Rockley Falls Quarry

DRY-MIX BATCH PLANT

MODIFICATION ENVIRONMENTAL ASSESSMENT REPORT

- Final
- 7 April 2010

Rockley Falls Quarry

DRY-MIX BATCH PLANT – MODIFICATION ENVIRONMENTAL ASSESSMENT REPORT

- Final
- 7 April 2010

A Team consisting of RTA, Abigroup and SKM
to duplicate the Hume Highway from Woomargama to Table Top

Contents

Assessment summary

In June 2008, approval was granted to Abigroup to establish and operate the Rockley Falls Quarry near Holbrook, NSW. Abigroup is a participant of the Hume Highway Woomargama Alliance (HHWA) that has been formed to construct a dual carriageway bypass of the existing Hume Highway which passes through the village of Woomargama. The quarry is supplying material to the HHWA duplication project, and is now being operated by the HHWA on behalf of Abigroup.

The HHWA, on behalf of Abigroup, has assessed the potential environmental impacts of operating a small dry mix batch plant at the quarry to determine whether its establishment would be largely consistent with the nature and scale of operations and environmental impacts considered in Ministerial approval No 07-0078 and EPL 12884. The Department of Planning (DoP) have indicated that a minor modification under Section 75W of the Environmental Planning and Assessment Act (EP&A Act) would be required as the activity is not consistent with those described in the Approved Project. This impact assessment focussed on determining whether other modifications to MCoA are required.

The area is rural in nature and the number of sensitive receivers in the vicinity of the quarry is low (7 receivers within 3 km). The background noise is dominated by highway traffic with vehicle numbers increasing during the evening period. Noise resulting from existing quarry operations does not currently adversely affect sensitive receivers and is not likely to do so with additional noise generate by the dry-mix plant.

Incremental dust generated by the plant would be minimal and is not likely to significantly increase dust concentrations (measured on a 24-hourly and monthly basis). The air quality in the area is sufficiently good and the currently generated dust sufficiently low to allow for any such increases in dust generation.

There are no other significant additional impacts on other environmental aspects relating to cumulative operation of the batch plant and quarry.

Consultation with the surrounding community was undertaken in order to describe the nature and potential impacts of the proposed operations and to ascertain any concerns or issues the community may have with this proposal. No concerns apart from increased dust generation were reported.

Based on this assessment, the HHWA does not anticipate that the proposed dry-mix batching plant would result in any additional adverse impacts on sensitive receivers – and the impacts would be entirely consistent with those presented in the original Environmental Assessment for the project. Overall no modification to the EPL or the MCoA are required except those relating to a description of the approved activities on site.

It is noted that the HHWA is committed to achieving excellent environmental outcomes and will ensure that all operations are undertaken strictly in accordance with the Rockley Falls Quarry EMP, which includes a requirement for regular monitoring, reporting; identification of areas of improvement; and regular consultation with the surrounding community.

1. Introduction

1.1. Background and purpose of this submission

The Hume Highway Duplication Project is a federally funded upgrade of the existing Hume Highway. The section of highway bypassing the village of Woomargama, NSW, (the Project) will be constructed by the Hume Highway Woomargama Alliance (HHWA), comprising the RTA (the Owner Participant), Abigroup and Sinclair Knight Merz (the Non-Owner Participants).

The principle supplier of 'hard rock' road base material to the HHWA project is the Rockley Falls Quarry (the quarry) located on the Hume Highway north of Holbrook, NSW. The quarry is currently being operated by the HHWA (specifically Abigroup) under Ministerial approval 07-0078, dated 16 June 2008 and Environmental Protection Licence (EPL) No. 12884 from the Department of Environment, Climate Change and Water (DECCW 2008).

The Minister's Conditions of Approval (MCoA) and the EPL permit the extraction and processing of up to 700 000 t of quarry material per annum during the operating hours of 7 am to 6 pm Monday to Saturday.

The HHWA is proposing to establish a dry-mix concrete batching plant at the quarry. This plant would supply some concrete to the project for shoulder paving and hand-pours and is critical since the primary concrete batching plant, a split-drum (wet) plant located on the project site, is not able to supply these works concurrently with supply of mainline paving. It should be noted that the batch plant would only supply concrete for the construction of the Woomargama Bypass – no other customers would be supplied with concrete.

Consultation has been undertaken with the Department of Planning (DoP) on the approval pathway for the construction and operation of the dry batch plant at Rockley Falls Quarry – and they have indicated that a minor modification under Section 75W of the Environmental Planning and Assessment Act (EP&A Act) would be required as the activity is not consistent with those described in the Approved Project. DoP have also indicated that Director-General Requirements would not be required for the impact assessment nor would the impacts be required to go on exhibition.

This assessment has been undertaken to consider the potential impacts of the dry-mix batch plant and whether its establishment would require any modification to the Ministers Conditions of Approval.

The assessment, documented in this report considers:

- the nature and scale of the operation of the proposed dry-mix plant in comparison with the approved quarrying operations;
- potential environmental impacts in addition to those of the approved quarry, including noise, pollution of waters and dust;
- outcomes of community and stakeholder consultation regarding the dry-mix batching plant; and
- environmental impact mitigation measures.

2. Description of Batch Plant

The proposed location for the dry-mix plant is on the eastern boundary of the stockpile area, as shown in **Figure 1**. This location is optimum in relation to its close proximity to the alignment and to the aggregate supply at the quarry (minimising material handling); ability to access the Hume Highway and available space. No additional land would be disturbed to allow the establishment of the batch plant

- **Figure 1: Rockley Falls Quarry and proposed dry-mix plant location (red border).**

The proposed dry-mix concrete plant is an appropriate extension to the quarrying activities, with aggregate and sand added to an agitator truck and mixed with cement/flyash and water prior to transport to site. An average of 150m^3 of concrete (maximum of 450 m^3) would be produced each day, generating an average of 25 agitator truck movements per day (maximum of 75 movements). It should be noted that a similar number of truck movements per day would be required if the dry batch plant were not located on the quarry site, since trucks would be required to deliver aggregate and sand from the quarry to the alternative location of the dry batch plant.

The plant is comprised of a feed hopper and two storage silos for cement and flyash, as shown in **Figure 3**. Aggregate is delivered to the waiting agitator truck via a belt conveyor and cement and flyash via a screw conveyor. Following loading, the agitator mixes the load for up to three minutes at a slump stand before delivery to the project.

The major potential impacts from the dry batch plant are upon noise and dust amenity.

3. Existing environment

3.1. Sensitive receivers

The risk of adverse impacts on noise and air quality is a function of:

- the number of receivers likely to be affected;
- their proximity to the quarry; and
- existing environmental conditions.

