SALLY PEAK SANDSTONE PTY LTD, BUCKLAND
DPEMP - SUPPLEMENT
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Attachment 4  Community engagement 4 September 2015 – NOTICE - PUBLIC COMMENT PERIOD PROPOSED SANDSTONE QUARRY – ‘SALLY PEAK’, TASMAN HIGHWAY, BUCKLAND
PART A - INTRODUCTION

A.1 SCOPE

This EER Supplement has been prepared in response to a Supplement request issued by the Environment Protection Authority.

The Council received 19 representations on the application which they provided to the EPA as part of the Level 2 assessment process. Of the 19 representations 15 were supportive of the project. The results may be reflective of the community engagement conducted by the proponent to make the community aware of the project such that they could voice their views on the quarry development. The approach was consistent with the EPA issued Guidance on Community Engagement March 2013.

Attachment 3 and 4 contain copies of the documentation that was posted at the shop/service station in Buckland (a regular meeting place for local residents) as well as being provided to most residential properties within the town (delivered by hand). The ‘letters’ were designed to provide awareness to the community before the application was lodged (the planning stage) and also once it was lodged and had been advertised. The proponent felt that the low-key ‘statutory’ advertising process (sign on property, nearest neighbours notified and it appearing in The Mercury once) was not a satisfactory means of getting the message ‘out there’ of the official period (28 days) for representations to be made – hence, the letter in Attachment 4 which notified persons more clearly of the official representation period, how to access information to make a representation and it was delivered more broadly within the community.

The Buckland township is relatively small such that if anyone did not get a letter directly it is very likely, indeed almost certain, that they would have heard of the proposal through the posters at the shop or from others in the community who had read the poster in the shop etc. The receipt of 19 representations from a small township is an encouraging sign that the community engagement process conducted by the proponent was effective because it highlighted to the broader community that they could have their say on what was proposed.

A.2 ACRONYMS/TERMS


pollutant has the meaning outlined in the Environmental Management and Pollution Control Act 1994.

QCP Quarry Code of Practice (Tasmania, 1999).

Sensitive Receptor Any building or part of a building lawfully used as, or for the purposes of, a private residence or residential flat and including the curtilage of the building or, where the boundaries of the curtilage are not ascertainable, the land within a distance of 25 metres from the building*.

AND

The nearest edge of a property to the closest proposed quarry face at year 5 where there is any building or part of a building -

(i) unlawfully used/constructed; or

(ii) the construction of a dwelling is Discretionary pursuant to the Glamorgan Spring Bay Interim Planning Scheme 2015.

* From the Quarry Code of Practice (QCP)
### TABLE 1: ADDITIONAL INFORMATION REQUIRED BY THE EPA BOARD

<table>
<thead>
<tr>
<th>Supplement Section</th>
<th>Representation No./ Agency</th>
<th>DPEMP Section</th>
<th>Page no.</th>
<th>Comment</th>
<th>Additional information required</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1</td>
<td>MRT</td>
<td>Project Background Map &amp; Site Layout</td>
<td>17</td>
<td>Page 17 Section Sally Peak North reads as follows &quot;This face is located to the immediate west of the access road (Figure 2-2-4a) and currently has no drainage infrastructure.&quot; This description is inconsistent with the figures.</td>
<td>Confirm the alignment of the access road in relation to the quarry face.</td>
</tr>
<tr>
<td>B2</td>
<td>Representation No. 4</td>
<td>Surface Water Management</td>
<td>40-42</td>
<td>The trees at the proposed quarry sally peak south site are a tree plantation, (as is north site) using water, above my property which is below in a valley. What infrastructure will be put in place to protect my property from the water &amp; sediment cascading down the hill, through the old abandoned tip site and onto my property with contaminations, once the trees have been removed, as the water flows, and speed of the water course, will be changed by the removal of the planation trees.</td>
<td>Page 49 of the DPEMP states ‘the property internal roads are within hardwood plantation and the trees contained therein act to trap any dust from road usage.’ Provide details of how this mitigation measure will be maintained during the life of the quarry in consideration of the vegetation being a forestry plantation. Provide further information on water and sediment mitigation and management in the event that areas of plantation are cleared during the operational lifetime of the quarries.</td>
</tr>
<tr>
<td>B3</td>
<td>EPA Division</td>
<td>Noise Emissions</td>
<td>43-49 &amp; Attachment 2</td>
<td>There appears some confusion in the noise study (Attachment 2) in relation to the application of various noise measurements to specific residences. There seems to be a strong focus at ‘Location 2’ [on Sally Peak Road] in the appendix but this is then referred</td>
<td>Review and amend the noise study and its conclusions in relation to sensitive receptors in consideration of the transport route as defined in the DPEMP, which excludes access along Sally Peak Road and places restrictions on ingress</td>
</tr>
</tbody>
</table>
to as ‘Location 7’ in the DPEMP. At the same time, according to the DPEMP trucks will not use Sally Peak Road and so won’t pass by Location 2 but will pass Location 7.

