

APPENDIX H:

Water Supply Source Assessment Step 1 Application and Approval

WSSA STEP 1 APPLICATION

278-17 Strang's Shore Campground, Murray Corner, NB

1. Name of proponent

Linda and Jerry Strang
Owner/operators
Strang's Shore Seasonal Camping Inc.
89 Moore Road Ext.
Otter Creek, NB E4M 3V5

2. Location of drill targets (including property PID) and purposes of the proposed water supply

Both the production well and observation are drilled. The campground is serviced by a production well that was drilled in 2010 (see attached well log; Report No. 24773 and Well ID 0042968). The well is located in a locked pump house on PID 00837088. The observation well is located on an adjacent parcel also owned by Strang's Shore on PID 70188826. The observation well was drilled in 2014 and used to service a trailer which has been removed from the property. The observation well log is also attached (Report No. 30194 and Well ID 50440). The observation well is 65 feet deep and the production well is 105 feet deep. It is proposed that the observation well be deepened by 40 feet to reach the same depth and fracture zones as the production well.

Refer to attached well logs for the campground water supply and observation well.

3. Required water quantity (in m³/day) and/or required pumping rate

The campground well is currently outfitted with a 4-inch diameter 2-HP submersible pump capable of pumping at rates of 4 to 42 Igpm (26 to 275 m³/day). A 450-L water storage tank is also located in the pump house. There have been no reports of water quantity or quality issues since the campground began operating in 2012. For a campground with water and sewer hook-up, the NBDELG recommends 450 L per space per day for water usage. The campground currently has 115 serviced lots and current water demand is approximately 52 m³/day. The campground will expand in future for a total of 150 lots with a future water demand of approximately 68 m³/day.

4. List alternate water supply sources in area (including municipal systems)

All properties in the area are serviced with private wells. There is no municipal water system for Murray Corner. The nearest municipal water system is in Port Elgin, located approximately 15 km southwest of the subject site.

5. Discuss area hydrogeology as it relates to the project requirements

The subject site is underlain by Late Carboniferous-aged sedimentary rocks of the Pictou Group, Richibucto Formation (Smith, 2007). The Richibucto Formation is composed mainly of sandstone interbedded with red mudrock and has good aquifer potential with hydraulic conductivity varying from 1.4×10^{-6} to 1.9×10^{-4} m/s (Rivard et al, 2008). Based on a well log search of the area within 500 metres of PID 00837088, the local aquifer is comprised of fractured sandstone bedrock. From

a review of seven (7) well logs, well depths range between 65 and 241 ft. Well yields ranged from 3 to 25 Igpm (19.6 to 163.6 m³/day).

Refer to attached well log search results (within 500m of PID No. 00837088).

6. Outline the proposed hydrogeological testing and work schedule

It is proposed that the observation well be deepened in the summer/early fall of 2017. A three-step step test, 72-hour pump test with 36-hour recovery period is proposed for November 2017 once the campground will then be closed for the season. Pump testing cannot occur over the summer months as the production well is in use and cannot be taken offline for the duration of the 72-hour pump test and 36-hour recovery period. During the pumping portion of the test, discharged water will be directed to the beach area, approximately 380 feet and downgradient of the production well. The beach area is primarily boulder/cobble and exposed rock slab. A pump test report is anticipated for submission by the end of December 2017/January 2018.

7. Identify any existing pollution or contamination hazards within a minimum radius of 500 m from the proposed drill targets. Historical land use that might pose a contamination hazard (i.e. tannery, industrial, waste disposal, etc.) should also be discussed.

No existing pollution has been identified within 500 m of the wells. Surrounding land use is cottage/residential buildings. Potential contamination hazards include private septic systems and household quantities of petroleum and chemical products.

