



**Northwestern
Health Unit**

www.nwhu.on.ca

SAMPLE SEWAGE PERMIT APPLICATION

FILTER BED SYSTEM

OWNER INFORMATION

John & Jane Sample

Name of Registered Owner(s)

Part 1-23R-1234 PIN 67890-1224

Property Parcel/PIN (Legal Description)

Kirkup

Municipality/Township

District of: Kenora Rainy River

123 Anywhere Street South

Mailing Address: Street Address/P.O. Box

Kenora

Ontario

City Province/State

Canada

P9N 3W7

Country Postal Code/Zip Code

807-548-1234

jjsample@tsa.com

Telephone / Fax Number Email address

DECLARATION OF HOMEOWNER: The information contained in this application, attached schedules, plans and specifications, and other attached documentation, is true to the best of my knowledge.

John Sample

Signature of Applicant

Date: 2011 01 01
year month day

Class	SYSTEM INFORMATION		
2	Greywater Design Flow (Q)		(L/day)
3	Cesspool Design Flow (Q)		(L/day)
2/3	Greywater/Cesspool sidewall area		(m ²)
4	Septic System Design Flow	[2]	(L)
4	Septic tank volume proposed	[3]	(L)
4	Trench length proposed	[4]	(m)
4	Filter bed effective size	[5]	21.3 (m ²)
4	Filter bed extended area	[6]	75.3 (m ²)
4	Filter bed mantle	[7]	267 (m ²)
5	Holding tank proposed volume	[3]	(L)
4	Tertiary System Design attached: <input type="checkbox"/> yes		
DWELLING INFORMATION			
No. of bedrooms : 3			
Residential area: 180 (m ²)			
Fixture units of plumbing: 17			
Walk-out basement? yes <input checked="" type="checkbox"/> no <input type="checkbox"/>			
SOILS INFORMATION			
		Perc. Rate (T)	
Design Soil T _D	Filter Sand		
Mantle Soil T _M	8		
Native Material T _N	40		[1]
* Include lab report for design sand/soil.			
* A lot survey must be submitted with this application.			

INSTALLER INFORMATION * The qualified installer must be present during the site inspection at substantial completion.

Company Name: AAA Septic BCIN: 08462

Qualified Installer Name: William "Billy" Doe BCIN: 08525

Contact Telephone or Cell Number (including area code): 807-555-1212 or cell 409-1356

DESIGNER INFORMATION

Company Name: AAA Septic BCIN: 08462

Permit Reviewed By: _____ Date: _____

(Signature of Inspector/Technician)

Permit Issued By: _____ Date: _____

(Signature of Chief Building Official)

Sewage Permit Application – PROFILE

Septic Tank: Gravity Pump * Pump systems require permit from the Electrical Safety Authority 1-877-372-7233

Septic tank to be buried within manufacturers specifications: yes no

Is a deep burial tank proposed: yes no

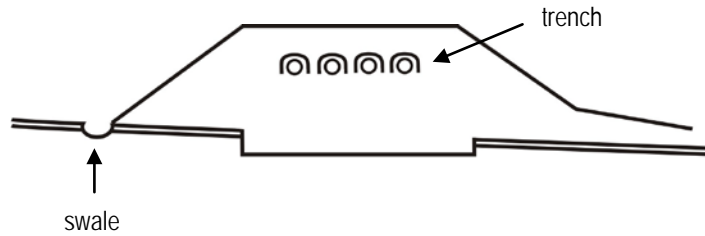
Is the effluent filter accessible: yes no

Slope in proposed field area before construction: 0 – 10% 10 – 20% > 20%

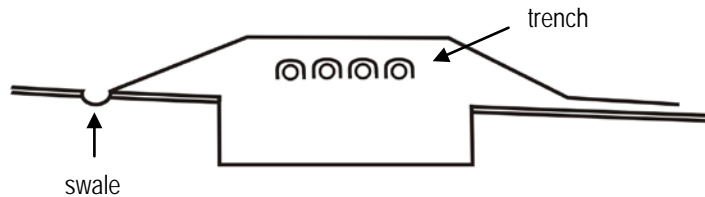
Slope in proposed mantle area before construction: 0 – 10% 10 – 20% > 20%

