Lawrence A. Tornes
Tornes Soil Investigations, LTD
811 State Route 61 North
Sunbury, Ohio 43074

Phone 740 965-3254

August 22, 2020

Mr. Chip Carpenter Broker/Auctioneer
Real Estate & Auction Services
2295 Creek Road
Sunbury, Ohio 43074

Dear Chip,

This is my invoice for a soil site evaluation for on-site sewage treatment and dispersal at 1499 County Road 149 in Cardington Township, Morrow County, on August 20, 2020, and preparation of the enclosed soils report.

Let me know if you have any questions on the report.

August 20 and 22, 2020 $285.00

Lawrence A. Tornes
Certified Professional Soil Scientist

Enclosure

Lawrence A. Tornes
Tornes Soil Investigations, LTD.
811 State Route 61 North
Sunbury, Ohio 43074

Phone 740 965-3254

August 22, 2020

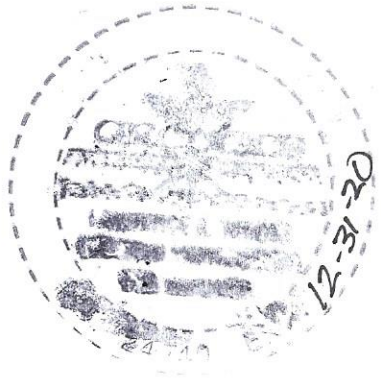
Mr. Chip Carpenter
United Country Real Estate

Dear Mr. Carpenter,

In August 20, 2020, I completed a soil site evaluation for on-site sewage treatment and dispersal on a 4.6 acre lot at 1499 County Road 149 in Cardington Township, Morrow County, Ohio. The proposed locations of the septic fields and test holes for the lot are marked with red flags. These fields contain soils that have been in the past and will be approved by the Morrow County Health Department for some type of on-site sewage treatment and dispersal system for a home on this date. The type of system that will be approved must be determined by a sewage system designer and the Morrow County Health Department.

Sincerely,

Lawrence A. Tornes
Certified Professional Soil Scientist



Morrow County, Ohio, 30 AC +/-

Real Estate
Auction Services

Boundary

1499 County Rd 149
Caldington, OH

12-31-20

August 20, 2020

yan Biltz

The information contained herein was obtained from sources deemed to be reliable.

Requested By: Chip Carpenter 614 206-1135
Real ~~Estate~~ Estate and Auction Services

Site and Soil Evaluation for Sewage Treatment and Dispersal

12-31-20

County: Morrow
Township / Sec.: Cardington
Property Address/Location: 1499 Co. Rd. 149 Cardington, OH
Applicant Name:
Address:
Phone #:
Lot #: Split of Parcel C07-00106304
Test Hole #: 1
Latitude/Longitude:
Method: ___ Pit ✓ Auger ___ Probe

Land Use / Vegetation: Meadow with Scattered Trees
Landform: Glaciated Upland
Position on Landform: Slight Rise
Percent Slope: 1402
Shape of Slope: Linear

Date: 8-20-20
Evaluator: Larry Torres
Torres Soil Investigations
811 St. Rt. 61 N
Sunbury, OH 43074
Phone#: 740 965-3254

Certification Stamp or Certification #:
Signature: Larry A. Torres

4 Bedroom House

Soil Profile		Estimating Soil Saturation			Estimating Soil Permeability							
		Munsell Color (hue, value, chroma)										
			Redoximorphic Features		Texture			Structure				
Horizon	Depth (inches)	Matrix Color	Concentrations	Depletions	Class	Approx. % Clay	Approx. % Fragments	Grade	Size	Type (shape)	Consistence	Other Soil Features
Ap	0-10	10YR 4/3			Sil	20	—	3	F,VF,M	Gr	Fr	
Bt1	10-18	10YR 5/6		40% 10YR 5/2	SICL	35	—	2	M	Sbk	Fi	
Bt2	18-31	10YR 5/6	10YR 5/4	35% 10YR 5/2	SICL	35	—	2	M	Sbk	Fi	
BC	31-38	10YR 4/4	10YR 5/4	30% 10YR 5/2	SICL	35	Few	1	M	Sbk	Fi	
Cd	38-49	10YR 4/4	10YR 5/4	20% 10YR 5/2	SICL	30	5	0		M	VFi	
		Stopped by rock fragments										

Limiting Conditions	Depth to (in.)	Descriptive Notes
Perched Seasonal Water Table	10	Perched on Glacial Till
Apparent Water Table		
Highly Permeable Material*		
Bedrock	>49	*
Restrictive Layer	38	Glacial Till

Remarks / Risk Factors: Bennington soil
I recommend a perimeter drain. There could be agricultural subsurface drains in this area.
Loading rates based on system installed 4 inches below the soil surface:
Basal loading rate of 0.6 gals/da/ft² (BOD ≥ 30 mg/L)
Linear loading rate of 2.7 gals/da/ft

* The Designer and the Morrow County Health Department will select the final loading rates used to design the sewage system.

Note: The evaluation shall include a complete site plan or site drawing including all requirements in paragraphs (B)(1) through (B)(4) of OAC 3701-29-08.

