ATHOL

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11 December 2023

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MP06_0295-Mod-15

This submission relates to one aspect of the proposed modification, namely the change to the operation of the CVO Dewatering Facility (CDF) in relation to train arrivals and departures. It is described this way:

> *CHPL is therefore seeking approval to allow train arrivals and departures to also occur during evening and night-time hours (i.e. in addition to the currently permitted daytime hours), to alleviate this logistical bottleneck."*[1]

I am writing to oppose this change.

I am the owner of the property "Athol" which is the noise sensitive receiver at location R07 directly to the south of the western end of the rail siding. Our house is on a hill 475 metres from the siding at the closest point.

Interpretation of existing consent conditions

The existing consent for the Cadia East development (PA 06_0295) provides for the CDF to operate only during day time hours. However, when it comes to train operations, the relevant condition specifies "train **loading**"[2]. It is silent about the time of train **arrivals and departures.** The noise assessment for the original approval did state that apart from daytime only train loading "*All other operations – 24 hours a day*"[3] Presumably it is this interpretation which Cadia has relied on to allow Cadia's rail service provider to manage its train movements during evening and night time, as it currently does.

So Cadia now seeks approval for what is already occurring: night time train arrivals and departures. There is no need to "predict" the noise consequences of this as it is already occurring. In fact, 57% of train arrivals occur during the night time period[4].

[1] Modifications Report paragraph 3.12.3 page 49
[2] Project Approval, Schedule 3, Environmental Performance Condition 6
[3] Noise and Blasting Impact Assessment (Wilkinson Murray, April 2009) paragraph D2.5, page D-11
[4] RWDI Report, clause 7.4 page 67

Clarity around proposed modification

The uncertainty around the interpretation of the existing condition still exists. It is important to clarify whether the proposed modification if approved may extend to other train operations at night time, such as loading containers onto wagons. There are several references to train loading at night:

- Modification 15 Information Sheets #1, #2 and #3 describe the changes to the operation of the CDF "to allow train **loading** and related activities during evening and night time hours";
- the Notice of Exhibition from DPE dated 23 November 2023, which summarises the application, states: "train **loading** during evening and night-time hours at the CVO Dewatering Facility;
- the Modification Report itself at page 61: "In December 2022, CHPL consulted with the Australian Rail Track Corporation (ARTC) regarding the requirement for **train loading and related operations** to occur during evening and night-time hours".

Source of noise at Athol

The noise which has and continues to have most impact on us is the noise coming from locomotives arriving in the early hours of the morning (usually 2.00am to 5.00am) at the western end of the siding, opposite our bedroom window. The noise seems to come from locomotives powering down, the bumping of wagons, wheel track squeak and from manoeuvring and idling.

Prior to Modification 6 (approved August 2015), when shorter trains were used, most noise from train arrivals was screened from our residence by the Blayney SeaLink complex. Modification 6 approved an increase in ore processing rates from 27 to 32 Mtpa and an increase in train capacity from 68 to 106 containers per train. One consequence of this is that longer trains are now used. Initially it seems that trains of 44 wagons (88 containers) were used under the contract with Qube[5]. It is not clear whether even longer trains (up to 53 wagons as per the approval) have since been used. In any event, this requires the arriving locomotives to travel further west on the siding before powering down and idling. They are no longer fully screened by the SeaLink complex and are in full uninterrupted view from our residence. The Noise Assessment Report for Modification 6 concentrated entirely on the additional time to load trains and additional passerby noise of trains on the mainline, noting that there was no additional trains per week, and conveniently concluding that "rail noise associated with the Project is still considered negligible and no further detailed assessment is required"[6]. This report failed to consider the significant potential noise impacts of night time arrivals of longer trains at our residence. The exceedances listed in the Appendix show the reality of the situation.

What we have not appreciated is that night time train arrivals and departures are not only the source of these noise exceedances, but they are in breach of existing conditions.

