Customer	NRQA
Location	Blakebrook Quarry
Shot Number	BLA40
Bench No.	Pit Southern Wall

Flyrock Assumptions		
Rock density	g/cc	2.8
Hole diameter	mm	89
Stemming length	m	2.5
Charge length	m	3.2
Burden	m	2.8
Explosive density	g/cc	1.15
Flyrock constant		20
Factor of safety	FoS	2
Drill Angle	deg	10
Charge mass/m	kg/m	7.2
Gravity	m/s/s	9.81

Scaled Depth of Burial		
Contributing charge length factor		8
Scaled depth of burial	m/kg^1/3	1.66

Maximum Flyrock Projection Range		
Distance	m	

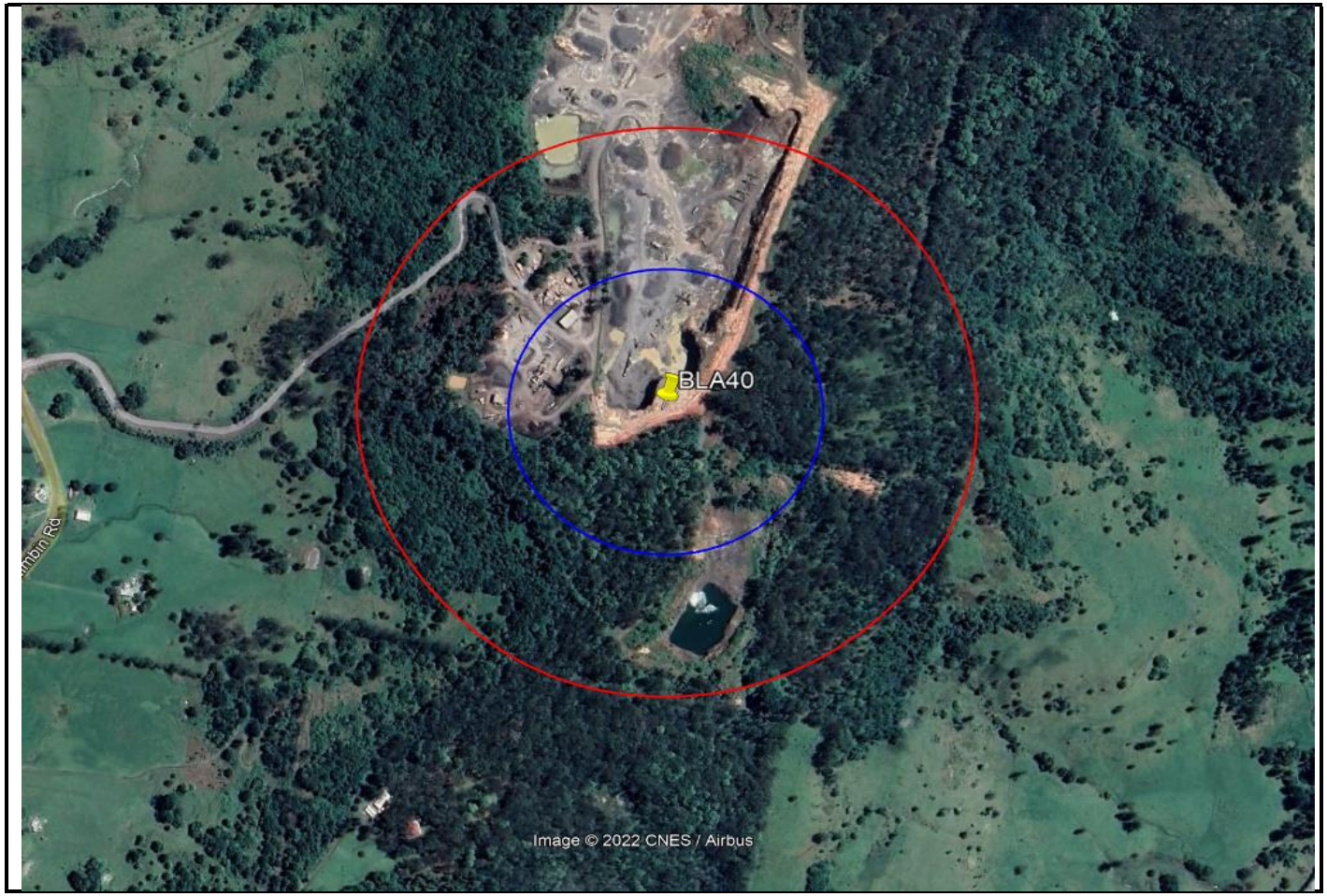
Clearance Distance and Projectile Size		
Projectile size	mm	17
Projectile weight	kg	0.01
Clearance Distance	m	146

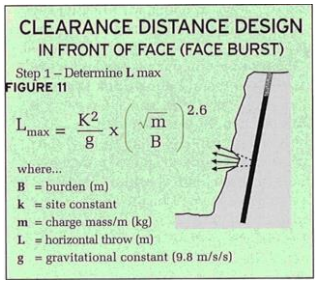
Maximum Horizontal Distance		
Face burst	m	72
Cratering	m	97
Stemming ejection	m	33

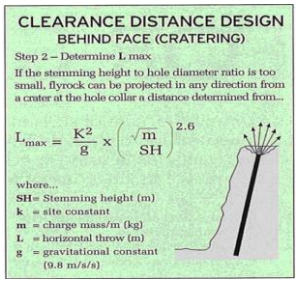
Maximum Vertical Distance		
Launch velocity (FB)	m/s	27
Launch velocity (C)	m/s	31
Launch velocity (SE)	m/s	18
Face burst	m	36
Cratering	m	49
Stemming ejection	m	17

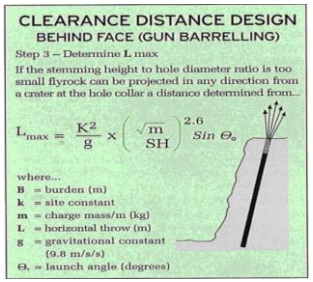
Equipment Exclusion Zone (Factor of saftey 2)		
Face burst	m	145
Cratering	m	194
Stemming ejection	m	66

Personell Exclusion Zone (Factor of saftey 4)		
Face burst	m	290
Cratering	m	389
Stemming ejection	m	133









DONNELLY BLASTING SERVICES

NRQA Blakebrook quarry
Blast BLA 40
Monitor Location MP# 4 (365 Booerie Creek Rd Booerie Creek)

Event Report: Monitor Log

Start Time	End Time	Status
		SERIAL NUMBER: BE12705
Mar 18 /22 14:53:30	Mar 18 /22 15:00:09	No events recorded. (Keyboard Exit) Geo: 0.900 mm/s

DONNELLY BLASTING SERVICES

No Trigger Report Summary

Customer	Northern Rivers Quarry
Date of blast	18/3/2022
Blast number	**BLA40**
Monitor Location – 4 (Primary)	**MP#4 – 365 Booerie Creek Road, Booerie Creek**
Monitor name/ model details:	Instantel Minimate Blaster
Monitor Serial no:	BE12705
Calibration date	12/1/2022
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*	(Y) / N
Airblast overpressure result (dB)	Not triggered. Overpressure reading set to geo trigger no overpressure dB detected
Ground vibration result (PPV)	Less than 0.900 mm/s
EPL limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s
Comments	Monitor was set to record ground vibration above 0.900 mm/s – no event was recorded. This monitor report is compliant with EPL conditions and has been undertaken in accordance with *AS 2187.2-2006*

J Donnelly Jr ..... 18/3/22 .....

Name (& signature) date

Event Report

Date/Time Long at 14:59:44 March 18, 2022
Trigger Source Geo: 0.900 mm/s
Range Geo: 254.0 mm/s
Record Time 6.0 sec at 1024 sps

