



**TOWN OF ALNA**

**PLANNING BOARD**

**2024 REVIEW &  
2025 APPLICATION**

**CROOKER CONSTRUCTION, LLC**

**ALNA QUARRY OPERATION**

CROOKER CONSTRUCTION, LLC.  
REVIEW OF 2024 PERMIT SEASON  
TOWN OF ALNA, MAINE

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WATER QUALITY: ..... UNDER SEPARATE COVER

## Overview 2024 Season

The 2024 season was uneventful. Approximately 5.9 acres are currently open to active mining operations, ±10.6 acres are being utilized for gravel laydown/ stockpile areas and ±21.6 acres cleared. We adjusted the process in areas to mitigate the effects of different geology and location on the program. Our drilling contractor, Austin Powder, progressed in the quality of holes drilled as well. We continued using bulk explosives along the drill hole bottom elevation from the previous years with minor adjustments to increase accuracy and control ground vibrations.

At the nearest residence (Weeks), noise levels exceeded the state level four times: shots 5, 9, 14 & 15. The MDEP was notified on those occasions. Looking back at those shots, the efforts to open the timing towards that monitoring location did decrease ground vibration but increased noise levels. We are working with Austin Powder's blasting personnel to develop a plan to decrease noise levels in that direction. We are also building a berm along this section which should greatly decrease noise levels.

One resident complaint was received regarding shot #7. Crooker immediately reached out to address their concern.

Crooker had **15** events with **139** seismograph records recorded in 2024.

## Summary:

On June 11, 2024, Crooker hired a third-party monitoring service, PreSeis Blast Vibration Consultants from Merrimack, NH to visit our site and verify proper set up and recordings of our units. This is required annually by the Maine Department of Environmental Protection to satisfy our permit. All the information from the PreSeis site visit is included in this report.

Anyone that has passed on contact information has been added to the notification list unless otherwise noted. If a complaint from a neighbor is received, we will relocate seismographs to their location to verify what levels exist. We have additional seismographs in areas where readings are expected to be highest to provide greater accuracy.

Due to the sensitivity of our instruments, it becomes increasingly difficult to get accurate event readings at greater distances (i.e., the distance of most neighboring properties.) Procedures need to be adjusted as traffic and other activities can trigger the seismographs prematurely. We have addressed issues elsewhere with background vibrations, (traffic or equipment running) and radio traffic causing false triggers.

Please contact me if you have any questions.

Sincerely,

**Scott Bernier**

Aggregate Manager

[info@crooker.com](mailto:info@crooker.com)

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June 12, 2024

Crooker Construction, LLC  
103 Lewiston Road  
Topsham, ME 04086  
Attention: Mr. Joe Hanna

**Subject: Blast Vibration Monitoring Services – PSI Project No. 24-051  
Seismographic Summary & Analysis of Blast Event June 11<sup>th</sup> 2024.  
Crooker Construction LLC, Alna ME Quarry**

Dear Mr. Hanna:

The following represents a comprehensive report detailing the empirical results of blast induced ground vibration and airblast data collected in conjunction with blasting activities for the Crooker Construction, LLC Wiscasset Road Quarry Facility in Alna, Maine. The intent of this document is to provide reporting on the collected vibration and airblast event data, outline the methodology for the data collection, and compare said resultant data with local regulatory and industry standard (USBM RI8507) vibration level criterion.

#### PROCEDURE

PreSeis, Inc. was contracted to provide independent vibration monitoring services regarding the above referenced project. For the preparation of this report, analysis of all data reviewed from services as provided by PreSeis, Inc. for blasting operations performed on June 11<sup>th</sup> 2024 at the Crooker Construction LLC, Alna ME Quarry.

As requested by said client and in coordination with scheduled blasting operations on this date, PreSeis, Inc. installed two (2) InstanTel digital engineering seismographs to record blast induced ground vibration and sound pressure levels (airblast) at the following properties. The identified properties were established based on blast permit, geographical location, and/or any such public relation concerns.

Unit A. - #39 Bailey Road, Alna, Maine – GPS Distance Measured – 530 ft. from the blast event. Unit B. - #36 Bailey Road, Alna, Maine – GPS Distance Measured – 1,742 ft. from the blast event.
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#### METHODOLOGY

The instrumentation was installed in accordance with industry guidelines by PreSeis, Inc. Such standards and guidelines recommend that instrumentation be installed at the point of concern and outside of a subject structure directed towards the source of vibration. Seismograph placement is intended to quantify the vibration and sound impact on a structure. Following a blasting event, and if triggered, an engineering seismograph is capable of producing a complete strip chart record (waveform history) of all vibration and sound emanating from blasting activity. The basis for recommendation of a vibration limit is conditioned by the weakest structure material located within the zone of influence for the proposed activity.

These recommendations are further related to the type of energy source, proximity, and operation methodology. After most blast events, recorded vibration levels are compared to either local or State regulatory vibration limits set specifically for blasting operations to determine a level of compliance. If a State does not have blasting vibration limits regulated by law, the most commonly used criterion are recommended limits established by the United States Bureau of Mines.

### VIBRATION DAMAGE CRITERIA (USBM)

Potential cosmetic and structural damage from blast induced ground vibration has been studied extensively by many governmental agencies, academia and private industry on an international level. A majority of this study in the United States has been done by the United States Bureau of Mines (USBM). While such studies were related largely to blast induced ground vibration and airblast levels, the conservative standards have been adopted and widely accepted by many local, state, and federal authorities seeking guidance for the establishment of safe blast vibration and noise level criteria. Such criteria are generally implemented to establish a conservative factor of safety in order to prevent threshold damage during such vibration intensified activities near residential structures.

### USBM CRITERIA (RI 8507)

The USBM has conducted extensive field studies additionally supplemented with clinical data and research proved by others, since the 1940's relating ground vibrations, airblast overpressure and instrumentation, with the results published in numerous reports. It is significant to note that all of these studies and observations, involving hundreds of residential structures, have found similar threshold damage levels from ground vibration and airblast.

The most authoritative of these studies is a publication produced by the United States Bureau of Mines (USBM), in 1980, Report of Investigations RI 8507, Structure Response and Damage Produced by Ground Vibration from Surface Mine Blasting. This report recommends safe limits for blast induced ground vibration at various frequencies as measured in the ground outside of a structure. In its empirical work, the Bureau concentrated on the weakest construction materials in a residential structure, those being construction material of wall surfaces. Through its research the Bureau determined that using maximum particle velocity in conjunction with its associated frequency was the best descriptor for quantifying damage potential.

The Bureau went on to establish a set of damage criterion, or degrees of damage. From this study, safe limits were established in order to prevent threshold damage, the most conservative level of the damage criterion. The recommendation in the Bureau's report is based on observations of threshold damage occurring at the lowest vibration levels and does not imply that damage will occur at this level or at even higher vibration levels, but does signify that the potential for damage may exist and therefore are used as a safe criterion.

These safe vibration limits have been established with a large degree of conservatism. Threshold damage was defined by the USBM as having one or more of the following characteristics: "loosening of paint; small plaster cracks at joints between construction elements; lengthening of old pre-existing cracks".

As previously mentioned, damage potential is a function of both the maximum vibration amplitude (in/sec) and the associated frequency (cycles per second/Hz) occurring at the most significant vibration peak. Vibration limits are minimized at lower frequencies, because as frequency levels lower, the potential for structural resonance is greater. This is particularly true for points at distances outside of the near-field blasting range. In general, as distance is increased the remaining predominant frequencies will be in the lower end of the spectral envelope.

At higher frequencies (>40 Hz), ground vibrations transmit less appreciably into the structure as more destructive interference occurs, thus the ability to increase the safe limit. Older homes with wall construction of plaster-on-lath have a lower damage threshold (0.50 in/sec) than stronger construction wall materials such as modern drywall (0.75 in/sec), masonry (3.0 in/sec), or monolithic concrete (10.0 in/sec).

Additional USBM studies have shown the relationship between daily environmental changes, typical household activities such as walking, jumping, door slamming, etc. and the physical material strain produced in walls and floors. These strains represent energy equivalent to produce vibration levels ranging from “.03 –3.0 in. /sec.” (USBM RI 8896 Table 6 & “Effects of Vibrations and Environmental Forces” by Lewis Oriard 1999).

Human perception to vibration sources can be a limiting factor. Vibration levels can be felt which are considerably less than those required to produce damage. All structures exhibit cracking and irregularities due to a variety of naturally occurring elements and environmental stresses. These commonly consist of seasonal air/ground temperature variations, expansion, contraction and shrinkage due to changes in relative humidity, settlement from ground consolidation, etc.

The number, width, and length of pre-existing type cracks can continue to change both seasonally and often daily, and continue to increase with age, completely independent of blasting.

#### AIRBLAST CRITERION

In addition to ground vibration, blasting produces airborne energy defined as airblast overpressure or impulse sound. Typically, in blasting applications peak airblast amplitudes are expressed in units of pressure (psi) and/or in relative units of weighted decibel levels. The decibel scale is logarithmic with values representing pressure changes above or below a standardized reference pressure. A change of 20 dB represents an order of magnitude (10x) difference in pressure. The higher frequency content of an airblast is audible and often is directly associated with a typical blast. The low frequency content of a blast is generally non-audible and can vibrate a house potentially creating secondary responses within the structure, often leading to concern and/or complaint. As with ground vibrations, airblast dissipates losing energy or loudness as distance increases from a given blast to the monitoring location and/or point of concern. Additionally, as with ground vibration the explosive weight per delay, distance factor, and atmospheric conditions are highly important factors when predicting potential airblast.

It is important to note that because the frequency ranges of most airblast overpressures occur in the lower end of the frequency spectrum, they are measured on a weighted scale specifically for this frequency range. Overpressures for these types of activities are measured using a flat-level or linear response microphone with dimensional units listed as dBL. These microphones best record overpressures in the frequency range between 2 and 200 Hz.

By comparison, the A-weighted or dBA scale, which represents the frequency spectrum of the human ear, ranges from 20 – 20,000 Hz.

Given the disparity between the two frequency ranges, you cannot directly compare the two scales. Measured differences, for each microphone type (dBA and dBL); illustrate that dBA levels may be as much as 70.8 decibels lower than dBL levels at the corresponding frequency levels.

### USBM AIRBLAST CRITERIA (RI 8485)

A study by the USBM documented the effects of airblast overpressure on structures in the USBM Report RI 8485 “Structure Response Produced by Airblast from Surface Mining”. The results of this report recommend a conservative and safe limit of 0.0129 psi or an equivalent sound pressure level of 133 decibels (dB). Further studies by the USBM reported that airblast overpressures more than 0.10 psi or 150 dB were necessary to cause cracking to window glass.

### LOCAL CRITERION

By local agreement, the quarry has the following regulations: For peak frequency levels greater than 30 Hz maximum allowable peak particle velocity is 1.00 in/sec. For peak frequency levels less than 30 Hz, the maximum allowable peak particle velocity is 0.50 in/sec

### EVENT ANALYSIS

#### **06/11/24 Blast Event – (12:03 p.m.)**

**Seismograph Location Unit A** - #39 Bailey Road, Alna, Maine – Maximum Peak Particle Velocity of: PPV: 0.610 in/sec (amplitude) @ 32.0 Hz. The maximum peak sound pressure level recorded for this location was 118.7 dB (L)

**Seismograph Location Unit B** - #36 Bailey Road, Alna, Maine – Maximum Peak Particle Velocity of: PPV: 0.080 in/sec (amplitude) @ 24.0 Hz. The maximum peak sound pressure level recorded for this location was 116.5 dB (L)

### CONCLUSIONS

The following represents the recorded vibration levels relative to local criterion:

The maximum PPV value and associated frequency recorded for the Unit A location represents 61% of the Local vibration limit for peak frequencies at greater than 30 Hz.

The maximum PPV value and associated frequency recorded for the Unit B location represents 16% of the Local vibration limit for peak frequency below 30 Hz.

All collected data for this project shall remain on file at our local office facility. Please feel free to contact us should you need any additional information or have any further questions.

Sincerely,

*Darren P. Haggerty*

Darren P. Haggerty  
President  
PreSeis, Inc.



**Date/Time** Vert at 12:04:19 PM June 11, 2024  
**Trigger Source** Geo: 0.020 in/s, Mic: 125.0 dB(L)  
**Range** Geo: 10.000 in/s  
**Record Time** 5.0 sec at 1024 sps  
**Operator/Setup:** Operator/Crooker-Alna ME.MMB

**Serial Number** UM11099 V 11-0AK Micromate ISEE  
**Battery Level** 3.8 Volts  
**Unit Calibration** March 15, 2024 by InstanTel  
**File Name** UM11099\_20240611120419.IDFW

**Notes**

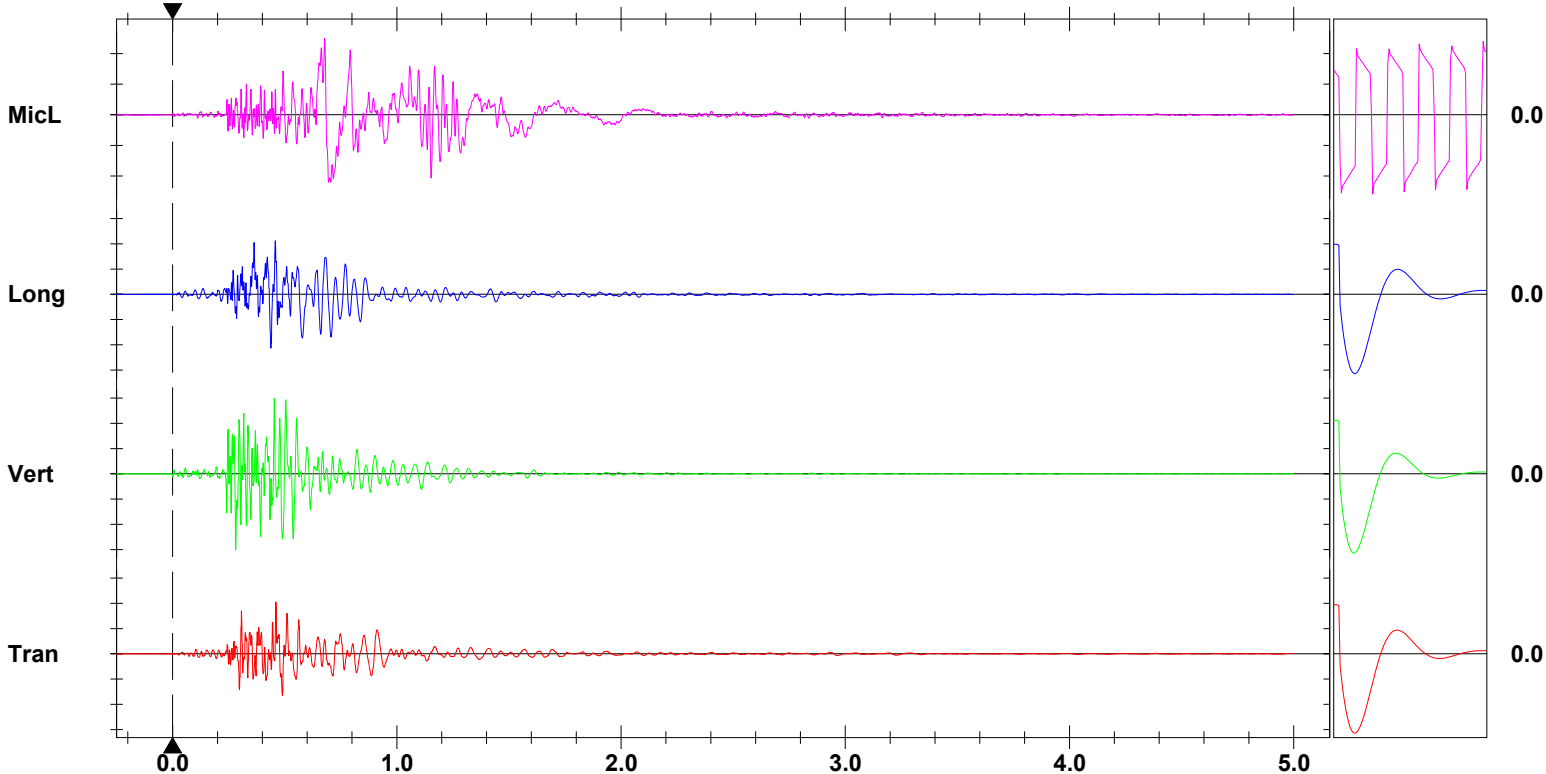
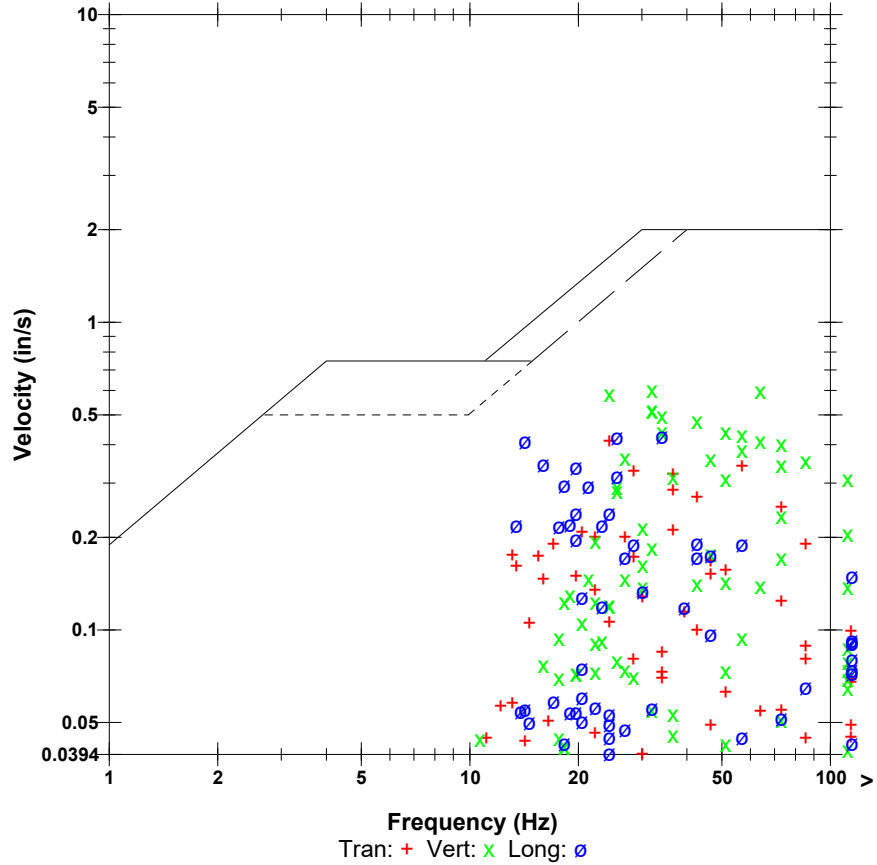
**Location:** 39 Bailey Rd Alna ME  
**Client:** Crooker-Whitefield Pit  
**User Name:** Presis Inc.  
**General:** At RRC, facing blast dir.