The ambient and truck noise levels in the DPEMP for this site are 40 and 56 respectively. The difference will be much less at Location 7 because (a) the highway noise will be louder (52.6 dB(A) from A15 in the appendix) and the truck bypass noise will be less because the road is greater than 32.5 metres from the access road.

<table>
<thead>
<tr>
<th>Representation No. 2</th>
<th>Noise Emissions</th>
<th>43-49 &amp; Attachment 2</th>
<th>The environmental impact studies, including most importantly the level of noise [two] further quarries and heavy machinery will generate, have not taken into account the close proximity of 169 Sally Peak Road and the potential negative effects that this may have on this property.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Representation No. 3</td>
<td>Noise Emissions</td>
<td>43-49 &amp; Attachment 2</td>
<td>We note that the plan fails to address the impact of the activity on [both] the Finearty property, which is between 76 Sally Peak Road and Sally Peak Road, and the McCaw property which is described in figure 2-3 as a public reserve.</td>
</tr>
<tr>
<td>MRT</td>
<td>Noise Emissions</td>
<td>43-49 &amp; Attachment 2</td>
<td>As there is approximately 76m (measured using the LIST) between the residence at ‘Ardross’ 5826 and egress as shown in Figure 4-13-1 of the DPEMP.</td>
</tr>
</tbody>
</table>

There needs to be a very definitive indication via a map of the sensitive receptors, the active production areas (Figure 4.4.1 does this) and the intended access road to the highway. There then needs to be a clear indication of the expected noise levels from the proposal at the sensitive receptors. Due to the separation of the two mining locations and the long stretch of access road it would be best to provide noise levels for each of these three sources separately.

The basic source details can be derived from the existing measurements and a table provided giving the three predicted noise levels for each sensitive receptor, supported by discussion of the potential
Tasman Highway and the western edge of mining lease 1991P/M nearest the house, it seems naive to make the claim that "Complaints are unlikely from the noise of one truck every 14 minutes (maximum) in a working rural setting".

Provide comment as to the contribution of these activities to the overall noise profile of the quarry during operational hours.

No testing has been carried out on the moving and loading of stone and movement of machinery within and between quarry faces. We anticipate this, particularly the loading of trucks, which will be constant given the numbers involved, will be the source of the greatest noise.

The cutting process and dust mitigation measures are dependent on water which is to come from the settling dam or from a water cart filled at Buckland (the Brushy Plains Rivulet?) (p18, para 4)

Confirm water source(s) for the sandstone cutting process and mitigation and management of dust in consideration of the representation comments. If water sources are likely to be an issue then other mitigation measures for dust management should be proposed.

It appears water is not readily available on the site and therefore will be required to be transported onto the site.
<table>
<thead>
<tr>
<th>#</th>
<th>Representation</th>
<th>Section</th>
<th>Page</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>B5</td>
<td>No. 4</td>
<td>Air Emissions</td>
<td>49</td>
<td>The only readily available source is the Brushy Plains Rivulet. In recent years, this has been a less than reliable source. In addition, upstream and downstream users that rely on this source for some or their entire domestic and farming supply may be seriously impacted. This type of activity, quarrying, has a big appetite for water consumption. Provide further information on dust mitigation and management in consideration of plantation clearance during the operational lifetime of the quarries. Particularly in consideration of the comment on page 49 of the DPEMP which states ‘the property internal roads are within hardwood plantation and the trees contained therein act to trap any dust from road usage’.</td>
</tr>
<tr>
<td>B6</td>
<td>No. 4</td>
<td>Waste Management</td>
<td>50</td>
<td>Will all O.H&amp;S Policies &amp; regulations be granted to the workforce to workplace standards, as there is no allowance for an amenities block for employees to decontaminate, and the large number of truck drivers to relieve themselves. Provide further information on amenities for employees and truck drivers accessing the site.</td>
</tr>
</tbody>
</table>
PART B - ADDITIONAL INFORMATION REQUIRED BY THE EPA BOARD

B.1 PROJECT BACKGROUND/MAP & SITE LAYOUT

On page 17 of the DPEMP it is stated -

‘Sally Peak North

The approximate layout of this quarry face is shown in Figures 2-2-4a and 2-2-4b.