Indicate most appropriate design:

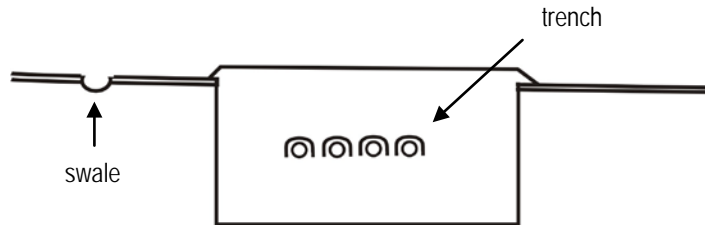
Fully raised with mantle:



Partially raised with mantle:



In-ground, no mantle:



Other – provide and attach details

Directions or map to property:

From Kenora - east highway to Storm Bay Road - third access
road on left - 2 nd drive on right - yellow sign with name at
driveway.

Worksheet - Consult Code and/or Background Document for complete detail.

Step 1: Determine Flow Rate (Q)

Use steps below for Residential Occupancies only.
For all other Occupancies see Tables 8.2.1.3.A. & B. of the Building Code.

Information required to complete Step 1

- No. of bedrooms in dwelling
- living area of dwelling
- No. of fixture units of plumbing in dwelling

The Total Daily Design Sewage Flow Rate (Q) is obtained by first establishing a base flow rate (BFR) based on bedrooms, up to five and then adding additional flow for:

1. bedrooms over five; or
2. living area over 200 square metres; or
3. fixture units of plumbing over 20 fixtures.

Residential Occupancy	Litres per day (L/d)
DWELLINGS	
a) 1 bedroom dwelling	750
b) 2 bedroom dwelling	1100
c) 3 bedroom dwelling	1600
d) 4 bedroom dwelling	2000
e) 5 bedroom dwelling	2500
f) Additional flow for	
i) each bedroom over 5, or	500
ii) a) each 10 m ² (or part of it) over 200 m ² up to 400 m ² ⁽²⁾ ,	100
b) each 10 m ² (or part of it) over 400 m ² up to 600 m ² ⁽²⁾ , and	75
c) each 10 m ² (or part of it) over 600 m ² ⁽²⁾ , or	50
iii) each fixture unit over 20 fixture units	50
Indicate Water Supply: DUG WELL <input type="checkbox"/> DRILLED WELL <input checked="" type="checkbox"/> SURFACE WATER <input type="checkbox"/> OTHER <input type="checkbox"/>	

Number of bedrooms = 3

Base Flow Rate based on number of bedrooms
BFR = 1600 L/d

Living area of dwelling(s) = 180 m²
(Round up to next 10 m²)

Fixture Units of Plumbing = 17
(See chart)

A BFR 1600 L/d + 0 L/d
for bedrooms over 5 = 1600 L/d

1B BFR 1600 L/d + 0 L/d
for living area over 200 m² = 1600 L/d

1C BFR 1600 L/d + 0 L/d
for fixture units over 20 = 1600 L/d

Table to calculate FIXTURE UNITS OF PLUMBING

FIXTURE	FIXTURE UNIT	#	TOTAL
Bathroom Group (3 piece)	6	<u>2</u>	<u>12</u>
Bathtub with/without shower	1 ½	—	—
Clothes Washer	1 ½	<u>1</u>	<u>1½</u>
Dishwasher	½	<u>1</u>	<u>1½</u>
Shower not in bathroom group	1 ½	—	—
Extra shower head	1 ½	—	—
Sinks not in bathroom group	1 ½	<u>2</u>	<u>3</u>
Toilets not in bathroom group	4	—	—
Total Fixture Units of Plumbing =			<u>17</u>

Q = 1600 [2] L/d (Highest of 1A, 1B or 1C)

Enter value [2] on page 1.

