

BLAST MONITORING REPORT

HM9C Hard Stone Quarry at Ta' Qaduma, I/o Mosta

24th January 2011

Details

Date	24-01-2011
Quarry number	HM9C – Ix-Xagħra Ta' Qaduma, I/o Mosta
Quarry operator	Carmel Vella Ltd.
ANFO Supplier	Framegrip Ltd.
Police escort	PC81 – G Galea

Location and time of blasting

Two blasts were carried out at 10:07 and 10:09 at approximately the points as indicated on the attached site diagram.

Summary of blasting conditions

Maximum charge per delay: 50Kg

Recommended vibration limit: <8 mm/s at the nearest residential/commercial area.

Site Specific Permit

Holes were within quarry boundaries and within the permitted depths.

Blasts were carried out according to the site specifications.

Comments

Holes of the first blast are at the bottom shelf of the quarry and holes of the second blast are at the middle shelf of the quarry.

Notes

Seismograph was placed at the road-side adjacent to the very back of Ta' Randa farmhouse as indicated on the attached site diagram. This is in front of the gate to the field very close to the quarry.

Seismograph was set to trigger at 0.51 mm/s. Seismograph used is MiniMate Plus s/n BE9488.

Readings

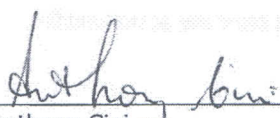
Blast Number	1	2
Time	10:07	10:09
No. of Holes	11	11
No. of delays	11	11
Depth of Holes (m)	10.5	10.5
Max. Charge per Delay (Kg)	28	28
Total Charge (Kg)	300	300
Dist. from Seismograph (m)	350	350
PPV (mm/s)	0.89	0.92
Frequency (Hz)	22.8	18.1
Air Overpressure (dB)	111.2	114.2
Scaled Distance (m^{-1/2})	66.1	66.1

Burden is an average of 2 metres and distance between holes is an average of 2.5 metres.

