturers specifications:	YES	
mpeller assembly removed and cleaned:	NO	
Previous signs of foaming overflow noted on Weir Plate:	NO	
ilter Socks cleaned:	NO	
Filter Socks were partially changed out:	NO	
Filter Socks were completely changed out:	NO	
Gaskets on Surge Bowl need replacing:	NO	
Digester settleable solids test resulted in greater than 40% settleable solids: (If Yes, pumping needed)	NŌ	
Pumping needed:	NO	

Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	0	

Pumping recommended:

NO

Pump: Effluent Pump Primary Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	N/A
Pump: Effluent Pump Effluent Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	N/A
Panel: Control - 2 Pumps Multi-Flo Panel	
This component was:	Fully Inspected
Panel functioning (including alarm):	YES
Pump 1: on minutes (override in parentheses - if present):	1 MIN
Pump 1: off hours (override in parentheses - if present):	0.4 HRS
Pump 1: gallons per dose (override in parentheses - if present):	N/A
Pump 1: ETM hours (override in parentheses - if present):	N/A
Pump 1: Cycle Count (override in parentheses - if present):	37268
Pump 2: on minutes (override in parentheses - if present):	1 MIN
Pump 2: off hours (override in parentheses - if present):	0.4 HRS
Pump 2: gallons per dose (override in parentheses - if present):	N/A
Pump 2: ETM hours (override in parentheses - if present):	N/A
Pump 2: Cycle Count (override in parentheses - if present):	37257
Orainfield (disposal): Pressure Bed Rockbed 10' X 135' w/3 laterals	
This component was:	Fully Inspected
ateral lines flushed:	NO
Average squirt height (if performed) (feet, if other specify):	N/A
Ponding present? If YES explain in comments:	NO

6074 Keystone Rd Milaca, MN 56353

320-983-2447

Fold

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Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

31-1-083601-604

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w 5 yr test

Mail To: Otterbelly South System 37760 Dove Street #24 Aitkin, MN 56431

Fold

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 05/07/2019 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:

Work Performed By:

Submitted 05/30/2019 by:

Septic Check

Blesener Dave

Angie Tvedt

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

IANK: Irash	Tank, Manufacturer= Local Manufacturer - Concrete 2000 Gallo	n
Manufacturer:	Local Manufacturer Model: Concrete	

This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments):	YES	
All required baffles in place (N/A = No baffles required):	YES	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	2"	
Pumping recommended:	NO	

Aerobic Treatment Unit: ATU - Consolidated Treatment Systems - Multiflo, Manufacturer= Consolidated Treatment Systems -Multi-Flo FTP-0.75 750 GPD Mul

Manufacturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75

This component was:	Fully Inspected	
Unit alarms functioning:	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
Impeller assembly removed and cleaned:	NO	
Previous signs of foaming overflow noted on Weir Plate:	NO	
Filter Socks cleaned:	NO	
Filter Socks were partially changed out:	NO	
Filter Socks were completely changed out:	NO	
Gaskets on Surge Bowl need replacing:	NO	
Digester settleable solids test resulted in greater than 40% settleable solids: (If Yes, pumping needed)	NO	
Pumping needed:	NO	
TANK: Pump Tank, Manufacturers, Local Manufacturer - Concrete 1600 Gallon		

TANK: Pump Tank, Manufacturer = Local Manufacturer - Concrete 1600 Gallon Manufacturer: Local Manufacturer Model: Concrete

This component was:	Fully Inspected
Compartment 1 Scum accumulation (Inches, if other specify):	0
Compartment 1 Sludge accumulation (Inches, if other specify):	0
Pumping recommended:	NO

Pump: Effluent Pump Primary Pump	Fully Inspected
his component was:	YES
Controls functioning:	
Tested gallons per minute flow:	N/A
Pump: Effluent Pump Effluent Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	N/A
Panel: Control - 2 Pumps Multi-Flo Panol	
This component was:	Fully Inspected
Panel functioning (including alarm):	YES
Pump 1: on minutes (override in parentheses - if present):	1 MIN
Pump 1: off hours (override in parentheses - if present):	0.4 HRS
Pump 1: gallons per dose (override in parentheses - if present):	N/A
Pump 1: ETM hours (override in parentheses - if present):	N/A
Pump 1: Cycle Count (override in parentheses - if present):	40391
Pump 2: on minutes (override in parentheses - if present):	N/A
Pump 2: off hours (override in parentheses - If present):	N/A
Pump 2: gallons per dose (override in parentheses - if present):	N/A
Pump 2: ETM hours (override in parentheses - if present):	N/A
Pump 2: Cycle Count (override in parentheses - if present):	40382
Drainfield (disposal): Pressure Bed Rockbed 10' X 135' w/3 laterals	
This component was:	Fully Inspected
Lateral lines flushed:	NO
Average squirt height (if performed) (feet, if other specify):	N/A
Ponding present? If YES explain in comments:	NO

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

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Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w 5 yr test

Mail To: Otterbelly South System 37760 Dove Street #24 Aitkin, MN 56431

Fold

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 10/18/2019 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:

Work Performed By:

Submitted 11/18/2019 by:

Septic Check

Chris King

Heather Johnson

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

This component was:	Fully Inspected
Effluent level within operational limits (if NO explain in comments):	YES
All required baffles in place (N/A = No baffles required):	YES
Compartment 1 Scum accumulation (Inches, if other specify):	0
Compartment 1 Sludge accumulation (Inches, if other specify):	0
Pumping recommended:	NO

Manufacturer: Consolidated Treatment Systems Model: Multi-Fio FTP-0,75		
This component was:	Fully Inspected	
Unit alarms functioning:	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
Impeller assembly removed and cleaned:	NO	
Previous signs of foaming overflow noted on Weir Plate:	NO	
Filter Socks cleaned:	YES	
Filter Socks were partially changed out:	NO	
Filter Socks were completely changed out:	NO	
Gaskets on Surge Bowl need replacing:	NO	
Digester settleable solids test resulted in greater than 40% settleable solids: (If Yes, pumping needed)	NO	
Pumping needed:	NO	

Fully Inspected	
0	
0	
NO	
	0

ump: Effluent Pump Primary Pump	Fully Inspected	
his component was:		
Controls functioning:	YES	
Fested gallons per minute flow:	NA	
Pump: Effluent Pump Effluent Pump		
This component was:	Fully Inspected	
Controls functioning:	YES	
Tested gallons per minute flow:	NA	
Panel: Control - 2 Pumps Multi-Flo Panel		
This component was:	Fully Inspected	
Panel functioning (including alarm):	YES	
Pump 1: on minutes (override in parentheses - if present):	0.4 MIN	
Pump 1: off hours (override in parentheses - if present):	1.0HRS	
Pump 1: gallons per dose (override in parentheses - if present):	NA	
Pump 1: ETM hours (override in parentheses - if present):	NA	
Pump 1: Cycle Count (override in parentheses - if present):	41033	
Pump 2: on minutes (override in parentheses - If present):	0.4MIN	
Pump 2: off hours (override in parentheses - if present):	NA	
Pump 2: gallons per dose (override in parentheses - if present):	NA NA	
Pump 2: ETM hours (override in parentheses - if present):	NA NA	
Pump 2: Cycle Count (override in parentheses - if present):	41024	
Drainfield (disposal): Pressure Bed Rockbed 10' X 135' w/3 laterals		- 11
This component was:	Fully Inspected	
Lateral lines flushed:	YES	
Average squirt height (if performed) (feet, if other specify):	NA NA	
Ponding present? If YES explain in comments:	NO	

Location: 37760 Dove St #24

Aitkin

31-0-066201

owner: Otterbelly South System

use: Multi Family

Service Company: Septic Check

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

Laboratory: A.W. Research Laboratories

Sample Date: 05/07/2019

Sample entered by: Angle Tvedt

Report submitted: 05/30/2019

Notes:

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT	
Effluent Pump Effluent Pump	Effluent	*Other*	800 GPD	637.17	
Pump Tank 1600 Gallon	Effluent	Fecal	2500 cfu/100i	1460	

Location: 37760 Dove St #24

Aitkin

31-0-066201

owner: Otterbelly South System

use: Multi Family

Service Company: Septic Check

6074 Keystone Rd

Milaca, MN 56353 320-983-2447

Laboratory: A.W. Research Laboratories

Sample Date: 10/21/2019

Sample entered by: Heather Johnson

Report submitted: 12/18/2019

Notes:

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT	
Effluent Pump Effluent Pump	Effluent	*Other*	800 GPD	978	-Limit Exceeded
Pump Tank 1600 Gallon	Effluent	Fecal	2500 cfu/100i	1100	

6074 Keystone Rd Milaca, MN 56353

320-983-2447

Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family

System Design Flow 750

GENERAL SYSTEM TYPE: MF Comm 2 w 5 yr test

Mail To: Otterbelly South System 37760 Dove Street #24 Aitkin, MN 56431

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ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 06/29/2020 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:

Work Performed By:

Submitted 07/14/2020 by:

Septic Check

Blesener Dave

Heather Johnson

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
All required baffles in place (N/A = No baffles required):	YES	
Effluent level within operational limits (if NO explain in comments):	YES	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	3	
Pumping recommended:	NO	
Aerobic Treatment Unit: ATU - Consolidated Treatment Systems - Multiflo, Manufacturer= Consolidated Treat Multi-Flo FTP-0.75 750 GPD Mul	ment Systems -	
Manufacturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75		
This component was:	Fully Inspected	
Unit alarms functioning:	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
Impeller assembly removed and cleaned:	NO	
Previous signs of foaming overflow noted on Weir Plate:	NO	
Filter Socks cleaned:	YES	
Filter Socks were partially changed out:	NO	
Filter Socks were completely changed out:	NO	
Gaskets on Surge Bowl need replacing:	NO	
Digester settleable solids test resulted in greater than 40% settleable solids: (If Yes, pumping needed)	NO	
Pumping needed:	NO	
TANK: Pump Tank, Manufacturer= Local Manufacturer - Concrete 1600 Gallon		
Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	1	
Pumping recommended:	NO	

