



020216002

POSTED AT THE CONSTRUCTION SITE

Becker County Planning & Zoning
835 Lake Ave, P O Box 787
Detroit Lakes, MN 56502-0787
Phone (218)-846-7314; Fax (218)-846-7266

Onsite Septic System Site Evaluation/Design Tax Parcel Number 202.0216.002 911 Address 16141 Blackhawk Rd.

Legal Description: pt of gov't lot 5, known as tract C Section 31 TWP 139N Range 42W

Lake Name NA Lake Classification NA Township Name AUDUBON

Owner's Name CARSON LONGTINE Address 419 BROOK AVE

City MOORHEAD, MN State/Zip 56560 Phone Number 701.361.5472

Number of Bedrooms 3 Well Casing Depth 750' Garbage Disposal (Yes) (No)
Design Flow 450 GPD Depth of other Wells within 100 ft of system Grinder Pump/Lift Station In House (Yes) (No)

Type of Observation: Probe (Pit) Boring
Original Soil (Yes) (No) Compacted Soil (Yes) (No) Proposed Design
Depth to Restricting Layer 772" ( ) Replace Septic Tank
Maximum of Depth of System 48" (x) Septic Tank/Drainfield
Perc Rate 24.35 Soil Sizing Factor 2.2 ( ) Drainfield Only
( ) Holding Tank
( ) Lift Station
Type of Drainfield 10' = 990 ft^2 req.
(x) Standard (gravelless/chamber)
( ) Standard (rock depth)
( ) Standard Bed
( ) Mound ( ) At Grade
( ) Pressurized Bed

SOIL BORING LOG

Table with 4 columns: DEPTH (INCHES), TEXTURE, COLOR & MUNSELL NO., STRUCTURE. Rows include 0-6" LOAM 10YR 3/1 and 6"-72" CLAY LOAM 10YR 7/4.

SOIL BORING LOG

Table with 4 columns: DEPTH (INCHES), TEXTURE, COLOR & MUNSELL NO., STRUCTURE. Rows include 0-6" LOAM 10YR 3/1 and 6"-72" CLAY LOAM 10YR 7/4.

Attach Perc Test Information If Required

Name and Address of Designer MICHAEL HUGH PO BOX 2 - D Phone 218.847.7391

MPCA Number 770 Date of Site Evaluation Signature of Designer

Name of Installer (if different from Designer) HAVATH, INC. MPCA Number

\*FOR USE BY BECKER COUNTY ENVIRONMENTAL SERVICES DEPARTMENT ONLY\*

- Any changes to the permit must first be approved by Becker County Planning & Zoning. No system shall be covered up without inspection by Becker County Planning & Zoning.
Inspections must be scheduled at least 24 hours prior to time requested.

Date Received 5/01/02 Application Fee 75.00 State Surcharge 0 Total 75.00

[ ] Application is hereby denied
[x] Application is hereby granted to CARSON LONGTINE to install an individual septic system according to the specifications of the site evaluation and design submitted to the Becker County Environmental Services Office. By

Order of: Nancy Young Signature of Becker County Qualified Employee 5/01/03 Date Permit Issued 5/01/02 Permit Number 17329
This permit expires on 5/01/03

The site plan must be drawn to dimension or to scale:

\*Dimensions of Lot

\*Existing & Proposed Buildings

\*Easements & setbacks

\*Scale - One inch = \_\_\_\_\_ ft

\*Well & Water Line Locations  
within 100 ft of System

\*Distance from Property Lines

\*Tank Access Route

\*Location of any Unsuitable Soil

\*Distance from OHWM

\*Distance from buildings

\*Soil Borings & Per Test Locations

\*Alternate Drainfield Location



SEE ATTACHED

	Tank (estimated)	Tank (actual)	Drainfield (estimated)	Drainfield (actual)
Distances to Well	_____	+50'	_____	+50'
Distance to Building	_____	+10'	_____	+20'
Distance to Property Line	_____	+10'	_____	+10'
Distance to Pressure Line	_____	_____	_____	_____
Distance to Ordinary High Water	_____	_____	_____	_____

Tank size 1500<sup>2</sup>/c CAMAS  
 Lift station size \_\_\_\_\_  
 Drainfield size 9.90 sq. ft.  
 Pump HP \_\_\_\_\_  
 Date Installed 5/6/02

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CERTIFICATE OF COMPLIANCE

( ) Certificate Is Hereby Denied

(X) Certificate is Hereby Granted Based upon the Application, addendum from, plans, specifications and all other supporting data. With property maintenance, this system can be expected to function satisfactory, however, this is not a guarantee.