To be clear, up to now, we have not been particularly concerned with noise from the operation of the CDF during the day, such as pump noise, the loading of trains or train departures, which are noticeable but do not disturb our day time activities. Most noticeable seems to be the movement of containers on the hard stand area and loading onto wagons, usually a loud but dull 'thud'. However, if container movements and train loading were to take place in the evening and night time (24 hours a day) this would be of serious additional concern.

[5] Cadia Operations, New South Wales, Australia, NI 43-101 Technical Report (30 June 2020)

[6] EA Noise Assessment Report March 2015, Appendix A, (Wilkinson Murray), page 29

Existing noise criteria

The existing evening and night time noise levels ($L_{Aeq\ (15\ minute)}$) (in dB) for various purposes, as they apply to "Athol", are as follows:

	Evening (6pm to 10pm)	Night (10pm to 7am)
Predicted noise levels[7]	32	32
Project specific noise levels[8]	38	35
Land acquisition noise levels[9]	40	40

Measured exceedances

Since longer trains have been used, the project specific noise levels have been exceeded on many occasions during monitoring periods. Details are provided in the **Appendix**. Some of these are listed in the Modification Report[10]. On many other occasions during monitoring periods the night time levels were exceeded "as measured" but considered compliant by adding 5 dB for noise enhancing wind speeds.

As the Appendix confirms, the vast majority of night time exceedances were caused by train arrivals and idling at the western end of the siding in the early hours of the morning. What must be remembered is that this is not the total of all exceedances, just the ones measured during the typical 2-3 day monitoring period.

Several points are relevant here:

- with two exceptions, all exceedances were caused by an activity conducted in breach of the conditions of consent. We were informed of some of the exceedances, but not of the fact that they came from an activity conducted in breach of the consent conditions;
- the location of the unattended mobile monitoring trailer was presumably chosen from commencement of construction as it has a direct line of sight to the CDF in an ENE direction, hence the AOI is 55° to 95°. As we now know, it is noise from arriving locomotives at the western end of the siding which are the main source of noise impact at our residence. That is in a northerly direction from our house. The monitor probably therefore underestimates the night time noise level at the "Athol" residence;
- many of the measurements were taken to be compliant, after addition of 5 dB, based on observed wind direction (W, SW and SE) but this is not the "source to receiver" direction. The relevant wind direction would seem to be in the arc from NW to E.

Proposed change in night time train operations

The operational changes proposed include using the west end of the siding for arrival and idling of locomotives between arrival (typically between 2:00am and 5:00am) until 90 minutes before departure (typically in the evening or night, which currently account for 37% and 2% of all departures), an average of say 12 hours a day.

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[7] The noise levels predicted during the original approval process for Cadia East (06_0295) as per Noise Assessment Report version F dated April 2009 (Wilkinson Murray), page D-49

[8] Environmental Consent Condition (schedule 3) paragraph 2

[9] ibid paragraph 3

[10] see Appendix A – 04 Noise Assessment, table 3-1 page 12 (RWDI, 15 November 2023).

The proposed change in train operations is essentially to take away train related noise impacts from the eastern end of the siding and move those to the western end. Night time arrivals will idle at the western end and only move to the eastern end shortly before departure, typically in the evening. This shifts the impacts from locations R01 (Ewens), R02 (Nixon) and R05 (Gardener) to R07 (Athol). This will only exacerbate the current problem, with the western end of the siding in use for far longer periods.

There is one mitigation measure which seems to be directed at reducing the noise on train arrival, namely that trains will arrive in a "bunched configuration (to minimise coupling noise)". This sounds impressive, but it is not explained how this is achieved or how it helps. According to ARTC's website:

> *"As trains slow down or speed up, the movement of the rail wagons generates noise. Bunching is caused by wagons bumping together as trains slow or halt."*

Predicted Noise levels following the change in operations

As a result of this approach to train operations, the following is the predicted noise levels at Athol if night time train arrivals and departures are approved and train operations take place as described in paragraph 7.6 of the Noise Assessment Report:

	Evening (6pm to 10pm)	Night (10pm to 7am)
Project specific noise levels	38	35
Predicted noise levels[11] - low idle west	35	35
Predicted noise levels[12] - arrival and idling west	34	34

The predicted night time noise level from idling locomotives at the western end of the siding (35 dB) is, not surprisingly, greater at Athol than any other receiver, because of the move away from idling at the eastern end. This 35 dB prediction also happens to be precisely at the maximum level for Athol permitted under the existing consent conditions. Given that the predicted night time noise levels in the original DA were 32 dB and the actuals during brief monitoring periods have reached over 50 dB (see the Appendix), one would think that the prediction on this occasion that the operational noise levels at Athol are "generally expected to comply with the Project Approval impact assessment criteria" should be treated with some scepticism. It is likely to seriously underestimate the noise impacts, just as the Noise Assessment Report for Modification 6 did. Surely actuals are more reliable than predictions.

It is hard to see that the Department could be satisfied that noise emissions from the proposed modification would not result in any additional noise impacts to those already assessed and approved under the existing consent.

What also seems to be at odds with our experience is the prediction that noise levels at Athol from train arrivals (34 dB) is lower than that from train idling (35 dB). Train arrivals usually reach further west on arrival before reversing. They generate a coupling noise from wagons which doesn't occur when idling. As Table 1 shows, it is train arrivals which to date have generated the greatest exceedances.

[11] Modification Report Appendix A – 04 Noise Assessment, table 7-6 page 70 (RWDI, 15 November 2023)
[12] Modification Report Appendix A – 04 Noise Assessment, table 7-6 page 70 (RWDI, 15 November 2023)

Summary

I would summarise my comments as follows:

1. It is the noise from night time train arrivals and idling which has been and will continue to be of most concern;

2. These night time train operations are apparently now accepted to have been contrary to the existing conditions of consent, requiring this modification;

3. The predicted noise levels following the operational changes (35 dB from low idle and 34 dB from arrival and idling) seem to disregard the actual experience from night time train operations which have been already taking place. The predictions should be treated with scepticism;

4. The mitigation measures proposed seem to alleviate noise impacts at receivers at the eastern end of the siding and shift those to the western end, directly opposite Athol

5. The exceedances already recorded (and the points noted above about wind direction and monitor location which suggest the recordings may be an underestimate of the true noise impact at the “Athol” residence) all demonstrate that night time train operations are likely to regularly exceed the project specific noise levels and should not be approved.

Yours sincerely

D R Somervaille

APPENDIX

Measured exceedances of project specific noise levels during monitoring periods[13]

Date & time	Source	Night time dB (LAeq,15minutes)
20 May 2019 (04:15am)	Train arrival	44
20 May 2019 (17:55pm)	Train departure	45
22 May 2019 (18:45pm)	Train departure	42
8 June 2019 (04:00am)	Train arrival	41
12 June 2019 (04:15am)	Train arrival	46
23 October 2019 (03:40)	Train arrival	48
28 October 2019 (17:00pm)	Train departure	44
30 October 2019 (06:15am)	Train arrival	50
23 October 2020 (06:00am)	Train arrival	48
27 October 2020 (03:15am)	Train arrival	40
2 November 2020 (03:00am)	Train arrival	52
8 October 2021 (04:00am)	Train arrival	49
8 October 2021 (04:15am)	Train manoeuvring on siding after arrival	42
9 October 2021 (03:15am)	Pump farm at CDF	36
30 March 2022 (05:20am)	Train arrival	42
3 April 2022 (04:30am)	Train arrival	43
6 April 2022 (04:45am)	Train arrival	51
7 April 2022 (06:00am)	Train arrival	35
18 April 2022 (22:04 pm)	Pump farm at CDF	37
10 January 2023 (06:04am)	Idling locomotive	35
3 June 2023 (04.44am)	Train arrival	37
5 June 2023 (04.00am)	Train arrival	36
7 June 2023 (04.00am)	Train arrival	39

[13] All details come from applicable attended or unattended Advitech Pty Ltd Noise Assessment reports on Cadia website