his component was:	Fully Inspected
Controls functioning:	YES
Fested gallons per minute flow:	NA NA
Pump: Effluent Pump Effluent Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	NA NA
Panel: Control - 2 Pumps Multi-Flo Panel	
This component was:	Fully Inspected
Panel functioning (including alarm):	YES
Pump 1: on minutes (override in parentheses - if present):	1
Pump 1: off hours (override in parentheses - if present):	.4
Pump 1: gallons per dose (override in parentheses - if present):	NA
Pump 1: ETM hours (override in parentheses - 'if present);	NA NA
Pump 1: Cycle Count (override in parentheses - if present):	42530
Pump 2: on minutes (override in parentheses - if present):	NA
Pump 2: off hours (override in parentheses - if present):	NA NA
Pump 2; gallons per dose (override in parentheses - if present):	NA NA
Pump 2: ETM hours (override in parentheses - if present):	NA NA
Pump 2: Cycle Count (override in parentheses - if present):	42522
Drainfield (disposal): Pressure Bed Rockbed 10' X 135' w/3 laterals	
This component was:	Fully Inspected
Lateral lines flushed:	NO
Average squirt height (if performed) (feet, if other specify):	NA NA
Ponding present? If YES explain in comments:	NO

Location: 37760 Dove St #24

Aitkin

31-0-066201

owner: Otterbelly South System

Use: Multi Family

Service Company: Septic Check

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

Laboratory: A.W. Research Laboratories

Sample Date: 06/29/2020

Sample entered by: Heather Johnson

Report submitted: 07/14/2020

Notes:

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT	
Effluent Pump Effluent Pump	Effluent	Flow	800 GPD	1468	-Limit Exceeded
Pump Tank 1600 Gallon	Effluent	Fecal	2500 cfu/100i	64900	

6074 Keystone Rd Milaca, MN 56353

320-983-2447 Fax: 320-983-2151

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PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow 750

GENERAL SYSTEM TYPE: MF Comm 2 w 5 yr test

Mail To: Otterbelly South System 37760 Dove Street #23 Aitkin, MN 56431

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ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 11/13/2020 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:

Submitted 11/18/2020 by: Work Performed By: Septic Check Michael Pederson Heather Johnson

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

This component was:	Fully Inspected	
All required baffles in place (N/A = No baffles required):	YES	
Effluent level within operational limits (if NO explain in comments):	YES	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	2	
Pumping recommended:	NO	
Aerobic Treatment Unit: ATU - Consolidated Treatment Systems - Multiflo, Manufacturer= Consoli Multi-Flo FTP-0.75 750 GPD Mul	dated Treatment Systems -	
Aerobic Treatment Unit: ATU - Consolidated Treatment Systems - Multiflo, Manufacturer= Consoli Multi-Flo FTP-0.75 750 GPD Mul Manufacturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75	and a link of the same was a second and	
Aerobic Treatment Unit: ATU - Consolidated Treatment Systems - Multiflo, Manufacturer= Consoli Multi-Flo FTP-0.75 750 GPD Mul Manufacturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75 This component was: Unit alarms functioning:	dated Treatment Systems - Fully Inspected YES	
Aerobic Treatment Unit: ATU - Consolidated Treatment Systems - Multiflo, Manufacturer= Consoli Multi-Flo FTP-0.75 750 GPD Mul Manufacturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75 This component was:	Fully Inspected	

This component was:	Fully Inspected	
Unit alarms functioning:	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
mpeller assembly removed and cleaned:	NO	
Previous signs of foaming overflow noted on Weir Plate:	NO	
Filter Socks cleaned:	NO	
Filter Socks were partially changed out:	NO	
Filter Socks were completely changed out:	NO	
Gaskets on Surge Bowl need replacing:	NO	
Digester settleable solids test resulted in greater than 40% settleable solids: (If Yes, pumping needed)	NO	
Pumping needed:	NO	
CANK Day Tank Manufacture Land Manufacture Committee Com		

This component was:	Fully Inspected	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	

ump: Effluent Pump Primary Pump		
his component was:	Fully Inspected	
Controls functioning:	YES	
ested gallons per minute flow:	NA	
ump: Effluent Pump Effluent Pump	ar ner worthour are the	
his component was:	Fully Inspected	
Controls functioning:	YES	
lested gallons per minute flow:	NA NA	_
anal: Cantrol - 2 Pumps Multi-Flo Panel		
This component was:	Fully Inspected	
Panel functioning (including alarm):	YES	
Pump 1: on minutes (override in parentheses - if present):	1	
Pump 1: off hours (override in parentheses - if present):	.40	
Pump 1; gallons per dose (override in parentheses - if present):	NA NA	
Pump 1: ETM hours (override in parentheses - if present):	NA NA	
Pump 1: Cycle Count (override in parentheses - if present):	43293	
Pump 2: on minutes (override in parentheses - it present):	NA NA	
Pump 2: off hours (override in parentheses - if present):	NA NA	
Pump 2: gallons per dose (override in parentheses - if present):	NA	
Pump 2: ETM hours (override in parentheses - if present):	NA NA	
Pump 2: Cycle Count (override in parentheses - if present):	43286	
Draintield (disposal): Pressure Bed Rockbed 10' X 135' w/3 laterals		
This component was:	Fully Inspected	
_ateral lines flushed:	NO	
Average squirt height (if performed) (feet, if other specify):	NA	
Ponding present? If YES explain in comments:	NO	

