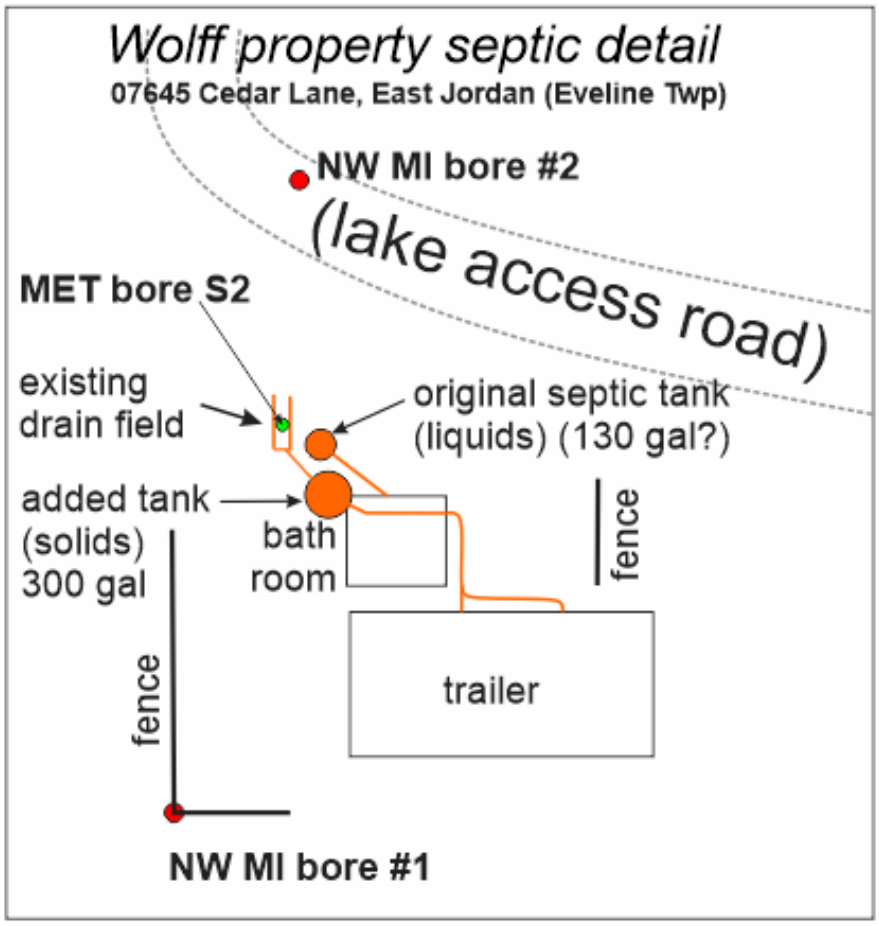
APPENDIX A Updated: 12-15-2022



The septic system on the Wolff property consists of two tanks and a small drain field. ***Both tanks are still being used.*** The original tank is a steel drum of unknown size, likely ~130 gal.. That tank is now used only for liquids (from the bathroom sink). There is an added (300 gal) plastic tank with an access port to enable pumping. This one receives all solid waste from the toilet.

Appendix A continued: Picture of the original septic system on the property – still in service.

APPENDIX B

2022 Wolff property - complete annual usage chart:

2022 Charlevoix Summer Calander					visitors:	vis.nights	others	me	Total use
Visit 1:	May 28 - May 31	3 nights	3		0		0	3	3
Visit 2:	June 13 - 16	3 nights	3		0		0	3	3
Visit 3:	July 1 - 7	6 nights	6		0		0	6	6
Visit 4:	July 15 - 18	3 nights	3		0		0	3	3
Visit 5:	July 23 - 24	1 night	1		1	1	1	1	2
Visit 6:	August 4-8	4 nights	5		3	3	9	5	14
Visit 7:	August 20 - 24	3 nights	4		0		0	4	4
Visit 8:	Aug 29 & Sept 2	2 nights	2		2	2	4	2	6
Visit 9:	Sept 13 - 17	4 nights	4		0		0	4	4
Visit 10:	Sept 26 - Oct 1	5 nights	5		0		0	5	5
	Total nights stayed in 2022:		36		Total "person nights" including visitors:				50

APPENDIX B continued

Wolff Property on Lake Charlevoix - Septic Sizing Information

updated: 12/6/2021

Septic size/usage comparison based on high vs low usage rates, and best vs worst soil absorption

			min use & max absorb		max use & min absorb
Soil drainage rate range:	0.8 - 5	gal / ft2	5 gal / ft2 / day		0.8 gal/ft2/day
Ave. household water usage range:	100 - 300	gal/day	100 gal/day		300 gal/day
Drain field size needed for average usage (ft2)			**20 ft2 min**	or up to	**375 ft2 max**

Wolff property actual usage and septic conditions	**Wolff Property Max.**	**Wolff Property Average**
Drainage rate based on soil samples **(fine sand)**	5 gal / ft2 / day	5 gal/ft2/day
Daily water usage (3.16 gal./flush x Num. flushes / d	51.2 gallons	19.2 gallons
Drain field size capacity needed in sq. feet	10.2 ft2	3.8 ft2
Measured drain field size	30 ft2	30 ft2
Percent of needed capacity with existing drain fie	**293%**	**781%**

Wolff max. total annual water flow for 4 people	2,560	gallons / year	based on 50 days use	50
Wolff likely ave. total annual water for 1.5 people	**576**	**gallons / year**	based on 30 days use	30

Wolff property septic sizing considerations

number of people on sight	4	max
	1-2	normal
	1.5	average

Water usage range assessment

			gallons
likely flushes / day per person	**4**	**average**	12.8
likely flushes per day total	**16**	**max**	51.2
	1	min	
	6	likely future average	
	2	actual current average	