**Microphone** Linear Weighting  
**PSPL** 118.7 dB(L) 0.002 psi(L) at 0.678 sec  
**ZC Freq** 12 Hz  
**Channel Test** Passed (Freq = 19.7 Hz Amp = 1309 mv )

	Tran	Vert	Long	
PPV	0.411	0.603	0.426	in/s
ZC Freq	24	32	34	Hz
Time (Rel. to Trig)	0.461	0.281	0.438	sec
Peak Acceleration	0.559	0.949	0.409	g
Peak Displacement	0.002	0.003	0.003	in
Sensor Check	Passed	Passed	Passed	
Frequency	7.7	7.9	7.7	Hz
Overswing Ratio	3.3	3.8	3.1	

**Peak Vector Sum** 0.619 in/s at 0.281 sec

**USBM R18507 And OSMRE**



**Time Scale:** 0.20 sec/div **Amplitude Scale:** Geo: 0.200 in/s/div Mic: 0.001 psi(L)/div  
**Trigger =**

Sensor Check



**Date/Time** Vert at 12:03:46 PM June 11, 2024  
**Trigger Source** Geo: 0.020 in/s, Mic: 125.0 dB(L)  
**Range** Geo: 10.000 in/s  
**Record Time** 5.0 sec at 1024 sps  
**Operator/Setup:** Operator/Crooker-Alna ME.MMB

**Serial Number** UM11101 V 11-0AK Micromate ISEE  
**Battery Level** 3.8 Volts  
**Unit Calibration** November 2, 2023 by InstanTel  
**File Name** UM11101\_20240611120346.IDFW

**Notes**

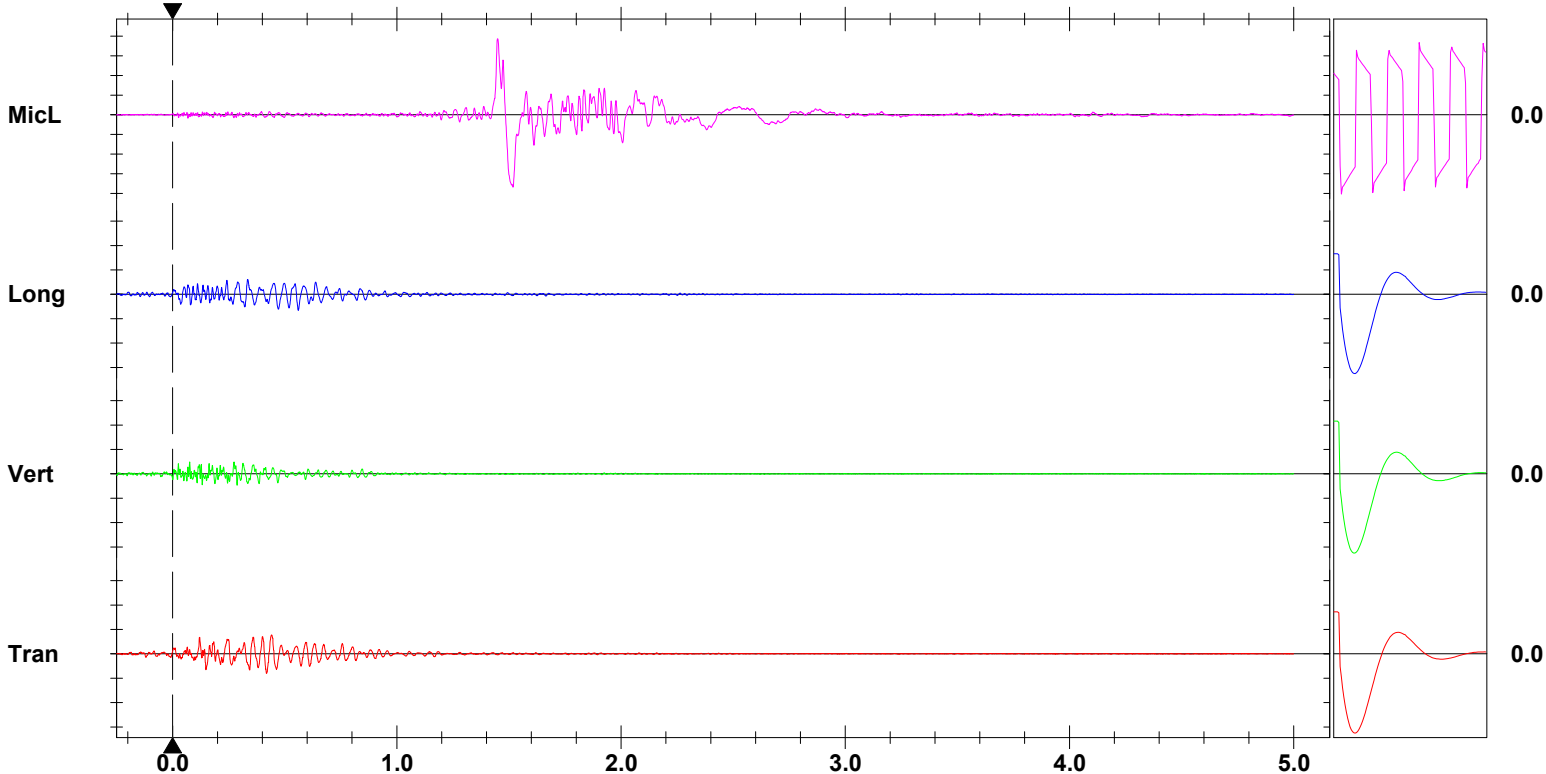
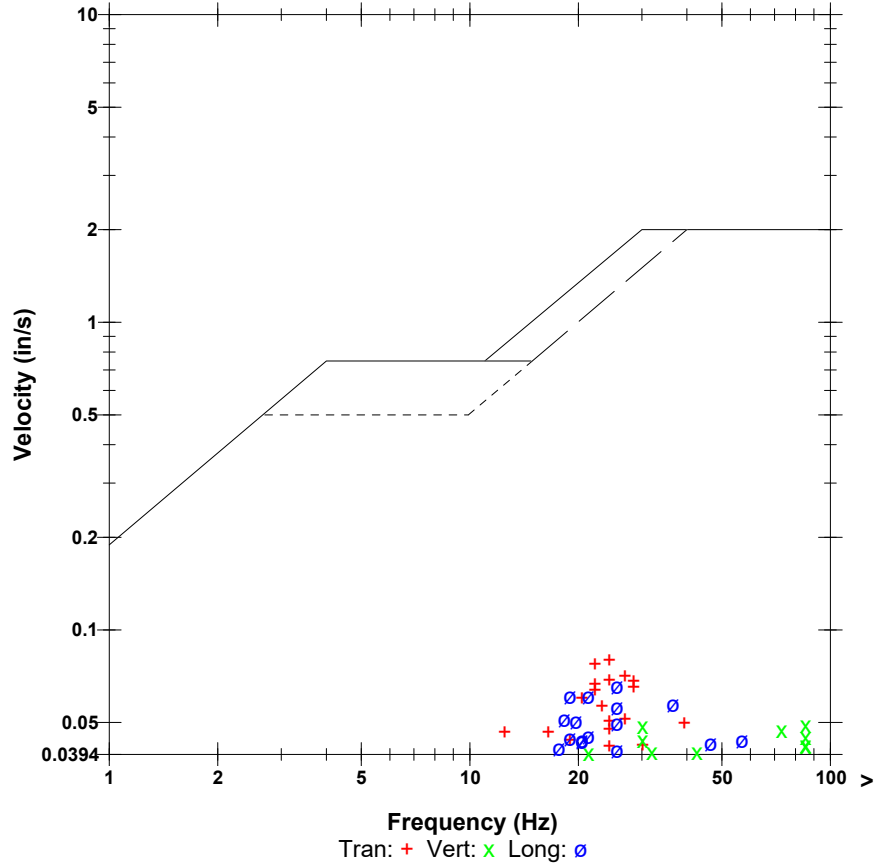
**Location:** 36 Bailey Rd Alna ME  
**Client:** Crooker-Whitefield Pit  
**User Name:** PreSeis Inc.  
**General:** At stone wall next to driveway

**Microphone** Linear Weighting  
**PSPL** 116.5 dB(L) 0.002 psi(L) at 1.449 sec  
**ZC Freq** 8.1 Hz  
**Channel Test** Passed (Freq = 20.5 Hz Amp = 1337 mv )

	Tran	Vert	Long	
PPV	0.080	0.049	0.066	in/s
ZC Freq	24	85	26	Hz
Time (Rel. to Trig)	0.419	0.076	0.561	sec
Peak Acceleration	0.085	0.100	0.073	g
Peak Displacement	0.001	0.000	0.000	in
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.7	7.7	Hz
Overswing Ratio	3.7	3.6	3.6	

**Peak Vector Sum** 0.085 in/s at 0.335 sec

**USBM R18507 And OSMRE**



**Time Scale:** 0.20 sec/div **Amplitude Scale:** Geo: 0.100 in/s/div Mic: 0.001 psi(L)/div  
**Trigger =**

Sensor Check



**Project:** Crooker Construction - Whitefield Pit

**Blaster:** Gordon Tibbetts - Austin Powder

**Client:** Crooker Construction, LLC - Topsham ME

**Field Rep:** Steve Hadlock - PreSeis, Inc.

**PreSeis, Inc. Location:** Wiscasset Road (Rte 218), Alna, Maine

**Job No.** 24-051      **Date:** 11-Jun-24

**SHOT DATA**

Shot	Time	Unit	PPV (T)	Hz	PPV (V)	Hz	PPV (L)	Hz	Air (dB)	Distance (ft.)	Seismograph Location w/dist. from structure
1	12:03	A	0.41	24	0.61	32	0.42	34	118.7	530 ft +/-	#39 Bailey Road, Alna ME - 10 ft +/- Opposite RR House corner in firm soil material, facing blast direction.
	PM										
	x	B	0.08	24	0.05	85	0.06	26	116.5	1,742 ft +/-	#36 Bailey Road, Alna ME - 10 ft +/- Opposite stonewall at mid point of gravel access road.

Instrument Data					
Unit	Serial No.	Cal. On Date	Geo	Mic	Coupling
A	UM 11099	Mar 15 24	.02	125	2+3
B	UM 11101	Nov 2 23	.02	125	2+3

Coupling: Buried 1, Spiked 2, Sand bag 3, Epoxy 4  
Other 5

Blast Data	
Shot No.	lbs./delay
1	Unknown



Blast Coordinates GPS	
44° 07' 20.1" N	069° 38' 43.7" W
<b>Weather:</b> Temperature: 60° F, Wind: calm, medium overcast	

**Comments:** N/C

# Site Plan

# **2024 Work Area**

**2022-25**

**Work Areas**

**DATE AND TIME OF BLASTS MADE**

**AT ALNA QUARRY DURING 2024**

<b><u>SHOT NUMBER</u></b>	<b><u>TIME</u></b>	<b><u>DATE</u></b>
ALNA 24-01	11:45 AM	4/23/2024
ALNA 24-02	11:37 AM	5/14/2024
ALNA 24-03	11:45 AM	5/28/2024
ALNA 24-04	12:00 PM	6/11/2024
ALNA 24-05	11:59 AM	6/25/2024
ALNA 24-06	11:51 AM	7/9/2024
ALNA 24-07	11:45 AM	7/30/2024
ALNA 24-08	11:51 AM	8/13/2024
ALNA 24-09	11:37 AM	8/27/2024
ALNA 24-10	11:39 AM	9/10/2024
ALNA 24-11	11:45 AM	9/24/2024
ALNA 24-12	11:41 AM	10/8/2024
ALNA 24-13	11:37 AM	10/22/2024
ALNA 24-14	12:18 PM	11/26/2024
ALNA 24-15	11:32 AM	12/12/2024

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	Shot Number	Date:	Time:	HOLES	BURD	SPAC	STEM	DIA	FT B H	FT- SUB	TL EXP	LBS P/H	HLS/DL	LBS DEL	TONS	YDS
	Alna 2024-01	4/23/2024	11:45 AM	30	8	10	6	3.5	1176	1116	4575	168.5	1	168.5	6757	3218
	Alna 2024-02	5/14/2024	11:37 AM	59	8	9	7	3.5	2302	2184	10887	193.3	2	373.8	12521	5665
	Alna 2024-03	5/28/2024	11:45 AM	30	8	10	6	3.5	1188	1128	4509.73	176.8	1	176.8	6832	3253
	Alna 2024-04	6/11/2024	12:00 PM	78	8	9	6	3.5	1319	1163	8715	158.7	1	227.5	6076	2893
	Alna 2024-05A	6/25/2024	11:59 AM	28	8	9	8	3.5	912	856	4354	161.1	1	161.1	4637	2208
	Alna 2024-05B	6/25/2024	11:59 AM	36	8	9	6	3.5	1596	1524	6873.08	206.6	1	206.6	8332	3968
	Alna 2024-06	7/9/2024	11:51 AM	55	8	9	6	3.5	1191	1081	10843.49	223	1	223	12868	6128
	Alna 2024-07	7/30/2024	11:45 AM	61	8	9	7	3.5	2545	2423	9741	169.7	1	169.7	13227	6299
	Alna 2024-08	8/13/2024	11:51 AM	18	8	9	8	3.5	756	720	3341	201.6	1	201.6	3931	1872
	Alna 2024-09	8/27/2024	11:37 AM	35	8	9	7	3.5	1540	1470	6701	234.1	1	234.1	7959	3790
	Alna 2024-10	9/10/2024	11:39 AM	62	8	9	7	3.5	2841	2717	11696	215.3	1	215.3	14867	7080
	Alna 2024-11	9/24/2024	11:45 AM	71	8	9	6	3.5	1677	1535	5801.50	99.60	1	199.10	9392	4472
	Alna 2024-12	10/8/2024	11:41 AM	52	8	9	7	3.5	2180	2076	10968.00	237.70	1	237.1	11334	5397
	Alna 2024-13A	10/22/2024	11:37 AM	18	8	9	8	3.5	803	767	2277.00	132.5	1	132.5	4194	1997
	Alna 2024-13B	10/22/2024	11:37 AM	46	8	9	8	3.5	1644	1552	7574.00	177.8	1	177.8	8431	4015
	Alna 2024-14	11/26/2024	12:18 PM	36	8	9	7	3.5	1752	1680	9481.84	269.30	2	487.1	9205	4383
	Alna 2024-15	12/12/2024	11:32 AM	21	8	9	7	3.5	1062	1020	4741.50	265.60	1	265.6	5594	2264
				736					26,484		123,080				146,158	68,901.30



