



Licensee: Perilya Broken Hill Limited
Environmental Protection Licenses: 2688 and 2683
Locations: Southern, Northern and Potosi Operations

Blast Monitoring

Perilya Broken Hill Limited (PBHL) has six (6) blast monitors which have been located at a number of what are considered to be noise sensitive locations surrounding their operations. These locations include; residential dwellings, schools and nursing homes that are within close proximity to PBHL operations (Southern and Potosi).

The monitors are also compliant with and are managed in keeping with the Australian Standard AS 2187.2:2006. In addition the blast monitors are routinely calibrated to ensure this equipment remains in calibration and that the information that is collected is representative.

Two (2) blast monitors set up to record peak particle velocity (PVS) and overpressure, have been located at Potosi operations. Blast monitors elsewhere record PVS only as PBHL EPL's for these operations only require this parameter.

PHBL's EPL's stipulate that PVS must not be greater than 10 mm/s for any blasts and that >95% of blasting conducted at both operations and for each reporting period must have a PVS of less than 5 mm/sec. Overpressure is not recorded at PBHL's Southern Operation's as it will have no significant impact on surrounding neighbour's due to being conducted deep underground. However, overpressure is recorded for blasting conducted on the Potosi Operation. This is a relatively new operation and blasting may still be conducted close to the surface. As development moves further underground, overpressure will become less relevant. According to the Potosi EPL, overpressure must not exceed 130dB for the period 7:00am to 7:00pm (day). For the period 7:00pm to 7:00am (night), the level must not exceed 110dB.

Results

Southern Operation (EPL 2688)

A total of 29 production blasts were conducted at the Southern Operation. All blasts conducted at the Southern Operation were within license conditions for October 2012 (Table 1).

Table 1. Southern Operation production blast results (EPL 2688).

Perilya Broken Hill Ltd (PBHL)

EPL No. 2688

Southern Operations

Monitoring frequency required by licence:

All blasts carried out in or on the premises

Date results received:

All results are received immediately following each blast.

Published on website:

Date	Time (24hr)	Blast Duration (ms)	Peak Particle Velocity Limit (mm/s)	Peak Particle Velocity (mm/s)			
				Nursing Home	Rainbow Ave	Westside Drive	Gaffney St
2/10/2012	0646h	400	10	<0.200	0.363	0.419	0.788
2/10/2012	1852h	400	10	0.384	0.251	0.340	0.372
4/10/2012	0647h	14100	10	0.625	1.430	0.420	0.623
5/10/2012	1845h	8400	10	<0.200	<0.200	0.771	1.610
7/10/2012	0646h	14100	10	0.614	1.300	0.373	0.357
7/10/2012	1852h	8050	10	<0.200	<0.200	<0.200	<0.200
7/10/2012	1852h	12900	10	0.255	<0.200	<0.200	0.512
9/10/2012	0652h	8050	10	<0.200	<0.200	0.236	0.316
10/10/2012	0649h	8050	10	<0.200	<0.200	0.298	0.823
12/10/2012	1902h	6550	10	0.863	1.830	0.356	0.351
13/10/2012	0649h	2650	10	0.336	0.442	0.228	0.264
15/10/2012	0646h	5900	10	<0.200	0.344	0.444	0.817
16/10/2012	0647h	3050	10	0.464	0.427	<0.200	<0.200
17/10/2012	0649h	8600	10	0.452	0.318	0.675	1.780
18/10/2012	0650h	2650	10	<0.200	<0.200	0.410	0.543
19/10/2012	0648h	7050	10	0.383	0.253	0.524	1.110
21/10/2012	0648h	4400	10	0.315	<0.200	1.130	1.370
22/10/2012	1856h	13800	10	<0.200	0.278	0.631	0.430
24/10/2012	0650h	14900	10	<0.200	0.406	1.780	0.692
26/10/2012	0647h	11500	10	0.293	0.461	0.256	<0.200
26/10/2012	0647h	8400	10	0.293	0.230	0.256	<0.200
27/10/2012	0648h	15000	10	0.674	1.210	0.364	0.463
27/10/2012	0648h	8150	10	0.674	0.324	0.364	1.300
28/10/2012	1847h	13750	10	0.374	1.260	2.260	4.170
28/10/2012	1847h	4850	10	<0.200	0.402	0.427	0.369
29/10/2012	0648h	8050	10	<0.200	<0.200	<0.200	1.150
30/10/2012	0650h	12200	10	<0.200	0.256	<0.200	<0.200
30/10/2012	0650h	8050	10	<0.200	<0.200	<0.200	0.886
31/10/2012	0649h	8050	10	<0.200	0.365	0.506	0.777