Notes

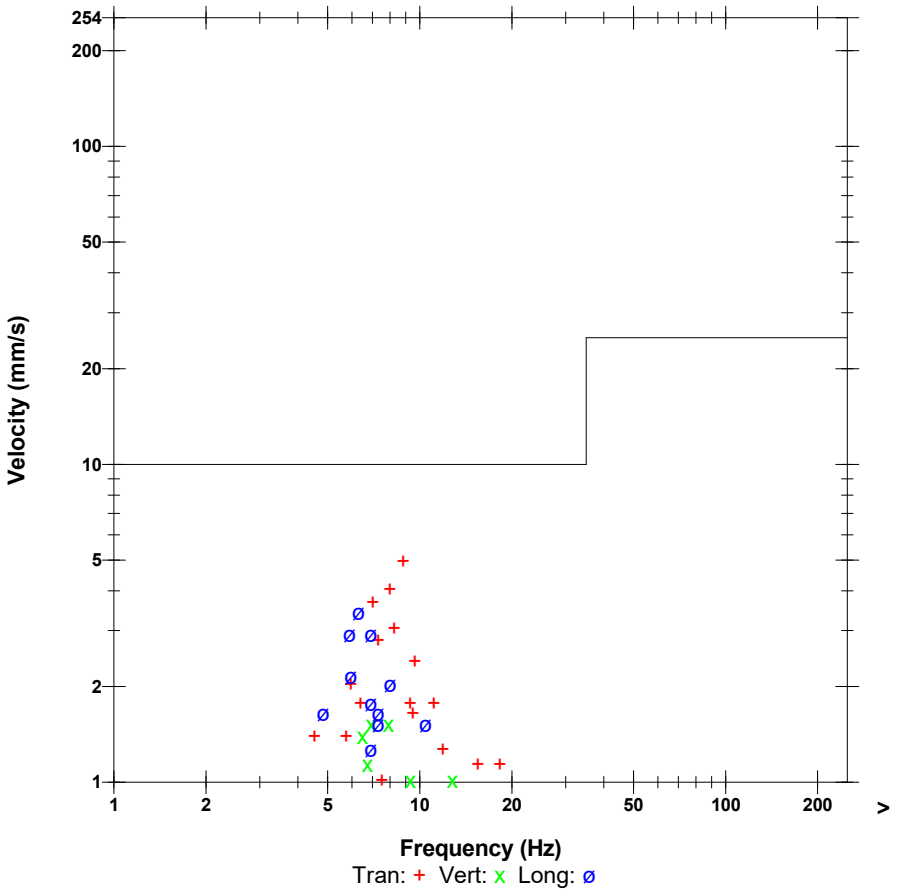
Serial Number BE13371 V 10.72-1.1 Minimate Blaster
Battery Level 5.9 Volts
Unit Calibration November 30, 2021 by Saros Int
File Name O371JF3T.NK0
Post Event Notes
Customer Site NRQA Blakebrook Quarry
Blast ID BLA 40
Monitor Location MP#2 (190 Keerrong Road Blakebrook)
Monitored By Rick Cavanagh

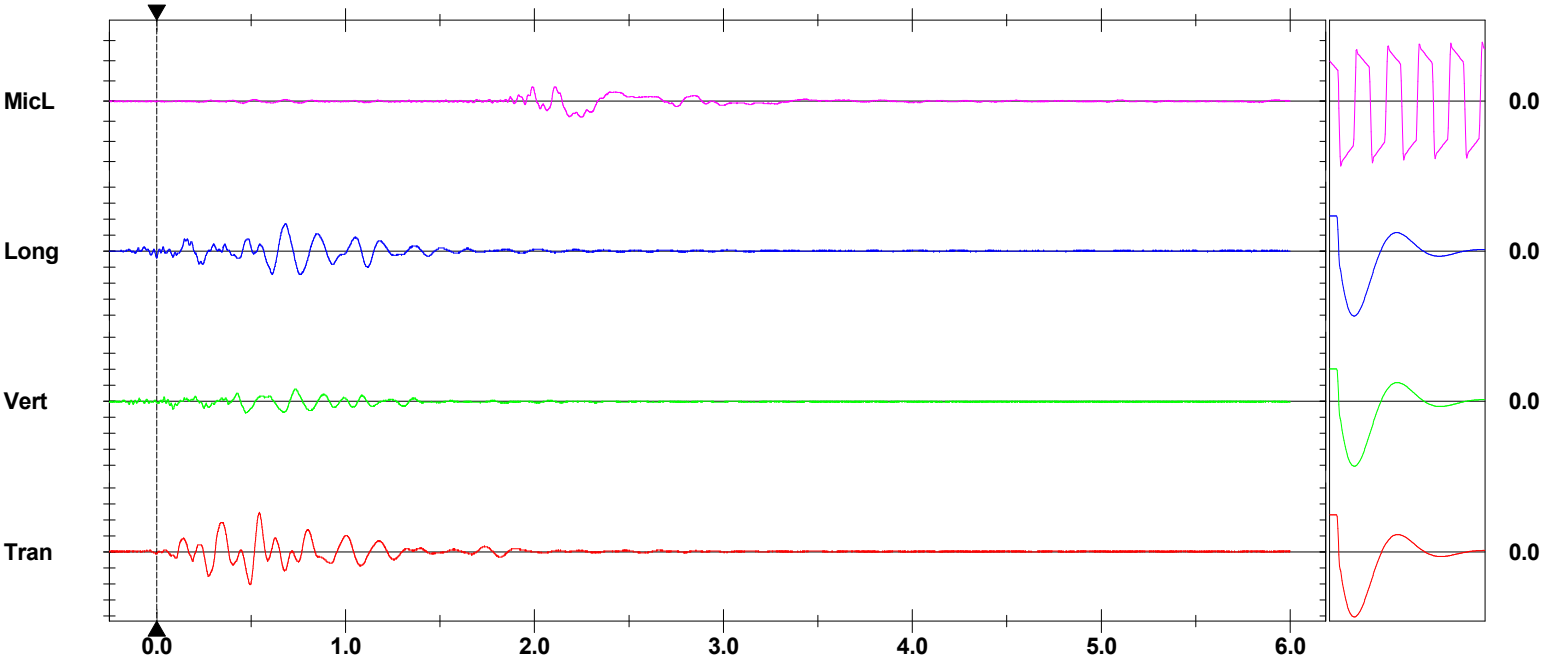
Microphone Linear Weighting
PSPL 112.0 dB(L) at 2.244 sec
ZC Freq 2.7 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 546 mv)

	Tran	Vert	Long	
PPV	4.953	1.524	3.429	mm/s
PPV	128.9	118.7	125.7	dB
ZC Freq	8.8	6.9	6.3	Hz
Time (Rel. to Trig)	0.544	0.472	0.681	sec
Peak Acceleration	0.027	0.027	0.027	g
Peak Displacement	0.090	0.035	0.085	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.4	7.5	Hz
Overswing Ratio	3.8	3.5	3.5	

Peak Vector Sum 5.072 mm/s at 0.544 sec

QLD APP Standard





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 10.000 pa.(L)/div
Trigger = ▶----------◀

Sensor Check

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Event Report

Date/Time	Long at 14:59:45 March 18, 2022
Trigger Source	Geo: 1.000 mm/s
Range	Geo: 254.0 mm/s
Record Time	6.0 sec at 1024 sps
Operator/Setup:	Operator/LINEAR.MMB

Notes
Location:
Client:
User Name:
General:

Serial Number	UM11467 V 10-90FB Micromate ISEE
Battery Level	3.8 Volts
Unit Calibration	September 10, 2021 by Saros Int.
File Name	UM11467_20220318145945.IDFW

