

Cecil Township PA
2024 Augustine & Schultz Well Pad Community Noise Monitoring Report



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TAV Report # 3019_02

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1 INTRODUCTION

Thornton Acoustics & Vibrations (TAV) was retained by Cecil Township to perform community noise monitoring of the Bernard Schultz Well site and the Augustine Well site to assess the noise emissions incident on residents along Nine-Eighty Road and North DePaoli Road respectively. The monitoring was performed from February 25, 2024 until March 7, 2024. The purpose of this monitoring was to identify any noise violations relative to the Cecil code. This report summarizes the results of this monitoring. No explicit noise violations were observed during the morning.

However, highly intrusive low-frequency noise emitted by both well pads was documented throughout the monitoring period. Although this low-frequency noise did not explicitly violate the Cecil Code (due to a series of limitations and deficiencies in the code) the noise was sufficient to negatively impact residents living in the vicinity of the well pads. TAV will issue an addendum to this report to address this issue in detail.

The noise monitoring sites are shown in Figures 1 and 2.



Figure 1 Bernard Schultz well site and noise monitor

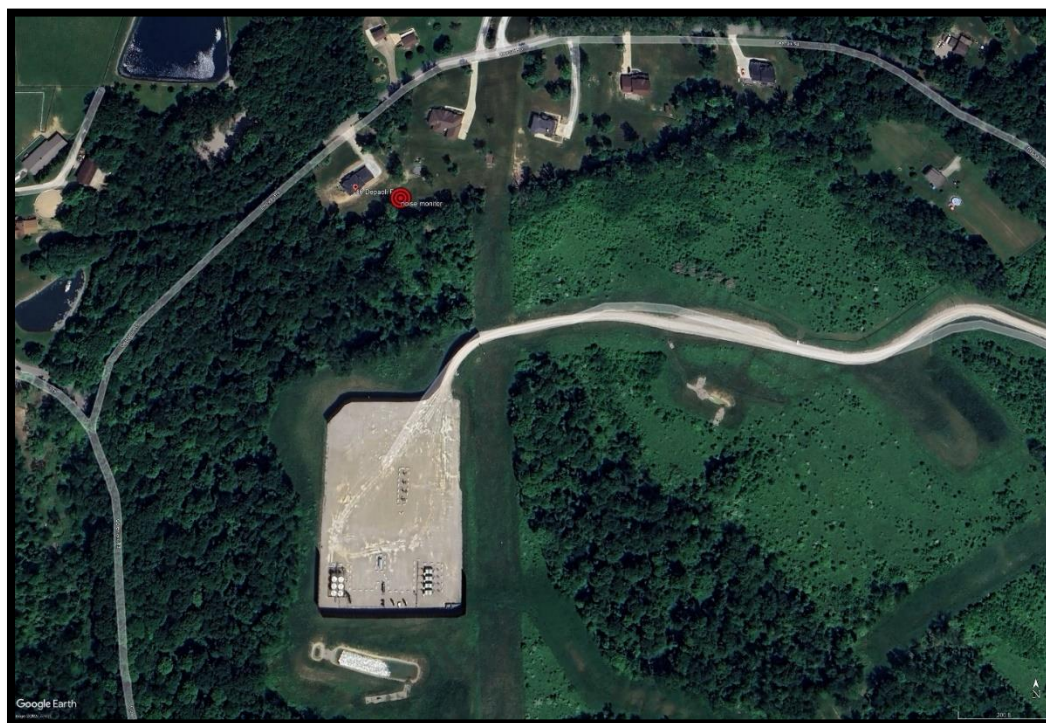


Figure 2 Augustine well site and noise monitor

2 METHODOLOGY

TAV installed Bruel & Kjaer Noise monitoring systems at the sites shown in Figures 1 and 2 and programmed these systems to record comprehensive noise data and calibrated audio continuously throughout the monitoring period. The noise data include metrics to allow evaluation relative to the Cecil Township Noise Ordinance and the Cecil Township Oil & Gas Ordinance. All monitoring is being performed in accordance with the requirements of the Cecil Township Code and in accordance with accepted best practices and standards. The Cecil Township Oil & Gas Noise Ordinance as excerpted as follows:

- (22) Township recognizes and acknowledges that oil and gas development is accompanied by inherent noise. However, the operator shall take the following steps to minimize, to the extent practicable, the noise resulting from the development:
 - (a) Prior to drilling of an oil and gas well, the operator shall establish a continuous

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seventy-two-hour ambient noise level at the nearest protected structure property line or 100 feet from the nearest protected structure (as measured to the closest exterior point of the building), whichever is closer to the protected structure, or alternatively, and in lieu of establishing the above seventy-two-hour ambient noise level, the operator may assume and use, for the purposes of compliance with this chapter, a default ambient noise level of 55 dBA. The sound level meter used in conducting any evaluation shall meet the American National Standard Institute's standard for sound meters or an instrument and the associated recording and analyzing equipment which will provide equivalent data.

- (b) The operator shall provide documentation of any established seventy-two-hour evaluation relied upon to establish an ambient noise level greater than 65 dBA to the Township's Zoning Officer within three business days of such a request from the Zoning Officer.
- (c) Ambient noise level.
 - [1] The noise generated during drilling and hydraulic fracturing activities when measured at the nearest protected structure property line or 100 feet from the nearest protected structure (as measured to the closest exterior point of the building), whichever is closer to the protected structure, shall not exceed the average ambient noise level (as determined by the seventy-two-hour evaluation) or default level, whichever is higher:
 - [a] During drilling activities by more than seven decibels during the hours of 6:00 a.m. to 10:00 p.m.;
 - [b] During drilling activities by more than five decibels during the hours of 10:00 p.m. to 6:00 a.m.; or
 - [c] By more than 10 decibels during hydraulic fracturing operations.
 - [2] The operator shall inform the Township of which level (average ambient noise level or default level) is being used.
- (d) Adjustments to the forgoing noise limits may be permitted in accordance with the following:

Permitted Increase (dBA)	Duration of Increase (minutes)*
5	15
10	5
15	1
20	1

NOTES:

*

Cumulative minutes
during any one hour.

- (e) If a complaint is received by the Township from any person, whether a resident or otherwise, using the protected structure as defined herein for any lawful purpose, regarding noise generated during drilling or hydraulic fracturing activities, the operator shall, within 24 hours of receipt of the complaint from the Township, continuously monitor for a forty-eight-hour period at a point which is the closer to the complainant's building of:
 - [1] The complainant's protected structure property line nearest to the well site or equipment generating the noise; or
 - [2] One hundred feet from the protected structure.
- (f) If the operator engages in any noise testing as required by this section, it will provide preliminary data to the Township no later than 10 business days following completion of the noise testing. Once the monitoring is complete, the operator will meet with Township representatives and affected residents to discuss whether possible noise abatement measures are warranted, if the permitted levels set forth herein were exceeded.
- (g) Exhaust from any internal combustion engine or compressor used in connection with the drilling of any well or for use on any production equipment or used in development shall not be discharged into the open air unless it is equipped with an exhaust muffler or an exhaust box. The exhaust muffler or exhaust box shall be constructed of noncombustible materials designed and installed to suppress noise and disruptive vibrations. Moreover, all such equipment with an exhaust muffler or exhaust box shall be maintained in good operating condition according to manufacturer's specifications.

3 RESULTS

The measured noise levels at the two monitoring locations (plotted relative to the applicable Cecil Township Noise Limits) are shown in Figures 3 and 4. Note that the code establishes nominal limits (240-61-C.1) relative to the Ambient noise level (Code allows for an assumed ambient noise level of 55 dB(A)) and also allows for limited duration exceedances above these limits (240-61-D).

