

# Inspect Minnesota & Midwest Soil Testing

**Brian Humpal - President** - MPCA Licensed Designer, Inspector, Installer, and Pumper

July 7, 2017

Mr. Joe Bush  
Joe Bush Homes  
1980 Quasar Ave S  
Lakeland, MN 55043

Subject: Sub-surface sewage treatment system site evaluations Carlson Sub-Division - Part of the southeast quarter of section 32 and part of the southwest quarter of section 33, township 28 north, range 20 west, City of Afton, Washington County, MN

Dear Joe:

Please find the soil testing logs, soil survey data, and a copy of the survey showing the soil test locations relative to the subject property. Four soil borings surrounding an area of approximately 12,000 square feet were performed on each of the twenty proposed lots. Washington County requires each lot to contain at least 10,000 square feet of area with suitable soils for long-term sewage treatment.

It is my opinion that each of the proposed lots will support primary and future sub-surface sewage treatment systems that will meet state and county requirements. Of the twenty lots, one boring on each of the proposed lots two; three (existing house lot), and four indicated less than twelve inches of suitable soil. The additional three borings on each of these lots indicated suitable soils. I feel that a significant amount of adjacent area with suitable soils exists and the bedrock areas could be isolated. Additionally, based on past experience as well as information gathered while performing the testing, I was able to confirm that the downslope areas contained more soil overlying the bedrock. This thicker layer of soil in the downslope areas most likely occurred during the glacial and postglacial periods and was caused by wind moving the fine soil particles and re-depositing this soil in downslope areas; this condition is referred to as loess.

Should the proposed lots or building sites change, based on the soil tests, it is my opinion that nearly all areas on the property within the set-backs will support sub-surface sewage treatment systems. Percolation rates in the upper 12-24 inches, where most systems would be installed, are expected to be less than 45 minutes per inch. After the exact lot configurations have been determined and the location/size of the homes have been determined, a complete system design showing tank sizes, soil treatment system size and location, etc. will be required by the county. Additional soil borings and percolation tests will be required once the exact locations of improvements to the property have been determined.


Areas that may be used for sewage treatment systems must be fenced off prior to construction to prevent access by construction equipment, which may harm the soils, rendering the area(s) unsuitable for a sub-surface sewage treatment system.

Please be advised that the findings herein are based on my interpretation of the site and soils. In no way can I guarantee that Washington County will approve the installation of sub-surface sewage treatment systems on this property. I recommend obtaining a soil review from

Washington County to insure that they will approve the soils for the installation of sub-surface sewage treatment systems on this property; a Washington County soil review application is attached. In addition, no interpretation of the soils relative to the construction of roads, drainage features, building footings, etc. has been given. Nor has any indication been given relative to the future use of this property beyond the suitability of the soils for sub-surface sewage treatment systems. I recommend contacting Washington County and The City of Afton to verify that the proposed property improvements will be acceptable.

Thank you very much for allowing me to do this work. Please contact me should you have any questions.

Sincerely,

A handwritten signature in cursive script that reads "Brian Humpal".

Brian Humpal

Cc: Mr. Milo Horak, Landmark Surveying

# CERTIFICATE OF SURVEY - SOIL TEST LOCATIONS

Part of the Southeast Quarter of Section 32 and part of the Southwest Quarter of Section 33,  
all in Township 28 North, Range 20 West, City of Afton, Washington County, Minnesota

