

Our Ref: 4465_DPIE_Response to EPA_20200520

20 May 2020

Mr Caleb Ferry
Department of Planning, Industry and Environment
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Dear Caleb

Re: Additional Information Responding to the EPA's review of the Response to Submissions prepared to support Roberts Road Quarry Modification 4 (DA267-11-99-Mod-4)

I refer to the letter from the EPA to DPIE dated 15 April 2020 (Ref: DOC20/249727-8, Your Ref. DA267-11-99-Mod-4). The EPA's letter contains a review of the additional information contained within a Response to Submissions prepared by Umwelt (Australia) Pty Ltd to support the application of Hodgson Quarries and Plant Pty Ltd (the Applicant) to modify DA 267-11-99. The EPA has specifically reviewed the additional information supplied relating to Water, Air Quality and Noise.

The following provides a final response to the matters raised by the EPA.

Water

The EPA has confirmed satisfaction with the additional information supplied by Umwelt on behalf of the Applicant and recommended a condition of consent to ensure potential water quality impacts of any future proposed discharge are appropriately assessed and managed.

"There must be no discharges to waters from the premises, except as regulated by an environment protection licence. Consistent with section 45 of the Protection of Environment Operations Act, any application to include a discharge point on the environment protection licence would require a water quality impact assessment consistent with the national Water Quality Guidelines to inform consideration by the EPA. Any such assessment must include consideration of all pollutants present at non-trivial levels, based on a risk assessment of the materials and activities at the premises, with reference to the relevant guideline values from the national Water Quality Guidelines."

The Applicant does not object to this condition.

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Air Quality

The EPA has confirmed that the majority of issues raised previously have been adequately addressed.

With respect to the benchmarking of the Quarry against best management practices and assessment of particulate matter emissions, The EPA makes the following statement regarding emissions of PM_{2.5} emissions

“This indicates that that there is an impact occurring from the existing operations, and hence there are potential issues with the actual implementation of best practice mitigation measures. The EPA recommends that prior to project determination the proponent investigate the source of elevated annual average PM_{2.5} impacts from current operations (which have been adopted as background), and if required, propose mitigation and rectification measures to reduce these impacts. If rectification and mitigation measures are proposed, the EPA will consider requiring these measures to be implemented via a pollution reduction program or special condition on the licence.”

The statement of the EPA suggests that the Roberts Road Quarry is a source of elevated PM_{2.5} emissions.

The Air Quality Impact Assessment prepared by Jacobs Pty Ltd provides a detailed review of the data collection, analysis and assessment relating to background PM_{2.5} emissions and the contribution of the Quarry. This review, a summary of which is as follows, illustrates that elevated PM_{2.5} concentrations are evident on a regional scale, as opposed to a local (Quarry specific) one.

Review of sources contributing to elevated annually averaged PM_{2.5}

Measured and estimated annually averaged PM_{2.5} concentrations are described for several monitoring locations at and around the Quarry Site in *Section 5.2* of the Air Quality Impact Assessment (AQIA). The monitoring stations include:

- Quarry air quality monitor: The Applicant operates a HVAS monitoring station at the Quarry. As identified on *Figure 3.3* of the Statement of Environmental Effects (SEE), this monitor is located within the site boundary, adjacent to the main internal access road. As outlined in the AQIA, the annual average PM_{2.5} concentration from the 6-daily data collected during the 2017 calendar year was 11.6 µg/m³. While the data set is incomplete and therefore an annual average concentration cannot be derived, the results indicate that locally there are elevated PM_{2.5} emissions which are either attributable to the Quarry (as implied by the EPA) or other factors in the local area and region.
- Dixon Sands TEOM: This TEOM is operated by Dixon Sands and is located at the Maroota Public School approximately 1 km to the northwest of the Quarry (refer to *Figure 2-1* of the AQIA). While likely to be influenced by some specific local factors, the site is subject to the same regional factors contributing to air emissions at the Quarry Site. Daily PM₁₀ records are collected at the Dixon Sands TEOM and so to derive an estimate of PM_{2.5} concentrations, the ratio of PM_{2.5}/PM₁₀ measured at the Quarry HVAS monitor was applied to the 2017 daily 2017 TEOM PM₁₀ measurements. An estimated annual average PM_{2.5} concentration of 13.5 µg/m³ was calculated. This concentration was adopted in the assessment as an estimate of background levels given that:
 1. the Quarry monitor is near dust-generating activities within the site boundary and only collected 6-daily records, and