Figure 2 illustrates the identified sensitive receivers and their proximity to the quarry. A tabulated summary is shown in **Table 1**.

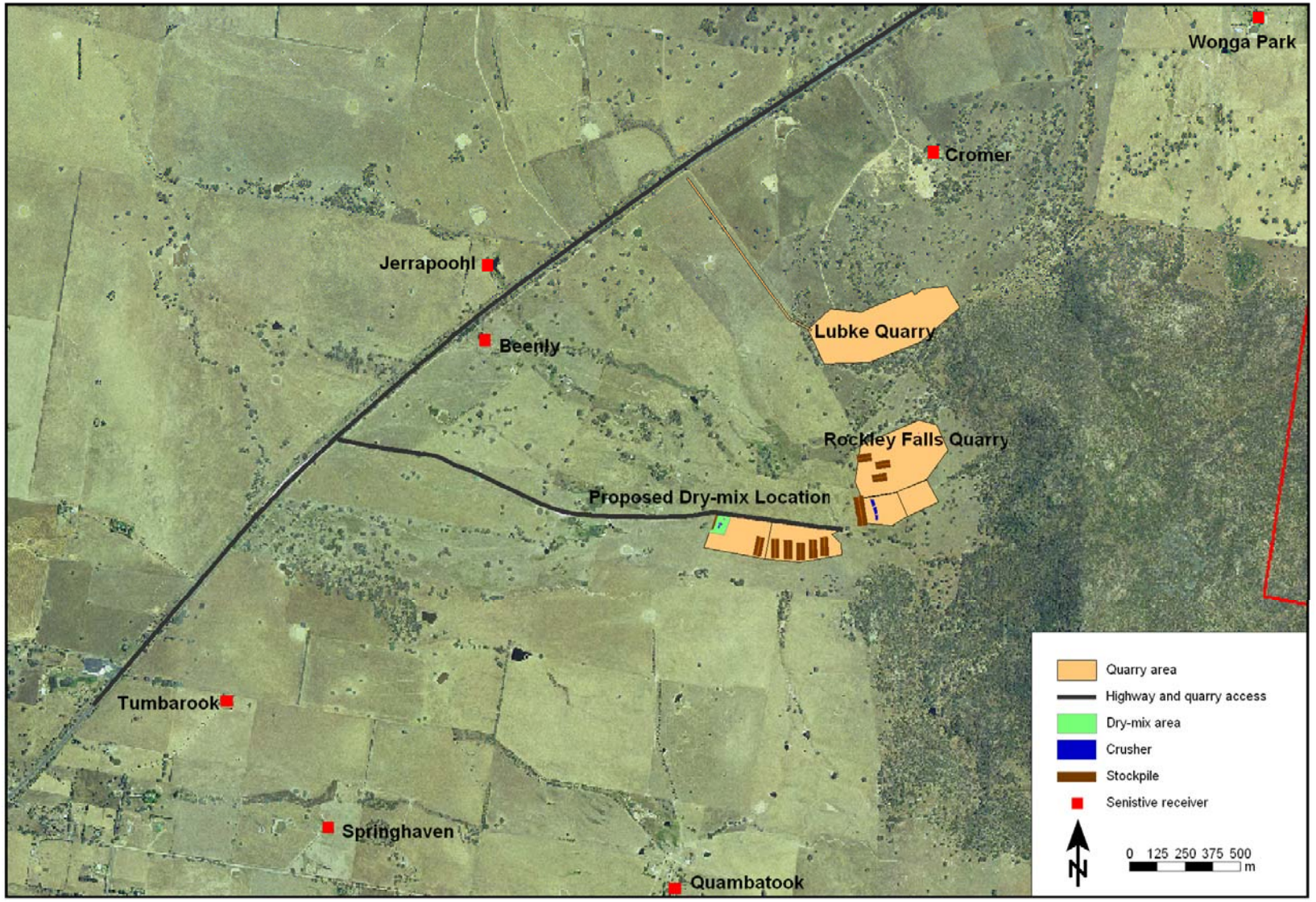
It is evident that there is a low number of receivers near the quarry and that the nearest of these is in excess of 1 km away. Therefore, considering the low number of receivers and substantial distances from the quarry, the risk of adverse impacts on amenity due to the proposed dry-mix batching plant would be minimal.

It is noted that the operational Lubke Quarry is positioned between the quarry and the nearest receiver 'Cromer', which is within 800 m of the Lubke Quarry. Therefore, potential impacts from the quarry would likely be insignificant in comparison with those from the Lubke Quarry.

- **Table 1: Summary of sensitive receivers within 3 km of quarry operations**

Property name	Orientation from quarry	Distance from quarry (m)
Wonga Park	NE	2500
Cromer	N	1300
Jerrapoohl	NW	2000
Beenly	NW	1900
Tumbarook	SW	3000
Springhaven	SW	2800
Quambatook	S	1800

- **Figure 2: Site layout showing location of Rockley Falls Quarry in relation to sensitive receivers and Lubke Quarry**



3.2. Background noise and air quality

3.2.1. Background noise

Noise impacts are assessed by comparing the noise from quarry activities to the underlying background noise at the point of assessment, which is often at a residential or other noise-sensitive location (e.g. school). When noise from the quarry is significantly greater than the background noise of the area, adverse impacts are likely. Conversely, when background noise levels are high, noise from the quarry is less likely to cause an adverse impact. Higher levels of existing or underlying background noise generated by sources other than quarry activities therefore assist to totally or partially "mask" noise from the quarry, making it less intrusive and less likely to cause adverse impacts.

Background noise monitoring was undertaken in three locations around the quarry during July and August 2007 by Noise and Sound Services (2008[1]) and a summary of monitoring data is provided in **Table 2**. Noise levels in the area are generally influenced by traffic with observed levels increasing from the day into the evening period and reducing later in the night, a pattern reflecting commuter traffic.

- **Table 2: Summary of monitored background noise levels**

Location	Period[2]	L_{A90}	L_{Aeq}
Cromer	Day	36	51
	Evening	41	52
	Night	35	50
Quambatook	Day	29	48
	Evening	33	46
	Night	30	42
Tumbarook	Day	35	51
	Evening	40	50
	Night	35	50

3.2.2. Background air quality

Given the rural environment and lack of industrial premises, there are few sources of air pollutants. The dominant pollutant in this area would be particulate generated largely by wind erosion of exposed soil; agricultural activities; and highway traffic.