This face is located to the immediate west of the access road (Figure 2-2-4a) and currently has no drainage infrastructure. The strategy for block extraction at this face is to work completely across a pit (see Figure 2-2-2) and then to establish a second bench within the pit. Subsequent benches will be added as the quarrying progresses. The quarrying is likely to reach a final depth of approximately 10 m and have 4-5 benches.

Each bench will be about 2 -3 m deep with a 5m buffer applied to the previous bench to ensure that bench height overall for any one bench is kept to less than 3m high (depicted as ‘bench width of 5m’ in Figure 2-2- 4a). A new sediment pond will be constructed (see Figure 2-2-4a for location and drainage to be directed to the pond) based on the parameters and water assessment/flow calculations in Attachment 1.

The access road is as shown in Figure 2-2-4a – to the east of the face. The section should now read –

‘Sally Peak North

The approximate layout of this quarry face is shown in Figures 2-2-4a and 2-2-4b.

This face is located to the immediate east of the access road (Figure 2-2-4a) and currently has no drainage infrastructure. The strategy for block extraction at this face is to work completely across a pit (see Figure 2-2-2) and then to establish a second bench within the pit. Subsequent benches will be added as quarrying progresses. The quarrying is likely to reach a final depth of approximately 10 m and have 4-5 benches.

Each bench will be about 2 -3 m deep with a 5m buffer applied to the previous bench to ensure that bench height overall for any one bench is kept to less than 3m high (depicted as ‘bench width of 5m’ in Figure 2-2- 4a). A new sediment pond will be constructed (see Figure 2-2-4a for location and drainage to be directed to the pond) based on the parameters and water assessment/flow calculations in Attachment 1.’

B.2 SURFACE WATER MANAGEMENT

The representation appears to be related to or concerned about the act of sustainable harvesting of the plantation than the direct effects of the sandstone quarry –

‘The trees at the proposed quarry sally peak south site are a tree plantation, (as is north site) using water, above my property which is below in a valley. What infrastructure will be put in place to protect my property from the water & sediment cascading down the hill, through the old abandoned tip site and onto my property with contaminations, once the trees have been removed, as the water flows, and speed of the water course, will be changed by the removal of the planation trees.’

The EPA asked on the basis of this representation –

‘...Page 49 of the DPEMP states ‘the property internal roads are within hardwood plantation and the trees contained therein act to trap any dust from road usage.’ Provide details of how this mitigation measure will be maintained during the life of the quarry in consideration of the vegetation being a forestry plantation.'
SALLY PEAK NORTH

SALLY PEAK SOUTH

Figure S-1: Sensitive Receptor Locations

<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Distance to Nearest Quarry</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5826 Tasman Highway</td>
<td>870m (SPN)</td>
</tr>
<tr>
<td>2</td>
<td>76 Sally Peak Road</td>
<td>435m (SPN)</td>
</tr>
<tr>
<td>3</td>
<td>104 Sally Peak Road (Boundary - NW)</td>
<td>440m (SPN)</td>
</tr>
<tr>
<td>4</td>
<td>104 Sally Peak Road (Boundary - SW)</td>
<td>460m (SPS)</td>
</tr>
<tr>
<td>5</td>
<td>30 Sally Peak Road</td>
<td>980m (SPN)</td>
</tr>
<tr>
<td>6</td>
<td>9 Sally Peak Road</td>
<td>1130m (SPN)</td>
</tr>
<tr>
<td>7</td>
<td>101 Sally Peak Road (Boundary - W)</td>
<td>910m (SPN)</td>
</tr>
<tr>
<td>8</td>
<td>168 Sally Peak Road</td>
<td>740 (SPS)</td>
</tr>
<tr>
<td>9</td>
<td>169 Sally Peak Road</td>
<td>910m (SPS)</td>
</tr>
</tbody>
</table>

Distance to Nearest Quarries are based on Extent at Year 5.
Provide further information on water and sediment mitigation and management in the event that areas of plantation are cleared during the operational lifetime of the quarries.’