8. Identify any groundwater use problems (quantity or quality) that have occurred in the area.

No groundwater quantity or quality problems were identified. A review of well water quality data from six (6) wells within 1500 m of the subject site was completed. Iron exceeded the Canadian Drinking Water Quality (CDWQ) Guideline in one well and manganese exceeded the CDWQ guideline in two wells. Both of these parameters exceeded an aesthetic guideline and are not considered to pose a health risk. Elevated iron and manganese may stain plumbing and laundry. Commercial treatment systems may be installed to reduce iron and manganese to within acceptable levels. One well had the presence of total coliforms which does not meet the CDWQ guideline of 0 counts per 100 ml. The presence of total coliforms may be localized to a specific well and is typically addressed through well disinfection and re-sampling. Two wells exceeded the CDWQ guideline for turbidity. Elevated turbidity may be related to new well construction and is a parameter that is expected to decrease with increased well use. Overall, water quality in the surrounding area is good with most parameters meeting CDWQ guidelines.

Refer to Appendix A: Well log search results within 1500 m of PID 00837088

9. Identify any watercourses (stream, brook, river, wetland, etc.) within 60 m of the proposed drill targets.

No watercourses are located within 60 m of the wells. The Northumberland Strait is located approximately 70 m northeast of the production well.

10. Identify site supervisory personnel involved in the source development (municipal officials, consultants, drillers).

Charlie Herman Chappell Well Drilling, based out of Colpitts Settlement, NB, will deepen the observation well and will complete the pump testing under the supervision of Roy Consultants' personnel.

11. Attach a 1:10 000 map and/or recent air photo clearly identifying the following:

- **Proposed location of drill targets and property PID**
- **Domestic or production wells within a 500 m radius from the drill target (s)**
- **Any potential hazards identify in question 7.**

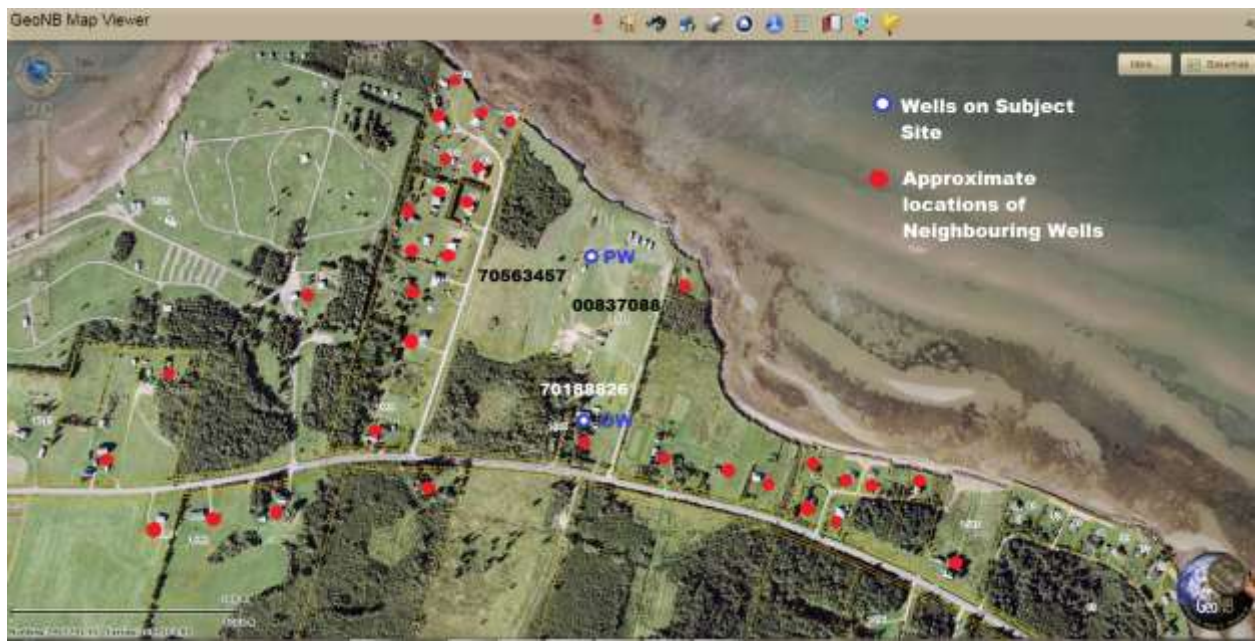


Figure No. 1: Subject Site PIDs and Neighbouring Water Supplies.