Toilet flush volume	**3.2**	gallons / flush (measured)					
drain field soil type:	sand	(gravel surrounding pipes)					
Measured drain field area	**30**	**ft2**	**maximum capacity:**	120	gal / day	37.5	flushes / day
							vs 4 - 16 actual

Soil Absorption Rates

Type of soil	Sq. ft/ per 100 gal/day	gal / ft2 per day
Coarse sand or gravel	20	5.0
Fine sand	25	**4.0**
Sandy loam	40	2.5
Sandy clay	60	1.7
Clay w/ considerable sand or grave	90	1.1
Clay w/ small amount of sand or gr	120	0.8

https://greywateraction.org/how-do-percolation-test/

APPENDIX B continued

Wolff Property on Lake Charlevoix - Septic Sizing Information

			sq ft	
likely max flow per day	**51.2**	**gallons per day**	**10.2**	**ft2 needed in drain field for course sand or gravel**
Wolff system % coverage based on max. usage			**293%**	(based on 30 ft2 vs what is needed)
likely average flow per day	19.2	gallons per day	3.84	ft2 needed for course sand or gravel
Wolff system % coverage based on ave. usage			**781%**	(based on 30 ft2 vs what is needed)
likely max flow per day	**51.2**	**gallons per day**	**12.8**	**ft2 needed in drain field for fine sand**
Wolff system % coverage based on max. usage			234%	(based on 30 ft2 vs what is needed)
average flow per day	19.2	gallons per day	4.8	ft2 needed for fine sand
Wolff system % coverage based on ave. usage			625%	(based on 30 ft2 vs what is needed)

Wolff Property Annual Seasonal Usage		
number of days used per year	50	max
	10	min
	30	**average**

Max. annual TOTAL toilet flow	2,560	gallons / year	1 primary toilet, 1 sink, no washers, no tubs or shower usage
Ave. annual TOTAL toilet flow	576	**gallons / year**	***This is an incredibly low usage - far below an average household!***

Potential usage for 2 bedroom house	gallons	flushes/day/perso		max. people	ave.
flush volume	2	4		4	2
	max	average			
likely toilet flushes per day	16	8	(at 4 flushes / day / per person)		
Toilet flow per day	32	16	gallons per day		

	showers	washers	sinks	**Total:**	
Sink, shower, washer etc us	100	50	10	**160**	gal/day
Max. total flow / day	192	gallons per day			
number of days used per yea	350	max			
Annual flow for 4 people	78,400	gallons / year		**for 2 people:**	39,200 gallons / year

Assessment: the septic system on the Wolff property may be comparatively small, but it has functioned property for decades, so it is obviously adequate. The calculations performed bear that out. Their water usage is quite small, and the system in place is actually very well sized to meet their needs, and in fact with the sandy soil in the area, their small system could actually handle significantly more usage than they tend to give it, as is evident from the % coverage calcs above for both max. and average usage. 55 years of trouble free usage certainly says a whole lot for the inherent integrity of the existing system and it's fully functional capability.

Hal Wolff, BSME, PE
phone: 734-487-5616 email: runlikehal@yahoo.com

APPENDIX C

A note from Mr. Mike Jones to Mr. Wolff:

On Monday, October 24, 2022 at 08:24:43 AM EDT, Mike Jones <m.jones@nwhealth.org> wrote:

Mr. Wolfe,
Attached is the Health Department of Northwest Michigan procedure for groundwater monitoring. A plan must first be proposed with specific information on monitoring well construction and location with notification to this department when monitoring is to begin so joint review can occur. In addition to groundwater elevations, the soil permeability is also unsuitable for the current system.

Additionally, by your own admission, as indicated in the variance hearing, the current habitable building is a "successor building". Section 4-19 of the District Sanitary Code requires the system to be deemed adequate in accordance with the Code. While you can continue to attempt to argue the suitability of the soil, the size of the system is without question non-conforming with respect to the requirements stated in Section 5-13 of the Code. Therefore, the current system will not receive approval from this department for use with the successor building.

However, the fact still remains that your variance request was denied by the Sanitary Code Board of Appeals. At this point you have three options. The first is to install a code-compliant wastewater system. The second is to appeal the decision of the board to the appropriate court. The third option would be the removal of the camper from the property. These are the only three options available to you.

MICHAEL JONES, RS, BSEH
Environmental Health District Supervisor
220 W. Garfield, Charlevoix, MI 49720
Office: 231-547-6523
www.nwhealth.org

HEALTH DEPARTMENT of Northwest Michigan

Treble damages - The leading case on statutory conversion is the 2015 Michigan Supreme Court case of Aroma Wines & Equipment, Inc. v. Columbian Distribution Services, Inc.

While the tort of conversion originally required a separate showing that the converter made some use of the property that amounted to a total deprivation of that property to its owner, by the twentieth century common-law conversion more broadly encompassed ***any conduct inconsistent with the owner's property rights.***