No air quality data were obtained prior to commencement of quarry operations; however, monitoring of air quality, in terms of particulate, has been underway since August 2008 at selected representative locations and these data are discussed in **Section 4.3.**

[1] Noise and Sound Services 2008, Noise impact statement for the proposed Rockley Falls Quarry, Report No. NSS 21080 – Rev A Final, Noise and Sound Services, St Ives NSW

[2] Day – 7 am to 6 pm; Evening – 6 pm to 10 pm; Night – 10 pm to 7 am

4. Planning & Legislative Context

The quarry was approved under Part 3A of the Environmental Planning and Assessment Act. Potential modifications to the approved project are dealt with in Section 75W of the Act. Under Section 75W(2) of the Act:

The proponent may request the Minister to modify the Minister's approval for a project.

The Environmental Assessment, Statement of Commitments, Minister's Conditions of Approval and Environmental Protection Licence do not make any explicit mention of a dry batch plant at the quarry. Advice provided by DoP on the 31/03/2010 indicate that the construction and operation of the dry batch is not consistent with activities described for the Approved Project. DoP have also indicated that Director-General Requirements would not be required for the impact assessment nor would the impact assessment require public exhibition. Therefore a minor modification to the Approved Project is being requested. To assess whether any modification to other Minister's Conditions of Approval is required, this impact assessment has been prepared.

Greater Hume Shire Council has consulted on the proposed construction and operation of the batch plant (pers. Comm. Mark Davies – Planning Manager 17/03/2010) and indicated that:

- they have no concerns or issues about the proposed operation of the batch plant provided the batch plant only provides concrete to Hume Highway duplication projects; and
- The batch plant is permissible development on the 1(a)and 1(b) zoning of the land.

Concrete batching is no longer a scheduled activity under the Protection of the Environment Operations Act and the quantity of cement handled is significantly less than the scheduled quantity requiring an EPL. DECCW have indicated that only a small variation to the information supporting the EPL is required, however the conditions of the EPL would not change (See attached correspondence – Appendix A).

MCoA and EPL conditions relevant to batch plant are presented in the table below and consistency is assessed in the following the chapter. **Overall no changes to the EPL or the MCoA are required except those relating to a description of the approved activities on site.**

<table>
<tr><th>Relevant Condition</th><th>Requirements of Condition</th></tr>
<tr><td>MCoA Schedule 2, Condition 9

EPL Condition O2.1</td><td>The Proponent shall ensure that all plant and equipment used at this site is:
a) maintained in a proper and efficient condition; and
b) operated in a proper and efficient manner</td></tr>
<tr><td>MCoA Schedule 3, Condition 3

EPL Condition L6.1</td><td>The Proponent shall ensure that the noise generated by the project does not exceed the noise impact assessment criteria in Table 2.

<table>
<tr><th>Location</th><th>$L_{Aeq\ (15\ min)}$ dB(A)</th></tr>
<tr><td>Cromer residence</td><td>45</td></tr>
<tr><td>Quambatook residence</td><td>35</td></tr>
<tr><td>Beenly residence</td><td>36</td></tr>
<tr><td>Tumbarook residence</td><td>35</td></tr>
<tr><td>Jerapoohl residence</td><td>35</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Relevant Condition</th><th>Requirements of Condition</th></tr>
<tr><td></td><td>Table 2: Noise Impact Assessment Criteria</td></tr>
<tr><td>MCoA Schedule 3, Condition 4

EPL Condition L6.2</td><td>Construction work shall only be carried out:
c) between 7.00am and 6.00pm Monday to Friday;
d) between 8.00am and 1.00pm on Saturdays; and
e) at no time on Sundays or Public Holidays.</td></tr>
<tr><td>MCoA, Schedule 3, Condition 5</td><td>The project shall operate:
a) between 7.00am and 6.00pm Monday to Saturday; and
b) at no time on Sundays or Public Holidays.</td></tr>
<tr><td>MCoA Schedule 3, Condition 14</td><td>The Proponent shall ensure that dust generated by the project does exceed the criteria listed in Table 5 at any residence on privately owned land

<table>
<tr><th>Pollutant</th><th>Averaging period</th><th>Maximum increase from the project</th><th>Maximum acceptable limit</th></tr>
<tr><td>TSP</td><td>annual</td><td>70 µg/m^3</td><td>90 µg/m^3</td></tr>
<tr><td>PM_{10}</td><td>annual</td><td>20 µg/m^3</td><td>30 µg/m^3</td></tr>
<tr><td>PM_{10}</td><td>24- hour</td><td>25 µg/m^3</td><td>50 µg/m^3</td></tr>
<tr><td>Deposited dust</td><td>annual</td><td>2 g/m^2/month</td><td>4 g/m^2/month</td></tr>
</table>
Table 5: Particulate Impact Assessment Criteria</td></tr>
<tr><td>MCoA Schedule 3, Condition 19</td><td>The Proponent shall not discharge any water from the quarry or its associated operations except in accordance with an EPL.</td></tr>
<tr><td>MCoA Schedule 3, Condition 24 a)</td><td>All sediment and erosion controls would be consistent with the requirements of Managing Urban Stormwater: Soils and Construction, Volume 1, 4th edition 2004 (Landcom).</td></tr>
<tr><td>EPL Condition L1.1</td><td>Except as may be expressly provided in any other condition of this licence, the licensee must comply with section 120 of the Protection of the Environment Operations Act 1997.</td></tr>
<tr><td>EPL Condition L6.3</td><td>Noise from the premises is to be measured at the most affected point within the residential boundary or at the most affected point within 30m of the dwelling (rural situations) where the dwelling is more than 30m from the boundary to determine compliance with $L_{Aeq(15\ minute)}$ noise limits on condition L6.1, unless otherwise noted.</td></tr>
<tr><td>EPL Condition O3.1</td><td>Activities occurring in or on the premises must be carried out in a manner that will minimise the generation, or emissions from the premises, of wind-blown or traffic generated dust.</td></tr>
<tr><td>EPL Condition O3.2</td><td>All areas must be maintained in a condition that minimises the generation of dust.</td></tr>
</table>