Location: 37760 Dove St #24 Aitkin

31-0-066201

Owner: Otterbelly South System
Use: Multi Family

Service Company: Septic Check

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

Sample Date: 11/13/2020

Sample entered by: Heather Johnson

Report submitted: 12/30/2020

Notes:

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT	
Effluent Pump Effluent Pump	Effluent	Flow	800 GPD	245.2	

6074 Keystone Rd Milaca, MN 56353

320-983-2447

Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family

System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w 5 yr test

Mail To: Otterbelly South System 37760 Dove Street #23 Aitkin, MN 56431

Fold

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 04/02/2021 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company: Work Performed By:

Michael Pederson

Submitted 04/06/2021 by:

Heather Johnson

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

*2.64 amps

Septic Check

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

This component was:	Fully Inspected	
All required baffles in place (N/A = No baffles required):	YES	
Effluent level within operational limits (if NO explain in comments):	YES	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	

Multi-Flo FTP-0.75 750 GPD Mul

Manufacturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75			
This component was:	Fully Inspected		
Unit alarms functioning:	YES		
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES		
Impeller assembly removed and cleaned:	NO		
Previous signs of foaming overflow noted on Weir Plate:	YES		
Filter Socks cleaned:	YES		
Filter Socks were partially changed out:	NO		
Filter Socks were completely changed out:	NO		
Gaskets on Surge Bowl need replacing:	NO		
Digester settleable solids test resulted in greater than 40% settleable solids: (If Yes, pumping needed)	NO		

Manufacturer: Local Manufacturer Model: Concrete				
This component was:	Fully Inspected			
Compartment 1 Scum accumulation (Inches, if other specify):	0			
Compartment 1 Sludge accumulation (Inches, if other specify):	0			
Pumping recommended:	NO			

Pump: Effluent Pump Primary Pump This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	NA NA
Pump: Effluent Pump Effluent Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Fested gallons per minute flow:	NA NA
Panel: Control - 2 Pumps Multi-Flo Panel	
This component was:	Fully Inspected
Panel functioning (including alarm):	YES
Pump 1: on minutes (override in parentheses - if present):	
Pump 1: off hours (override in parentheses - if present):	.40
Pump 1: gallons per dose (override in parentheses - if present):	NA NA
Pump 1: ETM hours (override in parentheses - if present):	NA NA
Pump 1: Cycle Count (override in parentheses - if present):	43747
Pump 2: on minutes (override in parentheses - if present):	1
Pump 2: off hours (override in parentheses - if present):	.40
Pump 2: gallons per dose (override in parentheses - if present):	NA NA
Pump 2: ETM hours (override in parentheses - If present):	NA NA
Pump 2: Cycle Count (override in parentheses - if present):	43740
Drainfield (disposal): Pressure Bed Rockhed 10' X 135' w/3 laterals	
This component was:	Fully Inspected
_ateral lines flushed:	NO
Average squirt height (if performed) (feet, if other specify):	NA NA
Ponding present? If YES explain in comments:	NO

Location: 37760 Dove St #24

Aitkin

31-0-066201

owner: Otterbelly South System

use: Multi Family

Service Company:

Septic Check

6074 Keystone Rd Milaca, MN 56353

320-983-2447

Laboratory: A W Labs

Sample Date: 04/02/2021

Sample entered by: Heather Johnson

Report submitted: 04/06/2021

Notes: NA on sample until 2024

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Effluent Pump Effluent Pump	Effluent	Flow	800 GPD	816.96
Pump Tank 1600 Gallon	Effluent	Fecal	2500 cfu/100i	

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

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Fax: 320-983-2151

PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w 5 yr test

Mail To: Otterbelly South System 37760 Dove Street #23 Aitkin, MN 56431

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ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 09/10/2021 - Inspection Type: ROUTINE - Correction Status: No corrections needed

Company:

Work Performed By:

Submitted 09/14/2021 by:

Septic Check

Michael Pederson

Heather Johnson

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

The aerator was replaced at this visit.

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected	
Components accessible for service:	YES	
All required service performed (if no - specify omitted inspection items in notes):	YES	
Surfacing effluent from any component (including mound seepage):	NO	
Components appear to be watertight - no visual leaks:	YES	
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO	

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

TANK: Trash Tank, Manufacturer= Local Manufacturer - Concre	te 2000 Gallon
Manufacturer: Local Manufacturer Model: Concrete	
This component was:	

This component was:	Fully Inspected	
All required baffles in place (N/A = No baffles required):	YES	
Effluent level within operational limits (if NO explain in comments):	YES	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	2	
Pumping recommended:	NO	

Aerobic Treatment Unit: ATU - Consolidated Treatment Systems - Multiflo, Manufacturer= Consolidated Treatment Systems - Multi-Flo FTP-0.75 750 GPD Mul

Manufacturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75

This component was:	Fully Inspected	
Unit alarms functioning:	YES	
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES	
Impeller assembly removed and cleaned:	NO	
Previous signs of foaming overflow noted on Weir Plate:	NO	
Filter Socks cleaned:	YES	
Filter Socks were partially changed out:	NO	
Filter Socks were completely changed out:	NO	
Gaskets on Surge Bowl need replacing:	NO	
Digester settleable solids test resulted in greater than 40% settleable solids: (If Yes, pumping needed)	NO	
Pumping needed:	NO	
TANKS CONTROL MANAGEMENT AND		dii

Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	0	
Pumping recommended:	NO	

Pump: Effluent Pump Primary Pump	
"his component was:	Fully Inspected
Controls functioning;	YES
l'ested gallons per minute flow:	NA NA
Pump: Effluent Pump Effluent Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	NA NA
Panel: Control - 2 Pumps Multi-Flo Panel	
This component was:	Fully Inspected
Panel functioning (including alarm):	YES
Pump 1: on minutes (override in parentheses - if present):	1
Pump 1: off hours (override in parentheses - if present):	.40
Pump 1: gallons per dose (override in parentheses - if present):	NA
Pump 1: ETM hours (override in parentheses - if present):	NA NA
Pump 1: Cycle Count (override in parentheses - if present):	44241
Pump 2: on minutes (override in parentheses - if present);	NA NA
Pump 2: off hours (override in parentheses - if present):	NA NA
Pump 2: gallons per dose (override in parentheses - if present):	NA NA
Pump 2: ETM hours (override in parentheses - if present):	NA NA
Pump 2: Cycle Count (override in parentheses - if present):	44234
Drainfield (disposal): Pressure Bed Rockbed 10' X 135' w/3 laterals	
This component was:	Fully Inspected
Lateral lines flushed:	NO
Average squirt height (if performed) (feet, if other specify):	NA NA
Ponding present? If YES explain in comments:	NO

Location: 37760 Dove St #24 Aitkin

31-0-066201

owner: Otterbelly South System

Use: Multi Family

Service Company: Septic Check

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

Sample Date: 09/10/2021

Sample entered by: Heather Johnson

Report submitted: 09/14/2021

Notes: Aerator was replaced at this visit

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Effluent Pump Effluent Pump	Effluent	Flow	800 GPD	248.81

PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w 5 yr test

Mail To: Otterbelly South System 37760 Dove Street #23
Aitkin, MN

56431

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ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 04/25/2022 - Inspection Type: ROUTINE - Correction Status: Corrections in progress

Company:Work Performed By:Submitted 04/27/2022 by:Septic CheckMichael PedersonHeather Johnson

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

South system: there is a little bit of water leaking into the first riser but can be patched up at the next visit when it's dry. The mound should be cleaned up a bit, there are trees almost growing on top of the mound and a lot on the sides which can cause big issues eventually. Everything else looks good and is working properly.

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected	
Components accessible for service:	YES	
All required service performed (if no - specify omitted inspection items in notes):	YES	
Surfacing effluent from any component (including mound seepage):	NO	
Components appear to be watertight - no visual leaks:	YES	
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO	

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

TANK: Trash Tank, Manufacturer= Local Manufacturer - Concrete 2000 Gallon Manufacturer: Local Manufacturer Model: Concrete	
This component was:	Fully Inspected
Effluent level within operational limits (if NO explain in comments):	YES
All required baffles in place (N/A = No baffles required):	YES
Compartment 1 Scum accumulation (Inches, if other specify):	0
Compartment 1 Sludge accumulation (Inches, if other specify):	3
Pumping recommended:	NO
Pump: Effluent Pump, Manufacturer= Goulds Pumps - PE Series Trash tank pump	
Manufacturer: Goulds Pumps Model: PE Series	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	NA NA
Pump: Effluent Pump, Manufacturer= Goulds Pumps - PE Series Trash tank pump	
Manufacturer: Goulds Pumps Model: PE Series	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	NA

Aerobic Treatment Unit: ATU - Consolidated Treatment Systems - Multiflo, Manufacturer= Consolidated Treatı Multi-Flo FTP-0.75 750 GPD Mul	ment Systems -		
Manufacturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75			
This component was:	Fully Inspected		
Unit alarms functioning:	YES		
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES		
Impeller assembly removed and cleaned:	NO		
Previous signs of foaming overflow noted on Weir Plate:	NO		
Filter Socks cleaned:	YES		
Filter Socks were partially changed out:	NO		
Filter Socks were completely changed out:	NO		
Gaskets on Surge Bowl need replacing:	NO		
Digester settleable solids test resulted in greater than 40% settleable solids: (If Yes, pumping needed)	NO		
Pumping needed:	NO		
TANK: Pump Tank, Manufacturer= Local Manufacturer - Concrete 1600 Gallon			
Manufacturer: Local Manufacturer Model: Concrete	Fully Inspected		
This component was:	Pully Inspected		
Compartment 1 Scum accumulation (Inches, if other specify):	0		
Compartment 1 Sludge accumulation (Inches, if other specify):	NO NO		
Pumping recommended:	NO		
Pump: Effluent Pump Primary Pump This component was:	Fully Inspected		
This component was:	YES NA		
Controls functioning:			
Tested gallons per minute flow:	NA		
Pump: Effluent Pump Effluent Pump This component was:	Fully Inspected		
Controls functioning:	YES		
Tested gallons per minute flow:	NA NA		
Panel: Control - 2 Pumps Multi-Flo Panel	IVA		
This component was:	Fully Inspected		
Panel functioning (including alarm):	YES		
Pump 1: on minutes (override in parentheses - if present):	1		
Pump 1: off hours (override in parentheses - if present):	.4		
Pump 1: gallons per dose (override in parentheses - if present):	NA		
Pump 1: ETM hours (override in parentheses - if present):	NA NA		
Pump 1: Cycle Count (override in parentheses - if present):	44715		
Pump 2: on minutes (override in parentheses - if present):	1		
Pump 2: off hours (override in parentheses - if present):	.4		
Pump 2: gallons per dose (override in parentheses - if present):	NA		
Pump 2: ETM hours (override in parentheses - if present):	NA NA		
Pump 2: Cycle Count (override in parentheses - if present):	44710		
	447 10		
Drainfield (disposal): Pressure Bed Rockbed 10' X 135' w/3 laterals This component was:	Fully Inspected		
Lateral lines flushed:	NO NO		
Average squirt height (if performed) (feet, if other specify):	NA NA		
Ponding present? If YES explain in comments:	NO NO		

