

27 February 2020

MAC170434-11-DPIE-LR01

Mandana Mazaheri
NSW DPIE
12 Darcy Street
Parramatta NSW 2150

Dear Mandana,

Response to DPIE Comments

McPhillamys Gold Project Noise Assessment

Muller Acoustic Consulting Pty Ltd (MAC) has reviewed the comments provided by Department of Planning, Industry and Environment (DPIE). The following responses are provided for each point.

Comment 1

Impact of temperature inversions and wind conditions: particularly the justification for why an E class temperature inversion was not modelled at night given the frequency of occurrence of E, F and G Class to 44%. It is also noted that the NSW Noise Policy for Industry requires that for extreme conditions (such as cases of unmodelled Stability Class inversions), the mine must limit its excursions to no more than 5dB above the noise limits.

Response 1

The NPI requires the percentage occurrence of F and G Class inversions during the night time period to be determined. **Table 1** reproduces the data from Table 25 of the **Noise and Vibration Impact Assessment, McPhillamys Gold Project (MAC 2019)**, which shows that the occurrence of F and G Class inversions is less than 20%. Hence, inversions were not considered further in the EIS noise assessment.

Table 1 Frequency of Occurrence of Atmospheric Stability Class

Stability Class	Frequency of Occurrence %
A	0%
B	0%
C	0%
D	55.9%
E	24.4%
F	14.3%
G	5.4%
Total F + G	19.7%

In regards to the NSW Noise Policy for Industry requirement for the mine to be within +5dB of the PNTL during unmodelled conditions, additional modelling for an E Class inversion during the night time period shows a negligible increase (<0.4dB) in noise levels compared to the predicted noise levels presented in the EIS.

Furthermore, as described in **MAC 2019 Section 8.3** (Noise Monitoring and Management), a noise monitoring program combining (unattended) real time noise monitoring terminals (NMT) and meteorological forecasting will be developed to assist in quantifying noise emissions, and provide warnings for noise enhancing conditions. The noise monitoring network, enabled with SMS/email alarms when noise levels are approaching noise criteria (PNTLs) will enable mine operators to manage equipment quantities and work locations (ie stand down equipment if necessary) and maintain noise emissions within the required limits, including the requirement to meet the PNTL +5dB limit for very noise enhancing conditions such as winds and temperature inversions.

Comment 2

The predicted operational noise impacts on private properties during the evening period: specifically clarification around the predictions for Kings Plains Yr1 which sees 9 properties experiencing an excursion of 2-5dB during the day, dropping to 1 property in the evening and rising back to 9 properties at night (refer Table 30, EIS Appendix L – Mine Development Noise and Vibration Impact Assessment).

Response 2

MAC 2019 Table 30 referred to in the comment is reproduced below as **Table 2** for reference. The items referred to in the DPIE commentary are shaded in the table for clarity. Additionally, the part of **MAC 2019 Table 32** for the Kings Plains catchment is shown in greater detail (refer to **MAC 2019 Appendix D**) in **Table 3** with an additional column showing the predicted noise level and difference to PNTL.

The key reasons for the significant change in affected properties between the assessment periods are summarised below:

- The number of plant operating reduces from the daytime to the evening/night time period (refer to **MAC 2019 Table 24**);
- Lower predicted noise levels during the evening period result in less receivers falling into the >PNTL +2dB category;
- The noise prediction results for the evening and night time periods are the same; and
- The additional eight receivers falling into the >PNTL +2dB category is a result of the night time criteria being 1dB lower than the evening criteria.

The significance of the changes in criteria is shown for each receiver in **Table 3**.

Table 2 Operational Noise Levels PY1 to PY8

Catchment (No) Receiver ID	Period ¹	PNTL dB LAeq(15min)	Project Noise Level (PNL) Range dB LAeq(15min)				No. of Receivers PNTL < PNL < PNTL+2dB ²				No. of Receivers PNTL+2dB < PNL < PNTL+5dB ³			
			PY1	PY2	PY4	PY8	PY1	PY2	PY4	PY8	PY1	PY2	PY4	PY8
Distant Rural (51) R01-R14, R52-R88	Day	40	26-34	24-33	19-32	18-30	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Evening	35	19-31	21-33	20-32	19-33	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Night	35	21-31	21-33	20-32	19-31	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Kings Plains (12) R15-R17, R25-R33	Day	41	36-45	37-41	33-38	31-34	2	Nil	Nil	Nil	9	Nil	Nil	Nil
	Evening	36	32-37	32-37	32-36	32-35	9	7	Nil	Nil	1	Nil	Nil	Nil
	Night	35	32-37	32-37	32-36	31-35	2	3	6	Nil	9	6	Nil	Nil
Walkom Road (7) R18-R24	Day	40	38-44	35-40	30-35	29-34	2	Nil	Nil	Nil	3	Nil	Nil	Nil
	Evening	35	30-36	32-36	30-35	30-35	2	4	Nil	Nil	4	Nil	Nil	Nil
	Night	35	30-36	32-36	30-35	23-34	2	4	Nil	Nil	4	Nil	Nil	Nil
Sturgeon Hill (18) R34-R51	Day	40	27-42	26-37	23-31	19-30	2	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Evening	38	23-36	25-36	25-34	21-33	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
	Night	35	23-36	25-36	25-34	22-33	1	2	Nil	Nil	2	1	Nil	Nil

Note 1: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

Table 3 Receivers where Project Noise Levels Exceed PNTL by more than 2dB

Catchment (No) Receiver ID	Period ¹	PNTL dB LAeq(15min)	Receiver – PY1	Predicted Noise Level dB LAeq(15min)	Difference, dB
	Day	41	R15	36	-5
			R16	43	2
			R17	45	4
			R25	44	3
			R26	44	3
			R27	45	4
			R28	45	4
			R29	44	3
			R30	45	4
			R31	44	3
			R32	43	2
			R33	44	3
Kings Plains (12) R15-R17, R25-R33	Evening	36	R15	34	-2
			R16	36	0
			R17	37	1
			R25	38	2
			R26	38	2
			R27	38	2
			R28	38	2
			R29	38	2
			R30	39	3
			R31	38	2
			R32	38	2
			R33	38	2
	Night	35	R15	34	-1
			R16	36	1
			R17	37	2
			R25	38	3
			R26	38	3
			R27	38	3
			R28	38	3
			R29	38	3
			R30	39	4
			R31	38	3
			R32	38	3
			R33	38	3

Note 1: Day - the period from 7am to 6pm Monday to Saturday or 8am to 6pm on Sundays and public holidays; Evening - the period from 6pm to 10pm; Night - the remaining periods.

We trust this is satisfactory for your current requirements. If you have any further questions or would like to discuss, please contact the undersigned.

Yours sincerely



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Reviewed: OM