SHOT	SERIAL	TIME	DATE	PPVT	T FRQ	PPVV	V FRQ	PPVL	L FRQ	SPL	LOCATION	OPERATOR	LBS DEL	DIST.	
Alna 24-01	541	11:45 AM	4/23/2024	0.020	28	0.020	43	0.030	39	120.0	L. Lunan	Joe Hanna	168.5	2534	
Alna 24-01	1271	11:45 AM	4/23/2024	0.050	17	0.065	37	0.060	27	121.6	C. Jordan Ramp	Matt Grant	168.5	1373	
Alna 24-01	1272	11:45 AM	4/23/2024	0.155	32	0.160	30	0.285	34	125.0	K. Weeks	Thomas Chadwick	168.5	528	
Alna 24-01	2934	11:45 AM	4/23/2024	0.195	32	0.330	37	0.270	37	123.8	K. Weeks	Thomas Chadwick	168.5	528	
Alna 24-01	1756	11:45 AM	4/23/2024	0.030	34	0.020	43	0.030	34	118.3	S. Sheehy	Dick Gower	168.5	2483	
Alna 24-01	3052	11:45 AM	4/23/2024	0.030	32	0.030	43	0.020	>100	113.5	M. Preston	Mark Cromwell	168.5	1478	
Alna 24-01	891	11:45 AM	4/23/2024	*No Trigger at .02								Quarry Entrance	Craig Roberts	168.5	2483
Alna 24-02	541	11:37 AM	5/14/2024	0.030	37	0.040	34	0.030	30	123.2	L. Lunan	Joe Hanna	373.8	2534	
Alna 24-02	UM21258	11:37 AM	5/14/2024	0.028	32	0.025	34	0.025	16	118.1	L. Lunan	Joe Hanna	373.8	2534	
Alna 24-02	1271	11:37 AM	5/14/2024	0.080	27	0.135	39	0.080	51	124.6	C. Jordan Ramp	Matt Grant	373.8	1056	
Alna 24-02	1272	11:37 AM	5/14/2024	0.115	43	0.115	43	0.125	27	125.1	K. Weeks	Thomas Chadwick	373.8	792	
Alna 24-02	2934	11:37 AM	5/14/2024	0.130	39	0.115	39	0.135	26	124.2	K. Weeks	Thomas Chadwick	373.8	792	
Alna 24-02	1756	11:37 AM	5/14/2024	0.035	32	0.030	51	0.030	37	121.4	S. Sheehy	Jennifer Sehen	373.8	2534	
Alna 24-02	UM21259	11:37 AM	5/14/2024	0.020	34	0.019	43	0.025	43	103.8	S. Sheehy	Jennifer Sehen	373.8	2534	
Alna 24-02	3052	11:37 AM	5/14/2024	0.025	47	0.015	73	0.005	N/A	118.6	M. Preston	Mark Cromwell	373.8	1742	
Alna 24-02	891	11:37 AM	5/14/2024	*No Trigger at .02								Quarry Entrance	Craig Roberts	373.8	2429
Alna 24-03	UM21258	11:45 AM	5/28/2024	0.021	28	0.018	39	0.023	34	113.7	L. Lunan	Joe Hanna	176.8	2534	
Alna 24-03	1271	11:45 AM	5/28/2024	0.050	51	0.045	64	0.045	39	120.8	C. Jordan Ramp	Matt Grant	176.8	1373	
Alna 24-03	1272	11:45 AM	5/28/2024	0.110	47	0.110	47	0.180	27	128.4	K. Weeks	Thomas Chadwick	176.8	634	
Alna 24-03	2934	11:45 AM	5/28/2024	0.180	27	0.175	57	0.165	27	127.9	K. Weeks	Thomas Chadwick	176.8	634	
Alna 24-03	1756	11:45 AM	5/28/2024	0.025	39	0.025	28	0.030	47	119.6	S. Sheehy	Jennifer Sehen	176.8	2482	
Alna 24-03	UM21259	11:45 AM	5/28/2024	0.031	34	0.026	39	0.025	32	118.6	S. Sheehy	Jennifer Sehen	176.8	2482	
Alna 24-03	3052	11:45 AM	5/28/2024	0.025	32	0.020	64	0.020	85	118.6	M. Preston	Simon Hanson	176.8	1584	
Alna 24-03	891	11:45 AM	5/28/2024	*No Trigger at .02								Quarry Entrance	Craig Kroot	176.8	2482
Alna 24-04	UM21258	12:04 PM	6/11/2024	0.034	30	0.025	27	0.038	39	113.2	L. Lunan	Joe Hanna	227.5	2323	
Alna 24-04	541	12:04 PM	6/11/2024	0.030	18	0.040	47	0.045	39	120.2	L. Lunan	Joe Hanna	227.5	2323	
Alna 24-04	1271	12:04 PM	6/11/2024	0.115	28	0.095	N/A	0.085	24	115.9	C. Jordan Ramp	Matt Grant	227.5	898	
Alna 24-04	UM11099	12:04 PM	6/11/2024	0.411	24	0.603	32	0.426	34	118.7	K. Weeks	Preseis, Inc.	227.5	528	
Alna 24-04	1272	12:04 PM	6/11/2024	0.255	32	0.260	32	0.355	21	126.9	K. Weeks	Thomas Chadwick	227.5	528	
Alna 24-04	2934	12:04 PM	6/11/2024	0.38	43	0.550	47	0.370	23	125.7	K. Weeks	Thomas Chadwick	227.5	528	
Alna 24-04	1756	12:04 PM	6/11/2024	0.055	22	0.035	43	0.035	34	118.1	S. Sheehy	Richard Gower	227.5	2376	
Alna 24-04	UM11101	12:04 PM	6/11/2024	0.080	24	0.049	85	0.066	26	116.5	M. Preston	Preseis, Inc.	227.5	1426	
Alna 24-04	3052	12:04 PM	6/11/2024	0.025	85	0.045	64	0.045	85	117.5	M. Preston	Simon Hanson	227.5	1426	
Alna 24-04	891	12:04 PM	6/11/2024	0.020	73	0.025	73	0.015	73	118.6	Quarry Entrance	Jennifer Sehen	227.5	2165	
Alna 24-05	UM21258	12:00 PM	6/25/2024	0.047	32	0.047	32	0.048	24	121.3	L. Lunan	Joe Hanna	161.1	2534	
Alna 24-05	541	12:00 PM	6/25/2024	0.040	26	0.045	20	0.045	37	124.2	L. Lunan	Joe Hanna	161.1	2534	
Alna 24-05	1271	12:00 PM	6/25/2024	0.145	16	0.110	15	0.115	34	122.9	C. Jordan Ramp	Matt Grant	161.1	1003	
Alna 24-05	1272	12:00 PM	6/25/2024	0.190	28	0.190	30	0.315	27	132.6	K. Weeks	Thomas Chadwick	161.1	581	
Alna 24-05	1756	12:00 PM	6/25/2024	0.040	28	0.030	43	0.030	34	123.9	S. Sheehy	Richard Gower	161.1	2482	
Alna 24-05	UM21259	12:00 PM	6/25/2024	0.039	22	0.037	28	0.030	22	123.8	S. Sheehy	Richard Gower	161.1	2482	
Alna 24-05	3052	12:00 PM	6/25/2024	0.030	21	0.025	51	0.020	32	125.5	M. Preston	Simon Hanson	161.1	1478	

SHOT	SERIAL	TIME	DATE	PPVT	T FRQ	PPVV	V FRQ	PPVL	L FRQ	SPL	LOCATION	OPERATOR	LBS DEL	DIST.	
Alna 24-05	891	12:00 PM	6/25/2024	0.020	51	0.020	43	0.025	43	122.6	Quarry Entrance	Jennifer Sehen	161.1	2429	
Alna 24-06	UM21258	11:51 AM	7/9/2024	0.025	32	0.042	37	0.026	27	119.4	L. Lunan	Joe Hanna	222.9	2534	
Alna 24-06	541	11:51 AM	7/9/2024	0.035	39	0.055	37	0.035	43	120.0	L. Lunan	Joe Hanna	222.9	2534	
Alna 24-06	1271	11:51 AM	7/9/2024	0.085	34	0.105	>100	0.170	13	123.8	C. Jordan Ramp	Matt Grant	222.9	1162	
Alna 24-06	1272	11:51 AM	7/9/2024	0.110	37	0.110	37	0.275	28	124.9	K. Weeks	Thomas Chadwick	222.9	686	
Alna 24-06	2934	11:51 AM	7/9/2024	0.130	37	0.160	30	0.280	28	124.1	K. Weeks	Thomas Chadwick	222.9	686	
Alna 24-06	1756	11:51 AM	7/9/2024	0.035	27	0.040	37	0.025	39	117.2	S. Sheehy	Richard Gower	222.9	2587	
Alna 24-06	UM21259	11:51 AM	7/9/2024	0.025	23	0.0.29	34	0.026	26	118.4	S. Sheehy	Richard Gower	222.9	2587	
Alna 24-06	3052	11:51 AM	7/9/2024	0.015	>100	0.025	47	0.015	>100	116.3	M. Preston	Simon Hanson	222.9	1637	
Alna 24-06	891	11:51 AM	7/9/2024	*No Trigger at .02								Quarry Entrance	Jennifer Sehen	222.9	2006
Alna 24-07	UM21258	11:45 AM	7/30/2024	0.030	28	0.038	37	0.021	30	112.8	L. Lunan	Joe Hanna	169.7	2587	
Alna 24-07	541	11:45 AM	7/30/2024	0.030	27	0.035	43	0.040	34	118.3	L. Lunan	Joe Hanna	169.7	2587	
Alna 24-07	1271	11:45 AM	7/30/2024	0.095	39	0.195	39	0.135	26	121.0	C. Jordan Ramp	Matt Grant	169.7	1003	
Alna 24-07	1272	11:45 AM	7/30/2024	0.090	15	0.090	15	0.135	30	125.5	K. Weeks	Thomas Chadwick	169.7	845	
Alna 24-07	2934	11:45 AM	7/30/2024	0.120	27	0.130	32	0.130	15	123.9	K. Weeks	Thomas Chadwick	169.7	845	
Alna 24-07	1756	11:45 AM	7/30/2024	0.025	17	0.020	47	0.020	23	120.4	S. Sheehy	Richard Gower	169.7	2534	
Alna 24-07	UM21259	11:45 AM	7/30/2024	0.034	27	0.018	43	0.020	16	119.5	S. Sheehy	Richard Gower	169.7	2534	
Alna 24-07	3052	11:45 AM	7/30/2024	*No Trigger at .02								M. Preston	Simon Hanson	169.7	1795
Alna 24-07	891	11:45 AM	7/30/2024	*No Trigger at .02								Quarry Entrance	Jennifer Sehen	169.7	2429
Alna 24-08	UM21258	11:51 AM	8/13/2024	0.022	37	0.031	27	0.028	26	113.1	L. Lunan	Jennifer Sehen	201.6	2587	
Alna 24-08	541	11:51 AM	8/13/2024	0.030	43	0.030	30	0.025	34	118.6	L. Lunan	Jennifer Sehen	201.6	2587	
Alna 24-08	1271	11:51 AM	8/13/2024	0.065	20	0.070	85	0.070	18	115.6	C. Jordan Ramp	Joe Hanna	201.6	898	
Alna 24-08	1272	11:51 AM	8/13/2024	0.200	37	0.200	39	0.295	34	125.9	K. Weeks	Thomas Chadwick	201.6	528	
Alna 24-08	2934	11:51 AM	8/13/2024	0.285	47	0.535	34	0.305	27	124.6	K. Weeks	Thomas Chadwick	201.6	528	
Alna 24-08	1756	11:51 AM	8/13/2024	0.045	32	0.040	32	0.025	37	118.3	S. Sheehy	Richard Gower	201.6	2534	
Alna 24-08	UM21259	11:51 AM	8/13/2024	MEMORY WAS FULL								S. Sheehy	Richard Gower	201.6	2534
Alna 24-08	3052	11:51 AM	8/13/2024	0.020	N/A	0.030	57	0.030	37	117.8	M. Preston	Simon Hanson	201.6	1795	
Alna 24-08	891	11:51 AM	8/13/2024	0.020	47	0.050	64	0.020	57	116.6	Quarry Entrance	Jason Pierce	201.6	2112	
Alna 24-09	UM21258	11:36 AM	8/27/2024	0.003	28	0.029	37	0.020	30	116.0	L. Lunan	Joe Hanna	234.1	2587	
Alna 24-09	541	11:36 AM	8/27/2024	0.030	26	0.030	32	0.005	N/A	119.3	L. Lunan	Joe Hanna	234.1	2587	
Alna 24-09	1271	11:36 AM	8/27/2024	0.055	22	0.065	>100	0.045	20	120.2	C. Jordan Ramp	Matt Grant	234.1	1320	
Alna 24-09	1272	11:36 AM	8/27/2024	0.110	43	0.110	43	0.210	34	130.5	K. Weeks	Thomas Chadwick	234.1	581	
Alna 24-09	2934	11:36 AM	8/27/2024	0.220	43	0.245	43	0.205	27	129.9	K. Weeks	Thomas Chadwick	234.1	581	
Alna 24-09	1756	11:36 AM	8/27/2024	0.040	28	0.035	32	0.025	34	119.1	S. Sheehy	Richard Gower	234.1	2482	
Alna 24-09	UM21259	11:36 AM	8/27/2024	0.027	27	0.025	32	0.032	39	118.7	S. Sheehy	Richard Gower	234.1	2482	
Alna 24-09	3052	11:36 AM	8/27/2024	0.015	N/A	0.025	57	0.020	N/A	119.8	M. Preston	Simon Hanson	234.1	1478	
Alna 24-09	891	11:36 AM	8/27/2024	*No Trigger at .02								Quarry Entrance	Jennifer Sehen	234.1	2482
Alna 24-10	UM21258	11:39 AM	9/10/2024	0.028	23	0.038	30	0.036	37	118.2	L. Lunan	Joe Hanna	215.3	2587	
Alna 24-10	541	11:39 AM	9/10/2024	0.025	51	0.025	43	0.020	34	<88	L. Lunan	Joe Hanna	215.3	2587	
Alna 24-10	1271	11:39 AM	9/10/2024	0.090	20	0.090	32	0.085	14	122.1	C. Jordan Ramp	Matt Grant	215.3	1320	
Alna 24-10	1272	11:39 AM	9/10/2024	0.190	28	0.190	28	0.220	24	126.8	K. Weeks	Thomas Chadwick	215.3	581	
Alna 24-10	2934	11:39 AM	9/10/2024	0.255	27	0.140	30	0.215	30	126.6	K. Weeks	Thomas Chadwick	215.3	581	
Alna 24-10	1756	11:39 AM	9/10/2024	0.035	39	0.030	39	0.030	24	121.0	S. Sheehy	Jennifer Sehen	215.3	2482	
Alna 24-10	UM21259	11:39 AM	9/10/2024	0.032	39	0.025	32	0.024	28	120.2	S. Sheehy	Jennifer Sehen	215.3	2482	

