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NSW Department of Planning and Environment
GPO Box 39
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Attention: Ms Elle Donnelley

Dear Ms Elle Donnelley

MOUNT THORLEY OPERATIONS 2014 PROJECT – SSD 6465

Reference is made to your email to the Environment Protection Authority (EPA), dated 24 June 2014, seeking comments on the Mount Thorley Operations 2014 (the project) development application, reference SSD 6465, which is applied for by Mt Thorley Operations Pty Limited under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The EPA has reviewed the project as detailed in the report titled '*Mount Thorley Operations 2014 – Environmental Impact Statement: 15 June 2014*' (EIS), Volumes 1 – 5, prepared by EMGA Mitchell McLennan.

Summary dot points on the project

- continuing existing and approved development on site;
- maintaining maximum coal extraction rates at 10 million tonnes of run of mine coal a year;
- increasing throughput of run of mine coal at Mt Thorley coal processing plant from 10 million tonnes a year to 18 million tonnes a year;
- receiving coal, tailings and overburden from the neighbouring Warkworth mine;
- receiving overburden from the Bulga mine;
- water sharing with other mines;
- minor infrastructure upgrades; and
- progressive rehabilitation of the site.

The EPA has reviewed the information provided and provides the following comments. The EPA's proposed recommended conditions of approval are provided in **Attachment 1**.

It should be noted that there were a number of discrepancies found within the report around formatting, specifically the numbering of appendices and other chapter references. For example the table of contents in Volume 1 ("Main report") lists the surface water study as Appendix I, where as in Volume 3 ("Appendices G to J") the surface water study is actually Appendix J. The ordering of the groundwater study and visual amenity study were also out of order, as well as a number of other discrepancies noted during the review.

While these discrepancies didn't change the content of the EIS it would likely result in difficulty or confusion for those reviewing the EIS.

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Noise

The EPA has undertaken a thorough review of the EIS and report titled '*Mt Thorley Continuation 2014 – Noise and Vibration Study*' (NVS) prepared by EMGA Mitchell McLennan, dated 2 June 2014. The EPA's detailed noise assessment review is provided in **Attachment 3**. The EPA can support the project based on predicted noise levels in the NVS and the recommended conditions of approval in **Attachment 1**.

The recommended conditions of approval include application of the Low Frequency Noise (LFN) modifying factor based on the information provided in the NVS. The EPA also notes that the recommended noise monitoring and reporting conditions provided can be varied and must be negotiated with the proponent, the EPA and Department of Planning and Environment before being finalised in any Project Approval.

Surface Water

As noted above the surface water study is Appendix J (Volume 3), despite being referred to as Appendix I in the table of contents in Volume 1. For the purposes of this EPA review the surface water study is referred to as Appendix J not Appendix I.

As the Warkworth and Mount Thorley sites are operated as a joint operation the EPA understands the project proposes a number of changes to the water management system for the Mount Thorley Warkworth (MTW) operations. These include:

- increasing the permissible Hunter River Salinity Trading Scheme (HRSTS) discharge rate into Loders Creek from 100 mega litres per day (ML/d) to 300 ML/d at the Mount Thorley mine;
- transferring of mine water from nearby mine operations such as Bulga Coal Complex and Warkworth; and
- increasing site storage capacity of the southern out-of-pit dam from 1.6 giga litres (GL) to 2.2GL.

While the project proposes an increase in annual discharge volume limit from the current 100 ML/d to 300ML/d, the EPA understands this results from the project involving an increase in water sharing between the Warkworth and Mount Thorley sites, as well as an increase in the annual coal volumes processed, and associated water used, at the Mount Thorley site. As the increased discharge regime is regulated in accordance with the Environment Protection Licence (EPL) and Hunter River Salinity Trading Scheme there is sufficient statutory controls in place to monitor and regulate the increased discharges proposed.

Uncontrolled discharges

Section 4.5 of the surface water study states "*overflows of water from sediment dams will occur during wet periods that exceed the design standard of the sediment control system (as per the design intent)*". These design capacity details are provided in section 6.5.7. The EIS and surface water study do not appear to adequately describe the potential frequency of uncontrolled discharges from the site from dam overflows throughout the life of the mine.