2. a continuous record was needed in order to assess whether the development would result in any additional days of exceedance.

Due to collection of data only every 6 days, and proximity to the operating Quarry, this was not considered likely to be representative of background PM concentrations.

- DPIE Richmond station: Data from the nearest station operated by DPIE at Richmond (around 25 km to the southwest) from 2014 to 2018 was also presented in *Section 5.2.3* of the AQIA. These data showed that annual average PM_{2.5} concentrations ranged from 6.7 to 8.1 µg/m³, with a more recent value of 13.1 µg/m³ recorded in 2019.

On review of the data collected at the three sites confirms elevated annually averaged PM_{2.5} concentrations at all three monitoring locations (relative to the criterion of 8 µg/m³). This is indicative of a potential regional issue, rather than a Quarry specific one. The elevated values identified at the Quarry HVAS and Dixon Sands TEOM likely reflect the high concentration of quarrying operations and proximity to a regional collector roads (Old Northern and Wisemans Ferry Roads) (see *Figure 1-1* and *Figure 7-1* of the AQIA and *Figure 2.1* of the SEE). *Section 6.3* of the AQIA notes the potential cumulative effects of these operations.

Recent climatic conditions would also have influenced airborne particulate matter concentrations. In their “Annual Air Quality Statement 2018” the OEH (now DPIE) concluded that particle levels increased across the State due to dust from the widespread, intense drought and smoke from bushfires and hazard reduction burning (OEH, 2019). Air quality conditions in Sydney have been influenced by the drought conditions in 2017 and 2018 and lower than average rainfall. The elevated PM_{2.5} concentration at the DPIE Richmond station in 2019 (not reported in the AQIA) is illustrative of the effect of environmental factors such as drought and bushfire.

In summary, the collected data is indicative of elevated PM_{2.5} concentrations on a regional scale, as opposed to a local (Quarry specific) one.

Quarry Contribution

Having established that elevated PM_{2.5} concentrations are a feature of the region, the modelling demonstrates that the actual contribution of the Quarry to these levels is very small. *Table 8-4* of the AQIA, the highest predicted annual PM_{2.5} contribution from existing operations was 0.3 µg/m³. This equates to about 2% of the total estimated annual PM_{2.5} concentration applied in the assessment (13.5 µg/m³).

Additional Mitigation Measures

The EPA identifies that emission controls for screening such as watering have not been included. Advice from the Applicant is that due to the variable clay content of the sand, wetting the material prior to screening could reduce the effectiveness of the screens and adversely impact on the processing circuit. This notwithstanding, the EPA nominates that screening represents a significant emission source from the Quarry (23% of PM_{2.5} emissions). Providing perspective to this observation.

1. The elevated proportion is amplified due to the emissions controls applied to all other activities.
2. At 23% of PM_{2.5} emissions which represent 2% of cumulative impacts received at the closest receiver, a 50% control on emissions (which could reasonably be attained through application of sprays over the screens) would only reduce cumulative emissions at the nearest receiver by ½ of 23% of 2%, i.e. 0.23%.

The very minor effect of additional controls on the plant screens notwithstanding, measures to minimise dust from key dust-generating activities at the site for proposed operations are committed in the AQIA (*Sections 6.2 and 9*). For screening activities, while not observed as a significant source of dust on site, the proponent has committed to applying water to the source feed “Where visible dust is observed to be emanating from screening or crushing activities at the site boundary”.