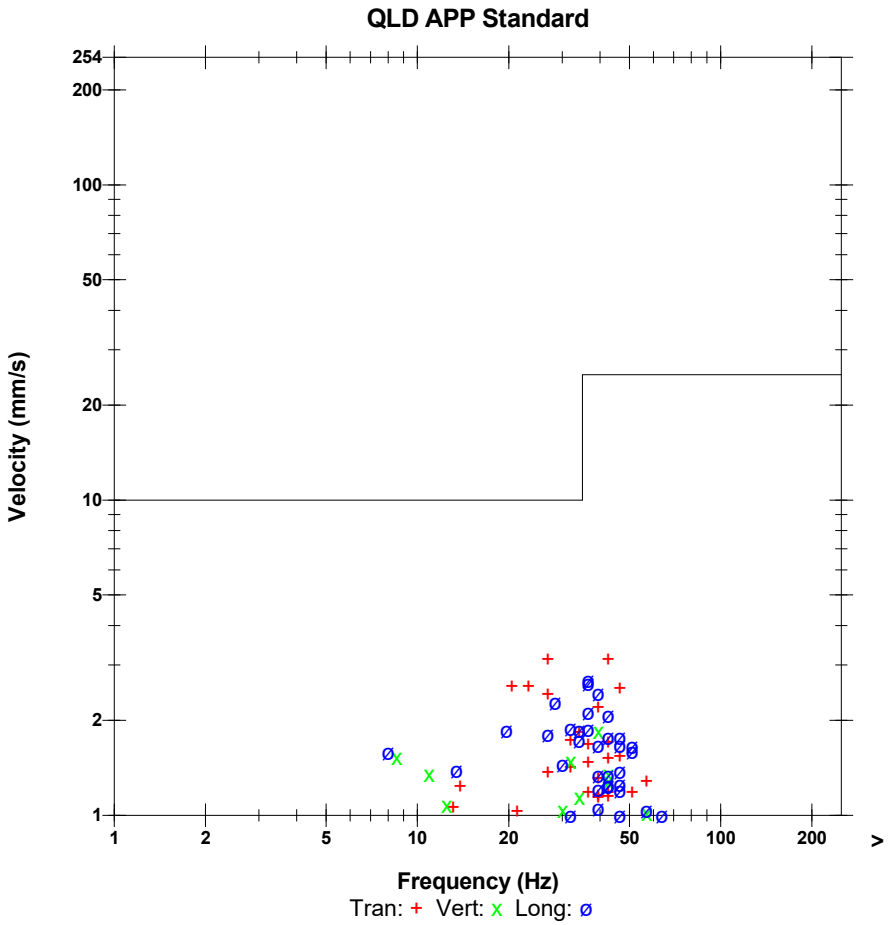
Post Event Notes

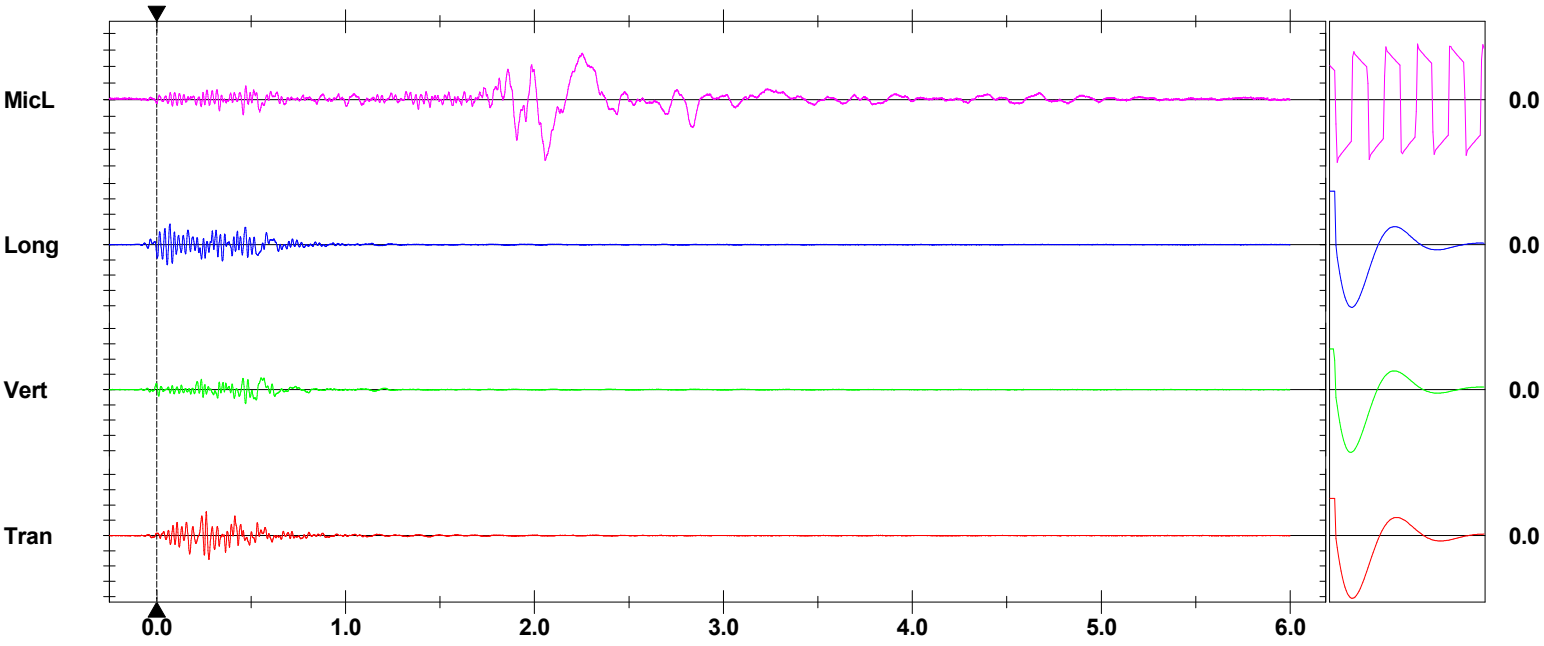
Customer Site	NRQA Blakebrook Quarry
Blast ID	BLA 40
Monitor Location	MP#8 (484 Nimbin Rd Blakebrook)
Monitored By	Jason Donnelly

Microphone	Linear Weighting
PSPL	105.3 dB(L) at 2.057 sec
ZC Freq	3.3 Hz
Channel Test	Passed (Freq = 19.7 Hz Amp = 1510 mv)

	Tran	Vert	Long	
PPV	3.145	1.852	2.688	mm/s
PPV	125.0	120.4	123.6	dB
ZC Freq	43	39	37	Hz
Time (Rel. to Trig)	0.263	0.471	0.069	sec
Peak Acceleration	0.090	0.041	0.064	g
Peak Displacement	0.017	0.026	0.020	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.3	7.7	7.5	Hz
Overswing Ratio	3.5	3.3	3.5	

Peak Vector Sum 3.336 mm/s at 0.238 sec





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 1.000 pa.(L)/div Sensor Check
Trigger = ▶----------◀

Format © 1995-2015 Xmark Corporation

Customer	NRQA
Location	Blakebrook Quarry
Shot Number	BLA41
Bench No.	0

Flyrock Assumptions		
Rock density	g/cc	2.8
Hole diameter	mm	89
Stemming length	m	3.0
Charge length	m	11.8
Burden	m	2.8
Explosive density	g/cc	1.15
Flyrock constant		25
Factor of safety	FoS	2
Drill Angle	deg	10
Charge mass/m	kg/m	7.2
Gravity	m/s/s	9.81

Scaled Depth of Burial		
Contributing charge length factor		8
Scaled depth of burial	m/kg^1/3	1.95

Maximum Flyrock Projection Range		
Distance	m	

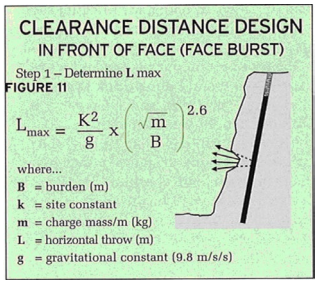
Clearance Distance and Projectile Size		
Projectile size	mm	12
Projectile weight	kg	0.00
Clearance Distance	m	103

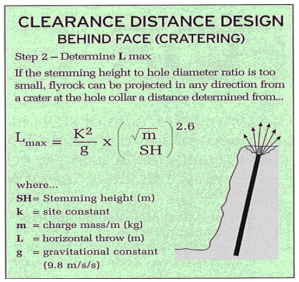
Maximum Horizontal Distance		
Face burst	m	113
Cratering	m	95
Stemming ejection	m	32

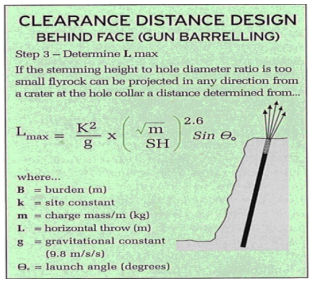
Maximum Vertical Distance		
Launch velocity (FB)	m/s	33
Launch velocity (C)	m/s	30
Launch velocity (SE)	m/s	18
Face burst	m	57
Cratering	m	47
Stemming ejection	m	16

Equipment Exclusion Zone (Factor of saftey 2)		
Face burst	m	226
Cratering	m	189
Stemming ejection	m	65

Personell Exclusion Zone (Factor of saftey 4)		
Face burst	m	453
Cratering	m	378
Stemming ejection	m	129







DONNELLY BLASTING SERVICES

NRQA Blakebrook Quarry
Blast ID BLA-41
Monitor Location 190 keerong road

Event Report: Monitor Log

Start Time	End Time	Status
----------	----------	SERIAL NUMBER: BE12705
May 31 /22 14:27:18	May 31 /22 14:27:26	Event recorded. Trigger Level Tran: 0.130 mm/s
May 31 /22 14:27:26		Start Monitoring Trigger Level: Geo: 0.130 mm/s
May 31 /22 14:27:27	May 31 /22 14:27:33	Event recorded. (Keyboard Exit) Trigger Level Tran: 0.130 mm/s
May 31 /22 14:29:33	May 31 /22 15:17:20	No events recorded. (Keyboard Exit) Geo: 2.00 mm/s

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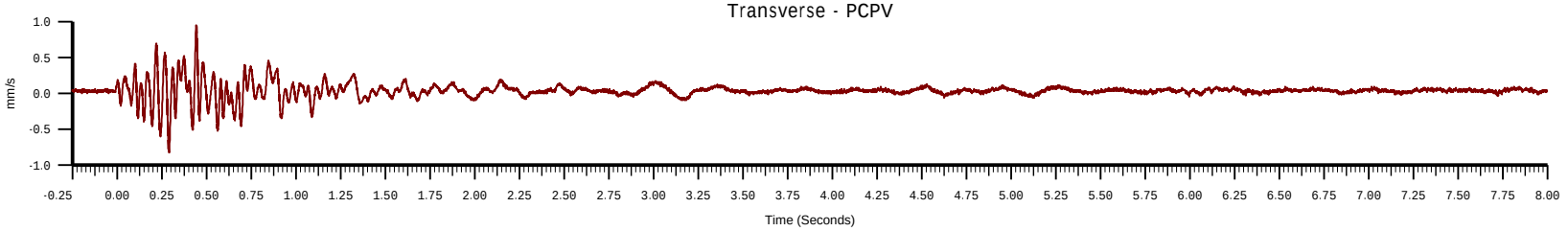
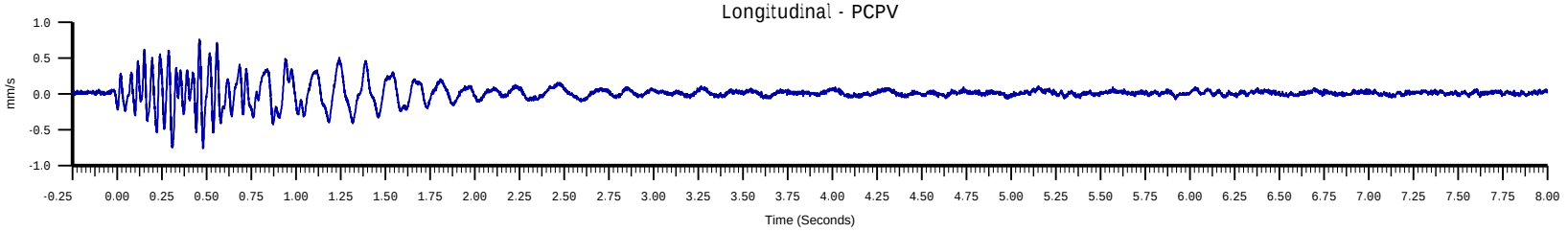
Blakebrook Quarry