5. Cumulative noise and dust impacts

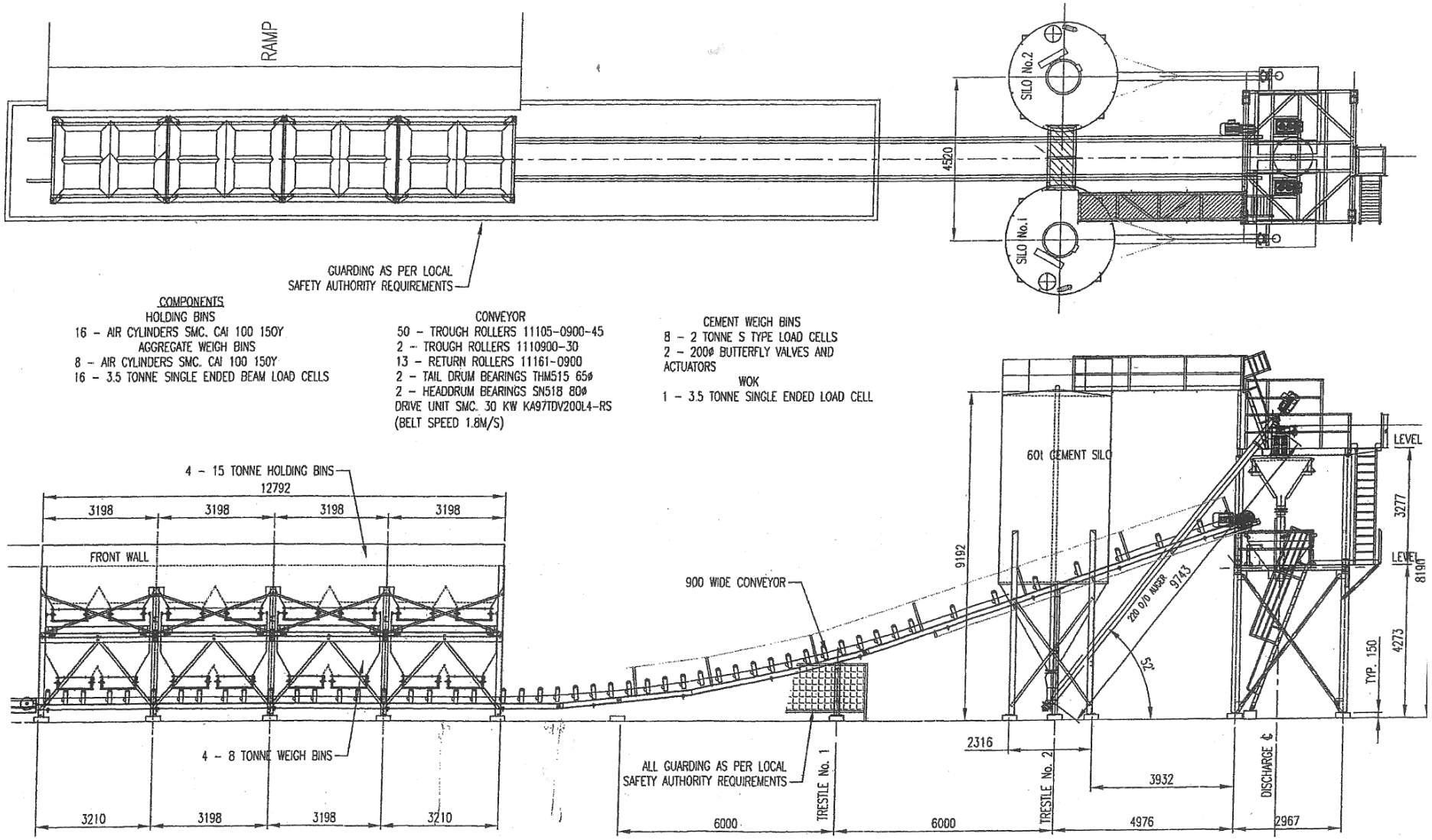
5.1. Nature and scale of operation

Quarry operations typically involve the following activities, which may result in noise and dust impacts.

- Rock is loosened by drilling and blasting, loaded into haul trucks by an excavator and delivered to processing stockpiles.
- An excavator feeds the rock into the three-stage crushing plant, which sequentially reduces the size and grades the rock to the desired specifications.
- Graded product is delivered to stockpiles via belt conveyors. Noise and dust emissions are generated at each stage of crushing and by material handling (e.g. excavator transfers, conveyor belt discharges and wheel generated dust on exposed surfaces).
- Products from each stage of the crushing plant are delivered by loader and haul truck to stockpiles prior to delivery offsite. The site access road is paved; however the haul roads within the quarry and processing area are unpaved.
- Sand washing may also be undertaken. This may generate some noise but is unlikely to be of the magnitude of the crushing plant.
- Aggregate is transported to the project in open-topped covered haul trucks.

The proposed dry-mix batch plant undertakes similar activities to some of the quarrying activities, with aggregate and sand added to an agitator truck and mixed with cement and water prior to transport to site. Also the proposed dry-mix batch plant is of relatively small capacity. Therefore, the addition of the dry-mix plant to quarry is unlikely to constitute a significant change in the overall nature and scale of quarrying operations. In addition, less material handling is required, saving fuel and greenhouse gas emissions.

- **Figure 3: Schematic of the proposed dry-mix plant**



5.2. Noise impacts

This section demonstrates that sensitive receivers are currently not significantly impacted by quarry operations and that the addition of the dry-mix plant to the quarry would not likely create additional adverse impacts.

5.2.1. Assessment criteria

In relation to noise impacts, the MCoA and DECC EPL require that noise from the project does not exceed the noise impact assessment criteria listed in **Table 3**. These criteria are based on operation during the day, 7 am to 6 pm, and the background noise levels during this time.

- **Table 3: Operational noise limits for the daytime period (DoP, DECC 2008)**

Residence	**Noise assessment criteria $L_{Aeq,\ 15\ minute}$ (dB(A))**
Cromer	45
Quambatook	35
Beenly	36
Tumbarook	35
Jerrapoohl	35

