

Appendix E

Noise Screening

NOISE SCREENING PROCESS FOR S.9 APPLICATIONS SUPPLEMENT TO APPLICATION FOR APPROVAL

In order to obtain an approval under Section 9 of the EPA, applicants are, as a minimum, required to assess and document the impacts of all noise emissions from their facility on any noise sensitive locations defined as a Point of Reception. In order to facilitate this assessment, the ministry has developed a Noise Screening Process.

The Noise Screening Process has been developed for mining, utilities and manufacturing operations that are being reviewed by the Air and Noise Unit of the Environmental Assessment and Approvals Branch. Other facilities that require Section 9 approval can not use this Noise Screening Process. Applications for equipment identified as candidates for the Streamline Review Unit (SRU) should not complete this process, rather they should follow specific directions from the SRU. For more information about the types of applications that may be reviewed by the SRU, please refer to the Guide to Applying for Approval (Air & Noise) dated February, 2005.

The Noise Screening Process consists of the following Steps:

- | | |
|---------|---|
| Step 1: | Identify the closest Point of Reception to the facility. (Zoning Plan) |
| Step 2: | Determine the actual separation distance from the Point of Reception to the facility. (Scaled Area Location Plan) |
| Step 3: | Calculate the minimum required separation distance by completing the questionnaire on using the facility's North American Industrial Classification System Code and generic assumptions regarding the actual noise sources present at the facility. |
| Step 4: | Compare the actual separation distance determined in Step 2 with the minimum required separation distance calculated in Step 3 and sign the form. |


The Noise Screening Process is based on the fact that the noise emissions from any noise sources at a facility will not exceed ministry noise guidelines at the closest Point of Reception provided there is a sufficient separation distance between the facility's noise sources and the Point of Reception. Using conservative assumptions regarding the likely noise sources present at a facility, a procedure was developed for calculating the minimum required separation distance to achieve compliance with the ministry noise guidelines. If the actual separation distance from the facility to the closest Point of Reception is greater than the calculated minimum required separation distance, then no further action is required. The signed Noise Screening Process form would provide sufficient supporting information for the noise assessment required by the application process.

If the closest Point of Reception is closer than the minimum required separation distance calculated in Step 3 then further assessment is required. The application may still be approved as proposed and noise control measures may not be necessary; however, a more detailed noise impact assessment using site specific information on the noise sources present at the facility must be completed. The Zoning Plan and Scaled Area Location Plan required by the Noise Screening Process will form part of the required assessment outlined in the ministry publication NPC 233 "Information to be Submitted for Approval of Stationary Sources of Sound." See the Guide to Applying for Approval (Air and Noise) dated February, 2005 for more information on the minimum required supporting information to be included with an application that is unable to pass the Noise Screening Process.

1. Applicant Information

Company Name Renfrew Power Generation Inc.	Site Name Thomas Low GS (proposed)	North American Industry Classification System (NAICS) Code 22111
Site Address - Street information (applies to an address that has civic numbering and street information - includes street number, name, type and direction) 32 Bridge Street Avenue West, Renfrew, ON		Unit Identifier (identifies type of unit, such as suite & number)
Survey Address (used for a rural location specified for a subdivided township, an unsubdivided township or unsurveyed territory) Part Lot 12, Concession 1, Part Lot 13, Concession 2		
Non Address Information (includes any additional information to clarify clients' physical location)		
Municipality/Unorganized Township Township of Horton	County/District County of Renfrew	Postal Code K7V 3R2

