

Appendix 3 – Noise impact assessment summary form (Please retain detailed records for compliance purposes)



Licensee: BlueEarth Renewables Inc. Facility name: Wheatcrest Solar Project Type: Solar Power

Project Legal location: E-22-15-18-W4M and SW-22-15-18-W4M Contact: Glenn Isaac Telephone:

403-609-5103

1. Permissible Sound Level (PSL) determination (Rule 012, Section 2)

Complete the following for the most affected dwelling(s) or at a distance of 1.5 km where there are no dwellings:

Dwelling Distance from facility (m)	Dwelling Direction from facility	BSL (dBA)	Daytime adjustment (dBA)	Nighttime PSL (dBA)	Daytime PSL (dBA)
900	Northeast	40	0	40	45

2. Sound source identification

For the new and existing equipment, identify the model major sources of noise from the facility, their associated sound power level (PWL) or sound pressure level (SPL).

New and/or Existing Equipment Noise Sources (include make and model, power rating)	Predicted or PWL (dBA)	Measured PWL(dBA)	Data source (Vendor Measurement theoretical, etc.)	Distance SPL measured from the noise source (m)
NEMA Estimate 3.15 MVA Inverter Transformer (x19) (New)	86		Vendor / Theoretical	955 (nearest)
SG3150U 3.15 MW Solar Inverter (x19) (New)	98		Vendor	955 (nearest)
Project Main Transformer 138 kV 71 MVA ONAF (New)	103		DNV GL / Theoretical	1730
Altalink Fortis Substation (Existing)	96		Prairie Sunlight I NIA ¹	1650
Prairie Sunlight SunGrow SG3000HV Inverter/Transformer Skid (x26) (Proposed/approved)	92.5			1000
Oil/gas single well battery/Active (x2) (Existing)		95.6	DNV GL. Measured a similar facility at a different location in Alberta in 2017.	1150

Provide a tentative schedule and timing for the operation, maintenance and testing of the equipment

Q1 2022 – Q2 2022: Commissioning, testing and commercial operation.

Q3 2022: Maintenance check-up

3. Normal operating conditions

When using manufacturer's data for expected performance, it may be necessary to modify the data to account for actual operating conditions (for example, indicate conditions such as operating with window/doors open or closed, load, RPM). Describe any considerations and assumptions used in preparing estimates:

¹ FDI Acoustics. *Noise Impact Assessment. Solar Krafte Prairie Sunlight I Solar Project*. April 09 2018. AUC Proceeding 23329

Inverters and transformers assumed to be operating at maximum load, even at night. All acoustic specs assume full load, with fans if applicable.

4. Noise modelling parameters

If modelling was conducted, identify the model input parameters used (see Section 3.2):

Ground Attenuation= 0.7, Relative Humidity = 70%. T= 10°C. Receptor height 1.5 m agl. Terrain included (5 m vertical resolution)

5. Predicted sound level/compliance determination

Predict the cumulative sound level at the most affected dwelling(s) or at a distance of 1.5 km where there are no dwellings. Typically, only the nighttime sound level is necessary, as levels do not often change from daytime to nighttime. However, if there are differences between day and night operations, both levels must be calculated.

Predicted Nighttime Cumulative Sound Level Including the New or Modified Facility (dBA)						
Receptor	Ambient Sound Level	Sound Level from Existing, Approved , and Proposed (Deemed Complete) Facilities	Baseline Sound Level	Predicted Sound Level from new or modified facility alone	Cumulative Sound Level	Permissible Sound Level
R1	35	30.6	36.3	28.8	37.0	40

Predicted Daytime Cumulative Sound Level Including the New or Modified Facility (dBA)						
Receptor	Ambient Sound Level	Sound Level from Existing, Approved , and Proposed (Deemed Complete) Facilities	Baseline Sound Level	Predicted Sound Level from new or modified facility alone	Cumulative Sound Level	Permissible Sound Level
R1	40	30.6	40.5	28.8	40.8	45

Is the predicted cumulative sound level less than the permissible sound level by a margin of three dBA?

Yes ☒ No ☐

If **No**, conduct a detailed NIA as per Section 3 of AUC Rule 012.

6. Supply any other relevant information you want to provide to the AUC. Submit additional pages if required.

Noise isocontour map that includes the 19 proposed inverter and transformer skids, project substation, 2 single well oil batteries, Prairie Sunlight project and Altalink substation has been provided as separate attachment.

7. If the nighttime permissible sound level is higher than 40 dBA L_{eq} , provide supplementary information to support the use of such permissible sound level.

Not applicable.

Explain what measures have been taken to address construction noise.

Construction activities will generate noise from the use of heavy machinery and vehicles. Access road and site preparations, foundation construction, delivery of materials, and installation of solar modules are the activities that will create the most noise. The contribution to noise levels is only expected in the vicinity of the project area, which is a low population density area, and for a short duration (i.e. the few weeks/months of planned work during the construction period). Furthermore, as the nearest residence is 900 m from the project boundary, construction noise impacts are anticipated to be low. However, in order to minimize potential noise effects during project construction, BluEarth will implement the following mitigation measures during construction;

- Construction activities will be completed between the hours of 7:00 AM and 10:00 PM;
- Nearby residents will be informed of the construction schedule, as well as significant noise-causing activities, which will be scheduled to reduce disruption;

- Vehicle speeds on access roads will be limited to 40 km/hr;
- All internal combustion engines will be fitted with appropriate muffler systems; and
- The project will comply with Rule 012 requirements, unless they jeopardize health and safety regulations.