The clearing of plantation will only be minor in its extent, being approximately 2.5 hectares maximum at year 5 of the activity. The clearing of trees will only occur as the areas are required for quarrying otherwise the trees will remain intact for those areas where they will eventually be removed to facilitate quarrying.

The harvest date of the plantation on the property and areas immediately adjoining the two quarry faces is unknown due to volatile market forces and that the trees have more growing to do before they become of merchantable size. The clearing of the trees within the Mining Lease for the quarrying is afforded an exemption (relevant aspects highlighted) pursuant to s4(i) of the Forest Practices Regulations 2007 -

(i) the harvesting of timber or the clearing of trees on any land, or the clearance and conversion of a threatened native vegetation community on any land, in the course of mineral exploration activities, or mining activities, that are authorised under –

(i) a permit granted under the Land Use Planning and Approvals Act 1993; or

(ii) an exploration licence within the meaning of the Mineral Resources Development Act 1995; or

(iii) a retention licence within the meaning of the Mineral Resources Development Act 1995; or

(iv) a mining lease within the meaning of the Mineral Resources Development Act 1995.

Any clearing of the trees conducted under the exemption afforded in the regulations would be conducted such that the requirements of the permit (if issued) are met (e.g. management of fugitive dust emissions), otherwise the sustainable harvesting of the trees would occur under a forest practices plan developed and certified using the forest practices system methodology outlined above.

For the harvesting of the timber that is not afforded an exemption, that is, when the trees are sustainably harvested for sale separately to the Level 2 activity the forest practices system is enacted. The act of harvesting the timber for sale where it is not specifically to facilitate access to the sandstone for quarrying is unrelated to the Level 2 activity in the effects that it [forest harvesting] may cause or potentially cause to the surrounding lands. These matters are assessed and governed by the Forest Practices Act 1985 and the Forest Practices Code.

The harvesting of timber within the meaning of the Forest Practices Act 1985 is regulated by that Act and the Tasmanian Forest Practices Code (the Code). The Code has substantial assessment requirements in relation to sediment loss/erosion when land is cleared, and management measures that must be applied in the specific circumstances of forest harvesting/clearing/reforestation. The Code was the first in Australia and is central to the forest practices system. It is the only forest code in Australia and one of a very few world-wide to apply equally to public and private land. The code is applied in accordance with a guiding policy that explains the contribution to be made by the code towards sustainable forest management in Tasmania.

The guidelines and standards in the Forest Practices Code –

- Planning
- building access into the forest (roads, bridges, quarries etc.)
- harvesting of timber
- conservation of natural and cultural values (soil and water, geomorphology, visual landscape, botany, zoology and cultural heritage)
- establishing and maintaining forests.

The FPA developed the code through extensive consultation and public comment. It is reviewed periodically, incorporating suggestions from scientists, government, the forestry industry and the public. The code is
legally enforceable under the Forest Practices Act 1985 for both public and private forests. The code can be purchased from some Service Tasmania outlets or downloaded from the FPA website.

Details on the process of assessing and integrating soil/erosion related matters into the forest practices system can be found at –

http://www.fpa.tas.gov.au/forest_practices_system/fpas_forest_planning_processes/earth_science_program

If the forest is completely or partially harvested during the lifetime of the quarries, then more frequent road/track dampening may be required for the Level 2 activity or an engineering solution which is more long-term may need to be adopted (eg engineered products to stabilise the soil surface such as Hydroguard is a useful product for this sort of quarry activity, http://www.envirosupplies.com.au/product/hydroguard-soil-stabilisation/). The onus is on the quarry operator to prevent environmental nuisance and/or serious/material environmental harm from potential dust emissions. Even without the trees or all of the trees, the emission of dust into nearby lands is very unlikely to occur given the large distances between the two proposed quarry faces and the nearest sensitive receptors (Figure S-1) and the prevailing wind patterns. In this case, the meaning of sensitive receptor has been broadened to mean the definition provided in this Supplement.