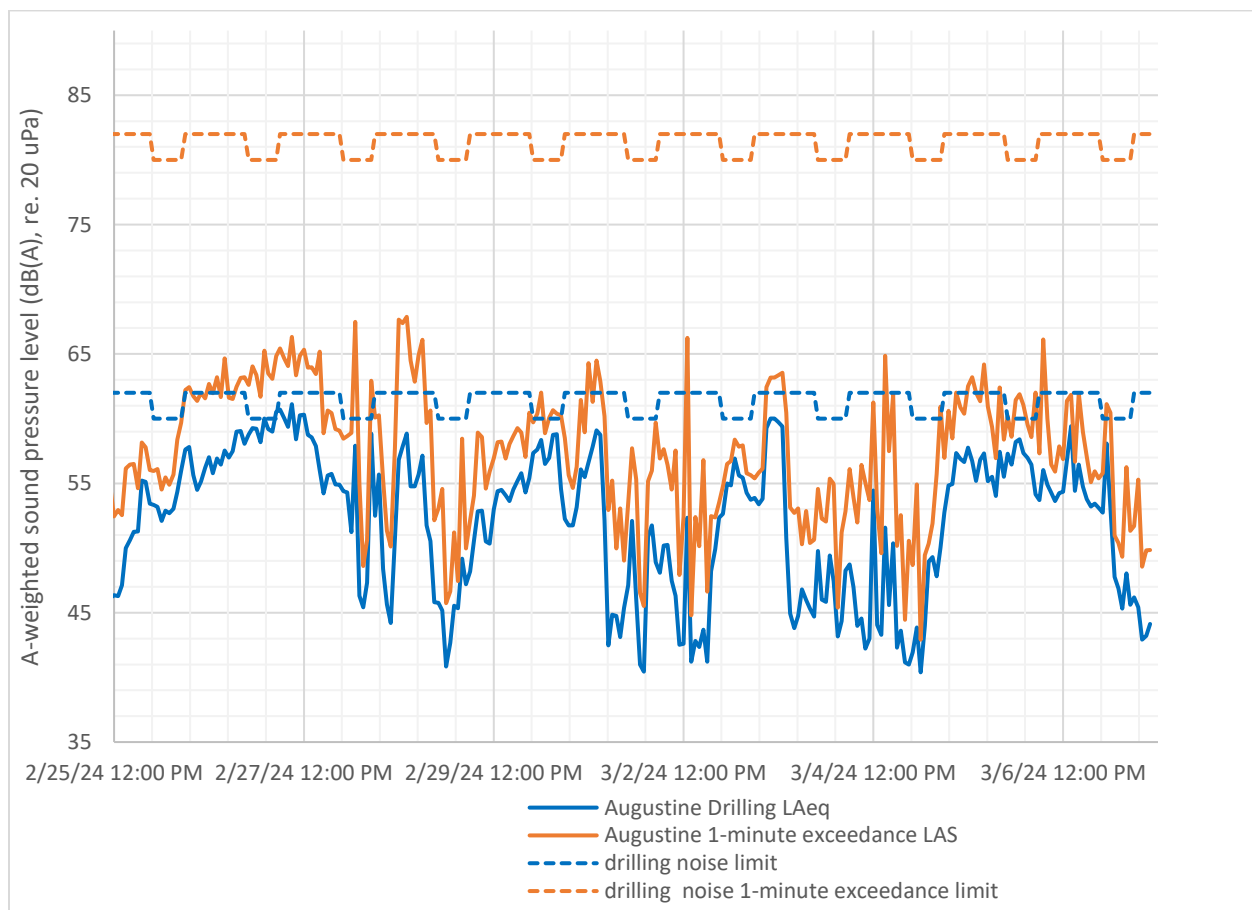


Figure 3 Augustine well pad drilling noise data plotted relative to the Code drilling limits.

