

Appendix F6

Report: *2011 Blast Monitoring Report*



ANNUAL REPORT MEMORANDUM

Agnico Eagle Mines Ltd: Meadowbank Division
Environment Department

SUBJECT: 2011 Blast Monitoring and Recommendations for Future Monitoring

1.1 Introduction and Objectives

As required by NIRB Project Certificate No.004, Commitment 85, AEM Meadowbank Division conducts monitoring to evaluate blast related peak particle velocity and overpressure to protect nearby fish bearing waters. According to the NIRB commitment, blasting must use a specific charge weight/delay/set.

The detonation of explosives in or near water produces compressive shock waves that can cause significant impacts to the swim bladders of fish, rupture other internal organs and/or damage or kill fish eggs and larvae. In addition, the effects of the shock waves can be intensified in the presence of ice. Consequently, guidelines have been developed by DFO to protect fish and fish habitat from works or undertakings that involve explosives in or near fisheries waters. These guidelines are presented in the DFO report entitled "Use of Explosives In or Near Canadian Fisheries Water", and included the following:

- No explosive is to be detonated in or near fish habitat that produces an instantaneous pressure change (IPC) greater than 100 kPa in the swim bladder of a fish; representatives from DFO requested that AEM use a value of 50 kPa instead of 100 kPa; and
- No explosive is to be detonated that produces a peak particle velocity greater than 13 mm/s in a spawning bed during the period of egg incubation (for lakes near the Meadowbank mine, the fisheries window is from August 15 to June 30).

Peak particle velocity (PPV) and overpressure monitoring data was recorded throughout 2010 during blasting activities at the North Portage Pit and South Portage pit. The locations of the blast monitoring stations in 2011, called Portage (North) (14W 7214597.83N 639457.97E) and Portage (South) (14W 7213663.3N 639349.8E) are shown in Figure 1. They are located near the shoreline of Second Portage Lake.

1.2 Methods

Blasts were monitored using an Instantel Minimate Blaster which is fully compliant with the international Society of Explosives and Engineers performance specification for blasting seismographs (Instantel, 2005). The Minimate Blaster has three main parts: a monitor, a standard transducer (geophone) and a microphone. The monitor contains the battery and electronic components of the instrument. It also checks the two sensors to be sure that they work properly. The transducer measures ground vibration with a mechanism called a geophone.

They measure transverse, vertical and longitudinal ground vibrations. Transverse ground vibrations agitate particles in a side to side motion. Vertical ground vibrations agitate particles in



an up and down motion. Longitudinal ground vibrations agitate particles in a back and forth motion progressing outward from the event site (Instanetel, 2005). The Minimate Blaster calculates the PPV for each geophone and calculates the vector sum of the three axes. The final result is the Peak Vector Sum (PVS) and is the resultant particle velocity magnitude of the event:

$$PVS = \sqrt{T^2 + V^2 + L^2}$$

Where:

T = particle velocity along the transverse plane

V = particle velocity along the vertical plane

L = particle velocity along the longitudinal plane

The transducer is installed as per the model specifications. All monitoring follows AEM (2010)ⁱ Blast Monitoring Plan.

1.3 Results, Discussion and Conclusions

Monitoring results are presented in Table 1.3. PPV concentrations exceeded the DFO limit of 13 mm/s on 16 occasions over the entire year (n = 311 blasts for the entire year). During the period of egg incubation (for lakes near the Meadowbank mine the period is from August 15 to June 30) we exceed the DFO limit on 12 occasions (n = 256); these exceedances are highlighted in Table 1.3. The IPC measurements were all below the DFO limit of 50 kpa. The blast monitoring results are reviewed after each blast and the blast mitigation plan is implemented immediately if the vibrations or the overpressure exceed the guidelines (see appended blast results). This plan includes a retroactive analysis to determine what caused the higher than expected results. From August to December 31st, 2011, there were only two exceedances of 13mm/s PPV limit.

In 2011, the average PPV was 6.33 mm/s (CI +/- 0.43) with a maximum of 22.3 mm/s. From August 15 to June 30, twelve exceedances were mostly at Portage (South) station and were around 15 mm/s with an upper 95% percentile of all the data equal to 12.85 mm/s.

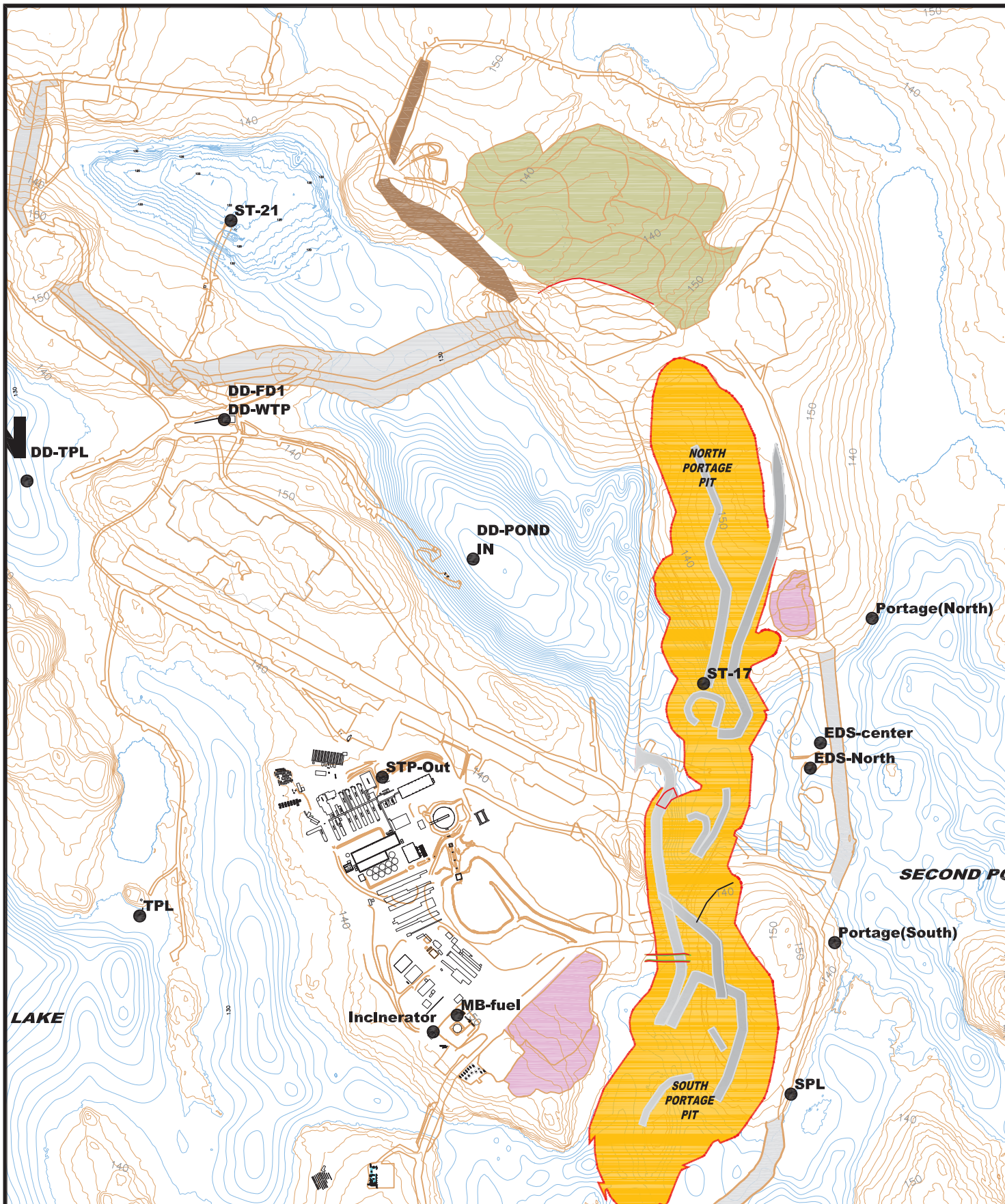
Wright (1982)ⁱⁱ determined that peak particle velocity greater than 13 mm/s is potentially damaging to incubating eggs, however Faulkner et al. (2006)ⁱⁱⁱ found no effects on lake trout eggs due to blasts at Diavik Mine, NWT with maximum PPVs of 28.5 mm/s. Faulkner et al. (2006) measured mean PPV at three exposure stations from September to July, 2003-2004 and found a mean range of 5.8- 6.4 mm/s and reported 80 exceedances of 13 mm/s PPV at these stations with a maximum PPV of double the DFO guideline. They found there were no differences in mortality of lake trout eggs in incubators between exposure sites and reference sites that resulted from blasting at Diavik in 2003-2004.

At Meadowbank, it is important to consider the location of the monitoring stations and distances to spawning and nursery habitat identified in the baseline habitat mapping. The closest high value habitat area is approximately greater than 500m away from the shoreline monitoring station, thus incubating eggs would be exposed to significantly less PPV given the distance of the spawning and incubation site from the blast location compared to the distance from the blast to the monitoring station. Based on the monitoring station locations and comparison to Faulkner et al. (2006), few exceedances of 13 mm/s PPV from the 2011 blasting are unlikely to impact salmonid incubation sites at the Meadowbank Mine site.

ⁱ AEM. 2010. Meadowbank Gold Project Blast Monitoring Plan. Prepared by Agnico-Eagle Mines: Meadowbank Division. May 2010 version 1.

ⁱⁱ Wright, D.G. 1982. A Discussion Paper on the Effects of Explosives on Fish and Marine Mammals in the Waters of the Northwest Territories. Canadian Technical Report of Fisheries and Aquatic Sciences 1052.

ⁱⁱⁱ Faulkner, Sean G., Tonn, William, Welz, Marek, Welz, and Schmitt, Douglas. 2006. Effects of Explosives on Incubating Lake Trout Eggs in the Canadian Arctic. North American Journal of Fisheries Management. 26:833-842.



REV	DATE	DESCRIPTION	BY
REVISIONS			
<small>THE INFORMATION HERE ON IS THE PROPERTY OF AGNICO-EAGLE LTD. AND MUST BE RETURNED UPON REQUEST. WITHOUT WRITTEN PERMISSION, ANY COPYING TRANSMITTAL TO OTHERS AND ANY USE, EXCEPT THAT FOR WHICH IT IS LOANED ARE PROHIBITED. © AGNICO-EAGLE LTD.</small>			



TITLE AGNICO-EAGLE - MEADOWBANK DIVISION Meadowbank Mine Site Sampling Location			
SCALE NTS		DATE 25/03/2011	
DRAWN BY P. DAUDELIN		SHEET 1 / 1	
APPROVED BY		REVISION	
DRAWING NO.			

Table 1.3: 2011 Meadowbank Mine Blast Monitoring Results

Notes:

Indicates an exceedance of 13.0 mm/s PPV

August 15 to June 30th- DFO, Guidance

Date of Blast	Location- Station ID	PPV (mm/s)	IPC-Peak Sound Pressure (pa)	(sec)	Holes in Blast Pattern
02-Jan-11	PORTAGE (SOUTH)	3.41	41.5	2.089	452
04-Jan-11	PORTAGE (SOUTH)	4.35	22.5	1.22	30
05-Jan-11	PORTAGE (SOUTH)	10.2	109	1.438	396
06-Jan-11	PORTAGE (SOUTH)	2.83	30.3	1.242	All Holes are in the first Blast
06-Jan-11	PORTAGE (SOUTH)	1.36	23	2.189	All Holes are in the first Blast
06-Jan-11	PORTAGE (NORTH)	2.52	23.8	1.528	All Holes are in the first Blast
10-Jan-11	PORTAGE (SOUTH)	4.44	233	2.341	404
11-Jan-11	PORTAGE (SOUTH)	15	103	2.123	364
13-Jan-11	PORTAGE (SOUTH)	3.83	29.3	1.534	All Holes are in the first Blast
16-Jan-11	PORTAGE (SOUTH)	7.13	69	2.001	All Holes are in the first Blast
16-Jan-11	PORTAGE (NORTH)	2.04	28.8	2.602	515
17-Jan-11	PORTAGE (NORTH)	8.13	122	2.035	381
18-Jan-11	PORTAGE (SOUTH)	1.98	0.5	0.052	All Holes are in the first Blast
22-Jan-11	PORTAGE (SOUTH)	14	59.3	1.234	163
24-Jan-11	PORTAGE (SOUTH)	9.79	41	1.831	317
24-Jan-11	PORTAGE (SOUTH)	3.48	34.3	1.987	365
28-Jan-11	PORTAGE (SOUTH)	21.5	103	1.208	356
28-Jan-11	PORTAGE (SOUTH)	21.3	25.3	0.094	9
05-Feb-11	PORTAGE (SOUTH)	2.45	55.3	1.844	433
06-Feb-11	PORTAGE (SOUTH)	3.77	59.5	1.402	45
06-Feb-11	PORTAGE (SOUTH)	9.33	153	1.43	46
12-Feb-11	PORTAGE (SOUTH)	9.48	117	1.633	29
12-Feb-11	PORTAGE (SOUTH)	9.48	117	1.663	All Holes are in the first Blast
12-Feb-11	PORTAGE (SOUTH)	9.48	117	1.633	All Holes are in the first Blast
13-Feb-11	PORTAGE (NORTH)	7.68	44.5	1.662	355
19-Feb-11	PORTAGE (SOUTH)	4.96	56.5	1.698	All Holes are in the first Blast
19-Feb-11	PORTAGE (SOUTH)	4.96	56.5	1.698	474
19-Feb-11	PORTAGE (SOUTH)	4.96	56.5	1.698	All Holes are in the first Blast
20-Feb-11	PORTAGE (SOUTH)	2.65	42.8	2.125	All Holes are in the first Blast
20-Feb-11	PORTAGE (SOUTH)	2.65	42.8	2.125	All Holes are in the first Blast
21-Feb-11	PORTAGE (SOUTH)	4.55	82.8	1.601	305
22-Feb-11	PORTAGE (NORTH)	4.59	32.5	1.239	48
23-Feb-11	PORTAGE (SOUTH)	8.02	109	1.633	438
26-Feb-11	PORTAGE (SOUTH)	3.63	36.5	2.358	All Holes are in the first Blast
26-Feb-11	PORTAGE (SOUTH)	3.63	36.5	2.358	All Holes are in the first Blast
28-Feb-11	PORTAGE (SOUTH)	4.3	13.5	1.514	All Holes are in the first Blast
03-Mar-11	PORTAGE (SOUTH)	5.14	80	2.126	All Holes are in the first Blast
05-Mar-11	PORTAGE (SOUTH)	22.3	141	1.109	All Holes are in the first Blast
06-Mar-11	PORTAGE (SOUTH)	7.72	113	1.66	All Holes are in the first Blast
08-Mar-11	PORTAGE (SOUTH)	2.68	457	0.719	448
15-Mar-11	PORTAGE (SOUTH)	3.23	14.5	1.894	All Holes are in the first Blast
23-Mar-11	PORTAGE (SOUTH)	5.29	69	2.811	471
23-Mar-11	PORTAGE (NORTH)	5.29	69	2.811	All Holes are in the first Blast
25-Mar-11	PORTAGE (SOUTH)	4.15	63.5	1.705	All Holes are in the first Blast
29-Mar-11	PORTAGE (SOUTH)	13.1	33.5	1.001	87
29-Mar-11	PORTAGE (NORTH)	11	133	1.481	181
30-Mar-11	PORTAGE (SOUTH)	8.55	12.5	1.031	All Holes are in the first Blast
31-Mar-11	PORTAGE (SOUTH)	4.42	18.3	0.97	All Holes are in the first Blast
01-Apr-11	PORTAGE (SOUTH)	7.98	85.3	1.742	All Holes are in the first Blast
02-Apr-11	PORTAGE (NORTH)	6.02	19.5	1.668	All Holes are in the first Blast
03-Apr-11	PORTAGE (SOUTH)	4.34	49.5	1.614	79
05-Apr-11	PORTAGE (NORTH)	5.88	71	1.189	All Holes are in the first Blast
08-Apr-11	PORTAGE (SOUTH)	5.36	28	1.717	All Holes are in the first Blast
09-Apr-11	PORTAGE (NORTH)	7.43	112	2.441	603
10-Apr-11	PORTAGE (SOUTH)	10.6	53	1.908	470
11-Apr-11	PORTAGE (SOUTH)	4.65	56.5	1.826	104
12-Apr-11	PORTAGE (SOUTH)	15.2	117	0.781	35
13-Apr-11	PORTAGE (SOUTH)	2.18	17.8	1.236	All Holes are in the first Blast
14-Apr-11	PORTAGE (SOUTH)	16.1	68.5	0.923	All Holes are in the first Blast
15-Apr-11	PORTAGE (SOUTH)	4.18	80	2.501	All Holes are in the first Blast
15-Apr-11	PORTAGE (SOUTH)	4.18	80	2.501	297
16-Apr-11	PORTAGE (SOUTH)	14.1	73.3	0.993	All Holes are in the first Blast

Table 1.3: 2011 Meadowbank Mine Blast Monitoring Results

Notes:

Indicates an exceedance of 13.0 mm/s PPV

August 15 to June 30th- DFO, Guidance

Date of Blast	Location- Station ID	PPV (mm/s)	IPC-Peak Sound Pressure (pa)	(sec)	Holes in Blast Pattern
17-Apr-11	PORTAGE (SOUTH)	13.1	23.5	0.948	57
19-Apr-11	PORTAGE (SOUTH)	11.7	73	2.77	All Holes are in the first Blast
19-Apr-11	PORTAGE (SOUTH)	11.7	73	2.77	All Holes are in the first Blast
19-Apr-11	PORTAGE (SOUTH)	11.7	73	2.77	All Holes are in the first Blast
20-Apr-11	PORTAGE (NORTH)	2.04	13.3	2.298	147
20-Apr-11	PORTAGE (NORTH)	2.04	13.3	2.298	62
23-Apr-11	PORTAGE (SOUTH)	3.63	79.5	1.603	All Holes are in the first Blast
23-Apr-11	PORTAGE (NORTH)	1.63	29.8	2.989	371
24-Apr-11	PORTAGE (SOUTH)	7.68	30.3	1.158	All Holes are in the first Blast
26-Apr-11	PORTAGE (NORTH)	7.85	154	2.446	All Holes are in the first Blast
28-Apr-11	PORTAGE (SOUTH)	12.6	125	1.455	274
02-May-11	PORTAGE (SOUTH)	10.9	34	0.951	All Holes are in the first Blast
04-May-11	PORTAGE (NORTH)	11.3	90.5	1.419	576
05-May-11	PORTAGE (SOUTH)	7.68	58.5	2.687	333
07-May-11	PORTAGE (SOUTH)	9.85	25	0.004	600
08-May-11	PORTAGE (NORTH)	2.39	21.5	2.943	314
10-May-11	PORTAGE (SOUTH)	1.62	69.5	1.515	58
11-May-11	PORTAGE (SOUTH)	10.3	111	2.137	70
11-May-11	PORTAGE (SOUTH)	10.3	111	2.137	37
11-May-11	PORTAGE (SOUTH)	10.3	111	2.137	189
11-May-11	PORTAGE (SOUTH)	10.3	111	2.137	69
11-May-11	PORTAGE (SOUTH)	10.3	111	2.137	0
12-May-11	PORTAGE (SOUTH)	5.93	24.3	0.093	All Holes are in the first Blast
13-May-11	PORTAGE (NORTH)	3.28	29	1.741	292
14-May-11	PORTAGE (NORTH)	6.21	85.5	2.872	99
14-May-11	PORTAGE (NORTH)	6.21	85.5	2.872	396
14-May-11	PORTAGE (NORTH)	6.21	85.5	2.872	All Holes are in the first Blast
14-May-11	PORTAGE (NORTH)	6.21	85.5	2.872	19
16-May-11	PORTAGE (NORTH)	3.85	76.8	1.594	53
17-May-11	PORTAGE (SOUTH)	8.89	24.3	1.475	40
17-May-11	PORTAGE (SOUTH)	8.89	24.3	1.475	236
18-May-11	PORTAGE (SOUTH)	11.6	31.3	1.423	632
18-May-11	PORTAGE (SOUTH)	11.6	31.3	1.423	0
19-May-11	PORTAGE (SOUTH)	10.1	71.8	2	48
19-May-11	PORTAGE (SOUTH)	10.1	71.8	2	25
20-May-11	PORTAGE (NORTH)	1.45	57	2.334	52
20-May-11	PORTAGE (SOUTH)	3.66	103	1.218	122
22-May-11	PORTAGE (SOUTH)	6.88	20.3	1.212	All Holes are in the first Blast
25-May-11	PORTAGE (SOUTH)	3.62	90.5	1.583	55
25-May-11	PORTAGE (SOUTH)	3.62	90.5	1.583	99
27-May-11	PORTAGE (SOUTH)	3.5	58.8	1.249	All Holes are in the first Blast
27-May-11	PORTAGE (SOUTH)	3.5	58.8	1.249	22
29-May-11	PORTAGE (SOUTH)	7.42	181	1.746	All Holes are in the first Blast
29-May-11	PORTAGE (SOUTH)	7.42	181	1.746	606
30-May-11	PORTAGE (SOUTH)	3.32	8	1.183	All Holes are in the first Blast
30-May-11	PORTAGE (NORTH)	8.77	65.3	1.48	579
30-May-11	PORTAGE (NORTH)	8.77	65.3	1.48	28
01-Jun-11	PORTAGE (NORTH)	4.36	10.8	1.994	456
02-Jun-11	PORTAGE (SOUTH)	1.73	8.25	1.192	All Holes are in the first Blast
04-Jun-11	PORTAGE (NORTH)	4.31	49	1.958	All Holes are in the first Blast
04-Jun-11	PORTAGE (NORTH)	4.31	49	1.958	All Holes are in the first Blast
04-Jun-11	PORTAGE (NORTH)	4.31	49	1.958	All Holes are in the first Blast
05-Jun-11	PORTAGE (SOUTH)	5.96	61	1.066	All Holes are in the first Blast
05-Jun-11	PORTAGE (SOUTH)	6.52	51.8	2.411	385
05-Jun-11	PORTAGE (NORTH)	5.96	61	1.066	47
06-Jun-11	PORTAGE (SOUTH)	3.92	24.3	1.291	All Holes are in the first Blast
06-Jun-11	PORTAGE (NORTH)	3.08	59.3	2.761	All Holes are in the first Blast
06-Jun-11	PORTAGE (NORTH)	3.08	59.3	2.761	214
07-Jun-11	PORTAGE (SOUTH)	1.48	15.8	1.927	73
07-Jun-11	PORTAGE (NORTH)	7.11	84.3	0.972	All Holes are in the first Blast
07-Jun-11	PORTAGE (NORTH)	1.48	15.8	1.927	63
08-Jun-11	PORTAGE (SOUTH)	3.08	22.3	1.223	All Holes are in the first Blast

Table 1.3: 2011 Meadowbank Mine Blast Monitoring Results

Notes:

Indicates an exceedance of 13.0 mm/s PPV
August 15 to June 30th- DFO, Guidance

Date of Blast	Location- Station ID	PPV (mm/s)	IPC-Peak Sound Pressure (pa)	(sec)	Holes in Blast Pattern
09-Jun-11	PORTAGE (NORTH)	2.5	18.5	2.132	647
10-Jun-11	PORTAGE (SOUTH)	4.67	203	1.839	All Holes are in the first Blast
10-Jun-11	PORTAGE (NORTH)	7.92	147	0.946	All Holes are in the first Blast
11-Jun-11	PORTAGE (NORTH)	1.84	5.5	2.669	55
11-Jun-11	PORTAGE (NORTH)	1.43	153	1.645	All Holes are in the first Blast
11-Jun-11	PORTAGE (NORTH)	1.84	5.5	2.669	147
12-Jun-11	PORTAGE (NORTH)	1.67	53	2.368	All Holes are in the first Blast
14-Jun-11	PORTAGE (SOUTH)	4.19	12.3	1.572	All Holes are in the first Blast
14-Jun-11	PORTAGE (SOUTH)	2.32	76	1.649	All Holes are in the first Blast
14-Jun-11	PORTAGE (SOUTH)	4.19	12.3	1.572	72
15-Jun-11	PORTAGE (SOUTH)	3.13	34	1.439	209
15-Jun-11	PORTAGE (NORTH)	2.22	30.5	2.282	All Holes are in the first Blast
17-Jun-11	PORTAGE (NORTH)	4.05	21.3	1.952	All Holes are in the first Blast
17-Jun-11	PORTAGE (NORTH)	4.05	21.3	1.952	92
18-Jun-11	PORTAGE (SOUTH)	7	80.5	1.074	All Holes are in the first Blast
18-Jun-11	PORTAGE (SOUTH)	7	80.5	1.074	26
19-Jun-11	PORTAGE (SOUTH)	5.96	82.5	1.17	All Holes are in the first Blast
19-Jun-11	PORTAGE (SOUTH)	5.96	85.5	1.17	46
19-Jun-11	PORTAGE (SOUTH)	4.64	26.3	0.739	44
21-Jun-11	PORTAGE (NORTH)	12.6	200	1.981	All Holes are in the first Blast
21-Jun-11	PORTAGE (NORTH)	12.6	200	1.981	156
22-Jun-11	PORTAGE (SOUTH)	7.89	186	1.354	All Holes are in the first Blast
22-Jun-11	PORTAGE (SOUTH)	7.89	186	1.354	240
22-Jun-11	PORTAGE (SOUTH)	7.89	186	1.354	All Holes are in the first Blast
22-Jun-11	PORTAGE (NORTH)	7.44	17.5	1.491	92
24-Jun-11	PORTAGE (SOUTH)	3.59	52	2.511	290
25-Jun-11	PORTAGE (SOUTH)	5.03	86	1.249	All Holes are in the first Blast
25-Jun-11	PORTAGE (SOUTH)	5.03	86	1.249	All Holes are in the first Blast
25-Jun-11	PORTAGE (SOUTH)	5.03	86	1.249	34
25-Jun-11	PORTAGE (NORTH)	7.52	29.8	1.467	49
25-Jun-11	PORTAGE (NORTH)	7.52	29.8	1.467	All Holes are in the first Blast
25-Jun-11	PORTAGE (NORTH)	7.52	29.8	1.467	270
26-Jun-11	PORTAGE (NORTH)	8.33	19.5	1.428	All Holes are in the first Blast
27-Jun-11	PORTAGE (SOUTH)	6.41	63.8	1.198	56
28-Jun-11	PORTAGE (SOUTH)	4.1	61.3	1.975	171
28-Jun-11	PORTAGE (NORTH)	4.1	61.3	1.975	200
29-Jun-11	PORTAGE (SOUTH)	9.31	130	1.382	All Holes are in the first Blast
29-Jun-11	PORTAGE (NORTH)	8.96	98	2.799	All Holes are in the first Blast
01-Jul-11	PORTAGE (NORTH)	5.45	14.3	2.209	328
04-Jul-11	PORTAGE (SOUTH)	3.3	30.3	2.255	260
06-Jul-11	PORTAGE (SOUTH)	1.05	7.5	1.747	62
07-Jul-11	PORTAGE (SOUTH)	11.6	55.3	1.455	95
07-Jul-11	PORTAGE (SOUTH)	11.6	55.3	1.455	All Holes are in the first Blast
07-Jul-11	PORTAGE (SOUTH)	11.6	55.3	1.455	All Holes are in the first Blast
07-Jul-11	PORTAGE (SOUTH)	11.6	55.3	1.455	All Holes are in the first Blast
07-Jul-11	PORTAGE (SOUTH)	11.6	55.3	1.455	59
07-Jul-11	PORTAGE (SOUTH)	11.6	55.3	1.455	402
07-Jul-11	PORTAGE (SOUTH)	11.6	55.3	1.455	Added with a order Blast or
08-Jul-11	PORTAGE (NORTH)	3.82	16	1.132	All Holes are in the first Blast
09-Jul-11	PORTAGE (SOUTH)	2.7	24.5	1.318	All Holes are in the first Blast
09-Jul-11	PORTAGE (NORTH)	2.3	54.3	2.968	All Holes are in the first Blast
09-Jul-11	PORTAGE (SOUTH)	2.3	54.3	2.968	All Holes are in the first Blast
10-Jul-11	PORTAGE (NORTH)	13.9	56.5	2.42	289
11-Jul-11	PORTAGE (SOUTH)	4.26	52.5	1.488	All Holes are in the first Blast
11-Jul-11	PORTAGE (SOUTH)	14.6	73.5	1.597	All Holes are in the first Blast
12-Jul-11	PORTAGE (SOUTH)	6.57	58.3	2.053	All Holes are in the first Blast
12-Jul-11	PORTAGE (NORTH)	2.19	25.8	1.509	All Holes are in the first Blast
13-Jul-11	PORTAGE (NORTH)	1.53	58.3	1.23	29
13-Jul-11	PORTAGE (NORTH)	1.53	58.3	1.23	95
14-Jul-11	PORTAGE (SOUTH)	2.47	12	1.426	85
16-Jul-11	PORTAGE (SOUTH)	10	96	1.651	262
16-Jul-11	PORTAGE (NORTH)	8.75	44.8	1.24	38

Table 1.3: 2011 Meadowbank Mine Blast Monitoring Results

Notes:

Indicates an exceedance of 13.0 mm/s PPV
August 15 to June 30th- DFO, Guidance

Date of Blast	Location- Station ID	PPV (mm/s)	IPC-Peak Sound Pressure (pa)	(sec)	Holes in Blast Pattern
16-Jul-11	PORTAGE (NORTH)	8.75	44.8	1.24	48
17-Jul-11	PORTAGE (SOUTH)	6.57	58.3	2.053	32
17-Jul-11	PORTAGE (SOUTH)	6.57	58.3	2.053	All Holes are in the first Blast
19-Jul-11	PORTAGE (SOUTH)	9.7	146	1.995	All Holes are in the first Blast
19-Jul-11	PORTAGE (NORTH)	15.4	38.5	1.07	All Holes are in the first Blast
20-Jul-11	PORTAGE (NORTH)	1.86	30.3	1.613	8
20-Jul-11	PORTAGE (NORTH)	1.86	30.3	1.613	All Holes are in the first Blast
21-Jul-11	PORTAGE (SOUTH)	8.61	12.3	1.682	All Holes are in the first Blast
21-Jul-11	PORTAGE (NORTH)	6.42	11.8	0.995	All Holes are in the first Blast
21-Jul-11	PORTAGE (NORTH)	6.42	11.8	0.995	All Holes are in the first Blast
23-Jul-11	PORTAGE (NORTH)	13.6	23.5	2.006	406
27-Jul-11	PORTAGE (SOUTH)	7.34	66.5	2.388	634
27-Jul-11	PORTAGE (NORTH)	5.11	63.3	2.125	148
29-Jul-11	PORTAGE (NORTH)	12.4	160	2.101	319
30-Jul-11	PORTAGE (NORTH)	7.41	102	1.07	All Holes are in the first Blast
30-Jul-11	PORTAGE (SOUTH)	7.41	102	1.07	All Holes are in the first Blast
30-Jul-11	PORTAGE (SOUTH)	7.41	102	1.07	176
01-Aug-11	PORTAGE (NORTH)	7.83	176	1.528	444
02-Aug-11	PORTAGE (SOUTH)	8.64	59.5	1.452	All Holes are in the first Blast
02-Aug-11	PORTAGE (SOUTH)	8.64	59.5	1.452	All Holes are in the first Blast
02-Aug-11	PORTAGE (NORTH)	1.98	22.5	1.96	221
03-Aug-11	PORTAGE (NORTH)	9.56	31	2.638	136
03-Aug-11	PORTAGE (NORTH)	9.56	31	2.638	160
03-Aug-11	PORTAGE (NORTH)	9.56	31	2.638	Added with a order Blast or
07-Aug-11	PORTAGE (NORTH)	3.16	29.5	2.262	All Holes are in the first Blast
12-Aug-11	PORTAGE (SOUTH)	6.67	32	2.591	248
12-Aug-11	PORTAGE (SOUTH)	2.36	22.8	0.712	All Holes are in the first Blast
12-Aug-11	PORTAGE (NORTH)	2.92	89.5	2.337	106
13-Aug-11	PORTAGE (SOUTH)	1.59	21.5	2.555	All Holes are in the first Blast
14-Aug-11	PORTAGE (NORTH)	3.75	39.8	0.569	All Holes are in the first Blast
14-Aug-11	PORTAGE (NORTH)	3.75	39.8	0.569	198
20-Aug-11	PORTAGE (SOUTH)	1.05	26.8	1.583	All Holes are in the first Blast
20-Aug-11	PORTAGE (SOUTH)	8.36	126	1.943	266
27-Aug-11	PORTAGE (SOUTH)	5.23	0.5	0.042	270
27-Aug-11	PORTAGE (SOUTH)	5.23	0.5	0.042	382
27-Aug-11	PORTAGE (SOUTH)	5.23	0.5	0.042	All Holes are in the first Blast
27-Aug-11	PORTAGE (SOUTH)	5.23	0.5	0.042	All Holes are in the first Blast
30-Aug-11	PORTAGE (SOUTH)	4.5	26	2.442	All Holes are in the first Blast
30-Aug-11	PORTAGE (SOUTH)	4.5	26	2.44	2
31-Aug-11	PORTAGE (NORTH)	10.5	19.3	0.97	183
31-Aug-11	PORTAGE (NORTH)	10.5	19.3	0.97	405
03-Sep-11	PORTAGE (NORTH)	7.32	23.5	2.16	161
03-Sep-11	PORTAGE (NORTH)	7.32	23.5	2.16	310
04-Sep-11	PORTAGE (SOUTH)	6.84	56.8	1.63	All Holes are in the first Blast
06-Sep-11	PORTAGE (SOUTH)	7.14	20.5	1.38	56
06-Sep-11	PORTAGE (SOUTH)	7.14	20.5	1.38	80
08-Sep-11	PORTAGE (SOUTH)	4.36	14	1.37	All Holes are in the first Blast
08-Sep-11	PORTAGE (SOUTH)	4.36	14	1.37	94
08-Sep-11	PORTAGE (SOUTH)	4.36	14	1.37	Added with a order Blast or
08-Sep-11	PORTAGE (NORTH)	4.36	14	1.372	All Holes are in the first Blast
08-Sep-11	PORTAGE (NORTH)	4.36	14	1.372	43
10-Sep-11	PORTAGE (NORTH)	8.46	12.8	2.437	370
11-Sep-11	PORTAGE (SOUTH)	1.75	19.5	1.31	29
11-Sep-11	PORTAGE (SOUTH)	1.75	19.5	1.312	All Holes are in the first Blast
12-Sep-11	PORTAGE (SOUTH)	8.36	126	1.943	327
12-Sep-11	PORTAGE (SOUTH)	8.36	126	1.94	All Holes are in the first Blast
12-Sep-11	PORTAGE (NORTH)	4.73	12.8	2.285	141
14-Sep-11	PORTAGE (SOUTH)	4.24	18.8	2.818	208
14-Sep-11	PORTAGE (SOUTH)	4.24	18.8	2.818	13
14-Sep-11	PORTAGE (NORTH)	4.24	18.8	2.818	126
18-Sep-11	PORTAGE (SOUTH)	3.87	13.8	1.24	29
18-Sep-11	PORTAGE (SOUTH)	3.87	13.8	1.237	369

Table 1.3: 2011 Meadowbank Mine Blast Monitoring Results

Notes:

Indicates an exceedance of 13.0 mm/s PPV

August 15 to June 30th- DFO, Guidance

Date of Blast	Location- Station ID	PPV (mm/s)	IPC-Peak Sound Pressure (pa)	(sec)	Holes in Blast Pattern
19-Sep-11	PORTAGE (SOUTH)	8.72	119	2.704	466
21-Sep-11	PORTAGE (NORTH)	9.86	24.5	1.891	545
21-Sep-11	PORTAGE (NORTH)	9.86	24.5	1.89	18
21-Sep-11	PORTAGE (NORTH)	9.86	24.5	1.891	51
23-Sep-11	PORTAGE (SOUTH)	3.88	50.5	1.854	312
23-Sep-11	PORTAGE (NORTH)	3.88	50.5	1.854	24
25-Sep-11	PORTAGE (NORTH)	2.33	28.3	2.42	All Holes are in the first Blast
25-Sep-11	PORTAGE (NORTH)	2.33	28.3	2.42	10
25-Sep-11	PORTAGE (NORTH)	2.33	28.3	2.424	109
27-Sep-11	PORTAGE (SOUTH)	1.05	26.8	1.583	57
28-Sep-11	PORTAGE (SOUTH)	8.72	119	2.7	All Holes are in the first Blast
28-Sep-11	PORTAGE (SOUTH)	8.72	119	2.7	606
28-Sep-11	PORTAGE (SOUTH)	8.72	119	2.704	4
01-Oct-11	PORTAGE (SOUTH)	3.7	12.8	2.828	All Holes are in the first Blast
01-Oct-11	PORTAGE (SOUTH)	3.7	12.8	2.828	384
07-Oct-11	PORTAGE (NORTH)	2.96	5.5	1.782	All Holes are in the first Blast
07-Oct-11	PORTAGE (NORTH)	2.96	5.25	1.782	152
07-Oct-11	PORTAGE (NORTH)	11.8	15	2.17	602
07-Oct-11	PORTAGE (NORTH)	2.96	5.5	1.782	4
10-Oct-11	PORTAGE (SOUTH)	8.12	50	1.74	All Holes are in the first Blast
10-Oct-11	PORTAGE (SOUTH)	8.12	50	1.74	All Holes are in the first Blast
10-Oct-11	PORTAGE (SOUTH)	8.12	50	1.74	All Holes are in the first Blast
10-Oct-11	PORTAGE (SOUTH)	8.12	50	1.737	461
10-Oct-11	PORTAGE (SOUTH)	6.07	24.5	1.995	111
15-Oct-11	PORTAGE (SOUTH)	7.39	22.8	2.916	296
15-Oct-11	PORTAGE (SOUTH)	7.39	22.8	2.916	All Holes are in the first Blast
18-Oct-11	PORTAGE (SOUTH)	6.33	22.5	2.879	56
18-Oct-11	PORTAGE (SOUTH)	6.33	22.5	2.879	171
18-Oct-11	PORTAGE (SOUTH)	6.33	22.5	2.879	291
23-Oct-11	PORTAGE (NORTH)	4.04	9.75	1.66	429
24-Oct-11	PORTAGE (NORTH)	2.05	30.8	1.325	331
24-Oct-11	PORTAGE (NORTH)	2.05	30.8	1.325	154
25-Oct-11	PORTAGE (NORTH)	1.96	27.8	2.592	All Holes are in the first Blast
25-Oct-11	PORTAGE (NORTH)	1.96	27.8	2.592	404
25-Oct-11	PORTAGE (NORTH)	1.96	27.8	2.592	25
26-Oct-11	PORTAGE (SOUTH)	11.3	16.3	1.475	304
26-Oct-11	PORTAGE (SOUTH)	11.3	16.3	1.48	Added with a order Blast or
28-Oct-11	PORTAGE (NORTH)	11.3	16.3		641
01-Nov-11	PORTAGE (SOUTH)	9.92	22.5	1.959	640
04-Nov-11	PORTAGE (SOUTH)	1.82	19	1.7	All Holes are in the first Blast
04-Nov-11	PORTAGE (SOUTH)	1.82	19	1.7	41
04-Nov-11	PORTAGE (NORTH)	1.82	19	1.701	207
04-Nov-11	PORTAGE (SOUTH)	1.82	19	1.7	20
05-Nov-11	PORTAGE (SOUTH)	11.8	13.3	2.129	359
05-Nov-11	PORTAGE (SOUTH)	11.8	13.3	2.129	327
06-Nov-11	PORTAGE (NORTH)	1.96	7.75	2.22	124
06-Nov-11	PORTAGE (NORTH)	1.96	7.75	2.215	218
07-Nov-11	PORTAGE (SOUTH)	1.2	10.3	1.856	133
09-Nov-11	PORTAGE (NORTH)	5.54	28.3	1.623	All Holes are in the first Blast
09-Nov-11	PORTAGE (NORTH)	5.54	28.3	1.623	All Holes are in the first Blast
09-Nov-11	PORTAGE (NORTH)	5.54	28.3	1.623	Added with a order Blast or
10-Nov-11	PORTAGE (NORTH)	4.54	1.75	0.151	All Holes are in the first Blast
10-Nov-11	PORTAGE (NORTH)	4.15	9.75	2.306	439
13-Nov-11	PORTAGE (NORTH)	2.88	13.3	2.853	294
20-Nov-11	PORTAGE (NORTH)	7.07	16.3	1.079	232
21-Nov-11	PORTAGE (NORTH)	1.58	13.8	2.876	181
21-Nov-11	PORTAGE (NORTH)	1.42	11.5	0.134	575
25-Nov-11	PORTAGE (NORTH)	1.28	16.3	2.02	404
04-Dec-11	PORTAGE (NORTH)	5.21	57.5		59
07-Dec-11	PORTAGE (SOUTH)	3.83	56.3		311

Table 1.3: 2011 Meadowbank Mine Blast Monitoring Results

Notes:

Indicates an exceedance of 13.0 mm/s PPV
August 15 to June 30th- DFO, Guidance

Date of Blast	Location- Station ID	PPV (mm/s)	IPC-Peak Sound Pressure (pa)	(sec)	Holes in Blast Pattern
08-Dec-11	PORTAGE (SOUTH)	13.6	244		98
10-Dec-11	PORTAGE (SOUTH)	21	60.3		51
30-Dec-11	PORTAGE (SOUTH)	1.51	8.75		375

Date/Time Tran at 12:54:30 January 11, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo : 254 mm/s
Record Time 4.0 sec at 4096 sps
Job Number: 1

Notes

Location: PORTAGE PIT
Client: Agnico-Eagle Mines Limited
User Name: Meadowbank Division
General: Engineering Departement

Serial Number BE15259 V 10.02-1.0 Minimate Blaster
Battery Level 6.2 Volts
Unit Calibration October 30, 2009 by Instantel inc.
File Name Q259DL0P.6U0

Post Event Notes

SOUTH PORTAGE (5109017-1)

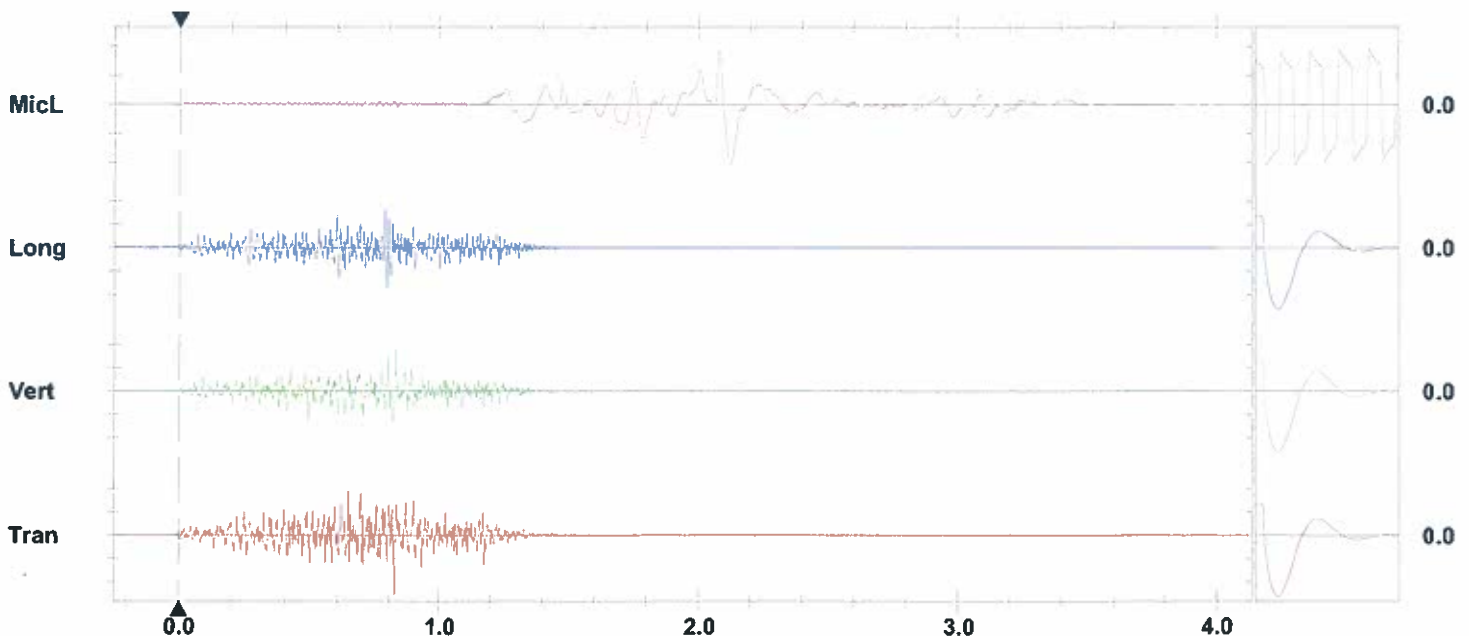
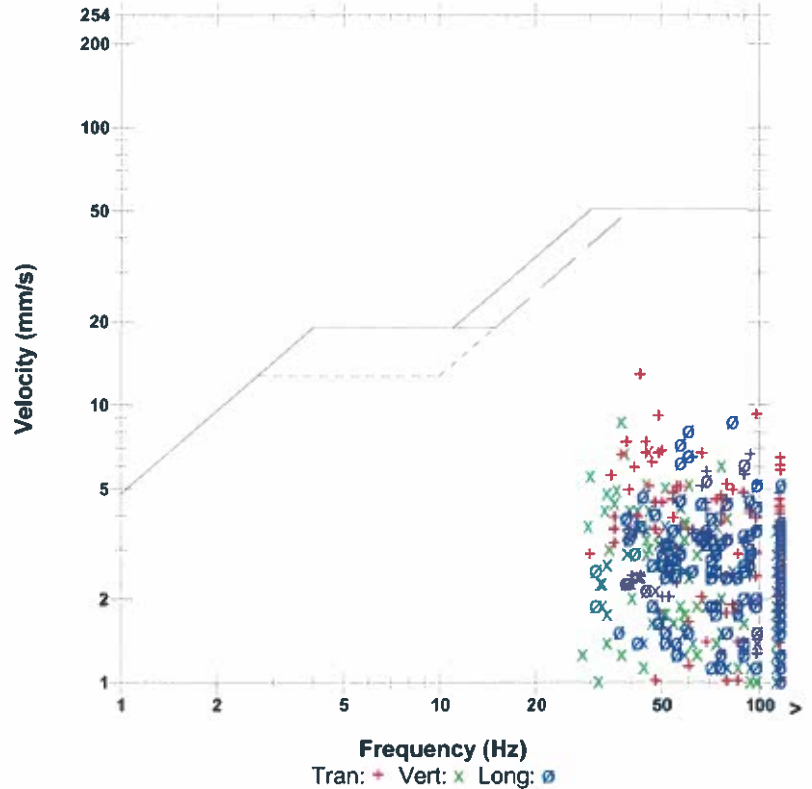
Extended Notes

Microphone Linear Weighting
PSPL 103 pa.(L) at 2.123 sec
ZC Freq 5.6 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 546 mv)

	Tran	Vert	Long	
PPV	12.8	8.76	8.76	mm/s
ZC Freq	43	37.2	82	Hz
Time (Rel. to Trig)	0.823	0.824	0.791	sec
Peak Acceleration	0.689	0.371	0.530	g
Peak Displacement	0.0315	0.0238	0.0181	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.6	7.3	Hz
Overswing Ratio	3.7	3.2	4.0	

Peak Vector Sum 15.0 mm/s at 0.824 sec

USBM RI8507 And OSMRE



Sensor Check

Date/Time Vert at 12:46:05 January 22, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo : 254 mm/s
Record Time 3.0 sec at 4096 sps
Job Number: 1

Notes

Location: North Portage
N: 7248.3857
E: 1967.2198
EL: 5134.506

Microphone Linear Weighting
PSPL 59.3 pa.(L) at 1.234 sec
ZC Freq 4.8 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 619 mv)

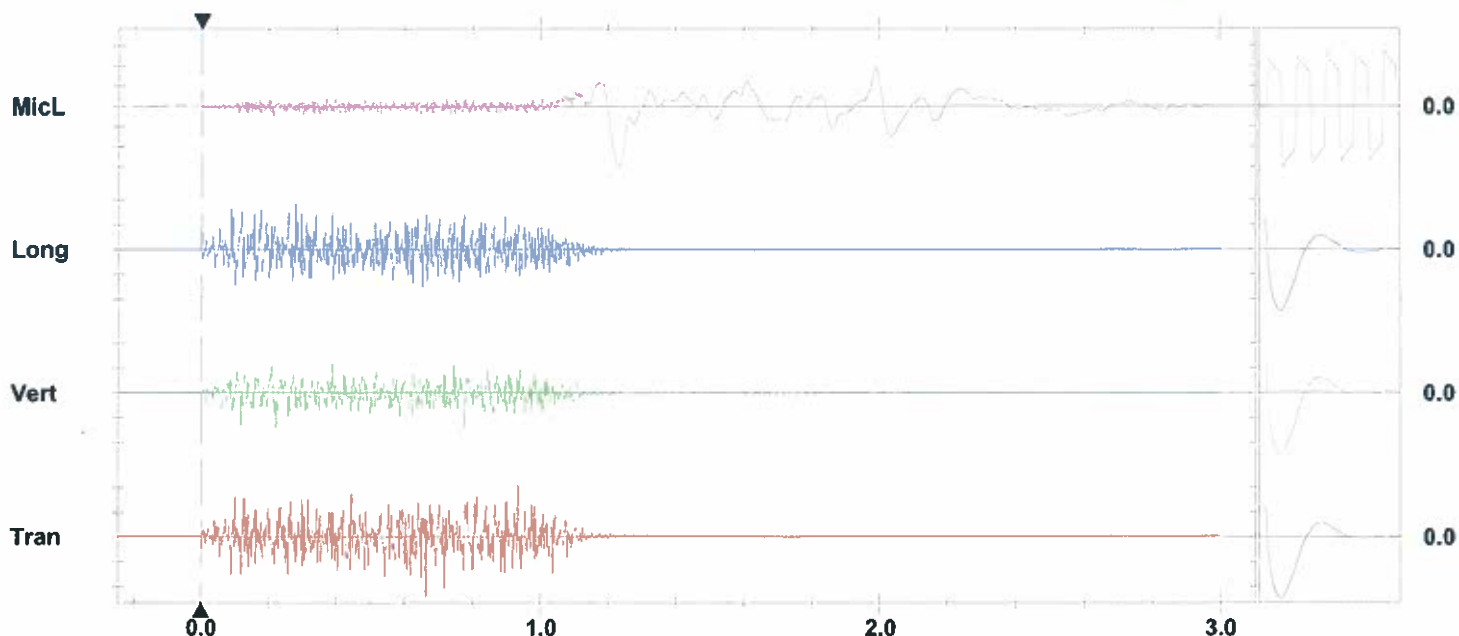
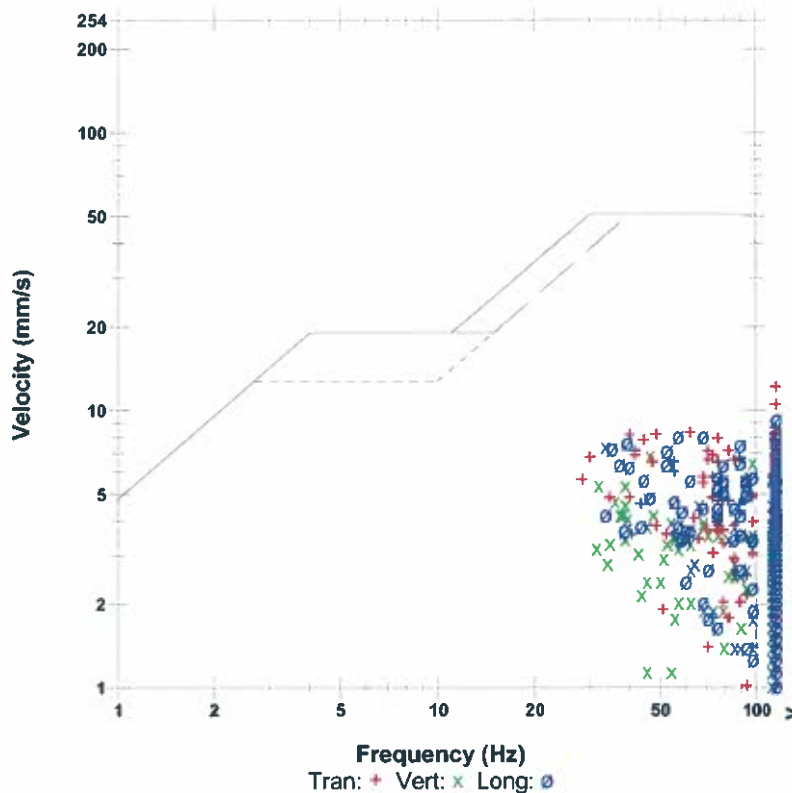
	Tran	Vert	Long	
PPV	12.1	7.37	9.27	mm/s
ZC Freq	158	33.6	137	Hz
Time (Rel. to Trig)	0.664	0.225	0.281	sec
Peak Acceleration	1.06	0.583	0.954	g
Peak Displacement	0.0260	0.0236	0.0212	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.2	7.5	7.4	Hz
Overswing Ratio	4.6	4.1	4.6	

