

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



Licensee: BluEarth 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: Isabelle Deguise Telephone: 604-988-6803

### 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 (x21) (New)	86		Vendor / Theoretical	1130 (nearest)
SG3150U 3.15 MW Solar Inverter (x21) (New)	98		Vendor	1130 (nearest)
Project Main Transformer 138 kV 71 MVA ONAF (New)	103		DNV / Theoretical	1730
Altalink Fortis Substation (Existing)	96		Prairie Sunlight I NIA <sup>1</sup>	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. 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:

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

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

#### 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	28.9	37.1	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	28.9	40.8	45

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

Yes  X  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 21 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)):**

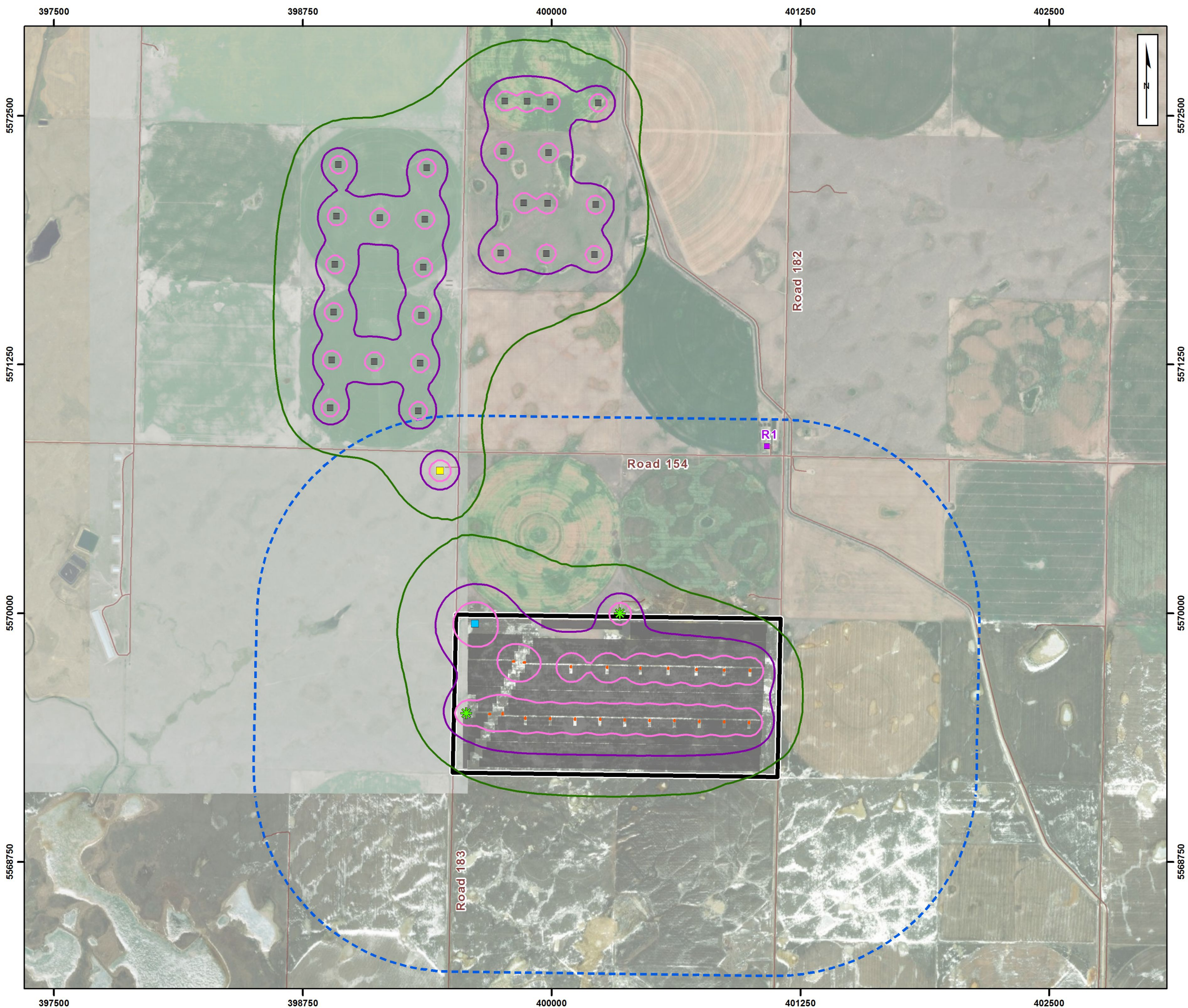
Company: DNV

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 Siting Engineer, Environment & Permitting Services Telephone: 514 272 2175 Date: April 23, 2021





### Legend

**Project Components**

- Project Area
- 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 dBA
- 45 dBA
- 50 dBA

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

0 0.25 0.5 1 Kilometers

10093992-210423-CD  
April 23, 2021

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