https://www.michbar.org/file/barjournal/article/documents/pdf4article4128.pdf

Appendix D

Water table depth data for Wolff property — updated: 12/15/2022

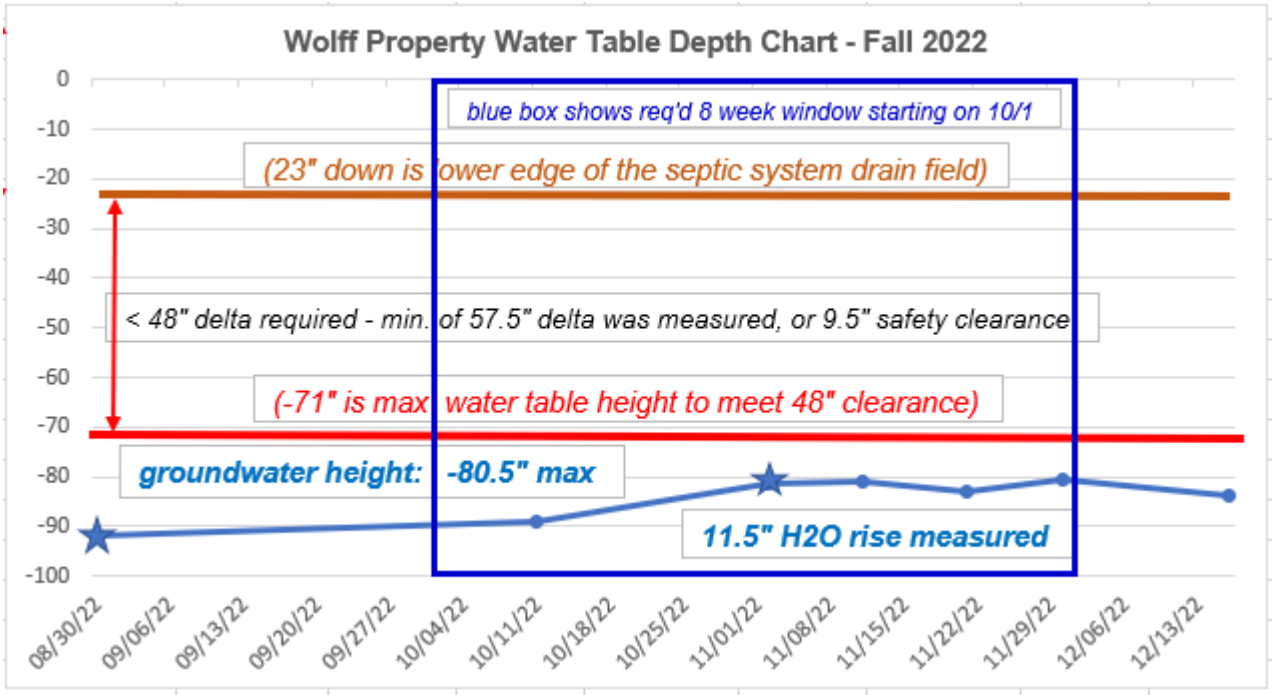
Date	S-2 well (inches below grade)	taken by
8/30/2022	**92**	**Brad**
10/11/2022	90	Hal
11/2/2022	82.5	Hal
11/11/2022	82	Hal
11/11/2022	**81**	**Brad** and Hal
11/20/2022	84	Hal
11/30/2022	81.5	Hal
12/16/2022	85	Hal

Note - Brad (of MET) and Hal each took 2 measurements on 11/11.
Brad used an electronic spool, Hal used a pole.
Hal's measurements were each 1" below Brad's, so
all of Hal's data was adjusted up by 1" to correlate with MET data.

1" Adjusted Graph data (converted to negative to show level below grade)

08/30/22	-92	Brad - MET ★
10/11/22	-89	Hal - adjusted up by 1"
11/02/22	-81.5	Hal - adjusted up by 1"
11/11/22	-81	Brad - MET ★
11/21/22	-83	Hal - adjusted up by 1"
11/30/2022	-80.5	Hal - adjusted up by 1"
12/16/2022	-84	Hal - adjusted up by 1"

dist. H2O is below field:	H2O rise:	safety:
-57.5 (inches)	11.5 (inches)	9.5 (inches)



Climate Charlevoix - Michigan

	Jan	Feb	Mar	Apr	May	Jun
Average high in °F	29	31	40	50	60	71
Average low in °F	21	19	24	33	46	58
Av. precipitation in inch	2.28	1.65	1.87	2.54	2.87	2.77
Av. snowfall in inch	33	22	14	5	0	0

	Jul	Aug	Sep	Oct	Nov	Dec
Average high in °F	76	75	69	56	44	34
Average low in °F	65	64	57	44	34	26
Av. precipitation in inch	2.54	3.37	3.39	3.73	2.58	2.60
Av. snowfall in inch	0	0	0	0	8	34

Source: https://www.usclimatedata.com/climate/charlevoix/michigan/united-states/usmi1270

	October 2022 Charlevoix Weather					
			rainfall	rain ave	snow	snow ave.
Oct-22		**TOTAL:**	5.03	3.73	0	0
	November 2022 Charlevoix Weather					
Nov-22		**TOTAL:**	4.2	2.58	19.5	8
		2 month totals:	**9.23**	**6.31**	**19.5**	**8**
		% of average:	146%		244%	
Source:	https://www.extremeweatherwatch.com/cities/charlevoix/year-2022					

Appendix D continued

MACKINAC ENVIRONMENTAL TECHNOLOGY, INC.

Environmental Consulting and Contracting Since 1990

September 9, 2022

Mr. Hal Wolff
2045 McKinley Avenue
Ypsilanti,Michigan 48197
runlikehal@yahoo.com
(734) 487-5616

RE: Septic Field Investigation – 07645 Cedar Lane (Parcel ID: 15-006-700-024-00)

Dear Mr. Wolff,

The following was prepared by Mackinac Environmental Technology, Inc. (MET) to provide results of the septic field subsurface investigation completed at 07645 Cedar Lane, East Jordan, Michigan ("Site").

The Site consists of a lake front lot along the south shore of Lake Charlevoix in Eveline Township, Charlevoix County. Current developments include a camping trailer, small storage shed and separate bathroom. It is METs understanding that the Site is used seasonally during the summer months.

The Site's existing sewage system consists of an approximate 300-gallon septic tank and associated drainage field (two 10-feet drain pipes in a 4 feet wide drain bed).

On August 29, 2022, MET was on-Site to conduct a subsurface investigation near the existing septic system. The investigation included the advancement of three soil borings (S-1 to S-3). See attached Figure 1 – Site Plan for boring locations.

A stainless-steel hand auger was utilized to complete the soil borings. Continuous soil cores were completed from surface to a maximum explored depth of 9.5 feet below grade. The soil was classified in accordance with the Unified Soil Classification guidelines and recorded in the field. Site soil lithology generally consisted of a surficial loamy sand/cobble (0 to 2.5 feet), followed by a fine sand/silt (2.5 to 6 feet), medium sand/cobble (6 to 8 feet) and silt/clay (8 to 9.5 feet). Saturated soils were encountered at approximately 7.5 feet below grade. See attached boring logs for specific soil lithology.