Location: 37760 Dove St #24

Aitkin

31-0-066201

Owner: Otterbelly South System

Use: Multi Family

Service Company: Septic Check

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

Sample Date: 04/25/2022 Sample entered by: Heather Johnson

Report submitted: 04/27/2022

Notes: Next sample 2024 amps-3.17

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Effluent Pump Effluent Pump	Effluent	Flow	800 GPD	523.12

PROPERTY INFORMATION

Otterbelly South System

Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w 5 yr test

Mail To: Otterbelly South System 37760 Dove Street #23
Aitkin, MN

56431

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ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 11/02/2022 - Inspection Type: ROUTINE - Correction Status: Corrections in progress

Company:Work Performed By:Submitted 11/04/2022 by:Septic CheckMichael PedersonHeather Johnson

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

South system: the last tank should be pumped it has 6in of sludge at the bottom. Everything else looks good and is working properly.

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	YES
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

Ianufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments):	YES	
All required baffles in place (N/A = No baffles required):	YES	
Compartment 1 Scum accumulation (Inches, if other specify):	0	
Compartment 1 Sludge accumulation (Inches, if other specify):	1	
Pumping recommended:	NO	
Pump: Effluent Pump, Manufacturer= Goulds Pumps - PE Series Trash tank pump		
Manufacturer: Goulds Pumps Model: PE Series		
This component was:	Fully Inspected	
Controls functioning:	YES	
Tested gallons per minute flow:	-	
Pump: Effluent Pump, Manufacturer= Goulds Pumps - PE Series Trash tank pump		
Manufacturer: Goulds Pumps Model: PE Series		
This component was:	Fully Inspected	
Controls functioning:	YES	
Tested gallons per minute flow:	-	

Aerobic Treatment Unit: ATU - Consolidated Treatment Systems - Multiflo, Manufacturer= Consolidated Treat Multi-Flo FTP-0.75 750 GPD Mul	ment Systems -		
Manufacturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75			
This component was:	Fully Inspected		
Unit alarms functioning:	YES		
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES		
Impeller assembly removed and cleaned:	NO		
Previous signs of foaming overflow noted on Weir Plate:	YES		
Filter Socks cleaned:	YES		
Filter Socks were partially changed out:	NO		
Filter Socks were completely changed out:	NO		
Gaskets on Surge Bowl need replacing:	NO		
Digester settleable solids test resulted in greater than 40% settleable solids: (If Yes, pumping needed)	NO		
Pumping needed:	NO		
TANK: Pump Tank, Manufacturer= Local Manufacturer - Concrete 1600 Gallon			
Manufacturer: Local Manufacturer Model: Concrete	Followers		
This component was:	Fully Inspected		
Compartment 1 Scum accumulation (Inches, if other specify):	0		
Compartment 1 Sludge accumulation (Inches, if other specify):	6 YES		
Pumping recommended:	YES		
Pump: Effluent Pump Primary Pump	Fully Inspected		
This component was:	YES		
Controls functioning:	-		
Tested gallons per minute flow:	-		
Pump: Effluent Pump Effluent Pump This component was:	Fully Inspected		
Controls functioning:	YES		
Tested gallons per minute flow:	-		
Panel: Control - 2 Pumps Multi-Flo Panel	_		
This component was:	Fully Inspected		
Panel functioning (including alarm):	YES		
Pump 1: on minutes (override in parentheses - if present):	1		
Pump 1: off hours (override in parentheses - if present):	.4		
Pump 1: gallons per dose (override in parentheses - if present):	-		
Pump 1: ETM hours (override in parentheses - if present):	_		
Pump 1: Cycle Count (override in parentheses - if present):	45412		
Pump 2: on minutes (override in parentheses - if present):	1		
Pump 2: off hours (override in parentheses - if present):	.4		
Pump 2: gallons per dose (override in parentheses - if present):	-		
Pump 2: ETM hours (override in parentheses - if present):	-		
Pump 2: Cycle Count (override in parentheses - if present):	45407		
Drainfield (disposal): Pressure Bed Rockbed 10' X 135' w/3 laterals	1010/		
This component was:	Fully Inspected		
Lateral lines flushed:	NO		
Average squirt height (if performed) (feet, if other specify):	-		
Ponding present? If YES explain in comments:	NO		

Location: 37760 Dove St #24

Aitkin

31-0-066201

owner: Otterbelly North System

Use: Multi Family

Service Company: Septic Check

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

Sample Date: 11/02/2022 Sample entered by: Heather Johnson Repor

Report submitted: 11/04/2022

Notes:

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT
Effluent Pump Effluent Pump	Effluent	Flow	1200 GPD	33

PROPERTY INFORMATION

Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w 5 yr test

Mail To: Otterbelly South System 37760 Dove Street #23 Aitkin, MN 56431

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ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 06/01/2023 - Inspection Type: ROUTINE - Correction Status: Corrections in progress

Company:Work Performed By:Submitted 06/06/2023 by:Septic CheckKyle WadeHeather Johnson

COMMENTS & GENERAL INSPECTION NOTES

No Deficiencies Noted

SOUTH:

I would recommend clearing the trees and brush from the mound on the south system as the roots could cause failure.