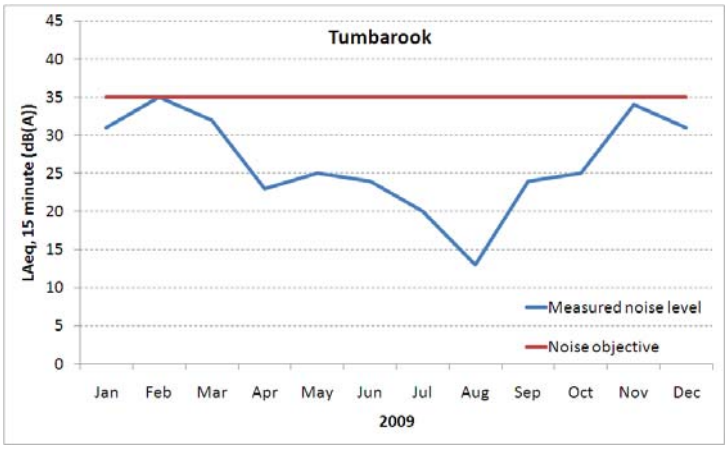
5.2.2. Measured noise levels

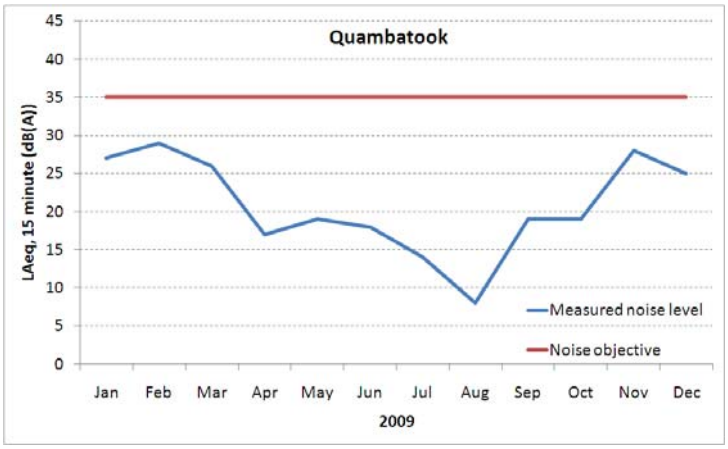
Attended noise monitoring is conducted on a monthly basis. Although meteorological conditions vary for each monitoring period, they are generally appropriate for the assessment, with winds noted as less than 5 m/s for all measurements and any strong winds that would affect the measured levels excluded from assessment.

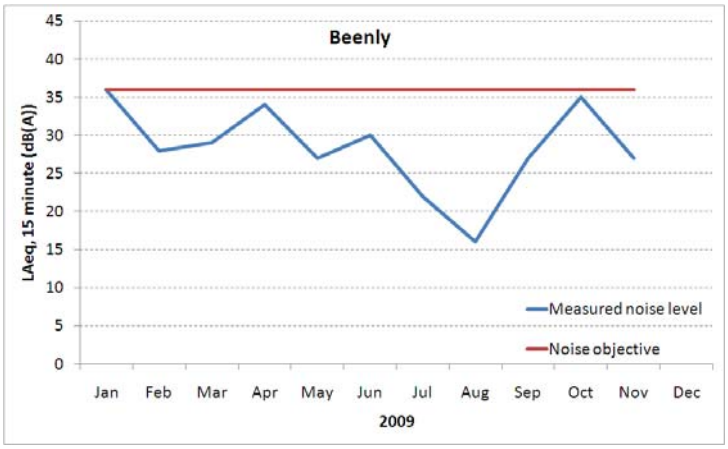
Figure 4 summarises the $L_{Aeq,\ 15\ minute}$ measurement results for representative receivers during 2009 and compares them against the relevant daytime noise criteria. No modification factors are deemed necessary for the quarry noise, which is typically dominated by engine noise (crushers, trucks and loaders).

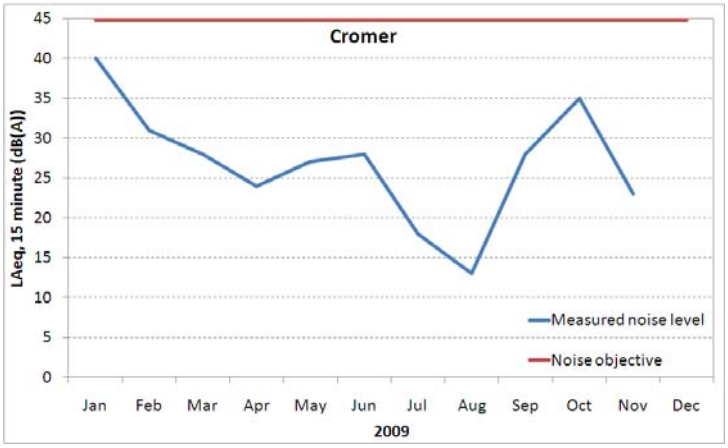
Monitoring results demonstrate that quarry noise is compliant with the noise limits.

- **Figure 4: Summary of monthly noise monitoring data for the quarry**









5.2.3. Predicted noise levels

The dry-mix plant itself is not a substantial noise source, with small motors driving a conveyor and cement/fly ash augers; and a loader supplying sand and aggregate to a feed hopper (refer **Figure 3**). Aggregate will be continually loaded to the feed hopper to prevent it becoming empty, reducing loading noise emissions.

The major source of noise in the dry-mix plant is the agitator trucks, particularly during loading and slumping. Noise levels of agitator trucks loading at a similar capacity batching plant were measured during a previous project and a L_{Aeq} noise level of 76 dB(A) was recorded 25m to the side, which is equivalent to a sound power level of 112 dB(A). It was observed that noise from the front of the trucks was 6 dB(A) lower than from the side due to screening provided by the truck cabin.

Noise impacts from the proposed dry-mix plant have been assessed in conjunction with existing operations of the quarry and stockpile area. Measurements of quarry plant and equipment were undertaken whilst in operation and their sound power levels estimated:

a) Crusher: Full operation - 118 dB(A)
b) Loader: pushing up stockpiles - 115 dB(A)
c) Haul truck - 110 dB(A)

The predicted noise levels incorporate attenuation due to geometric divergence as well as ground and air absorption. It is expected that the crushing operation would continue to be undertaken in the crushing area and that no additional haul trucks or loaders would be used in comparison with current operations.

In order to ensure minimal noise impacts, the loading bay will be enclosed on three sides and the slump stand enclosed on two.

Results of the noise prediction are summarised in **Table 4**. It can be seen that the noise objectives are likely to be achieved at all properties, with only a minor, 1 dB(A), exceedance predicted for Quambatook.

For the majority of residences, there would be a 1-2 dB(A) increase in noise levels attributable to proposed dry-mix operations at the majority of properties. This magnitude of increase would be indiscernible to the residents.

At two receivers, Springvale and Tumbarook, the increase in noise level attributable to the dry-mix would be significant, with an 11 dB increase predicted for Springvale. However, the predicted levels would be **inaudible** over background noise and would still be well below the noise objective.

Considering that the increase in noise levels at sensitive receivers would be minor and, for the most part, indiscernible, and that the noise objectives are expected to be achieved at all residences, the impact of the proposed dry-mix operations on the acoustic environment is considered to be minimal and to be consistent with the approved and operational quarry operations.

- **Table 4: Summary of predicted and measured noise levels resulting from operation of the batching plant**

Property name	Orientation from quarry	Distance from quarry (m)	Predicted noise level – existing activities, dB(A)	Predicted noise level – existing plus dry-mix plant, dB(A)	Difference	Noise objective, dB(A)
Wonga Park	NE	2500	<20	<20	0	35
Cromer	N	1300	32	33	+1	45
Jerrapoohl	NW	2000	34	36	+2	36
Beenly	NW	1900	34	36	+2	36
Tumbarook	SW	3000	20	24	+4	35
Springhaven	SW	2800	13	24	+11	35
Quambatook	S	1800	35	36	+1	35

5.3. Dust impacts

This section demonstrates that sensitive receivers are not currently adversely impacted by quarry operations and that the addition of a dry-mix batching plant would not likely create additional adverse impacts.