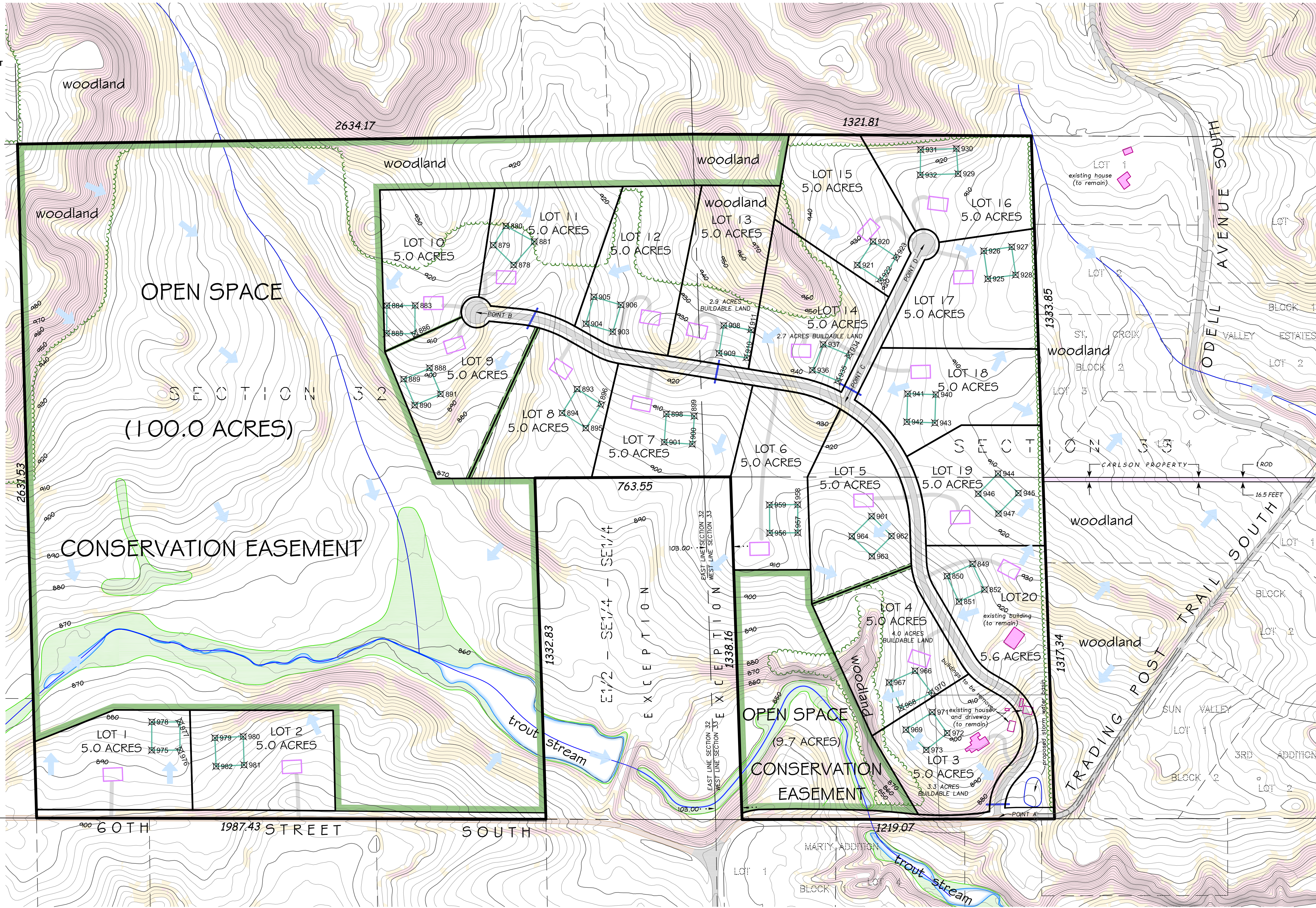
## SOIL TEST LOCATIONS - PNEZD FORMAT

Point Number, Northing, Easting, Elevation, Description  
Coordinates are based on the Washington County  
Coordinate System, Nad 83, 1986 Adjustment.  
Elevations are based on the North American Vertical  
Datum of 1988

852	143223.9	504057.1	919.0	SET LATH
878	144490.9	502219.5	911.0	SET LATH
879	144567.8	502140.7	918.6	SET LATH
880	144843.2	502189.2	916.0	SET LATH
881	144582.2	502300.3	908.9	SET LATH
883	144332.7	501835.8	917.8	SET LATH
884	144332.2	501725.1	911.9	SET LATH
885	144223.8	501723.8	905.5	SET LATH
886	144222.4	501834.3	912.5	SET LATH
888	144089.0	501891.8	902.1	SET LATH
889	144045.3	501790.4	898.4	SET LATH
890	143943.4	501833.7	893.2	SET LATH
891	143996.8	501934.6	896.0	SET LATH
893	144006.6	502467.4	902.9	SET LATH
894	143913.1	502408.8	897.7	SET LATH
895	143854.1	502501.2	900.3	SET LATH
896	143947.3	502560.9	905.7	SET LATH
898	143908.9	502815.4	909.5	SET LATH
899	143900.9	502924.3	909.6	SET LATH
900	143791.5	502917.1	904.5	SET LATH
901	143799.1	502807.3	904.5	SET LATH
903	144230.2	502606.4	918.0	SET LATH
904	144261.2	502501.5	909.4	SET LATH
905	144366.3	502532.2	911.0	SET LATH
906	144335.1	502637.6	919.3	SET LATH
908	144254.7	503033.0	928.7	SET LATH
909	144146.2	503021.0	921.8	SET LATH
910	144128.4	503129.6	925.1	SET LATH
911	144237.3	503147.0	930.5	SET LATH
920	144582.2	503622.1	927.8	SET LATH
921	144490.4	503591.2	925.9	SET LATH
922	144429.2	503652.6	921.2	SET LATH
923	144520.7	503713.2	920.1	SET LATH
925	144436.7	504069.9	904.2	SET LATH
926	144545.5	504054.0	905.9	SET LATH
927	144561.3	504163.3	902.8	SET LATH
928	144452.1	504178.3	901.7	SET LATH
929	144846.7	503954.1	914.0	SET LATH
930	144944.9	503947.2	925.2	SET LATH
931	144940.7	503807.7	928.0	SET LATH
932	144842.2	503806.4	918.6	SET LATH
934	144139.2	503528.8	929.6	SET LATH
935	144037.5	503466.6	930.7	SET LATH
936	144090.1	503385.3	940.5	SET LATH
937	144180.7	503427.7	940.7	SET LATH
940	143985.4	503867.1	913.1	SET LATH
941	143988.2	503757.1	915.7	SET LATH
942	143878.4	503735.7	915.2	SET LATH
943	143874.5	503863.2	912.9	SET LATH
944	143676.9	504109.7	911.0	SET LATH
945	143600.3	504189.3	910.9	SET LATH
946	143598.1	504033.0	915.8	SET LATH
947	143520.5	504111.6	916.7	SET LATH
956	143444.9	503218.7	911.9	SET LATH
957	143445.8	503328.4	906.2	SET LATH
958	143555.5	503328.1	907.7	SET LATH
959	143544.4	503217.9	910.7	SET LATH
961	143510.0	503616.3	907.5	SET LATH
962	143433.0	503694.1	907.2	SET LATH
963	143353.7	503617.4	898.2	SET LATH
964	143432.1	503539.4	900.8	SET LATH
966	142906.8	503786.2	896.6	SET LATH
967	142861.4	503684.7	888.4	SET LATH
968	142761.1	503730.3	892.5	SET LATH
969	142677.0	503750.2	893.6	SET LATH
970	142600.2	503851.0	901.8	SET LATH
971	142745.8	503853.1	900.9	SET LATH
972	142664.0	503911.7	901.3	SET LATH
973	142598.1	503829.7	895.9	SET LATH
975	142596.8	500872.2	886.2	SET LATH
976	142596.0	500918.1	887.5	SET LATH
977	142707.2	500917.7	878.4	SET LATH
978	142707.4	500807.8	879.9	SET LATH
979	142845.2	501053.8	886.1	SET LATH
980	142650.2	501164.6	891.6	SET LATH
981	142539.4	501167.8	897.7	SET LATH
982	142533.8	501058.4	893.0	SET LATH