Permit No: _____

Step 2: Determine Minimum Tank Volume for Class 4 Systems

Minimum Tank Volume for Residential Occupancies is 2 times daily flow rate (Q) = 3200 litres.

Minimum Tank Volume for Non-Residential Occupancies is 3 times daily flow rate (Q) = _____ litres.

Proposed Tank Volume 3600 litres. [3] Enter value [3] on page 1.
 Note: Minimum allowable tank volume is 3,600 L.

Information required to complete Step 2

- Calculated Flow Rate (Q) from Step 1

Step 3: Determine Soils to be Used

The Northwestern Health Unit requires documentation on the soils to be used by a certified soil technician to determine the T time for conventional type fields or suitability as filter bed sand for filter bed systems.

Loading Rates for Fill-Based Trenches and Filter Beds	
ESTIMATED	ASSIGNED
Percolation Time (T_N) of Native Soil, min/cm	Loading Rates – LRM (L/m^2) /day
$1 < T \leq 20$	10
$20 < T \leq 35$	8
$35 < T \leq 50$	6
$T > 50$	4
Loading rate of mantle from above table = LRM = <u>6</u> litres/ m^2 /day.	

Information required to complete Step 3

- Percolation Rate (T_D) of Design Soil, as determined by accredited laboratory analysis
- Percolation Rate (T_M) of Mantle Sand;
- Classification of Native Soil as determined through the excavation of on-site test holes.
- Lab report must be attached to Sewage Permit Application.

GUIDE FOR ESTIMATING PERCOLATION RATE OF NATIVE SOIL (Circle one)

SOIL TYPE	Coarse Gravel, no fines	Gravel, some small rocks	Gravel, Sand Mix, some fines	Sand, uniform, some fines	Sand / Loam Mix	Silty Loam	Clay
T-Time Min/cm	0 – 1	1 – 5	5 – 10	10 – 15	15 – 25	25 – 50	> 50

- Enter T_D of soil to be used filter sand min/cm [1].
- Enter estimated T_N of native soil in mantle area 40 min/cm [1]. (See loading rate chart and soil chart in Background document.)
- Enter T_M of mantle sand 8 min/cm [1]. Enter value [1] on page 1.

Step 4: Show Field Design Calculations

COMPLETE THE APPROPRIATE SECTION FOR THE TYPE OF SYSTEM BEING PROPOSED:

- Class 4: Trench Type System - 4A, **or**
- Class 4: Conventional Filter Bed - 4B, **or**
- Class 5: Holding Tank Design - 4C, **or**
- Class 2: Greywater System Design - 4D.

For applications using patented treatment, attach design with maintenance and sampling contract.

4A - TRENCH SYSTEM

The formula for calculating the length of pipe (L) is $L=Q \times T_D / 200$. L = _____ metres.

Proposed Length: L = _____. [4]

Note: Minimum length is 40 metres.

Complete where patented product is proposed:

- Name of product: _____
(Attach BMEC authorization.)
- Length of trench based on BMEC authorization = _____ metres. [4]

Information Required to Complete Section 4A

- Calculated Flow Rate (Q) From Step 1.
- Design Soil (T_D) from laboratory.
- Registered Name of Patented product (if used). BMEC Authorization must be attached to Sewage Permit Application.

4C - HOLDING TANK DESIGN

Minimum Volume of holding tank is 7 times daily flow rate. (Q) = _____ litres.

Proposed Tank Volume _____ litres. [3]

Note: Minimum allowable tank volume is 9,000 litres.

Information Required to Complete Step 4C

- Calculated Flow Rate (Q) from Step 1.

Enter values from [3], [4], [5], [6], [7] and [8] on page 1 where applicable.

4B - FILTER BED WITH SEPTIC TANK

There are three calculations for the sizing of a filter bed (effective area, extended contact area & mantle).

Effective area = $Q / 75 = 21.3 \text{ m}^2$ [5]
where Q is 3000 litres or less.