5.3.1. Assessment criteria

In order to determine whether receivers are, or are likely to be, adversely impacted by quarrying operations, assessment criteria for air quality impacts are provided in the MCoA, which prescribe acceptable limits to the level of dust at each sensitive receiver. These criteria are reproduced in **Table 5.** EPL 12884 does not prescribe operational limits on dust concentrations.

- **Table 5: Operational dust limits for the evening period**

Pollutant	Averaging period	Maximum increase from this project	Maximum acceptable level
TSP	Annual	70 µg/m^3	90 µg/m^3
PM_{10}	Annual	20 µg/m^3	30 µg/m^3
PM_{10}	24 hour	25 µg/m^3	50 µg/m^3
Deposited dust	annual	2 g/m^2/month	4 g/m^2/month

5.3.2. Measured dust levels

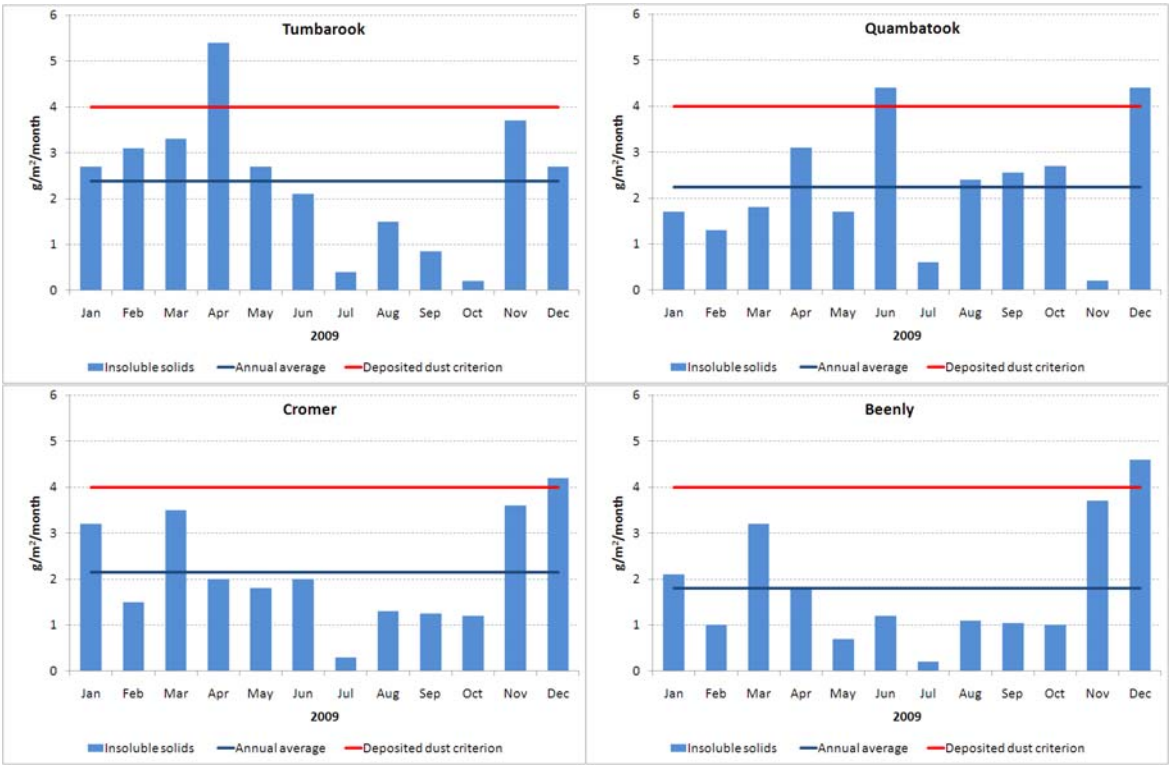
Monitoring of deposited dust has been undertaken at the following locations since commencement of quarry operations. Samples are collected on a monthly basis and analysed at Charles Sturt University's Laboratories.

- Tumbarook
- Quambatook
- Cromer
- Beenly

Monthly results for 2009 are presented in **Figure 5**. Although the measured dust concentration is greater than 4 g/m^2/month during some months, the criterion is an annual average with which the

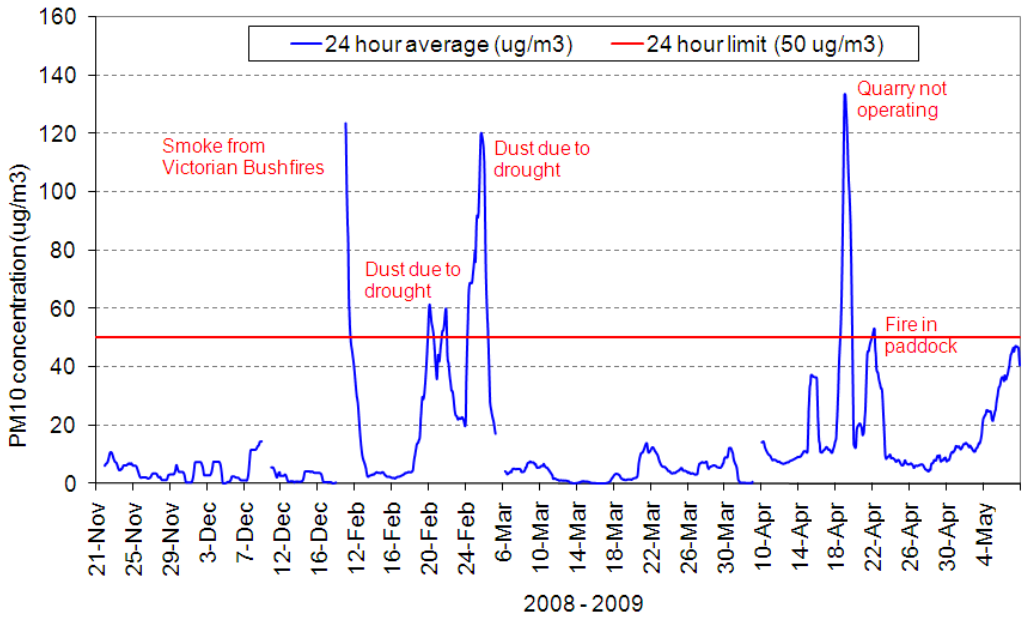
existing quarry operations currently comply. Furthermore, the occasional monthly exceedances have been caused by natural phenomena such as dust storms and bush fires.