2. Noise Screening Process (please refer to the attached Noise Screening Process – Information & Instructions)

Step 1 Identify Closest Point of Reception (POR) (attach Land Use Zoning Designation Plan) POR Description <u>residence on opposing shoreline north of site</u> POR Acoustical Class (as per NPC-205 & NPC-232) <input checked="" type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3				
Step 2 Determine Actual Separation Distance (attach Scaled Area Location Plan) <u>78</u> m				
Step 3 Calculate Minimum Separation Distance (complete attached Noise Screening Process Questionnaire) <u>1000</u> m				
Step 4 By signing this statement you are verifying that: <ul style="list-style-type: none"> I am the applicant or have been retained by the applicant, for the purposes of completing this Noise Screening Process; The closest Point of Reception has been identified and the Land Use Zoning Designation Plan provided by the Local Municipality is attached (Step 1); A Scaled Area Location Plan, prepared by myself, that identifies the facility, the closest Point of Reception and the actual minimum separation distance is attached (Step 2); I have accurately completed the Noise Screening Process questionnaire and identified all noise sources as required (Step 3); The actual separation distance from the facility to the closest Point of Reception, as determined in Steps 1 and 2, is greater than the minimum required separation distance determined in Step 3; and The facility belongs to one of the sectors for which the ministry has indicated the Noise Screening Process is applicable. 				
Name of Signing Authority (please print) Karen Fortin	Title: Environmental Approvals Coordinator	Company: (if different from the Applicant) OEL HydroSys Inc.		
Civic Address - Street information (includes street number, name, type and direction) <input type="checkbox"/> Same as Site Address 3108 Carp Road		Unit Identifier (identifies type of unit, such as suite & number) Box 430		
Municipality Ottawa	Postal Station	Province/State ON	Country Canada	Postal Code K0A 1L0
Telephone Number (including area code & extension) 613-839-3053 x261	Fax Number (including area code) 613-839-5376	E-mail Address kfortin@oel-hydrosys.ca		
Signature 		Date (y/m/d) 2011 / 11 / 30		

Noise Screening Process Questionnaire

Question 1

1 (a) - Is your facility NAICS Code Listed on Table 1.1 below?

Table 1.1 Industry with significant noise sources		
NAICS Code	Industry	Check all That Apply
21	Mining and Oil and Gas Extraction	<input type="checkbox"/>
22111	Electrical Power Generation	<input checked="" type="checkbox"/>
324	Petroleum and Coal Products Manufacturing	<input type="checkbox"/>
3251	Basic Chemical Manufacturing	<input type="checkbox"/>
32731	Cement Manufacturing	<input type="checkbox"/>
32741	Lime Manufacturing	<input type="checkbox"/>
3311	Iron and Steel Mills and Ferro-Alloy Manufacturing	<input type="checkbox"/>
3313	Alumina and Aluminium Production and Processing	<input type="checkbox"/>

1 (b) - Is any of the following equipment Listed on Table 1.2 below present at the facility?

Table 1.2 Equipment with significant noise emissions	
Equipment	Check all That Apply
Flares	<input type="checkbox"/>
Gas Turbines, Cogeneration Facilities or any other continuous or peak shaving electrical power generation equipment	<input type="checkbox"/>
Arc Furnaces	<input type="checkbox"/>
Asphalt Plants	<input type="checkbox"/>
High velocity or pressure atmospheric vents such as Gas Process Blow Down Devices	<input type="checkbox"/>
Rock, Concrete or Aggregate Crushing Operations	<input type="checkbox"/>
Individual Fans with flow rates in excess of 47 m ³ /s	<input type="checkbox"/>
Individual Pressure Blowers or Positive Displacement Blowers with static pressures in excess of 1.25 kilopascal	<input type="checkbox"/>

Did you answer "Yes" to Question 1(a) or 1 (b)?

Yes

No

If Yes, the minimum required separation distance is 1,000 m.

You have completed Step 3 of the Noise Screening Process, proceed to Step 4.

If No, proceed to Question 2

Proceed to Question 2

Question 2

2 - Is your facility NAICS Code Listed on Table 2 below?

Table 2 Industries with a 500 m Radius		
NAICS Code	Industry	Check all That Apply
22112	Electrical Power Transmission, Control and Distribution	<input type="checkbox"/>
2213	Water Sewage and Other Systems	<input type="checkbox"/>
321	Wood Product Manufacturing	<input type="checkbox"/>
322	Paper Manufacturing	<input type="checkbox"/>
325	Chemical Manufacturing (except 3251 as noted in Table 1.1 above)	<input type="checkbox"/>
326	Plastics and Rubber Products Manufacturing	<input type="checkbox"/>
327	Non-Metallic Mineral Product Manufacturing (except 32731 and 32741 as noted in Table 1.1 above)	<input type="checkbox"/>
331	Primary Metal Manufacturing (except 3311 as noted in Table 1.1 above)	<input type="checkbox"/>
332	Fabricated Metal Product Manufacturing (except 33271 and 3328)	<input type="checkbox"/>
333	Machinery Manufacturing	<input type="checkbox"/>
335	Electrical Equipment, Appliance and Component Manufacturing	<input type="checkbox"/>
336	Transportation Equipment Manufacturing	<input type="checkbox"/>

Did you answer "Yes" to Question 2?