12. Attach a land use/zoning map of the area (if any). Superimpose drill targets on this map.

According to the Tantramar Rural Zoning Map Schedule A (December 2011, Scale 1:40,000), the subject site is zoned "rural zone".

Refer to attached zoning map and map detail.

13. Contingency plan for open loop earth energy systems (see Section 2.3).

Not applicable to this project.

References:

- Rivard, C., Michaud, Y., Deblonde, C., Boisvert, V., Carrier, C., Morin, R.H., Calvert, T., Vigneault, H., Conohan, D., Castonguay, S., Lefebvre, R., Rivera, A., and Parent, M. 2008. Canadian Groundwater Inventory: Regional hydrogeological characterization of the south central part of the Maritimes Basin; Geological Survey of Canada. Bulletin 589, 96 p.
- Smith, E.A. (compiler). 2007. Bedrock geology of the Cape Tormentine area (NTS 11L/04), Westmorland County, New Brunswick. New Brunswick Department of Natural Resources, Minerals, Policy and Planning Division, Plate 2007-46. Scale 1:50,000.

Attachments:

- Subject site production well log;
- Subject site observation well log;
- Well logs within 1500m of subject site;
- Tantramar Rural Plan Zoning Map
- Tantramar Rural Plan Zoning Map Detail

Subject site production well log

Well Driller's Report

Date printed **6/8/2017**

Drilled by	Work Type	Drill Method	Work Completed
Well Use Drinking Water, Domestic	New Well	Cable Tool	08/02/2010

Casing Information		Casing above ground 2ft 10in			Drive Shoe Used? Yes
Well Log	Casing Type	Diameter	From	End	Slotted?
24773	Steel	6 inch	0ft	36ft	

Aquifer Test/Yield						
Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well? Rate
Bailer	16ft	20 igpm	1hr	20ft	20 igpm	No 0 igpm
<i>(BTC - Below top of casing)</i>						

Well Grouting
There is no Grout information.

Drilling Fluids Used	Disinfectant	Pump Installed
None	Chlorine Pucks	Submersible
	Qty 0 ig	Intake Setting (BTC) 0ft

Driller's Log				
Well Log	From	End	Colour	Rock Type
24773	0ft	10ft	Brown	Clay and Sand
24773	10ft	21ft	Red	Clay and Sand
24773	21ft	30ft	Brown	Sand
24773	30ft	41ft	Red	Soft Shale
24773	41ft	53ft	Grey	Sandstone
24773	53ft	80ft	Red	Shale
24773	80ft	105ft	Dark brown	Sandstone

Overall Well Depth
105ft
Bedrock Level
21ft

Water Bearing Fracture Zone		
Well Log	Depth	Rate
24773	60ft	15 igpm
24773	80ft	10 igpm
24773	91ft	10 igpm

Setbacks		
Well Log	Distance	Setback From
24773	600ft	Right of any Public Way Road

Subject site observation well log

Well Driller's Report

Date printed **6/8/2017**

Drilled by	Work Type	Drill Method	Work Completed
Well Use Drinking Water, Domestic	New Well	Rotary	08/13/2014

Casing Information		Casing above ground 2ft			Drive Shoe Used? Yes
Well Log	Casing Type	Diameter	From	End	Slotted?
30194	Steel	6 inch	0ft	40ft	

Aquifer Test/Yield						
Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well? Rate
Air	5ft	15 igpm	1hr	30ft	15 igpm	No 0 igpm
<i>(BTC - Below top of casing)</i>						