## SURVEY REPORT:

The purpose of this survey is to document soil test locations for review by the Washington County Public Health Department and the preparation of a preliminary plat. Soil tests were performed by Brian Humpal, Midwest Soil Testing. As of the date of this survey, the depicted subdivision is a concept only, and has not been approved by any governing agencies.



### Legend

- Denotes slopes 12% to 17.9%
- Denotes slopes over 18%
- Denotes wetland location.
- Denotes stream.
- Denotes general surface water flow.
- Denotes proposed culvert location.
- Denotes proposed house site.
- Denotes proposed septic area.
- Denotes proposed driveway location.
- Denotes Carlson "farm road" property.

Contours are at two foot intervals and are based on data provided by the Minnesota Department of Natural Resources.  
Wetland, Shoreland and stream locations are approximate and are based on data obtained through the National Wetlands Inventory - V2 online interface and the City of Afton Zoning Map (MAP 11).

Scale in Feet  
0 100 200 400  
1 inch = 200 feet

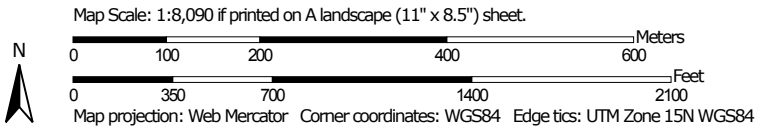
### OFFICIAL COPIES OF THIS MAP ARE CRIMP SEALED

I hereby certify that this survey, plan or report was prepared by me or under my direct supervision and that I am a duly Licensed Land Surveyor under the laws of the State of Minnesota.

Landmark Surveying, Inc.  
*Milo B. Horak*  
Milo B. Horak, Minnesota License No. 52577  
Date: June 30, 2017


Landmark Surveying, Inc.  
21090 Olinda Trail North  
P.O. Box 65  
Scandia, Minnesota 55073  
Office number: 651-433-3421  
Cell number: 651-755-5760  
E-mail: mthfield@frontiernet.net

Soil Map—Washington County, Minnesota




## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

### Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

### Water Features



Streams and Canals

### Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

### Background



Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

**Warning:** Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Minnesota

Survey Area Data: Version 11, Sep 19, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 16, 2012—Apr 26, 2012

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Washington County, Minnesota (MN163)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
49B	Antigo silt loam, 2 to 6 percent slopes	0.5	0.2%
49C	Antigo silt loam, 6 to 15 percent slopes	4.0	1.6%
174C	Gale silt loam, 6 to 15 percent slopes	50.0	19.9%
174F	Gale silt loam, 25 to 50 percent slopes	12.7	5.1%
301B	Lindstrom silt loam, 2 to 4 percent slopes	12.6	5.0%
367B	Campia silt loam, 0 to 8 percent slopes	4.8	1.9%
411	Waukegan silt loam, 0 to 2 percent slopes	3.0	1.2%
411B	Waukegan silt loam, 2 to 6 percent slopes	16.3	6.5%
411C	Waukegan silt loam, 6 to 12 percent slopes	17.3	6.9%
449	Crystal Lake silt loam, 1 to 3 percent slopes	5.4	2.1%
460B	Baytown silt loam, 1 to 6 percent slopes	74.0	29.4%
460C	Baytown silt loam, 6 to 12 percent slopes	33.7	13.4%
468	Otter silt loam	11.7	4.7%
488F	Brodale flaggy loam, 20 to 50 percent slopes	3.2	1.3%
1821	Alganssee loamy sand	0.1	0.0%
W	Water	2.0	0.8%
<b>Totals for Area of Interest</b>		<b>251.5</b>	<b>100.0%</b>

