

Rocky Mountain Materials & Asphalt, Inc
Red Canyon Quarry
Blasting Plan

RECEIVED

JAN 21 2016

DIVISION OF RECLAMATION
MINING AND SAFETY

The onsite Foreman will follow the following plan when blasting is to be initiated at Rocky Mountain Materials' Red Canyon Quarry site.

1. Blasting Schedule.

- Notification to Blasting Company
- Scheduled Blast Date: 1-11-2016
Time: 2:00

2. Notification of Outside Agencies. (Minimum 72 hrs. prior to blast event).

- Colorado Division Of Reclamation, Mining & Safety
Tim Cazier 303-866-3567 Ext. 8169
- Ken Bishop (Adjoining Property Owner)
Email: ken@kidlynx.com
- Additional Notification

Taken Care of by Tom Smith

- A. _____
B. _____

3. Ground Control. Radio communication will be maintained at all times between the site foreman and the lead blaster.

- Safety Briefing with Blasting Crew
Date: 1-11-2016 Time: 8:00AM
Foreman: JD Blaster: Don Shoemaker
- Access to Blast area closed
Time: 8:00 BY: JD
- Mine site cleared and access closed
Time: 2:30 BY: JD
- Blast Initiation
Time: 2:54 By: JD
- Blast Area Cleared
Time: 3:00 By: JD

4. Blast Report: The blast report will be completed by the Certified blaster in charge of the event and will include, at minimum, the following information.

A. Mine Site

Date

Time

Location of Blast: To include GPS coordinates of the initiation point

B. Weather Conditions

C. Number Of Holes

Diameter

Depth

D. Size Of Blast

Tonnage

Hole Spacing/ Burden

E. Explosives:

Amount Used

Stemming Depth

Number of Delays

F. Seismograph Recording

All Blasting will be recorded at the site

A minimum of one seismograph will be placed at a location chosen by the pit operator.

When available, a second unit will be placed at a location chosen by the lead blaster.

All blasting at the Red Canyon Quarry site will occur between the hours of 8:00 AM & 3:00 PM

Efforts will be made to avoid blasting during adverse weather conditions.

All blast reports and seismograph recordings will be turned in, and stored, Rocky Mountain Materials main office Located at 1910 Rand Ave. Colorado Springs, Colorado 80905.

Buckley Powder Co.

BLAST REPORT


 SERVICE SITE LOCATION: Louviers ORDER NO.: 7402794

 BLAST NUMBER: 1-2016 BLAST TIME: 2:52 pm BLAST DATE: 01/12/2016
 CUSTOMER: ROCKY MOUNTAIN MATERIA MINE: ROCKY MOUNTAIN MATERIA ADDRESS: Colorado Springs, CO
 ROCK TYPE: Granite Tons/Yd3: 2.00 EXPECTED VIBRATION: 0.000

LOCATION OF BLAST

 LOCATION OF BLAST IN MINE: North BENCH: Bench 1
 BLAST GPS POINTS: N 038 36.43800 & W -104 56.75400

WEATHER

 WEATHER: Clear CEILING: Medium TEMPERATURE: 38 WIND DIRECTION & SPEED: Northeast 5

NEAREST NON-OWNED STRUCTURE

 NAME: ROCKY MOUNTAIN MATERIALS GPS Points: N 038 36.45900 & W -104 56.63400
 DISTANCE: 1,500 Ft DIRECTION: 77°

SEISMOGRAPH DATA

LOCATION		DISTANCE		GPS POINTS		CALIBRATION DATE	
1	ROCKY MOUNTAIN MAT	1,500	Ft	N 038 36.45900	& W -104 56.63400	02/09/2015	
	L (F)	T (F)	V (F)	AIR (db)	SEISMOGRAPH	SERIAL	OPERATOR
1	0.096	12	0.083	16	0.068	27	121
					BA 9241	BA 9241	Farmer, Jimmie

BLAST DATA

NUMBER OF HOLES (EA)		EXPLOSIVES SIZE, TYPE & WEIGHT	
HOLE DIAMETER (IN)	4.5	SIZE	TYPE
HOLE DEPTH (FT)	33.75	0.44	SPARTAN 200
FACE HEIGHT (FT)		0.75	SPARTAN 350
SUB DRILLING (FT)	0	BULK	TITAN 1000 XL
AVG. STEM FACE HOLES (FT)			
STEM OTHER HOLES (FT)	15		
BURDEN FRONT ROW (FT)			
BURDEN OTHER ROWS (FT)	12		
SPACING FRONT ROW (FT)			
SPACING OTHER ROWS (FT)	12		
		TOTAL WEIGHT: 25,700.63	