Appendix J identifies the dam overflow receiving environments in Table 6.3. E.g. node number 106 'Dam 6S (SOOP Dam)' overflows to Loders Creek, however the EPA is concerned about the lack of information on the predicted frequencies of these occurring.

Section 6.6.8 and table 6.21 of the surface water study appear to show that uncontrolled offsite discharges may occur throughout the life of the mine in the range of around 100 ML/year (50 percentile) increasing as the mine life progresses, however uncontrolled discharge frequencies do not appear to be adequately detailed in the EIS or Appendix J.

Despite the above the EPA acknowledges the current licence for the site, EPL 1976, has conditions relating to discharge rates, concentration limits and monitoring requirements associated with any site discharges. Any discharges from the site in breach of the conditions permitted in the licence may result in regulatory action.

Air Quality

The EPA's review of the Air Quality Impact Assessment (AQIA) undertaken for the project has identified that the AQIA generally follows the requirements of EPA's *Approved Methods for the Modelling and Assessment of Air pollutants in NSW*. However there are gaps in the methodology and information provided for the 24-hour cumulative assessment and therefore additional information is required to assist in determining if potential worst-case impacts have been assessed. In addition, clarification and justification should also be provided for some of the methodology in the diesel and blast assessments. The EPA's detailed AQIA assessment and information requirements are provided in **Attachment 2**.

Environment Protection Licence

If project approval is granted amendments will be required to the EPL 1976 currently issued for the premises. The proponent will have to make a separate application to the EPA for an amendment to the existing EPL 1976, or a new EPL if desired, prior to undertaking any on site works.

If you require any further information regarding this matter please contact Michael Howat on 4908 6819.

Yours sincerely

 13.8.14

BILL GEORGE

A/Head Regional Operations Unit – Hunter

Environment Protection Authority

Encl: Attachment 1 - Recommended Condition of Approval: Mount Thorley Operations 2014, SSD 6465
Attachment 2 – EPA's Detailed Air Quality Assessment Review
Attachment 3 – EPA's Detailed Noise and Vibration Study Review

RECOMMENDED CONDITIONS OF APPROVAL MOUNT THORLEY OPERATIONS 2014, SSD 6465

Noting that Environment Protection Licence 1976 is already issued for the premises, the following recommended conditions of approval are only new or amended conditions to those already existing on EPL 1976. The EPA has not included an exhaustive list of all conditions currently in force in EPL 1976 that will remain unchanged if project approval is granted.

General

Works are to be undertaken in accordance with the information supplied to the EPA

1. Except as provided by these conditions of approval, the works and activities must be undertaken in accordance with the proposal contained in:

(a) *'Mount Thorley Operations 2014 – Environmental Impact Statement'* (Vols 1 – 5), dated 15 June 2014, prepared by EMGA Mitchell McLennan

unless otherwise specified in these conditions of approval

Premises or plant to which this licence applies

2. The licensee must provide the EPA with an updated premises description diagram/map prior to the commencement of any site works associated with the project. This diagram/map must be:
 - a. titled and dated;
 - b. prepared by a registered surveyor;
 - c. clearly identify the boundary of the premises for which Coal & Allied Operations Pty Ltd is the occupier;
 - d. illustrate location and GPS coordinates of all discharge and/or monitoring sites; and
 - e. in size A1 in both electronic and hard copy format.

Noise

3. Noise generated at the premises must not exceed the noise limits in the Table below. The location numbers in this table are taken from Table D.1 of the report *'Mt Thorley Operations 2014 Noise and Vibration Study'* prepared by EMGA Mitchell McLennan, dated 2 June 2014.

Location	NOISE LIMITS dB(A)			
	Day	Evening	Night	
	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{Aeq} (15 minute)	L _{A1} (1 minute)

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 117, 118, 120, 121, 122, 123, 124, 127, 128, 130, 134, 139, 141, 152, 153, 155, 156, 157, 160, 161, 162, 163, 180, 181, 182, 183, 184, 185, 186, 187, 191, 192 167, 168, 169, 170, 172, 173, 174, 175, 176, 177, 178, 179, 188 193, 197, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 217, 218, 219, 220, 221, 222, 223, 224, 225 244, 245, 246, 247, 248, 249, 250, 251 256, 257, 258, 259, 260, 261, 263, 265, 266, 267, 268, 904, 905, 911, 923, 926, 927, 932 937,	35	35	35	45
229,	36	36	36	46
28, 921, 922,	37	37	37	47
13, 16, 17, 19, 21, 24, 30, 31, 32, 35, 37, 52, 54, 61, 67, 70, 74, 77, 80, 84, 89, 102, 126, 215, 234, 235, 237, 238, 243, 254, 255, 262, 264, 903, 917, 918, 919, 929	38	38	38	48

