

SAN RAFAEL ROCK QUARRY VIBRATION REPORT

BLAST INFORMATION
 Location: South Hill El-75' Max. Charge Weight: 175 Date of Blast: 1-14-11
 Northing: 37° 59' 04 N Blast Duration: 400 MS Time of Blast: 12:19
 Easting: 122° 27' 22 W Blast Number: 1842

SEISMOGRAPH INFORMATION		UNIT 2		UNIT 3		UNIT 4	
Seismograph Model	2000	Mico	Mico	Mico	Mico		
Serial Number	2481	4550	4567	4570			
Last Calibration Date	5 10 10	5 17 10	5 17 10	5 17 10			
LOCATION INFORMATION		UNIT 2		UNIT 3		UNIT 4	
Location	Marin ag	Vicmont	San Marino	M ^c Neav			
Northing	37° 59' 19 N	37° 59' 18 N	37° 59' 31 N	37° 59' 30 N			
Easting	122° 27' 22 W	122° 27' 53 W	122° 27' 30 W	122° 27' 16 W			
Distance from Blast	1584	2851	2904	2693			
Scaled Distance	119	215	219	203			

VIBRATION INFORMATION	
Longitudinal Peak Particle Velocity (ips)	/
Longitudinal Peak Frequency (Hz)	/
Transverse Peak Particle Velocity (ips)	/
Transverse Peak Frequency (Hz)	/
Vertical Peak Particle Velocity (ips)	/
Vertical Peak Frequency (Hz)	/
Peak Vector Sum (ips)	0
Peak Air Overpressure (cb)	-

GENERAL COMMENT
Nothing triggered
 Seismograph Operator: Decon Lopez Signature: Decon Lopez

SAN RAFAEL ROCK QUARRY BLAST REPORT

BASE DATA:

Location: Scout's Hill E-175' Designed Bench Height (ft): 55' Date: 1-14-11
 Northing: 37° 59' 04" N Rock Density (lb/ft³): 2.7 Time: 12:19
 Easting: 122° 27' 22" W Relative Rock Hardness: 7 Blast Number: 1542

DESIGN DATA:

Number of Holes Shot: 23 Hole Dia. (in.): 3 1/2 Stemming (ft): 56-16 Loading Time Required (man hrs): 7 Deck Type: 5 tons
 Ave. Hole Depth (ft): 62 Burden (ft): 8 Stem Type: 3/8" 5 tons Staggered Pattern (y or n): N Length (ft): 12-18
 Relative Confinement: _____ Spacing (ft): 3 Subdrill (ft): 3 Number of Lost Holes: 1 Tons Shot: 8096

EXPLOSIVES DATA:

Bulk Explosive	Weight	Boosters	Units	Delays	Units	Misc.	Units	Max (lb/hole):
<u>Alpha Mix</u>	<u>2600</u>	<u>350 gr</u>	<u>46</u>	<u>65 ms</u>	<u>23</u>			<u>200</u>
<u>Blastex</u>	<u>280</u>			<u>30 ms</u>	<u>23</u>			<u>400 ms</u>
								<u>Total Charge Wt.: 2915</u>

VIBRATION DATA:

Nearest Structure: Maxima 29 Seismograph Loc.: Sec 10 Temperature: 56° Max. Chrg. (lb/8ms): 175
 Northing: 37° 59' 19" N Northing: _____ Sky Condition: Clear RPPV: _____
 Easting: 122° 27' 22" W Easting: _____ Wind Direction: N-E Frequency: _____
 Distance Away: 1584 Distance Away: _____ Wind Speed: 0-3 Airblast: _____

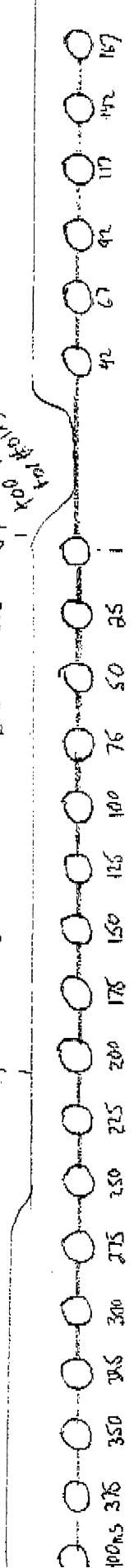
PERFORMANCE DATA:

Powder Factor (lb/ton): .4 Displacement: good Crushability: _____
 Lbf/ft³: 1.3 Vibration: Good Fines: _____
 Fragmentation: Good Dig ability: _____
 Comments: _____ Blaster in Charge: T. De la Rosa