Well Grouting				Drilling Fluids Used	Disinfectant	Pump Installed
Well Log	Grout Type	From	End	None	Bleach (Javex)	N/A
30194	Bentonite	35ft	40ft		Qty 0 ig	Intake Setting (BTC) 0ft

Driller's Log					Overall Well Depth
Well Log	From	End	Colour	Rock Type	65ft
30194	0ft	15ft	Brown	Till	Bedrock Level 0ft
30194	15ft	20ft	Brown	Sandstone	
30194	20ft	51ft	Grey	Sandstone	
30194	51ft	57ft	Brown	Shale	
30194	57ft	65ft	Brown	Sandstone	

Water Bearing Fracture Zone		
Well Log	Depth	Rate
30194	50ft	5 igpm
30194	60ft	10 igpm
30194	62ft	1 igpm

Setbacks		
Well Log	Distance	Setback From
30194	65ft	Septic Tank
30194	80ft	Leach Field
30194	200ft	Center of road

Well logs within 1500m of subject site

Well Driller's Report

Date printed **6/8/2017**

Drilled by	Work Type	Drill Method	Work Completed
Well Use Drinking Water, Domestic	New Well	Rotary	07/08/2003

Casing Information		Casing above ground 2ft		Drive Shoe Used? Yes	
Well Log	Casing Type	Diameter	From	End	Slotted?
[REDACTED]	Steel	6 inch	0ft	80ft	

Aquifer Test/Yield						
Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well? Rate
Air	0ft	3 igpm	1hr	105ft	3 igpm	No 0 igpm
<i>(BTC - Below top of casina)</i>						

Well Grouting	Drilling Fluids Used	Disinfectant	Pump Installed
There is no Grout information.	None	N/A	N/A
		Qty 0 ig	Intake Setting (BTC) 0ft

Driller's Log				
Well Log	From	End	Colour	Rock Type
[REDACTED]	0ft	2ft	Unknown Rock Colour	Overburden
[REDACTED]	2ft	15ft	Brown	Clay and Shale
[REDACTED]	15ft	18ft	Grey	Sandstone
[REDACTED]	18ft	21ft	Brown	Clay and Shale
[REDACTED]	21ft	30ft	Grey	Sandstone
[REDACTED]	30ft	42ft	Brown	Clay and Shale
[REDACTED]	42ft	45ft	Grey	Sandstone
[REDACTED]	45ft	56ft	Brown	Clay and Shale
[REDACTED]	56ft	67ft	Grey	Sandstone
[REDACTED]	67ft	76ft	Brown	Clay and Shale
[REDACTED]	76ft	110ft	Grey	Sandstone
[REDACTED]	110ft	177ft	Brown	Clay and Shale
[REDACTED]	177ft	183ft	Brown	Sandstone
[REDACTED]	183ft	199ft	Brown	Clay and Shale
[REDACTED]	199ft	206ft	Brown	Sandstone
[REDACTED]	206ft	214ft	Unknown Rock Colour	Soapstone
[REDACTED]	214ft	241ft	Brown	Clay and Shale

Overall Well Depth **241ft**

Bedrock Level **76ft**

Water Bearing Fracture Zone		
Well Log	Depth	Rate
[REDACTED]	88ft	3 igpm

Setbacks
There is no Setback information.