The Applicant has also committed to completing a review of the location of the Quarry HVAS, as part of an overall review of the Air Quality Management Plan, with relocation undertaken where practical and where this would improve the understanding of PM concentrations at nearby receivers.

Pollution Reduction Program

As nominated in the preceding, further analysis of the data collected for and assessed in the AQIA illustrates that elevated PM_{2.5} concentrations are likely a result of regional factors and are not related to operations at the Quarry. It is acknowledged that as one of the many extractive industries operating in the region, it contributes to the elevated regional PM concentrations. However, modelling demonstrates that the incremental contribution of the Roberts Road Quarry is very small and application of further controls would have minimal effect on the cumulative concentration of PM_{2.5} and PM₁₀.

On the basis of the preceding, and the commitment to review and potentially relocate the Quarry HVAS, the requirement for a Pollution Reduction Program is not warranted.

Noise

The EPA has indicated they do not believe the Response to Submissions (of 20 March 2020) provided in response to their original submission of 3 February 2020 addressed the matters raised with respect to the Noise Impact Assessment. The EPA referred back to their submission of 3 February 2020 which recommended that “the noise assessment be updated to reflect the Noise Policy for Industry (NPfI)”.

Led by Umwelt’s Lead Acoustic Engineer, Tim Proctor and Principal Acoustician, Dave Davis, the Noise Impact Assessment has been revised as requested to reflect the NPfI. The revised Noise Impact Assessment is attached with this correspondence and **Table 1** provides a summary as to how the specific issues raised by the EPA in their original 3 February 2020 submission have been addressed.

We trust this information meets with your current requirements. Please do not hesitate to contact the undersigned on 1300 793 267 should you require clarification or further information.

Yours sincerely

A handwritten signature in blue ink, appearing to read 'AI', is positioned above the printed name and title.

Alex Irwin
Principal Environmental Consultant

Table 1 EPA raised Issues Addressed

Issue raised By EPA	Comment	Section of the Revised NIA
<p>The Wilkinson Murray noise monitoring was based on short term attended monitoring only. An analysis of the data presented within the report shows that the quarry operation at the time of the monitoring significantly increased the background noise level in the area by 5 - 10 dBA. Providing licence limits for the current modification application will need to be based on up to date noise levels that are obtained as per the most recent EPA noise policy documentation, namely the Noise Policy for Industry (NPfI) (EPA, 2017). The Umwelt Report has been not based on the NPfI. It is possible that there would be significant changes in the Project Trigger Noise Levels (PNTLs) derived under NPfI assessment.</p>	<p>Fact Sheet D of the NPfI notes that when determining project noise trigger levels an exception applies to the measurement of the background noise levels and the exclusion of premises that has been operating in excess of 10 years and is considered a normal part of the acoustic environment and is operating in accordance with consent or licence limits.</p> <p>This applies to this development. Notwithstanding this additional monitoring data has been used to establish the assess the acoustic environment in the region surrounding the quarry, at locations where the quarry was not contributing to the acoustic environment.</p>	<p>Compliance monitoring is discussed in Section 3.2</p> <p>The results of the background noise monitoring is discussed in Section 4.1</p>
<p>The Wilkinson Murray report recommended changing the licence conditions from the outdated L10 metric to an LAeq level. However, this was not adopted at the time. As outlined within the NPfI transition policy, the NPfI should be applied to this application. The relevant section of the transition policy is presented below:</p> <p><i>4. The Noise Policy for Industry (2017) will be used to assess and develop requirements for existing industrial developments/activities under the circumstances and through the processes described in points 5 and 6 below.</i></p> <p><i>5. Modification to a planning approval: a. where the planning authority requires a noise impact assessment to support the modification;</i></p> <p>As per the above, we would expect that Umwelt undertake an assessment as per the NPfI for this development, including derivation of Project Noise Trigger Levels in LAeq.</p>	<p><i>The Implementation and transitional arrangements for the Noise Policy for Industry (2017) provide an arrangement for the orderly and transparent transition between the INP and NPfI. With this in mind, the application of the Policy has been based on Section 6 of the NPfI. With respect to the other triggers identified in Section 6 of the NPfI:</i></p> <ul style="list-style-type: none"> ▪ the existing site is not the subject of serious, persistent noise complaints; ▪ the site has existing consent and licence conditions relating to noise; ▪ management does not need to clarify their position with respect to the acoustic performance of the existing operation; and ▪ the owner is not seeking to initiate an environmental improvement program. <p>It can be argued that the proposed modification triggers a review of noise limits because the proposal to import VENM and ENM represents a proposal to “upgrade or expand the site”. However, it is believed the more significant driver for this is that the consent conditions in DA 267-11-99 MOD3 are inconsistent with the existing noise condition in EPL 6535. As a result, a review of noise limits in EPL 6535 is warranted.</p>	<p>Refer to Section 2 of the revised NIA</p>