SHOT	SERIAL	TIME	DATE	PPVT	T FRQ	PPVV	V FRQ	PPVL	L FRQ	SPL	LOCATION	OPERATOR	LBS DEL	DIST.	
Alna 24-10	3052	11:39 AM	9/10/2024	0.025	23	0.020	64	0.020	85	122.1	M. Preston	Simon Hanson	215.3	1478	
Alna 24-10	891	11:39 AM	9/10/2024	0.010	51	0.020	51	0.015	47	119.1	Quarry Entrance	Scott Bernier	215.3	2482	
Alna 24-11	UM21258	11:30 AM	9/24/2024	*No Trigger at .02								L. Lunan	Joe Hanna	199.10	2270
Alna 24-11	1271	11:30 AM	9/24/2024	0.075	20	0.085	>100	0.060	32	112.6	C. Jordan Ramp	Matt Grant	199.10	898	
Alna 24-11	1272	11:30 AM	9/24/2024	0.055	37	0.055	34	0.080	26	120.2	K. Weeks	Thomas Chadwick	199.10	950	
Alna 24-11	2934	11:30 AM	9/24/2024	0.065	39	0.090	30	0.070	24	119.3	K. Weeks	Thomas Chadwick	199.10	950	
Alna 24-11	1756	11:30 AM	9/24/2024	0.020	39	0.020	43	0.020	39	108.8	S. Sheehy	Richard Gower	199.10	2323	
Alna 24-11	UM21259	11:30 AM	9/24/2024	0.022	21	0.021	43	0.016	27	104.9	S. Sheehy	Richard Gower	199.10	2323	
Alna 24-11	3052	11:30 AM	9/24/2024	*No Trigger at .02								M. Preston	Simon Hanson	199.10	1901
Alna 24-11	891	11:30 AM	9/24/2024	*No Trigger at .02								Quarry Entrance	Jennifer Sehen	199.10	2112
Alna 24-12	UM21258	11:41 AM	10/8/2024	0.026	26	0.027	28	0.028	32	117.5	L. Lunan	Joe Hanna	237.7	2587	
Alna 24-12	1271	11:41 AM	10/8/2024	0.155	16	0.125	47	0.120	21	122.6	C. Jordan Ramp	Matt Grant	237.7	1056	
Alna 24-12	1272	11:41 AM	10/8/2024	0.065	37	0.065	34	0.12	24	127.6	K. Weeks	Thomas Chadwick	237.7	845	
Alna 24-12	2934	11:41 AM	10/8/2024	0.1	32	0.11	32	0.12	26	127.2	K. Weeks	Thomas Chadwick	237.7	845	
Alna 24-12	1756	11:41 AM	10/8/2024	0.02	47	0.03	43	0.03	28	122.3	S. Sheehy	Richard Gower	237.7	2587	
Alna 24-12	UM21259	11:41 AM	10/8/2024	0.036	27	0.027	39	0.029	24	120.4	S. Sheehy	Richard Gower	237.7	2587	
Alna 24-12	3052	11:41 AM	10/8/2024	*No Trigger at .02								M. Preston	Simon Hanson	237.7	1795
Alna 24-12	891	11:41 AM	10/8/2024	*No Trigger at .02								Quarry Entrance	Jennifer Sehen	237.7	2482
Alna 24-13A & 1	UM21258	11:37 AM	10/22/2024	0.034	24	0.034	32	0.028	39	109.3	L. Lunan	Joe Hanna	177.8	2482	
Alna 24-13A & 1	1271	11:37 AM	10/22/2024	0.155	19	0.16	26	0.12	19	120.8	C. Jordan Ramp	Matt Grant	177.8	950	
Alna 24-13A & 1	1272	11:37 AM	10/22/2024	0.265	39	0.265	39	0.495	30	128.2	K. Weeks	Thomas Chadwick	177.8	581	
Alna 24-13A & 1	2934	11:37 AM	10/22/2024	0.425	47	0.44	24	0.44	30	126.6	K. Weeks	Thomas Chadwick	177.8	581	
Alna 24-13A & 1	1756	11:37 AM	10/22/2024	0.05	32	0.035	39	0.045	30	116.9	S. Sheehy	Richard Gower	177.8	2482	
Alna 24-13A & 1	UM21259	11:37 AM	10/22/2024	0.045	32	0.037	37	0.038	32	118.1	S. Sheehy	Richard Gower	177.8	2482	
Alna 24-13A & 1	3052	11:37 AM	10/22/2024	0.055	23	0.005	N/A	0.015	34	<88	M. Preston	Simon Hanson	177.8	1478	
Alna 24-13A & 1	891	11:37 AM	10/22/2024	0.02	43	0.035	43	0.015	43	119.8	Quarry Entrance	Jennifer Sehen	177.8	2323	
Alna 24-14	UM21258	12:17 PM	11/26/2024	0.021	39	0.027	32	0.024	39	108.3	L. Lunan	Joe Hanna	487.1	2587	
Alna 24-14	1271	12:17 PM	11/26/2024	0.055	27	0.065	43	0.07	34	121.6	C. Jordan Ramp	Matt Grant	487.1	1372	
Alna 24-14	2934	12:17 PM	11/26/2024	0.255	27	0.21	39	0.33	32	130.9	K. Weeks	Thomas Chadwick	487.1	581	
Alna 24-14	1756	12:17 PM	11/26/2024	0.03	30	0.03	34	0.04	24	120.8	S. Sheehy	Richard Gower	487.1	2534	
Alna 24-14	UM21259	12:17 PM	11/26/2024	0.039	30	0.029	43	0.044	23	122.9	S. Sheehy	Richard Gower	487.1	2534	
Alna 24-14	3052	12:17 PM	11/26/2024	0.02	57	0.035	57	0.025	28	121	M. Preston	Jake Warren	487.1	1531	
Alna 24-14	891	12:17 PM	11/26/2024	0.015	85	0.02	51	0.015	57	121.9	Quarry Entrance	Jennifer Sehen	487.1	2534	
Alna 24-15	UM21258	11:32 AM	12/12/2024	*No Trigger at .02								Quarry Entrance	Joe Hanna	265.6	2534
Alna 24-15	1271	11:32 AM	12/12/2024	0.095	18	0.075	57	0.090	15	122.3	C. Jordan Ramp	Matt Grant	265.6	1372	
Alna 24-15	1272	11:37 AM	12/12/2024	0.125	28	0.13	28	0.205	28	132.6	K. Weeks	Thomas Chadwick	265.6	581	
Alna 24-15	2934	11:32 AM	12/12/2024	0.150	28	0.200	21	0.165	27	131.5	K. Weeks	Thomas Chadwick	265.6	581	
Alna 24-15	1756	11:32 AM	12/12/2024	0.025	21	0.030	32	0.035	17	121.4	S. Sheehy	Richard Gower	265.6	2534	
Alna 24-15	UM21259	11:32 AM	12/12/2024	0.023	28	0.017	34	0.034	18	122.6	S. Sheehy	Richard Gower	265.6	2534	
Alna 24-15	3052	11:32 AM	12/12/2024	0.045	32	0.030	47	0.035	43	124.5	M. Preston	Jake Warren	265.6	1531	
Alna 24-15	891	11:32 AM	12/12/2024	*No Trigger at .02								Quarry Entrance	Jennifer Sehen	265.6	2534

**Shot Summary Legend**

HOLES = Number of holes drilled for shot  
BURD = Distance between rows of holes drilled in feet  
SPAC = Distance between holes in row in feet  
STEM = Depth of cap in feet  
DIA = Diameter of the drill holes in inches  
FT B H = Feet of bore hole drilled  
FT – SUB = Feet of bore hole drilled less sub depth  
TL EXP = Total explosives in pounds  
LBS P/H = Pounds of explosives per hole  
HLS/ DL = Number of holes per delay  
LBS DEL = Pounds of explosives per delay (LBS P/H x HLS/ DL)  
TONS = Calculated production in tons  
YDS = Calculated production in cubic yards

**Seismograph Summary Legend**

SERIAL = Serial number of monitoring device  
PPVT = Peak particle velocity – transverse in inches per second  
T FRQ = Transverse frequency in hertz  
PPVV = Peak particle velocity - vertical in inches per second  
V FRQ = Vertical frequency in hertz  
PPVL = Peak particle velocity – longitudinal in inches per second  
L FRQ = Longitudinal frequency in hertz  
SPL = Sound pressure longitudinal in decibels  
DIST = Distance from monitoring location in feet

[info@crooker.com](mailto:info@crooker.com)

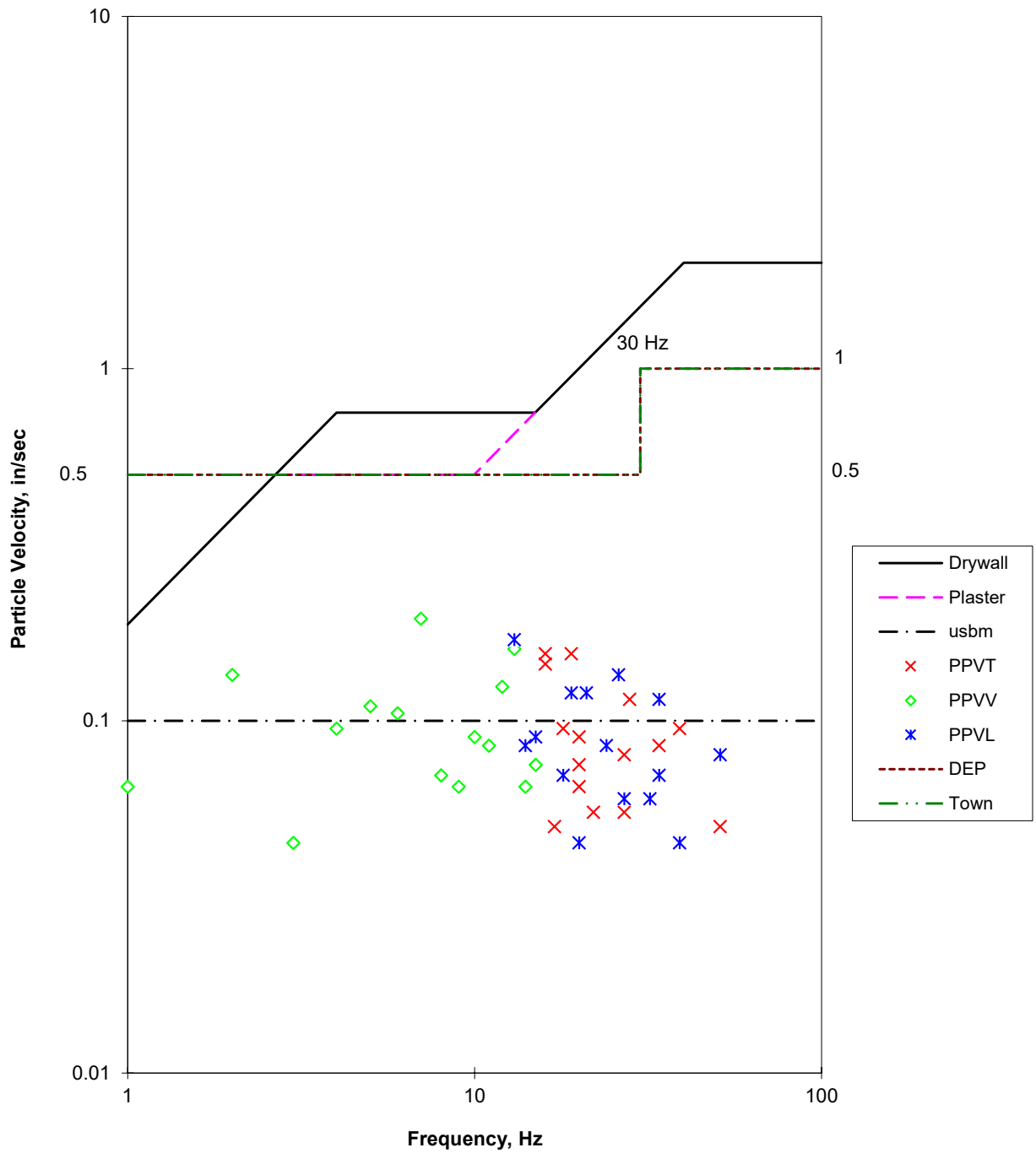
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GENERAL CONTRACTORS (207) 729-3331  
PAVING DIVISION (207) 729-5511

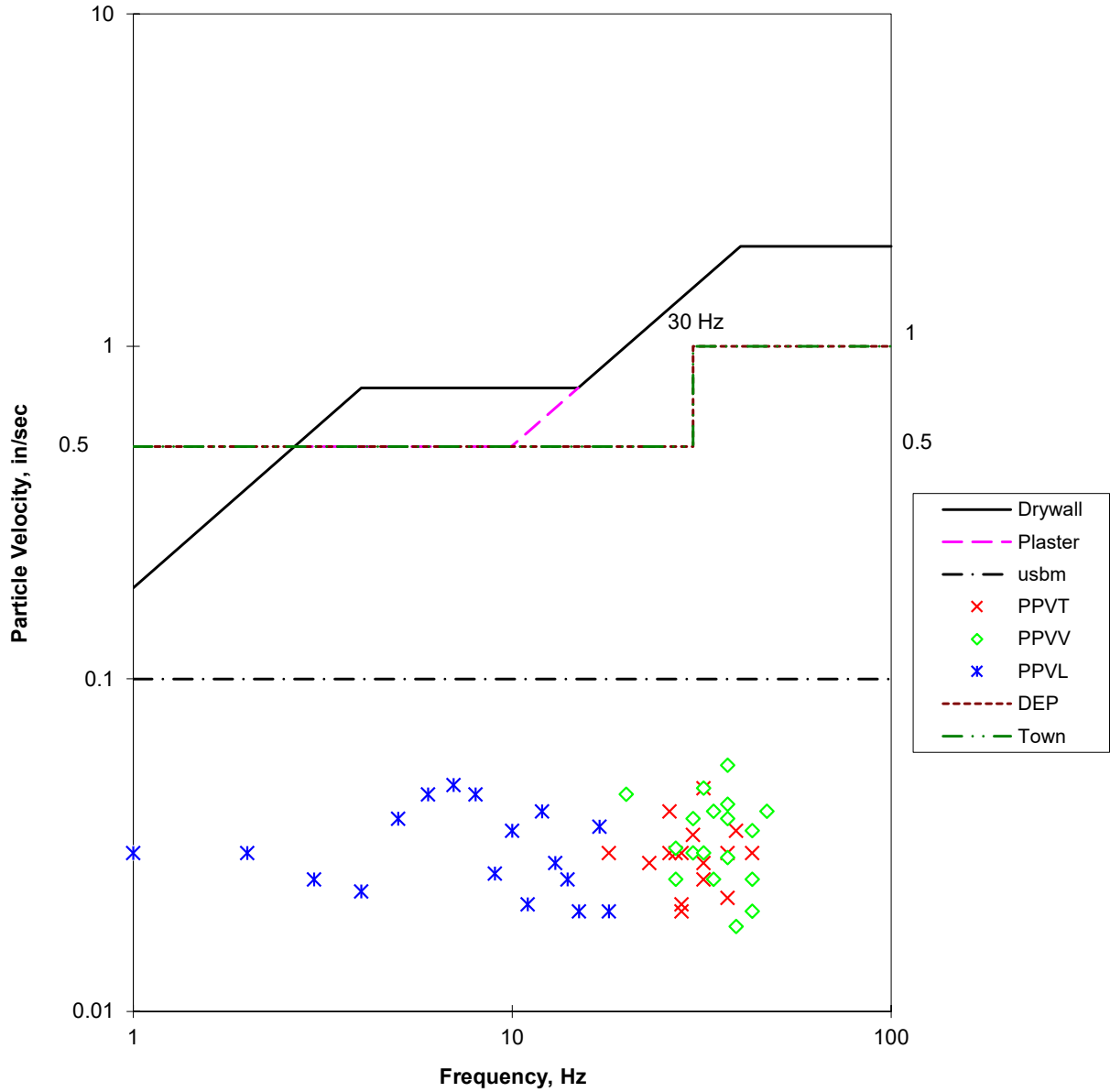
ENGINEERING FAX (207) 725-0926  
OFFICE FAX (207) 725-4025

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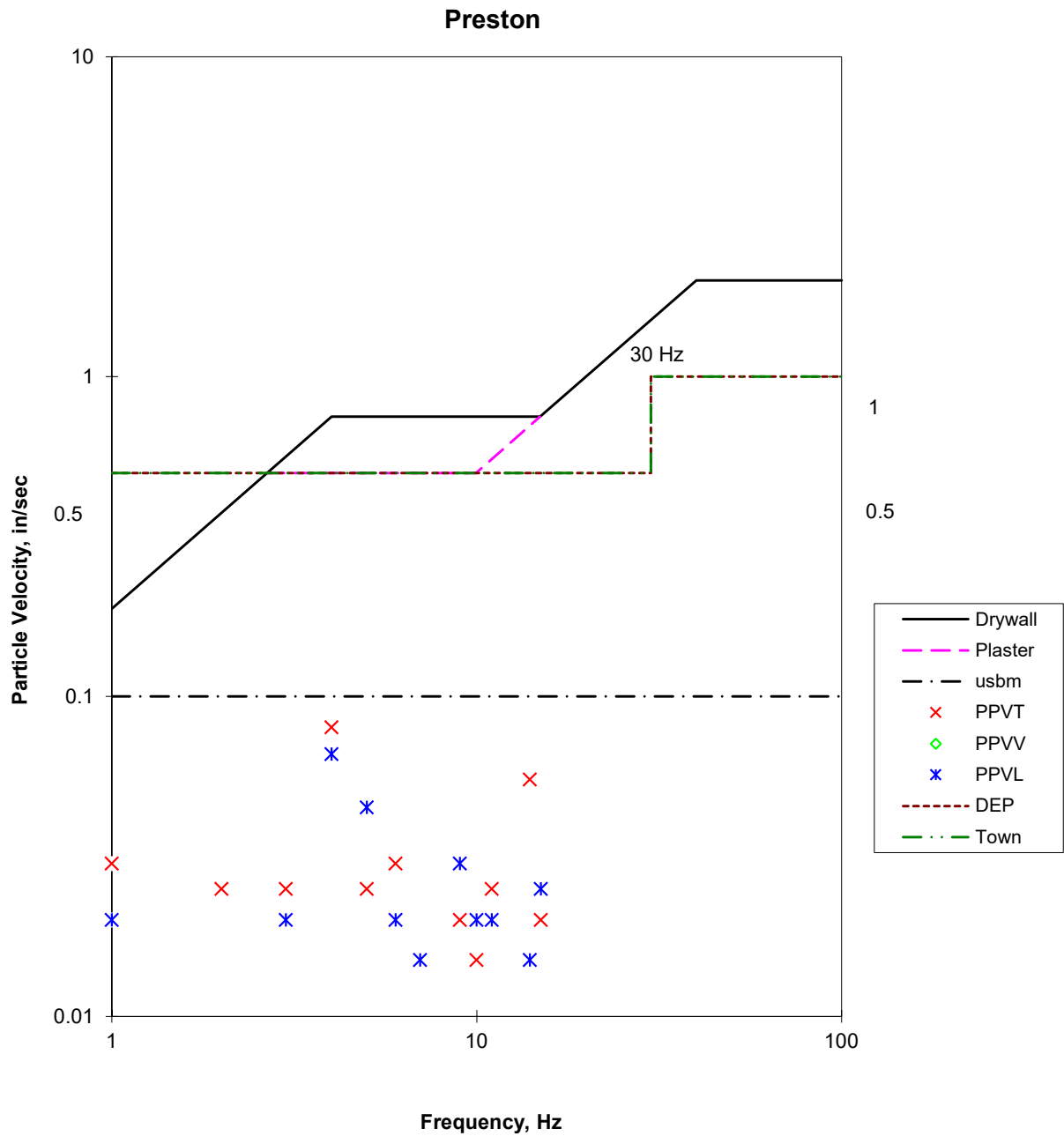
**Jordan**



