



DOC20/6390  
Your Ref. DA267-11-99-Mod-4

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**3 February 2020**

Dear Caleb,

**RE: EPA Response to Roberts Road Quarry Modification 4 (DA267-11-99-Mod-4)**

I refer to your correspondence dated 20 December 2019 seeking advice from the Environment Protection Authority (EPA) on the Statement of Environmental Effects (SEE) report in relation to the above modification for Hodgson Quarries and Plant Pty Ltd located at Roberts Road, Lot 1 and part Lot 2 DP 228308 and Lot 2 DP 312327 Maroota, NSW 2756.

Hodgson Quarries and Plant Pty Ltd (the proponent) operates the Roberts Road Quarry located on Roberts Road at Maroota NSW (the premises). The proponent is seeking to modify the development consent (DA 267-11-99) for the premises to allow for importation of Virgin Excavated Natural Material (VENM) and Excavated Natural Material (ENM) for backfilling the extraction area to construct a free-draining final landform, and to undertake processing and blending. Specifically, the modification to the consent seeks:

- Extending the life of the quarry by five years (to 2030);
- Importing up to 320,000 tonnes per annum of Virgin Excavated Natural Material (VENM) and Excavated Natural Material (ENM);
- On-site processing of selected VENM and ENM for sale or blending with sand produced from in-situ resources;
- Increasing maximum allowable truck movements from 100 to 140 per day;
- Removal of a condition limiting exposed and active areas in the quarry to permit backfill and rehabilitation of completed sections of the quarry with VENM and ENM; and
- Construction of a free-draining final landform.

Current approved activities are permitted at the premises under Environmental Protection Licence (EPL) 6535 (the licence), issued by the EPA to HB Maroota P/L (the licensee). Extractive and crushing/grinding/separating activities at the premises are each permitted up to 500,000t per year. With the proposed importation and processing of the VENM and ENM, the EPL will require a variation application to include an ancillary activity for 'Receipt and processing of VENM and ENM' with limitations under additional conditions of the licence to restrict the amount of VENM/ENM

received as approved by any conditions of consent and the need to meet all conditions of any resource recovery order, made under Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2019, at the time the VENM/ENM is received.

The EPA has reviewed the environmental assessment and has determined that at this stage that the assessment is not adequate to determine the impacts and provide recommended modified conditions of approval in relation to air, noise and water impacts. Details of the EPA's assessment, concerns and recommendations are provided below and further detail is provided in Attachments A to C.

## **Air**

The EPA's Technical Advice Air unit has reviewed the Statement of Environmental Effects (the SEE) and the Air Quality Impact Assessment (the AQIA) submitted for the proposed Modification 4 to the Roberts Road Quarry development consent.

The AQIA assessed potential impacts of PM<sub>2.5</sub>, PM<sub>10</sub> and Total Suspended Particles (TSP) for existing operations, proposed VENM/ENM importation taking place at the north-east corner of site and proposed VENM/ENM importation to the south east corner of the site.

The AQIA predicts that there will be:

- up to four additional exceedances of the PM<sub>10</sub> (24-hour average) impact assessment criteria for proposed VENM/ENM importation taking place at the north-east corner of the site and up to 1 additional exceedance for proposed VENM/ENM importation taking place at the south east corner of the site.
- Exceedances of the PM<sub>2.5</sub> (annual average) impact assessment criteria. It is noted that adopted background concentrations are above the impact assessment criteria without the proposal;
- No exceedances of PM<sub>2.5</sub> (24-hour average) and TSP (annual average) impact assessment criteria

However, the EPA has identified that there are issues with the AQIA including that the:

- Variables for emission estimation are not justified
- Particulate matter emission estimates for screening activities require review and clarification
- Assessment does not account for potential emissions associated with proposed crushing activities
- Assessment predicts exceedances and has not benchmarked mitigation measures against best management practice
- Change in potential PM<sub>10</sub> (24-hour average) and PM<sub>2.5</sub> (24-hour average) impacts are not clear.

The issues identified are outlined in **Attachment A**. To ensure a robust assessment is provided for decision making purposes, the EPA recommends that the proponent revise the AQIA to address the issues identified.

## **Noise**

The EPA's Noise Technical Advice Unit has reviewed the Final Noise Impact Assessment (NIA) prepared by Umwelt in November 2019. The Operational Noise Assessment prepared by Wilkinson Murray in May 2015 (Report 14229 Version B) for MOD 3 was also reviewed, as the NIA relies on modelling assumptions within the Wilkinson Murray Report and therefore it is important to consider both together.

The EPA has identified that there is key information missing in the Noise Impact Assessment, as outlined in Attachment B. The EPA recommends that the NIA be revised in line with the Noise Policy for Industry (NPfI) to address the issues in **Attachment B**.