Temporary monitoring wells, consisting of a five-foot section of two-inch diameter polyvinyl chloride (PVC) #10 slot screen and associated PVC risers, were installed in boreholes S-2 and S-3. Please note that due to auger refusal encountered at 7.5 feet below grade, a monitoring well was not installed in borehole S-1. The screened sections were set to bisect the groundwater table. Clean filter sand was used to fill annular space around the wells to grade. Photographs of the installed monitoring wells are also attached.

Following a four-day stabilization period, MET conducted depth-to-water measurements on September 2, 2022. All water level measurements were made relative to each wells top-of-

casings (TOCs) using an electronic static water level meter (accurate to 0.01-feet). Above grade casing height was subtracted to determine exact depth to groundwater from surface grade.

Table 1 – Depth to Groundwater

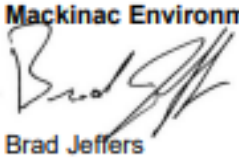
Location	TOC - Depth to Groundwater	Above Grade Casing Height	Surface Grade - Depth to Groundwater
	Unit (ft)		
S-2	9.21	1.54	7.67
S-3	8.20	1.25	6.95

As depicted above, groundwater was encountered beneath the existing drain field at 7.67 feet below grade. Groundwater depth, located approximately 10 feet south of the drain field, was measured at 6.95 feet below grade.

Mackinac Environmental Technology, Inc. appreciates the opportunity to provide these consulting services. Should you have any questions or comments regarding this report, or if we can be of further assistance, please do not hesitate to contact us.

Sincerely,

Mackinac Environmental Technology, Inc.



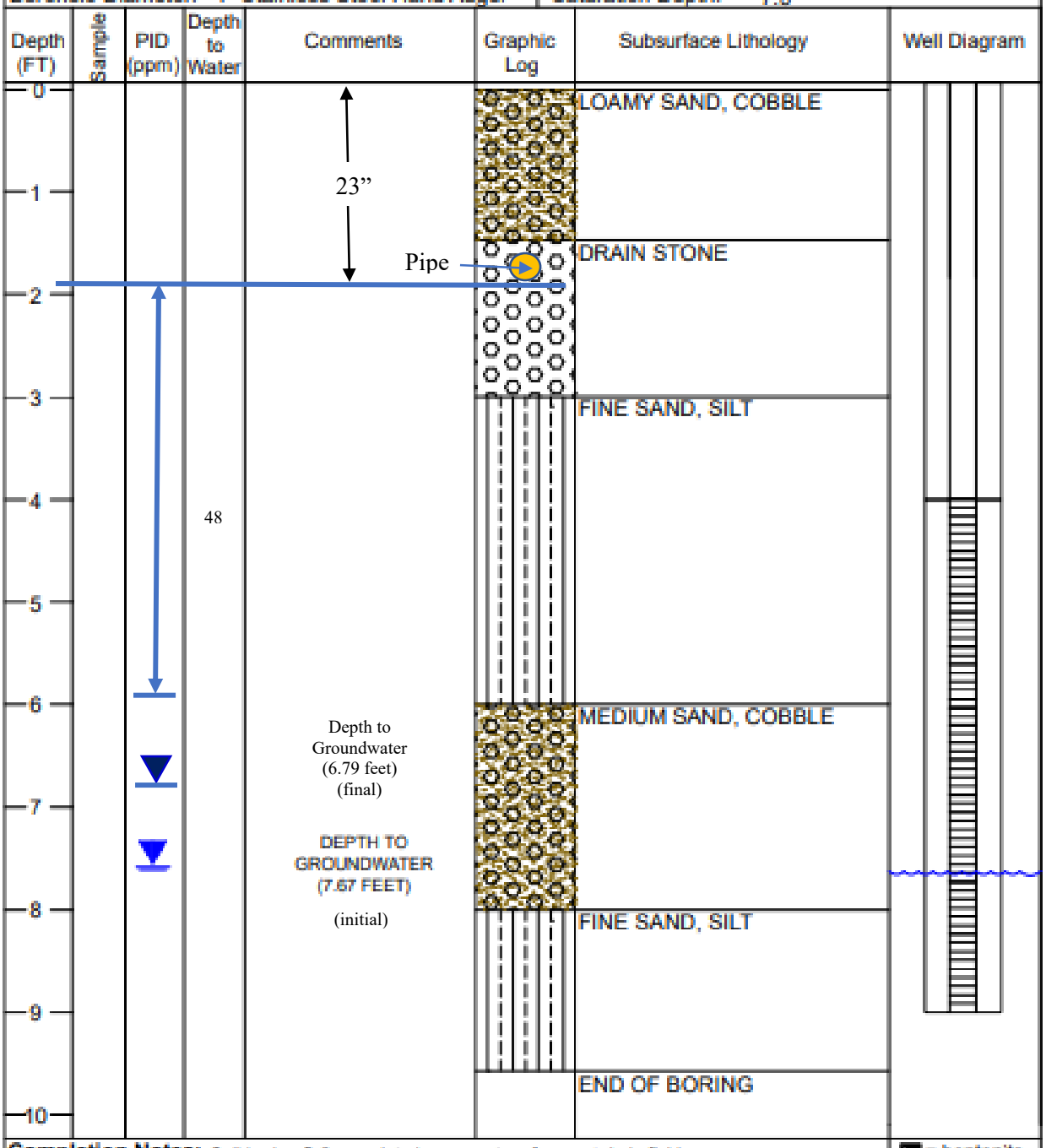
Brad Jeffers
Environmental Professional

Attachment:
- Figure 1: Site Plan
- Boring Logs
- Site Photographs

S-2

HAL WOLFF RESIDENCE 07645 CEDAR LANE, EAST JORDAN, MI

Project Number:	M22-3771	Drilling Co:	Mackinac Environmental Tech.
Logged By:	B. Jeffers (MET)	Ground Elevation:	N/A
Date Drilled:	8/29/2022	Boring Depth:	9.5'
Borehole Diameter:	4" Stainless Steel Hand Auger	Saturation Depth:	7.5'



Completion Notes: Soil boring S-2 completed near center of current drain field.