### VanLunen

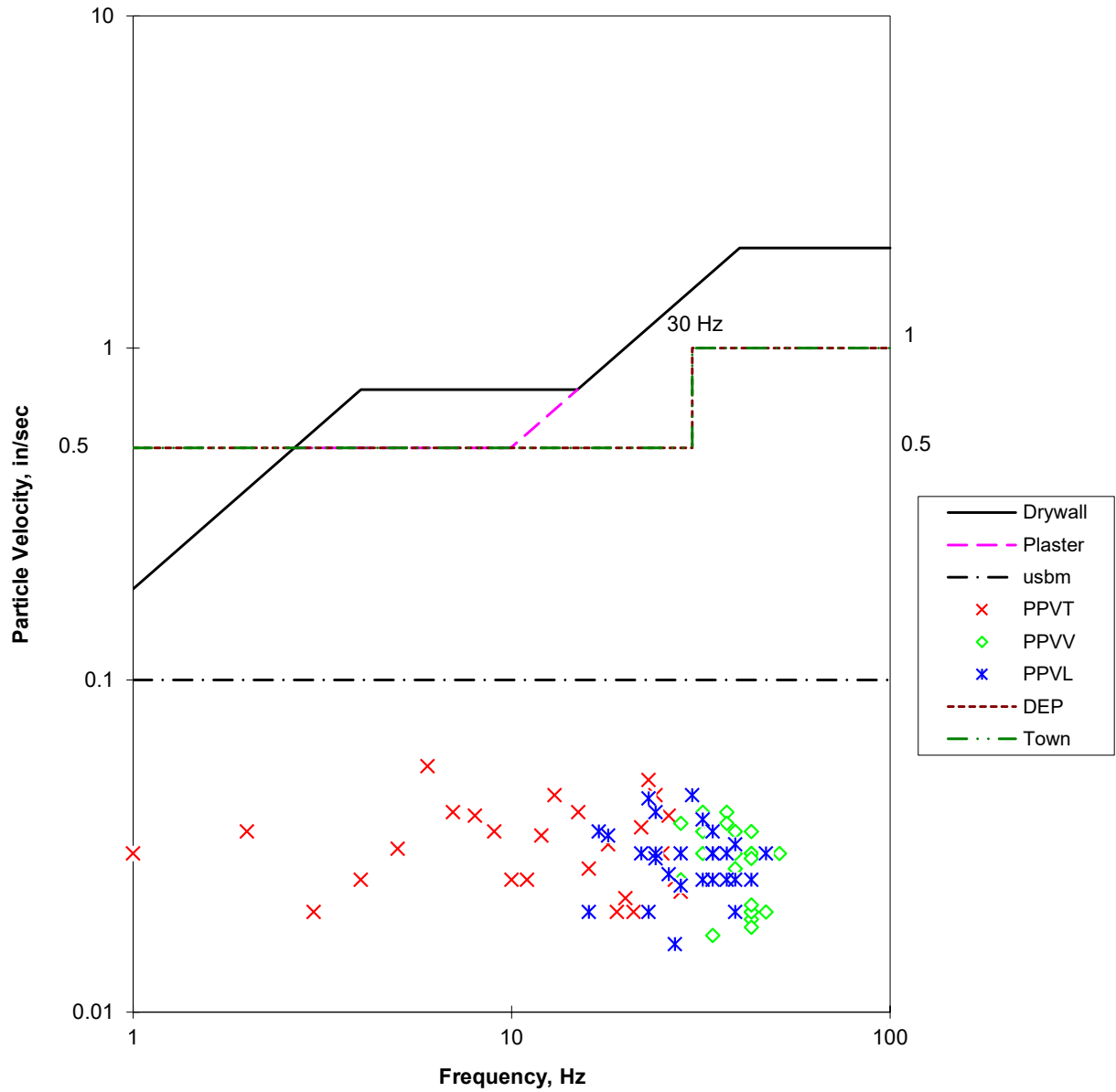


USBM RECOMMENDATIONS (RI 8507)  
 DEP RECOMMENDATION  
 TOWN LIMIT

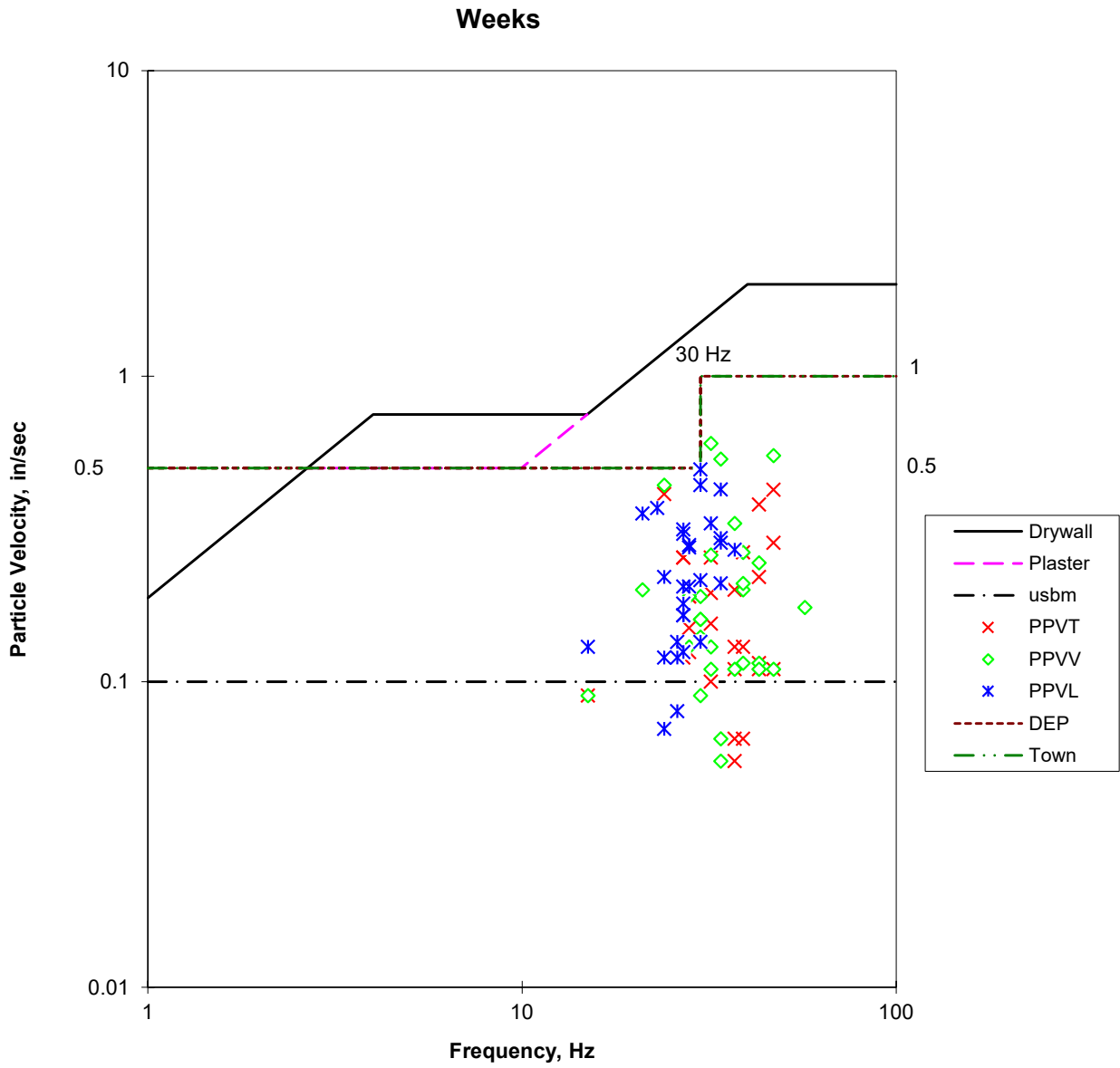


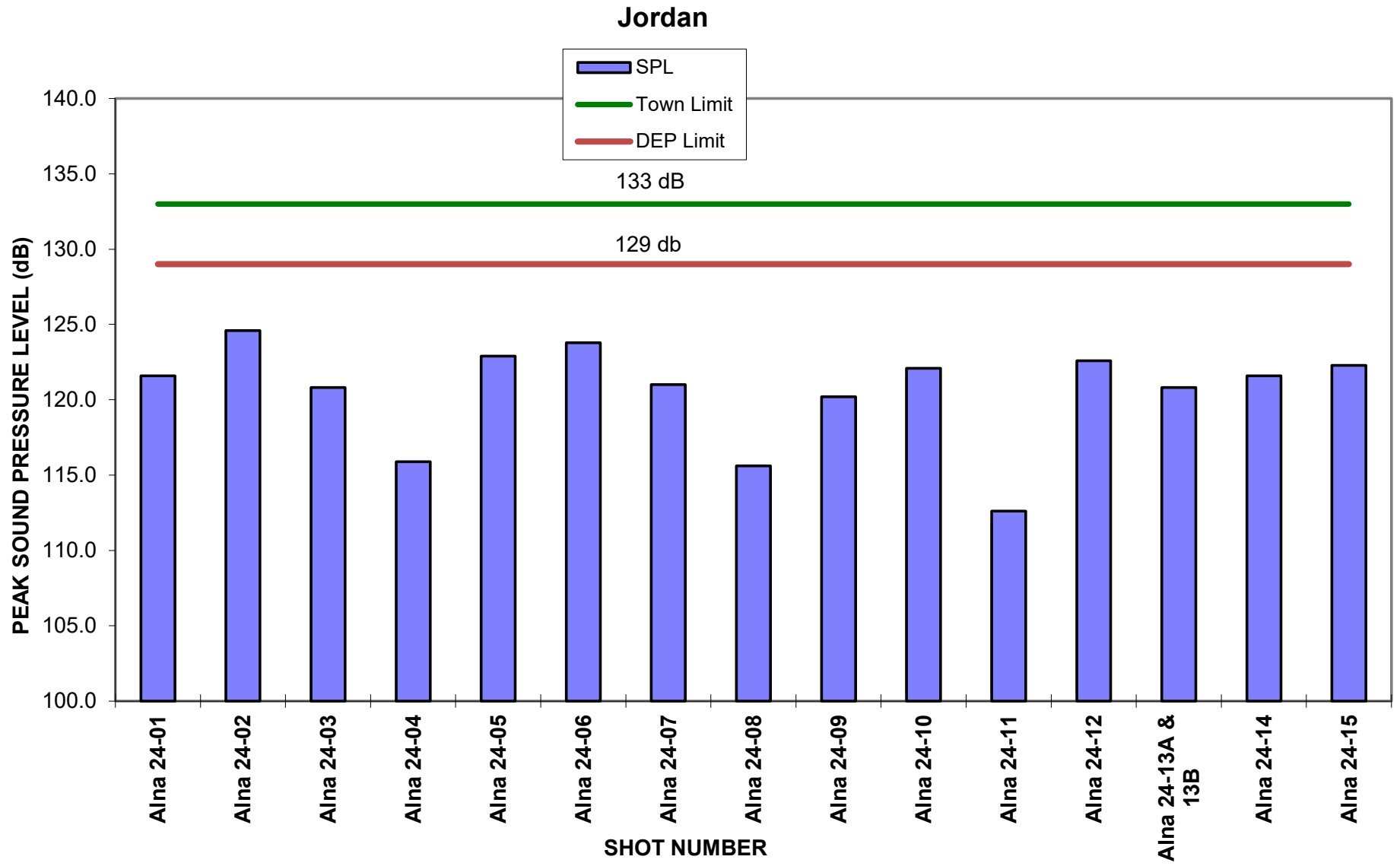


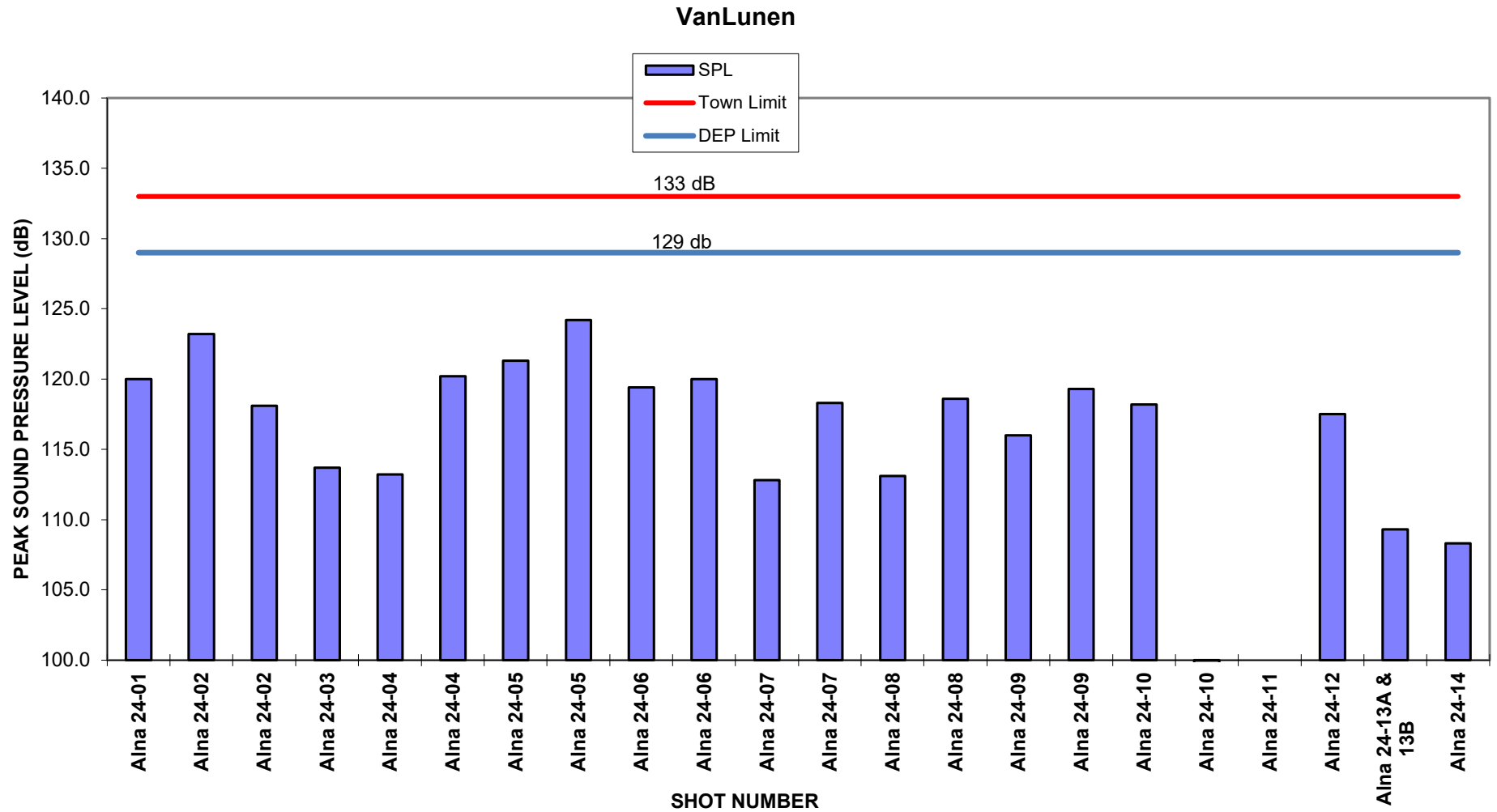
Sheehy



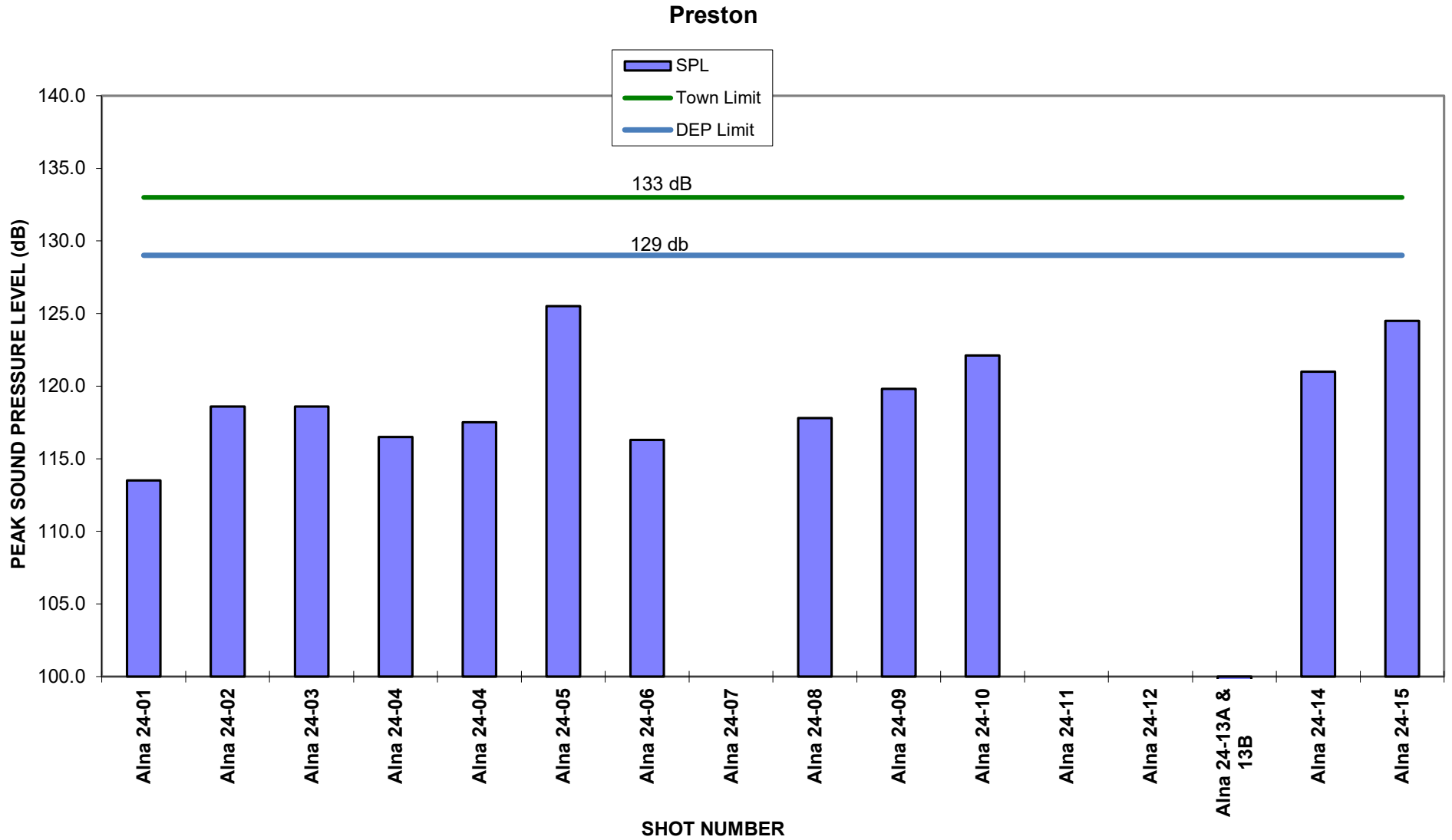
USBM RECOMMENDATIONS (RI 8507)  
 DEP RECOMMENDATION  
 TOWN LIMIT



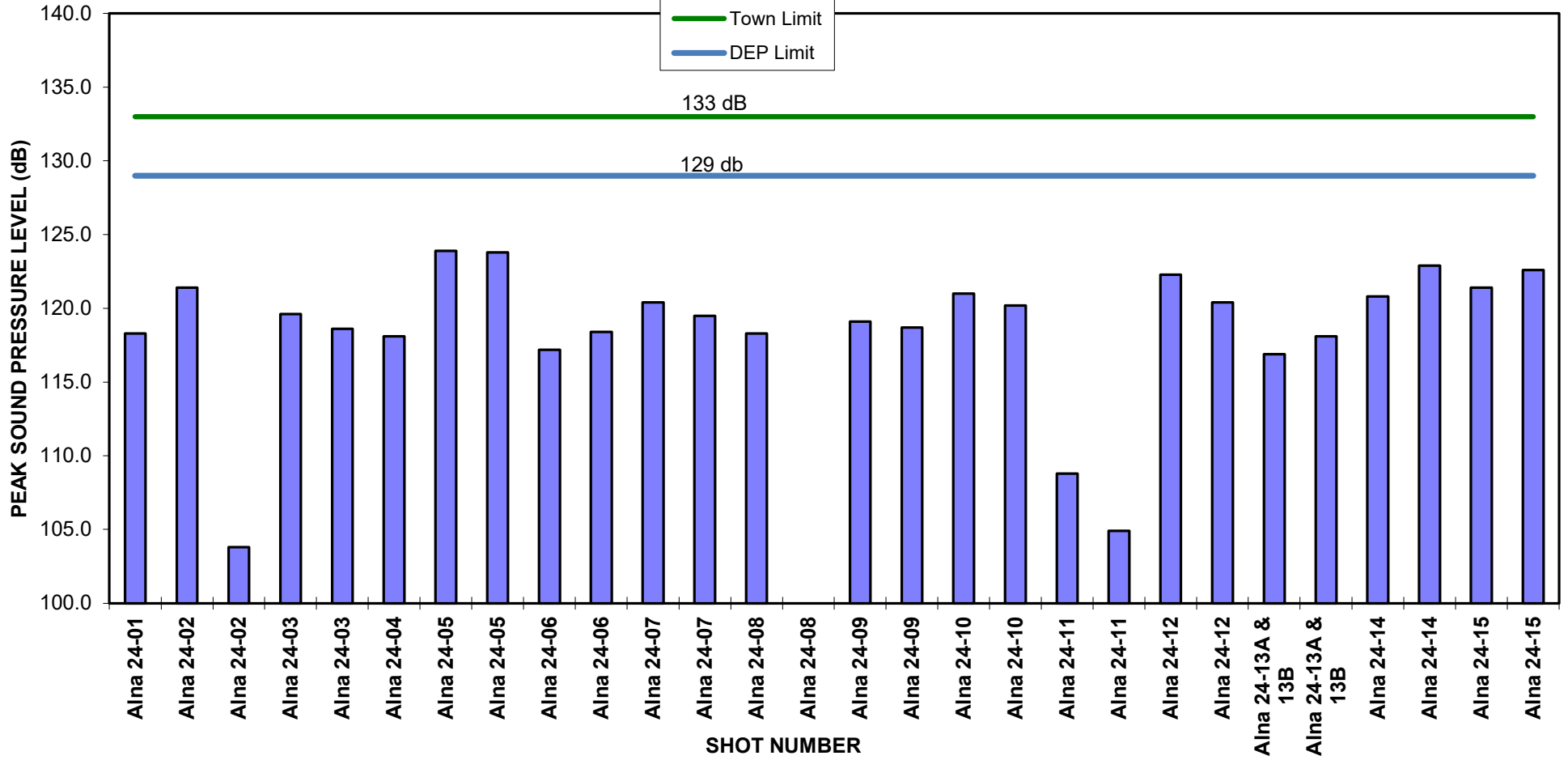
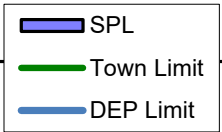




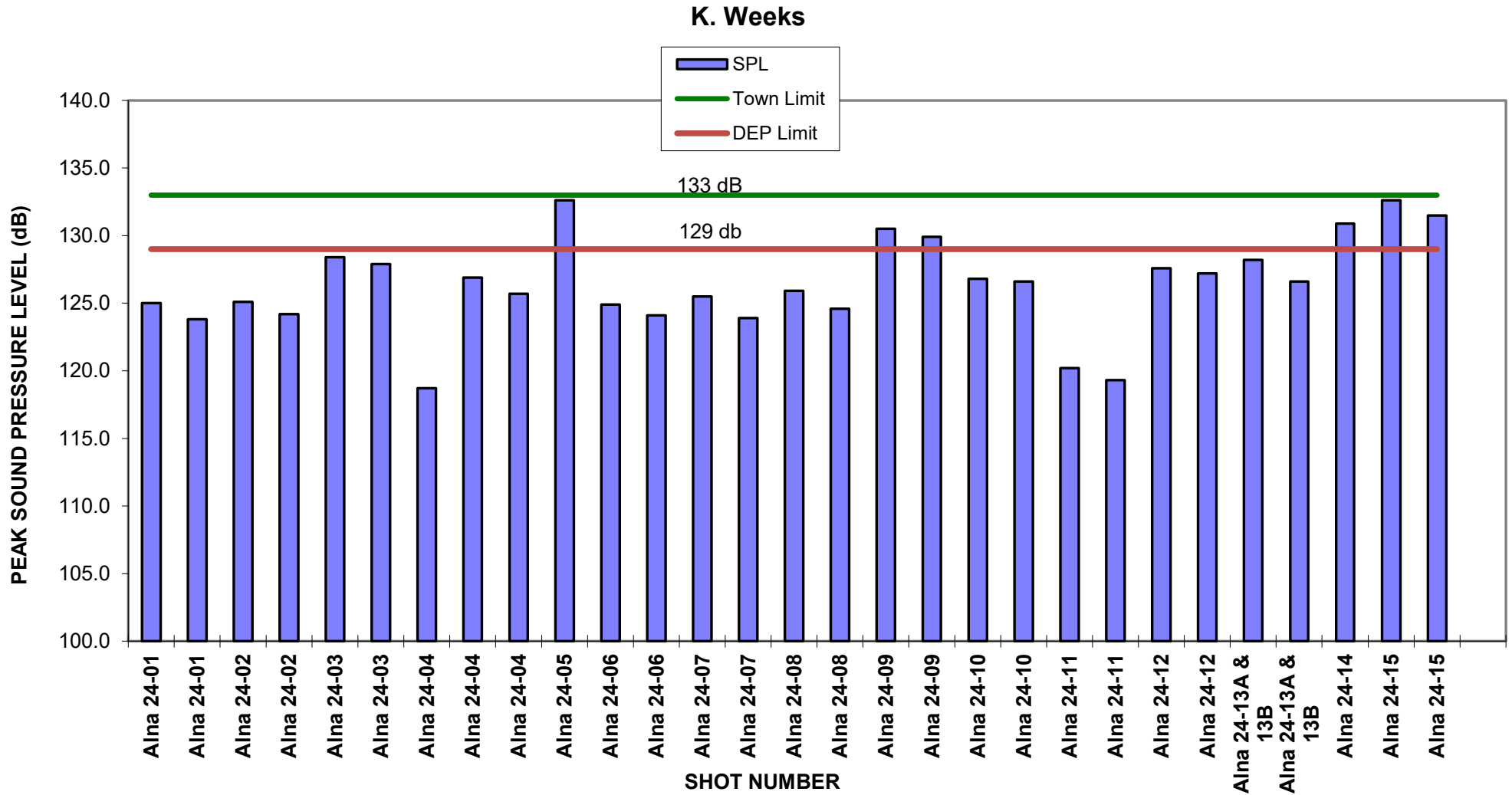
Typically two seismographs were monitoring this location, both results are shown.



**Sheehy**



Typically two seismographs were monitoring this location, both results are shown.



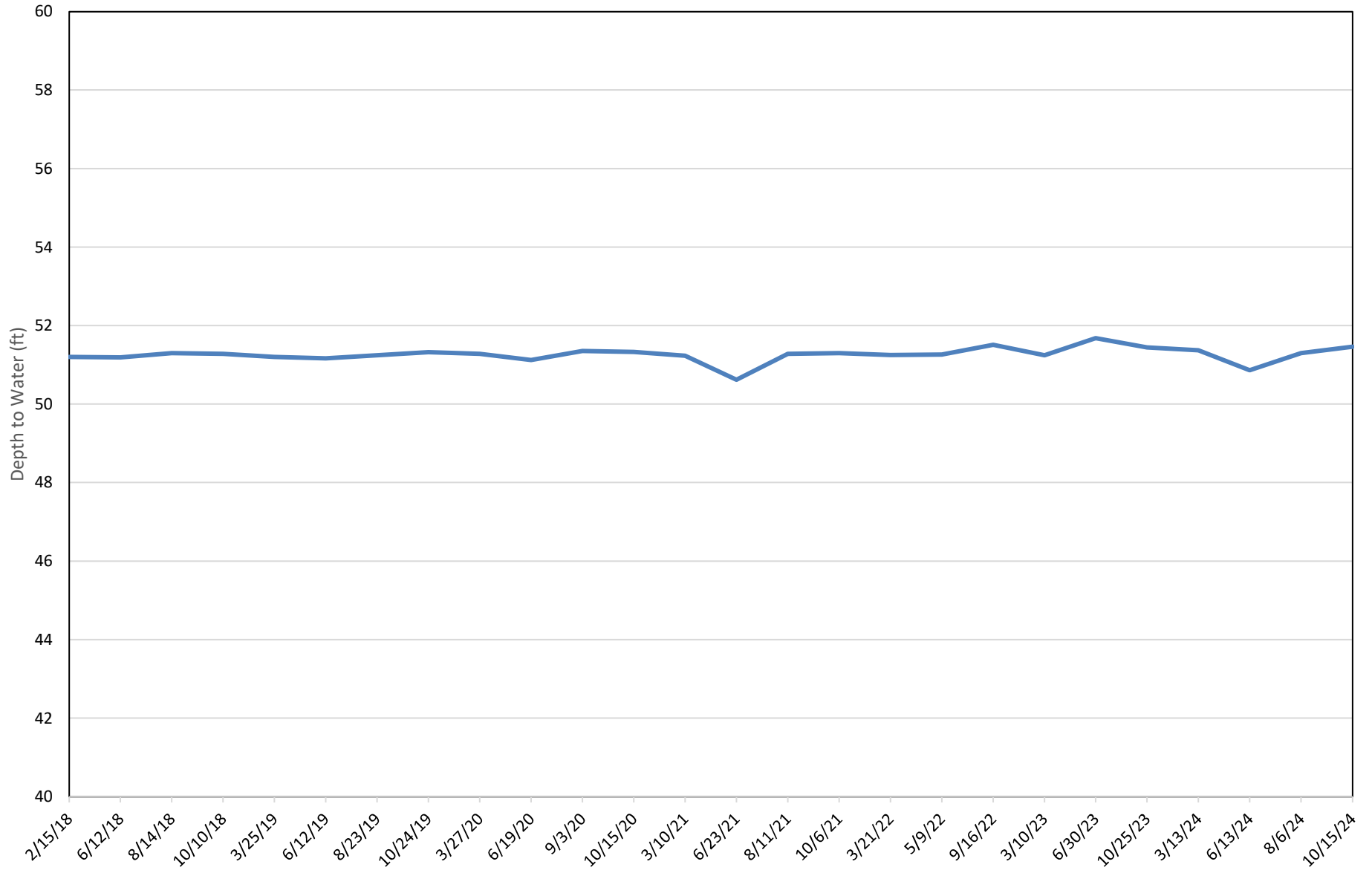
Typically two seismographs were monitoring this location, both results are shown.