The EPA also notes that noise conditions in the licence will need to be varied to be consistent with the NPfI.

## **Water**

The EPA's Water Technical Advice Unit has reviewed the Statement of Environmental Effects (the SEE) submitted for the proposed Modification 4 to the Roberts Road Quarry development consent.

The *in-situ* resource to be extracted will remain unchanged by the proposal modification. No modification to the approved extraction area is proposed. As such, the proposed modification is unlikely to change interception of the groundwater table.

The erosion and sediment controls are correctly proposed in accordance with *Managing Urban Stormwater Volume 1* (Landcom, 2004) and *Volume 2e Mines and Quarries* (DECC, 2008).

The general drainage pattern of the site is in a northerly direction along a first-order creek line which joins a tributary of Coopers Creek approximately 2km to the north, before eventually flowing into the Hawkesbury River. Coopers Creek is within the Marramarra National Park which has conservation and recreational values.

Since operation commenced, there has been no discharge from the quarry site with all runoff contained and reused within the four onsite dams. As such, there is no licenced discharge point for site water and no existing water quality monitoring requirements within the applicant's current Environment Protection Licence (EPL) 6535.

However, the EPA notes that potential water pollution risks and mitigation measures to address these risks associated with this modification proposal have not been adequately identified. To ensure this occurs, it is recommended that the applicant undertake a discharge impact assessment. This should include assessment of impacts from all pollutants that may be introduced into the water cycle by source and discharge point.

Further details of the water impact assessment requirements are outlined in **Attachment C**, along with recommended licence conditions to address residual water pollution risks.

Should you have further questions in relation to this matter, please contact Lisa Crambrook on 02 8837 6079 or email [lisa.crambrook@epa.nsw.gov.au](mailto:lisa.crambrook@epa.nsw.gov.au).

Yours sincerely,



**JACQUELINE INGHAM**  
**Unit Head– Sydney Industry**  
**Environment Protection Authority**

## **Attachment A – Detailed review of Air Quality Impact Assessment**

### **Information reviewed**

- *Air Quality Impact Assessment for Proposed Modification 4*, dated June 2019 (the AQIA)
- *Hodgson Quarries and Plant Pty Ltd Roberts Road Quarry Modification 4 Statement of Environmental Effects*, dated December 2019 (the SEE)

### **Issues identified**

#### **1. Variables for emission estimation not justified**

The AQIA estimates particulate matter emissions utilising emission factors adopted from NPI, 2012 and US EPA AP42. The EPA notes that the emission factors for haul roads are derived using variables, including silt content. The AQIA adopts a silt content of 2 % for estimating emissions from haul roads. The AQIA does not include a justification for the adopted 2%, noting the Chapter 13 of US EPA AP42 includes silt content for unpaved roads for various industries, and the mean silt contents for various industries are all greater than 2%. Hence the adopted value of 2% potentially underestimates emissions from haul roads, and hence potentially underpredicts the predicted ground level concentrations of particulate matter.

**Recommendation: Revise the Air Quality Impact Assessment to ensure emission estimates are robustly justified and represent a reasonable worst-case emission estimate.**

#### **2. Particulate matter emission estimates for screening activities requires review and clarification**

The EPA notes that the AQIA has accounted for particulate matter emissions from screening activities. A summary of the emission estimates for screening activities is presented in table 1 below.

*Table 1 – Summary of emissions from screening activities*

	Existing	Proposed VENM filling North	Proposed VENM filling South
TSP (kg/year)	6,000	14,400	14,400
PM <sub>10</sub> (kg/year)	2,064	4,800	4,800
PM <sub>2.5</sub> (kg/year)	480	960	960

Additionally, the EPA notes that:

- Screening activities account for a large portion of total assessed emissions and hence have the potential to have a greater influence on predicted ground level concentrations;
- Emission estimates are based on total throughput of 480,000 tonnes per year for each scenario assessed
- There are differences in the emission factors for screening activities between the different scenarios.

However, the assessment does not include a detailed discussion on the adopted emission factors for screening activities (including specific information on where emission factors have been referenced), hence it is unclear as why there is a difference in estimated emissions between scenarios when the material throughput used to derive emission estimates remains constant.

Furthermore Section 3.2 of the SEE states “*The Applicant is proposing to import VENM and ENM, both as a backfill material to assist in the rehabilitation of the Quarry, as well as a feed stock for crushing, screening and washing to produce sand products*”. It is not clear if the assessment has accounted for any proposed increases in quantity of material throughput to screening activities, as the emission estimate is based on the same throughput for each assessed scenario.