## Log Of Soil Borings

<b>Location of Project:</b>		Carlson Sub-Division NW Corner Of 60th St S & Trading Post		
<b>Borings Made By:</b>		Midwest Soil Testing		
<b>Auger Used:</b>		Hand/Bucket	<b>Classification System:</b>	USDA
<b>Boring # and Date</b>	<b>Depth In Inches</b>	<b>Soils Encountered</b>	<b>Boring Depth</b>	<b>Depth To Restriction</b>
6/20/17				
849	0-8	10YR 3/3 Loam		
	8-22	10YR 4/6 Loamy Sand		
	18-26	10YR 6/8 Unconsolidated Sandstone	26"	18"
850	0-8	10YR 3/3 Loam		
	8-18	10YR 3/6 Sandy Loam		
	18-26	10YR 4/6 Sandy Loam, Refusal at 26" Bedrock	26"	26"
851	0-9	10YR 2/2 Silt Loam		
	9-20	10YR 4/6 Silt Loam		
		Refusal @ 20" Bedrock	20"	20"
852	0-10	10YR 3/3 Silt Loam		
	10-20	10YR 3/4 Silt Loam		
	20-32	10YR 3/6 Silt Loam, Refusal at 32" Bedrock	32"	32"
6/24/17				
878	0-9	10YR 3/2 Loam		
	9-24	10YR 4/3 Silt Loam		
	24-43	10YR 4/4 Medium Sand		
	43-48	Unconsolidated Bedrock	48"	43"
6/20/17				
879	0-10	10YR 2/2 Silt Loam		
	10-24	10YR 4/3 Silt Loam		
	24-38	10YR 4/3 Medium Sand	38"	≥38"
6/24/17				
880	0-11	10YR 2/2 Silt Loam		
	11-17	10YR 3/2 Silt Loam		
	17-29	10YR 4/3 Silt Loam, Refusal at 29" Bedrock	29"	29"

<b>Location of Project:</b>		Carlson Sub-Division NW Corner Of 60th St S & Trading Post		
<b>Borings Made By:</b>		Midwest Soil Testing		
<b>Auger Used:</b>		Hand/Bucket	<b>Classification System:</b>	USDA
<b>Boring # and Date</b>	<b>Depth In Inches</b>	<b>Soils Encountered</b>	<b>Boring Depth</b>	<b>Depth To Restriction</b>
881	0-22	10YR 2/2 Silt Loam		
	22-46	10YR 3/4 Silt Loam With Bedrock Fragments at 46"	46"	46"
883	0-9	10YR 3/2 Silt Loam		
	9-17	10YR 4/3 Silt Loam		
	17-26	10YR 5/4 Silt Loam		
	26-29	10YR 5/8 Fine Sand		
	29-32	10YR 7/8 Fine Sand/Unconsolidated Bedrock	32"	29"
884	0-6	10YR 3/2 Silt Loam		
	6-22	10YR 2/2 Silt Loam		
	22-34	10YR 4/3 Silt Loam With Bedrock Fragments		
	34-39	10YR 5/8 Fine Sand With Unconsolidated Bedrock	39"	34"
885	0-7	10YR 2/2 Silt Loam		
	7-20	10YR 4/6 Fine Sand Loam With Bedrock		
		Fragments; Refusal at 20" Bedrock	20"	20"
886	0-10	10YR 2/2 Silt Loam		
	10-21	10Y 3/2 Silt Loam With Bedrock Fragments		
	21-33	10YR 4/3 Silt Loam With Bedrock Fragments	33"	≥33"
888	0-13	10YR 3/2 Silt Loam		
	13-28	10YR 3/3 Silt Loam		
	28-32	10YR 5/8 Unconsolidated Bedrock	32"	28"
889	0-10	10YR 2/2 Silt Loam		
	10-20	10YR 4/3 Silt Loam		
	20-25	10YR 5/8 Fine Sand/Unconsolidated Bedrock		
		Refusal at 25"	25"	20"
890	0-7	10YR 3/2 Loam		
	7-22	10YR 4/3 Sandy loam/Refusal at 22" Bedrock	22"	22"



<b>Location of Project:</b>		Carlson Sub-Division NW Corner Of 60th St S & Trading Post		
<b>Borings Made By:</b>		Midwest Soil Testing		
<b>Auger Used:</b>		Hand/Bucket	<b>Classification System:</b>	USDA
<b>Boring # and Date</b>	<b>Depth In Inches</b>	<b>Soils Encountered</b>	<b>Boring Depth</b>	<b>Depth To Restriction</b>
891	0-11	10YR 3/2 Loam		
	11-17	10YR 3/3 Silt Loam		
	17-28	10YR 4/3 Silt Loam		
	28-35	10YR 5/8 Fine Sand		
	35-39	10YR 7/8 Unconsolidated Bedrock	39"	35"
893	0-18	10YR 3/2 Loam		
	18-28	10YR 5/8 Fine Sand With Bedrock Fragments		
	28-38	10YR 5/8 Fine Sand With Bedrock Fragments And 7.5 YR 5/8, 10YR 7/2 Redox	38"	28"
894	0-16	10YR 2/2 Loam		
	16-28	10YR 3/2 Silt Loam		
	28-41	10YR 4/3 Sandy Loam		
	41-48	10YR 5/8 Fine Sand		
	48-52	10YR 7/8 Fine Sand/ Unconsolidated Bedrock	52"	48"
895	0-11	10YR 2/2 Loam		
	11-18	10YR 4/3 Silt Loam		
	18-22	10YR 4/3 Silt Loam With Bedrock Fragments And 7/2 Redox	22"	18"
896	0-15	10YR 2/2 Silt Loam		
	15-38	10YR 4/3 Silt Loam		
	38-42	10YR 5/8 Fine Sand With Bedrock Fragments	42"	42"
6/29/17				
898	0-9	10YR 2/2 Silt Loam		
	9-20	10YR 4/4 Silt Loam		
	20-28	10YR 3/6 Sandy Loam		
	28-35	7.5YR 4/4 Loamy Sand		
	35-45	10YR 4/6 Loamy Sand		
	45-52	10YR 5/6 Loamy Sand/Unconsolidated Sandstone	58"	45"
899	0-11	10YR 2/2 Silt Loam		
	11-28	10YR 3/4 Silt Loam		
	28-38	10YR 3/6 Loamy Sand		
	38-48	10YR 5/6 Loamy Sand/Unconsolidated Sandstone	48"	38"

