

To: Sydvaranger Gruve AS, v/ Åse Wosnitza

From: Norconsult AS, v/ Jan Anders Marheim

Date: July 24, 2009

ADDITIONAL NOISE MEASUREMENTS - PHASE 1

As a result of renewed mining activities and related processes, Sydvaranger Gruve AS (SGA) has instigated measurements of noise emissions to the surroundings. The results of the first measurement series are reported in Norconsult report 5012660-1.0, dated June 25th, 2009. The neighbors to the mine have requested additional measurements to further verify the background noise levels at more locations.

SGA and the neighbors agreed to two more measurement locations, at Bekkeneset and Henrikodden. Figure 1 shows an overview over the two additional locations close to the mine at Bjørnevatn, while figures 2 and 3 show detailed view of both measurement locations.



Figure 1 – Additional measurement locations at Bjørnevatn



Figure 2 – Detailed view of the measurement point at Bekkenesset with the mine in the background



Figure 3 – Detailed view of the measurement point at Henriksodden with the mine in the background

At both locations, the noise logging time was set to 48 hours, with 10 second logging interval. The measurement equipment was identical to the one used in the previous measurement series, also using the same instrument settings. The measuring range was set from 30 to 110 dB.

The measurement results are summarized in Table 1 below. The logging profiles are enclosed in Appendix 1.

Measurement location	LAeq (dBA)
1. Bekkeneset	49
2. Henriksodden	50

Table 1 – Equivalent noise levels, LAeq, at the two additional locations

Explanations of some key parameters in noise measurements:

LAeq: A-weighted equivalent continuous sound pressure level for a work operation, A-weighted sound pressure level of a continuous steady sound that within a measurement time interval, t , has the same mean square sound pressure as a sound under consideration, which varies with time. It is the A-weighted level of the mean square sound pressure over a time interval. It is expressed in decibels.

LAFmax: A-weighted maximum sound pressure level, highest observed A-weighted sound pressure level during the measurement time interval when using instrument time weighting F (*Fast*) that is specified in IEC 60651. It is expressed in decibels.

LCpeak: C-weighted peak sound pressure level, highest observed C-weighted sound pressure level during the measurement time interval when using instrument time weighting *peak* that is specified in IEC 60651. It is expressed in decibels.

At Bekkeneset, two events can be seen, the first on Monday, July 13th at 6:15 PM and the second one on Tuesday at about 4:44 PM. Similarly, at Henriksodden there was an event on Friday July 17th at 2:10 PM. These three events may be related to blasts at the mine.