Signature Nancy Young Title Zoning Inspector Date 5/6/02

(Certificate of Compliance is not valid unless signed by a Registered Qualified Employee)

# - PERCOLATION TEST SHEET -

Test hole location N. DRAINFIELD Hole # 1 Date test hole was prepared: 19 APRIL 02

Depth of hole bottom: 12" inches Diameter of hole: 4 inches

Soil Data from test hole:

depth, inches	soil texture:	soil color
<u>0-6</u>	<u>LOAM</u>	
<u>6-72</u>	<u>CLAY LOAM</u>	

Method of scratching sidewall: NAILON BOARD Depth of pea size gravel in bottom of hole: 2 inches

Date and hour of initial water filling: 10:00AM APR 02 Depth of initial water filling: 12" above hole bottom

Method used to maintain 12" of water depth in hole for 4 hours: REFILL

Percolation test conducted by: M. H. H. H. Percolation test started at 3:15 (a) (p) (m).

Maximum water depth above hole bottom during test: 12 inches

TIME	INTERVAL (MINUTES)	WATER DEPTH	WATER DROP (fraction)	WATER DROP (decimal)	PERC RATE CALCULATION	conversions
<u>3:15</u> <u>4:00</u>	START <u>45</u>	<u>10"</u> <u>8 1/2"</u>	<u>1 1/2"</u>		$\frac{45}{\text{TIME}} \div \frac{1.50}{\text{DROP (Decimal)}} = \frac{30.00}{\text{PERC}}$ <b>A</b>	1/16 = .06 1/8 = .13 3/16 = .19
<u>4:00</u> <u>4:45</u>	REFILL <u>45</u>	<u>10"</u> <u>8 9/16"</u>	<u>1 7/16"</u>		$\frac{45}{\text{TIME}} \div \frac{1.44}{\text{DROP (Decimal)}} = \frac{31.25}{\text{PERC}}$ <b>B</b>	1/4 = .25 5/16 = .31
<u>4:45</u> <u>5:30</u>	REFILL <u>45</u>	<u>10"</u> <u>8 5/8"</u>	<u>1 3/8"</u>		$\frac{45}{\text{TIME}} \div \frac{1.38}{\text{DROP (Decimal)}} = \frac{32.61}{\text{PERC}}$ <b>C</b>	3/8 = .38 7/16 = .44
<u>5:30</u> <u>6:15</u>	REFILL <u>45</u>	<u>10"</u> <u>8 5/8"</u>	<u>1 3/8"</u>		$\frac{45}{\text{TIME}} \div \frac{1.38}{\text{DROP (Decimal)}} = \frac{32.61}{\text{PERC}}$ <b>D</b>	1/2 = .5 9/16 = .56
	REFILL				$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \frac{\text{PERC}}{\text{PERC}}$ <b>E</b>	5/8 = .63
	REFILL				$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \frac{\text{PERC}}{\text{PERC}}$ <b>F</b>	11/16 = .69
	REFILL				$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \frac{\text{PERC}}{\text{PERC}}$ <b>G</b>	3/4 = .75 13/16 = .81
	REFILL				$\frac{\text{TIME}}{\text{DROP (Decimal)}} = \frac{\text{PERC}}{\text{PERC}}$ <b>H</b>	7/8 = .88 15/16 = .94

### Ten Percent Calculation \*

<b>A, B, C</b>
<u>32.61</u> - <u>30.00</u> = <u>2.61</u>
Largest # of ABC - Smallest # of ABC =
<u>30.00</u> x 0.10 = <u>3.0</u>
<b>C, D, E</b>
Largest # of CDE - Smallest # of CDE =
Smallest # of CDE x 0.10 =
<b>E, F, G</b>
Largest # of EFG - Smallest # of EFG =
Smallest # of EFG x 0.10 =

<b>B, C, D</b>
Largest # of BCD - Smallest # of BCD =
Smallest # of BCD x 0.10 =
<b>D, E, F</b>
Largest # of DEF - Smallest # of DEF =
Smallest # of DEF x 0.10 =
<b>F, G, H</b>
Largest # of FGH - Smallest # of FGH =
Smallest # of FGH x 0.10 =

\* If the top number in each set of boxes is larger than the bottom number then take another reading. If the top number is equal or smaller than bottom number, average the three numbers for the perc rate.