Well Driller's Report

Date printed **6/8/2017**

Drilled by	Work Type	Drill Method	Work Completed
Well Use Drinking Water, Domestic	New Well	Rotary	02/13/2007

Casing Information		Casing above ground 2ft			Drive Shoe Used? Yes
Well Log	Casing Type	Diameter	From	End	Slotted?
[REDACTED]	Steel	6 inch	0ft	29ft	
[REDACTED]	PVC	5 1/2 Inch	29ft	70ft	

Aquifer Test/Yield							
Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	19ft	10 igpm	0hr	19ft	10 igpm	No	0 igpm
<i>(BTC - Below top of casing)</i>							

Well Grouting	Drilling Fluids Used	Disinfectant	Pump Installed
There is no Grout information.	None	Chlorine Pucks	N/A
		Qty 0 ig	Intake Setting (BTC) 0ft

Driller's Log					Overall Well Depth
Well Log	From	End	Colour	Rock Type	
[REDACTED]	0ft	9ft	Brown	Overburden	85ft
[REDACTED]	9ft	25ft	Brown	Clay	Bedrock Level
[REDACTED]	25ft	35ft	Grey	Sandstone	25ft
[REDACTED]	35ft	40ft	Brown	Clay and Shale	
[REDACTED]	40ft	83ft	Grey	Sandstone	
[REDACTED]	83ft	85ft	Brown	Clay and Shale	

Water Bearing Fracture Zone		
Well Log	Depth	Rate
[REDACTED]	32ft	5 igpm
[REDACTED]	54ft	5 igpm

Setbacks		
Well Log	Distance	Setback From
[REDACTED]	85ft	Septic Tank
[REDACTED]	90ft	Leach Field
[REDACTED]	200ft	Right of any Public Way Road

Well Driller's Report

Date printed **6/8/2017**

Drilled by	Work Type	Drill Method	Work Completed
Well Use Drinking Water, Domestic	New Well	Cable Tool	08/02/2010

Casing Information		Casing above ground 2ft 10in			Drive Shoe Used? Yes
Well Log	Casing Type	Diameter	From	End	Slotted?
[REDACTED]	Steel	6 inch	0ft	36ft	

Aquifer Test/Yield						
Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well? Rate
Bailer	16ft	20 igpm	1hr	20ft	20 igpm	No 0 igpm
<i>(BTC - Below top of casing)</i>						

Well Grouting	Drilling Fluids Used	Disinfectant	Pump Installed
There is no Grout information.	None	Chlorine Pucks	Submersible
		Qty 0 ig	Intake Setting (BTC) 0ft

Driller's Log					Overall Well Depth
Well Log	From	End	Colour	Rock Type	105ft
[REDACTED]	0ft	10ft	Brown	Clay and Sand	Bedrock Level 21ft
[REDACTED]	10ft	21ft	Red	Clay and Sand	
[REDACTED]	21ft	30ft	Brown	Sand	
[REDACTED]	30ft	41ft	Red	Soft Shale	
[REDACTED]	41ft	53ft	Grey	Sandstone	
[REDACTED]	53ft	80ft	Red	Shale	
[REDACTED]	80ft	105ft	Dark brown	Sandstone	

Water Bearing Fracture Zone		
Well Log	Depth	Rate
[REDACTED]	60ft	15 igpm
[REDACTED]	80ft	10 igpm
[REDACTED]	91ft	10 igpm

Setbacks		
Well Log	Distance	Setback From
[REDACTED]	600ft	Right of any Public Way Road

Well Driller's Report

Date printed **6/8/2017**

Drilled by	Work Type	Drill Method	Work Completed
Well Use Drinking Water, Domestic	New Well	Rotary	09/03/2009

Casing Information		Casing above ground 1ft 6in			Drive Shoe Used? Yes
Well Log	Casing Type	Diameter	From	End	Slotted?
[REDACTED]	Steel	6 inch	0ft	30ft	

Aquifer Test/Yield						
Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well? Rate
Air	15ft	60 igpm	1hr	15ft	5 igpm	No 0 igpm
<i>(BTC - Below top of casing)</i>						

Well Grouting	Drilling Fluids Used	Disinfectant	Pump Installed
There is no Grout information.	None	Chlorine Pucks	N/A
		Qty 0 ig	Intake Setting (BTC) 0ft