<b>Location of Project:</b>		Carlson Sub-Division NW Corner Of 60th St S & Trading Post		
<b>Borings Made By:</b>		Midwest Soil Testing		
<b>Auger Used:</b>		Hand/Bucket	<b>Classification System:</b>	USDA
<b>Boring # and Date</b>	<b>Depth In Inches</b>	<b>Soils Encountered</b>	<b>Boring Depth</b>	<b>Depth To Restriction</b>
900	0-20	10YR 2/1 Silt Loam		
	20-26	10YR 3/ Silt Loam		
	26-33	10YR 4/6 Silt Loam	33"	≥33"
6/24/17				
901	0-9	10YR 3/2 Loam		
	9-16	10YR 2/2 Silt Loam		
	16-42	10YR 4/3 Sandy Loam		
	42-48	10YR 5/8 Fine Sand		
	48-52	10YR 5/8 Loamy Sand With 7.5 YR 5/8 Redox	52"	48"
903	0-11	10YR 3/2 Loam		
	11-14	10YR 4/3 Silt Loam		
	14-24	10YR 4/3 Sandy Loam With 25% Rock Fragments		
		Refusal at 24" Bedrock	24"	24"
904	0-12	10YR 2/2 Loam		
	12-19	10YR 4/3 Silt Loam		
	19-31	10YR 4/3 Sandy Loam/Refusal at 31" Bedrock	31"	31"
905	0-11	10YR 2/2 Silt Loam		
	11-21	10YR 3/2 Fine Sand		
	21-32	10YR 5/8 Fine Sand /Unconsolidated Bedrock	32"	21"
906	0-10	10YR 3/2 Loam		
	10-18	10YR 4/4 Silt Loam		
	18-22	10YR 5/8 Fine Sand/Unconsolidated Bedrock	22"	18"
6/24/17				
908	0-12	10YR 3/2 Loam		
	12-28	10YR 4/4 Silt Loam		
	28-43	10YR 4/3 Sandy Loam/ Unconsolidated Bedrock	43"	28"
909	0-9	10YR 3/2 Loam		
	9-24	10YR 4/4 Silt Loam		
	24-40	10YR 4/4 Medium Sand/Unconsolidated Bedrock	40"	24"

<b>Location of Project:</b>		Carlson Sub-Division NW Corner Of 60th St S & Trading Post		
<b>Borings Made By:</b>		Midwest Soil Testing		
<b>Auger Used:</b>		Hand/Bucket	<b>Classification System:</b>	USDA
<b>Boring # and Date</b>	<b>Depth In Inches</b>	<b>Soils Encountered</b>	<b>Boring Depth</b>	<b>Depth To Restriction</b>
910	0-20	10YR 2/2 Silt Loam		
	20-32	10YR 3/4 Silt Loam/Refusal at 32" Bedrock	32"	32"
911	0-10	10YR 2/2 Loam		
	10-15	10YR 3/4 Silt Loam		
	15-25	10YR 4/6 Silt Loam		
	25-30	10YR 4/6 Silt Loam With 10YR 6/2 and 5YR 5/8 Redox	30"	25"
920	0-9	10YR 3/3 Loam		
	9-18	10YR 3/6 Silt Loam		
	18-28	10YR 6/6 Unconsolidated Sandstone	28"	18"
921	0-19	10YR 3/3 Loam		
	19-27	10YR 4/6 Clay Loam		
	27-34	10YR 4/6 Clay Loam With 10YR 6/2 And 7.5YR 5/8 Redox	34"	27"
922	0-18	10YR 2/2 Silt Loam		
	18-31	10YR 3/6 Clay Loam		
	31-36	10YR 4/6 Silt Loam With 10YR 6/2 and 7.5YR 5/8 Redox	36"	31"
923	0-15	10YR 2/2 Loam		
	15-27	10YR 3/4 Silt Loam		
	27-40	10YR 4-6 Silt Loam		
	40-48	10YR 4/6 Loamy Sand (Moist)	48"	≥48"
925	0-10	10YR 2/2 Silt Loam		
	10-27	10YR 4/4 Clay Loam		
	37-35	10YR 3/6 Loamy Sand		
	35-50	10YR 3/6 Sandy Loam	50"	≥50"
926	0-11	10YR 2/2 Loam		
	11-20	10YR 4/4 Clay Loam		
	20-29	10YR 4/4 Sandy Clay Loam; Refusal at 29" Bedrock	29"	29"