- **Figure 5: Monthly deposited dust levels at sensitive receivers for 2009**



Concentrations of fine particulate, as PM_{10}, were monitored using a DustTrak aerosol monitor from November 21 2008 to 8 May 2009 at the Tumbarook property (refer **Figure 2**). Results presented in **Figure 6** demonstrate that, with the exception of anomalous dusty conditions due to natural phenomena such as droughts and fires, quarry operations comply with the 24-hour average assessment criterion of 50 µg/m^3. The average recorded value, including quarry operations and ambient sources, is approximately 14 µg/m^3.

- **Figure 6: PM_{10} monitoring data – Tumbarook 21 November 2008 – 8 May 2009**



5.3.3. Expected dust impacts

Typical dust emission sources from a dry-mix batching plant may include:

- delivery of raw materials in trucks, trailers and tankers;
- storage of raw materials in bunkers and stockpiles;
- transfer of raw materials by front end loaders, conveyors, hoppers and agitators; and
- leakage or spillage of raw materials from silos, inspection covers and duct work.

Raw material delivery is unlikely to generate significant dust impacts considering cement and fly ash would be pneumatically transferred to sealed storage silos. Transfer of materials would be undertaken at appropriate pressures to prevent filter blow-out. Aggregate would be taken from existing stockpiles at the quarry and would generate no additional dust to current operations.

With the nearest sensitive receiver approximately 1300m from the proposed site, air quality at sensitive receivers is unlikely to be adversely impacted by the operation of the dry-mix plant and with the implementation of the Rockley Falls Quarry EMP, which includes measures to minimise the generation of dust, the cumulative impact on air quality due to the batch plant would be negligible.

In accordance with the EMP, and consistent with the approved batching plant, dust monitoring will be undertaken during the operation phase to ensure dust levels comply with the project air quality objectives.

6. Other potential impacts on amenity

In addition to potential impacts on air quality and noise, a range of other environmental aspects have been considered as part of this submission. These aspects are discussed below and include:

- Soil and Water
- Heritage
- Traffic
- Flora and Fauna
- Waste
- Energy consumption

6.1. Soil and Water

The proposed batch plant would not have any additional impacts on water quality. An existing sedimentation basin designed in accordance with the requirements of *Managing Urban Stormwater: Soils and Construction, Volume 1, 4th Edition* (Landcom 2004) would be used to treat runoff from the batch plant area. Any discharges would be required to meet the current EPL discharge limits. Due to the small size of the dry batch plant and its distance to the existing sedimentation basin, runoff from the batch plant area would not require any special measures. Existing control measures and safeguards are referenced in the EMP and would be implemented to manage any potential impacts.

Water would be required to make concrete and would be sourced from the existing water supply for the quarry. The quarry obtains its water from a licensed RTA bore on the Hume Highway via a pipeline. It is estimated that there would a 10% increase in water use due the batching operations – which is still below the licensed capacity of the bore.

6.2. Heritage (Aboriginal and Non-Aboriginal)

The quarry footprint is not proposed to be increased as a result of this proposal and there would be no increased impacts on heritage aspects.

6.3. Traffic

Heavy vehicle movements to and from the quarry would increase slightly a batch plant being located at the quarry. While concrete agitators would now access the quarry to load concrete, truck movements delivering aggregate and sand to an off-site batch plant would no longer be required. As the trucks delivering sand and concrete have a greater capacity than a concrete agitator the increase in truck movements over a day would be about 5 vehicles. Concrete deliveries to the batch plant would also be required – a maximum of 1 truck delivery would be required

The overall increase in truck movement is minor and thus impacts are expected to be negligible and remain consistent with those discussed in the EA.

6.3.1. Flora and Fauna

The quarry footprint is not proposed to be increased as a result of this proposal and no additional clearing is required, thus there would be no adverse impacts on flora or fauna.

6.4. Waste

Impacts of waste are expected to be negligible and remain compliant with the predictions made for the initial scope of the works in the EA. There would be improved recycling of concrete as any excess concrete would be returned to quarry, crushed and incorporated with stabilised fill material

6.5. Energy consumption

Impacts are expected to be negligible and remain consistent with those discussed in the EA. The dry-mix plant does not consist of any significant energy consumers, with small motors used to drive the conveyors. Diesel fuel would be consumed by the agitator trucks during loading and transport of the concrete; however, this would be offset by a lower number of haul trucks required to transport aggregate to an alternative batching plant location. Less material handling will be required if the dry batch plant is established at the quarry, reducing fuel consumption and greenhouse gas emissions.

6.6. Visual impacts

The batch plant would be approximately 10m high and 30m long and would be located in an existing stockpile area. The batch plant would be similar in appearance to other plant on site such as the crushers (See Figure 1). Only three residents would potentially be able to see the batch plant and they are at least 1.5 km distant. Given the size and scale of the quarrying operations, the similar plant already on site and distances to the nearest residents, the batch plant would have a negligible impact on visual amenity.

6.7. Community consultation

Consultation with the surrounding community was undertaken as part of this assessment to describe the nature and potential impacts of the proposed batching operations and to seek feedback or concerns. Residents were telephoned directly and a summary of responses to the proposal is provided in **Table 5**. In general, there are no concerns relating to operation of a batching plant at the quarry. Although an issue of dust was raised, no objection to the proposal has been raised.

- **Table 5 Summary of community consultation responses.**

Property	Resident contacted	Response
Cromer	Paul Lubke	No concerns or issues
Rockley Falls Quarry	David Emerson	No concerns or issues
Springhaven	Andrew Emerson	No concerns or issues
Quambatook	Keven Reynolds	No concerns or issues
Jerrapoohl	John and Phoebe Taylor	Only concern was potential for dust due to asthma. Informed of appropriate dust controls in place.
Beenly	David Emerson	No concerns or issues
Tumbarook	Steven Daley	No response to numerous messages.

6.8. Environmental Benefits

As noted in the introduction, there are a number of environmental benefits in locating the batch plant at the quarry rather than at Woomargama Bypass project site. These include:

- Reduced heavy vehicle movements through Woomargama – deliveries of aggregates, sand, cement and flyash to the alternative batch plant site south of Woomargama would no longer be required. While there may be some movements of agitators through the township, many of the agitators would be able to access the construction site north of Woomaragama, avoiding travelling through the village;
- Reduction in heritage impacts – due to constraints on the project site, the alternative batch plant location is on an Aboriginal heritage site (as approved by the CHAR). In relocating the batch plant to the quarry salvage and other impacts on the heritage site can be avoided;
- Reduced energy use and greenhouse gas emissions – there would be a reduction in material handling and heavy vehicle movements, resulting in a reduction in fuel use;
- Improved recycling of concrete – as the excess concrete would be returned to the quarry for crushing and incorporation in stabilised fill. An existing approved hard stand area would be utilised, preventing a new hard stand area being constructed elsewhere.