Landforms
Upland*
Terrace
Flood Plain
Lake Pain
Beach Ridge
*Includes glacial till plain and end moraine

Position on Landform
Depression
Flat
Knoll
Crest
Hillslope
Footslope

Shape of Slope
Convex
Concave
Linear
Complex

Horizon Nomenclature

Master Horizons

O	Predominantly organic matter (litter & humus)
A	Mineral, organic matter (humus) accumulation, loss of Fe, Al, clay
E	Mineral, loss of Si, Fe, Al, clay, organic matter
B	Subsurface accumulation of clay, Fe, Al, Si, humus; sesquioxides; loss of $CaCO_3$; subsurface soil structure
C	Little or no pedogenic alteration, unconsoilidated earthy material, soft bedrock
R	Hard bedrock

Horizon Suffixes

a	Highly decomposed organic matter
b	Buried genetic horizon
d	Densic layer (physically root restrictive)
e	Moderately decomposed organic matter
g	Strong gley
i	Slightly decomposed organic matter
p	Plow layer or artificial disturbance
r	Weathered or soft bedrock
t	Illuvial accumulation of silicate clay
w	Weak color or structure within B
x	Fragipan characteristics

Horizon Modifiers

Numerical Prefixes: Used to denote lithologic discontinuities.

Numerical Suffixes: Used to denote subdivisions within a master horizon.

Soil Texture

Texture Class Abbreviations	
Course Sand	cos
Sand	s
Fine Sand	fs
Very Fine Sand	vfs
Loamy Coarse Sand	lcos
Loamy Sand	ls
Loamy Fine Sand	lfs
Loamy Very Fine Sand	lvfs
Coarse Sandy Loam	cosl
Sandy Loam	sl
Fine Sandy Loam	fsl
Very Fine Sandy Loam	vfsl
Loam	l
Silt Loam	sil
Silt	si
Sandy Clay Loam	scl
Clay Loam	cl
Silty Clay Loam	sicl
Sandy Clay	sc
Silty Clay	sic
Clay	c

Textural Class Modifiers	
Gravelly	GR
Fine Gravelly	FGR
Medium Gravelly	MGR
Coarse Gravelly	CGR
Very Gravelly	VGR
Extremely Gravelly	XGR
Cobbly	CB
Very Cobbly	VCB
Extremely Cobbly	XCB
Stony	ST
Very Stony	VST
Extremely Stony	XST
Bouldery	BY
Very Bouldery	VBY
Extremely Bouldery	XBY
Channery	CN
Very Channery	VCN
Extremely Channery	XCN
Flaggy	FL
Very Flaggy	VFL
Extremely Flaggy	XFL

*Estimate approximate clay percentage within 5 percent

Soil Structure

Grade		Size		Type (Shape)	
Structureless	0	Very Fine	vf	Granular	gr
Weak	1	Fine	f	Angular Blocky	abk
Moderate	2	Medium	m	Subangular Blocky	sbk
Strong	3	Coarse	co	Platy	pl
		Very Coarse	vc	Prismatic	pr
		Extr. Coarse	ec	Columnar	cpr
		Very Thin*	vn	Single Grain	sg
		Thin*	tn	Massive	m
		Thick*	tk	Cloddy	CDY
		Very Thick*	vk		

* The sizes Very Thin, Thin, Thick, and Very Thick, are used when describing platy structure only. Substitute thin for fine, and thick for coarse when describing platy structure.

Moist Consistence

Loose	l
Very Friable	vfr
Friable	fr
Firm	fi
Very Firm	vfi
Extremely Firm	efi

For a more detailed explanation on describing and sampling soils, please refer to the "Field Book for Describing and Sampling Soils" Schoeneberger, P.J., Wysocki, D.A., Benham, E.C., and Broderson, W.D. (editors) 2002. Field book for describing and sampling soils, version 2.0. Natural Resources Conservation Service, USDA, National Soil Survey Center, Lincoln, NE.

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County: Morrow
Township / Sec.: Cardington
Property Address/Location: 1499 Co. Rd. 148 Cardington, OH
Applicant Name:
Address:
Phone #:
Lot #: Split of Parcel 007 00106304
Test Hole #: 2
Latitude/Longitude:
Method: ___ Pit ✓ Auger ___ Probe

Land Use / Vegetation: Meadow with Scattered Trees
Landform: Glaciated Upland
Position on Landform: Slight Rise
Percent Slope: 1 to 2
Shape of Slope: Linear

Date: 8-20-20
Evaluator: Larry Torres
Torres Soil Types
511 St. Rt. 61 N
Sunbury, OH 43074

Certification Stamp or Certification #:
Signature: Larry A. Torres
Phone#: 740 965-3254

4 Bedroom House

Soil Profile		Estimating Soil Saturation			Estimating Soil Permeability							
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Bt	10-28	10YR 5/4	10YR 4/4	25% 10YR 5/2	SICL	35	—	2	M	SBk	Fi	
BC	28-42	10YR 5/4	10YR 4/4+5/6	35% 10YR 5/2	SICL	35	Few	1	M	SBk	Fi	
Cd	42-51	10YR 4/4	10YR 5/4	15% 10YR 5/2	SICL	30	Few	0		M	VFi	

Limiting Conditions	Depth to (in.)	Descriptive Notes	
Perched Seasonal Water Table	10	Perched on Glacial	
Apparent Water Table			
Highly Permeable Material			
Bedrock	>51		
Restrictive Layer	42	Glacial Till	*

Remarks / Risk Factors: Bennington Soil. Till I recommend a peripeter drain. There could be agricultural subsurface drains in this area. Loading rates based on system installed 4 inches below the soil surface: Basal loading rate of 0.6 gals/da/ft (BOD >30 mg/L) Linear loading rate of 2.7 gals/da/ft

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Silt Loam	sil
Silt	si
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Clay Loam	cl
Silty Clay Loam	sicl
Sandy Clay	sc
Silty Clay	sic
Clay	c

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