Sandvika, July 24, 2009



Jan Anders Marheim

APPENDIX 1- DETAILED VARIATIONS IN EQUIVALENT NOISE LEVEL

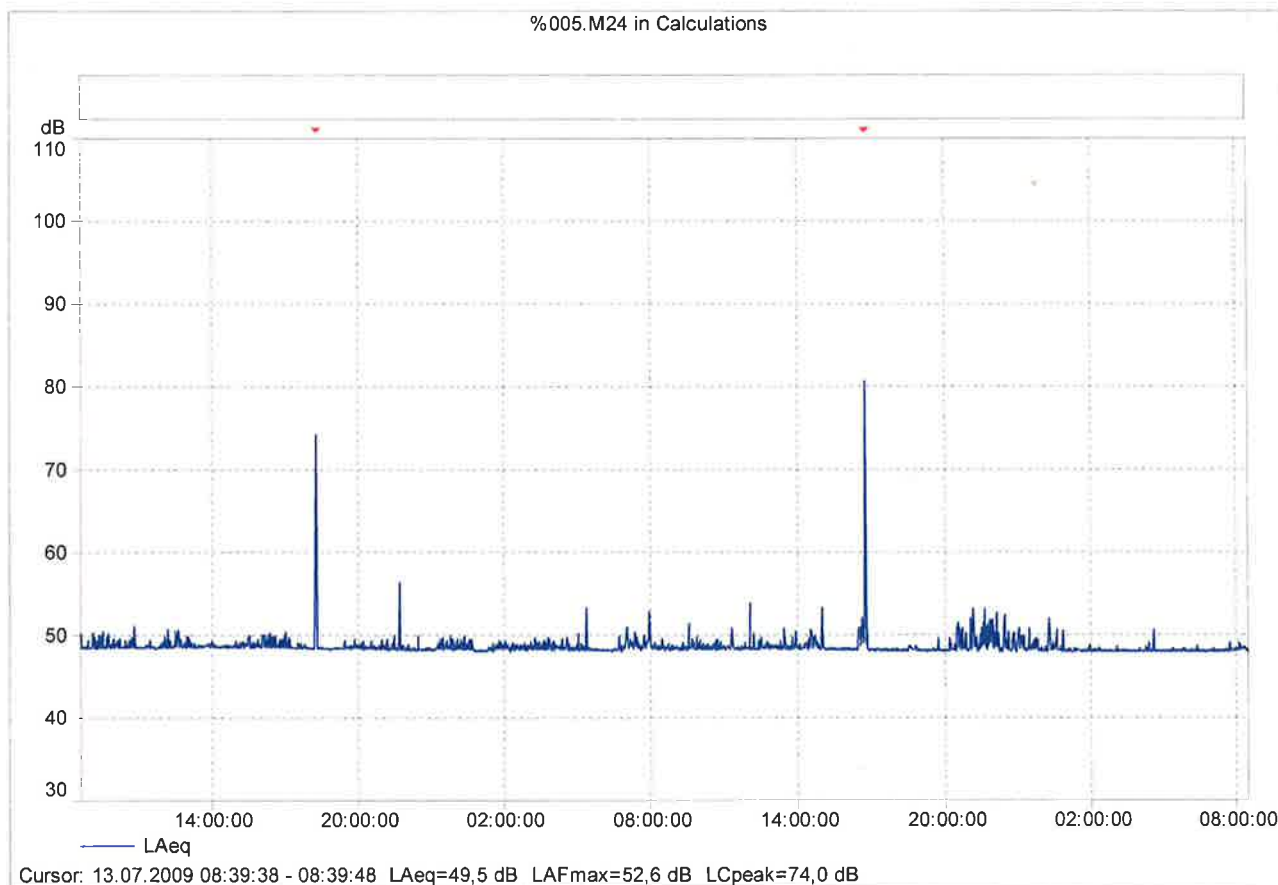


Figure 2 – Variations in equivalent noise level at Bekkeneset

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]
Value				0	49,4
Time	08:29:18	08:29:18	48:00:00		
Date	13.07.2009	15.07.2009			

Table 2 – Measurement overview Bekkeneset

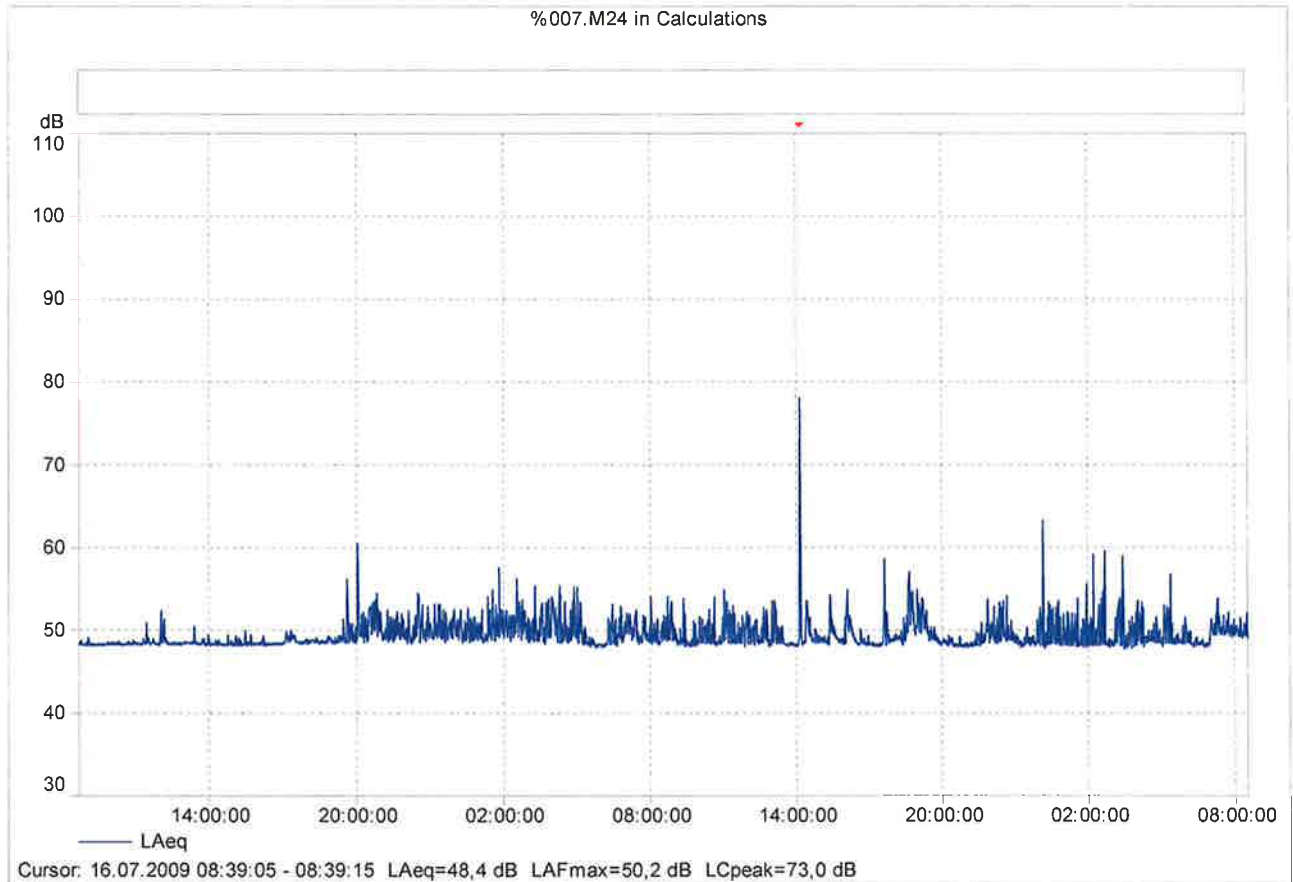


Figure 3 – Variations in equivalent noise level at Henriksodden

	Start time	End time	Elapsed time	Overload [%]	LAeq [dB]
Value				0	49,7
Time	08:30:55	08:30:55	48:00:00		
Date	16.07.2009	18.07.2009			

Table 3 – Measurement overview Henriksodden