Driller's Log					Overall Well Depth
Well Log	From	End	Colour	Rock Type	105ft
[REDACTED]	0ft	3ft	Brown	Topsoil	Bedrock Level 0ft
[REDACTED]	3ft	10ft	Brown	Fill	
[REDACTED]	10ft	28ft	Red	Clay	
[REDACTED]	28ft	45ft	Brown	Fine Sandstone	
[REDACTED]	45ft	70ft	Grey	Medlum Sandstone	
[REDACTED]	70ft	105ft	Brown	Fine Sandstone	

Water Bearing Fracture Zone		
Well Log	Depth	Rate
[REDACTED]	60ft	3 igpm
[REDACTED]	101ft	57 igpm

Setbacks		
Well Log	Distance	Setback From
[REDACTED]	65ft	Septic Tank
[REDACTED]	90ft	Leach Field
[REDACTED]	300ft	Right of any Public Way Road

Well Driller's Report

Date printed **6/8/2017**

Drilled by	Work Type	Drill Method	Work Completed
Well Use Drinking Water, Domestic	New Well	Rotary	08/13/2014

Casing Information		Casing above ground 2ft			Drive Shoe Used? Yes
Well Log	Casing Type	Diameter	From	End	Slotted?
[REDACTED]	Steel	6 inch	0ft	40ft	

Aquifer Test/Yield							
Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	5ft	15 igpm	1hr	30ft	15 igpm	No	0 igpm
<i>(BTC - Below top of casing)</i>							

Well Grouting				Drilling Fluids Used	Disinfectant	Pump Installed
Well Log	Grout Type	From	End	None	Bleach (Javex)	N/A
[REDACTED]	Bentonite	35ft	40ft		Qty 0 ig	Intake Setting (BTC) 0ft

Driller's Log					Overall Well Depth
Well Log	From	End	Colour	Rock Type	65ft
[REDACTED]	0ft	15ft	Brown	Till	Bedrock Level 0ft
[REDACTED]	15ft	20ft	Brown	Sandstone	
[REDACTED]	20ft	51ft	Grey	Sandstone	
[REDACTED]	51ft	57ft	Brown	Shale	
[REDACTED]	57ft	65ft	Brown	Sandstone	

Water Bearing Fracture Zone		
Well Log	Depth	Rate
[REDACTED]	50ft	5 igpm
[REDACTED]	60ft	10 igpm
[REDACTED]	62ft	1 igpm

Setbacks		
Well Log	Distance	Setback From
[REDACTED]	65ft	Septic Tank
[REDACTED]	80ft	Leach Field
[REDACTED]	200ft	Center of road

Well Driller's Report

Date printed **6/8/2017**

Drilled by	Work Type	Drill Method	Work Completed
Well Use Drinking Water, Domestic	New Well	Rotary	10/13/2013

Casing Information		Casing above ground 2ft			Drive Shoe Used? Yes
Well Log	Casing Type	Diameter	From	End	Slotted?
[REDACTED]	Steel	6 inch	0ft	31ft	

Aquifer Test/Yield						
Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well? Rate
Air	10ft	20 igpm	1hr 10min	40ft	25 igpm	No 0 igpm
<i>(BTC - Below top of casing)</i>						

Well Grouting				Drilling Fluids Used	Disinfectant	Pump Installed
Well Log	Grout Type	From	End	None	Bleach (Javex)	N/A
[REDACTED]	Bentonite	20ft	30ft			Intake Setting (BTC)
				Qty	0 ig	0ft

Driller's Log					Overall Well Depth
Well Log	From	End	Colour	Rock Type	76ft
[REDACTED]	0ft	10ft	Red	Sand	Bedrock Level 0ft
[REDACTED]	23ft	28ft	Grey	Clay and Sand	
[REDACTED]	28ft	57ft	Red	Sandstone	
[REDACTED]	57ft	76ft	Brown	Sandstone	
[REDACTED]	10ft	23ft	Brown	Clay and Sand	