Yes No

If Yes, the minimum required separation distance is as follows:

	Minimum Separation	Check the One That Applies
For Class 1:		
Daytime Operation Only (between 7:00 am and 7:00 pm)	300 m	<input type="checkbox"/>
Daytime and Afternoon shift only (between 7:00 am and 11:00 pm)	400 m	<input type="checkbox"/>
Other times (outside the hours of 7:00 am to 11:00 pm)	500 m	<input type="checkbox"/>
For Class 2:		
Daytime Operation Only (between 7:00 am and 7:00 pm)	300 m	<input type="checkbox"/>
Multi shifts (outside the hours of 7:00 am to 7:00 pm)	500 m	<input type="checkbox"/>
For Class 3:		
Any Operation	500 m	<input type="checkbox"/>

You have completed Step 3 of the Noise Screening Process, proceed to Step 4

If No, proceed to Question 3

Proceed to Question 3

Question 3

3 - Provide information on the facility and any noise sources that may be present by answering the following questions to determine a Score for noise sources located at the facility:

		Check one for each question	Value	Score
(a) What is the area of the enclosed buildings of the facility?				
$< 650 \text{ m}^2$	$< 7,000 \text{ ft}^2$	<input type="checkbox"/>	20	
650 m^2 to $< 2,300 \text{ m}^2$	$7,000 \text{ ft}^2$ to $< 25,000 \text{ ft}^2$	<input type="checkbox"/>	25	
$2,300 \text{ m}^2$ to $9,300 \text{ m}^2$	$25,000 \text{ ft}^2$ to $100,000 \text{ ft}^2$	<input type="checkbox"/>	30	
$> 9,300 \text{ m}^2$	$> 100,000 \text{ ft}^2$	<input type="checkbox"/>	40	
multi building		<input type="checkbox"/>	40	
(b) Are any cooling towers located at the facility?				
Yes				
- Total of all cooling towers less than 20 horsepower	$< 15 \text{ kW}$	<input type="checkbox"/>	10	
- Total of all cooling towers from 20 to 100 horsepower	15 to 75 kW	<input type="checkbox"/>	20	
- Total of all cooling towers greater than 100 horsepower	$> 75 \text{ kW}$	<input type="checkbox"/>	40	
No				
(c) Are any outdoor air cooled chillers located at the facility?				
Yes				
- Total of all chillers less than 150 ton	$< 530 \text{ kW}$	<input type="checkbox"/>	10	
- Total of all chillers from 150 to 1,000 ton	530 to $3,500 \text{ kW}$	<input type="checkbox"/>	20	
- Total of all chillers greater than 1,000 ton	$> 3,500 \text{ kW}$	<input type="checkbox"/>	40	
No				
(d) Are any air compressors used to provide process air or for pneumatic conveying systems located at the facility?				
Yes				
- Total of all compressors less than 10 horsepower	$< 7.5 \text{ kW}$	<input type="checkbox"/>	10	
- Total of all compressors from 10 to 75 horsepower	7.5 to 56 kW	<input type="checkbox"/>	20	
- Total of all compressors greater than 75 horsepower	$> 56 \text{ kW}$	<input type="checkbox"/>	40	
No				
(e) Is a boiler located at the facility?				
Yes				
- Total heat input of all boilers less than 10 million BTU/hr	$< 2,930 \text{ kW}$	<input type="checkbox"/>	10	
- Total heat input of all boilers from 10 to 67 million BTU/hr	$2,930$ to $19,600 \text{ kW}$	<input type="checkbox"/>	20	
- Total heat input of all boilers greater than 67 million BTU/hr	$> 19,600 \text{ kW}$	<input type="checkbox"/>	40	
No				
(f) What is the total volumetric flow rate of all process exhaust and general ventilation fans?				
$< 5 \text{ m}^3/\text{s}$		<input type="checkbox"/>	0	
$5 \text{ m}^3/\text{s}$ to $< 10 \text{ m}^3/\text{s}$		<input type="checkbox"/>	10	
$10 \text{ m}^3/\text{s}$ to $< 15 \text{ m}^3/\text{s}$		<input type="checkbox"/>	20	
$15 \text{ m}^3/\text{s}$ to $< 20 \text{ m}^3/\text{s}$		<input type="checkbox"/>	30	
$> 20 \text{ m}^3/\text{s}$		<input type="checkbox"/>	40	
(g) Are any of the above air compressors, fan or blower motors located outside the building envelope?				
Yes				
		<input type="checkbox"/>	10	
No				
		<input type="checkbox"/>	0	
SUBTOTAL - Add Score from (a) to (g)				

