

SAN RAFAEL ROCK QUARRY VIBRATION REPORT

Location: South Hill El. 75'
 Northing: 37° 59' 01 N
 Easting: 122° 27' 23 W

Max. Charge Weight: 210/420
 Blast Duration: 436 ms

Date of Blast: 4.21.11
 Time of Blast: 12:21
 Blast Number: 1548

SEISMOGRAPH INFORMATION		UNIT #1	UNIT #2	UNIT #3	UNIT #4	UNIT #5
Seismograph Model		Micro	Micro	Micro	Micro	Micro
Serial Number		4650	4567	4570	4570	4570
Last Calibration Date		5 10 10	5 17 10	5 17 10	5 17 10	5 17 10

LOCATION INFORMATION		UNIT #1	UNIT #2	UNIT #3	UNIT #4	UNIT #5
Location		Marin Ag	Via Montebello	San Marino	McNear Park	
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		1795	2909	3115	2904	
Scaled Distance		87	141	151	141	

VIBRATION INFORMATION		UNIT #1	UNIT #2	UNIT #3	UNIT #4	UNIT #5
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	0	0	0	0
Peak Air Overpressure (db)		-	-	-	-	-

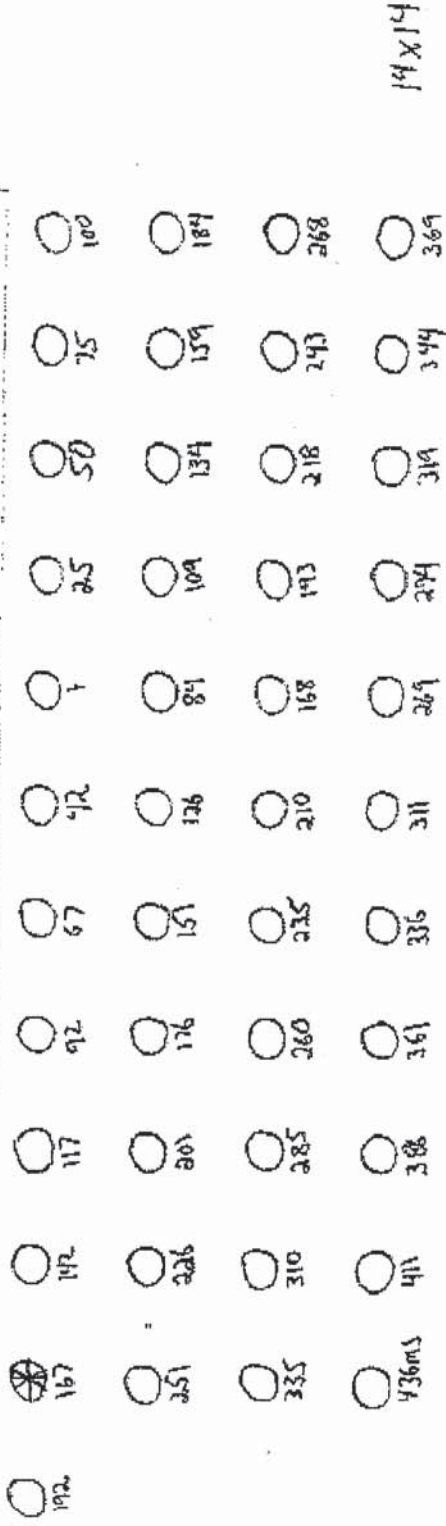
GENERAL COMMENTS: Nothing triggered.

Seismograph Operator: Deron Lopes Signature: Deron Lopes

4.21.11
 South Hill - E1.75'
 # 1548

Face Ht 25 FT

Life-load
 1000



45 Holes
 45= 50 unitron det
 45= 30 unitron det
 90= 450 gram

9,400 lbs titan

depth 29'
 14 stemming
 Max 20 lbs per hole
 480 per delay

192/193
 268/269
 168/167
 310/311
 366/365

Main 1795
 Vic M 2904
 Seam 3115
 M N 2904

⊗ 37° 59' 01N
 122° 27' 23W

GeoSonics Inc. Seismic Analysis

Stop Event Report

Serial No: 7155 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: 04/21/2011 07:00:50 (UTC-7)
End Date: 04/21/2011 20:00:00 (UTC-7)
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: 01/26/2011
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 7155) did not trigger during the blast on April 21, 2011 at approximately 12:21 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: 9856 v3.23
Client: COUNTY MARIN
Operation: SAN RAFAEL ROCK QUARRY
Location: ON QUARRY PROPERTY
Distance:
Operator: VIBRA-TECH GSM
Comment:

Begin Date: 04/21/2011 06:04:42 (UTC-7)
End Date: 04/21/2011 20:00:00 (UTC-7)
Events over Trigger: 0 (2-1)
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: 01/27/2011
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 9856) did not trigger during the shot on April 21, 2011 at approximately 12:21 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: 9669 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: 04/21/2011 07:00:50 (UTC-7)
End Date: 04/21/2011 19:00:00 (UTC-7)
Events over Trigger: 0 (2-1)
Record Time: 5.0 s
Seismic Trigger: 0.030 in/s
Sound Trigger: N/A
Battery Level: 8.9

Additional Info:

j-GEO-01254
N37 59.395, W122 27.700

Shaketable Calibrated: 01/26/2011
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 9669) did not trigger during the shot on April 21, 2011 at approximately 12:21 indicating the ground vibrations produced were below the ground trigger level of 0.030 in/sec.