Peak Vector Sum 14.0 mm/s at 0.664 sec

Serial Number BE13567 V 10.10-1.1 Minimate Blaster
Battery Level 5.9 Volts
Unit Calibration July 29, 2010 by Instantel
File Name O567DLL2.4T0

Post Event Notes
 5109005

USBM RI8507 And OSMRE



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 20.0 pa.(L)/div
Trigger = 

Sensor Check

Date/Time Vert at 18:31:00 January 28, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo: 254 mm/s
Record Time 3.0 sec at 4096 sps
Job Number: 1

Notes

Location: PORTAGE PIT
Client: Agnico-Eagle Mines Limited
User Name: Meadowbank Division
General: Engineering Departement

Serial Number BE15259 V 10.02-1.0 Minimate Blaster
Battery Level 6.2 Volts
Unit Calibration October 30, 2009 by Instantel inc.
File Name Q259DLWM.300

Post Event Notes

South Portage
 5109023-1

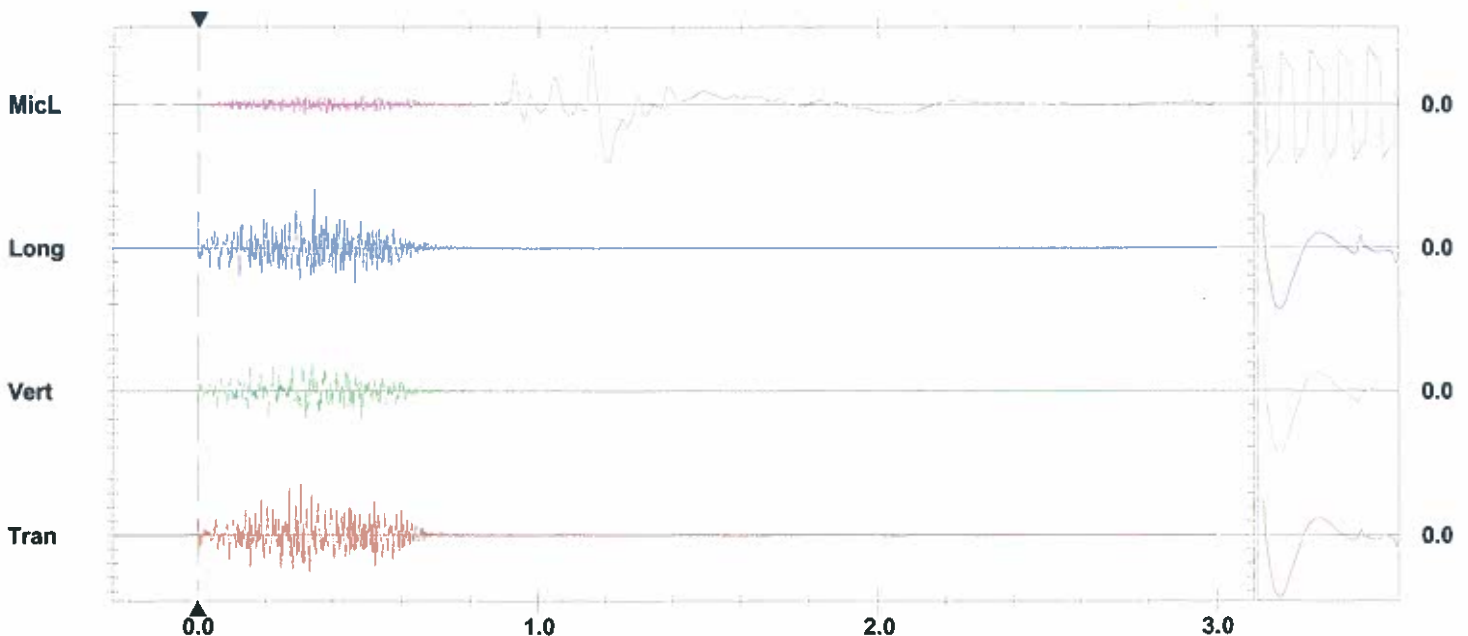
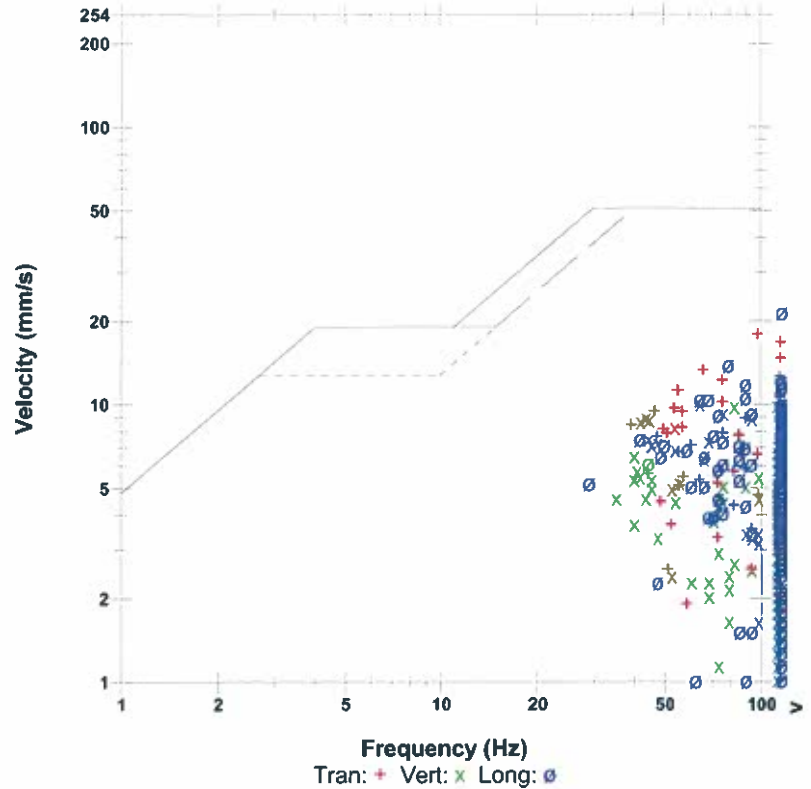
Extended Notes

Microphone Linear Weighting
PSPL 103 pa.(L) at 1.208 sec
ZC Freq 4.5 Hz
Channel Test Passed (Freq = 19.7 Hz Amp = 651 mv)

	Tran	Vert	Long	
PPV	17.8	10.0	21.3	mm/s
ZC Freq	98	64	146	Hz
Time (Rel. to Trig)	0.304	0.481	0.345	sec
Peak Acceleration	1.27	0.954	2.23	g
Peak Displacement	0.0293	0.0322	0.0275	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.7	7.3	Hz
Overswing Ratio	3.8	3.4	4.4	

Peak Vector Sum 21.5 mm/s at 0.345 sec

USBM R18507 And OSMRE



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 50.0 pa.(L)/div
Trigger = 

Sensor Check

Date/Time Vert at 12:39:58 January 28, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo : 254 mm/s
Record Time 3.0 sec at 4096 sps
Job Number: 1

Notes

Location: Portage
N: 7248.3857
E: 1967.2198
EL: 5134.506

Serial Number BE13567 V 10.10-1.1 Minimate Blaster
Battery Level 6.0 Volts
Unit Calibration July 29, 2010 by InstanTEL
File Name O567DLW5.UM0

Post Event Notes

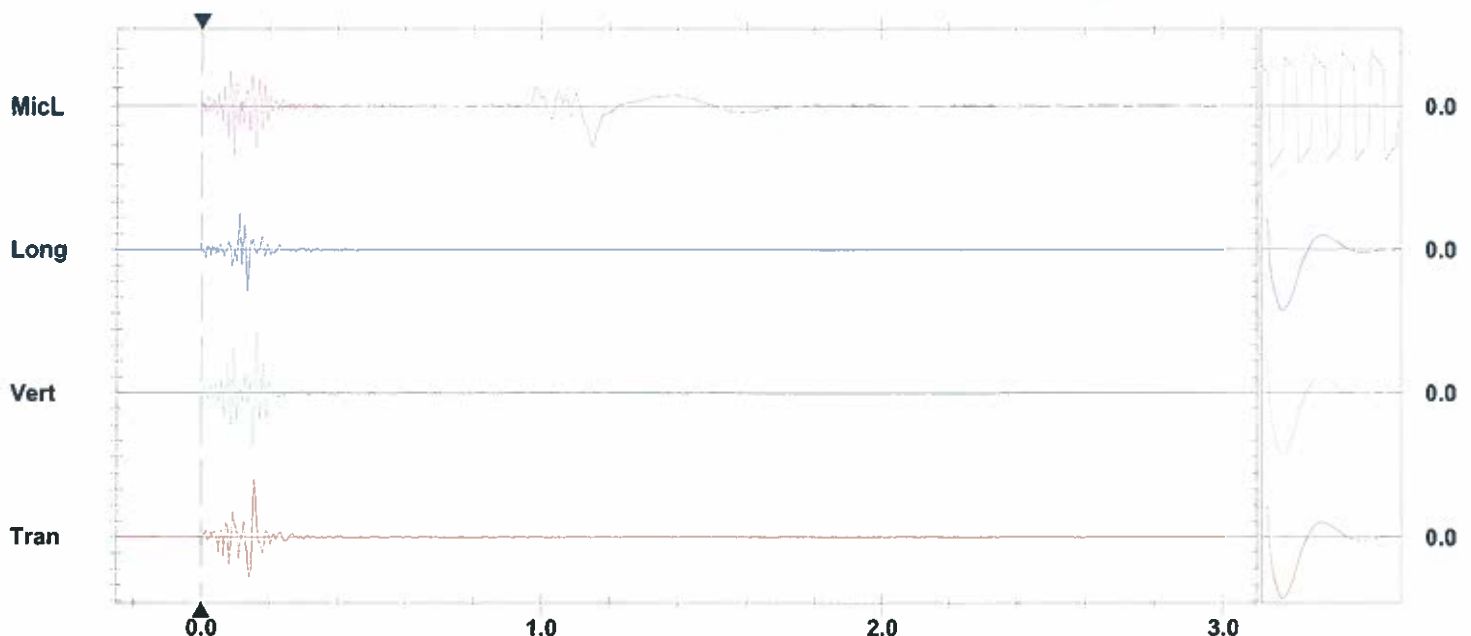
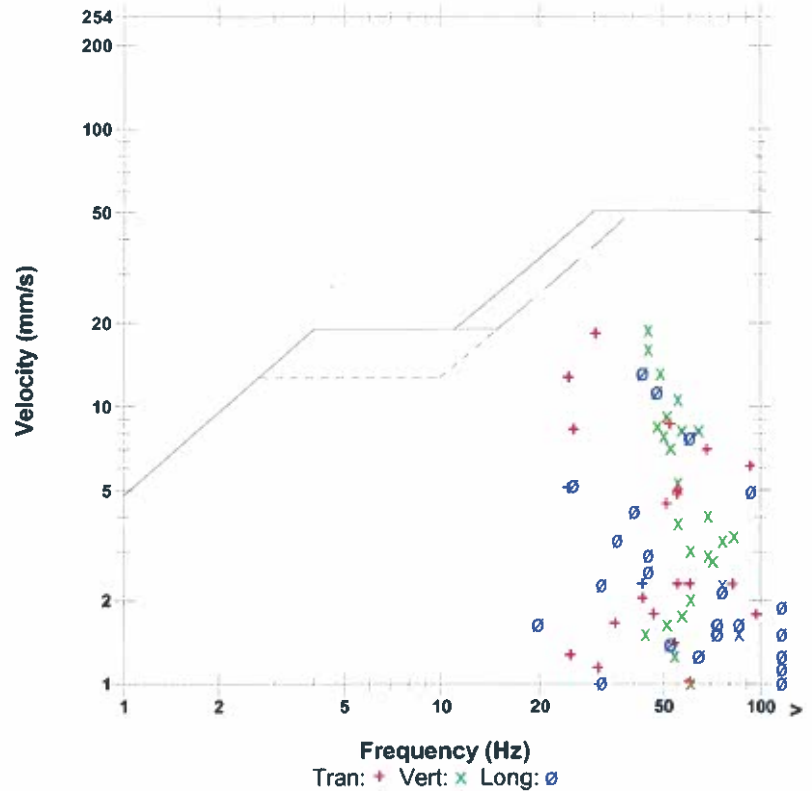
North Portage
 5130023-PS22-PS23

Microphone Linear Weighting
PSPL 25.3 pa.(L) at 0.094 sec
ZC Freq 62 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 803 mv)

	Tran	Vert	Long	
PPV	18.3	18.9	13.2	mm/s
ZC Freq	30.1	45	43	Hz
Time (Rel. to Trig)	0.156	0.162	0.137	sec
Peak Acceleration	0.477	0.583	0.424	g
Peak Displacement	0.0845	0.0660	0.0446	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.2	7.5	7.1	Hz
Overswing Ratio	4.4	3.9	4.5	

Peak Vector Sum 21.3 mm/s at 0.154 sec

USBM R18507 And OSMRE



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 10.00 pa.(L)/div
Trigger = ► — ◄

Sensor Check

Date/Time Tran at 12:36:30 March 5, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo : 254 mm/s
Record Time 3.0 sec at 4096 sps
Job Number: 1

Notes

Location: PORTAGE PIT
Client: Agnico-Eagle Mines Limited
User Name: Meadowbank Division
General: Engineering Departement

Serial Number BE15259 V 10.02-1.0 Minimate Blaster
Battery Level 6.3 Volts
Unit Calibration October 30, 2009 by InstanTEL inc.
File Name Q259DNQT.OU0

Post Event Notes

SOUTH PORTAGE (5109023-2 & 5109015-2 & 5109017-2)

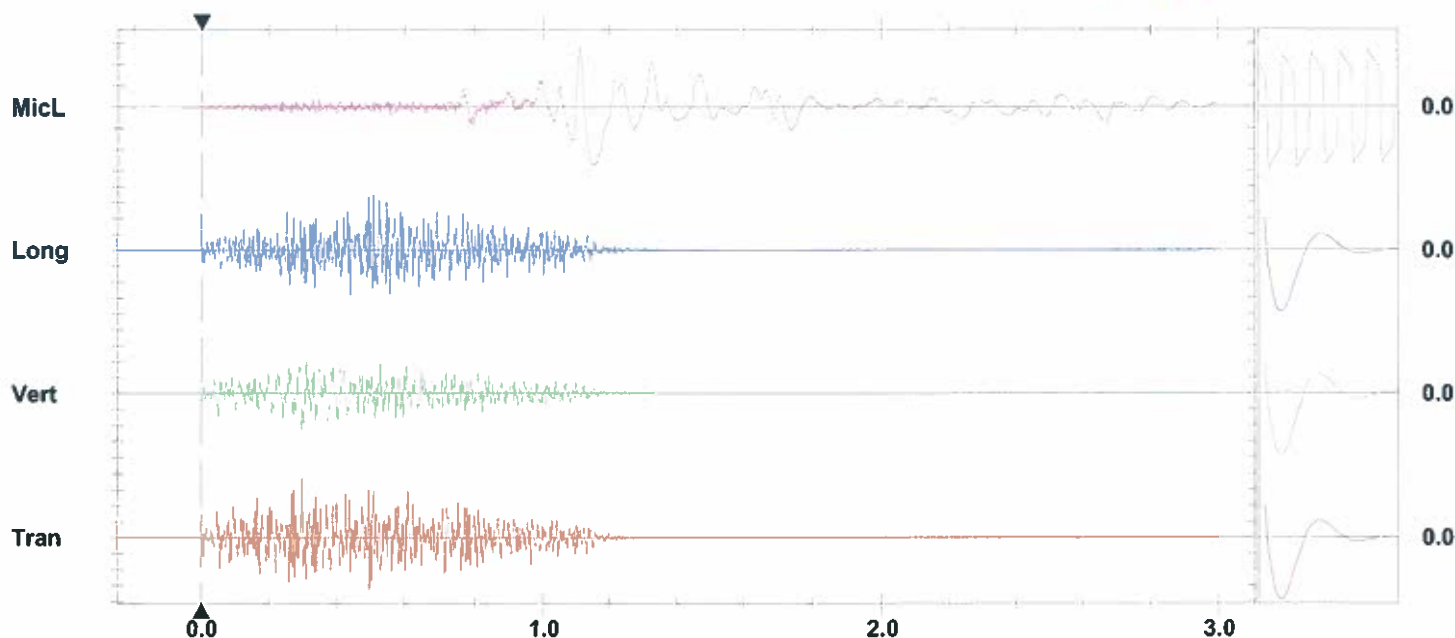
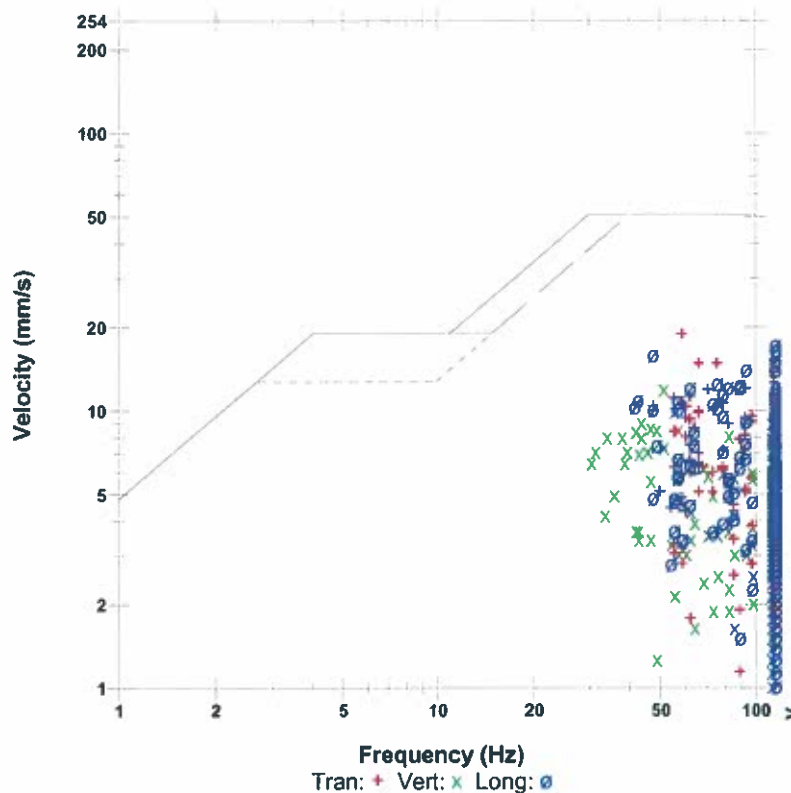
Extended Notes