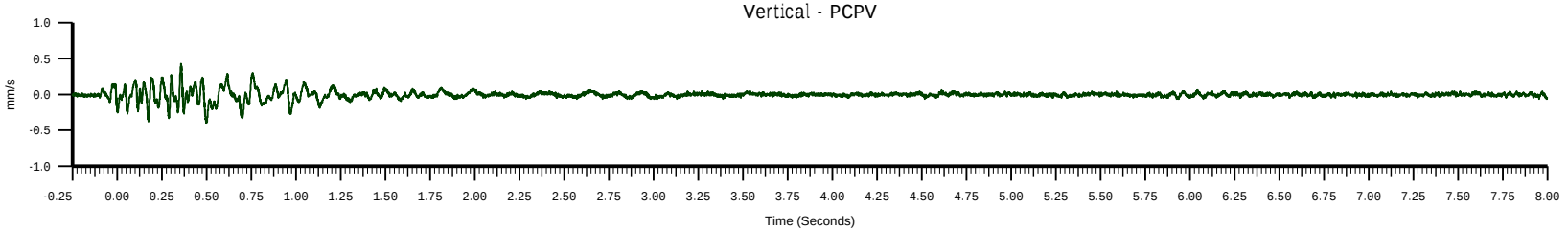
Date	31/05/2022
Time	2:58:15 PM
Blast Number	20220531
Monitoring Location	Location 8
Distance	1059 m

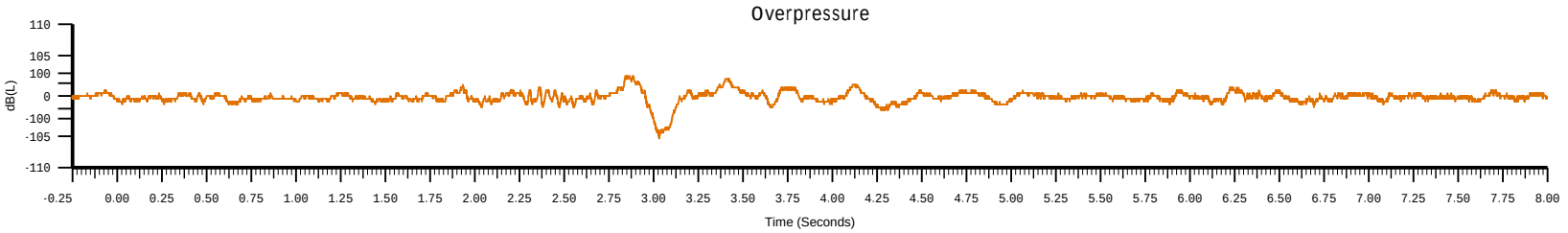
Monitoring Results

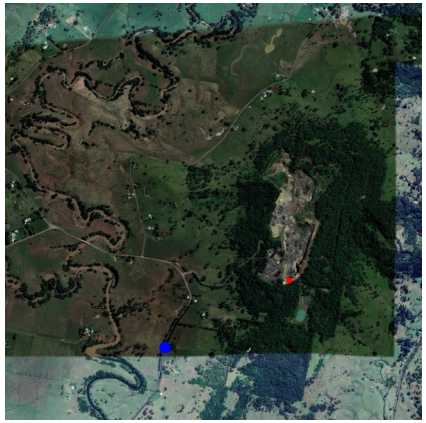
Peak Vibration Level (Vector Sum)	1.10 mm/s
Peak Overpressure Level	105.5 dB(L)
Peak Vibration Level for frequencies less than 35Hz	(Tran) 0.95 mm/s
Peak Vibration Level for frequencies greater than 35Hz	(Tran) 0.38 mm/s











Serial Number	BE15216
Coupling	Unknown
Last Calibration Date	May 26, 2021 by Saros Int
Source Reference	Q216JIWU.X30
File Reference	

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NRQA Blakebrook Quarry
Blast ID BLA-41
Monitor Location 365 Boorie Creek Road

Event Report: Monitor Log

Start Time	End Time	Status
---	---	SERIAL NUMBER: BE13371
May 31 /22 14:53:47	May 31 /22 14:57:09	No events recorded. (Keyboard Exit) Geo: 0.900 mm/s

NRQA Blakebrook Quarry
Blast ID BLA-41
Monitor Location 437 Rosehill road

Event Report: Monitor Log

Start Time	End Time	Status
----------	----------	SERIAL NUMBER: BE13456
May 31 /22 14:51:08		Start Monitoring Trigger Level: Geo: 0.210 mm/s
May 31 /22 14:52:23	May 31 /22 14:52:33	Event recorded. Trigger Level Long: 0.210 mm/s
May 31 /22 14:52:33		Start Monitoring Trigger Level: Geo: 0.210 mm/s
May 31 /22 14:56:02	May 31 /22 14:56:12	Event recorded. Trigger Level Long: 0.210 mm/s
May 31 /22 14:56:12		Start Monitoring Trigger Level: Geo: 0.210 mm/s
May 31 /22 14:56:47	May 31 /22 14:56:57	Event recorded. Trigger Level Tran: 0.210 mm/s
May 31 /22 14:56:57		Start Monitoring Trigger Level: Geo: 0.210 mm/s
May 31 /22 15:00:21	May 31 /22 15:00:31	Event recorded. Trigger Level Long: 0.210 mm/s
May 31 /22 15:00:31		Start Monitoring Trigger Level: Geo: 0.210 mm/s
May 31 /22 15:00:51	May 31 /22 15:01:01	Event recorded. Trigger Level Tran: 0.210 mm/s
May 31 /22 15:01:01		Start Monitoring Trigger Level: Geo: 0.210 mm/s
May 31 /22 15:01:29	May 31 /22 15:01:39	Event recorded. Trigger Level Tran: 0.210 mm/s
May 31 /22 15:01:39		Start Monitoring Trigger Level: Geo: 0.210 mm/s
May 31 /22 15:03:00	May 31 /22 15:03:10	Event recorded. Trigger Level Tran: 0.210 mm/s
May 31 /22 15:03:10		Start Monitoring Trigger Level: Geo: 0.210 mm/s
May 31 /22 15:06:09	May 31 /22 15:06:19	Event recorded. Trigger Level Long: 0.210 mm/s
May 31 /22 15:06:19		Start Monitoring Trigger Level: Geo: 0.210 mm/s
May 31 /22 15:07:29	May 31 /22 15:07:39	Event recorded. Trigger Level Long: 0.210 mm/s
May 31 /22 15:07:39		Start Monitoring Trigger Level: Geo: 0.210 mm/s
May 31 /22 15:09:31	May 31 /22 15:09:41	Event recorded. Trigger Level Tran: 0.210 mm/s
May 31 /22 15:09:41		Start Monitoring Trigger Level: Geo: 0.210 mm/s
May 31 /22 15:11:23	May 31 /22 15:11:33	Event recorded. Trigger Level Tran: 0.210 mm/s
May 31 /22 15:11:33		Start Monitoring Trigger Level: Geo: 0.210 mm/s
May 31 /22 15:11:58	May 31 /22 15:12:08	Event recorded. Trigger Level Long: 0.210 mm/s
May 31 /22 15:12:08		Start Monitoring Trigger Level: Geo: 0.210 mm/s
May 31 /22 15:12:41	May 31 /22 15:12:51	Event recorded. Trigger Level Tran: 0.210 mm/s
May 31 /22 15:12:51	May 31 /22 15:12:54	No events recorded. (Keyboard Exit) Geo: 0.210 mm/s

DONNELLY BLASTING SERVICES

No Trigger Report Summary

Customer	Northern Rivers Quarry
Date of blast	31/5/2022
Blast number	**BLA41**
Monitor Location – 2 (Primary)	**190 Keerrong Road, Keerrong**
Monitor name/ model details:	Instantel Minimate Blaster
Monitor Serial no:	BE12705
Calibration date	12/1/2022
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*	(Y)/ N
Airblast overpressure result (dB)	Not triggered. Overpressure reading set to geo trigger no overpressure dB detected
Ground vibration result (PPV)	Less than 0.130 mm/s
EPL limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s
Comments	Monitor was set to record ground vibration above 0.130 mm/s – no event was recorded. This monitor report is compliant with EPL conditions and has been undertaken in accordance with *AS 2187.2-2006*