<b>Location of Project:</b>		Carlson Sub-Division NW Corner Of 60th St S & Trading Post		
<b>Borings Made By:</b>		Midwest Soil Testing		
<b>Auger Used:</b>		Hand/Bucket	<b>Classification System:</b>	USDA
<b>Boring # and Date</b>	<b>Depth In Inches</b>	<b>Soils Encountered</b>	<b>Boring Depth</b>	<b>Depth To Restriction</b>
927	0-15	10YR 2/2 Silt Loam		
	15-36	10YR 4/4 Clay Loam		
	36-47	10YR 4/4 Sandy Loam		
	47-57	10YR 4/6 Medium Sand/Refusal at 57" Bedrock	57"	57"
928	0-15	10YR 2/2 Loam		
	15-27	10YR 3/4 Silt Loam; Refusal at 27" Bedrock	27"	27"
929	0-13	10YR 2/1 Silt Loam		
	13-29	10YR 4/4 Silt Loam		
	29-36	10YR 4/4 Silt Loam With 10YR 6/2 and 7.5YR 5/8 Redox	36"	29"
930	0-15	10YR 3/4 Very Fine Sand		
	15-29	10YR 5/4 Very Fine Sand		
	29-45	10YR 6/4 Very Fine Sand		
	45-50	10YR 6/4 Very Find Sand With 5YR 5/8 Redox	50"	45"
931	0-14	10YR 2/2 Silt Loam		
	14-35	10YR 3/4 Loam		
	35-40	10YR 4/6 Loamy Sand	40"	≥40"
932	0-14	10YR 2/1 Silt Loam		
	14-29	10YR 4/4 Silt Loam		
	29-37	10YR 4/6 Clay Loam With Silt Coatings On Soil Peds; Refusal at 37" Bedrock	37"	37"
6/24/17				
934	0-14	10YR 3/3 Silt Loam		
	14-33	10YR 4/4 Sandy Loam	33"	≥33"
935	0-16	10YR 3/3 Silt Loam		
	16-35	10YR 5/4 Sandy Loam	35"	≥35"

<b>Location of Project:</b>		Carlson Sub-Division NW Corner Of 60th St S & Trading Post		
<b>Borings Made By:</b>		Midwest Soil Testing		
<b>Auger Used:</b>		Hand/Bucket	<b>System:</b>	USDA
<b>Boring # and Date</b>	<b>Depth In Inches</b>	<b>Soils Encountered</b>	<b>Boring Depth</b>	<b>Depth To Restriction</b>
936	0-10	10YR 3/3 Loam		
	10-15	10YR 3/6 Silt Loam		
	15-19	10YR 3/6 Loamy Sand		
	19-31	10YR 5/8 Fine Sand/Unconsolidated Sandstone	31"	19"
937	0-9	10YR 4/3 Silt Loam		
	9-14	10YR 4/6 Silt Loam		
	14-21	10YR 4/6 Sandy Loam		
	21-35	10YR 5/8 Fine Sand/Unconsolidated Bedrock	35"	21"
940	0-20	10YR 2/1 Silt Loam		
	20-29	10YR 4/4 Clay Loam		
	29-36	10YR 4/4 Clay Loam With 10YR 6/2 and 5YR 5/8 Redox	36"	29"
941	0-10	10YR 2/2 Silt Loam		
	10-32	10YR 4/4 Silt Loam/Refusal at 32" Bedrock	32"	32"
942	0-15	10YR 2/1 Silt Loam		
	15-23	10YR 3/4 Silt Loam/Refusal at 32" Bedrock	32"	32"
943	0-17	10YR 2/1 Silt Loam		
	17-37	10YR 3/4 Silt Loam		
	37-40	10YR 3/6 Loamy Sand With Sandstone Pieces ≈ 20%/ Refusal at 40" Bedrock	40"	40"
944	0-21	10YR 2/1 Silt Loam		
	21-48	10YR 4/4 Silt Loam		
	48-57	10YR 3/6 Sandy Loam	57"	≥57"
945	0-23	10YR 2/2 Silt Loam		
	23-30	10YR 4/6 Clay Loam/Refusal at 30" Bedrock	30"	30"

<b>Location of Project:</b>		Carlson Sub-Division NW Corner Of 60th St S & Trading Post		
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<b>Auger Used:</b>		Hand/Bucket	<b>Classification System:</b>	USDA
<b>Boring # and Date</b>	<b>Depth In Inches</b>	<b>Soils Encountered</b>	<b>Boring Depth</b>	<b>Depth To Restriction</b>
946	0-8	10YR 2/2 Silt Loam		
	8-16	10YR 4/4 Clay Loam		
	16/21	10YR 5/6 Loamy Fine Sand With Sandstone ~ 25% Rock Fragment		
	21-28	10YR 6/6 Unconsolidated Sandstone	28"	21"
947	0-10	10YR 2/2 Silt Loam		
	10-19	10YR 5/6 Loamy Fine Sand With Sandstone Pieces ~ 20% Rock Fragment		
	19-26	10YR 6/8 Loamy Fine Sand With Sandstone ~ 20% Rock Fragment	26"	≥26"
955	0-10	10YR 2/2 Silt Loam		
	10-21	10YR 4/4 Silt Loam		
	21-25	10YR 4/4 Silt Loam with Gravel ~ 40% Rock Content/Refusal at 25" Bedrock	25"	25"
956	0-13	10YR 2/2 Silt Loam		
	13-29	10YR 4/4 Silt Loam/Refusal at 29" Bedrock	29"	29"
957	0-13	10YR 2/2 Silt Loam		
	13-25	10YR 3/6 Silt Loam/Refusal at 25" Bedrock	25"	25"
958	0-9	10YR 2/2 Silt Loam		
	9-22	10YR 3/4 SiltLoam		
	22-34	10YR 3/6 Sandy Loam With Sandstone Fragments ~ 20%	34"	≥34"
961	0-10	10YR 2/2 Silt Loam		
	10-15	10YR 3/6 Silt Loam		
	15-27	10YR 4/6 Silt Loam		
	27-36	10YR 4/6 Silt Loam With Unconsolidated Sandstone	36"	27"