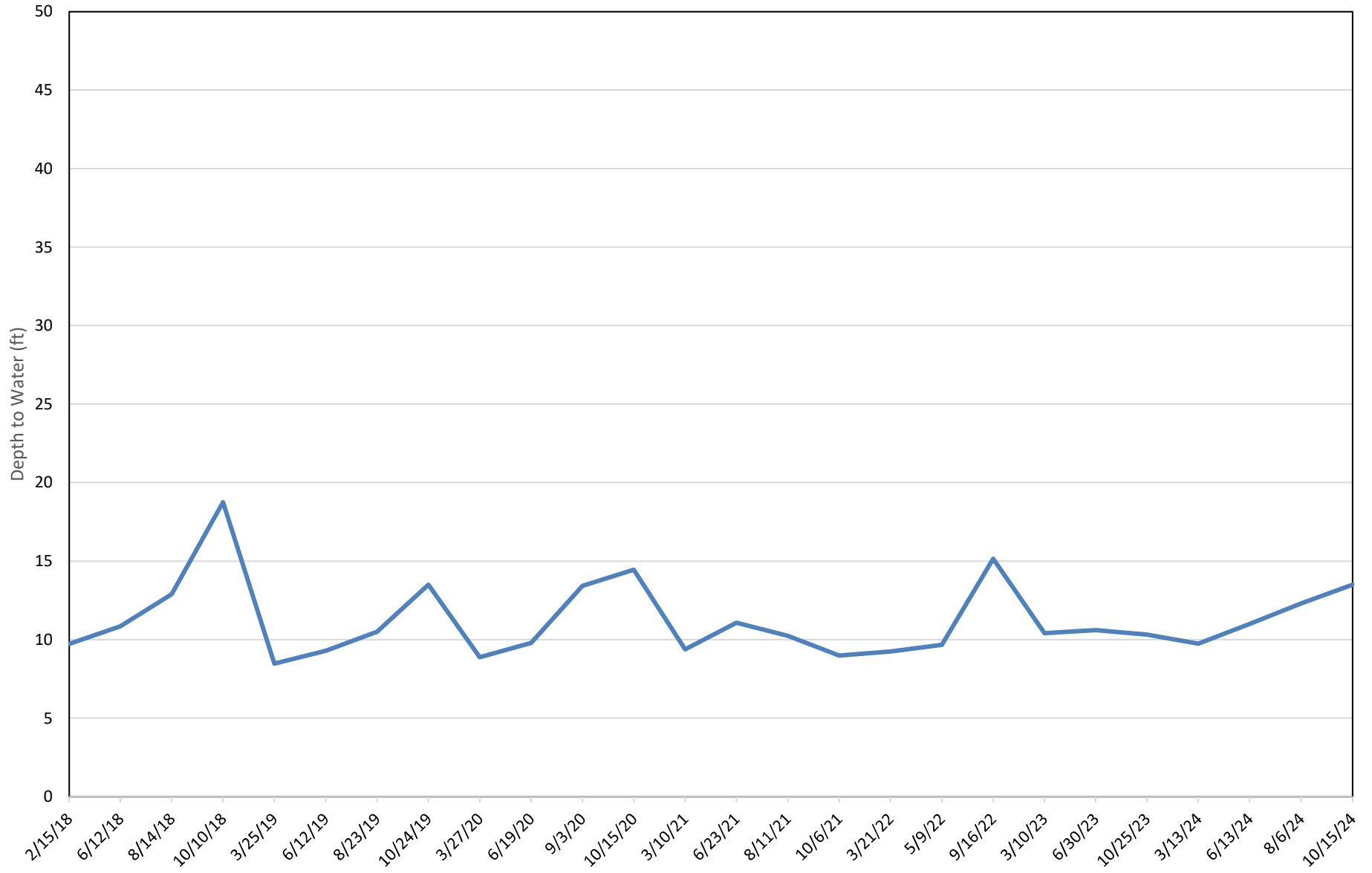
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10/17/01	51.35	14.42		
11/2/01	51.44	14.57		
11/28/01	51.39	14.48		
12/18/01	51.37	14.27		
11/9/04	52.5	15.5		
5/24/05	51.6	9.2		
11/22/07	51.8	10		
11/18/08	51.59	9.81		
12/2/09	51.5	10.2		
12/10/10	51.5	9.6		
6/6/12	51.1	8.7		
7/16/13	51.42	7.3		
10/18/13	51.22	10.35		
12/2/13	51.25	9.2		
4/10/14	50.63	8.33		
6/16/14	51.15	8.81		
10/2/14	51.16	12.81		
12/22/14	50.9	8.92		
4/13/15	50.71	8.37		
6/10/15	51.21	10.05		
8/6/15	51.1	10.96		
11/18/15	51.34	10.41		
3/29/16	51.08	8.98		
5/31/16	51.1	10.4		
8/10/16	51.24	13.23		
11/21/16	51.46	14.82		
2/13/17	51.28	13.87		
5/17/17	51	8.76		
7/25/17	51.21	12.2		
9/13/17	51.28	13.87		
12/21/17	51.31	9.44		
2/15/18	51.2	9.73		
6/12/18	51.19	10.85		