J. Donnelly 31/5/22

Name (& signature) date

DONNELLY BLASTING SERVICES

No Trigger Report Summary

Customer	Northern Rivers Quarry
Date of blast	31/5/2022
Blast number	**BLA41**
Monitor Location – 4 (Primary)	**365 Booerie Creek Road, Booerie Creek**
Monitor name/ model details:	Instantel Minimate Blaster
Monitor Serial no:	BE13371
Calibration date	30/11/2021
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*	(Y) / N
Airblast overpressure result (dB)	Not triggered. Overpressure reading set to geo trigger no overpressure dB detected
Ground vibration result (PPV)	Less than 0.900 mm/s
EPL limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s
Comments	Monitor was set to record ground vibration above 0.900 mm/s – no event was recorded. This monitor report is compliant with EPL conditions and has been undertaken in accordance with *AS 2187.2-2006*

J. Donnelly ..... 31/5/22 .....

Name (& signature) date

DONNELLY BLASTING SERVICES

No Trigger Report Summary

Customer	Northern Rivers Quarry	
Date of blast	31/5/2022	
Blast number	**BLA41**	
Monitor Location – additional	**437 Rosehill Road, Blakebrook**	
Monitor name/ model details:	Instantel Minimate Blaster	
Monitor Serial no:	BE13456	
Calibration date	15/4/2021	
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*		(Y)/ N
Airblast overpressure result (dB)	Not triggered. Overpressure reading set to geo trigger no overpressure dB detected	
Ground vibration result (PPV)	Less than 0.210 mm/s	
EPL limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s	
Comments	Monitor was set to record ground vibration above 0.210 mm/s – no event was recorded. This monitor report is compliant with EPL conditions and has been undertaken in accordance with *AS 2187.2-2006*	

J. Donnelly ..... 31-5-22 .....

Name (& signature) date

No Trigger Report Summary

Customer	Northern Rivers Quarry	
Date of blast	16/8/2022	
Blast number	**BLA 42**	
Monitor Location – additional	**437 Rosehill Road, Blakebrook**	
Monitor name/ model details:	Instantel Micromate Blaster	
Monitor Serial no:	UM11467	
Calibration date	10/09/2021	
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*		Y /
Airblast overpressure result (dB)	No trigger Reading at monitor location	
Ground vibration result (PPV)	No trigger Reading at monitor location	
EPL limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s	
Comments	Monitor was set to record ground vibration above 1.0 mm/s – no event was recorded. This monitor report is compliant with EPL conditions and has been undertaken in accordance with *AS 2187.2-2006*	

Peter Bradford ..... 16.8.22 .....

Name (& signature) date

Event Report

Date/Time	Tran at 14:26:39 August 16, 2022
Trigger Source	Geo: 0.900 mm/s, Mic: 100.0 dB(L)
Range	Geo: 254.0 mm/s
Record Time	8.0 sec at 1024 sps

Notes

Serial Number	BE13371 V 10.72-1.1 Minimate Blaster
Battery Level	6.0 Volts
Unit Calibration	November 30, 2021 by Saros Int
File Name	__TEMP.EVT

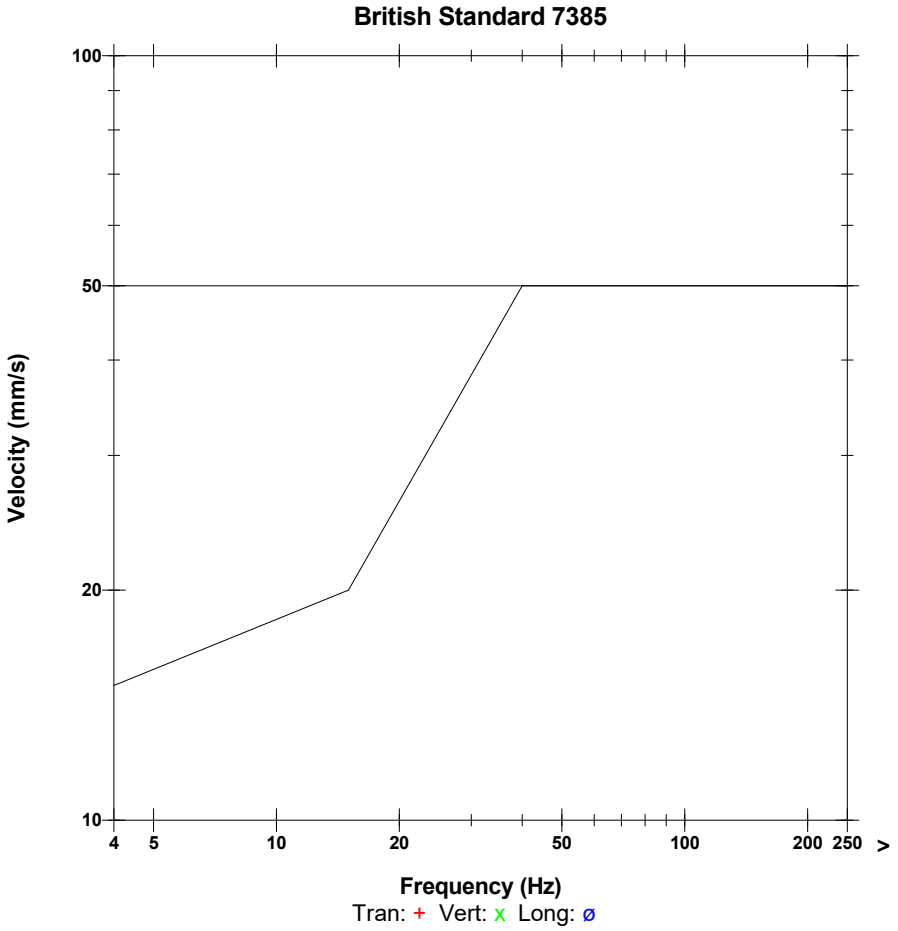
Post Event Notes

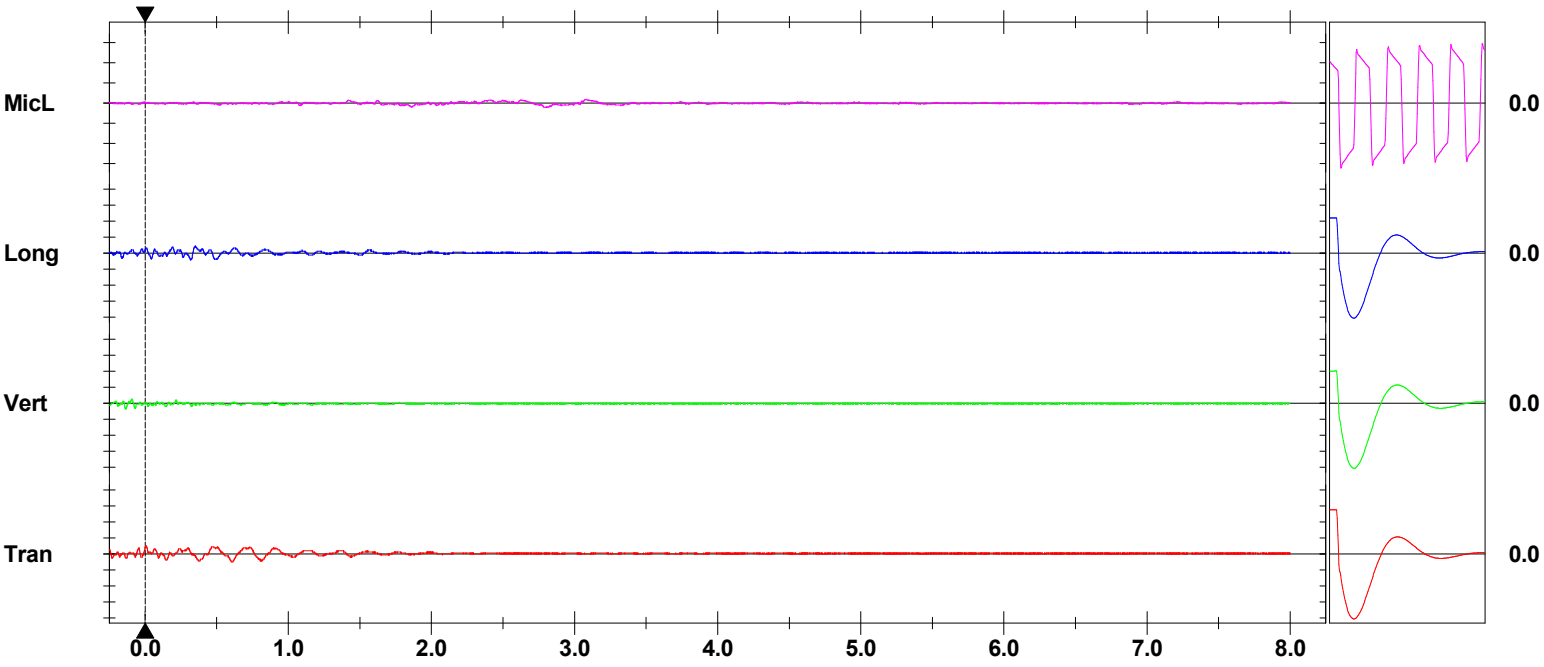
Customer	Site Blakebrook
Blast ID	BLA42
Monitor Location	190 Keerrong Rd Blakebrook
Monitored By	Rick Cavanagh

Microphone	Linear Weighting
PSPL	101.0 dB(L) at 2.795 sec
ZC Freq	3.3 Hz
Channel Test	Passed (Freq = 20.1 Hz Amp = 588 mv)

	Tran	Vert	Long	
PPV	1.016	0.762	0.889	mm/s
PPV	115.1	112.6	114.0	dB
ZC Freq	17	23	14	Hz
Time (Rel. to Trig)	0.003	-0.136	0.318	sec
Peak Acceleration	0.013	0.013	0.013	g
Peak Displacement	0.031	0.005	0.018	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.4	7.4	7.5	Hz
Overswing Ratio	3.8	3.6	3.6	

Peak Vector Sum 1.205 mm/s at 0.004 sec





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 10.000 pa.(L)/div Sensor Check

Trigger = ▶----------◀

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No Trigger Report Summary

Customer	Northern Rivers Quarry	
Date of blast	16/8/2022	
Blast number	**BLA 42**	
Monitor Location – 8 (Primary)	**484 Nimbin Rd, Blakebrook**	
Monitor name/ model details:	Instatel Minimate Blaster	
Monitor Serial no:	BE 12705	
Calibration date	12/01/2022	
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*		Y /
Airblast overpressure result (dB)	No recorded trigger	
Ground vibration result (PPV)	No recorded trigger	
EPL limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s	
Comments	Monitor was set to record ground vibration above 0.91 mm/s – no event was recorded. This monitor report is compliant with EPL conditions and has been undertaken in accordance with *AS 2187.2-2006*	

Peter Bradford ..... 16.8.22 .....