Effective area = $Q / 50 = \text{_____ m}^2$ [5]
where Q is over 3000 litres.

Minimum Extended Filter Sand Area (A)
 $A = Q \times T_N / 850 = 75.3 \text{ m}^2$ [6]

Mantle area = $Q / \text{LRM} = 267 \text{ m}^2$ [7]

Information Required to Complete Section 4B

- Calculated Flow Rate (Q) From Step 1.
- Loading Rate of Mantle (LRM) From Step 3.
- Percolation Rate of Native Soil (T_N) From Step 3.
All Filter Sand must be tested by an approved laboratory. (Report must be attached to Sewage Permit Application.)

4D - GREYWATER SYSTEM DESIGN

Read the Northwestern Health Unit's Sewage Permit Process Backgrounder and Guide for detailed design instructions.

Daily Flow Rate $Q = \# \text{ of Fixture Units} \times 125\text{L/d}$ (non-pressurized) or 200 litres/d (pressurized)
 $Q = \text{_____ litres}$

Sidewall Loading Rate $L_R = 400/T$
 $L_R = \text{_____ litres/m}^2$

Sidewall Area Required
 $A = Q / L_R$
 $A = \text{_____ m}^2$ [8]

Length of Trench (assuming standard 300 mm sidewall depth) $L_T = A / (0.300 \text{ m})$ (2 sides)
 $L_T = \text{_____ m}$ [4]

TEST PIT SOIL DATA SHEET

Name of Applicant:

John & Jane Sample

Test Pit Description:

Pit #1 - Bed Area Pit #2 - Extended Area

NWHU Inspector/Technician:

TEST PIT #1		TEST PIT #2	
Depth in Metres	<u>Description of Soil</u> List colour and type	Depth in Metres	<u>Description of Soil</u> List colour and type
0 - 0.3	black topsoil	0 - 0.4	black topsoil
0.3 - 0.7	brown sandy silt	0.4 - 0.9	brown sandy silt
0.7 - 0.9	brown silt	0.9 - 1.1	grey & brown silt & clay
0.9 - 1.2	grey & brown silty clay	1.1 - 1.5	brown clay
1.2 - 1.5	brown clay	-	
-		-	
TEST PIT INFORMATION REQUIRED		Test Pit #1	Test Pit #2
Depth to groundwater?		1m	1m
Seasonal high groundwater?		0.9m	0.9
Was bedrock located? If yes, at what depth?		no	no

NOTE: Except as otherwise directed by the Northwestern Health Unit, a minimum of two test pits must be used. The soil profile from the test pits and any percolation results must be included as part of the plans submitted for approval. The soil profile must be to a depth that is at least 1.0 metre below the bottom of the proposed field bed or trench.

COLLECTION OF INFORMATION

Personal information on this form is collected, under the authority of the Ontario Regulation 350/06 Building Code to ensure compliance with legal and regulatory requirements.

Questions about this collection can be mailed to:

Freedom of Information Officer

Northwestern Health Unit

21 Wolsley Street

Kenora, ON P9N 3W7 or by telephone at: 807-468-3147 ext 260 or 1-800-830-5978.