= bentonite
= filter sand
Casing = 4'
Screen = 5'

MACKINAC ENVIRONMENTAL TECHNOLOGY, INC.
Environmental Consulting & Contracting

Hal Wolff Residence, 07645 Cedar Lane, East Jordan, Michigan.
Photographs by B. Jeffers (MET) on August 29, 2022.

Photograph: 1

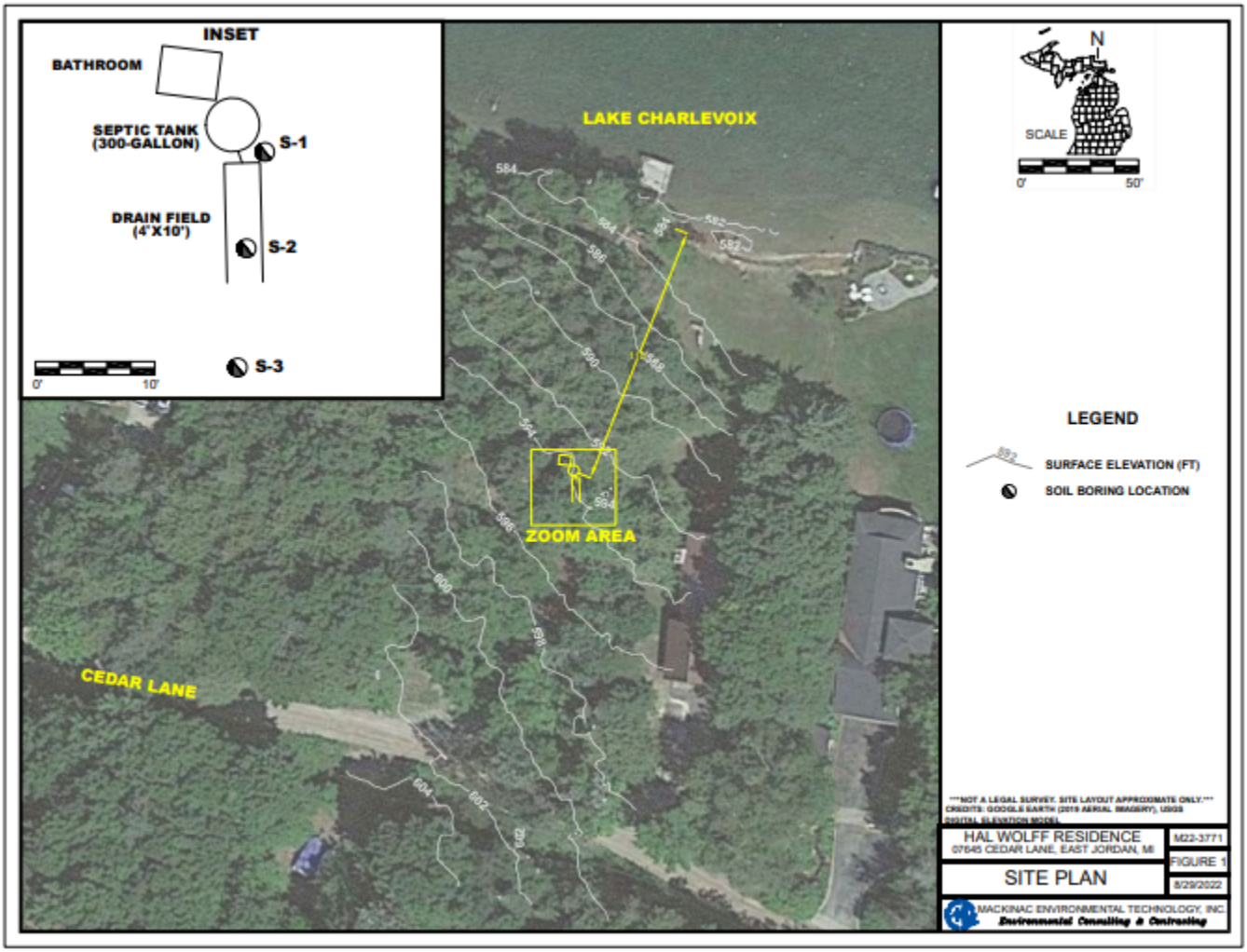
Description: Looking north, across the septic drain field, towards the Site bathroom.

Photograph: 2

Description: Looking north towards the Site bathroom.

Photograph: 3

Description: Looking south, across the Site drain field, from the bathroom location.



Appendix E

Picture of E. Coli sample bottles referenced in the note below from Caroline Keson.
(The purple color indicates no dangerous E. coli. Yellow would indicate the presence of E. coli.)

Email note from Caroline Keson of Tip of the Mitt Watershed regarding tests she ran on the Wolff property. **Possibly remove most of this note? (Below the purple confirmation part.)**

Caroline Keson <caroline@watershedcouncil.org>
To:Hal Wolfe
Tue, Oct 4 at 3:33 PM

Hi Hal,

Yes, I am out in the field every day this week. The samples that I had were also purple after 48 hours.

The E. coli reading from Lake Charlevoix was basically a non-detect. The E. coli result from GW s3 was 14.80 E. coli units/100 mL. I am attaching the analyses from the Northern Michigan Regional Lab.

The conductivity reading I took from Lake Charlevoix, using a YSI30 meter, was 322.29 microsiemens/cm and consistent along your shoreline. I also collected water samples to be analyzed for total phosphorus, total nitrogen, and chloride, but I won't get those results until probably December. I would have to look up the range for Lake Charlevoix, but at first glance the conductivity reading was in the normal range for ambient conductivity in Lake Charlevoix.