4. For the purpose of condition 3;

- Day is defined as the period from 7am to 6pm Monday to Saturday and 8am to 6pm Sunday and Public Holidays.
- Evening is defined as the period 6pm to 10pm.
- Night is defined as the period from 10pm to 7am Monday to Saturday and 10pm to 8am Sunday and Public Holidays.

5. The noise limits set out in condition 3 apply under all meteorological conditions except for the following:

- Wind speeds greater than 3 metres/second at 10 metres above ground level.
- Stability category F temperature inversion conditions and wind speeds greater than 2 metres/second at 10 metres above ground level; or
- Stability category G temperature inversion conditions.

6. For the purposes of condition 5:

- Data recorded by a meteorological station installed on site must be used to determine meteorological conditions; and
- Temperature inversion conditions (stability category) are to be determined by the sigma-theta method referred to in Part E4 of Appendix E to the NSW Industrial Noise Policy.

7. To determine compliance:

- with the $L_{eq(15 \text{ minute})}$ noise limits in condition 3, the noise measurement equipment must be located:

- approximately on the property boundary, where any dwelling is situated 30 metres or less from the property boundary closest to the premises; or
 - within 30 metres of a dwelling façade, but not closer than 3m, where any dwelling on the property is situated more than 30 metres from the property boundary closest to the premises; or, where applicable
 - within approximately 50 metres of the boundary of a National Park or a Nature Reserve.
- b) with the $L_{A1(1 \text{ minute})}$ noise limits in condition 3, the noise measurement equipment must be located within 1 metre of a dwelling façade.
- c) with the noise limits in condition 3, the noise measurement equipment must be located:
- at the most affected point at a location where there is no dwelling at the location; or
 - at the most affected point within an area at a location prescribed by conditions 7(a) or 7(b).
8. A non-compliance of condition 3 will still occur where noise generated from the premises in excess of the appropriate limit is measured:
- at a location other than an area prescribed by conditions 7(a) and 7(b); and/or
 - at a point other than the most affected point at a location.
9. For the purposes of determining the noise generated at the premises the modification factors in Section 4 of the NSW Industrial Noise Policy must be applied, as appropriate, to the noise levels measured by the noise monitoring equipment.

Reporting Conditions

Noise Monitoring Report

10. A noise compliance assessment report must be submitted to the EPA within 30 days of the completion of the yearly monitoring. The assessment must be prepared by a suitably qualified and experienced acoustical consultant and include:
- a) an assessment of compliance with noise limits presented in Condition 3; and
 - b) an outline of any management actions taken within the monitoring period to address any exceedences of the limits contained in Condition 3.

Monitoring Conditions

Requirement to Monitor Noise

Note: This condition can be varied and must be negotiated with the proponent before being finalised in any Project Approval.

11. To assess compliance with Condition 3, attended noise monitoring must be undertaken in accordance with Conditions 7 and:
- a) at each one of the locations listed in Condition 3;
 - b) occur annually in a reporting period;
 - c) occur during each day, evening and night period as defined in the NSW Industrial Noise Policy for a minimum of:
 - 1.5 hours during the day;
 - 30 minutes during the evening; and
 - 1 hour during the night.

- d) occur for three consecutive operating days.

Surface Water

12. For each discharge point or utilisation area specified below, the volume/mass of:

- a. liquids discharged to water; or
- b. solids or liquids applied to the area;

Must not exceed the volume/mass limit specified for that discharge point or area.

Point	Unit of measure	Volume/Mass Limit
4	megalitres per day	300

Note: Point 4 in the table above is taken to be point 4 as shown in Condition P1.3 of EPL 1976.