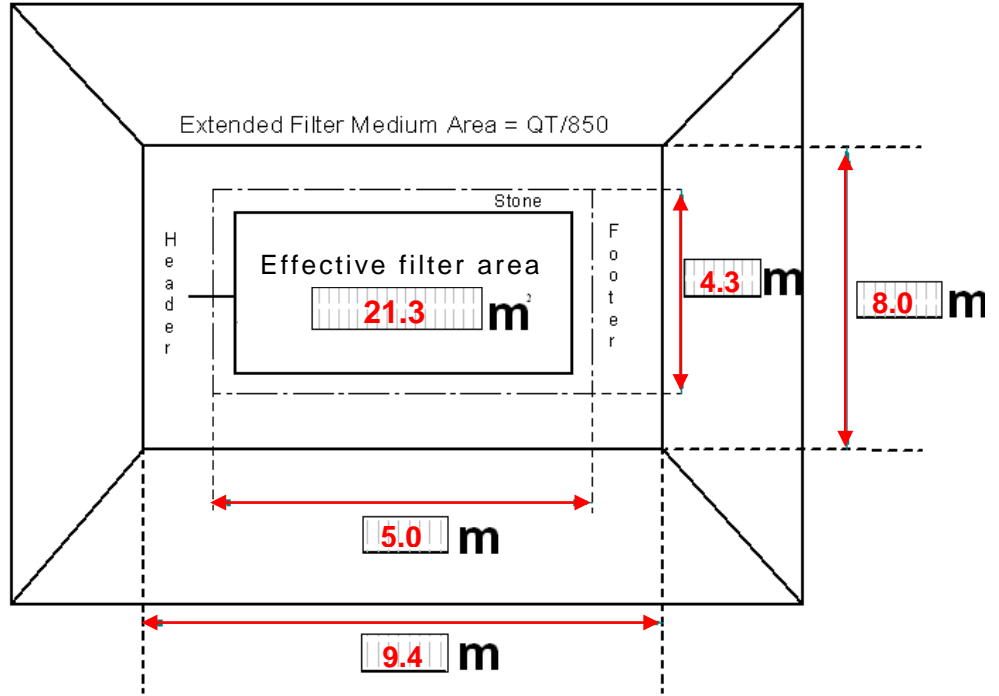
Permit No: _____

Typical Drawing – Filter Bed (drawings are not to scale)

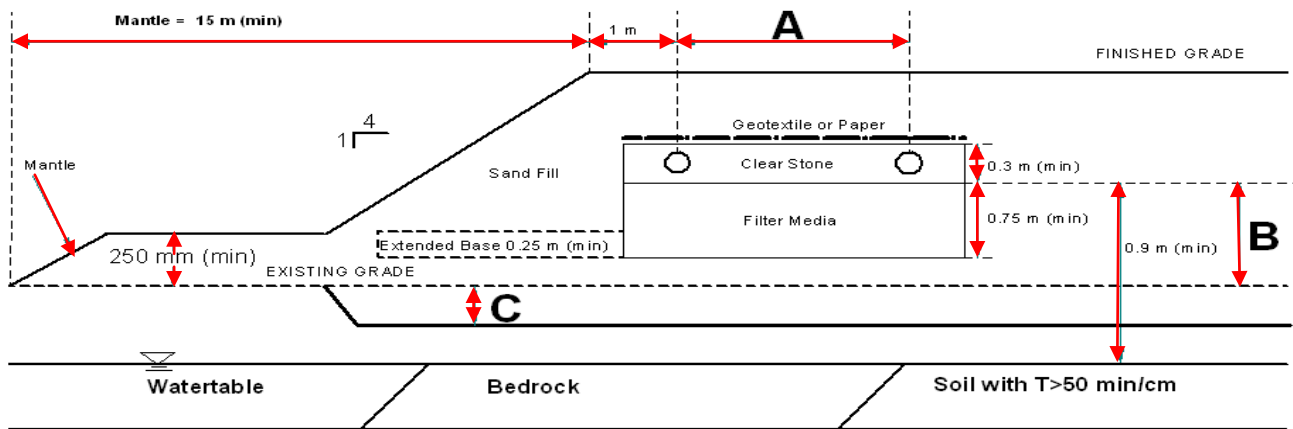
Name of Applicant: John & Jane Sample Name of Designer: AAA Septic - Bill Doe

PLAN VIEW
(complete all fields)

Is mantle required?
 YES
 NO
 Direction west
 Total Mantle Area (m²): 267
 Extended Filter Medium Area (m²): 75



PROFILE VIEW
(complete all fields)



- A** - Proposed Horizontal Offset Distance Between Tile Runs 1.0 m
- B** - Proposed Height of Stone Layer Above Existing Grade 0.4 m
- C** - Proposed Depth of Excavation for Partially Raised Field 0.4 m

Permit No: _____