



# GeoSonics

## REPORT

### TO

**846 MINE LLC**  
**c/o QUALITY ENTERPRISES**  
3494 Shearwater Street  
Naples, Florida 34117

### DATE

May 15, 2023

### SUBJECT

#### **VIBRATION AND SOUND RECORDINGS SUMMARY**

846 Mine  
April 1, 2023 – April 30, 2023

Lawrence Residence  
4935 20<sup>th</sup> Street  
Naples, Florida 34120

## **VIBRATION AND SOUND RECORDINGS SUMMARY**

### **Construction Materials Mining Activities**

846 Mine LLC

April 1, 2023 – April 30, 2023

#### **PURPOSE**

The purpose of this report is to summarize the results obtained from recordings made during blasting operations completed at the 846 Mine LLC. Blasting was conducted by the Austin Powder Company. The measurements made have also been compared to report compliance with the regulatory limits of the State of Florida, Division of State Fire Marshal for blasting operations permitted as Construction Materials Mining Activities.

#### **PROCEDURE**

Vibrations and atmospheric overpressure (airblast) levels, which were produced by blasting operations, were recorded with a GeoSonics, Inc. **Re:mote™** Seismograph System, Serial No. 9420. During the blasting, the instrument used was located at the northwest corner of the Lawrence residence, 4935 20<sup>th</sup> Street, Naples, Florida 34120.

#### **RESULTS**

The maximum vibration level recorded during the report period occurred on April 24, 2023. The maximum half wave, peak particle velocity was 0.125 inch per second at 38.5 Hertz (Hz.). Under the restrictions of Chapter 552.30 of the State of Florida, vibration is limited to standards reported in U.S. Bureau of Mines, Report of Investigations No. 8507, Appendix B – Alternative Blast Level Criteria. The maximum particle velocity represents six percent of the allowable level of 1.90 inches per second for a frequency of 38 Hertz.

The Collier County conditional use permit limits peak particle velocity to a monthly calendar average of 0.20 inch per second. The average velocity during the report period was 0.1215 inch per second.

The maximum air overpressure measured was 0.00160 pounds per square inch (114 dB). Limits on air overpressure are based upon the type of microphone used by the seismograph. The maximum level measured represents 12.4% of the recommended U.S. Bureau of Mines limit of 0.0129 pounds per square inch (133 dB) for a 2-Hertz microphone. The percentage calculation is based upon the pounds per square inch linear measurement level, rather than logarithmic decibel measurements.

Additionally the conditions limit the maximum air overpressure (airblast) to 120 dB(L). The calendar averaged monthly level measured was 114 dB(L).

The specific levels measured during the report period are tabulated in the following summary.

Vibration Levels Summary

Date	Time	Longitudinal @ Frequency	Transverse @ Frequency	Vertical @ Frequency	Percent of Limit	Airblast dB / psi	Source of Event
04/12/23	10:29 a.m.	0.118 in./sec. @ 38.5 Hz	0.090 in./sec. @ 25.0 Hz	0.118 in./sec. @ 41.7 Hz	6.21% of 1.90 in./sec.	114 dB 0.00160 psi	846 Mine LLC 846 Mine
04/24/23	10:31 a.m.	0.088 in./sec. @ 33.3 Hz	0.085 in./sec. @ 33.3 Hz	0.125 in./sec. @ 38.5 Hz	6.57% of 1.90 in./sec.	113 dB 0.00139 psi	846 Mine LLC 846 Mine

The **Blast Numbers, Dates and Times** are as they appear on the Blast Logs.

The time history waveforms and seismograph results obtained during blasting operations at the 846 Mine LLC are included following the conclusion of this report.

Respectfully submitted,  
GeoSonics, Inc.



Jeffrey A. Straw  
Vice President & Area Manager

# GeoSonics Inc. Seismic Analysis

## USBM/Velocity Waveform Report

Serial No: 9420 v6.20  
Date: 04/12/2023 10:29:14 (UTC-4)  
Event No: 16  
Record Time: 5.0 s  
Client: 846 Mine LLC  
Operation: 846 Mine  
Location: Lawrence Residence\_  
Distance:  
Operator: GeoSonics FL  
Comment: 4935 20th St NE  
Seismic Trigger: 0.020 in/s

### Summary Data

	L	T	V
PPV (in/s)	0.118	0.090	0.118
FREQ (Hz)	38.5	25.0	41.7
PD (.001")	1.20	1.24	1.83
PPA (g)	0.072	0.046	0.091
Peak Vector Sum:	0.165 in/s		
Peak Air Pressure:	114 db		
	0.00160 PSI @ 19.2 Hz		