DETONATORS USED IN BLAST: Non-ElectricMATS USED: NoSTEM TYPE: 3/4 x 1/2 CRUSHED

TYPE	MFG	DATE CODE	USED	TYPE	MFG	DATE CODE	USED
SPARTAN 350	Dyno Nobel Global	03JU15	178	SPARTAN 200	Dyno Nobel Global	09SE15	114
MS 350 50FT	Dyno Nobel Global	10AU15	33	EZTL 42MS 20FT	Dyno Nobel Global	17AU15	7
EZTL 67MS 30 FT	Dyno Nobel Global	20JY15	14	EZDET 25/350 40 FT	Dyno Nobel Global	26OC15	124
MS 350 40FT	Dyno Nobel Global	28SE15	80	EZDET 25/350 30 FT	Dyno Nobel Global	30OC15	55
LEADLINE 2500FT	Dyno Nobel Global	31AU15	250				

CU YDS IN SHOT: 31,860 SCALED DISTANCE FACTOR: 87% OF ANFO: 0TONS IN SHOT: 63,720HOLES/DELAY: 2FUEL OIL % (BULK): 0MAX LBS/DELAY: 291AVERAGE LBS/HOLE 145POWDER FACTOR (TONS/LB): 2.48POWDER FACTOR POUNDS/YD3: 0.81BLASTERS NAME: Shoemaker, Don/SBLASTERS NUMBER & STATE: 1-001-01636BLASTERS SIGNATURE: [Signature]SITE SAFETY INSPECTION PERFORMED: NoNUMBER OF PERSONNEL ON SITE: 7REMARKS: Shot good, no anomalies, no loud air overpressure. Had 4 bad holes, 33.75' avg. 12' stem avg.

START TIME	END TIME	TOTAL TIME	TRUCK NUMBERS
7:45 AM	12:50 PM	05:05	5013

Date: 11-16 Location: Rocky Mt shot #: 1



BLASTER'S CHECKLIST

Must be filled out as you go

yes / no / NA	PRE-TRIP CHECKLIST
✓	Measuring Tapes and lead ends
✓	Burden pole
✓	Paperwork and Hold Harmless
✓	Splices
✓	Starter and primers
✓	Blasting Signs & cones
✓	Sirens in working order
✓	Seismographs
✓	Paint
✓	Set back Stakes
✓	camera and tape for specific acct.

yes / no / NA	
✓	Drillers log (if faxed prior to shot)
✓	Shot reports
✓	Load - blocked and braced
✓	Loading Poles / T Bars
✓	Density Cup and Scales
✓	Two Way Radios
✓	Radios fully Charged
✓	Wheel Chocks
✓	Harness & Lanyard
✓	First Aid Kits
✓	PPE

yes / no / NA	PRESHIFT CHECKLIST
✓	Inspect blast area for Unsafe Working Conditions (including face) for voids, cracks, caves, etc..
✓	Ensure all employees have their site specific training.
✓	Secure blast site with warning signs and cones (including floor in front of face)
✓	Mark fall zone area at least six(6) feet from the crest
✓	Inspect Harness/ Lanyard before each use if needed for fall zone or top of trucks
✓	All equipment - back up alarms operational
✓	Measure front row burden with burden pole or profiler
✓	Check drill log and all holes for proper depth and blockage
✓	Insure all needed products are present-enough boosters, detonators etc
✓	Insure blast design is consistent with closest structures requirements
✓	Check shot access including traffic activity
✓	Any need for calling assistance (Hold Harmless, equipment to close, drilling problems, etc...)
✓	Conduct pre-blast safety meeting with blast crew and customer blast coordinator (include names below)
	<u>Don Bruce Patrick Luke MATT B DAN</u>
	Items covered <u>2" snow, and warning to 45,</u>
	<u>Keep Good Control of Gassing</u>

yes / no / NA	TIE-IN CHECKLIST
✓	Shot tie inspected and signed off by two persons prior to shot including lead line (include names below)
	<u>JDZ</u> <u>RDS</u>
✓	Blast area is cleared and blocked before attaching starter cap and lead line
✓	Blaster in charge in communication with all guards at this time
✓	Blaster in charge will insure blast area has been cleared and guarded before the siren is sounded
✓	After proper waiting time blaster in charge will contact all guards before firing blast
✓	Seismograph located at nearest off site structure or at the Property Line
✓	Was the shot video taped
	Reason for not videoing:

yes / no / NA	POST BLAST CHECKLIST
✓	Maintain guards until shot is cleared and "all clear" is sounded
✓	Check for misfires, undetonated explosives or burning product and other dangers
✓	Sound all clear that is audible to all parties
✓	Dispose of lead line in approved manner
✓	Dispose of empty boxes in approved methods only
	Complete all paper work prior to leaving site- delivery ticket, return bill of lading Blaster's checklist
<u>1.05</u>	cup densities 1st 2nd 3rd Final Density
✓	Amount of water used in repump operations
✓	Make one final check of blast site before leaving property to insure no materials have been left
✓	and that no hazards are present that may have been missed during clearing process

Must be completed and turned in daily

Blaster In Charge

Don Shure M.B.