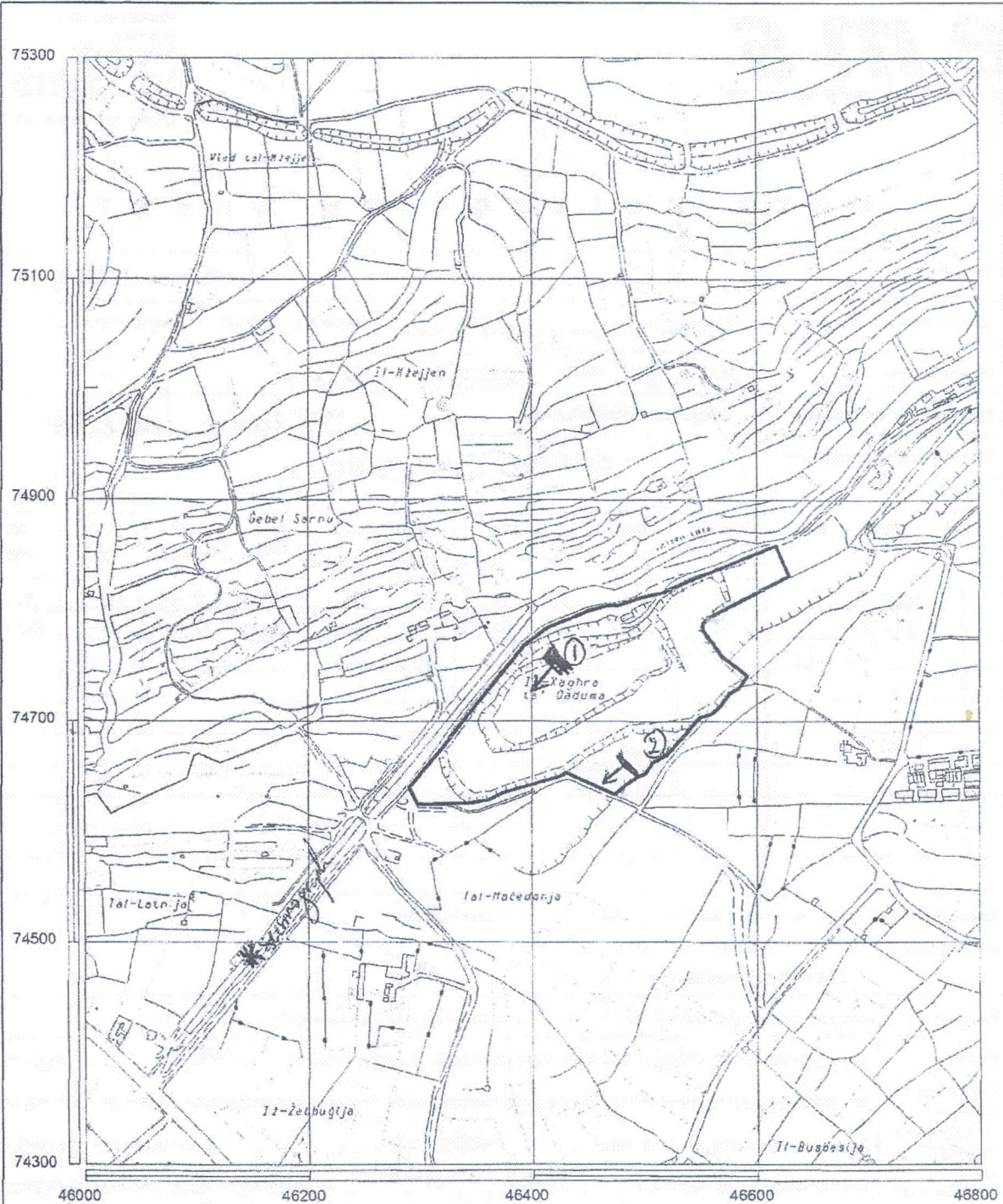
Weights in kilograms are rounded-up to the nearest unit, depths in metres are rounded to the nearest 1/2 unit, and distance between the holes and the seismograph is accurate to the nearest 10 metres.

Observations:

There was no flyrock outside quarry boundaries. From a brief visual inspection after the blast, no damage to the surroundings of the quarry was observed.



Anthony Cini B.Sc.



Malta Environment & Planning Authority

Hardstone (LC) Quarry Site Plan

St. Francis Revelin
 Floriana
 PO Box 200, Valletta
 Tel:240976 Fax 224846



Quarry No. :-

HM 9C

Location :- Xaghra ta' Qaduma

Permitted Quarry Area :- 35537.46 sqm

Scale :- 1:5000

Permitted Quarry Depth :- 50 m amsl

24-1-03

Part of Survey Sheet(s): 4674 4675

Date :- 6/5/03

DATA COLLECTION SHEET

Date:	24-1-11		MIC for HM9C is 50Kg	
Quarry Name & Number:	HM9C - Ix-Xaghra ta' Qaduma, I/o Mosta	Quarry Operator:	Carmel Vella Ltd.	
Police Escort:	No: PC 87 Name: GEORGE CALEA			
Blasting carried out by:	Company: FrameGrip Ltd.		Name: MARIO CALLEJA	
Seismograph readings by:	RAPHAEL MICKLEF			


Blast	Time	Holes	Delays	Dist.		Depth		Total charge		Max. Chrg.	PPV mm/s	Freq. (Hz)	Air (dB)
				(m)	(ft)	(m)	Bags	(kg)					
1	10:07.16	11	11	350	35	10.5	12	300	2.8	0.89	22.8	111.2	
2	10:34.41	11	11	350	35	10.5	12	300	2.8	0.92	18.1	114.2	
3		22		/			24	600	/				
4													
5													
6													
7													
8													
9													