*The blast monitors are set to trigger at 0.2 mm/s. If the blast does not trigger the unit it indicates the PVS was <0.2

Potosi Operation (EPL 2683)

A total of 97 blasts were conducted at the Potosi Operation. Two of these blasts resulted in elevated overpressures and are highlighted red in Table 2. However, one of these (9/10/2012) did not register at the Hall St blast monitor (nearest residence). After inspection of the blast reports it appears that the elevated overpressures were not blast related but were most likely a result of high winds.

Table 2. Potosi blast results.

Perilya Broken Hill Ltd (PBHL)

EPL No. 2683

Northern and Potosi Operations

Monitoring frequency required by licence:

Date results received:

Published on website:

All blasts carried out in or on the premises

All results are recieved immediately following each blast.

Date	Time (24hr)	Peak Particle Velocity Limit (mm/s)	Peak Particle Velocity (mm/s)		Overpressure Limit (dB)	Overpressure Recorded (dB)	
			Potosi	Hall St		Potosi	Hall St
1/10/2012	0716h	10	0.254	NR	130	94	NR
1/10/2012	0824h	10	0.209	NR	130	95.9	NR
1/10/2012	1937h	10	0.702	NR	110	<88	NR
1/10/2012	2008h	10	0.139	NR	110	<88	NR
2/10/2012	0517h	10	0.086	NR	110	<88	NR
2/10/2012	1843h	10	0.136	<0.200	130	<88	<110
3/10/2012	0637h	10	2.67	<0.200	110	<88	<110
3/10/2012	1248h	10	0.649	<0.200	130	94	<110
3/10/2012	1832h	10	0.43	<0.200	130	94	<110
3/10/2012	1836h	10	0.588	<0.200	130	<88	<110
4/10/2012	0625h	10	0.199	<0.200	110	<88	<110
4/10/2012	1344h	10	5.8	<0.200	130	98.8	<110
4/10/2012	1822h	10	0.982	<0.200	130	98.8	<110
5/10/2012	0651h	10	0.618	<0.200	110	91.5	<110
5/10/2012	1403h	10	0.16	NR	130	94	NR
5/10/2012	1823h	10	9.52	<0.200	130	101	<110
6/10/2012	0651h	10	0.755	<0.200	110	91.5	<110
6/10/2012	0656h	10	0.177	<0.200	110	<88	<110
6/10/2012	1206h	10	0.814	NR	130	103.5	NR
6/10/2012	1858h	10	0.426	NR	130	104.9	NR
7/10/2012	0538h	10	0.313	NR	110	91.5	NR
7/10/2012	1058h	10	0.417	NR	130	95.9	NR
7/10/2012	1729h	10	0.496	NR	130	91.5	NR
8/10/2012	0539h	10	0.187	NR	110	<88	NR
8/10/2012	0645h	10	0.397	NR	110	<88	NR