Lastly, should a noise complaint be received by the project, BluEarth will respond in a timely fashion and ensure that the concern is addressed.

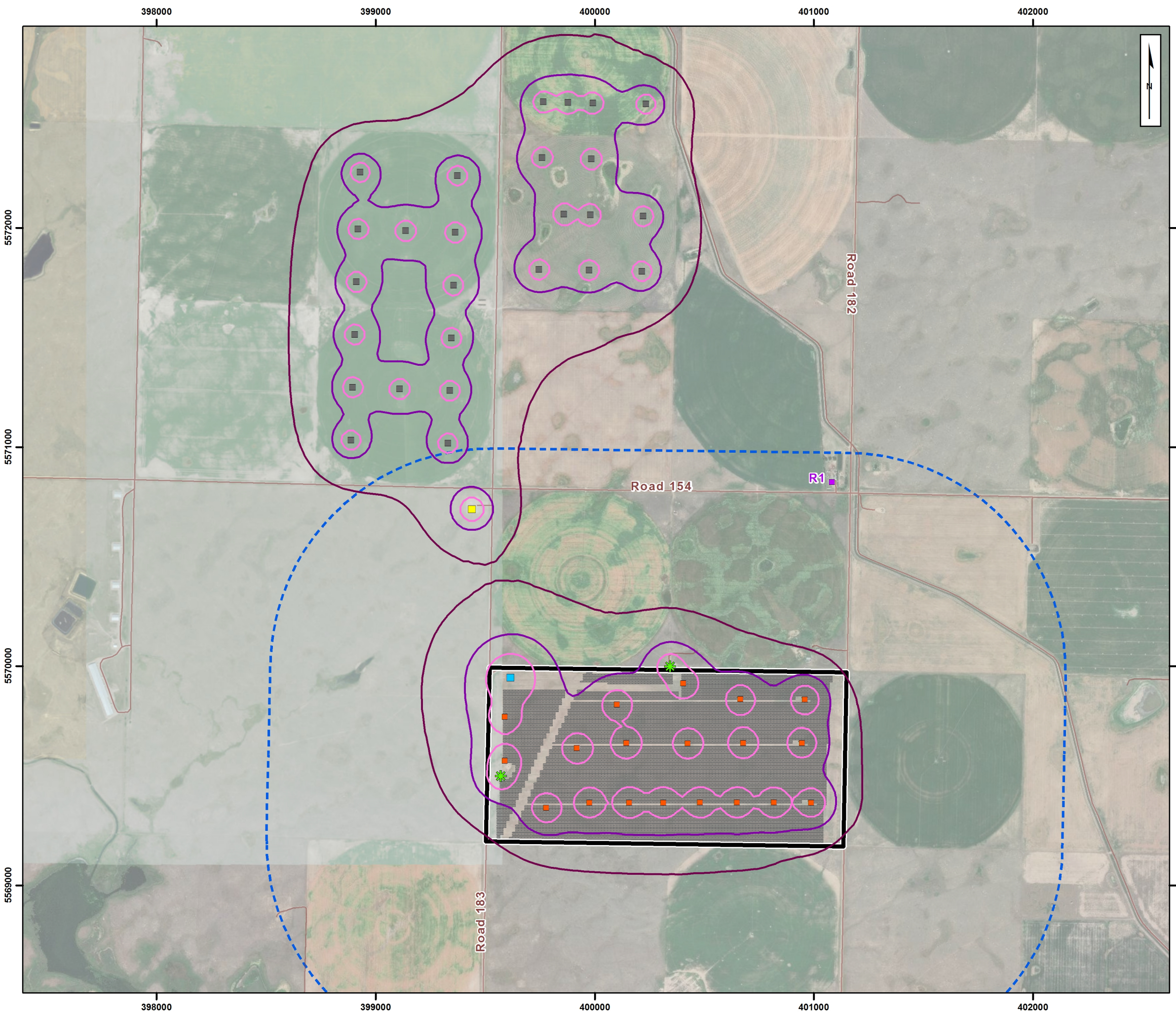
Acoustical practitioner's information (See Section 3.2 (15)):

Company: DNV GL

Name: Aren Nercessian

Experience: 12 years in the renewable energy industry conducting Noise Impact Assessments (NIAs) for wind and solar projects throughout North America. Has completed numerous NIAs in Alberta, many of which received an AUC approval and are now in operation or soon to be constructed.

Title: Project Analyst, Environment & Permitting Services Telephone: 514 272 2175 Date: October 20, 2020



Legend

Project Components

- Project
- 1 km Buffer
- Solar Module
- Receptor
- Project Inverter
- Project Substation

Other Components

- Prairie Sunlight Inverter
- Fortis Substation
- Gas - Single Well Battery

Simulated Iso-Contour (1.5m agl)*

- 40 dB(A)
- 45 dB(A)
- 50 dB(A)

* agl : Above Ground Level
Noise contours include 35 dBA ambient noise

0 0.25 0.5 1 Kilometers

Wheatcrest Solar Project

SIMULATED SOUND ISOCONTOURS

10093992-201023-AB
October 23, 2020

Sources: DNVGL, ArcGIS Online
Projection: UTM Zone 12, NAD83