Microphone Linear Weighting
PSPL 141 pa.(L) at 1.109 sec
ZC Freq 19.7 Hz
Channel Test Passed (Freq = 19.7 Hz Amp = 602 mv)

	Tran	Vert	Long	
PPV	18.8	11.9	17.3	mm/s
ZC Freq	59	51	120	Hz
Time (Rel. to Trig)	0.299	0.300	0.510	sec
Peak Acceleration	1.70	1.17	1.80	g
Peak Displacement	0.0421	0.0350	0.0372	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.6	7.2	Hz
Overswing Ratio	3.8	3.3	4.1	

Peak Vector Sum 22.3 mm/s at 0.495 sec

USBM RI8507 And OSMRE



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 50.0 pa.(L)/div
Trigger = 

Sensor Check

Date/Time Tran at 11:37:55 March 29, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo : 254 mm/s
Record Time 3.0 sec at 4096 sps
Job Number: 1

Notes

Location: Portage
N: 7248.3857
E: 1967.2198
EL: 5134.506

Serial Number BE13567 V 10.10-1.1 Minimate Blaster
Battery Level 6.2 Volts
Unit Calibration July 29, 2010 by InstanTEL
File Name O567DOZ6.Z70

Post Event Notes

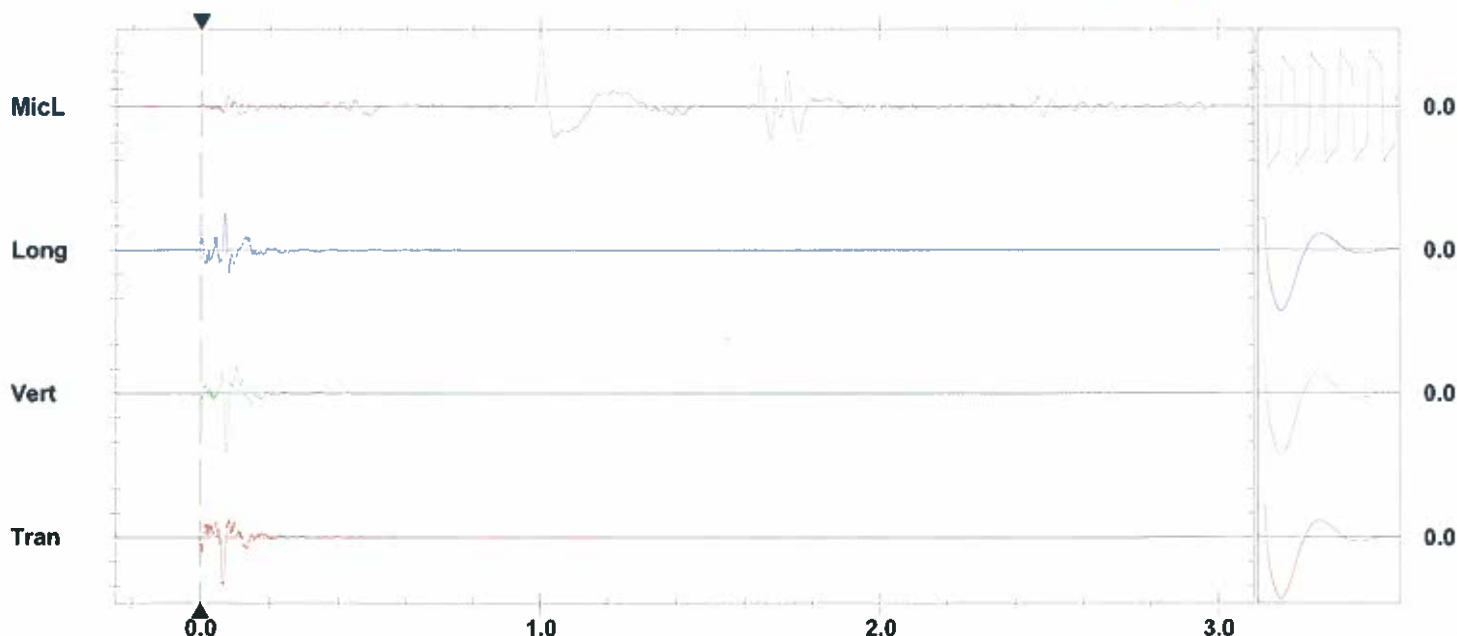
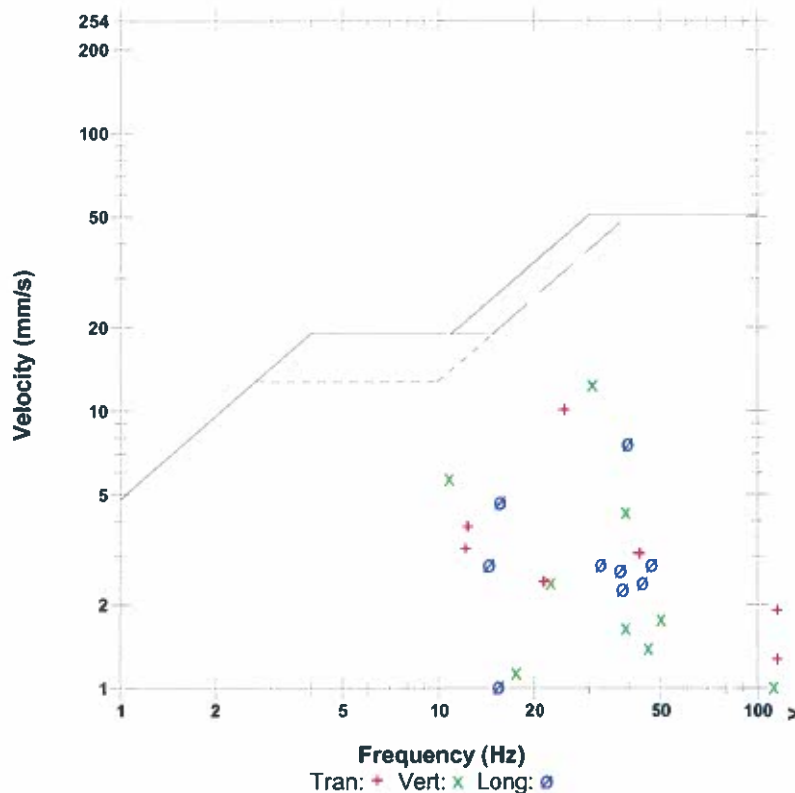
SOUTH PORTAGE (5095PS030-1 & Missholes)

Microphone Linear Weighting
PSPL 33.5 pa.(L) at 1.001 sec
ZC Freq 11.3 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 608 mv)

	Tran	Vert	Long	
PPV	10.0	12.4	7.62	mm/s
ZC Freq	25.0	30.6	39.4	Hz
Time (Rel. to Trig)	0.068	0.075	0.069	sec
Peak Acceleration	0.318	0.265	0.265	g
Peak Displacement	0.0509	0.0616	0.0325	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.6	7.2	Hz
Overswing Ratio	3.7	3.3	4.0	

Peak Vector Sum 13.1 mm/s at 0.075 sec

USBM RI8507 And OSMRE



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 10.00 pa.(L)/div
Trigger = 

Sensor Check

Date/Time Long at 12:42:28 April 12, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo : 254 mm/s
Record Time 3.0 sec at 4096 sps
Job Number: 1

Notes

Location: PORTAGE PIT
Client: Agnico-Eagle Mines Limited
User Name: Meadowbank Division
General: Engineering Departement

Serial Number BE15259 V 10.02-1.0 Minimate Blaster
Battery Level 6.1 Volts
Unit Calibration October 30, 2009 by Instantel inc.
File Name Q259DPP7.AS0

Post Event Notes

South Portage
 5088PS014-1

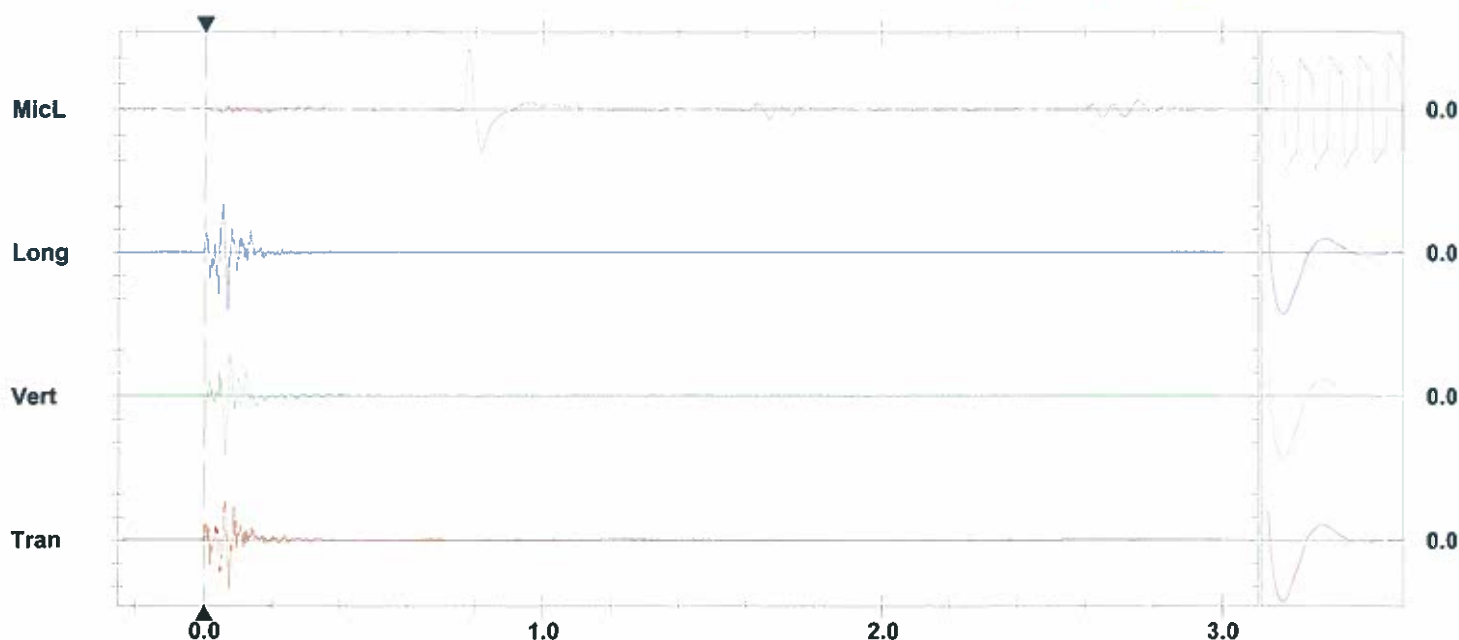
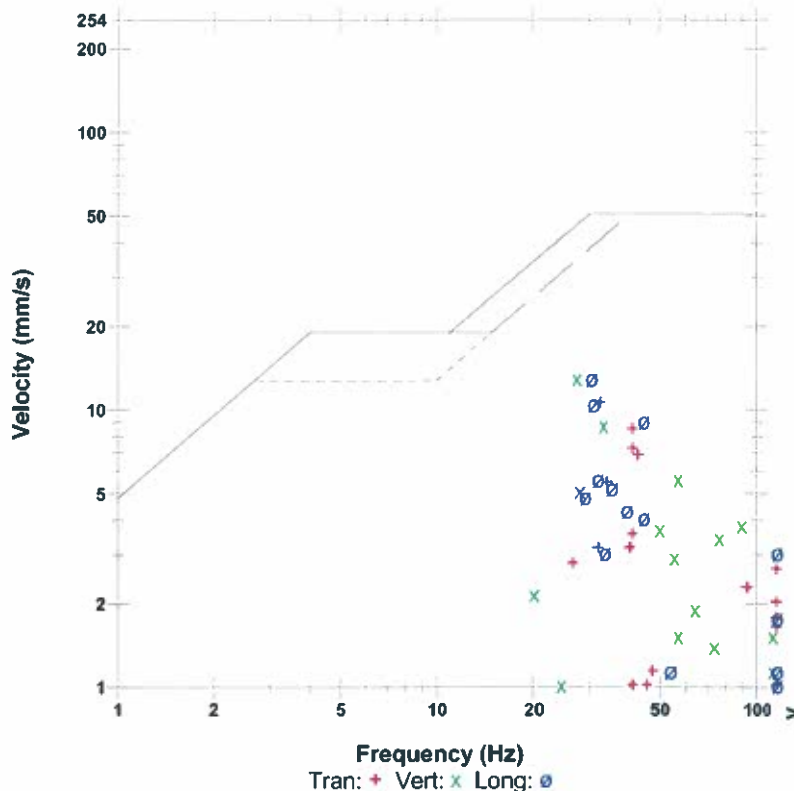
Extended Notes

Microphone Linear Weighting
PSPL 117 pa.(L) at 0.781 sec
ZC Freq 15.4 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 622 mv)

	Tran	Vert	Long	
PPV	10.5	13.0	12.8	mm/s
ZC Freq	32.5	27.3	30.6	Hz
Time (Rel. to Trig)	0.072	0.061	0.067	sec
Peak Acceleration	0.477	0.318	0.583	g
Peak Displacement	0.0351	0.0631	0.0453	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.4	7.5	7.1	Hz
Overswing Ratio	4.2	3.6	4.6	

Peak Vector Sum 15.2 mm/s at 0.060 sec

USBM RI8507 And OSMRE



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 50.0 pa.(L)/div
Trigger = ▶ ◀

Sensor Check

Date/Time Long at 13:00:00 April 14, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo : 254 mm/s
Record Time 3.0 sec at 4096 sps
Job Number: 1

Notes

Location: Portage
N: 7248.3857
E: 1967.2198
EL: 5134.506

Serial Number BE13567 V 10.10-1.1 Minimate Blaster
Battery Level 6.3 Volts
Unit Calibration July 29, 2010 by Instantel
File Name O567DPSX.G00

Post Event Notes

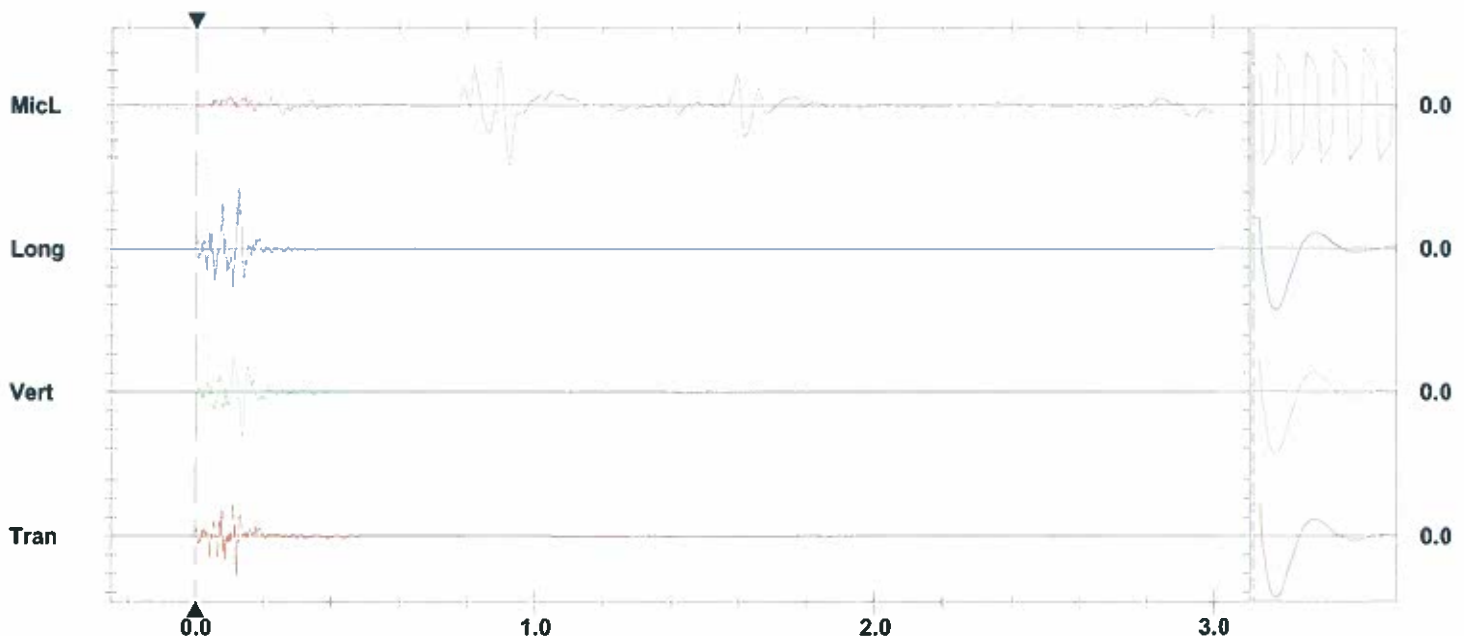
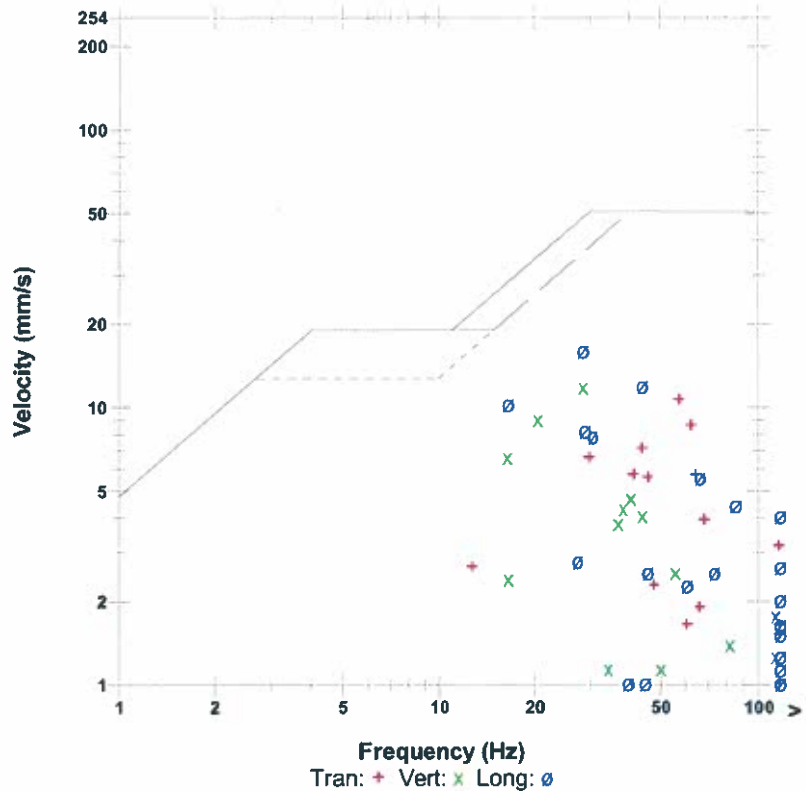
South Portage
 5088PS014-2 & missholes