**Recommendation: The proponent review the emission estimates for screening activities and revise the Air Quality Impact Assessment to include:**

- **Further information and justification for the adopted emission factors, and throughputs**
- **A demonstration that screening activities have adequately accounted for any additional increase in material throughput associated with the proposed modification**

3. Assessment does not account for potential emissions associated with proposed crushing activities

Section 3.2 of the SEE states “*The Applicant is proposing to import VENM and ENM, both as a backfill material to assist in the rehabilitation of the Quarry, as well as a feed stock for crushing, screening and washing to produce sand products*”.

However, the EPA notes that the emissions inventory as per Appendix A of the AQIA does not include emission estimates for proposed crushing activities. Hence it appears that the assessment has not accounted for proposed crushing activities as advised within the SEE.

**Recommendation: Revise the assessment to account for emissions from proposed crushing activities**

4. Assessment predicts exceedances and has not benchmarked mitigation measures against best management practice

The AQIA accounts for wet suppression mitigation measures, including the following:

- Watering of unsealed roads (50% control factor adopted)
- Watering during unloading of materials to screens (70% control factor adopted)
- Water sprays during loading of materials to stockpiles (50% control factor adopted)

The EPA notes that there are emission sources which do not include mitigation measures (screening activities).

Section 5.1.3 of the *Approved Methods for Modelling and Assessment of Air Pollutants* provides guidance when exceedances of the impact assessment criteria are predicted. The guidance advises that proponents must demonstrate that best management practices will be implemented to minimise emissions of air pollutants as far as practical. The AQIA does not benchmark mitigation measures against best management practices noting that exceedances of impact assessment criteria are predicted, and there are unmitigated particulate emission sources.

**Recommendation: The proponent:**

- **Benchmark mitigation measures against best management practices;**
- **Revise the Air Quality Impact Assessment incorporating all feasible and reasonable best practice mitigation measures.**

5. Change in potential PM<sub>10</sub> (24-hour average) and PM<sub>2.5</sub> (24-hour average) impacts not clear

The AQIA advises that:

- Up to four additional exceedances of the PM<sub>10</sub> (24-hour average) impact assessment criteria are predicted for proposed VENM/ENM importation taking place at the north-east corner of the site and up to 1 additional exceedance for proposed VENM/ENM importation taking place at the south east corner of the site
- No additional exceedances of PM<sub>2.5</sub> (24-hour average) are predicted

The EPA understands that the additional exceedances are due to the proposed modification, however, the AQIA does not include tabulated results for maximum predicted incremental 24-hour average PM<sub>10</sub> and PM<sub>2.5</sub> for each scenario assessed (existing, VENM/ENM importation to the north, VENM/ENM importation to the south). Hence it is unclear as to the potential increase in incremental 24-hour average PM<sub>10</sub> and PM<sub>2.5</sub> ground level concentrations from existing operations and the potential for additional exceedance days above existing operations (as the assessment does not clearly advise on any predicted exceedances for the existing operations).

**Recommendation: Revise the Air Quality Impact Assessment to include tabulated results articulating:**

- maximum incremental and cumulative ground level concentrations at each sensitive receptor for 24-hour average  $PM_{10}$  and  $PM_{2.5}$  for each scenario (existing, VENM/ENM importation to the north, VENM/ENM importation to the south)
- Number of additional exceedances for each scenario (existing, VENM/ENM importation to the north, VENM/ENM importation to the south) at each sensitive receptor.

## **Attachment B – Detailed review of Noise requirements**

### **Information reviewed**

- *Noise Impact Assessment* prepared by Umwelt, November 2019 (the NIA)
- Operational Noise Assessment prepared by Wilkinson Murray in May 2015 (Report 14229 Version B for MOD 3).

### **Issues identified**

At this stage, the EPA has not included recommended conditions of approval as there is important missing information which is required to determine what noise levels should be included in the licence, including:

- 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.
- The Wilkinson Murray report recommended changing the licence conditions from the outdated L10 metric to an  $L_{Aeq}$  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:

*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.*

*5. Modification to a planning approval: a. where the planning authority requires a noise impact assessment to support the modification;*

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  $L_{Aeq}$ .

- 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.
- 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.
- 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.

**Recommendation: Based on the above, we recommended that the noise assessment be updated to reflect the Noise Policy for Industry (NPfI).**

Please note that the updated noise assessment should include new noise levels that will need to be included in the licence.

The number of truck movements are predicted to increase from 100 (50 laden trucks) to 140 (70 laden trucks). This modification in truck movements is unlikely to result in a significant increase in noise levels (less than 3 dB).