Name (& signature) date

Event Report

Date/Time Long at 14:26:38 August 16, 2022
Trigger Source Geo: 0.210 mm/s
Range Geo: 31.75 mm/s
Record Time 10.0 sec at 1024 sps

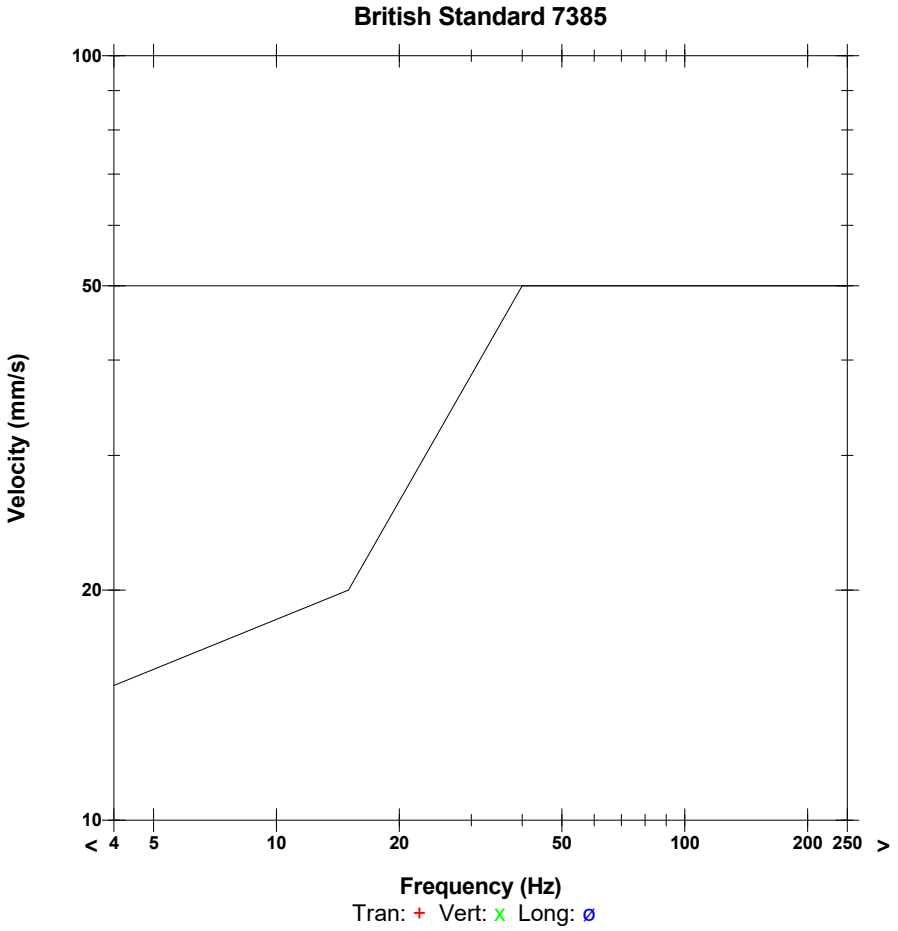
Notes

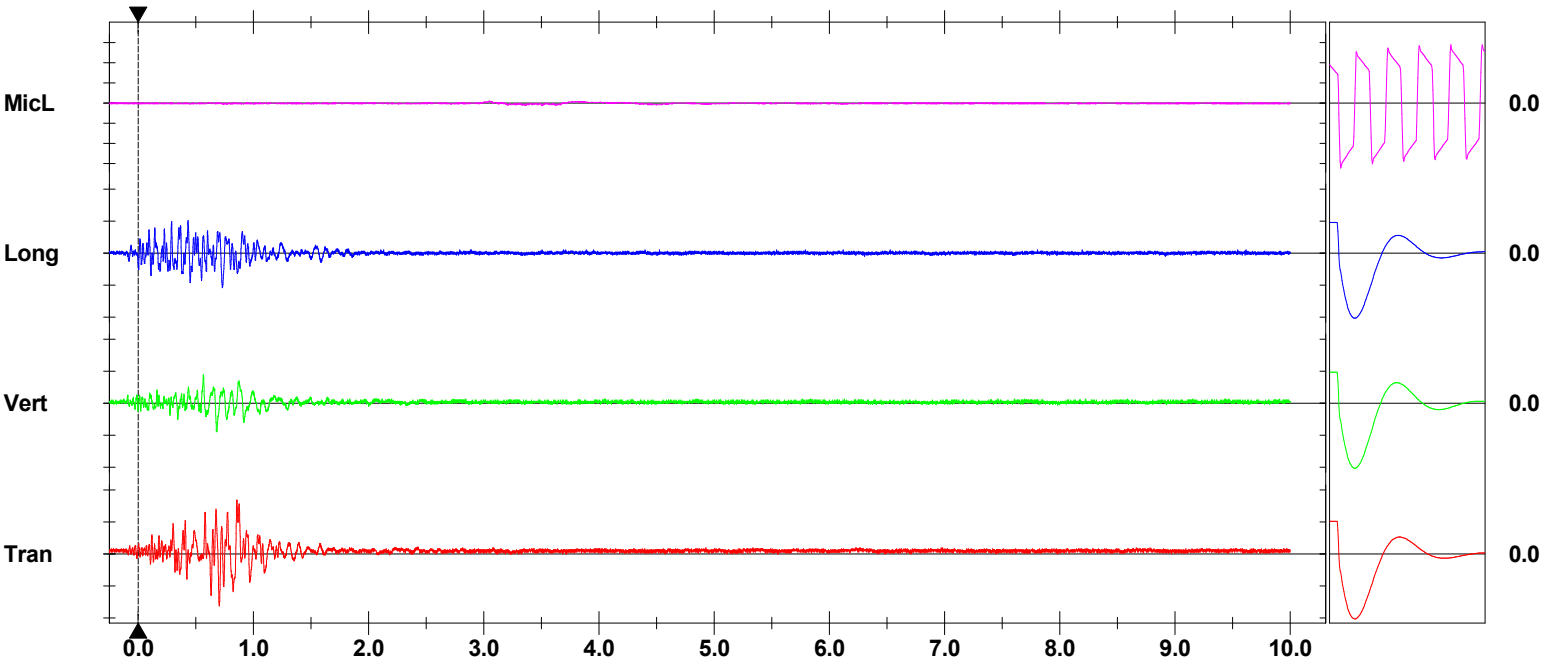
Serial Number BE13456 V 10.72-1.1 Minimate Blaster
Battery Level 6.3 Volts
Unit Calibration July 5, 2022 by Saros Int.
File Name __TEMP.EVT
Post Event Notes
Customer Site Blakebrook
Blast ID BLA42
Monitor Location 365 Booerie Creek Rd Booerie Creek
Monitored By Rick Cavanagh

Microphone Linear Weighting
PSPL 95.9 dB(L) at 3.362 sec
ZC Freq 5.6 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 565 mv)

	Tran	Vert	Long	
PPV	0.841	0.444	0.540	mm/s
PPV	113.5	108.0	109.6	dB
ZC Freq	12	19	16	Hz
Time (Rel. to Trig)	0.855	0.565	0.729	sec
Peak Acceleration	0.013	0.008	0.012	g
Peak Displacement	0.012	0.005	0.005	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.5	7.3	Hz
Overswing Ratio	3.9	3.2	3.7	

Peak Vector Sum 0.880 mm/s at 0.857 sec





Time Scale: 0.50 sec/div **Amplitude Scale:** Geo: 0.500 mm/s/div Mic: 10.000 pa.(L)/div Sensor Check
Trigger = ▶----------◀