Blast Fume

13. Offensive blast fume must not be emitted from the premises.

Definition:

Offensive blast fume means post-blast gases (whether visible or invisible, odorous or odourless) from the detonation of explosives at the premises that by reason of their nature, duration, character or quality, or the time at which they are emitted, or any other circumstances:

- (i) are harmful to (or is likely to be harmful to) a person that is outside the premises from which it is emitted, or
- (ii) interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted.

Air

The EPA requires further information is provided by the proponent, this is detailed further in **Attachment 2**. The EPA is unable to issue recommended conditions of approval in relation to air quality until such time as the additional information is received.

**Environment Protection Authority
August 2014**

Attachment 2

EPA'S DETAILED AIR QUALITY ASSESSMENT REVIEW

For the purposes of this assessment the Air quality and greenhouse gas study (Appendix G of the EIS) is referred to as the Air Quality Impact Assessment (AQIA).

1. Modelled Scenarios

The future years included in the air dispersion modelling were year 3, 9 and 14. The assessment does not provide justification for the selection of future scenarios for modelling. Factors that are generally taken into account for selection of modelling scenarios representative of potential worst-case impacts include overburden movement, coal movement, mine layout, proximity of active mining to receptors and capacity of overburden and coal handled.

Mount Thorley Operations (MTO) propose to increase the throughput at the coal preparation plant (CPP) from 10 Mtpa to 18 Mtpa. It is noted in the emissions inventories for the three future mining years modelled, the throughput at the MTO CPP ranges from approximately 6 to 7.5 Mtpa of ROM coal. The proposed maximum capacity of 18 Mtpa has not been modelled in any of the scenarios presented.

It is also noted that the quantity of ROM coal extracted from the MTO active pits in Year 3 is only 3.6 Mtpa, well below the approved capacity of 10 Mtpa. The EIS states that mining will be undertaken at a maximum rate of 10 Mtpa until 2022.

The EPA recommends that the proponent provides details of selection process for the future years modelled including justification for how the selected modelling scenarios represent potential worst-case.

2. 24-hour PM₁₀ Cumulative Assessment

Accounting for 2012 Impacts

The 24-hour PM₁₀ cumulative assessment was completed by adding predicted increments from the MTO Project to measured background data from 2012 at the nearby monitors. Impacts from Warkworth mining operations were also included due to the interactions between the two mines and the proximity of the Warkworth mine.

The 2012 monitoring data would include impacts from the Mount Thorley Warkworth (MTW) operations during 2012. Therefore, MTW operations in 2012 were modelled and the results were applied to the cumulative assessment to avoid double counting of impacts from the two mines. The 2012 emissions inventory, source locations and methodology for applying 2012 MTW operations have not been provided in the AQIA.

It is unclear from the tables in *Appendix F* of the AQIA how 2012 impacts have been accounted for in the cumulative assessment. There appears to be inconsistencies in the methodology to account for predicted 2012 MTW results. For example, active mining moves towards the west closer to the Bulga monitor in the future mining years and therefore impacts are expected to increase. In the table below from *Appendix F*, the predicted increment decreases in the future mining years at the Bulga monitor on 7 October 2012 (one of days where the top ten highest measured data was recorded). However, a review of the top ten highest predicted increment on 14 June 2012 increases in the future years.

Year	Date	Measured (µg/m ³)	Predicted (µg/m ³)	Total (µg/m ³)
Year 3	7/10/2012	40.9	-4.1	36.8
Year 9	7/10/2012	40.9	-6.0	34.9
Year 14	7/10/2012	40.9	-10.7	30.1
Year	Date	Measured (µg/m ³)	Highest Predicted (µg/m ³)	Total (µg/m ³)
Year 3	14/6/2012	ND	5.2	5.2

Year 9	14/6/2012	ND	14.8	14.8
Year 14	14/6/2012	ND	18.9	18.9

On certain days where the model may have predicted higher impacts for the future mining years compared to 2012 (or vice versa if 2012 results were subtracted from future predicted results), the predicted increment was a negative value. As a result of the negative predicted increments, there are days where the cumulative assessment resulted in lower concentrations than the original measured data. For example, at the Mt Thorley Industrial Estate tapered element oscillating microbalances (TEOM) in Year 9 on 6 September 2012, the measured PM₁₀ concentration was 59 µg/m³ and the incremental impact was - 13.6 µg/m³. The resulting cumulative total PM₁₀ concentration was 45.4 µg/m³.