The conductivity collected in the groundwater in your wells was as follows:

S2: 515 microsiemens/cm

S3: 484.6 microsiemens/cm

Both of the groundwater conductivity readings were higher than what is normal in Lake Charlevoix. However, I cannot say what is normal for groundwater, nor can I say whether it is going into Lake Charlevoix.

I did use the Terramar Dualem1, but I have not looked at the data. I am still learning how to interpret that, so I cannot say those readings were normal. I would prefer to make opinions like this until I am able to critically look at all the data from your property together as well as the 400 other properties we have surveyed.

You can also say this is part of an investigative monitoring project we are conducting for Lake Charlevoix Association all along Lake Charlevoix.

Thanks,
Caroline

Northern Michigan Regional Laboratory

95 LIVINGSTON BOULEVARD
GAYLORD, MI 49735

PHONE: (989)732-1794
FAX: (989)732-3285

OFFICIAL WATER ANALYSIS REPORT

MDEQ# 9960

Date Reported: 09/28/2022 at 9:43 am

REPORT TO: **CAROLINE KESON**
426 BAY ST
PETOSKEY, MI 49770

Sample ID: EN22-006696

County of Watersource: Charlevoix
Township of Watersource: EVELINE
Site Code of Water Source: LAKE CHARLEVOIX

COLLECTION SITE ADDRESS: **WOLFF**
ATTN: 134351
0764 S Cedar Lane
East Jordan, MI 49727

SUBMITTING AGENCY: **CAROLINE KESON**
AGENCY ID#: 937932
426 Bay St
Petoskey, MI 49770
231-347-1181

Collection date: 09/27/2022
Collection time: 12:15 pm
Collected by: TIP OF MITT WATERSHED COUNCIL
Received date: 09/27/2022
Received time: 03:20 pm
Received by:

Site Code: LAKE CHARLEVOIX
Surface Water Type: SURFACE WATER (7)

TEST & ANALYTE NAME	Date/Time Tested	Result	Units	RL	MCL / AL	Method	Analyst
Surface Water - Quanti-Tray							
Surface Water 1:1	09/28/2022	**<1.0**	E.coli/ 100ml			SM 9223	CC

This result is a calculated Most Probable Number (MPN) of E. coli per 100ml sample tested.

The agency for the county of this water source to contact in regards to questions about interpretation of results is:
NORTHWEST MI COMM HEALTH AG-ENV
220 W GARFIELD
Phone: (231)547-6523

MCL : Maximum Contaminant Level
AL : Action Level
cfu : Colony Forming Units
RL : Reporting Limit
mg/L : milligrams/Liter (ppm)
ppm : parts per million
MPN : Most Probable Number

Appendix F

5-11 VERTICAL SEPARATION REQUIREMENTS

TABLE 5-11 MINIMUM VERTICAL SEPARATION DISTANCES
(INCHES OF SEPARATION)

The infiltrative surface of a sewage treatment and disposal system shall be separated by the minimum vertical distances from the item named:

Water Table[1]	Ordinary High Water Mark[2]	Impervious/Limiting Stratum
48	48	60

The natural ground surface within the entire sewage treatment and disposal system area shall be separated by the minimum vertical distances from the items named for the types of systems noted:

Type of System	Water Table	Ordinary High Water Mark[2]	Impervious/Limiting Stratum
Conventional	48	48	60
Low Pressure Dist. Mound	24	24	36
Advanced Treatment (ATS)	12	12	24

[1]Water table cannot be artificially lowered to meet requirement. [2]Measurement from relative elevation of ordinary high water mark

2-19 FAILURE – SEWAGE TREATMENT AND DISPOSAL SYSTEM

Where the drainfield aggregate of a sewage treatment and disposal system has hydraulically saturated or effluent from a sewage treatment and disposal system is exposed to the surface of the ground, backing up into a structure or is permitted to drain onto the surface of the ground or into any lake, river, storm sewer or stream, or where the seepage of effluent is endangering a public or private water supply or where a public health nuisance is created by a system improperly constructed or maintained.

2-53 SUCCESSOR BUILDING

Any premises where the square footage is replaced or expanded by greater than 50% through construction, remodeling or renovation activities.

4-19 SUCCESSOR BUILDINGS

A building or mobile home using an existing sewage treatment and disposal system may be replaced or succeeded by a building or mobile home which may use the same treatment and disposal system provided approval of the Health Officer is first obtained and the system is deemed adequate for the replacement building in terms of the provisions of this Code.

October 21, 2021
Revised letter

Halsey Wolff
2045 McKinley
Ypsilanti, MI 48197

RE: Existing System Evaluation (C21-033), 07645 Cedar Lane East Jordan, MI 49729; Lot 24 of Tonnadoonah Section 14, Eveline Township, Charlevoix County
Tax ID 15-006-700-024-00

Mr. Wolff,

On October 4, 2021, two representatives of the Health Department of Northwest Michigan conducted an evaluation of the existing wastewater system, at the above referenced property, in response to the unauthorized connection of the newer camper trailer to the outdoor toilet and wastewater system observed while onsite for the submitted well permit application.