Bucley

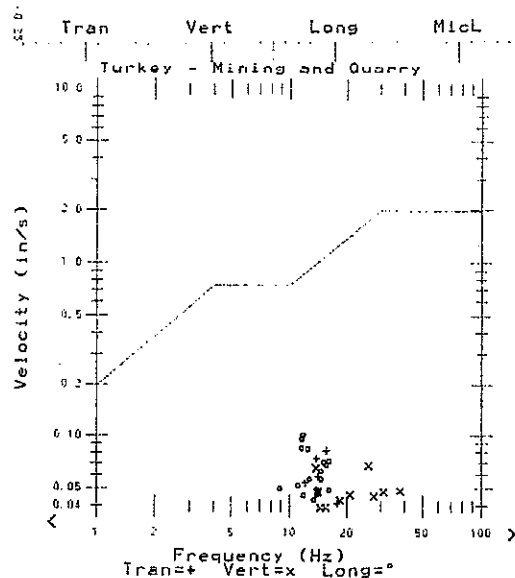
INSTANTEL BlastMate III

Serial Number BA9241 V 10.72-0.17
Trigger Source Geo 0.00700 in/s
Geo Range Mic 130.0 dB(L)
Record Time 1.25 in/s
Location: Rocky MT 3.0 s at 1024 sps
Shot#01-2016 Colorado springs CO
Holes: 176
USER: JO

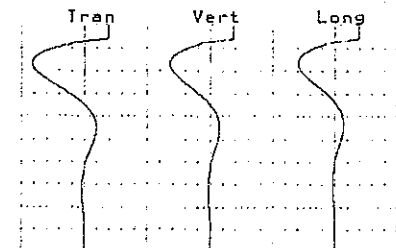
Pattern: 12x12
Scaled Distance 1500.0 ft., 445.0 lb.,
71.1

Trigger Long at 02:53:21 PM Jan 11 16

	Tran	Vert	Long
PPV	0.0825	0.0681	0.0962 in/s
ZC Freq	16	16	12 Hz
Time	0.826	0.707	0.845 sec
Accel	0.0282	0.0530	0.0282 g
Pk Disp	0.00084	0.00054	0.00121 in
PVS	0.107 in/s at 0.854 Sec		
PSPL	121.2 dB(L) at 1.688 Sec		
	8.8 Hz		



SENSORCHECK CALIBRATION



FI=7.2 OT=4.1 FV=7.2 OV=4.2
FL=7.6 OL=4.0 FM=20.1 PM=552
Tran, Vert, Long, MicL Passed
Battery Level: 6.3 Volts

Calibration Name Instantel
Calibration December 24, 2015
Format Copyrighted 1996-2010 Instantel

Date/Time Vert at 19:53 January 11, 2016
Trigger Source Geo: 0.630 mm/s, Mic: 5.90 pa.(L)
Range Geo: 31.7 mm/s
Record Time 30.0 sec at 1024 sps
Job Number: 1

Serial Number BC6736 V 10.72-8.17 MiniMate Plus
Battery Level 6.2 Volts
Unit Calibration September 18, 2015 by InstanTel
File Name __TEMP.EVT

Notes

Location: Red Canon Scalehouse
Client: Matheson Mining Ltd.
User Name: Tech: 14
General: Tests

Microphone Linear Weighting
PSPL 9.00 pa.(L) at 20.187 sec
ZC Freq 5.8 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 687 mv)

	Tran	Vert	Long	
PPV	1.60	1.08	1.10	mm/s
ZC Freq	2.0	12	3.0	Hz
Time (Rel. to Trig)	19.349	18.663	7.786	sec
Peak Acceleration	0.0315	0.0215	0.0298	g
Peak Displacement	0.134	0.0884	0.0410	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.2	7.5	7.4	Hz
Overswing Ratio	4.0	3.5	3.7	

Peak Vector Sum 1.87 mm/s at 19.349 sec

USBM RI8507 And OSMRE