Question 3 (continued)

Adjustments for Hours of Operation		Check one	Value	Score
Class 1	Daytime Operation Only (between 7:00 am and 7:00 pm) *	<input type="checkbox"/>	-20	
	Daytime and Afternoon shift only (between 7:00 am and 11:00 pm) **	<input type="checkbox"/>	-15	
	Other times (outside the hours of 7:00 am to 11:00 pm)	<input type="checkbox"/>	-10	
Class2	Daytime Operation Only (between 7:00 am and 7:00 pm)*	<input type="checkbox"/>	-20	
	Multi shifts (outside the hours of 7:00 am to 7:00 pm)	<input type="checkbox"/>	-10	
Class 3	Daytime Operation Only (between 7:00 am and 7:00 pm)	<input type="checkbox"/>	-10	
	Multi shifts (outside the hours of 7:00 am to 7:00 pm)	<input type="checkbox"/>	0	
TOTAL ADJUSTMENT (A)				
Adjustments for Elevated Background Noise at Point of Reception (POR)***		Check one	Value	Score
Class 1	POR within 100 m of a 400 Series Freeway (e.g. 401)	<input type="checkbox"/>	-10	
	POR within 30 m of a Provincial Highway or Arterial Road (eg HWY 27, Keele St)	<input type="checkbox"/>	-10	
	POR at other locations	<input type="checkbox"/>	0	
Class2	POR within 100 m of a 400 Series Freeway (e.g. 401)	<input type="checkbox"/>	-10	
	POR within 30 m of a Provincial Highway or Arterial Road (eg HWY 27, Keele St)	<input type="checkbox"/>	-10	
	POR at other locations	<input type="checkbox"/>	0	
Class 3	All locations	<input type="checkbox"/>	0	
TOTAL ADJUSTMENT (B)				
TOTAL SCORE - SUBTOTAL + TOTAL ADJUSTMENT (A) + TOTAL ADJUSTMENT (B)				

- * Note: the largest minimum separation distance for Daytime Operation only in Class 1 or 2 is 300 m.
- ** Note: the largest minimum separation distance for Evening and Daytime Operation only in Class 1 is 400 m
- *** Note: if Adjustments for Elevated Background Noise are used then the applicant must identify the next closest receptor outside the area of influence of the roadway and show that the actual separation distance to the next closest receptor is greater than the minimum required separation distance without adjustments.

Minimum Separation Distances – Based on Total Score (above)

Total Score	Minimum Separation Distance	Check the distance that applies
< 0 points	50 m	<input type="checkbox"/>
< 5 points	75 m	<input type="checkbox"/>
< 10 points	100 m	<input type="checkbox"/>
< 20 points	200 m	<input type="checkbox"/>
< 30 points	300 m	<input type="checkbox"/>
< 40 points	400 m	<input type="checkbox"/>
40 or more points	500 m	<input type="checkbox"/>
Distance:		m

NOISE SCREENING PROCESS – INFORMATION & INSTRUCTIONS

STEP 1: IDENTIFY CLOSEST POINT OF RECEPTION

The applicant must identify and locate the closest Point of Reception (POR) affected by any noise emissions that may arise from the operations at the facility. A Point of Reception is defined as “any point on the premises of a person where sound or vibration originating from other than those premises is received”.