DATE	B212	B216	B-19-1	B-19-4
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10/10/18	51.28	18.75		
3/25/19	51.2	8.47		
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8/23/19	51.24	10.49	New	New
10/24/19	51.32	13.5	15.39	0
3/27/20	51.28	8.88	7.46	0
6/19/20	51.12	9.78	10.69	0
9/3/20	51.35	13.42	12.54	0.38
10/15/20	51.33	14.45	19.74	0
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6/23/21	50.62	11.07	15.76	0.27
8/11/21	51.28	10.24	13.55	0
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3/21/22	51.25	9.24	7.2	0
5/9/22	51.26	9.66	8.34	0
9/16/22	51.51	15.14	16.2	1.03
3/10/23	51.24	10.4	8.55	0.93
6/30/23	51.68	10.61	8.57	0.68
10/25/23	51.44	10.31	7.8	0.18
3/13/24	51.37	9.74	8.03	0.1
6/13/24	50.86	10.99	11.29	0.25
8/6/24	51.3	12.3	13.66	0.33
10/15/24	51.46	13.5	12.7	0.25

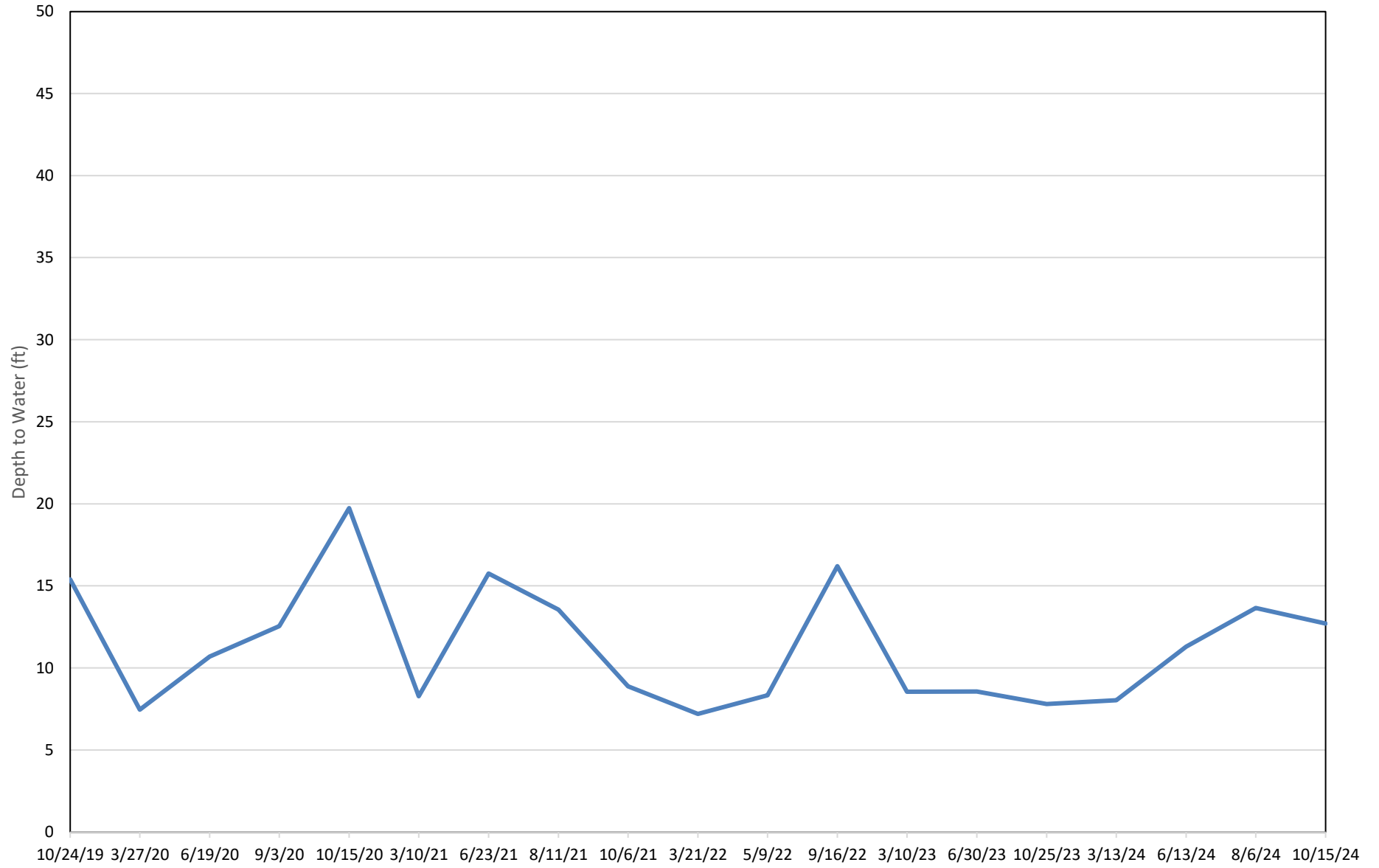
B-212



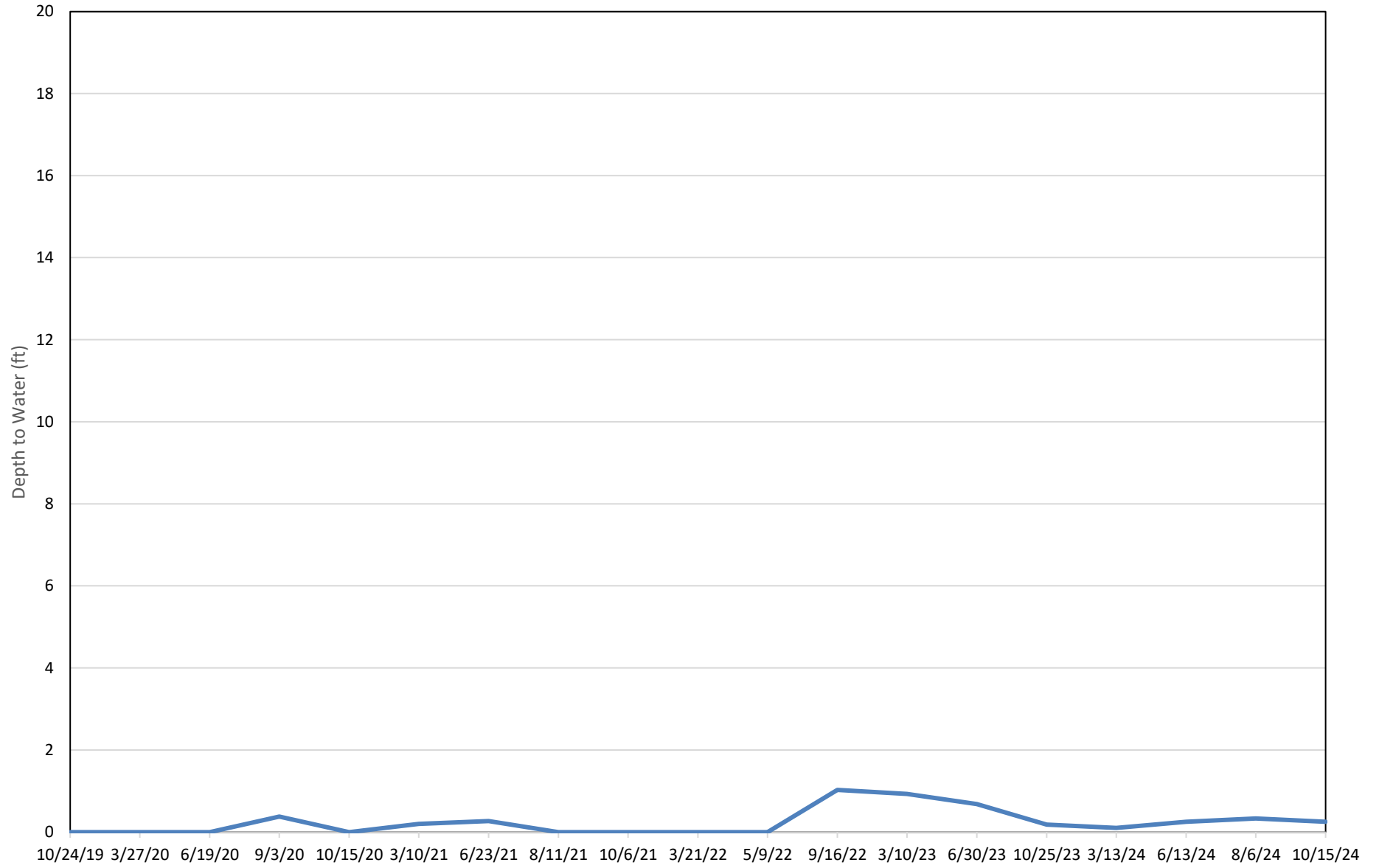
B-216

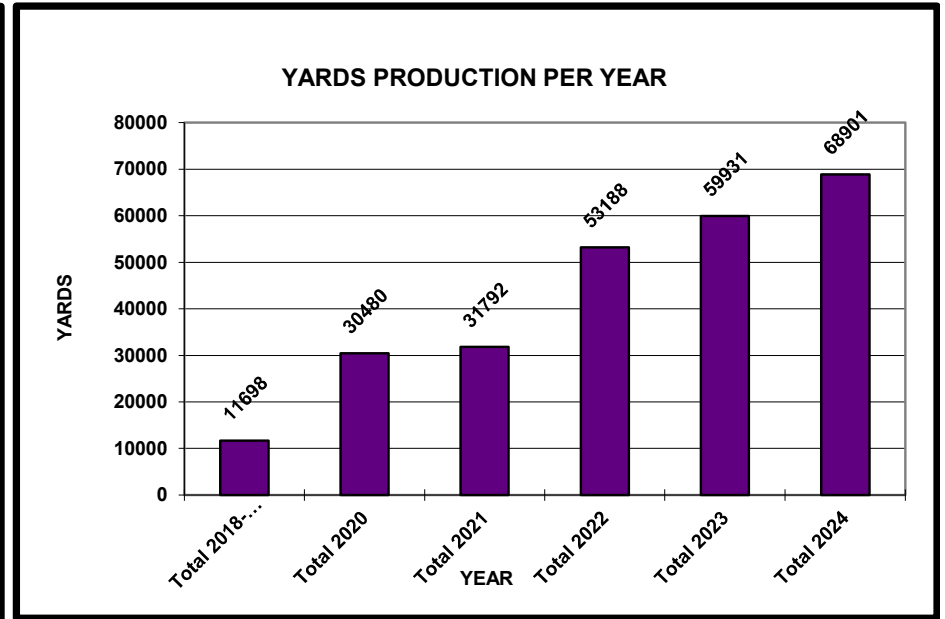
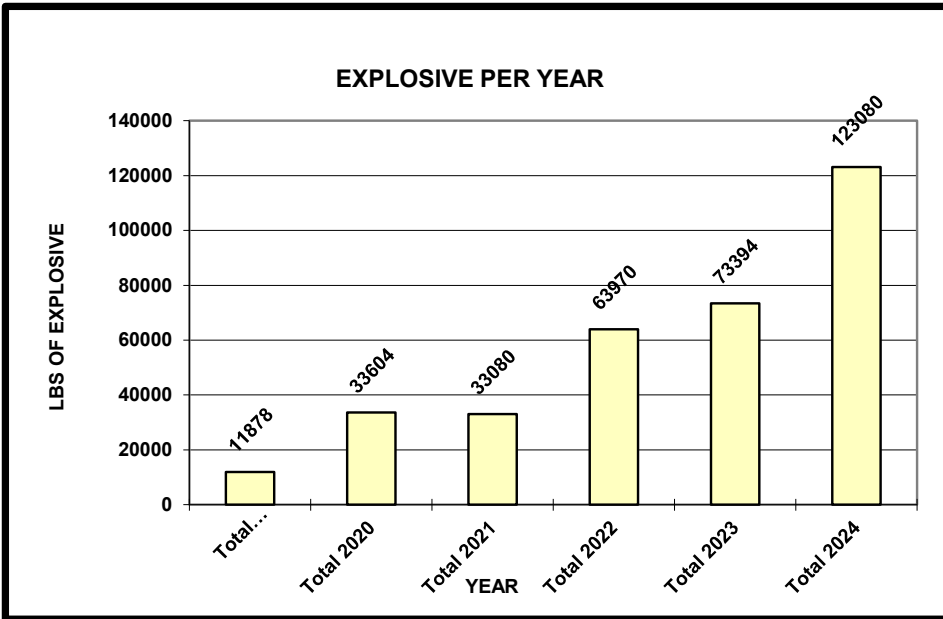
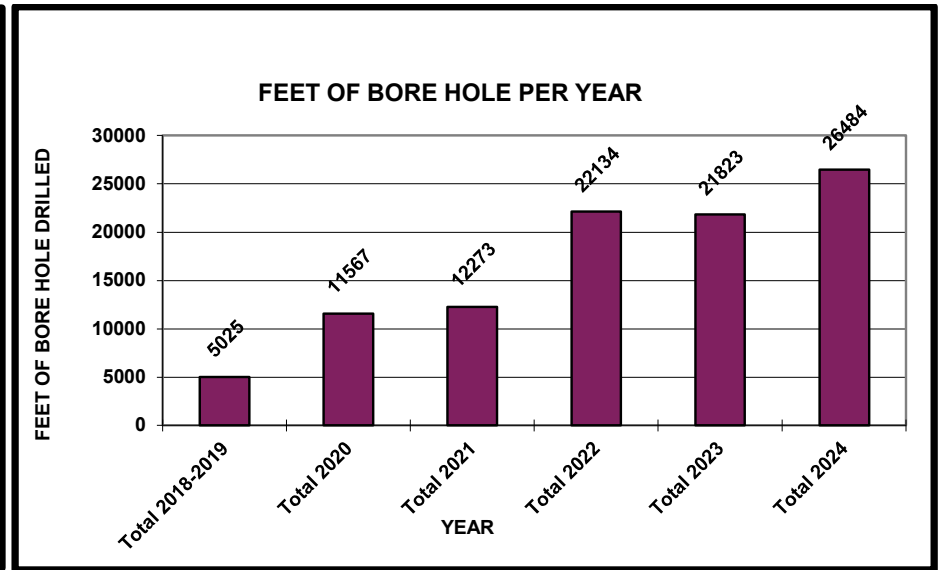
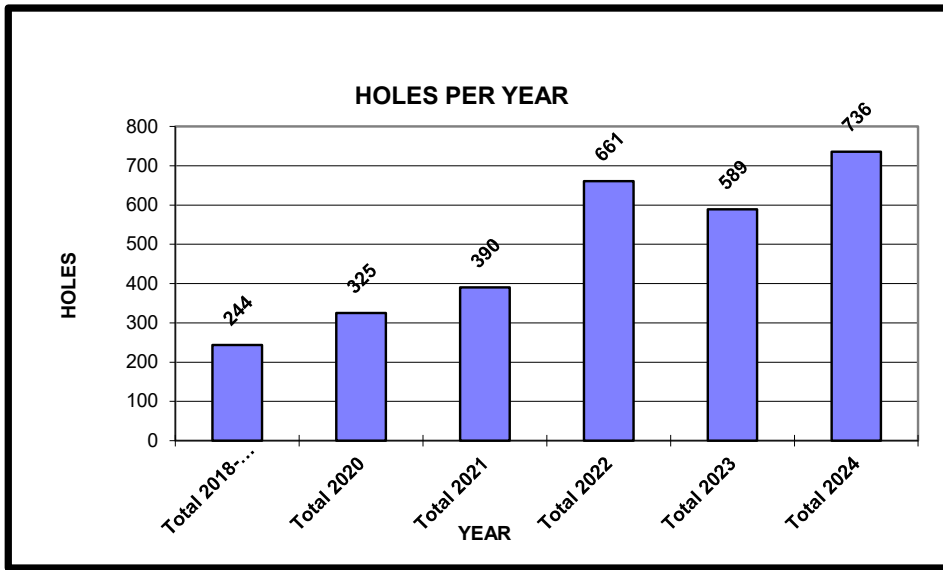


B19-1



B19-4







CROOKER CONSTRUCTION, LLC.  
APPLICATION FOR 2025 BLASTING PERMIT  
TOWN OF ALNA, MAINE

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February 4<sup>th</sup>, 2025

Town of Alna, Maine  
1574 Alna Road  
Alna, Maine 04535

Re: Crooker Construction, LLC. Blasting Application

To Whom It May Concern,

Crooker Construction, LLC. is pleased to provide the following application and explanatory documents in support of our 2025 blasting program at our quarry in Alna, Maine. This application provides information regarding blasting schedules, site plan information, description of the project (including estimated yardages), hours of blasting and current monitoring programs.