<b>Location of Project:</b>		Carlson Sub-Division NW Corner Of 60th St S & Trading Post		
<b>Borings Made By:</b>		Midwest Soil Testing		
<b>Auger Used:</b>		Hand/Bucket	<b>System:</b>	USDA
<b>Boring # and Date</b>	<b>Depth In Inches</b>	<b>Soils Encountered</b>	<b>Boring Depth</b>	<b>Depth To Restriction</b>
6/22/17				
962	0-8	10YR 3/4 Loam		
	8-17	10YR 6/6 Silt Loam		
	17-23	10YR 6/6 Silt Loam With Bedrock Fragments~30%		
	23-36	10YR 6/6 Silt Loam With Sandstone < 50%	36"	23"
963	0-11	10YR 3/3 Silt Loam		
	11-21	10YR 3/6 Silt Loam		
	21-31	10YR 3/6 Sandy Loam		
	31-36	10YR 5/4 Silt Loam	36"	≥36"
964	0-10	10YR 2/2 Silt Loam		
	10-30	10YR 3/4 Silt Loam		
	30-45	10YR 4/4 Loamy Sand		
	45-50	10YR 4/6 Silt Loam With Sandstone	50"	≥50"
6/29/17				
966	0-8	10YR 4/2 Silt Loam		
	8-22	10YR 4/3 Silt Loam; Bedrock at 22"	22"	22"
967	0-12	10YR 4/2 Silt Loam		
	12-24	Bedrock	24"	12"
968	0-9	10YR 4/2 Silt Loam		
	9-18	10YR 4/3 Silt Loam		
	18-26	Bedrock	26"	18"
969	0-7	10YR 4/2 Silt Loam		
	7-14	10YR 4-6 Silt Loam With Bedrock Fragments		
	14-18	Unconsolidated Bedrock 25%	18"	14"
970	0-8	10YR 4/2 Silt Loam		
	8-23	10YR 4/3 Silt Loam		
	23-27	Bedrock	27"	23"

<b>Location of Project:</b>		Carlson Sub-Division NW Corner Of 60th St S & Trading Post		
<b>Borings Made By:</b>		Midwest Soil Testing		
<b>Auger Used:</b>		Hand/Bucket	<b>Classification System:</b>	USDA
971	0-11	10YR 4/2 Silt Loam		
	11-26	10YR 4/3 Silt Loam		
	26-28	Bedrock	28"	26"
972	0-12	10YR 4/2 Silt Loam		
	12-21	10YR 4/3 Silt Loam		
	21-24	10YR 4/4 Silt Loam		
		Bedrock at 24"	24"	24"
973	0-8	10YR 4/2 Silt Loam		
	8-18	10YR 4/3 Silt Loam		
	18-21	Bedrock	21"	18"
975	0-9	10YR 2/2 Silt Loam		
	9-19	10YR 3/3 Loam		
	19-25	10YR 3/4 Fine Sand		
	25-60	10YR 4/6 Sand	60"	≥60"
976	0-4	10YR 3/3 Loam		
	4-18	10YR 3/4 Medium Sand With ≈ 15% Gravel		
	18-33	10YR 4/4 Medium Sand		
	33-46	10YR 5/4 Medium Sand; Refusal at 46" Bedrock	46"	46"
977	0-24	10YR 2/1 Silt Loam		
	24-46	10YR 3/3 Silt Loam		
	46-56	10YR 4/4 Loamy Sand (Moist)		
	56-60	10YR 5/4 Silt Loam (Moist) With 10YR 7/1 And		
		7.5YR 5/8 Redox	60"	56"
978	0-23	10YR 2/1 Silt Loam		
	23-33	10YR 3/4 Silt Loam		
	33-46	10YR 3/6 Silt Loam		
	46-55	10YR 4/6 Sand and Gravel; ≈ 40% Rock	55"	≥55"



<b>Location of Project:</b>		Carlson Sub-Division NW Corner Of 60th St S & Trading Post		
<b>Borings Made By:</b>		Midwest Soil Testing		
<b>Auger Used:</b>		Hand/Bucket	<b>Classification System:</b>	USDA
<b>Boring # and Date</b>	<b>Depth In Inches</b>	<b>Soils Encountered</b>	<b>Boring Depth</b>	<b>Depth To Restriction</b>
979	0-12	10YR 3/3 Silt Loam		
	12-20	2.5YR 6/6 Unconsolidated Bedrock	20"	12"
980	0-6	10YR 4/2 Silt Loam		
	6-14	10YR 3/4 Medium Sand		
	14-26	10YR 4/4 Medium Sand; Refusal at 26" Bedrock	26"	26"
981	0-12	10YR 4/2 Silt Loam		
	12-24	10YR 7/4 Silt Loam		
	24-27	Bedrock	27"	24"
982	0-10	10YR 2/2 Silt Loam		
	10-22	10YR 4/6 Silt Loam		
	22-28	10YR 6/4 Bedrock	28"	22"

# Subsurface Sewage Treatment Systems

*Non-transferable*

# Business License

## Inspect Minnesota, Midwest Soil Testing

License # L2896

License Expires: 12/22/2017

Issued: 11/29/2016

### Specialty Area(s):

Installer

Maintainer

Service Provider

Advanced Designer

Advanced Inspector

### Designated Certified Individual(s):

Cert #	Name	Certification Expires:
C5342	Brian L Humpal Installer, Maintainer, Serv Prov, Adv Designer, Adv Inspector	10/15/2017
C9852	Christopher R Uebe Designer, Inspector	3/4/2018



**Minnesota Pollution Control Agency**

520 Lafayette Road North

St. Paul, Minnesota 55155-4194

A handwritten signature in black ink that reads "Steven Giddings".