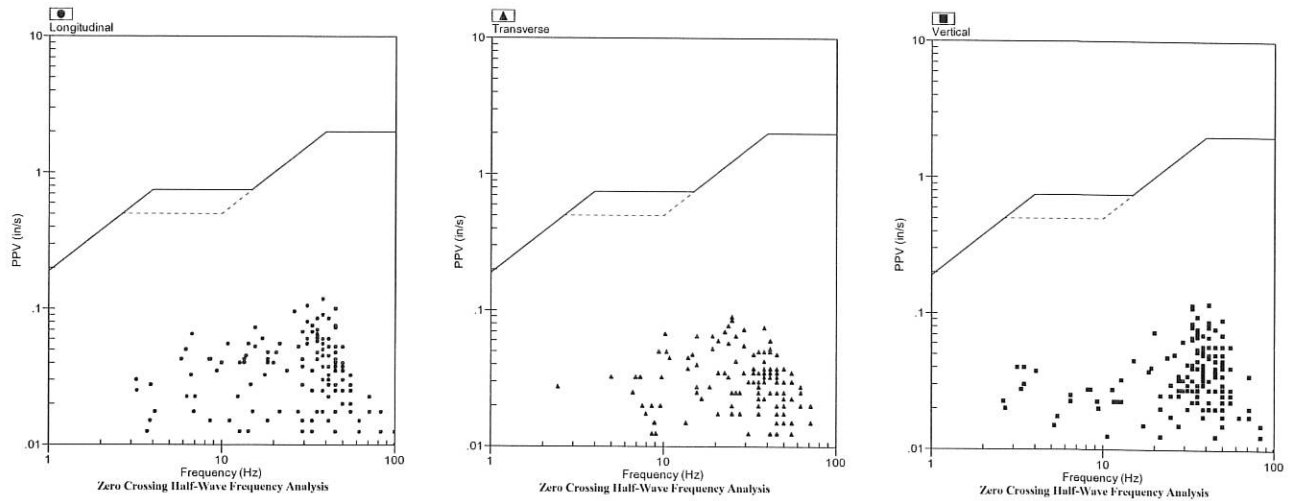
### Additional Info:

NW cm of House  
j-GEO-40492  
N26 19 18.3 W81 34 9.6

Shaketable Calibrated: 11/01/2022

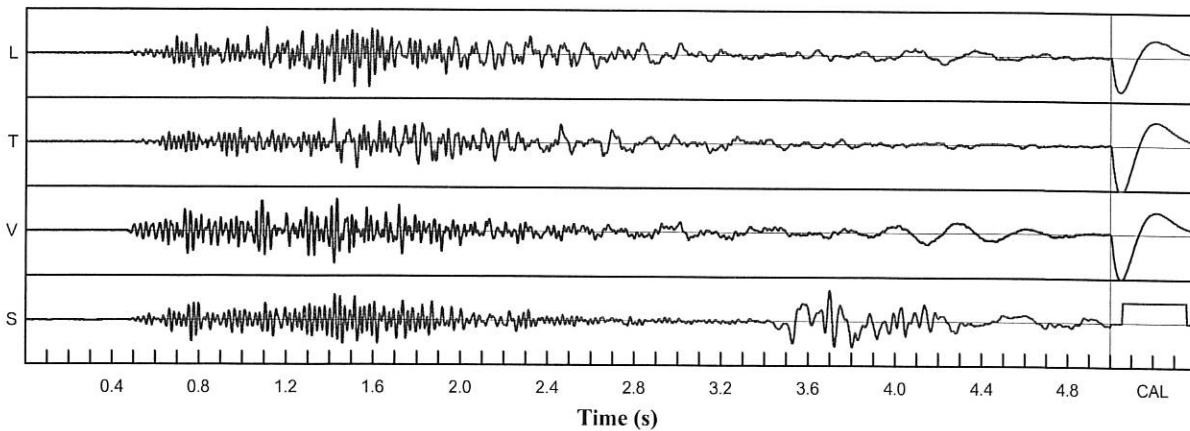
By: GeoSonics Inc.  
359 Northgate Drive  
Warrendale, PA 15086 U.S.A.  
TEL: 724.934.2900 FAX: 724.934.2999

### USBM Safe Blasting Levels



### Velocity Waveform

SN: 9420 Event: 16



### Velocity Waveform Graph Scale

Time Scale: 0.100 s  
Seismic Scale: +/- 0.160 in/s  
Sound Scale: +/- 0.0023 PSI

# Seismic Analysis

## USBM/Velocity Waveform Report

Serial No: 9420 v6.20  
Date: 04/24/2023 10:31:29 (UTC-4)  
Event No: 19  
Record Time: 5.0 s  
Client: 846 Mine LLC  
Operation: 846 Mine  
Location: Lawrence Residence\_  
Distance:  
Operator: GeoSonics FL  
Comment: 4935 20th St NE  
Seismic Trigger: 0.020 in/s