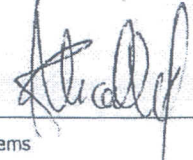
Location of Seismograph	<input checked="" type="checkbox"/> On the road, adjacent to the back of Ta' Randa Farmhouse (opposite gate to fields touching with quarry) <input type="checkbox"/> Other location: _____	
Burden	Distance between boreholes: 2.5 m	Distance from rock face (burden): 2 m
Notes	Any horizontal holes? <u>No</u> Any blast made up of holes of different-depth? <u>No</u> Why? <u>-</u> Please expand in below section and/or overleaf if space provided is not enough. Any blasts grouped together and detonated using multiple (almost simultaneous) short-circuit exploders? <u>No</u> Why? <u>-</u> Any visitors before/during/after blast? <u>Nobody</u> (note names and organizations) Any complaints from neighbours? <u>None reported</u> (note names, number of persons/households?) Note levels of holes: <u>(1) Bottom shelf (2) Middle shelf</u> Flyrock observation: <u>None Outside</u> Any damage to quarry surroundings? <u>None Observed</u>	
Further Comments		

(use overleaf if more space is required)

Signatures


Police escort


f/ Quarry operator


f/ ems

Date/Time Tran at 10:07:16 January 24, 2011
 Trigger Source Geo: 0.500 mm/s
 Range Geo :31.7 mm/s
 Record Time 2.0 sec at 4096 sps

Serial Number BE9488 V 8.01-8.0 MiniMate Plus
 Battery Level 6.1 Volts
 Calibration September 9, 2010 by Datum Monitoring
 File Name K488DLOK.440

Notes

Location: Quarry Blasting
 Client:
 User Name: ems
 General:

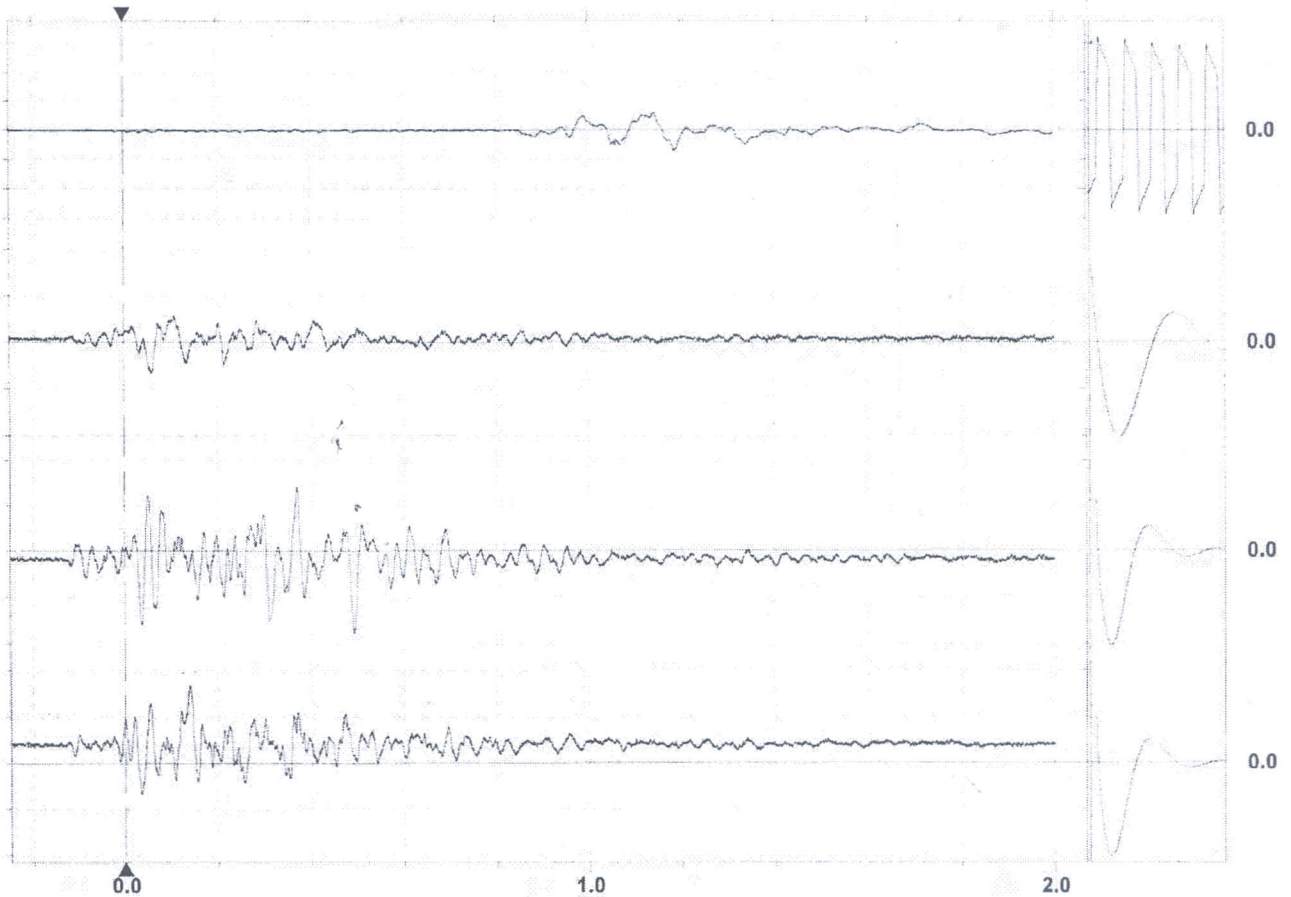
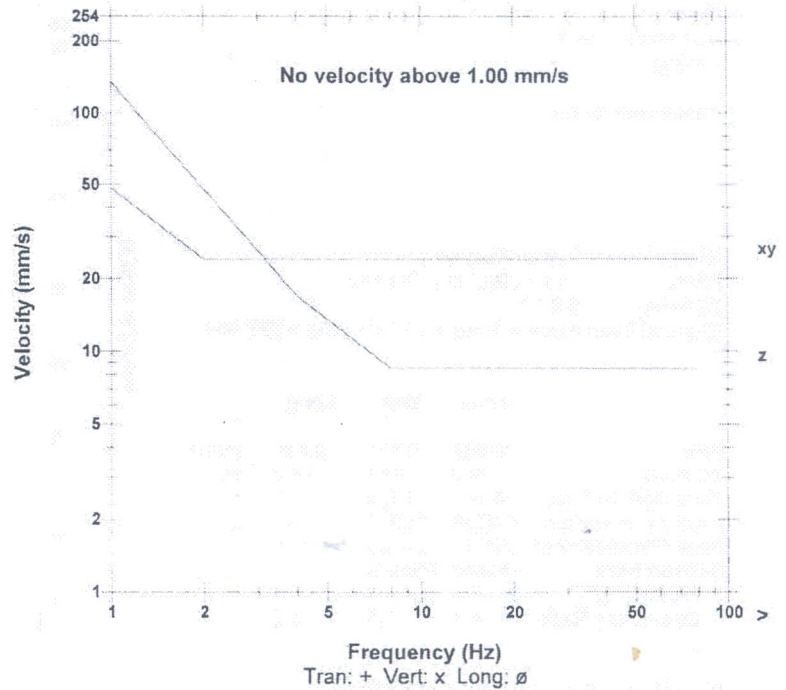
Post Event Notes

Microphone Linear Weighting
 PSPL 111.2 dB(L) at 1.189 sec
 ZC Freq 11.0 Hz
 Channel Test Passed (Freq = 20.5 Hz Amp = 627 mv)