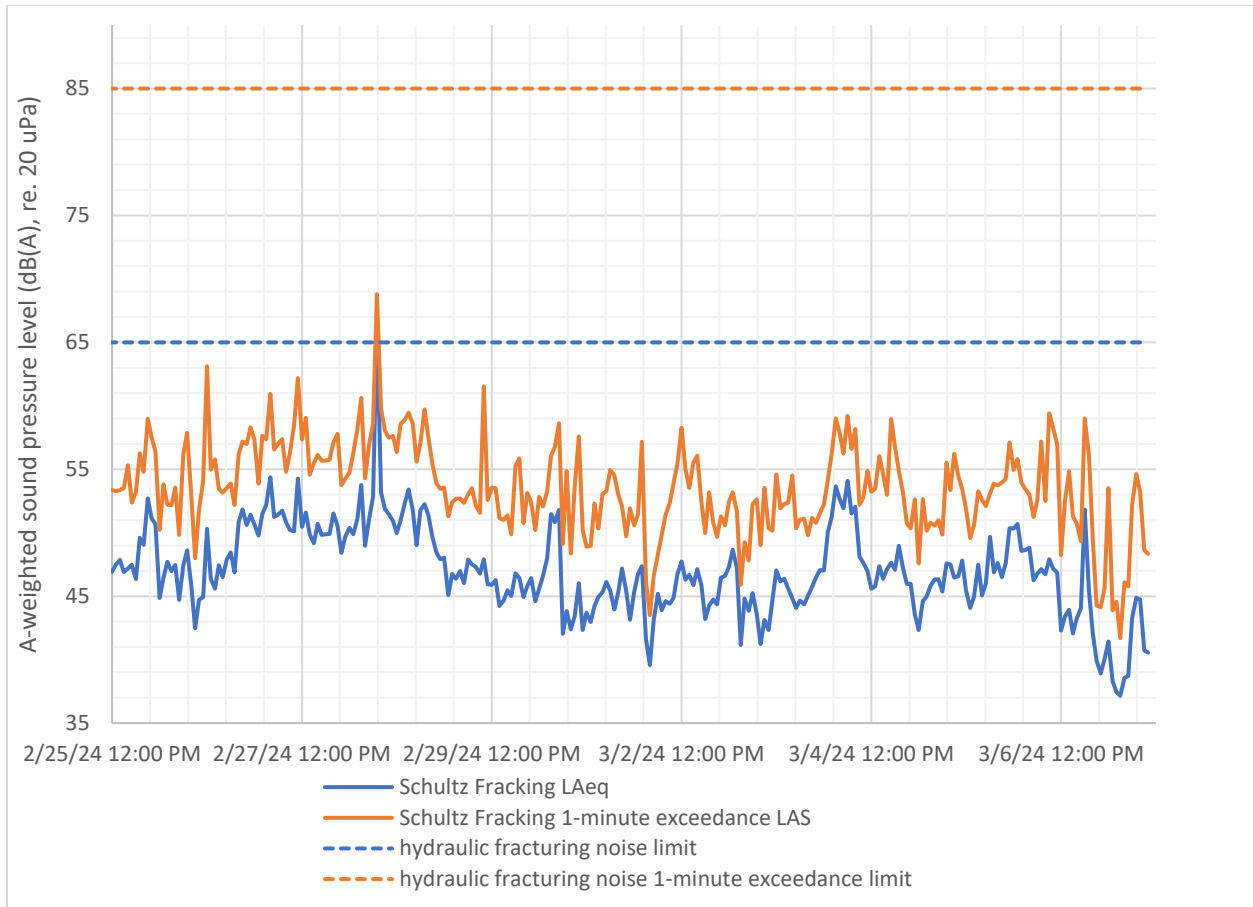


Figure 4 Schultz well pad hydraulic fracturing noise data plotted relative to the Code hydraulic fracturing noise limits.

4 CONCLUSIONS

The noise levels observed over the monitoring period at the Schultz and Augustine monitoring locations have not explicitly exceeded the nominal Cecil Township Oil & Gas Noise Ordinance limits.

While the Code deficiencies will be discussed in an addendum, it is worth pointing out that the Code allows for an assumed ambient noise level of 55 dB(A) which is then used to establish a noise limit above that ambient level. The assumed ambient noise level is clearly artificially high as the measured noise levels, including the contributions of the well pad noise, are routinely well below 55 dB(A) (often 45 dB(A) or lower - particularly at night).

Best Regards,

A handwritten signature in black ink, appearing to read 'William Thornton', with a stylized, cursive script.

William Thornton