7. Management of environmental impacts

The assessment demonstrates that the dry-mix batching plant would be unlikely to result in additional adverse impacts on sensitive receivers or other environmental aspects. The HHWA is committed to achieving excellent environmental outcomes and will ensure that all operations are undertaken strictly in accordance with the Rockley Falls Quarry EMP, which includes a requirement for regular monitoring, reporting and identification of areas of improvement. The EMP would updated to include the batch plant operations.

To assess and further manage noise emissions relating to the proposal, noise monitoring shall be undertaken specifically during operation to confirm that no adverse impact has occurred. Any adverse impacts that may occur shall be recorded and managed by the HHWA.

Predictions of dust concentrations will be confirmed through monitoring and adverse impacts reported and managed. Specifically, a PM_{10} monitor, in addition to the existing deposited dust monitors, will be located at representative property to further assess and manage dust impacts.

Water quality monitoring of sedimentation basins discharges would be undertaken in compalicne with EPL conditions.

In addition, a comprehensive community and stakeholder management program has been implemented to ensure any issues arising from the operation of the dry-mix batching plant are rapidly identified and managed appropriately.

Therefore, any impacts resulting from the batch plant at the Rockley Falls Quarry will be managed to a high standard.

8. Consideration of EPBC Act

Presented in the table below is an assessment of the proposed batch plant against the EPBC Act.

8.1. EPBC ACT 1999 Factors (Commonwealth Legislation)

Factor (Commonwealth Legislation)	Impacts
a. Any environmental impact on a World Heritage property? Comments: The works would not be undertaken near any world heritage properties and as such are not expected to have any impact on any world heritage properties.	Nil
b. Any environmental impact on wetlands of international importance? Comments: There are no wetlands of international significance in the surrounding area. The proposed works are not expected to have any impact on any wetlands of international significance.	N/A
c. Any environmental impact on Commonwealth listed threatened species or ecological communities? Comments: There are no commonwealth listed threatened species or ecological communities that are expected to be impacted on by the proposed works.	Nil
d. Any environmental impact on Commonwealth listed migratory species? Comments: The proposed works would not result in any vegetation removal, and are to be undertaken in an area which is already cleared. As such the proposed works are not expected to have any impact on any habitat for Commonwealth listed migratory species or any actual Commonwealth listed threatened species.	Nil
e. Does any part of the proposal involve a nuclear action? Comments: No part of the proposed works involves a nuclear action.	N/A
f. Any environmental impact on a Commonwealth marine area? Comments: The proposed works are not expected to have any impact on any wetlands of international significance.	N/A
g. Any direct or indirect effect on Commonwealth land? Comments: The proposed works are not expected to have any impact on any Commonwealth Land.	NA

9. Conclusion

In the following table the consistency of the proposed batch plant with the Approved Project is summarised.

FACTOR	YES	NO
3.1 Fundamental consistency with project		
Will all proposed modifications, considered together, result in a radical change to the activity as approved? (Note – this question is aimed at the fundamental concept of the project, its location and standard.) The proposed establishment of a dry-mix batch plant is not expected to result in a major change to the approved project or its described activities. There would be no change in the scale of the extractive activities as described in the EA, MCoA and EPL. The environmental impacts associated with the dry-mix batch plant are consistent with those already outlined in the EA.		✓
3.2 Consistency with objectives and functions of approved activity as a whole		
Will all proposed modifications, considered together, result in any substantive change to the objectives and functions of the approved project as a whole? The proposed modification would not result in a substantive change to the objectives or functions of the approved activity as a whole as they are consistent with the objectives and functions as outlined in the EA being to supply road building materials to the Hume Highway Duplication Projects until 2012.		✓
3.3 Consistency with objectives and functions of elements of approved activity		
Will each separate proposed modification result in any substantive change to the objectives and functions of that element of the approved activity which it modifies AND do so without better satisfying any other Conditions of Approval such that a net improvement in the environment results? The production of concrete for the Hume Highway Duplication Projects was not identified as a specific element or activity at the quarry.	✓	

FACTOR	YES	NO
3.4 Consistency with environmental impact		
Are there any new environmental impacts or changes to environmental impact associated with the proposed modification that are not covered by safeguards or mitigation measures identified in the EIS, Representations Report or associated documents; or any Condition of Approval; or which would make safeguards, mitigation measures or Conditions of Approval ineffective? The proposed establishment of a dry-mix batch plant would result in no net change in environmental outcomes. The mitigation measures identified in the EA, SoC and the Conditions of Approval will all still apply and be effective to manage the proposed works.		✓
3.5 Consistency with particular Conditions of Approval		
Will any proposed modification, either by itself or in association with any other proposed modifications, result in the inability to satisfy any Condition of Approval? The proposed modification would not result in a change in impact that due to its nature or scale, should be made public. The potential impacts of the proposal are discussed in **Section 4** and **Section 5**.		✓

It is concluded that the proposed activities do not result in a substantial change to the approved projects and remain consistent with the objectives and function of Rockley Falls Quarry as outlined in the EA. The proposed works are generally consistent with the specific relevant MCoA, SoC and EPL.

Potential impacts to the environment from the proposed works have been identified and discussed in **Section 4** and **Section 5**. The proposed works are not likely to significantly increase dust or noise emissions above current levels. The proposed works are also not likely to result in any other significant impacts above current conditions.

Consequently, the proposed changes arising from the establishment of a dry-mix batch plant are considered to be consistent with the approved project.

Appendix A - Correspondence from DECCW

Jonas,

Based on the information contained in the report *Rockley Falls Quarry Dry-Mix Batch Plant Consistency Assessment* DECCW has no objection to the proposal.

However, it is noted that noise modelling predicts a possible exceedences of the licence limit by 1 dB at the Quambatook residence. It is acknowledged that the measurements for the existing operation are 5 or more dB below the predicted level of 35dB (Fig 4). DECCW therefore requests that the *Noise Monitoring Plan* be amended to reflect the changes in operation, and that monthly noise monitoring continue at the Quambatook residence.

Licensing Issues

With regard to the current licence, it will be necessary to make a small amendment. Sub-clause to *Condition A4.1 Information supplied to the EPA* will need to be amended noting the dry batch plan and the supporting documentation. This can be done by submitting a licence application form, which can be downloaded from http://www.environment.nsw.gov.au/resources/licensing/09774varpremises.doc and supporting information (the final version of the Dry mix batch plant assessment).

Also we will need proof of Development Consent.

If you have any queries, please give me a call.

Regards

Mark Enright | Senior Regional Operations Officer | Department of Environment, Climate Change & Water | 512 Dean St (PO Box 544) Albury 2640 | T: 02 60220607 M: 0419 267 253