Water Bearing Fracture Zone		
Well Log	Depth	Rate
[REDACTED]	50ft	15 igpm
[REDACTED]	60ft	10 igpm
[REDACTED]	62ft	10 igpm
[REDACTED]	68ft	1 igpm

Setbacks		
Well Log	Distance	Setback From
[REDACTED]	60ft	Septic Tank
[REDACTED]	80ft	Leach Field
[REDACTED]	100ft	Center of road

Well Driller's Report

Date printed **6/8/2017**

Drilled by	Work Type	Drill Method	Work Completed
Well Use Drinking Water, Domestic	New Well (NEW WELL)	Rotary (ROTARY)	08/31/1995

Casing Information		Casing above ground 2ft	Drive Shoe Used? Yes
Well Log	Casing Type	Diameter	From
[REDACTED]	Steel	6 inch	0ft
			End
			42ft
			Slotted?

Aquifer Test/Yield							
Method	Initial Water Level (BTC)	Pumping Rate	Duration	Final Water Level (BTC)	Estimated Safe Yield	Flowing Well?	Rate
Air	0ft	5 igpm	1hr	20ft	5 igpm	No	0 igpm
<i>(BTC - Below top of casing)</i>							

Well Grouting	Drilling Fluids Used	Disinfectant	Pump Installed
There is no Grout information.	None	N/A	N/A
		Qty 0 ig	Intake Setting (BTC) 0ft

Driller's Log				
Well Log	From	End	Colour	Rock Type
[REDACTED]	0ft	29ft	Brown	Sand
[REDACTED]	29ft	31ft	Brown	Broken Sandstone
[REDACTED]	31ft	82ft	Grey	Sandstone
[REDACTED]	82ft	84ft	Grey	Shale
[REDACTED]	84ft	93ft	Brown	Clay and Shale
[REDACTED]	93ft	96ft	Brown	Sandstone
[REDACTED]	96ft	105ft	Brown	Clay and Shale

Overall Well Depth
105ft

Bedrock Level
0ft

Water Bearing Fracture Zone		
Well Log	Depth	Rate
[REDACTED]	50ft	2 igpm
[REDACTED]	77ft	3 igpm

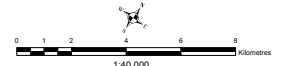
Setbacks
There is no Setback information.

Tantramar Rural Plan Zoning Map
and
Tantramar Rural Plan Zoning Map Detail

Schedule A / Annexe A
**TANTRAMAR RURAL ZONING MAP /
 CARTE DE ZONAGE DU SECTEUR
 D'AMÉNAGEMENT DE TANTRAMAR**

Legend / Légende

Tantramar Planning District / Commission du district d'aménagement de Tantramar	Rural Zone / Zone rurale
Limited Access Zone / Zone à accès limité	Mixed Use Zone / Zone usage mixte
Coastal Zone / Zone côtière	Industrial Zone / Zone industrielle
General plot or rock quarries / Carrières de granit ou de roche	Conservation Zone / Zone de conservation
Transportation Line / Ligne de transport d'énergie	Agricultural Zoning Zone / Zone de terres agricoles agricoles
Pipeline / Pipeline	