### Summary Data

	L	T	V
PPV (in/s)	0.088	0.085	0.125
FREQ (Hz)	33.3	33.3	38.5
PD (.001")	0.81	1.03	0.74
PPA (g)	0.052	0.052	0.078
Peak Vector Sum:		0.138 in/s	
Peak Air Pressure:		113 db	
		0.00139 PSI @ 35.7 Hz	

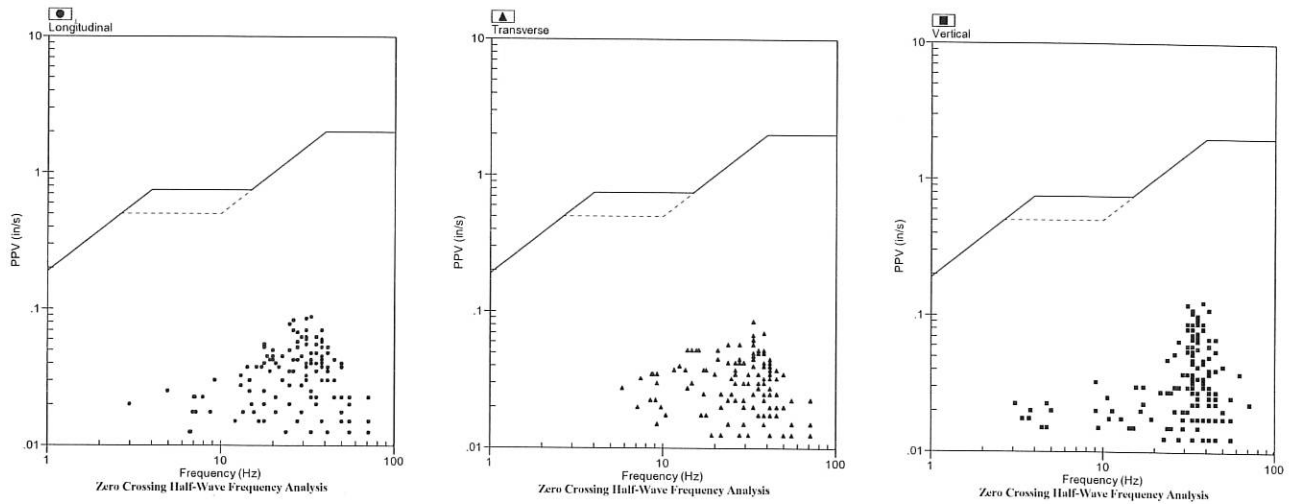
### Additional Info:

NW cor of House  
j-GEO-40492  
N26 19 18.3 W81 34 9.6

Shaketable Calibrated: 11/01/2022

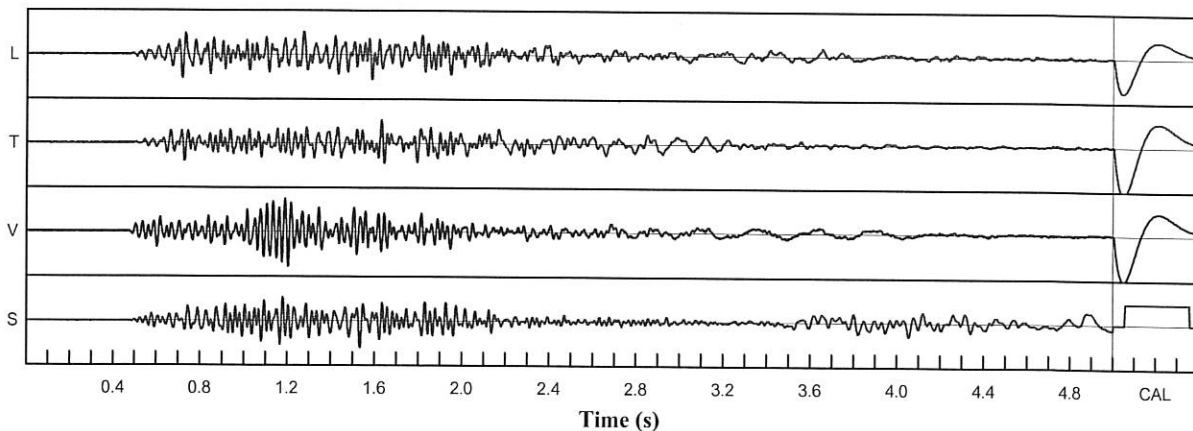
By: GeoSonics Inc.  
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### USBM Safe Blasting Levels



### Velocity Waveform

SN: 9420 Event: 19



### Velocity Waveform Graph Scale

Time Scale: 0.100 s  
Seismic Scale: +/- 0.160 in/s  
Sound Scale: +/- 0.0023 PSI