Steven Giddings, Manager

Prevention and Solid Waste Management Section



# SEPTIC PERMIT APPLICATION

2016

Washington County Department of Public Health & Environment  
 14949-62nd St N, P.O. Box 6, Stillwater MN 55082-0006  
 651.430.6655 FAX: 651.430.6730

PERMIT NUMBER

## PROPERTY & APPLICANT INFORMATION

PROPERTY ADDRESS:		GEOCODE:	
USE OF BUILDING: <input type="checkbox"/> SINGLE FAMILY HOME <input type="checkbox"/> NON-SINGLE FAMILY		APPLICATION TYPE: <input type="checkbox"/> NEW <input type="checkbox"/> REPLACEMENT	
PROPERTY OWNER			
NAME(S)	ADDRESS CITY	ZIP	PHONE NUMBER(S)
APPLICANT (IF DIFFERENT FROM OWNER)			
NAME(S)	ADDRESS CITY	ZIP	PHONE NUMBER(S)
Email Address For Issued Permit			

## Permit Types

INSTALLATION PERMITS					
Type	Building/Lot Type	Permit Sub-Type	v	Total Fee	
Installing a new or replacement system	Single Family Home	<input type="checkbox"/> Privy	<input type="checkbox"/> Holding Tank	<input type="checkbox"/>	\$565
		<input type="checkbox"/> Drainfield	<input type="checkbox"/> Pressure Bed	<input type="checkbox"/>	\$600
		<input type="checkbox"/> Mound	<input type="checkbox"/> At-Grade	<input type="checkbox"/>	\$780
	Non-single Family Home	1-500 Gallons		<input type="checkbox"/>	\$1,035
		501-1000 Gallons		<input type="checkbox"/>	\$1,185
		1001-5000 Gallons		<input type="checkbox"/>	\$1,415
5001-9999 Gallons		<input type="checkbox"/>	\$1,620		
Other	Installation Permit Renewal		<input type="checkbox"/>	\$150	
	System Abandonment		<input type="checkbox"/>	\$120	
	Holding Tank Replacement				
	System Repair				
	Connect to Existing System				

Make Checks Payable to WASHINGTON COUNTY TOTAL PERMIT FEE = APPLICATION FEE + PERMIT FEE:

## SOIL REVIEW / LOT SPLIT / SUBDIVISION APPROVAL PERMITS

<input type="checkbox"/> Soil Review Only	\$200 + \$85 PER LOT	REVIEW BASE FEE: _____
<input type="checkbox"/> Lot Split		+
<input type="checkbox"/> Subdivision Approval		LOTS: _____ X \$85 PER LOT _____
Make Checks Payable to WASHINGTON COUNTY		TOTAL SOIL REVIEW / LOT SPLIT / SUBDIVISION APPROVAL FEE: _____

The following exhibits are required as part of the application and shall be attached hereto: Soil Boring Logs; Site Plan drawn to scale showing location of buildings, lot lines, soil hydraulic loading rate information, soil boring holes, proposed location of system and location of well(s); one (1) copy of the System Design; and one (1) copy of the Final Building Plan. The house and drainfield areas must be staked. Inaccurate or incomplete information will result in delays in processing or denial of the application.

**AGREEMENT:** The undersigned hereby makes Application for Permit to Install or Extend the Sewage Treatment System herein specified, agreeing that all work shall be done in strict accordance with ordinances and regulations of the County of Washington, Minnesota. Applicant agrees that the Site Plan, Sketches, and Design submitted herewith, and which are reviewed by Washington County, together with any requirements and/or restrictions made necessary by conditions peculiar to a particular location, shall become part of the permit. Applicant further agrees to provide access, at reasonable times, to Washington County for the purpose of performing inspections required and that no part of the system shall be covered until it has been inspected and accepted. **APPLICATION IS FOR AN INSTALLATION AT A SPECIFIC LOCATION; ANY DEVIATION FROM THE APPROVED LOCATION SHALL VOID THE PERMIT.** It shall be the responsibility of the applicant for the permit to notify the Washington County Department of Public Health and Environment that the installation is ready for inspection.

**PERMITS WILL NOT BE ISSUED ONCE FROZEN GROUND CONDITIONS EXIST** due to the inability to conduct soil reviews unless arrangements are made BY THE APPLICANT to provide a backhoe, geo-probe, or any other device that can penetrate the frozen soil to allow Washington County to conduct a soil review. In accordance with Minnesota Statute 15.99, Subdivision 2, Washington County has up to SIXTY (60) DAYS to review and approve or deny the permit application.

I hereby certify the above to be true and correct. I hereby give the Washington County Department of Public Health and Environment permission to enter upon my property during normal business hours for the purpose of determining the suitability of the location, design, and construction, which may include minor excavations or soil borings by the Department.

\_\_\_\_\_  
Signature of Applicant (Owner or Contractor) \_\_\_\_\_  
Date