Microphone Linear Weighting
PSPL 68.5 pa.(L) at 0.923 sec
ZC Freq 7.1 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 662 mv)

	Tran	Vert	Long	
PPV	10.7	11.8	16.0	mm/s
ZC Freq	57	28.4	28.4	Hz
Time (Rel. to Trig)	0.122	0.138	0.129	sec
Peak Acceleration	0.689	0.318	0.530	g
Peak Displacement	0.0238	0.0625	0.0770	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.6	7.2	Hz
Overswing Ratio	3.8	3.3	4.0	

Peak Vector Sum 16.1 mm/s at 0.129 sec

USBM RI8507 And OSMRE



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 20.0 pa.(L)/div
Trigger = 

Sensor Check

Date/Time Vert at 18:27:43 April 16, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo : 254 mm/s
Record Time 3.0 sec at 4096 sps
Job Number: 1

Notes

Location: PORTAGE PIT
Client: Agnico-Eagle Mines Limited
User Name: Meadowbank Division
General: Engineering Departement

Serial Number BE15259 V 10.02-1.0 Minimate Blaster
Battery Level 6.3 Volts
Unit Calibration October 30, 2009 by InstanTEL inc.
File Name Q259DPX1.Y70

Post Event Notes

South Portage
 5102014-2

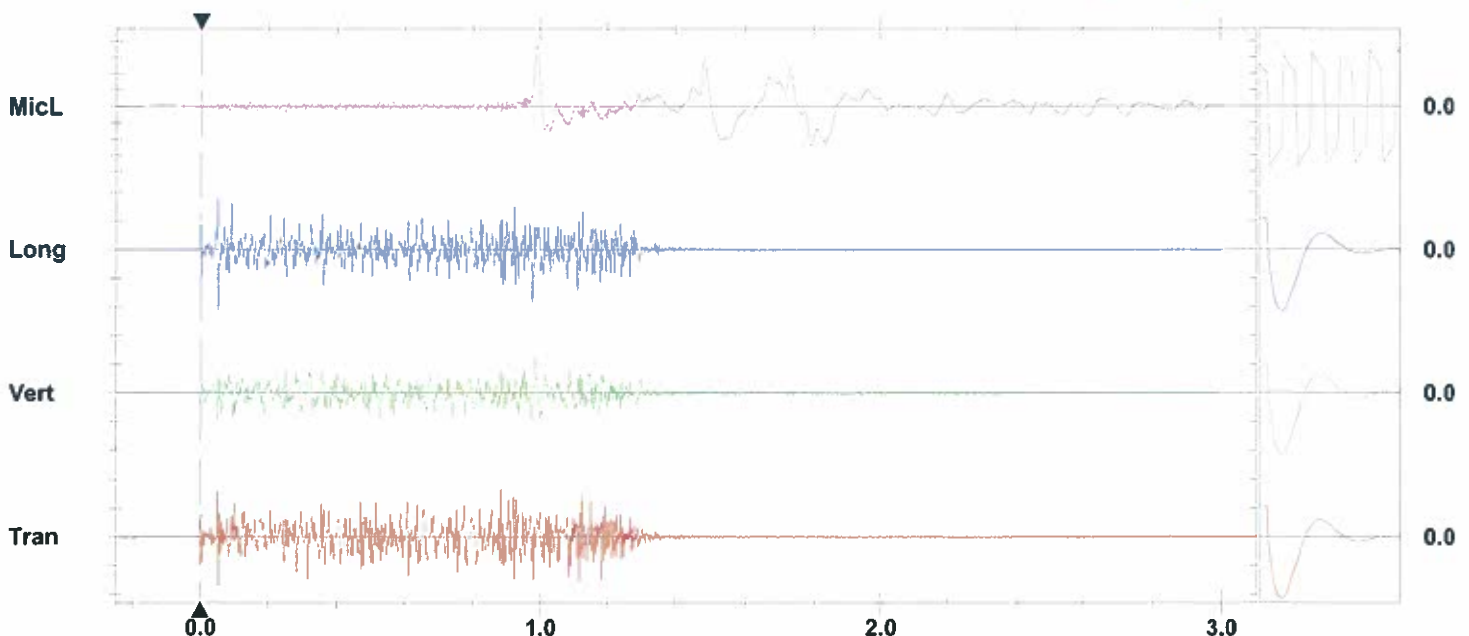
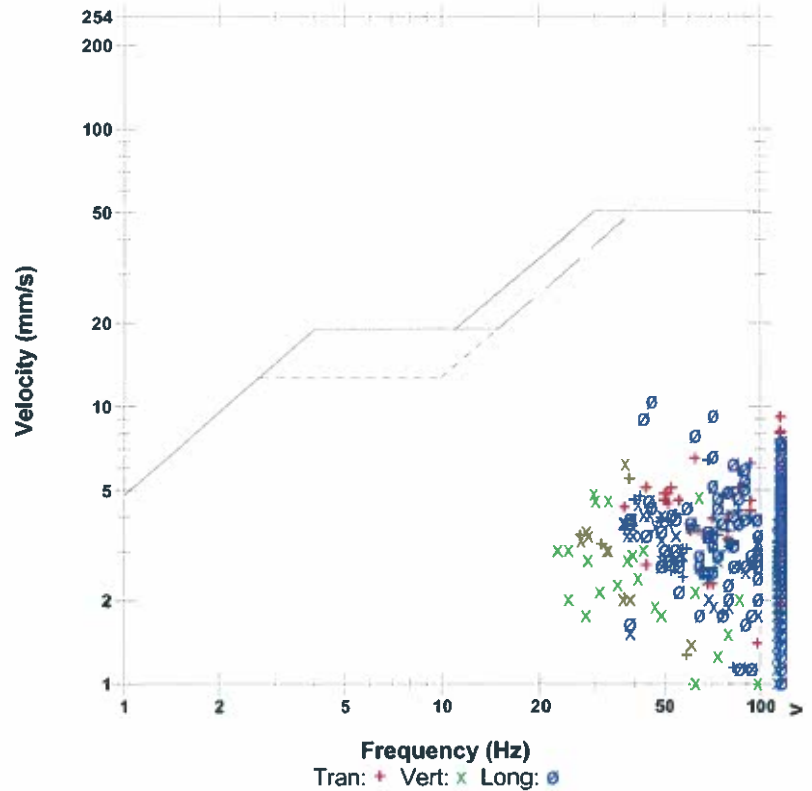
Extended Notes

Microphone Linear Weighting
PSPL 73.3 pa.(L) at 0.993 sec
ZC Freq 11.3 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 610 mv)

	Tran	Vert	Long	
PPV	9.14	6.22	10.4	mm/s
ZC Freq	128	37.2	46	Hz
Time (Rel. to Trig)	0.054	0.985	0.054	sec
Peak Acceleration	0.848	0.371	0.954	g
Peak Displacement	0.0175	0.0208	0.0209	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.6	7.3	Hz
Overswing Ratio	3.7	3.2	4.0	

Peak Vector Sum 14.1 mm/s at 0.054 sec

USBM R18507 And OSMRE



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 20.0 pa.(L)/div
Trigger = ► — ◀

Sensor Check

Date/Time Long at 18:31:10 April 17, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo: 254 mm/s
Record Time 3.0 sec at 4096 sps
Job Number: 1

Notes

Location: Portage
N: 7248.3857
E: 1967.2198
EL: 5134.506

Serial Number BE13567 V 10.10-1.1 Minimate Blaster
Battery Level 6.3 Volts
Unit Calibration July 29, 2010 by Instantel
File Name O567DPYW.RY0

Post Event Notes

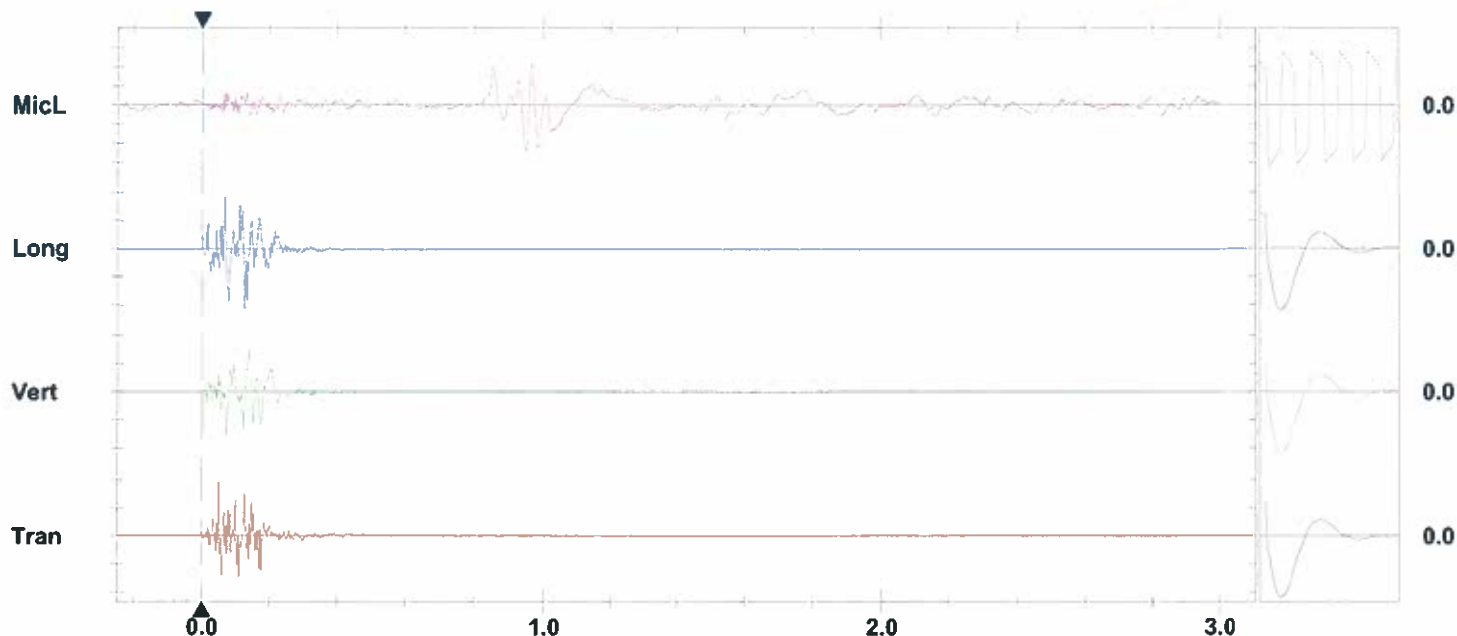
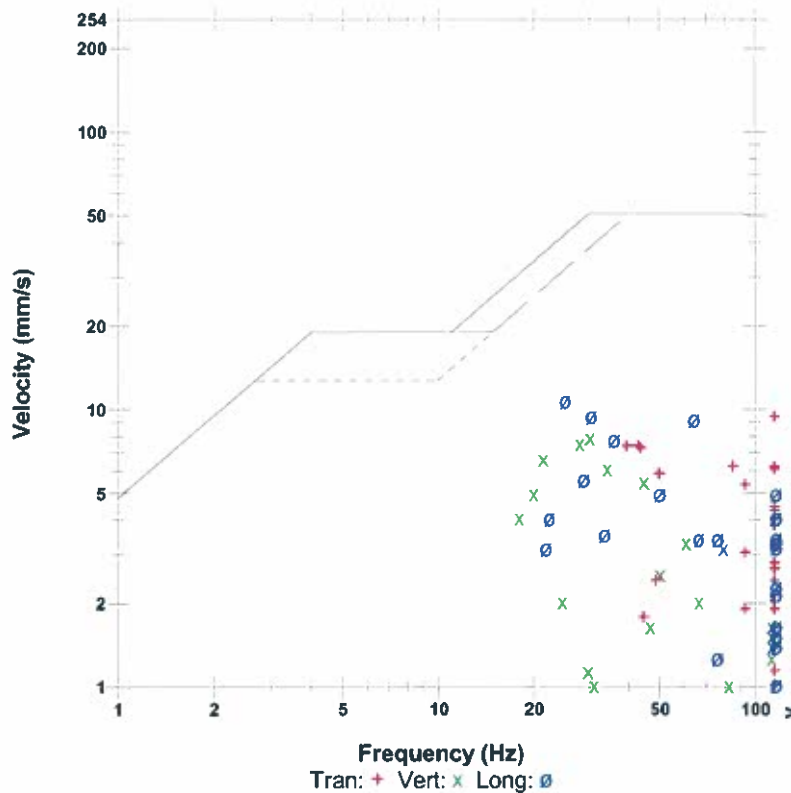
South Portage
 5088PS010-1

Microphone Linear Weighting
PSPL 23.5 pa.(L) at 0.948 sec
ZC Freq 23.0 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 547 mv)

	Tran	Vert	Long	
PPV	9.40	7.87	10.7	mm/s
ZC Freq	120	30.1	25.3	Hz
Time (Rel. to Trig)	0.051	0.073	0.127	sec
Peak Acceleration	0.742	0.424	0.583	g
Peak Displacement	0.0192	0.0362	0.0427	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.4	7.5	7.5	Hz
Overswing Ratio	3.9	3.6	3.9	

Peak Vector Sum 13.1 mm/s at 0.127 sec

USBM RI8507 And OSMRE



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 10.00 pa.(L)/div
Trigger = 

Sensor Check

Date/Time Long at 12:49:05 July 10, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo : 254 mm/s
Record Time 3.0 sec at 4096 sps
Job Number: 1

Notes

Location: PORTAGE PIT
Client: Agnico-Eagle Mines Limited
User Name: Meadowbank Division
General: Engineering Departement

Serial Number BE15259 V 10.02-1.0 Minimate Blaster
Battery Level 6.4 Volts
Unit Calibration October 30, 2009 by Instantel inc.
File Name Q259DUA0.XT0

Post Event Notes

North Portage
5123303

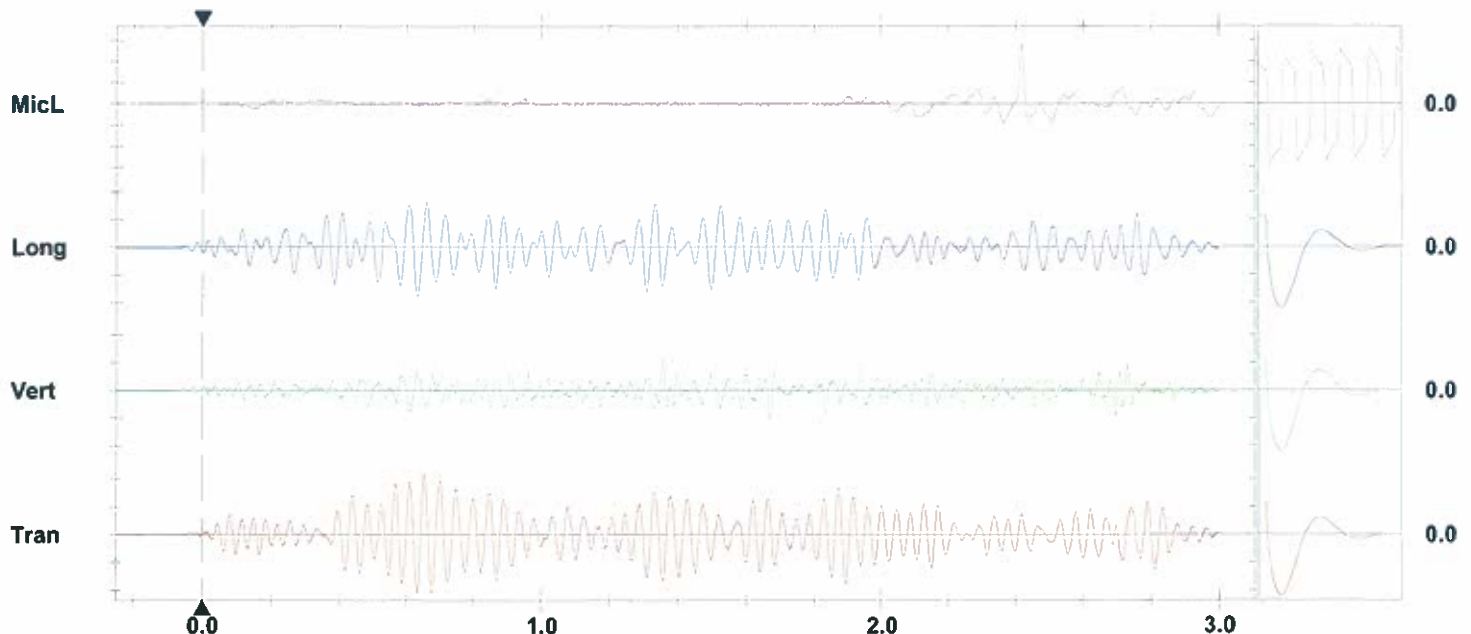
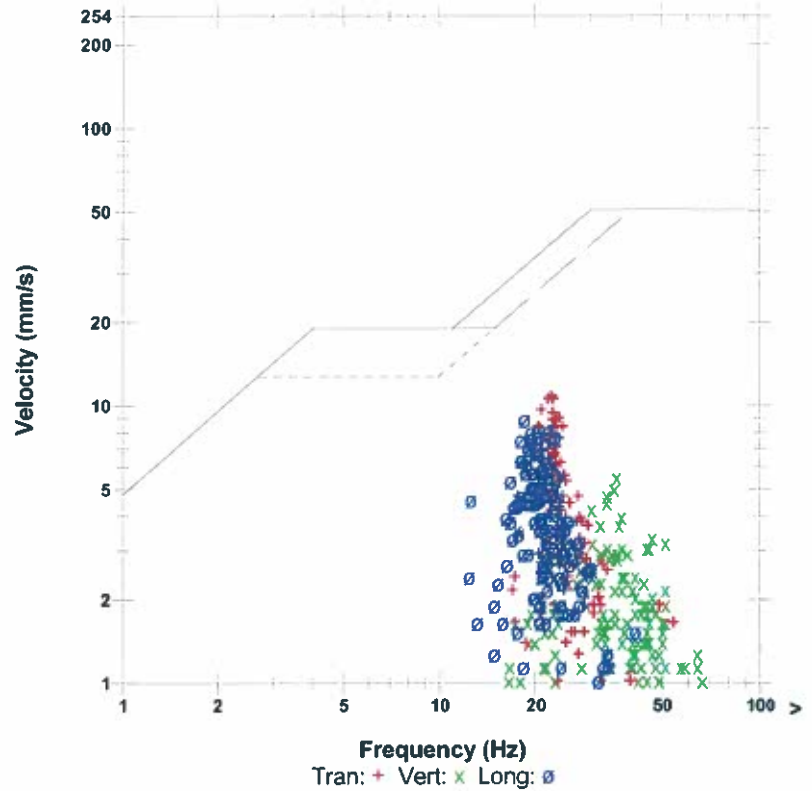
Extended Notes