Along with this information, Crooker would like to note that all environmental and safety procedures will always be followed per industry standard practices, including spill prevention, seismograph monitoring (ground vibration), water level and water quality monitoring.

If you have any questions regarding this application, please feel free to contact us at the information listed below.

Sincerely,

*Ian Messier*

Ian Messier, P.E.  
Chief Engineer  
ian@crooker.com

Phone: (207) 729-3331  
Fax: (207) 725-0926  
Cell: (207) 720-0371

APPLICATION  
For Proposed Blasting Activities  
At the Crooker Construction, LLC Gravel Pit  
Alna, Maine

**Date of Application: February 4<sup>th</sup>, 2025**

**Permit Application Period: March 1<sup>st</sup>, 2025- March 31<sup>st</sup>, 2026**

This Application is being submitted to request permission to continue blasting activities in ledge contained in a portion of an active gravel pit located in Alna, Maine. This fulfills in part the requirement outlined in Condition 6 of the February 17, 2003 Approval issued by the Town of Alna Planning Board to Maine Gravel Services and H.C. Crooker & Sons, now known collectively as Crooker Construction, LLC. (Crooker), for the expansion of the gravel pit (Pit) located in Whitefield and Alna. Condition 6 states that Crooker must “comply with the standards set forth in the requirements of the Town of Topsham Blasting Ordinance.”, which includes submitting this Application for Planning Board approval prior to conducting blasting activities in the Pit. Crooker is familiar with the requirements of the Topsham Blasting Ordinance (Ordinance) from current operations conducted at our Pejepscot rock quarry in Topsham. As specified in the Ordinance, this Application contains information about the Applicant, the proposed blasting location and a description of the anticipated number of blasts and quantity of material to be removed, pre-blast assessment procedures, notifications, monitoring and record keeping activities.

Name of Applicant

Crooker Construction, LLC.  
P.O. Box 5001  
103 Lewiston Rd.  
Topsham, ME 04086  
(207) 729-3331

Contact: Ian Messier  
ian@Crooker.com

Name of Property Owner

Same (Crooker)

Name of Drilling/ Blasting Contractor

Drilling: Austin Powder Co. (New Hampshire Office)  
P.O. Box 6049  
Cleveland, Ohio 44194  
(216) 464-2400

Contact: Gordon Tibbetts  
Gordon.Tibbetts@AustinPowder.com

Blasting: Same (Austin Powder Co.)

Locations of the proposed blasting activity

See Figure 1, enclosed herein (Site Plan). We are proposing to blast within our Maine Department of Environmental Protection (MDEP) permitted quarry footprint, shown in yellow on the attached plan. This plan meets all required setbacks, which will be strictly followed as we determine our blast locations for 2025.

Total number of cubic yards of material to be removed by Blasting

It is estimated a maximum of 120,000CY will be removed during the permit period.

Estimate of the number of blasts required to remove the specified amount of material

Crooker is requesting a maximum (20) blast days for the proposed permit cycle. Blasting will occur on the scheduled days shown in the application (or next available good weather day). The number of blasts will not exceed what is listed in the section “hours of blasting” shown below.

Description of the project for which the blasting is being undertaken

Excavated rock will be processed (crushed and sorted) in the Pit to be used in various products for construction purposes, ranging from crushed stone, gravel and other road building materials to rip rap (larger rock for slope stabilization). Some of the processed material will be transported to our asphalt plant in Topsham for use in bituminous asphalt (pavement) mixes.

Adjacent land uses

Surrounding land use consists of woodland, agricultural (blueberry harvesting) and residential properties.

Location of adjacent structures and distance to those structures

The nearest house (K. Weeks) is approximately 620 feet from the proposed blasting area (see Figure 1). A list of nearby houses that were offered/ included in the pre-blast assessment and other monitoring activities are shown the table below:

**Table 1**

<b>Name</b>	<b>Address</b>	<b>Distance from 1-acre Quarry (Approximate)</b>
Kimberly Weeks	39 Bailey Road, Alna	620 feet
Michael and Amy Preston	36 Perry Road (off Bailey Road), Alna	2,120 feet
Clayton S. & Mary E. Jordan	8 Blueberry Lane, Whitefield	2,040 feet
Gregory D. Hodgkins	645 Wiscasset Road, Whitefield	2,500 feet
Daryl L. Hodgins	652 Wiscasset Road, Whitefield	2,400 feet
Howard & Gena Sirkel (Previously E. Lincoln)	692 Wiscasset Road, Whitefield	2,250 feet
C. Wescott III (Bo) Gallup	714 Wiscasset Road, Whitefield	2,300 feet
Elizabeth Van Lunen	743 Wiscasset Road, Whitefield	1,935 feet
Stephen M. and Ellin Sheehy	757 Wiscasset Road, Whitefield	1,970 feet

The projected dates work is to be undertaken

Work will begin upon receiving the blasting permit from the Town. This project will be a continuation of our previous blasting program and will follow a similar schedule (April 2025 thru March of 2026).

Other information to be collected (subject to discretion of Planning Board and Codes Enforcement Officer)

- (a) **Pre-blast Assessment.**  
Preblast assessments were completed in November 2018. The previously submitted summary is available on request.
- (b) **Hours of Blasting.** We propose to limit blasting to occur between the hours of 9am and 4pm, Monday thru Friday. No blasting will occur on National or State-recognized holidays. Blasting will be limited to no more than four (4) blast days per month and two (2) blasts on a given blast day.
- (c) **Blasting Notification.** Neighbors will be notified prior to each blast. A blasting schedule will be provided. However, due to weather and or production concerns, the blasting schedule may change up to the day of the blast. Neighbors will be called on the planned day and notified of the time of blast(s) or if blasting has been rescheduled to another day.
- (d) **Seismographic Monitoring.** On each blast day, seismographs will be set up outside the nearest residence and at other locations to be determined through discussions with the Planning Board and Code Enforcement Officer. Peak Particle Velocity will be limited to 0.5 in/sec (at 0-30Hz) and 1.0 in/sec (at > 30 Hz) at monitoring locations and air blast overpressure must not exceed 133 DB (linear) on a two Hz high-pass system.
- (e) **Turbidity Testing.** No requests were received for turbidity testing in 2024.
- (f) **Proof of Liability Insurance.** A Certificate of Liability Insurance, naming the Town of Alna as "additional insured", is enclosed with this Application.
- (g) **Recordkeeping.** Records will be maintained and made available to the Code Enforcement Officer for review at any time.

Application Submitted By:



Ian J. Messier, P.E.  
Chief Engineer  
Crooker Construction, LLC



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

10/04/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

**IMPORTANT:** If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

<b>PRODUCER</b> Cross Insurance-Manchester 1100 Elm Street  Manchester NH 03101	<b>CONTACT NAME:</b> Kelley Massey <b>PHONE (A/C, No, Ext):</b> (603) 669-3218 <b>FAX (A/C, No):</b> (603) 645-4331 <b>E-MAIL ADDRESS:</b> manch.certs@crossagency.com  <table style="width:100%; border-collapse: collapse;"> <tr> <th style="width:80%;">INSURER(S) AFFORDING COVERAGE</th> <th style="width:20%;">NAIC #</th> </tr> <tr> <td><b>INSURER A:</b> Continental Western Ins Co</td> <td>10804</td> </tr> <tr> <td><b>INSURER B:</b> Acadia Ins Co.</td> <td>31325</td> </tr> <tr> <td><b>INSURER C:</b></td> <td></td> </tr> <tr> <td><b>INSURER D:</b></td> <td></td> </tr> <tr> <td><b>INSURER E:</b></td> <td></td> </tr> <tr> <td><b>INSURER F:</b></td> <td></td> </tr> </table>	INSURER(S) AFFORDING COVERAGE	NAIC #	<b>INSURER A:</b> Continental Western Ins Co	10804	<b>INSURER B:</b> Acadia Ins Co.	31325	<b>INSURER C:</b>		<b>INSURER D:</b>		<b>INSURER E:</b>		<b>INSURER F:</b>	
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<b>INSURER D:</b>															
<b>INSURER E:</b>															
<b>INSURER F:</b>															
<b>INSURED</b>  Crooker Holdings LLC; Crooker Construction LLC; Precast of Maine; Crooker Realty/Equipment LLC; Harry C. Crooker & Sons Inc.; Precast Concrete Products of Maine Inc PO Box 5001 Topsham ME 04086															

**COVERAGES**

CERTIFICATE NUMBER: 24-25 GL, BA &amp; Umb

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS				
A	<input checked="" type="checkbox"/> <b>COMMERCIAL GENERAL LIABILITY</b>  <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR  GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC OTHER:			CPA5616121-10	10/09/2024	10/09/2025	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 Electronic Data Liability \$ 100,000				
A	<b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS ONLY <input type="checkbox"/> NON-OWNED AUTOS ONLY <input checked="" type="checkbox"/> CA9948 <input checked="" type="checkbox"/> MCS-90			CAA5616165-10	10/09/2024	10/09/2025	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ \$				
B	<input checked="" type="checkbox"/> <b>UMBRELLA LIAB</b> <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> <b>EXCESS LIAB</b> <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input checked="" type="checkbox"/> RETENTION \$ 0			CUA5616166-10	10/09/2024	10/09/2025	EACH OCCURRENCE \$ 10,000,000 AGGREGATE \$ 10,000,000 \$ <table style="width:100%;"> <tr> <td style="width:15%;"></td> <td style="width:15%;">PER STATUTE</td> <td style="width:15%;">OTH-ER</td> <td></td> </tr> </table> E.L. EACH ACCIDENT \$ E.L. DISEASE - EA EMPLOYEE \$ E.L. DISEASE - POLICY LIMIT \$		PER STATUTE	OTH-ER	
	PER STATUTE	OTH-ER									
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input type="checkbox"/> Y / N <input checked="" type="checkbox"/> N / A (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below										

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Re: Blasting permit at rock quarry in Alna. Town of Alna, ME is included as additional insured with respects to the CGL as required by executed written contract with the above named insured. Refer to attached policy forms.

**CERTIFICATE HOLDER****CANCELLATION**

Town of Alna, ME 1568 Alna Road  Alna ME 04535	<p>SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.</p> <p>AUTHORIZED REPRESENTATIVE</p>
---	--

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## Alna Quarry Abutters List Updated 1/13/2025

### TOWN MAP LOT NUMBERS AND OWNER:

<b>R6-28-0</b>	Kimberly J. Weeks 39 Bailey Road Alna, Maine 04535	<b>001-036,</b>	Gregory D. Hodgkins, 645 Wiscasset Road Whitefield, Maine 04353	
<b>R6-21-B</b>	Michael A. & Amy O. Preston P.O. Box 47 Alna, Maine 04535 (36 Perry Road)	<b>001-052 &amp;</b>	Daryl L. Hodgkins <b>001-055</b>	652 Wiscasset Road Whitefield, Maine 04353
<b>001-001</b>	Stephen M. & Ellin Sheehy 757 Wiscasset Road Whitefield, Maine 04353	<b>001-056</b>	Howard & Gena Sirkel 692 Wiscasset Road Whitefield, Maine 04353	
<b>001-002</b>	Elizabeth Van Lunen 743 Wiscasset Road Whitefield, Maine 04353	<b>001-057-4</b>	C. Westcott Gallup 714 Wiscasset Road Whitefield, Maine 04353	
<b>001-003</b>	Hanna Barrington Turnbull 735 Wiscasset Road Whitefield, Maine 04353	<b>001-058 E</b>	Hallis A. Thayer II 7 Petticoat Acres Lane Whitefield, Maine 04353	
<b>001-009 &amp;</b>	Clayton S. & Mary E. Jordan			
<b>001-011</b>	8 Blueberry Lane Whitefield, Maine 04353			

Thank you,  
Shoshanna Starks  
Project Engineer  
(207) 729-3331 Ext. 1131  
[Shoshanna@Crooker.com](mailto:Shoshanna@Crooker.com)

[info@crooker.com](mailto:info@crooker.com)

[www.crooker.com](http://www.crooker.com)

GENERAL CONTRACTORS (207) 729-3331  
PAVING DIVISION (207) 729-5511

ENGINEERING FAX (207) 725-0926  
OFFICE FAX (207) 725-4025

**WE ARE AN AFFIRMATIVE ACTION - EQUAL OPPORTUNITY EMPLOYER**

January 22, 2025

Alna Quarry Abutters

Re: Crooker Construction Quarry Alna, Maine  
Tuesday February 4<sup>th</sup> Meeting to Discuss Blasting Permit Renewal

To Whom It May Concern,

Crooker Construction, LLC. will be attending the Alna Planning Board meeting scheduled for **Tuesday February 4<sup>th</sup>, 6:00pm** to renew their blasting permit and discuss and feedback you may have as an abutter. This meeting will be held at the Alna Town Office at 1574 Alna Road in Alna.

We will be there to explain our plans and answer any questions you may have. You are also welcome to contact us anytime at the phone number or email listed below.

Sincerely,

*Shoshanna Starks*

Shoshanna Starks  
Project Engineer  
Office: (207) 729-3331 x1131  
Shoshanna@Crooker.com

[info@crooker.com](mailto:info@crooker.com)

[www.crooker.com](http://www.crooker.com)

GENERAL CONTRACTORS (207) 729-3331  
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ENGINEERING FAX (207) 725-0926  
OFFICE FAX (207) 725-4025

**WE ARE AN AFFIRMATIVE ACTION - EQUAL OPPORTUNITY EMPLOYER**

Wiscasset Newspaper 250123

Lincoln County News 250123

Kennebec Journal 250122 - 250124

## Notice of Public Meeting

Crooker Construction, LLC. will be attending the February 4<sup>th</sup> Alna Planning Board meeting at 6:00pm to discuss their blasting permit renewal.

The meeting will be held at the Alna Town Office at 1574 Alna Rd. in Alna.

Please contact Shoshanna Starks at [Shoshanna@crooker.com](mailto:Shoshanna@crooker.com) or (207) 729-3331x1131 with any questions.

[info@crooker.com](mailto:info@crooker.com)

[www.crooker.com](http://www.crooker.com)

GENERAL CONTRACTORS (207) 729-3331  
PAVING DIVISION (207) 729-5511

ENGINEERING FAX (207) 725-0926  
OFFICE FAX (207) 725-4025

**WE ARE AN AFFIRMATIVE ACTION - EQUAL OPPORTUNITY EMPLOYER**



Dear Neighbor,

In accordance with the blasting ordinance, section [6] [A], Crooker Construction, LLC. is required to give written notice of our intent to commence blasting operations at our Alna quarry.

We will continue blasting operations at Alna quarry on **Tuesday, March 25, 2025; weather permitting.**

The blasting is scheduled to take place twice each month for the remainder of the season. In accordance with section [6] [1], a description of the blasting signals is as follows:

- \*\*\*Three (3) horns indicates five (5) minutes until blast
- \*\*Two (2) horns indicates one (1) minute until blast
- \*One (1) horn indicates that the blast is complete and serves as an all clear.

A notification of blasting will be published in the local newspaper approximately ten (10) days prior to each blast. This schedule has been given to the local newspaper.

In accordance with the blasting ordinance, if you wish to be further notified about each individual blast, we have a phone list that we call the **morning of the scheduled blast** with an estimated time and would be more than happy to add anyone to this list. We will need your telephone number and your name and mailing address for our records. Anyone not wishing to be notified can be removed from the call list if they wish. Please let us know and we will remove you from the list.

**Calls will be made on every scheduled blast day even when weather or other events cause us to cancel.** If canceled, we may try the next good day or when product is available. There will be times a date might be skipped for whatever reason. If you do **not** want to be called if a blast has been cancelled, please let us know.

If you have any concerns or questions about our Alna quarry operation at any time please give us a call.

Respectfully,

**Scott Bernier**

Aggregate Manager

[info@crooker.com](mailto:info@crooker.com)

[www.crooker.com](http://www.crooker.com)

GENERAL CONTRACTORS (207) 729-3331  
PAVING DIVISION (207) 729-5511

ENGINEERING FAX (207) 725-0926  
OFFICE FAX (207) 725-4025

**WE ARE AN AFFIRMATIVE ACTION - EQUAL OPPORTUNITY EMPLOYER**

**Crooker Construction, LLC**  
**Dates for 2025**

**Alna Quarry**

Tuesday, March 25<sup>th</sup>

Tuesday, April 8<sup>th</sup>  
Tuesday, April 22<sup>nd</sup>

Tuesday, May 13<sup>th</sup>  
Thursday, May 29<sup>th</sup>

Tuesday, June 10<sup>th</sup>  
Tuesday, June 24<sup>th</sup>

Tuesday, July 8<sup>th</sup>  
Tuesday, July 22<sup>nd</sup>

Tuesday, August 12<sup>th</sup>  
Tuesday, August 26<sup>th</sup>

Tuesday, September 9<sup>th</sup>  
Tuesday, September 23<sup>rd</sup>

Tuesday, October 14<sup>th</sup>  
Tuesday, October 28<sup>th</sup>

Tuesday, November 11<sup>th</sup>  
Tuesday, November 25<sup>nd</sup>

Thursday, December 4<sup>th</sup>  
Thursday, December 11<sup>th</sup>

[info@crooker.com](mailto:info@crooker.com)

[www.crooker.com](http://www.crooker.com)

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