## - PERCOLATION TEST SHEET -

Test hole location S. DRAINFIELD Hole # 2 Date test hole was prepared: 19 APRIL 02

Depth of hole bottom: 12" inches Diameter of hole: 4 inches

Soil Data from test hole:

depth, inches	soil texture:	soil color
<u>0-6</u>	<u>LOAM</u>	
<u>6-72</u>	<u>CLAY LOAM</u>	

Method of scratching sidewall: NAIL ON BOARD Depth of pea size gravel in bottom of hole: 2 inches

Date and hour of initial water filling: 12:00AM APR 02 Depth of initial water filling: 12" above hole bottom

Method used to maintain 12" of water depth in hole for 4 hours: REFILL

Percolation test conducted by: M. D. HOUGHT Percolation test started at 3:16 (a)  (p.m.)

Maximum water depth above hole bottom during test: 12 inches

TIME	INTERVAL (MINUTES)	WATER DEPTH	WATER DROP (fraction)	WATER DROP (decimal)	PERC RATE CALCULATION	conversions
<u>3:16</u> <u>4:01</u>	START <u>45</u>	<u>10"</u> <u>8 7/8"</u>	<u>1 3/8"</u>	<u>1.38</u>	$\frac{45}{\text{TIME}} \div \frac{1.38}{\text{DROP}} = \frac{32.61}{\text{PERC}} \text{ A}$	1/16 = .06 1/8 = .13 3/16 = .19
<u>4:01</u> <u>4:46</u>	REFILL <u>45</u>	<u>10"</u> <u>8 11/16"</u>	<u>1 5/16"</u>	<u>1.31</u>	$\frac{45}{\text{TIME}} \div \frac{1.31}{\text{DROP}} = \frac{34.35}{\text{PERC}} \text{ B}$	1/4 = .25 5/16 = .31
<u>4:46</u> <u>5:31</u>	REFILL <u>45</u>	<u>10"</u> <u>8 11/16"</u>	<u>1 5/16"</u>	<u>1.31</u>	$\frac{45}{\text{TIME}} \div \frac{1.31}{\text{DROP}} = \frac{34.35}{\text{PERC}} \text{ C}$	3/8 = .38 7/16 = .44
<u>5:31</u> <u>6:16</u>	REFILL <u>45</u>	<u>10"</u> <u>8 11/16"</u>	<u>1 5/16"</u>	<u>1.31</u>	$\frac{45}{\text{TIME}} \div \frac{1.31}{\text{DROP}} = \frac{34.35}{\text{PERC}} \text{ D}$	1/2 = .5 9/16 = .56 5/8 = .63
	REFILL				$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{PERC}} \text{ E}$	11/16 = .69
	REFILL				$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{PERC}} \text{ F}$	3/4 = .75
	REFILL				$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{PERC}} \text{ G}$	13/16 = .81
	REFILL				$\frac{\text{TIME}}{\text{DROP}} = \frac{\text{PERC}}{\text{PERC}} \text{ H}$	7/8 = .88 15/16 = .94

### Ten Percent Calculation \*

<b>A, B, C</b>	
Largest # of ABC	Smallest # of ABC = _____
Smallest # of ABC	x 0.10 = _____
<b>C, D, E</b>	
Largest # of CDE	Smallest # of CDE = _____
Smallest # of CDE	x 0.10 = _____
<b>E, F, G</b>	
Largest # of EFG	Smallest # of EFG = _____
Smallest # of EFG	x 0.10 = _____

<b>B, C, D</b>	
Largest # of BCD	Smallest # of BCD = _____
Smallest # of BCD	x 0.10 = _____
<b>D, E, F</b>	
Largest # of DEF	Smallest # of DEF = _____
Smallest # of DEF	x 0.10 = _____
<b>F, G, H</b>	
Largest # of FGH	Smallest # of FGH = _____
Smallest # of FGH	x 0.10 = _____

\* If the top number in each set of boxes is larger than the bottom number then take another reading. If the top number is equal or smaller than bottom number, average the three numbers for the perc rate.