I would also recommend raising the junction boxes to a minimum of 12" to keep them out of the snow.

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected	
Components accessible for service:	YES	
All required service performed (if no - specify omitted inspection items in notes):	YES	
Surfacing effluent from any component (including mound seepage):	NO	
Components appear to be watertight - no visual leaks:	YES	
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO	

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

TANK: Trash Tank, Manufacturer= Local Manufacturer - Concrete 2000 Gallon		
Manufacturer: Local Manufacturer Model: Concrete		
This component was:	Fully Inspected	
Effluent level within operational limits (if NO explain in comments):	YES	
All required baffles in place (N/A = No baffles required):	YES	
Compartment 1 Scum accumulation (Inches, if other specify):	1	
Compartment 1 Sludge accumulation (Inches, if other specify):	5	
Pumping recommended:	NO	
Pump: Effluent Pump, Manufacturer= Goulds Pumps - PE Series Trash tank pump		
Manufacturer: Goulds Pumps Model: PE Series		
This component was:	Fully Inspected	
Controls functioning:	YES	
Tested gallons per minute flow:	-	
Pump: Effluent Pump, Manufacturer= Goulds Pumps - PE Series Trash tank pump		
Manufacturer: Goulds Pumps Model: PE Series		
This component was:	Fully Inspected	
Controls functioning:	YES	
Tested gallons per minute flow:	-	

Fold

Aerobic Treatment Unit: ATU - Consolidated Treatment Systems - Multiflo, Manufacturer= Consolidated Treatment	atment Systems - Multi-Flo
FTP-0.75 750 GPD Mul	annone Systems matter 10
Manufacturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75	
This component was:	Fully Inspected
Unit alarms functioning:	YES
Aerobic Mechanism appears to be functioning per manufacturers specifications:	YES
Impeller assembly removed and cleaned:	NO
Previous signs of foaming overflow noted on Weir Plate:	YES
Filter Socks cleaned:	YES
Filter Socks were partially changed out:	NO
Filter Socks were completely changed out:	NO
Gaskets on Surge Bowl need replacing:	NO
Digester settleable solids test resulted in greater than 40% settleable solids: (If Yes, pumping needed)	NO
Pumping needed:	NO
TANK: Pump Tank, Manufacturer= Local Manufacturer - Concrete 1600 Gallon	
Manufacturer: Local Manufacturer Model: Concrete	
This component was:	Fully Inspected
Compartment 1 Scum accumulation (Inches, if other specify):	0
Compartment 1 Sludge accumulation (Inches, if other specify):	0
Pumping recommended:	NO
Pump: Effluent Pump Primary Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	-
Pump: Effluent Pump Effluent Pump	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	-
Panel: Control - 2 Pumps Multi-Flo Panel	
This component was:	Fully Inspected
Panel functioning (including alarm):	YES
Pump 1: on minutes (override in parentheses - if present):	1 min
Pump 1: off hours (override in parentheses - if present):	.4 hrs
Pump 1: gallons per dose (override in parentheses - if present):	-
Pump 1: ETM hours (override in parentheses - if present):	-
Pump 1: Cycle Count (override in parentheses - if present):	46583
Pump 2: on minutes (override in parentheses - if present):	1
Pump 2: off hours (override in parentheses - if present):	.4 hrs
Pump 2: gallons per dose (override in parentheses - if present):	-
Pump 2: ETM hours (override in parentheses - if present):	-
Pump 2: Cycle Count (override in parentheses - if present):	46679
Orainfield (disposal): Pressure Bed Rockbed 10' X 135' w/3 laterals	
This component was:	Fully Inspected
Lateral lines flushed:	NO

NO NO

Lateral lines flushed:
Average squirt height (if performed) (feet, if other specify):
Ponding present? If YES explain in comments:

Location: 37760 Dove St #24

Aitkin

31-0-066201

Owner: Otterbelly South System

Use: Multi Family

Service Company:

Septic Check

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

Sample Date: 06/01/2023 Sample entered by: Heather Johnson Report submitted: 06/06/2023

Notes: Next sample 2024

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT	
Effluent Pump Effluent Pump	Effluent	Flow	800 GPD	1447	-Limit Exceeded

PROPERTY INFORMATION

Location: 37760 Dove St #24

Aitkin

Tax ID: 31-0-066201

Use: Commercial, Multi Family System Design Flow: 750

GENERAL SYSTEM TYPE: MF Comm 2 w 5 yr test

Mail To: Otterbelly South System 37760 Dove Street #23 Aitkin, MN 56431

Fold

ON-SITE WASTEWATER TREATMENT SYSTEM INSPECTION REPORT

Inspected: 10/10/2023 - Inspection Type: ROUTINE - Correction Status: Corrections in progress

Company:Work Performed By:Submitted 10/18/2023 by:Septic CheckKyle WadeHeather Johnson

COMMENTS & GENERAL INSPECTION NOTES

Deficiencies Were Noted: Corrections are in progress.