The Point of Reception may be located on any of the following existing or zoned for future use premises:

- permanent or seasonal residences;
- hotels/motels;
- nursing/retirement homes;
- rental residences;
- hospitals;
- campgrounds; and
- noise sensitive buildings such as schools and places of worship.

For the Screening Process it is only required to identify the closest Point of Reception to the facility or any outdoor noise sources. For a more detailed assessment additional Point(s) or Reception may be required to be identified in other directions based on site specific conditions.

The closest Point of Reception must be selected using a **Land Use Zoning Designation Plan**. This plan indicates the approved local land use and nature of the neighbourhood for the area surrounding the facility. The plan must be based on up-to-date Zoning information provided by the Local Municipality. Zoning Designation Plans may be obtained from the planning department of the Local Municipality. This information may be in the form of hard copy zoning plans prepared by the municipality or electronic base maps showing local land use and features that may be available from the municipality to be printed by the applicant.

The Zoning information obtained from the Local Municipality must be detailed enough to clearly indicate the approved local land use for the individual properties surrounding the facility in a radius including the closest Point of Reception. The plan must include a scale and legend indicating the land use. The Zoning Information used to identify the closest Point of Reception must be attached to the Screening Process.

The Point of Reception Identification section should also describe the environmental noise climate at the Point of Reception in terms of the acoustical class, according to the following definitions:

- "Class 1 Area" means an area with an acoustical environment typical of a major population centre, where the background noise is dominated by the urban hum.
- "Class 2 Area" means an area with an acoustical environment that has qualities representative of both Class 1 and Class 3 Areas, and in which a low ambient sound level, normally occurring only between 23:00 and 07:00 hours in Class 1 Areas, will typically be realized as early as 19:00 hours.
Other characteristics which may indicate the presence of a Class 2 Area include:
 - absence of urban hum between 19:00 and 23:00 hours;
 - evening background sound level defined by natural environment and infrequent human activity; and
 - no clearly audible sound from stationary sources other than from those under impact assessment.
- "Class 3 Area" means a rural area with an acoustical environment that is dominated by natural sounds having little or no road traffic, such as the following:
 - a small community with less than 1,000 population;
 - an agricultural area;
 - a rural recreational area such as a cottage or a resort area; or
 - a wilderness area.

STEP 2: DETERMINE ACTUAL SEPARATION DISTANCE

The location of the closest Point of Reception must be shown on a figure, prepared by the applicant, to determine the actual separation distance from the facility to the Point of Reception. The figure is referred to as a **Scaled Area Location Plan**.

For the Purposes of the Screening Process it may be possible to use the Zoning information provided by the Local Municipality as the Scaled Area Location Plan. However, the information is usually better presented in two separate figures because the scale of zoning plans available from the Local municipality is usually too small to sufficiently show the level of detail required by the Scaled Area Location Plan.

This figure, prepared by the applicant, must clearly indicate the location of the facility, the facility property line, all buildings on the facility and any noise sources at the facility that are located outside of the building envelope, such as dust collectors located beside a building. For the purposes of the Screening Process, it is not required to identify all noise sources, such as roof-mounted exhaust fans, on the Scaled Area Location Plan. The Scaled Area Location Plan must also show and name all local roads and features of the neighbourhood for the area surrounding the facility within a radius that includes the closest Point of Reception identified in Step 1. The figure must include a legend and scale.

The actual separation distance is calculated from the closest facility wall or outside noise source, such as a dust collector located outside the facility, to the Property Line of the selected Point of Reception. For rural receptors in Class 3 Areas, where properties may be larger and may include areas that would not be considered noise-sensitive, Points of Reception are limited to locations within 30 metres of a dwelling or a camping area, where sound or vibration originating from other than those premises is received. The location of the closest Point of Reception must be shown on the figure and the actual separation distance from the facility to the Property line of the closest Point of Reception must also be shown as a line on the figure, measured in metres.