During the evaluation, the wastewater system was evaluated for compliance with current regulations and to determine their current operational status. The following observations were documented at the time of inspection:

1. The property is a lakefront parcel on Lake Charlevoix with a gradual slope down heading north toward the lake. This parcel is located within the established Tonnadoonah Subdivision.
2. There is a screened-in seasonal building near the lake, an updated recreational camper had recently been brought onto the property, and a new "shed" structure.
    a. The owner revealed the inside of the shed, which consisted of characteristics deemed to that of a habitable building, including a futon sofa, stove, and microwave in addition to bike storage.
3. The owner had stated to recently replaced the previous camper trailer with a newer camper trailer and has since connected it directly to the existing septic system. The replacement of a habitable structure with interior plumbing constitutes a successor building with respect to Section 2-53 of the District Sanitary Code.
4. This Department does not have any record of a septic permit available on file for the existing wastewater system. Through conversations with the property owner, the exact age of the system is unknown but has been present since being under the family ownership over the past 54 years.
    a. The exposed septic tank lid and the presence of filter fabric over the drainfield stone appear to be evident of work done to the system in more recent years. Note, no record of a valid septic permit is available on file.
5. The existing septic tank is stated to have an approximate capacity of 300-gallons.
6. The end of the drainfield was exposed for this evaluation and consists of a 3'x10' drainfield with two laterals for a total of 30 sqft of absorption area.
7. Multiple soil borings were conducted onsite and revealed the following:
   <u>Soil Boring #1: off the northeast corner of the outdoor toilet structure and existing septic tank; 86' to Lake Charlevoix ordinary highwater mark</u>
   0 – 12" Sandy Topsoil with gravel

12 – 18" Medium Sand with gravel
18 – 32" Fine Sand with Silt (mottled, dull at 24")
32 – 50" Silt Loam (dull)
50 – 65" Sandy Loam (damp at 56")
65" + Refusal by rock
Seasonal high groundwater noted at 56"

Soil Boring #2: south of SB#1, west of driveway, directly east of new "shed" structure
0 – 9" Loamy Sand Topsoil
9 – 24" Medium Sand
24 – 26" Medium Sand with Loamy Sand pockets
26 – 62" Medium Sand
62 – 72" Medium Sand with Silt Loam pockets (moisture increasing with depth, saturated at 70")
Seasonal high groundwater noted at 62"

8. Adequate isolation from neighboring water wells, septic systems, and surface water exists for the installation of a complaint onsite septic system.

Based on the above noted observations, it is the opinion of this department that the existing wastewater system is not in substantial compliance with the District Sanitary Code as it is severely undersized, and the connection of the new camper trailer is **DENIED. The owner shall immediately discontinue the direct connection between the new camper trailer and the existing wastewater system.** Any incidental wastewater generated onsite shall be contained with the recreational unit and hauled offsite for proper disposal (i.e. campground dumping station). **Written notice and verification of the above-described disconnection *or* a septic permit application shall be submitted to this agency within thirty (30) days of the date of this letter.** This existing system evaluation may be rolled over into a residential septic permit for an additional fee of $148 within 30 days of the date of this letter. Note, the well permit will continue to be held in pending awaiting the until compliant wastewater disposal is permitted and/or verified.

An applicant may appeal to the Board of Appeals any order, requirement, decision, or determination that is made by the Health Officer. Note, each appeal shall be in writing and shall be filed, with the County fee, within sixty (60) days after the date of the decision that is being appealed. Please reference Article XI Board of Appeals of the District Sanitary Code for more information regarding the appeals process. The District Sanitary Code is available on our agency website, www.nwhealth.org and hard copies are available at our Department offices.

As previously mentioned, the conditions on the premise may require approval from other agencies outside of this Department, including the Charlevoix Building Department, Eveline Township Zoning, the Tonnadoonah Association.

Respectfully,

Meghan Stih
Environmental Health Sanitarian

cc. Ken Visser, Mallard Cove/Tonnadoonah Association
John Cochrane, Charlevoix County Building Department
Eveline Township Zoning Administrator
Mike Jones, HDNW Environmental Health District Supervisor

HEALTH DEPARTMENT of Northwest Michigan

The mission of the Health Department of Northwest Michigan is to serve our entire community and to achieve health equity by promoting well-being, preventing disease, and protecting the environment through partnerships, innovation, and excellence in public health practice.

October 21, 2021
Revised letter

Halsey Wolff
2045 McKinley
Ypsilanti, MI 48197

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During the evaluation, the wastewater system was evaluated for compliance with current regulations and to determine their current operational status. The following observations were documented at the time of inspection:

1. The property is a lakefront parcel on Lake Charlevoix with a gradual slope down heading north toward the lake. This parcel is located within the established Tonnadoonah Subdivision.
2. There is a screened-in seasonal building near the lake, an updated recreational camper had recently been brought onto the property, and a new "shed" structure.
    a. The owner revealed the inside of the shed, which consisted of characteristics deemed to that of a habitable building, including a futon sofa, stove, and microwave in addition to bike storage.
3. The owner had stated to recently replaced the previous camper trailer with a newer camper trailer and has since connected it directly to the existing septic system. The replacement of a habitable structure with interior plumbing constitutes a successor building with respect to Section 2-53 of the District Sanitary Code.
4. This Department does not have any record of a septic permit available on file for the existing wastewater system. Through conversations with the property owner, the exact age of the system is unknown but has been present since being under the family ownership over the past 54 years.
    a. The exposed septic tank lid and the presence of filter fabric over the drainfield stone appear to be evident of work done to the system in more recent years. Note, no record of a valid septic permit is available on file.
5. The existing septic tank is stated to have an approximate capacity of 300-gallons.
6. The end of the drainfield was exposed for this evaluation and consists of a 3'x10' drainfield with two laterals for a total of 30 sqft of absorption area.
7. Multiple soil borings were conducted onsite and revealed the following:
    <u>Soil Boring #1: off the northeast corner of the outdoor toilet structure and existing septic tank; 86' to Lake Charlevoix ordinary highwater mark</u>
    0 – 12" Sandy Topsoil with gravel

12 – 18" Medium Sand with gravel
18 – 32" Fine Sand with Silt (mottled, dull at 24")
32 – 50" Silt Loam (dull)
50 – 65" Sandy Loam (damp at 56")
65" + Refusal by rock
Seasonal high groundwater noted at 56"

Soil Boring #2: south of SB#1, west of driveway, directly east of new "shed" structure
0 – 9" Loamy Sand Topsoil
9 – 24" Medium Sand
24 – 26" Medium Sand with Loamy Sand pockets
26 – 62" Medium Sand
62 – 72" Medium Sand with Silt Loam pockets (moisture increasing with depth, saturated at 70")
Seasonal high groundwater noted at 62"

8. Adequate isolation from neighboring water wells, septic systems, and surface water exists for the installation of a complaint onsite septic system.