Microphone Linear Weighting
PSPL 56.5 pa.(L) at 2.420 sec
ZC Freq 15.6 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 505 mv)

	Tran	Vert	Long	
PPV	10.8	5.46	8.89	mm/s
ZC Freq	22.5	35.9	18.5	Hz
Time (Rel. to Trig)	0.654	1.360	0.635	sec
Peak Acceleration	0.212	0.212	0.159	g
Peak Displacement	0.0772	0.0268	0.0767	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.7	7.3	Hz
Overswing Ratio	3.7	3.1	3.9	

Peak Vector Sum 13.9 mm/s at 0.634 sec

USBM RI8507 And OSMRE



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 20.0 pa.(L)/div
Trigger = 

Sensor Check

Date/Time Vert at 18:34:12 July 11, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo : 254 mm/s
Record Time 3.0 sec at 4096 sps
Job Number: 1

Notes

Location: PORTAGE PIT
Client: Agnico-Eagle Mines Limited
User Name: Meadowbank Division
General: Engineering Departement

Serial Number BE15259 V 10.02-1.0 Minimate Blaster
Battery Level 6.3 Volts
Unit Calibration October 30, 2009 by Instantel inc.
File Name Q259DUCB.L00

Post Event Notes

South Portage
 5095013-1 & 5095005-2

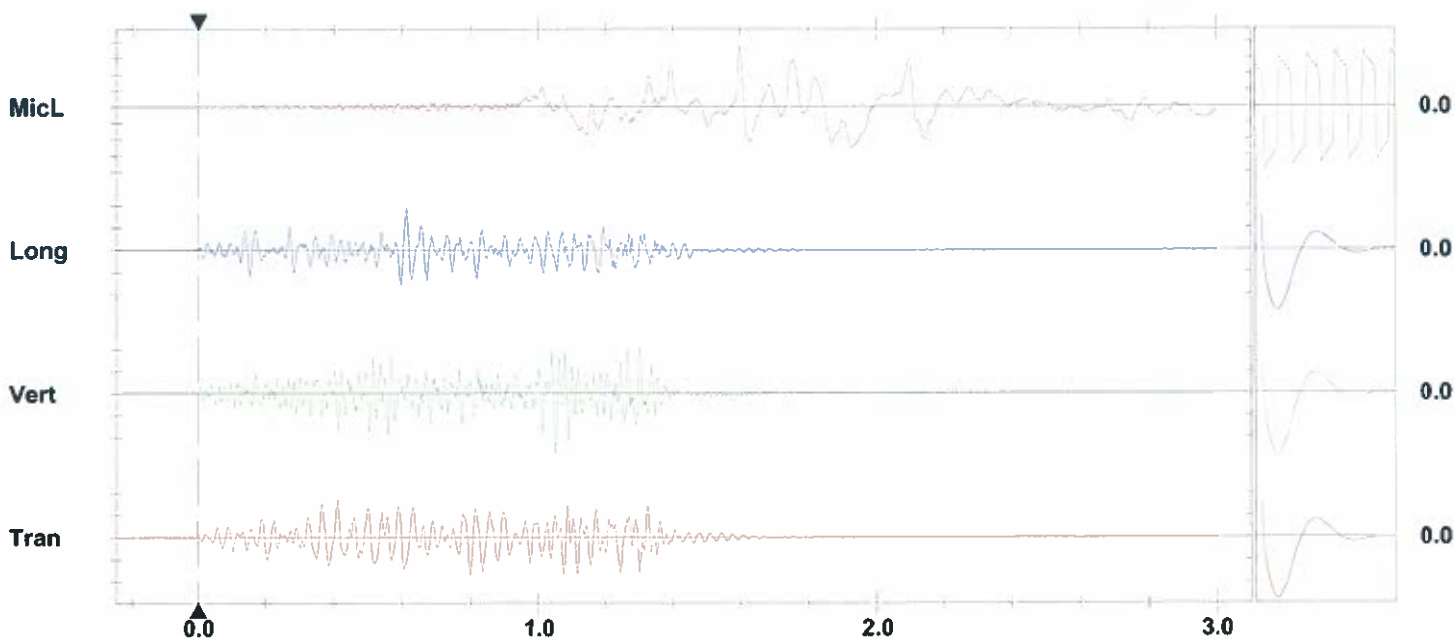
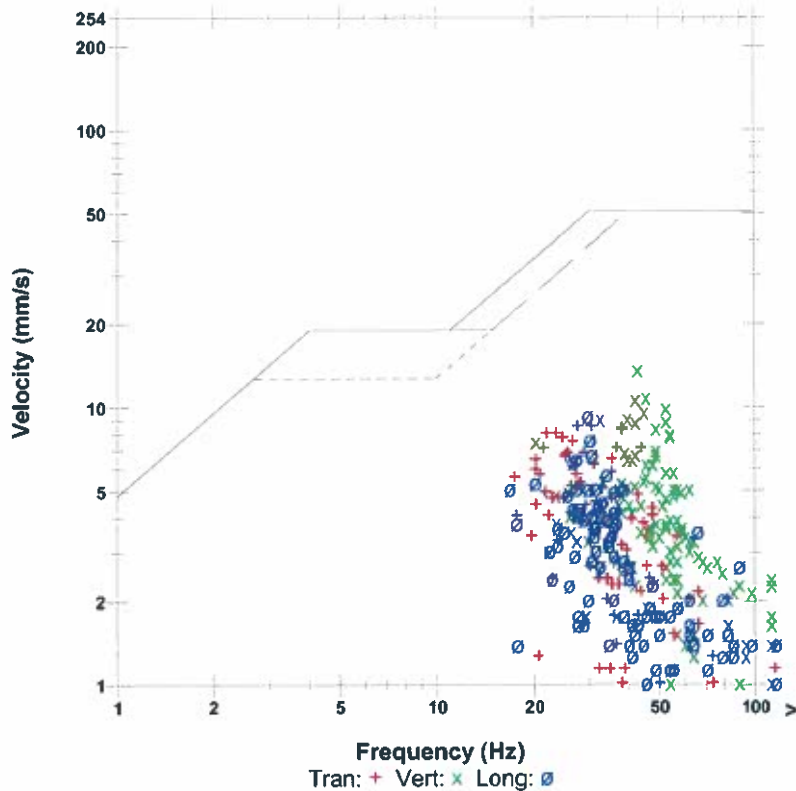
Extended Notes

Microphone Linear Weighting
PSPL 73.5 pa.(L) at 1.597 sec
ZC Freq 12.8 Hz
Channel Test Passed (Freq = 20.1 Hz Amp = 503 mv)

	Tran	Vert	Long	
PPV	8.51	13.6	9.27	mm/s
ZC Freq	27.7	43	29.7	Hz
Time (Rel. to Trig)	0.412	1.054	0.614	sec
Peak Acceleration	0.265	0.477	0.212	g
Peak Displacement	0.0542	0.0529	0.0463	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.6	7.4	Hz
Overswing Ratio	3.7	3.2	3.9	

Peak Vector Sum 14.6 mm/s at 1.054 sec

USBM RI8507 And OSMRE



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 20.0 pa.(L)/div
Trigger = 

Sensor Check

Date/Time Long at 18:20:32 July 19, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo : 254 mm/s
Record Time 3.0 sec at 4096 sps
Job Number: 1

Notes

Location: PORTAGE PIT
Client: Agnico-Eagle Mines Limited
User Name: Meadowbank Division
General: Engineering Departement

Serial Number BE15259 V 10.02-1.0 Minimate Blaster
Battery Level 6.4 Volts
Unit Calibration October 30, 2009 by Instantel inc.
File Name Q259DUR4.A80

Post Event Notes

NORTH PORTAGE 5109PS305,PS302,PS263

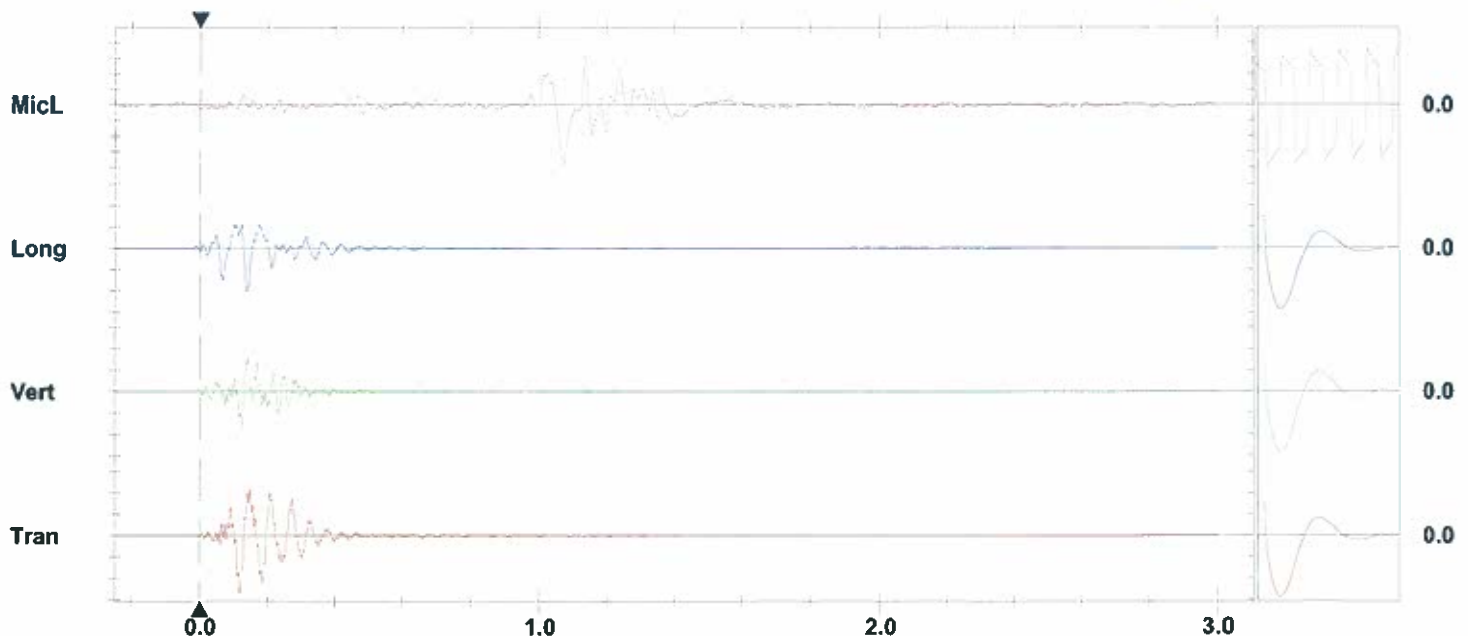
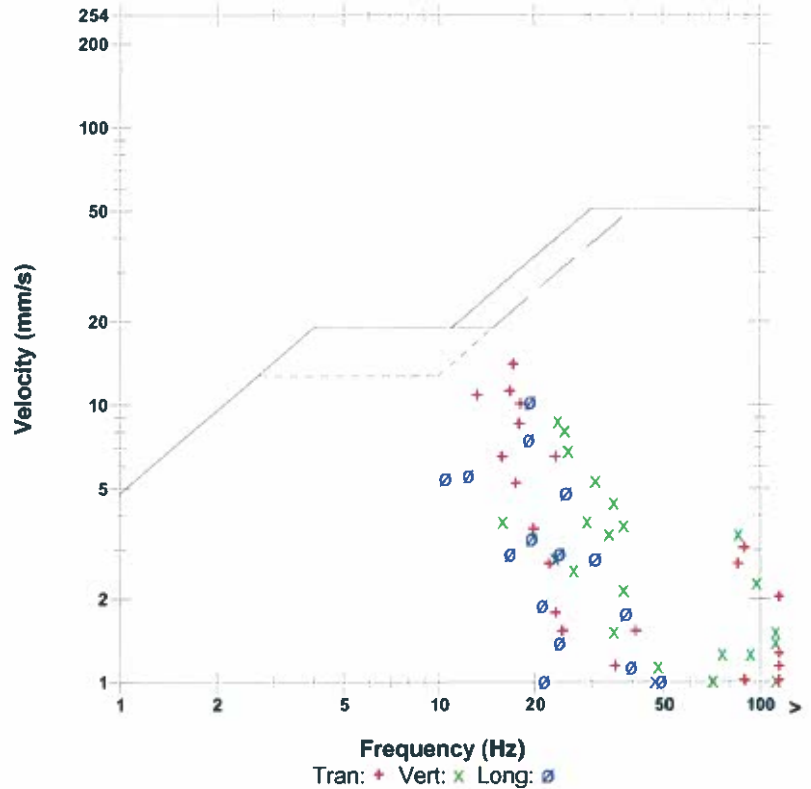
Extended Notes

Microphone Linear Weighting
PSPL 38.5 pa.(L) at 1.070 sec
ZC Freq 6.5 Hz
Channel Test Passed (Freq = 20.5 Hz Amp = 498 mv)

	Tran	Vert	Long	
PPV	14.0	8.76	10.3	mm/s
ZC Freq	17.2	23.5	19.3	Hz
Time (Rel. to Trig)	0.120	0.124	0.137	sec
Peak Acceleration	0.318	0.318	0.265	g
Peak Displacement	0.112	0.0513	0.0770	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.6	7.7	7.2	Hz
Overswing Ratio	3.6	3.1	3.9	

Peak Vector Sum 15.4 mm/s at 0.120 sec

USBM R18507 And OSMRE



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 10.00 pa.(L)/div
Trigger = 

Sensor Check

Date/Time Long at 12:35:05 July 23, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo : 254 mm/s
Record Time 3.0 sec at 4096 sps
Job Number: 1

Notes

Location: PORTAGE PIT
Client: Agnico-Eagle Mines Limited
User Name: Meadowbank Division
General: Engineering Department

Serial Number BE15259 V 10.02-1.0 Minimate Blaster
Battery Level 6.4 Volts
Unit Calibration October 30, 2009 by InstanTEL inc.
File Name Q259DUY2.YH0