It appears reasonable to account the mine contribution from 2012 to avoid double counting of MTW impacts. It is also noted that as mining operations move and change, the potential impacts at a particular TEOM is likely to change compared to the base year 2012. However, the 24-hour average PM₁₀ cumulative assessment should include a level of conservativeness to account for operational fluctuations, modelling sensitivities and future changes to operations at other mines. The proponent has not provided enough information and justification in the 24-hour average PM₁₀ cumulative assessment to determine if the potential worst-case impacts have been assessed.

The EPA recommends that the proponent provides details of the 2012 emissions inventory and the methodology to account for 2012 impacts in the cumulative assessment. The cumulative assessment should be conservative enough to take into consideration worst case conditions that are likely to arise in the future mining years. Therefore, the proponent should provide justification for the methodology used in the cumulative assessment and reasoning that the potential worst-case impacts on nearby sensitive receptors have been assessed.

Location of Predicted Impacts

Predicted results have been extracted at the nearby TEOMs to represent clusters of sensitive receptors rather than directly at the sensitive receptors. The reasoning provided was that the TEOMs are typically located closer to mining activities and therefore are likely to experience greater impacts.

Whilst the majority of the residences are located further from the MTW mining operations compared to the TEOMs, there are a few residences located closer to mining operations than the TEOMs assessed. An example of private receptors located close to mining operations includes receptors 81, 102, 118, 126, 259, 262 and 264. Hence, the potential impacts at these residences would be higher than those of the nearby TEOMs.

In accordance with the approved methods, the 24-hour average PM₁₀ cumulative assessment should be undertaken at the nearest existing or likely future off-site sensitive receptor. The EPA recommends that additional 24-hour average PM₁₀ cumulative analysis should be completed at the sensitive receptors close to mining operations.

Predicted Cumulative Impacts

In accordance with Section 5.1.1 of the Approved Methods, measured background concentration should be added to each individual dispersion model prediction at each receptor for the entire modelled year. It is also noted that only 20 days of background data and predicted increment has been presented in *Appendix F* and it is unclear if a full year of data has been assessed in the 24-hour PM₁₀ cumulative assessment.

The data shown in *Table 9-6* summarising the predicted maximum number of additional days above 24-hour average criterion does not match with the tables shown in *Appendix F*. The number of additional days above the 24-hour average criterion based on *Appendix F* is shown below.

Location	Year 3	Year 9	Year 14
Bulga	0	0	0
Wallaby Scrub Road	0	0	0
Warkworth	1	7	2
Knodlers Lane	0	3	2
MTIE	0	2	1

The EPA recommends that a full year of assessment should be provided for the cumulative analysis and Table 9-6 of the AQIA should be revised accordingly.

3. Diesel Assessment

Nitrogen dioxide (NO₂) emissions from diesel powered equipment items were modelled using emissions data from manufacturer's equipment performance specifications. The equipment items modelled included excavators, loaders, dozers, drills, graders, watercarts and haul trucks and were assumed to be operating at full power 20% of the time. The assessment does not specify for the remaining 80% of the time whether the equipment items were assumed to be operating at a reduced rate or were not operational.

The EPA has conducted studies which have demonstrated that haul trucks generally operate at approximately 40% load capacity. A 20% operating capacity spread over a full year would result in underestimation of potential 1-hour average NO₂ impacts from operation of diesel equipment.

It is noted that the cumulative assessments for dust in the AQIA has been completed using the predicted concentrations from MTW due to the interactions between the two mines. However, the NO₂ assessment appears to have only used data from MTO alone. Due to the integrated operations between MTO and Warkworth and for consistency with the cumulative approach for dust in the AQIA, the NO₂ cumulative assessment should include emissions from diesel from mining operations at Warkworth.

Background NO₂ data was obtained from the Singleton monitor and the levels used for the cumulative assessment were 41.4 µg/m³ for 1-hour average and 16.9 µg/m³ for annual average. Table 10-2 of the assessment shows NO₂ impacts from diesel emissions from the Project and background. A review of the isopleths in Appendix G for the predicted 1-hour and annual average NO₂ concentrations from the Project alone are the same as Table 10-2. The proponent should check that background levels have been included in the predicted results in Table 10-2.