Based on the above noted observations, it is the opinion of this department that the existing wastewater system is not in substantial compliance with the District Sanitary Code as it is severely undersized, and the connection of the new camper trailer is **DENIED. The owner shall immediately discontinue the direct connection between the new camper trailer and the existing wastewater system.** Any incidental wastewater generated onsite shall be contained with the recreational unit and hauled offsite for proper disposal (i.e. campground dumping station). **Written notice and verification of the above-described disconnection *or* a septic permit application shall be submitted to this agency within thirty (30) days of the date of this letter.** This existing system evaluation may be rolled over into a residential septic permit for an additional fee of $148 within 30 days of the date of this letter. Note, the well permit will continue to be held in pending awaiting the until compliant wastewater disposal is permitted and/or verified.

An applicant may appeal to the Board of Appeals any order, requirement, decision, or determination that is made by the Health Officer. Note, each appeal shall be in writing and shall be filed, with the County fee, within sixty (60) days after the date of the decision that is being appealed. Please reference Article XI Board of Appeals of the District Sanitary Code for more information regarding the appeals process. The District Sanitary Code is available on our agency website, www.nwhealth.org and hard copies are available at our Department offices.

As previously mentioned, the conditions on the premise may require approval from other agencies outside of this Department, including the Charlevoix Building Department, Eveline Township Zoning, the Tonnadoonah Association.

Respectfully,

Meghan Stih
Environmental Health Sanitarian

cc. Ken Visser, Mallard Cove/Tonnadoonah Association
John Cochrane, Charlevoix County Building Department
Eveline Township Zoning Administrator
Mike Jones, HDNW Environmental Health District Supervisor

Julia A. Drost, County Clerk
COUNTY OF CHARLEVOIX

203 ANTRIM STREET
CHARLEVOIX, MICHIGAN 49720
Telephone: 231-547-7200
FAX: 231-547-7217
Email: clerk@charlevoixcounty.org

December 14, 2021

Mr. Halsey Wolff
2045 McKinley
Ypsilanti, MI 48197

RE: Sanitary Code of Appeals hearing, property located at 07645 Cedar Lane, East Jordan, MI, 49729, Section 14, Eveline Township, Charlevoix County. Parcel 15-006-700-024-00.

Dear Mr. Wolff:

The above referenced Sanitary Code Board of Appeals hearing has been scheduled for **Thursday, December 16, 2021.** The Appeals Board will meet on the property at approximately 9:00 a.m. to review the site. The Board will convene at the Eveline Township Hall located at 08525 Ferry Road, East Jordan, MI 49727 the for the formal hearing immediately following the site visit.

Please bring all applicable information and be prepared to make your presentation at that time.

Sincerely,

Julia Drost, Secretary
Sanitary Code Board of Appeals

JD/kck

xc: Michael Jones, Health Department of Northwest Michigan
Dan Thorell, Health Department of Northwest Michigan
Meghan Stih, Environmental Health Sanitarian
Members of the Sanitary Board of Appeals
Kevin Schlickau, Office of Building Safety
Sandi Whiteford, Eveline Township Clerk
John Vrondran, Eveline Township Supervisor
Deb Graber, Eveline Township Zoning Administrator
Tip of the Mitt Watershed Council
Ken Visser, Tonnadoonah Association Sewer Committee President

HEALTH DEPARTMENT of Northwest Michigan

The mission of the Health Department of Northwest Michigan is to serve our entire community and to achieve health equity by promoting well-being, preventing disease, and protecting the environment through partnerships, innovation, and excellence in public health practice.

January 10, 2022

Attn: Hal Wolff
2045 McKinley
Ypsilanti, MI 48197

RE: Well Permit Application (#C21-184)
07645 Cedar Lane; Lot #24 of Tonnadoonah Subdivision
Section 14, Eveline Township, Charlevoix County; Tax ID #: 15-006-700-024-00

Mr. Wolff,

Let this letter serve as a follow-up correspondence regarding the status of the submitted well permit application following the recent appeals hearing.

On December 16, 2021 a Sanitary Code Board of Appeals hearing was held regarding the above-described premise. The outcome of the Sanitary Code Board of Appeals hearing denied the owner's request for an appeal to simply add onto the unpermitted, existing wastewater system in an attempt to bring the system to meet minimum code requirements and in-turn obtain a valid well permit. Based on a soils evaluation conducted onsite, simply adding onto the existing wastewater treatment and disposal system would not effectively bring the system into compliance with minimum code requirements due to lack of adequate vertical separation to seasonal groundwater levels per Section 5-11 of the District Sanitary Code. However, an area was identified onsite where a compliant conventional-style wastewater treatment and disposal system could be installed.

A permit for the installation of a water supply well will not be issued for the above-described premise until a compliant wastewater treatment and disposal system is both installed and approved by this Department. The installation of a wastewater treatment and disposal system will require the owner to submit a septic permit application and corresponding fee to the Charlevoix branch office. Septic permit applications are available on our agency website, www.nwhealth.org and at our branch offices. **As such, the submitted well permit application (#C21-184) will remain in our pending file.** Please note that permit applications shall have a term of one (1) year from the date of application submittal.

If you have any questions regarding this correspondence, please feel free to contact HDNW Environmental Health District Supervisor, Mike Jones, at our Administrative office located in Charlevoix at 231-547-6523.

Respectfully,

Meghan Stih
Environmental Sanitarian

CC: Ken Visser, Mallard Cove/Tonnadoonah Association
Deb Graber, Eveline Township Zoning Administrator
Dan Thorell, HDNW Environmental Health Director
Mike Jones, HDNW Environmental Health District Supervisor