

# Appendix C

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Noise Data

## Construction Source Noise Prediction Model

Construction Type	Receptor	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L <sub>eq</sub> dBA)	Equipment	Reference Noise Levels (L <sub>max</sub> ) at 50 feet <sup>1</sup>	Usage Factor <sup>1</sup>
Pipeline and fire hydrant replacements	Various residences along pipeline route	30	90.8	Man Lift	85	0.2
Construction of pressure reducing station	Residences near intersection of Hot Springs Road and Pleasant Valley Road	65	82.0	Excavator	85	0.4
Pleasant Valley Tank improvements	Residences near intersection of Pleasant Valley Road and Lava Cap	280	65.3	Grader	85	0.4

**Ground Type** soft  
**Source Height** 8  
**Receiver Height** 5  
**Ground Factor<sup>2</sup>** 0.63

Predicted Noise Level <sup>3</sup>	L <sub>eq</sub> dBA at 50 feet <sup>3</sup>
Man Lift	78.0
Excavator	81.0
Grader	81.0

**Combined Predicted Noise Level (L<sub>eq</sub> dBA at 50 feet)**  
 85.0

Sources:

<sup>1</sup> Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

<sup>2</sup> Based on Table 4-26 from the Federal Transit Noise and Vibration Impact Assessment, 2018 (pg 86).

<sup>3</sup> Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2018 (pg 176 and 177).

$$L_{eq}(\text{equip}) = E.L. + 10 \cdot \log(U.F.) - 20 \cdot \log(D/50) - 10 \cdot G \cdot \log(D/50)$$

Where: E.L. = Emission Level;

U.F. = Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2018: pg 86); and

D = Distance from source to receiver.