The proponent should clarify the operating capacity of 20% used in the diesel assessment and provide justification for the capacity assessed. The EPA recommends that Warkworth should be included in the NO₂ assessment, consistent with the cumulative approach for dust in the AQIA. The proponent should also check that the results presented in Table 10-2 and Appendix G are correct.

4. Blast Assessment

The blast assessment was completed for all the future mining years by placing a blast source in the centre of the active pit. The AQIA states the model was set up to generate a blast during each hour of the day when blasting is permitted and takes into account weather conditions and existing blast permissions, in accordance with the existing MTW Blast Management Plan. The exact conditions where the emissions were halted in the modelling were not provided in the AQIA.

A review of Appendix H of the air quality assessment indicates that the hours between 9 am and 5 pm were modelled. However, the permitted hours for blasting in the blast management plan is from 7 am and 5 pm. The time of day where NO₂ impacts from blasting was predicted to result in adverse impacts were in the early evening at 4 pm and 5 pm.

The proponent should provide details of the weather conditions that lead to a halt in blasting. In addition, the hours of blasting in the modelling should be crossed checked to ensure that all permitted hours between 7 am and 5 pm have been assessed.

Attachment 3

EPA'S DETAILED NOISE AND VIBRATION STUDY REVIEW

The EPA reviewed the report titled '*Mt Thorley Continuation 2014 – Noise and Vibration Study*' (NVS) prepared by EMGA Mitchell McLennan, dated 2 June 2014, and provides the following comments:

There does not appear to be a discussion of potential noise increases associated with the CPP as a result of its upgrading from 10Mtpa to 18Mtpa.

1. DECCW Letter of December 2010

DECCW's letter to the Department of Planning and Environment (Planning) of December 2010 is mentioned in relation to the Ombudsman's letter quoted in the NVS. In the letter to Planning, DECCW stated that it agreed with Planning that the INP Low Frequency Noise (LFN) modification factor would be applied except where it is shown that it results in perverse outcomes. For example, where the INP method results in a noise sensitive receiver further from a noise source being eligible for acquisition when another receiver closer to the source and receiving higher dBA noise levels is not.

Since the letter the EPA has done further analysis and considers that situations could arise where the C – A differential is 15dB or more but the assessment criteria proposed by the UK Department of Environment, Food and Rural Affairs (DEFRA) indicates that no LFN impact occurs. Section 10.9.2 of the NVS presents the results of some noise measurements outside and inside a dwelling that show that the DEFRA criteria are not exceeded. However the C – A differential during the measurements was not 15 or more, therefore the example in the NVS does not demonstrate that the DEFRA criteria are not exceeded when the INP criterion is exceeded. EPA therefore proposes to apply the methodology for LFN in Table 4.1 of the INP unless further information is provided.

2. Urban / Industrial Interface classification

Locations categorised as "Urban / Industrial Interface" might be more appropriately categorised "Rural / Industrial Interface", as per the INP Application Note "When to apply the urban/industrial interface amenity category" (at <http://www.epa.nsw.gov.au/noise/applicnotesindustnoise.htm>). The NVS does not appear to discuss that this category applies to a region where the noise level of the existing industry (measured at its boundary) has fallen by 5 decibels.

3. Amenity criteria

The NVS references 2.2.4 of the INP in relation to amenity criteria and seems to be suggesting that Mt Thorley's noise contribution should be included when deriving the amenity criteria. Appendix A of the INP appears to indicate that noise from an existing premises should not be included when deriving amenity criteria. However, EPA notes that use of the intrusive criteria is appropriate as the PSNL would not change if this was corrected.

4. Modelling algorithm used

The prediction algorithm (eg CONCAWE, ISO9613) that was utilised for the noise modelling within the Bruel and Kjaer Predictor software is not stated. Most current algorithms base their predictions for atmospheric inversion conditions in terms of Stability Categories. The predictions in the NVS describe atmospheric inversions in terms of degrees C per 100m and it's not clear what, if any, conversion was undertaken. However, EPA considers that the prediction method and results appear reasonable and proposes to set the predicted values as noise limits, which it will be the responsibility of the proponent to meet.

