



November 24, 2020

Meghan Howey  
Technology Associates EC  
9725 Third Avenue NE, Suite 410  
Seattle, WA 98115

Re: Acoustical Report – T-Mobile US-WA-5105 Cle Elum DT  
Site: 200 South Pennsylvania Ave, Cle Elum, WA 98922

Dear Meghan,

This report presents a noise survey performed in the immediate vicinity of the proposed T-Mobile telecommunications facility at 200 South Pennsylvania Avenue in Cle Elum, Washington. This noise survey extends from the proposed equipment to the nearest properties. The purpose of this report is to document the existing conditions and the impacts of the acoustical changes due to the proposed equipment. This report contains data on the existing and predicted noise environments, impact criteria and an evaluation of the predicted sound levels as they relate to the criteria.

### **Ambient Conditions**

Existing ambient noise levels were measured on site with a Svantek 971 sound level meter on November 20, 2020. Measurements were conducted as close to the proposed location as possible and the property lines in accordance with the State of Washington code for Maximum Environmental Noise Levels WAC 173-60-020. The average ambient noise level was 66 dBA, primarily due to noise from traffic on I-90.

### **Code Requirements**

The site is located within the City of Cle Elum zoning jurisdiction on property with an I (Industrial) zoning. The receiving properties are all in the same Industrial zoning.

The proposed new equipment includes equipment support cabinets and an emergency generator. The equipment support cabinets are expected to run 24 hours a day. The generator will run once a week during daytime hours for maintenance and testing purposes only.

Cle Elum Municipal Code Chapter 17.36.040 requires all uses in the Industrial zone to comply with Washington State noise standards. WAC 173-60-040 limits noise from equipment on a Class C EDNA (Industrial) property as follows:

Class C EDNA Receiver: Noise is limited to 70 dBA 24 hours a day. As the support cabinets are expected to operate 24 hours a day they must meet this limit.

Additionally, WAC 173-60-040 allows that during any one-hour period, the maximum permissible noise level may be exceeded by 5 dBA for a 15 minute period. Therefore, the generator must not exceed 75 dBA when running during daytime hours for maintenance testing. The generator is exempt during emergency operation.

**Predicted Equipment Sound Levels**

*24-Hour Operation Equipment*

The following table presents a summary of the equipment and their associated noise levels:

**Table 1: Equipment Noise Levels**

<b>Equipment</b>	<b>dBA (each)</b>	<b>Quantity</b>	<b>Combined dBA @ 5 ft</b>
Purcell HPL3 Equipment Cabinet	68 dBA @ 5ft	3	73
<b>Total dBA (All cabinets combined)</b>			<b>73</b>

Methods established by ARI Standard 275-2010 and ASHRAE were used in predicting equipment noise levels to the receiving properties. Application factors such as location, height, and reflective surfaces are accounted for in the calculations.

The equipment will be located at grade surrounded by a chain-link fence. The nearest receiving property is approximately 70 feet west of the equipment. The following table presents the predicted sound level at the nearest receiving properties:

**Table 2: Predicted Noise Levels: Proposed Equipment Cabinets**

<b>Line</b>	<b>Application Factor</b>	<b>W</b>
1	Sound Pressure Level at 5 ft (dBA), Lp1	73
2	Distance Factor (DF) Inverse-Square Law (Free Field): $DF = 20 \cdot \log(d1/d2)$	-23 (70 ft)
3	New Equipment Sound Pressure Level at Receiver, Lpr (Add lines 1 and 2)	<b>50</b>

As shown in Table 2, the sound pressure level from the proposed equipment is predicted to be 50 dBA at the nearest receiving property to the west, which meets the 70 dBA code limit. Noise levels at other receiving properties, which are further away, will be lower and within code limits.

### Emergency Equipment

The proposed equipment includes one Generac RD025 25 KW diesel generator with a Level 1 sound enclosure and has a sound level of 65 dBA at 23 feet. The generator will be located at grade surrounded by a 7' chain-link fence. The nearest receiving property is approximately 70 feet west of the generator. The following are the predicted sound levels at the receiving property:

**Table 3: Predicted Noise Levels: Proposed Emergency Generator**

Line	Application Factor	W
1	Equipment Sound Pressure Level at 23 ft. (dBA), Lp1	65
2	Distance Factor (DF) Inverse-Square Law (Free Field): $DF = 20\log(d1/d2)$	-10 (70 ft)
3	New Equipment Sound Pressure Level at Receiver, Lpr	55

As shown in Table 3, the sound pressure level from the proposed generator during test cycle operation is predicted to be 55 dBA at the nearest receiving property to the west, which meets the 75 dBA code limit. Noise levels at other receiving properties, which are further away, will be lower and within code limits.

Please contact us if you have any questions or require further information.

Sincerely,  
SSA Acoustics, LLP



**Steve Hedback**  
Acoustical Consultant

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