Post Event Notes

PORTAGE 5116280

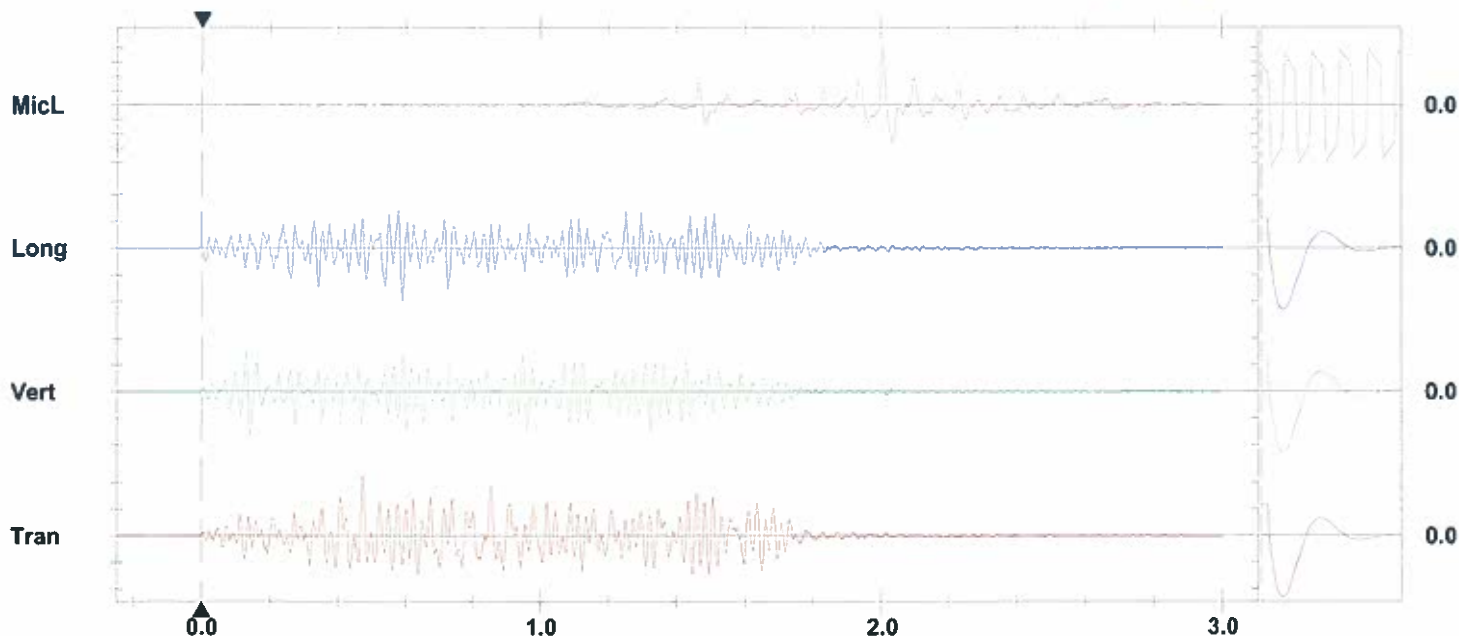
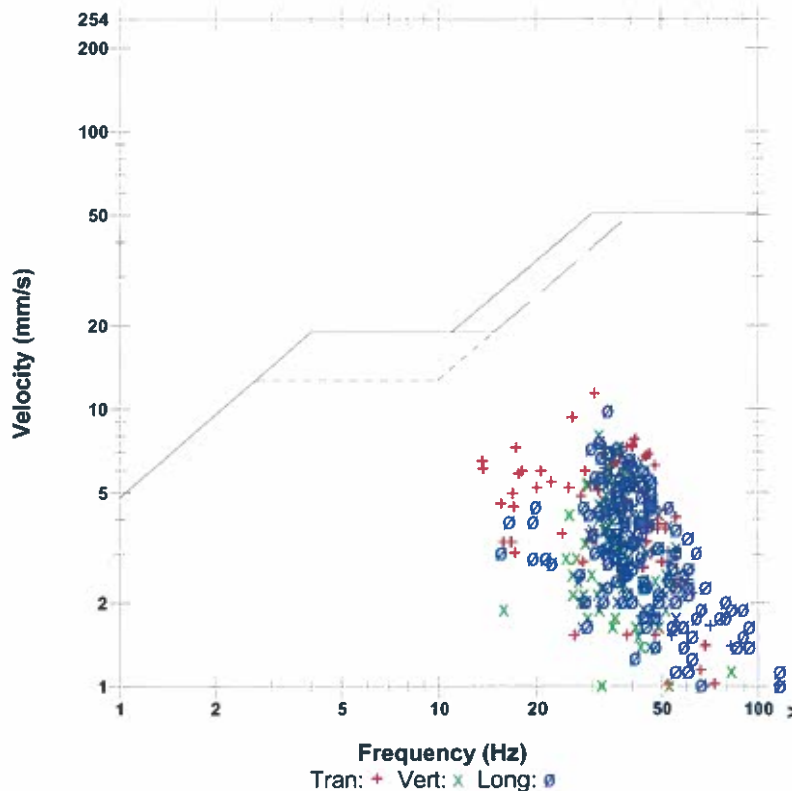
Extended Notes

Microphone Linear Weighting
PSPL 208 pa.(L) at 2.006 sec
ZC Freq 23.5 Hz
Channel Test Passed (Freq = 20.5 Hz Amp = 530 mv)

	Tran	Vert	Long	
PPV	11.3	8.13	9.91	mm/s
ZC Freq	30.6	31.5	33.6	Hz
Time (Rel. to Trig)	0.473	0.143	0.590	sec
Peak Acceleration	0.265	0.265	0.265	g
Peak Displacement	0.0608	0.0400	0.0431	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.7	7.2	Hz
Overswing Ratio	3.7	3.2	4.0	

Peak Vector Sum 13.6 mm/s at 0.472 sec

USBM RI8507 And OSMRE



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 50.0 pa.(L)/div
Trigger = 

Sensor Check

Date/Time Vert at 02:20:14 December 9, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo: 254 mm/s
Record Time 5.0 sec at 4096 sps
Job Number: 1

Serial Number BE15259 V 10.02-1.0 Minimate Blaster
Battery Level 6.3 Volts
Unit Calibration October 30, 2009 by Instantel inc.
File Name Q259E22P.5Q0

5081011

USBM RI8507 And OSMRE

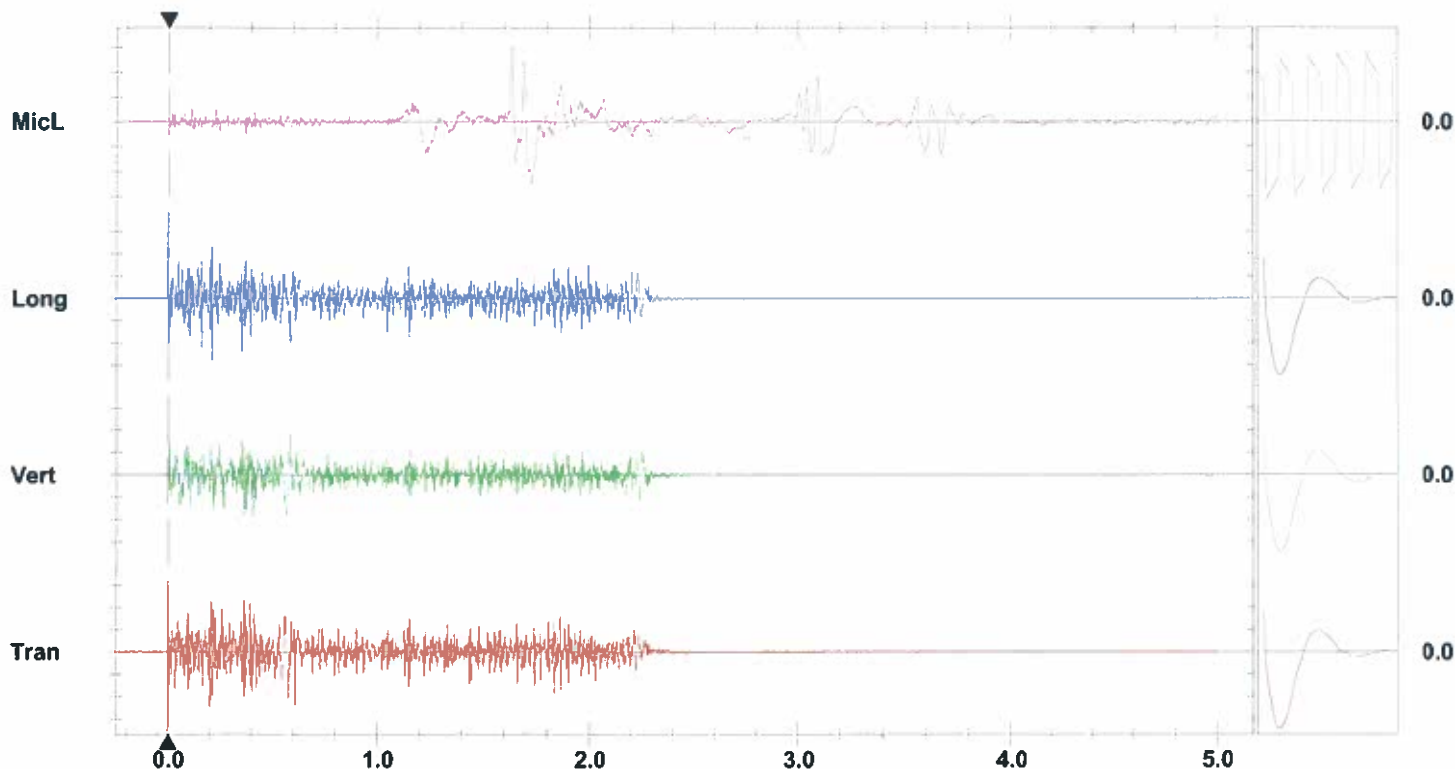
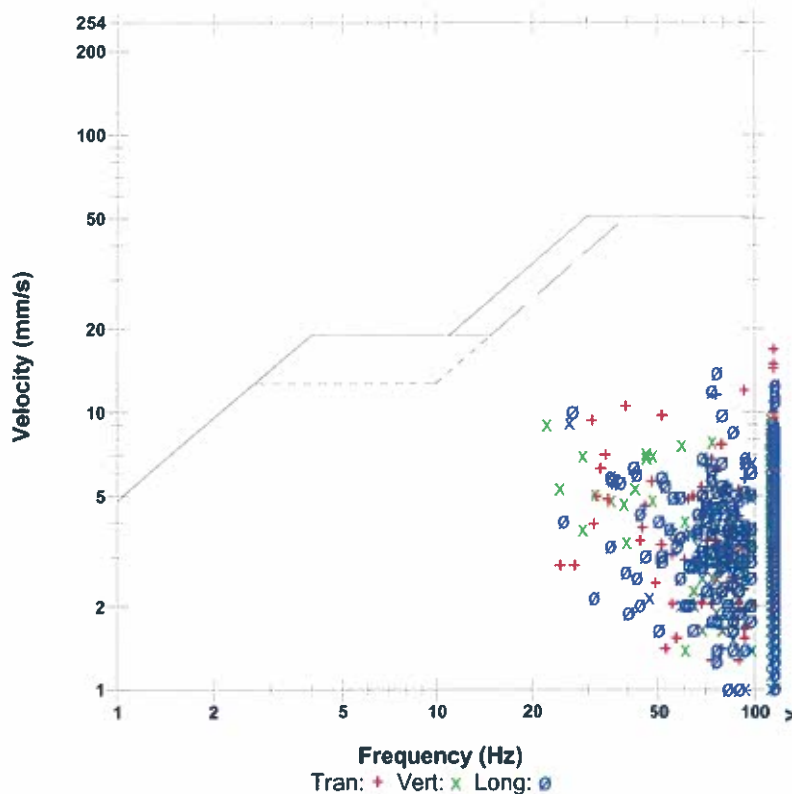
Notes
Location: PORTAGE PIT
Client: Agnico-Eagle Mines Limited
User Name: Meadowbank Division
General: Engineering Departement

Extended Notes

Microphone Linear Weighting
PSPL 60.3 pa.(L) at 1.631 sec
ZC Freq 10.6 Hz
Channel Test Passed (Freq = 20.5 Hz Amp = 553 mv)

	Tran	Vert	Long	
PPV	16.8	9.52	13.8	mm/s
ZC Freq	128	146	76	Hz
Time (Rel. to Trig)	0.006	0.409	0.214	sec
Peak Acceleration	1.54	1.11	1.33	g
Peak Displacement	0.0445	0.0602	0.0360	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.6	7.6	7.3	Hz
Overswing Ratio	3.7	3.2	4.0	

Peak Vector Sum 21.0 mm/s at 0.006 sec



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 20.0 pa.(L)/div
Trigger = 

Sensor Check

Date/Time Long at 02:20:33 December 10, 2011
Trigger Source Geo: 1.00 mm/s
Range Geo : 254 mm/s
Record Time 5.0 sec at 4096 sps
Job Number: 1

Notes

Location: PORTAGE PIT
Client: Agnico-Eagle Mines Limited
User Name: Meadowbank Division
General: Engineering Department

Extended Notes

Microphone Linear Weighting
PSPL 244 pa.(L) at 1.108 sec
ZC Freq 13.4 Hz
Channel Test Passed (Freq = 20.5 Hz Amp = 538 mv)

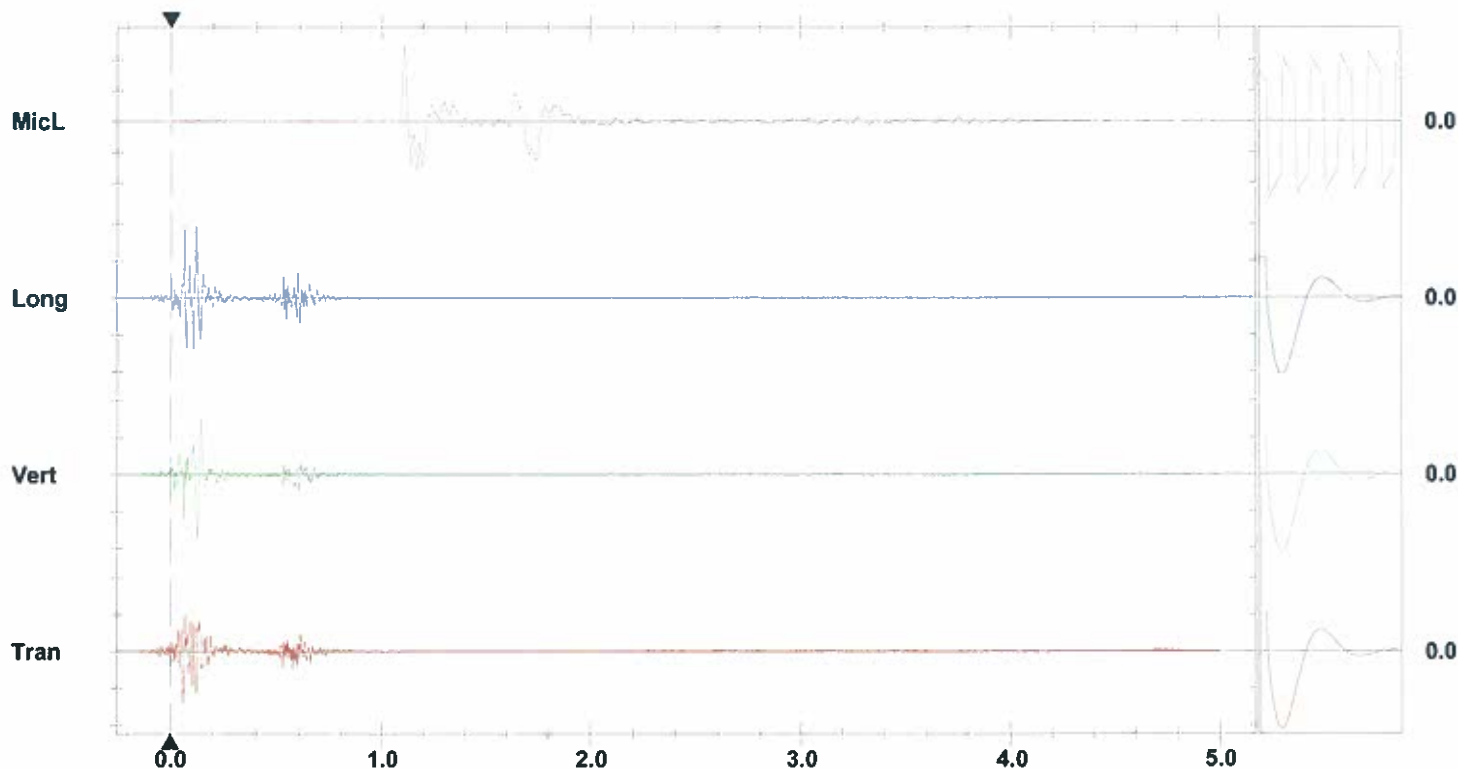
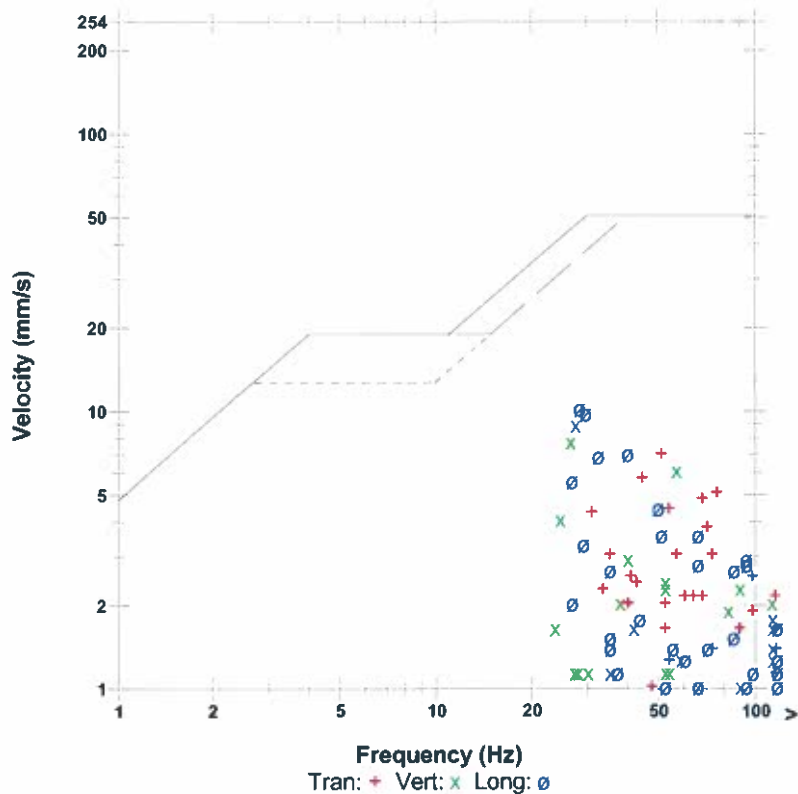
	Tran	Vert	Long	
PPV	6.98	8.89	10.2	mm/s
ZC Freq	51	27.7	28.4	Hz
Time (Rel. to Trig)	0.064	0.127	0.065	sec
Peak Acceleration	0.371	0.265	0.583	g
Peak Displacement	0.0226	0.0485	0.0436	mm
Sensor Check	Passed	Passed	Passed	
Frequency	7.5	7.7	7.3	Hz
Overswing Ratio	3.7	3.2	4.0	

Peak Vector Sum 13.6 mm/s at 0.065 sec

Serial Number BE15259 V 10.02-1.0 Minimate Blaster
Battery Level 6.3 Volts
Unit Calibration October 30, 2009 by Instantel inc.
File Name Q259E24J.W90

5067PS 001

USBM RI8507 And OSMRE



Time Scale: 0.20 sec/div **Amplitude Scale:** Geo: 5.00 mm/s/div Mic: 100.0 pa.(L)/div
Trigger = 

Sensor Check