South system.

First tank is at 60% solids, we recommend pumping at 30%.

The multiflo doesn't have much for solids, however the socks are plugged, restricting flow. I was unable to do a full service on this unit.

Everything else looks fine.

GENERAL SITE & SYSTEM CONDITIONS

The General Site and System Conditions were:	Fully Inspected
Components accessible for service:	YES
All required service performed (if no - specify omitted inspection items in notes):	NO - In Progress
Surfacing effluent from any component (including mound seepage):	NO
Components appear to be watertight - no visual leaks:	YES
Improper encroachment (structures/impervious surfaces); cover; or settling problems observed:	NO

ONSITE SEWAGE SYSTEM INSPECTION DETAIL

TANK: Trash Tank, Manufacturer= Local Manufacturer - Concrete 2000 Gallon	
Manufacturer: Local Manufacturer Model: Concrete	
This component was:	Fully Inspected
Effluent level within operational limits (if NO explain in comments):	YES
All required baffles in place (N/A = No baffles required):	YES
Compartment 1 Scum accumulation (Inches, if other specify):	1
Compartment 1 Sludge accumulation (Inches, if other specify):	13
Pumping recommended:	YES
Pump: Effluent Pump, Manufacturer= Goulds Pumps - PE Series Trash tank pump	
Manufacturer: Goulds Pumps Model: PE Series	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	-
Pump: Effluent Pump, Manufacturer= Goulds Pumps - PE Series Trash tank pump	
Manufacturer: Goulds Pumps Model: PE Series	
This component was:	Fully Inspected
Controls functioning:	YES
Tested gallons per minute flow:	-

Fold

erobic Treatment Unit: ATU - Consolidated Treatment Systems - Multiflo, Manufacturer= Consolidated Treat	ment Systems - Multi-Flo			
TP-0.75 750 GPD Mul				
anufacturer: Consolidated Treatment Systems Model: Multi-Flo FTP-0.75	Fully Inspected			
This component was:	YES			
Init alarms functioning:	YES			
Nerobic Mechanism appears to be functioning per manufacturers specifications:	NO NO			
mpeller assembly removed and cleaned:	NO NO			
Previous signs of foaming overflow noted on Weir Plate:	NO NO			
Filter Socks cleaned:	NO NO			
Filter Socks were partially changed out:	NO NO			
Filter Socks were completely changed out:	NO NO			
Gaskets on Surge Bowl need replacing:	NO NO			
Digester settleable solids test resulted in greater than 40% settleable solids: (If Yes, pumping needed)	YES	I. D.		
Pumping needed:	YES	In Progress		
ANK: Pump Tank, Manufacturer= Local Manufacturer - Concrete 1600 Gallon				
lanufacturer: Local Manufacturer Model: Concrete				
This component was:	Fully Inspected			
Compartment 1 Scum accumulation (Inches, if other specify):	0			
Compartment 1 Sludge accumulation (Inches, if other specify):	0			
Pumping recommended:	NO			
Pump: Effluent Pump Primary Pump				
This component was:	Fully Inspected			
Controls functioning:	YES			
Tested gallons per minute flow:	-			
Pump: Effluent Pump Effluent Pump				
This component was:	Fully Inspected			
Controls functioning:	YES			
gallons per minute flow:				
Panel: Control - 2 Pumps Multi-Flo Panel				
This component was:	Fully Inspected			
Panel functioning (including alarm):	YES			
Pump 1: on minutes (override in parentheses - if present):	1 min			
Pump 1: off hours (override in parentheses - if present):	.4 hrs			
Pump 1: gallons per dose (override in parentheses - if present):	-			
Pump 1: ETM hours (override in parentheses - if present):	-			
Pump 1: Cycle Count (override in parentheses - if present):	47549			
Pump 2: on minutes (override in parentheses - if present):	1 min			
Pump 2: off hours (override in parentheses - if present):	.4 hrs			
Pump 2: gallons per dose (override in parentheses - if present):	-			
Pump 2: ETM hours (override in parentheses - if present):	-			
Pump 2: Cycle Count (override in parentheses - if present):	47546			
Orainfield (disposal): Pressure Bed Rockbed 10' X 135' w/3 laterals	<u> </u>			
This component was:	Fully Inspected			
_ateral lines flushed:	NO			
Average squirt height (if performed) (feet, if other specify):	-			
Ponding present? If YES explain in comments:	NO			

Location: 37760 Dove St #24

Aitkin

31-0-066201

owner: Otterbelly South System

Use: Multi Family

Service Company:

Septic Check

6074 Keystone Rd Milaca, MN 56353

320-983-2447

Sample Date: 10/10/2023 Sample entered by: Heather Johnson F

Report submitted: 10/18/2023

Notes:

COMPONENT	TYPE	SAMPLE	LIMIT	RESULT	
Effluent Pump Effluent Pump	Effluent	Flow	800 GPD	1749	-Limit Exceeded