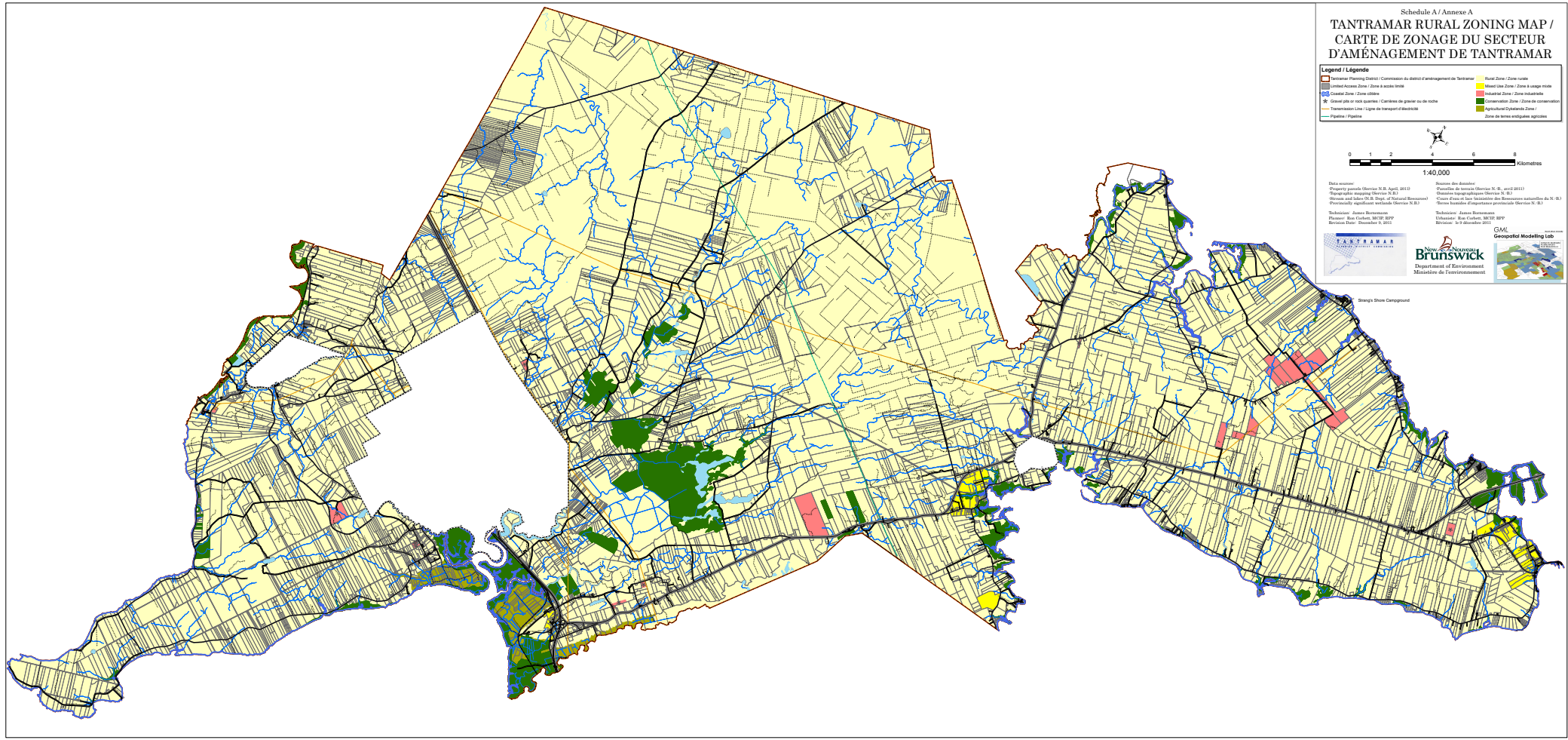


Data sources:
 Property parcels (Service N.S. April 2010)
 Municipal zoning (Service N.S. 2011)
 Roads and Inter. (N.S. Dept. of Natural Resources)
 Provincially designated wetlands (Service N.S. 2011)
 Topography: James Beaman
 Planner: Sue Collier, MFCP, BPP
 Revision Date: December 9, 2011

Source des données:
 Parcelles de terrain (Service N.S., avril 2010)
 Zonage municipal (Service N.S., 2011)
 Cours d'eau et les installations des Ressources naturelles du N.S.
 Zones humides d'importance provinciale (Service N.S., 2011)
 Topographie: James Beaman
 Urbaniste: Sue Collier, MFCP, BPP
 Révision: le 9 décembre 2011



Shirley Shum Cartographer



Tantramar Rural Plan Detail (Strang's Shore Campground Outlined in Red).