	Tran	Vert	Long	
PPV	0.841	0.889	0.333	mm/s
ZC Freq	12.4	22.8	22.5	Hz
Time (Rel. to Trig)	0.141	0.492	0.061	sec
Peak Acceleration	0.0265	0.0265	0.0199	g
Peak Displacement	0.0244	0.00667	0.00309	mm
Sensorcheck	Passed	Passed	Check	
Frequency	7.2	7.4	4.9	Hz
Overswing Ratio	4.1	3.8	3.3	

Peak Vector Sum 0.908 mm/s at 0.371 sec

BS 6472:1992 CURVE 60



Time Scale: 0.20 sec/div Amplitude Scale: Geo: 0.500 mm/s/div Mic: 10.00 pa.(L)/div
 Trigger =

Sensorcheck

Date/Time Vert at 10:09:41 January 24, 2011
 Trigger Source Geo: 0.500 mm/s
 Range Geo :31.7 mm/s
 Record Time 2.0 sec at 4096 sps

Serial Number BE9488 V 8.01-8.0 MiniMate Plus
 Battery Level 6.1 Volts
 Calibration September 9, 2010 by Datum Monitoring
 File Name K488DLOK.850

Notes

Location: Quarry Blasting
 Client:
 User Name: ems
 General:

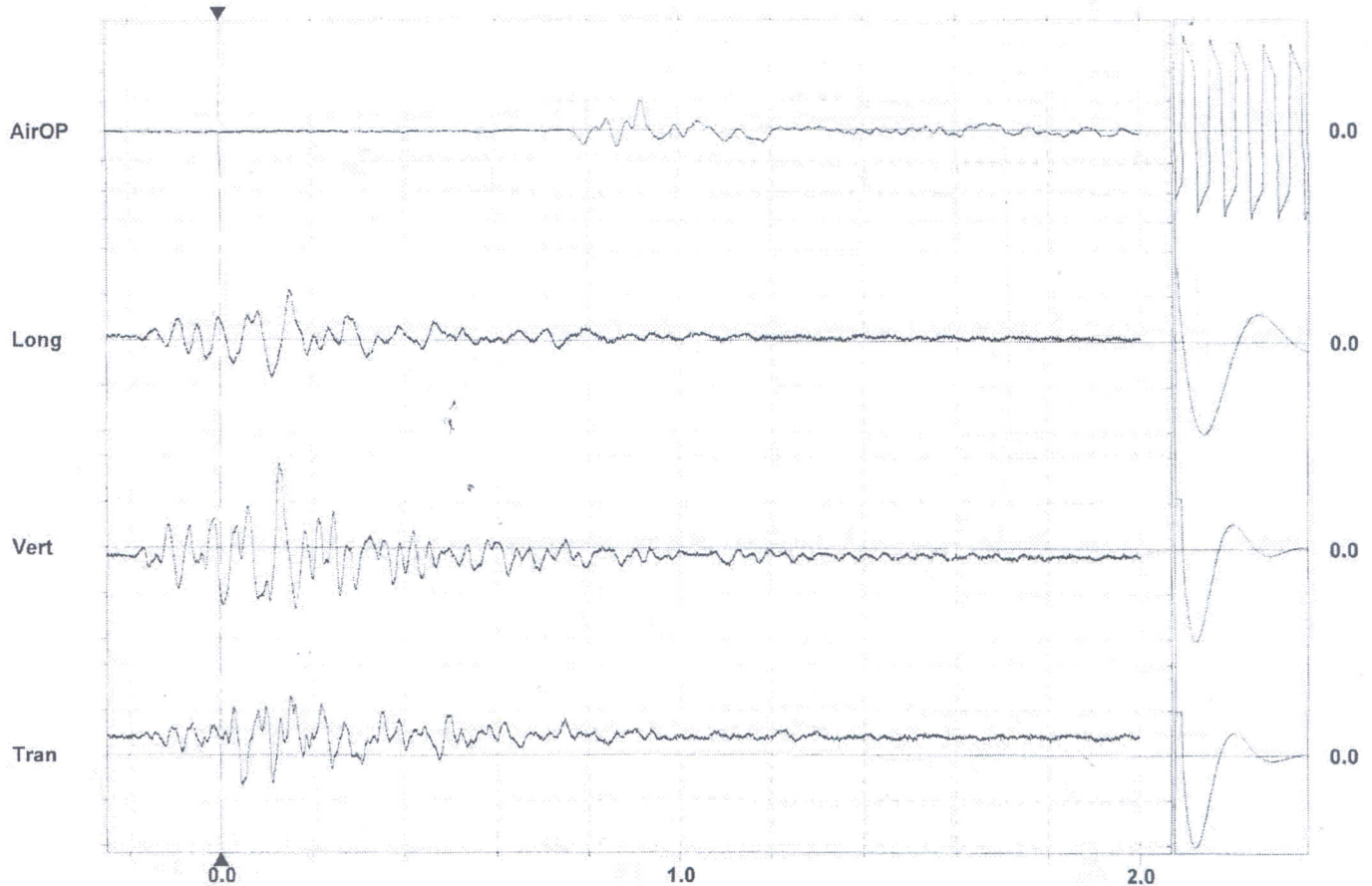
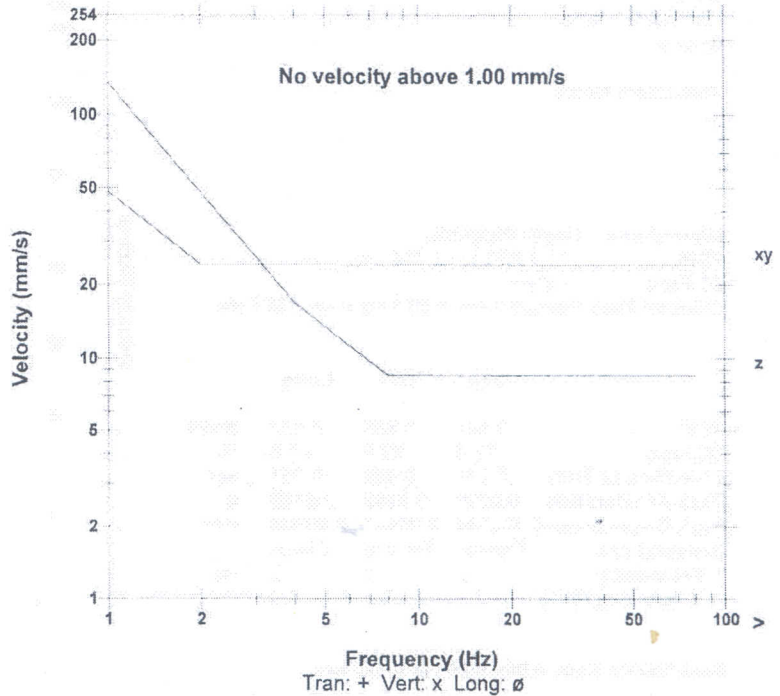
Post Event Notes

Microphone Linear Weighting
 PSPL 114.2 dB(L) at 0.914 sec
 ZC Freq 8.8 Hz
 Channel Test Passed (Freq = 20.5 Hz Amp = 627 mv)

	Tran	Vert	Long	
PPV	0.667	0.921	0.556	mm/s
ZC Freq	9.2	18.1	11.2	Hz
Time (Rel. to Trig)	0.153	0.129	0.150	sec
Peak Acceleration	0.0199	0.0265	0.0199	g
Peak Displacement	0.0315	0.0102	0.00606	mm
Sensorcheck	Passed	Passed	Check	
Frequency	7.2	7.4	4.9	Hz
Overswing Ratio	4.1	3.8	3.3	

Peak Vector Sum 1.01 mm/s at 0.130 sec

BS 6472:1992 CURVE 60



Time Scale: 0.20 sec/div Amplitude Scale: Geo: 0.500 mm/s/div Mic: 10.00 pa.(L)/div
 Trigger = > <

Sensorcheck