Base maps showing the features of the surrounding neighbourhood may be obtained from the Local Municipality, Ministry of Natural Resources or other mapping companies.

The plan may include the location and features of all buildings surrounding the facility and include the topography of the surrounding area should it have an effect on the transmission of noise to a Point of Reception. However for the Screening Process this is usually not necessary. This information is required for a more detailed noise assessment.

Note: For larger facilities with outdoor noise sources, this process may have to be repeated for each outdoor noise source and different Points of Reception in order to identify the shortest actual separation distance to the closest Point of Reception.

STEP 3 – CALCULATE MINIMUM REQUIRED SEPARATION DISTANCE

Applicants are required to complete the Noise Screening Process questionnaire to calculate the minimum required separation distance that will result in compliance with the noise guidelines for the facility. Generic separation distances have been supplied that should provide a sufficient separation distance for a facility based on the type of operations conducted at the facility and the size and quantity of common noise sources associated with the type of facility under review. The minimum required distances have been provided from 1,000 m to 50 m. If a facility is closer to a Point of Reception than 50 m, you can not use this process. Conversely, if a facility is well sited, located more than 1,000m from a Point of Reception, then a detailed noise assessment is not required.

Applicants must use the North American Industry Classification System (NAICS) Code required by the application form to describe the facility. The NAICS code is determined in accordance with the Statistics Canada publication "North American Industry Classification System (NAICS) 2002 - Canada". For more information on determining the NAICS Code for a business please see www.statcan.ca. This screening process only applies to facilities with NAICS Codes starting with 21, 22, 31, 32 or 33. **If the NAICS code for the facility does not fall into one of these sectors then this step of the Screening Process can not be used.**

The following explanations are intended to assist with completing the Questionnaire:

Table 1.2 The presence of any one piece of equipment identified on this table should be indicated in the appropriate check box. The reference to fans and blowers is for individual large fans or blowers only. It is not required to sum the total volumetric flow rate or pressure drops across all fans or blowers at the facility. The applicant






must include any fans or blowers located on delivery trucks that supply or transport raw materials or products from the facility.

- Table 1.2 The applicant must identify large atmospheric vents that are associated with process pressure vessels, or piping such as natural gas blow down valves at pipeline compressor stations. This category of equipment is not intended to capture mandatory steam release valves from commercial boilers.
- Question 3 For each type of equipment identified on this table the total rating for all similar pieces of equipment should be summed and indicated in the appropriate question.
- Question 3(f) The applicant is required to sum the total maximum volumetric flow rate for all process or general ventilation fans or blowers at the facility that are not directly referenced elsewhere in the table. If fans are capable of operating at two speeds the higher volumetric flow rate should be used. It is not necessary to include fans associated with cooling towers or part of packaged HVAC equipment. Fans serving condensers or other cooling units should be included. The applicant must include any fans or blowers located on delivery trucks that supply or transport raw materials or products from the facility.
- Question 3(g) The applicant is required to identify if any motors powering any of the fans, blowers or air compressors are located outside the building envelope. For example if a fan serving a dust collector is located outside then the answer is yes. If the fan and dust collector are inside the building envelope the answer is no.

STEP 4: STATEMENT FACILITY MEETS SCREENING REQUIREMENTS

If an applicant can demonstrate through this screening process that the actual separation distance from the facility to the closest Point of Reception shown on the Scaled Area Location Plan is greater than the minimum required separation distance calculated in Step 3, then the person who conducted the Noise Screening Process must complete and sign off in Step 4.