## **Attachment C – Detailed review of Water requirements**

Section 45 of the *Protection of Environment Operations Act 1997* (POEO Act) sets out the matters that the EPA must consider when making licensing decisions, including:

the pollution caused Section 45 POEO Act matters

- or likely to be caused by the carrying out of the activity or work concerned and the likely impact of that pollution on the environment
- the practical measures that could be taken to prevent, control, abate or mitigate that pollution and protect the environment from harm as a result of that pollution
- in relation to an activity or work that causes, is likely to cause or has caused water pollution the environmental values of water affected by the activity or work, and the practical measures that could be taken to restore or maintain those environmental values.

The *Statement of Environmental Effects* does not provide the information required to consider all these matters. The assessment does not include a characterisation of the quality of discharges or assess the impact of discharges on the environmental values of waterways.

Water from the sediment basin will be reused for dust suppression and irrigation, however water demand modelling during landform placement indicates that the quarry will be required to discharge water to maintain minimum settling and sediment storage volumes. The controlled discharge frequency ranges from a minimum of three days per year to a maximum of 51 days per year. During dry years, controlled discharges are predicted to be minimal while discharge volumes are expected to range from 4 to 82 ML/year during median and wet years. An assessment of the impact of discharges on the environmental values of waterways is required to inform consideration of the s45 POEO Act matters. The applicant should demonstrate that all practical and reasonable measures will be implemented to avoid discharges and minimise pollution.

The applicant has supplied summarised site monitoring data within the four onsite dams as well as average groundwater quality for several bores within the region. Data was collected from 2017 to 2019 however It is not clear how many sampling events were undertaken. Monitored parameters are restricted to pH, electrical conductivity, total dissolved solids, and several cations and anions (chlorine, sulphate, alkalinity, calcium, magnesium, sodium and potassium). The report does not assess concentrations of the monitored parameters against any guidelines, however a preliminary review by the EPA indicates that observed concentrations of parameters such as chlorine are significantly above recommended guidelines. Water quality data should be assessed against the relevant guidelines values from the national Water Quality Guidelines (ANZG 2018) and to determine the potential impacts of discharges. This assessment is required to ascertain whether further water quality management and mitigation measures are required.

It is unclear whether all pollutants that may be present at non-trivial levels have been identified as metals (including iron, manganese, cadmium, copper, nickel, lead and zinc) and nutrients (such as total nitrogen, total phosphorus) have not been assessed. The report also does not consider the expected water quality (surface and groundwater) following importation of VENM and ENM.

### Incorrect methodology to derive site specific guideline values

The applicant proposes monitoring within the drainage line directly to the north of the Quarry '*on a monthly basis for a period of 24 months to prepare a dataset that can be used to define site specific trigger values in accordance with ANZECC 2000*'. The drainage line directly to the north of the Quarry is not an appropriate reference site for the purposes of deriving site-specific guideline values as the site is impacted by surrounding catchment land uses.

Site-specific guideline values used to assess potential impacts should be derived consistent with the national Water Quality Guidelines. The policy in NSW is that the level of protection applied to most waterways is the one suggested for 'slightly to moderately disturbed' ecosystems. For highly

disturbed systems, the emphasis should be on improvement of the waterway and not maintenance of a degraded condition. Therefore, if site-specific guideline values are to be used to assess impacts and inform licence conditions, they should be derived from data from an appropriate reference site(s) representative of slightly disturbed condition.

The ANZG (2018) guidelines provides further details regarding the derivation of site-specific guideline values and selection of representative reference sites.

### Recommendations

It is the responsibility of the licensee to ensure that their licence specifically regulates the discharge from its premises of all those pollutants that pose a risk of non-trivial harm to human health or the environment. Where the premises discharges a pollutant that is not regulated by the licence, the licence holder does not have a defence against the pollution of waters offence by that pollutant.

**Recommendation: Given that the EPA will need to provide discharge criteria for inclusion in the modification consent, the following information is required to enable the EPA to provide conditions of approval, to address residual water quality risks:**

**1. The applicant should prepare a water quality impact assessment. This assessment should:**

- **demonstrate that all practical and reasonable measures will be implemented to avoid discharges and minimise pollution**
- **identify and estimate the quality and quantity of all pollutants that may be introduced into the water cycle by source and discharge point including residual discharges after mitigation and waste avoidance measures are implemented (where possible, this should be based on monitoring at the site)**
- **describe the nature and degree of impact that any residual discharges will have on the environmental values of the receiving waterways with reference to the relevant guideline values from the national Water Quality Guidelines**
- **where relevant, consider practical measures to address identified impacts.**

**The assessment should adopt the guideline values for slightly to moderately disturbed ecosystems. If site-specific guideline values are used, these should be derived consistent with the national Water Quality Guidelines, including being based on at least 24 months of contiguous monitoring data from a suitable reference site/s, representative of slightly disturbed condition.**