Issue raised By EPA	Comment	Section of the Revised NIA
<p>All of the recommendations contained within the Wilkinson Murray report were to enable compliance with their assessment under the Industrial Noise Policy (INP, EPA, 2000). As an assessment under the NPfI may lead to different/lower PNTLs, Umwelt's assumption of existing compliance may not be valid because the existing noise levels from the site may be over the targets that would be derived from the NPfI.</p>	<p>The revised NIA includes an assessment of the PNTLs under the NPfI using available background monitoring data for the region surrounding the development. The derived PNTLs are either at or 1 dB above the Minimum Assumed PINLs.</p>	<p>Refer to Section 2 of the revised NIA</p>
<p>The modelled noise levels in the Wilkinson Murray report have been used as a basis for the Umwelt NIA assessment. We also note that the Umwelt NIA has used the "typical" noise level assessment from the Wilkinson Murray report, rather than the worst case scenario. Umwelt have not addressed the frequency or impact of the worst-case noise levels presented within Table 5.5 of the Wilkinson Murray report. The proposed additional operations, in conjunction with the worst case noise levels may lead to significant increases over the NPfI PNTLs.</p>	<p>The quarry has implemented and maintained an Operational and Road Noise Management Plan. This outlines the operational requirement that are implemented in order to comply with relevant criteria at all receivers and how the periods of 'exception' are managed. This includes modifying the extraction process to use over burden to establish perimeter bunds to shield mobile plant, work below the surface, implement temporary noise shielding such as temporary bunds when extraction occurs in close proximity to the property boundary of neighbouring receivers and consultation with the neighbouring residence to provide a clear lines of communication between the quarry and community during operational and construction activities.</p> <p>The requirement of the Operational and Road Noise Management Plan and the performance of the development will be routinely monitored using an independent consultant.</p>	<p>Refer to Section 2 of the revised NIA</p>

Issue raised By EPA	Comment	Section of the Revised NIA
<p>Neither of the assessments consider adverse meteorological conditions. Assessment of all meteorological conditions is important as they can affect the noise levels at the receivers (by increasing them). Due to the distances between the development and the receivers, this may impact some residents more than others. However, this has not been assessed within either report.</p>	<p>The meteorological conditions were assessed in the 2015 Wilkinson Murray report. The study concluded that noise-enhancing meteorological conditions, as defined by the INP, which are identical to the definitions in the NPfI, do not occur with sufficient frequency to be classed as a characteristic feature of the region. Additionally, the noise impacts that require ongoing management are associated with the proximity of the equipment to the receiver location and not necessarily propagation from a loud noise source as the equipment sound power levels are within the range of noise emissions that are considered to be best practice of similar equipment currently in use at similar sites in New South Wales. This is reflected in the Operational and Road Noise Management Plan wherein the provisions for managing noise levels are based on proactively managing the noise shielding for the closest receivers, as the primary noise management issue for this site is the proximity of noise sources to noise receivers, which over short distances is not noticeably affected by variations in meteorological conditions.</p>	<p>Refer to Section 3 of the revised NIA</p>