5. Frequency occurrence of F and G stability categories

The relatively low (8%) frequency of occurrence of F and G stability categories for winter nights seems low. The weather station location is referred to as Charlton Ridge which suggests it may have greater exposure to wind conditions compared to more low-lying areas. The proponent has, however, assessed impacts for inversion conditions.

Conclusion

Notwithstanding the above comments, the EPA can support the project based on predicted noise levels in the NVS and the recommended conditions of approval in **Attachment 1**.

The proponent states that:

- the predicted noise levels are those that result after the implementation of all feasible and reasonable noise mitigation measures; and,
- the noise mitigation measures incorporated in the proposal are all that are feasible and reasonable for it to implement.

The EPA's view of the proposed noise mitigation measures is that they reasonably represent current best practices at similar mines. The EPA considers it unlikely that there are further feasible and reasonable measures that would provide significant additional noise mitigation.

If the project is approved the EPA can vary Mt Thorley's existing Environment Protection Licence (EPL) to include noise limits for noise sensitive receiver locations, in the following manner:

- Where predicted noise levels at noise sensitive receiver locations do not exceed the Project Specific Noise Levels (PSNLs), the EPA would set noise limits in the licence at the predicted level. Where the predicted noise level is less than 35dBA Leq_(15minutes) EPA would set the limit at 35dBA Leq_(15minutes).
- Where noise levels are predicted to be above the PSNLs ("residual impacts") Planning is best positioned to weigh the benefits of the proposal against potential adverse noise impacts according to Chapter 8.2.1 of the INP, and to determine if a noise limit above the PSNL is justified. Planning may choose to negotiate lower levels with the proponent or to adopt the predicted levels as consent conditions.
- Where noise limits in Planning's Project Approval, if issued, are above the PSNLs, EPA will include them as limits in the licence, provided they do not exceed the PSNLs by more than 5dB and suitable arrangements are made to mitigate the impact. EPA understands that Planning may assign Acoustic Treatment rights for noise between 3 and 5dB above the PSNL, and Acquisition rights where noise is more than 5dB above the PSNL.
- EPA will not specify noise limits in the licence for a receiver that has negotiated an agreement with the proponent in relation to noise levels, in accordance with the Negotiated Agreement provisions of the INP, which are available to the proponent at any time.

The EPA's process for assigning recommended noise limits is broadly as follows:

- a. The EPA consults the predicted noise levels for the premises (e.g. Table D.1 of the NVS);
- b. A minimum noise limit level of 35dBA is adopted;
- c. For receivers with predicted impacts up to the PSNL,
 - i. EPA sets the noise limit for the night-time period to the predicted level in the assessment, down to a minimum of 35 dBA;
 - ii. EPA sets the noise limit for the evening period to the predicted level in the assessment, down to a minimum of the night-time period limit or 35 dBA, whichever is higher;
 - iii. EPA sets the noise limit for the daytime period to the predicted level in the assessment, down to a minimum of the evening period limit or 35 dBA, whichever is higher.

Steps ii and iii above ensure that noise limits for the less sensitive evening period are not lower than those for the night-time period, and similarly so limits for the least sensitive daytime period are not lower than those for the evening and night-time periods.

These limits are included as recommended limit conditions (eg. as a Table of limits in **Attachment 1**).

- d. For receivers with predicted impacts up to 5 dB above the PSNL,
 - i. EPA sets the noise limit for the night-time period as the predicted level in the assessment, down to a minimum of 35 dBA;
 - ii. EPA sets the noise limit for the evening period as the predicted level in the assessment, down to a minimum of the night-time period limit or 35 dBA, whichever is higher;
 - iii. EPA sets the noise limit for the daytime period as the predicted level in the assessment, down to a minimum of the evening period limit or 35 dBA, whichever is higher.

Steps ii and iii above ensure that noise limits for the less sensitive evening period are not lower than those for the night-time period, and similarly so limits for the least sensitive daytime period are not lower than those for the evening and night-time periods.

These limits are included as suggested limit conditions for Planning to consider.

Receivers with predicted noise levels more than 5 dB above the PSNLs would not be included in EPA's Licence. Owners whose properties are currently subject to acquisition by a mining company would be included in the recommended limit tables as acquisition may not have been completed at the time of writing these recommendations. These would be excluded once acquisition has been completed.