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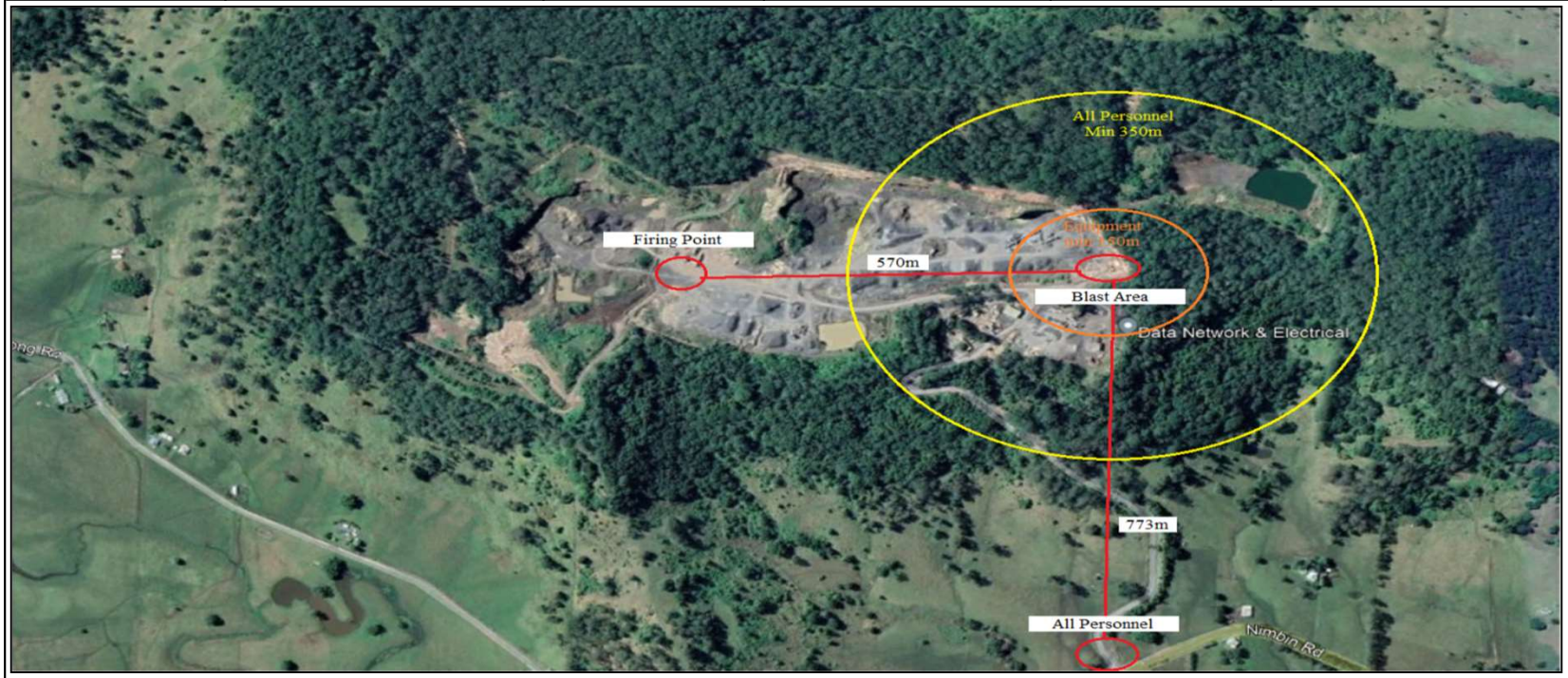
Blast Summary

CUSTOMER:	Lismore City Council	BURDEN:	2.0m - 3.0m	TOTAL HOLES:	184
DATE:	07/09/22	SPACING:	2.0m - 3.0m	DRILLED METERS	2,431.87
SHOT NUMBER:	LCC 04	BENCH HEIGHT:	13.21m average	BCM:	17,300.16
Hole Diameter	89 mm	SUB DRILL:	0.5m	TONNES:	48,440.45



COMMENTS: Blast merked out in area as per QM direction. Side & rear of blast designed to leave catch bench as per QM direction. Shape and disposition of blast will not yield best possible result, however due to all area mined infront, is the only option to extract the material. Bench stripped to hard rock and ground is virgin which promotes more cap rock. Blast has been designed using standard parameters used in previous Grande DB blasts. QM advises no change needed to design parameters as per previous Environmental Blast effects study completed.

Blast Monitoring Results Summary

Customer	Northern Rivers Quarry	
Date of blast	26 September 2022	
Blast number	LCC 04	
Monitor Location	Location 8 (484 Nimbin Road, Blakebrook)	
Monitor name/ model details:	Texcel GTM	
Monitor Serial no	4296	
Calibration date	23/08/2022	
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*		Y / N
Airblast overpressure result (dB)	110.6BDL	
Ground vibration result (PPV)	7.71mm/s	
Peak Vector Sum (PVS)	7.71mm/s	
Licence limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s	
Comments	Recommend installing small concrete footing for better coupling to ground as the set up area is rocky in nature and can be problematic when placing geophone.	

Monitor Location	Location 4 (365 Booerie Creek Rd, Booerie Creek)	
Monitor name/ model details:	Texcel GTM	
Monitor Serial no	4384	
Calibration date	14/09/2022	
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*		Y / N
Airblast overpressure result (dB)	108.3DBL	
Ground vibration result (PPV)	0.69mm/s	
Peak Vector Sum (PVS)	0.69mm/s	
Licence limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s	
Comments	N/A	

Monitor Location	Location 2 (190 Keerong Road Blakebrook)	
Monitor name/ model details:	Texcel GTM	
Monitor Serial no	4298	
Calibration date	19/05/2022	
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*		Y / N
Airblast overpressure result (dB)	104.7DBL	
Ground vibration result (PPV)	0.45mm/s	
Peak Vector Sum (PVS)	0.45mm/s	
Licence limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s	
Comments	N/A	

Monitor Location	437 Rosehill Road	
Monitor name/ model details:	Texcel GTM	
Monitor Serial no	4207	
Calibration date	20/09/2022	
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*		Y / N
Airblast overpressure result (dB)	105.4DBL	
Ground vibration result (PPV)	0.08mm/s	
Peak Vector Sum (PVS)	0.08mm/s	
Licence limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s	
Comments	N/A	

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CUSTOMER	**Lismore City Council**	**DATE**	**23/12/2022**
SITE	**Blakebrook Quarry**	**WEATHER**	**Fine**
SHOT NUMBER	**1**	**WIND DIRECTION**	**Southerly**

BLAST REPORT

NUMBER OF HOLES	**48**	**TOTAL LIN METERS (m)**	**312**
SPACING (m)	**2.5**	**HOLE DIAMETER (mm)**	**89**
BURDEN (m)	**2.5**	**MIC (KG)**	**42.4**
AVERAGE HOLE DEPTH (m)	**6.50**	**BULK EXPLOSIVE TYPE**	**Wala**
BLAST VOLUME (BCM)	**1950.0**	**TOTAL EXPLOSIVE (KG)**	**1728**
MIN STEMMING (m)	**2**	**POWDER FACTOR (kg/bcr**	**0.89**

EXPLOSIVES

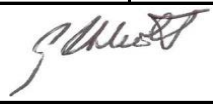
SURFACE CONNECTORS	
TYPE	**QUANTITY**
9ms	
25ms	**16**
42ms	
67ms	**32**

DOWNLINES	
TYPE	**QUANTITY**
500ms	**48**

BOOSTERS

TYPE	**QUANTITY**
150g	**48**
400g	
SHOTFIRER	Geof Chilcott

MONITOR RESULTS

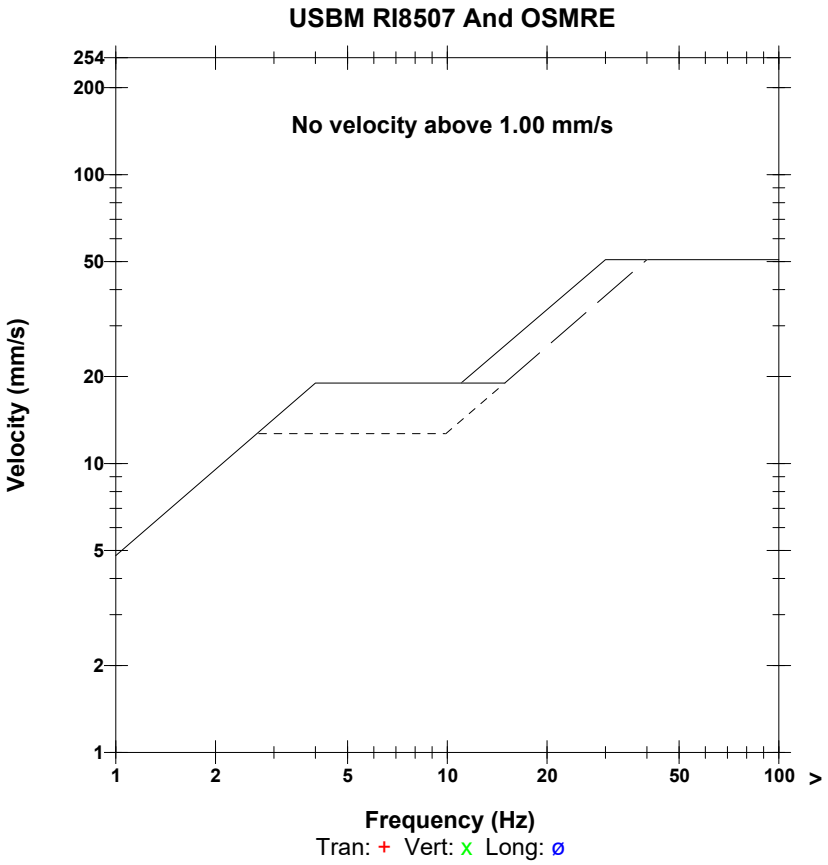
Location	**Vibration / Airblast**
Monitor 2 -Nearest House	1.092mm/s, 98.5dB(L)
Monitor 3, 4, 5 & 6	No Trigger
SIGN / DATE: 23/12/2022	