LEGEND

-  Contours (masl)
-  Roads
-  Railway
-  Vegetation
-  Water Features

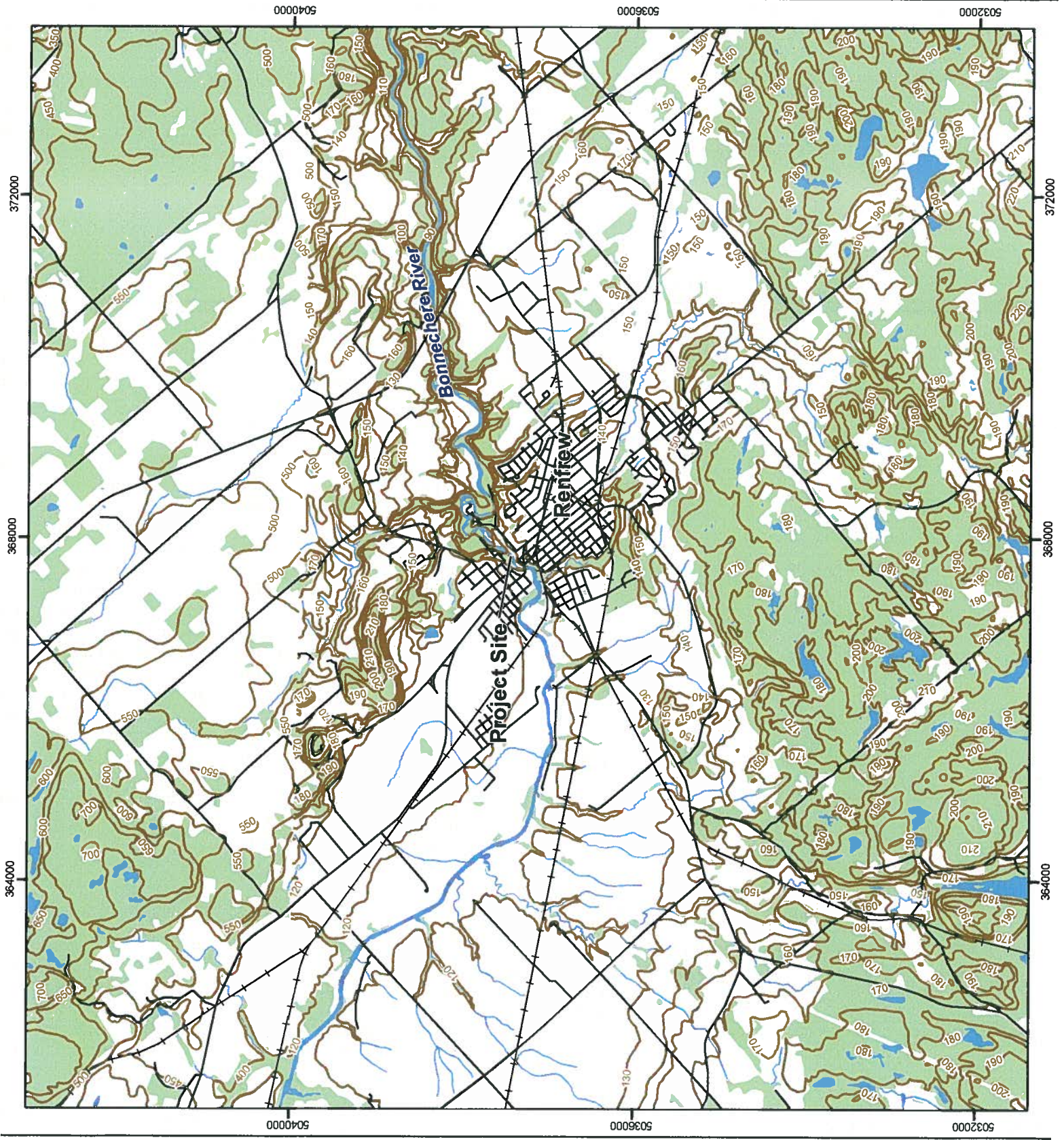
REFERENCE
 MAPS: LITUA
 Aerial Imagery provided by FirstBase Solutions (2008)

PROJECT
 THE THOMAS LOW GS PROJECT

TITLE
 RENREW POWER GENERATION
 SITE LOCATION MAP

REVISION 0

PROJECT NO	1308
DATE	15/02/11
CHECK	15/02/11
BY	15/02/11



LEGEND

Property Line



REFERENCE

Note: QuickBird Imagery (2008-09-30)
NAD83, UTM18



PROJECT

THE THOMAS LOW WATERPOWER
PROJECT

TITLE

THOMAS LOW GS
POR LOCATION MAP



PROJECT No.	06796
DESIGN	SC
CHECK	SC
REVIEW	SC