8/10/2012	1731h	10	0.271	<0.200	130	<88	<110
9/10/2012	0117h	10	0.103	<0.200	110	<88	<110
9/10/2012	0505h	10	0.261	<0.200	110	116.1	<110
10/10/2012	0045h	10	0.094	<0.200	110	<88	<110
10/10/2012	1205h	10	0.403	<0.200	130	100	<110
10/10/2012	1342h	10	0.238	<0.200	130	97.5	<110
11/10/2012	0229h	10	0.144	NR	110	<88	NR
11/10/2012	0635h	10	0.241	NR	110	101.9	NR
11/10/2012	1846h	10	0.318	NR	130	100	NR
12/10/2012	0630h	10	0.147	NR	110	108.8	NR
12/10/2012	1906h	10	0.192	<0.200	110	91.5	<110
13/10/2012	0059h	10	0.102	<0.200	110	<88	<110
13/10/2012	0632h	10	0.132	<0.200	110	<88	<110
13/10/2012	1619h	10	0.15	<0.200	130	91.5	<110
13/10/2012	1849h	10	0.154	<0.200	130	<88	<110
14/10/2012	0632h	10	0.158	<0.200	110	<88	<110
14/10/2012	0848h	10	0.112	<0.200	130	<88	<110
15/10/2012	0217h	10	0.164	<0.200	110	<88	<110
15/10/2012	0638h	10	0.079	<0.200	110	<88	<110
15/10/2012	0645h	10	0.093	<0.200	110	<88	<110
15/10/2012	2206h	10	0.071	NR	110	107	NR
16/10/2012	0457h	10	0.462	NR	110	110.9	NR
16/10/2012	1736h	10	0.394	NR	130	94	NR
16/10/2012	1841h	10	0.159	NR	130	<88	NR
17/10/2012	0239h	10	1.39	NR	110	98.8	NR
17/10/2012	0627h	10	0.831	NR	110	94	NR
17/10/2012	1415h	10	0.103	<0.200	130	94	<110
17/10/2012	1812h	10	0.213	<0.200	130	<88	<110
18/10/2012	0615h	10	0.284	<0.200	110	<88	<110
18/10/2012	0617h	10	0.532	<0.200	110	<88	<110
18/10/2012	1756h	10	0.131	<0.200	130	91.5	<110
19/10/2012	0621h	10	0.575	<0.200	110	<88	<110
19/10/2012	0626h	10	1.47	<0.200	110	<88	<110
19/10/2012	1515h	10	0.103	NR	130	100	NR
20/10/2012	0630h	10	0.43	NR	110	<88	NR
20/10/2012	1331h	10	0.116	NR	130	<88	NR
20/10/2012	1822h	10	0.379	NR	130	<88	NR
21/10/2012	0631h	10	0.518	NR	110	91.5	NR
21/10/2012	0635h	10	0.382	NR	110	91.5	NR
21/10/2012	1849h	10	0.729	NR	130	<88	NR
21/10/2012	1851h	10	0.129	NR	130	<88	NR
21/10/2012	1855h	10	0.137	NR	130	<88	NR
22/10/2012	0509h	10	0.528	NR	110	<88	NR
22/10/2012	0655h	10	0.172	NR	110	95.9	NR
22/10/2012	1449h	10	0.363	NR	130	94	NR
22/10/2012	1714h	10	0.192	0.057	130	98.8	109.9

23/10/2012	0413h	10	0.145	<0.200	110	<88	<110
23/10/2012	0508h	10	0.151	<0.200	110	100	<110
23/10/2012	1829h	10	0.125	NR	130	94	NR
24/10/2012	0645h	10	0.125	NR	110	94	NR
24/10/2012	1036h	10	0.214	NR	130	106.5	NR
24/10/2012	1312h	10	0.086	NR	130	104.2	NR
24/10/2012	1837h	10	0.549	NR	130	95.9	NR
25/10/2012	0645h	10	0.098	NR	110	97.5	NR
25/10/2012	0653h	10	0.1	NR	110	91.5	NR
26/10/2012	0213h	10	0.196	NR	110	95.9	NR
26/10/2012	0619h	10	0.235	NR	110	98.8	NR
26/10/2012	1752h	10	0.097	1.5	130	91.5	<88
27/10/2012	0616h	10	0.15	<0.200	110	<88	<110
27/10/2012	0629h	10	0.116	<0.200	110	<88	<110
27/10/2012	1833h	10	0.083	NR	130	103.5	NR
28/10/2012	0256h	10	0.132	NR	110	<88	NR
29/10/2012	0031h	10	0.375	NR	110	97.5	NR
29/10/2012	0108h	10	0.342	NR	110	<88	NR
29/10/2012	0611h	10	0.086	NR	110	<88	NR
29/10/2012	2038h	10	0.147	<0.200	110	<88	<110
30/10/2012	0121h	10	0.204	NR	110	<88	NR
30/10/2012	1725h	10	0.16	0.376	130	<88	<88
30/10/2012	2335h	10	0.384	<0.200	110	<88	<110
31/10/2012	0925h	10	0.131	0.059	130	106.5	113.5
31/10/2012	1534h	10	0.139	NR	130	<88	NR
31/10/2012	2313h	10	0.237	NR	110	94	NR

*NR for Hall St Indicates the blast monitor was not recording at the time of the blast.

*The blast monitors are set to trigger at 0.2 mm/s. If the blast does not trigger the unit it indicates the PVS was <0.2

* The blast monitor at Hall St is set to trigger at 110 dB. If the blast does not trigger the unit it indicates the overpressure was <110.

* The blast monitors do not recorded overpressures less than 88 dB. This is the reason for the <88 result.