1.14.11
 1542
 SH EN'S

Face SS

thin face. Profiled and loaded accordingly
 100 ft
 100 ft



23 Holes

23 - 65 unit ton
 23 - 80 unit ton
 46 - 350 gram

Alpha Mix 52 Bags - 2600
 Blastex 2 1/2 x 1/4 - 880 lbs

Depth - 62

3 1/2 in
 20° Angle
 175' Max
 16' stem

as little as 3 sticks per

13 wet holes

Prain 1584
 Vicmont 2851
 SM 2904
 MN 2673
 3754041N
 122 2722W



A Dyno Nobel Distributor

ALPHA EXPLOSIVES
P.O. BOX 310
LINCOLN, CALIFORNIA 95648
TELEPHONE (916) 645-3377
FAX (916) 645-8512

01/13/2011 40052

STRAIGHT
BILL OF LADING
NON-NEGOTIABLE

SOLD TO SAN RAFAEL ROCK QUARRY
1000 FT. SAN PEDRO ROAD
SAN RAFAEL, CA 94901-8312
USA

SHIP TO SAN RAFAEL ROCK QUARRY
1000 FT. SAN PEDRO ROAD
SAN RAFAEL, CA

ATF #: 9-CA-041-33-0B-00872

EXPIRATION: 8/1/10

Table with columns for item description, quantity, unit, price, and lot. Includes items like Detonators, Boosters, Ammonium Nitrate Fuel Oil, Explosive Blasting Tube, and Miscellaneous Supplies. Includes handwritten notes and a signature.

GeoSonics Inc. Seismic Analysis

Stop Event Report

Serial No: 9774 v3.23
Client: COUNTY MARIN
Operation: SAN RAFAEL ROCK QUARRY
Location: 114 SAN MARINO DRIVE
Distance:
Operator: VIBRA-TECH GSM
Comment: VERONIQUE RASKIN

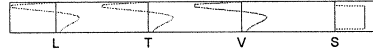
Begin Date: 01/14/2011 07:05:12 (UTC-8)
End Date: 01/14/2011 19:00:00 (UTC-8)
Events over Trigger: 0 (46-45)
Record Time: 5.0 s
Seismic Trigger: 0.030 in/s
Sound Trigger: N/A
Battery Level: 6.4

Additional Info:

j-GEO-01254
N37 59.395, W122 27.700

Shaketable Calibrated: 02/17/2010
By: Vibra-Tech, Inc.
2700 Holloway Road - Suite 113
Louisville, KY 40299 U.S.A.
TEL: 502.240.9900 FAX: 502.240.9902

Dynamic Calibration Graph:



Cal Test Results:

Longitudinal:	Pass
Transverse:	Pass
Vertical:	Pass
Sound:	Pass

The seismograph at 114 San Marino Drive (S/N 9774) did not trigger during the shot on January 14, 2011 at approximately 12:19 indicating the ground vibrations produced were below the ground trigger level of 0.030 in/sec.

GeoSonics Inc. Seismic Analysis

Stop Event Report

Serial No: 9468 v3.23
Client: COUNTY OF MARIN
Operation: SAN RAFAEL ROCK QUARRY
Location: 16 MARIN BAY PARK CT.
Distance:
Operator: VIBRA-TECH GSM
Comment: WILLIAM HOSKEN RESIDENC

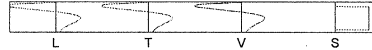
Begin Date: 01/14/2011 07:00:50 (UTC-8)
End Date: 01/14/2011 13:19:22 (UTC-8)
Events over Trigger: 0 (2-1)
Record Time: 5.0 s
Seismic Trigger: 0.030 in/s
Sound Trigger: N/A
Battery Level: 8.8

Additional Info:

j-GEO-01252
N37 59.524, W122 27.373

Shaketable Calibrated: 06/30/2010
By: Vibra-Tech, Inc.
2700 Holloway Road - Suite 113
Louisville, KY 40299 U.S.A.
TEL: 502.240.9900 FAX: 502.240.9902

Dynamic Calibration Graph:



Cal Test Results:

Longitudinal: Pass
Transverse: Pass
Vertical: Pass
Sound: Pass

The seismograph located across the street from 16 Marin Bay Park Court (S/N 9468) did not trigger during the blast on January 14, 2011 at approximately 12:19 indicating the ground vibrations produced were below the ground trigger level of 0.030 in/sec.

GeoSonics Inc. Seismic Analysis

Stop Event Report

Serial No: 9442 v3.23
Client: COUNTY MARIN
Operation: SAN RAFAEL ROCK QUARRY
Location: ON QUARRY PROPERTY
Distance:
Operator: VIBRA-TECH GSM
Comment:

Begin Date: 01/14/2011 06:00:50 (UTC-8)
End Date: 01/14/2011 13:16:04 (UTC-8)
Events over Trigger: 0 (4-3)
Record Time: 5.0 s
Seismic Trigger: 0.030 in/s
Sound Trigger: N/A
Battery Level: 8.7

Additional Info:

j-GEO-01253
N37 59.481, W122 27.256

Shaketable Calibrated: 02/17/2010
By: Vibra-Tech, Inc.
2700 Holloway Road - Suite 113
Louisville, KY 40299 U.S.A.
TEL: 502.240.9900 FAX: 502.240.9902

Dynamic Calibration Graph:



Cal Test Results:

Longitudinal: Pass
Transverse: Pass
Vertical: Pass
Sound: Pass

The seismograph on Quarry Property (S/N 9442) did not trigger during the shot on January 14, 2011 at approximately 12:19 indicating the ground vibrations produced were below the ground trigger level of 0.030 in/sec.