Event Report

Date/Time	Long at 09:10:41 December 23, 2022
Trigger Source	Geo: 0.127 mm/s, Mic: 100.00 dB(L)
Range	Geo: 254.0 mm/s
Record Time	3.0 sec at 2048 sps
Operator/Setup:	Operator/Default Micromate DIN.MMB

Serial Number	UM10342 V 10-90GC Micromate DIN
Battery Level	3.8 Volts
Unit Calibration	June 3, 2022 by Saros Int
File Name	UM10342_20221223091041.IDFW

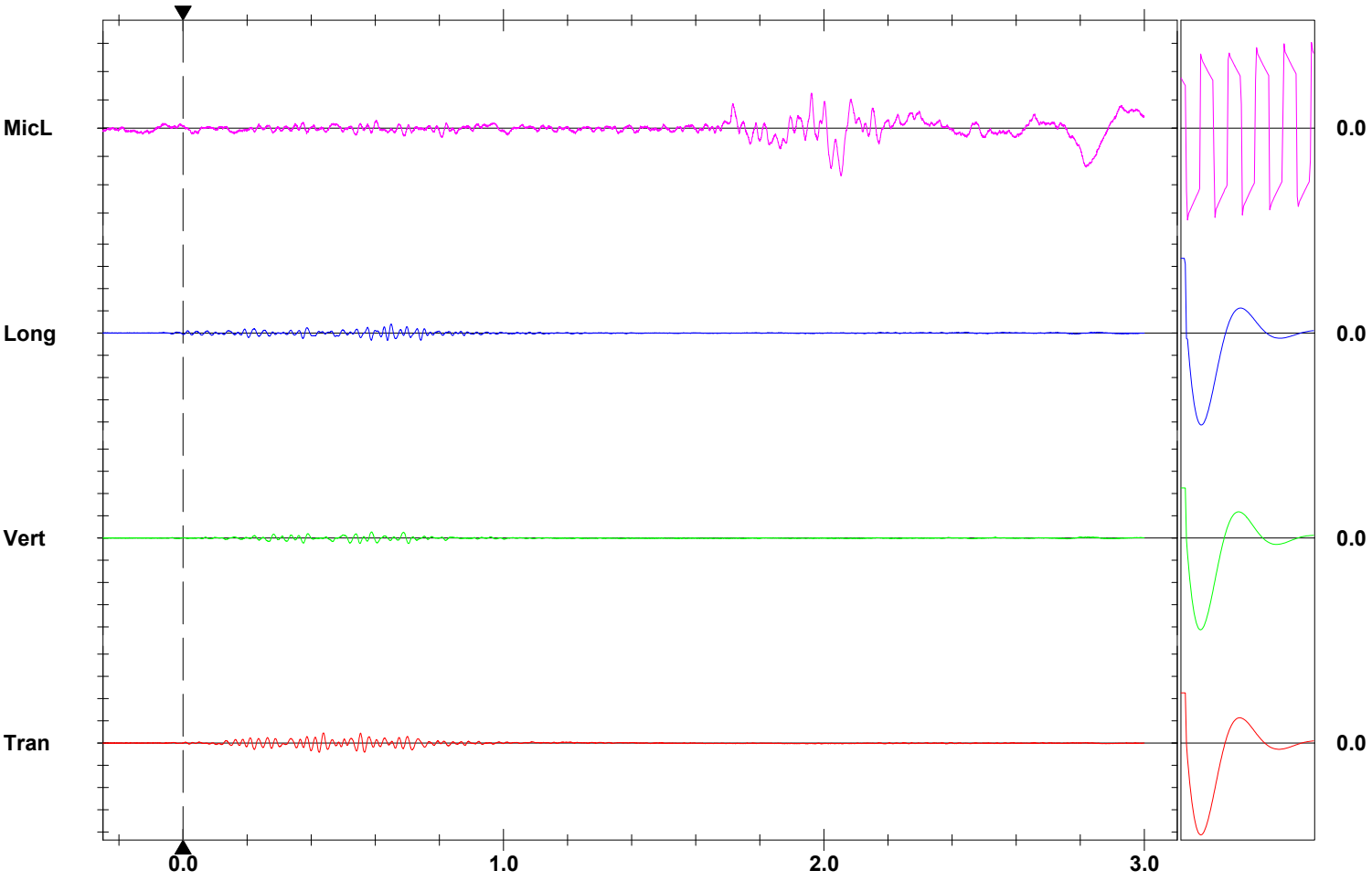
Notes: Location 8



Microphone	Linear Weighting
PSPL	98.5 dB(L) at 2.053 sec
ZC Freq	8.1 Hz
Channel Test	Passed (Freq = 20.5 Hz Amp = 1592 mv)

	Tran	Vert	Long	
PPV	0.914	0.544	0.820	mm/s
ZC Freq	35	29	38	Hz
Time (Rel. to Trig)	0.438	0.588	0.649	sec
Peak Acceleration	0.035	0.018	0.030	g
Peak Displacement	0.004	0.003	0.003	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.1	7.3	7.1	Hz
Overswing Ratio	3.6	3.5	3.6	

Peak Vector Sum 1.092 mm/s at 0.554 sec



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 2.000 mm/s/div Mic: 1.000 pa.(L)/div Sensor Check

Trigger =

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Customer	Blakebrook Quarry	
Date of blast	23-12-2022	
Blast number	01	
Monitor Location	**Location 8**	
Monitor name/ model details:	Monitor 2 - Micromate	
Monitor Serial no	UM10342	
Calibration date	03.06.2022	
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*		Y
Airblast overpressure result (dB)	98.5	
Ground vibration result (PPV)	1.092 mm/s	
Peak Vector Sum (PVS)	1.092 mm/s at 0.554 sec	
Licence limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s	
Comments	Monitor set to record airblast overpressure above 110 dB Monitor set to record ground vibration above 0.5 mm/s	

Customer	Northern Rivers Quarry (Blakebrook Quarry)	
Date of blast	23-12-2022	
Blast number	01	
Monitor Location	**Additional residence** – 437 Rosehill Rd, Blakebrook	
Monitor name/ model details:	Monitor 6 – Blastmate III	
Monitor Serial no	BA8980	
Calibration date	15.03.2022	
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*		Y
Airblast overpressure result (dB)	No result triggered	
Ground vibration result (PPV)	No result triggered	
EPL limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s	
Comments	*Monitor set to record airblast overpressure above 110 dB* *Monitor set to record ground vibration above 0.5 mm/s – no event was recorded.*	

Customer	Northern Rivers Quarry (Blakebrook Quarry)	
Date of blast	23-12-2022	
Blast number	01	
Monitor Location	**Location 2**	
Monitor name/ model details:	Monitor 3 – Minimate plus	
Monitor Serial no	BE22005	
Calibration date	15.03.2022	
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*		Y

Airblast overpressure result (dB)	No result triggered
Ground vibration result (PPV)	No result triggered
EPL limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s
Comments	*Monitor set to record ground vibration above 0.5 mm/s* *Monitor set to record airblast overpressure above 110 dB – no event was recorded.*

Customer	Northern Rivers Quarry (Blakebrook Quarry)	
Date of blast	23-12-2022	
Blast number	01	
Monitor Location	**Additional residence** - 308 Keerong Rd, Blakebrook	
Monitor name/ model details:	Monitor 4 – Blastmate III	
Monitor Serial no	BA17309	
Calibration date	15.12.2021	
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*		Y
Airblast overpressure result (dB)	No result triggered	
Ground vibration result (PPV)	No result triggered	
EPL limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s	
Comments	*Monitor set to record ground vibration above 0.5 mm/s* *Monitor set to record airblast overpressure above 110 dB – no event was recorded.*	

Customer	Northern Rivers Quarry (Blakebrook Quarry)	
Date of blast	23-12-2022	
Blast number	01	
Monitor Location	**Location 4**	
Monitor name/ model details:	Monitor 5 – Blastmate III	
Monitor Serial no	BA10184	
Calibration date	15.12.2021	
Instrumentation used to measure the airblast overpressure and ground vibration levels meets the requirements of Australian Standard *AS 2187.2-2006.*		Y
Airblast overpressure result (dB)	No result triggered	
Ground vibration result (PPV)	No result triggered	
EPL limits	Airblast overpressure - 115 dB Ground vibration (PPV) - 5mm/s	
Comments	*Monitor set to record ground vibration above 0.5 mm/s* *Monitor set to record airblast overpressure above 110 dB – no event was recorded.*	
Name:	Geof Chilcott	
Signature:		
Position:	Owner/Director	Date:23-12-2022