Surface water management measures have been provided within the DPEMP that describe engineer-developed measures to capture, control and treat water from the two pits for Level 2 activity. Standard water management devices for the internal road, such as culverts and cut-off drains, have been/will be installed as required. The locations of these water management measures (including the sediment ponds) and their required performance for the quarry (eg sediment pond sizing and cleaning regimes) is unrelated to the existence or otherwise of the eucalypt plantation. Indeed, comparable road management measures (excluding sediment ponds) are required by the forest practices system to install culverts and roadside drains and grips on the road where appropriate to minimise the risk of erosion etc. Therefore, if the forest is harvested under a forest practices plan either partially or completely the applicant would be required to maintain the same standards as have been proposed for this Level 2 activity.

B.3 NOISE EMISSIONS

A noise assessment was commissioned for the activity and has been revised in recognition of comments from the representations and EPA (see Attachment 1). The sandstone cutting process creates minimal amounts of noise due to the nature of the material (damp and the blade may be wetted when the sandstone is drier) and slow cutting process.

B.3.1 Sensitive receptors

Figure S-1 provides a definitive map of sensitive receptors within the meaning provided below. For the purposes of this Supplement, we have taken a very broad view of the term ‘sensitive receptor’ which we have defined as –

‘Any building or part of a building lawfully used as, or for the purposes of, a private residence or residential flat and including the curtilage of the building or, where the boundaries of the curtilage are not ascertainable, the land within a distance of 25 metres from the building.

AND

The nearest edge of a property to the closest proposed quarry face at year 5 where there is any building or part of a building -

(i) unlawfully used/constructed; or

(ii) the construction of a dwelling is Discretionary pursuant to the Glamorgan Spring Bay Interim Planning Scheme 2015.’
These 9 locations have been identified by us as being relevant to this project and meet the definition of ‘sensitive receptor’ applied in this Supplement.

There seems to have been some confusion around the locations of noise assessment work, especially Locations 2 and 7. The locations numbered in the report by Mr Terts (page A1 of Attachment 1 in this Supplement and page A1 of Attachment 2 of the DPEMP) are the same as those labelled in Figure 4-4-2 of the DPEMP -

- Location 2 is 76 Sally Peak Road; and
- Location 7 is 5826 Tasman Highway.

B.3.2 Revised Noise Assessment

The noise assessment conducted and reported within the DPEMP documentation took into consideration the potential to use Sally Peak Road to cart some or all of the blocks of sandstone from the quarries to the Tasman Highway. The assessment of truck noise and its potential to cause environmental nuisance was part of the project development (the planning stage) and is therefore integral to the understanding of why the access off the Tasman Highway to the development has been proposed in the formal application that was lodged.

The results of the noise assessment, which are outlined in the report by Mr Terts in the DPEMP and also in the revised version of his report (Attachment 1 of this Supplement) made it clear that the use of Sally Peak Road may be unacceptable in relation to the generation of noise from the type of truck needed to be used for the activity. There were also some concerns expressed through the community consultation phase conducted by the proponent about the use of Sally Peak Road – mainly noise related matters, and one which related to safety due to the current poor road surface. The option of using Sally Peak Road was therefore abandoned in favour of solely using an existing access onto the Tasman Highway. The shift to this access meant that greater scrutiny was then applied to the potential for noise nuisance to occur at 5268 Tasman Highway (Location 7 in Attachment 1, Site A in Figure S-1).

The use of the access road between the quarry faces by machinery will be intermittent as the machinery nominated in the DPIPWE will only be able to be used at any one face at any one time. As the colouration of the sandstone in each pit is different and orders are likely to be large the machinery would not be traversing between the pits regularly, rather they are likely to remain in the one pit for weeks or months (except when they need to be removed for repair and/or service). This approach avoids the risk of cumulative noise propagation which may otherwise occur from the cutting of blocks at the two faces concurrently. The noise generated by machinery ‘moving’ has been factored into the calculations done by Mr Terts as his noise readings for the machines included them running, moving and operating.

To further explore the potential impact of noise emissions from the activity, and to respond to the request for additional information from the EPA, Mr Terts calculated the likely noise levels from the operation of the stone cutter (Leq =68 dB(A) at 28 m) and the excavator (Leq = 62.4 dB(A) at 28 m) for the A to I shown on Fig S – 1: Sensitive Receptor Locations, ‘Sally Peak’ Sandstone Quarries – DP & EMP dated 28 October 2015, TASMAP: Buckland 5428. As noted by Mr Terts in his report, the calculations are based on geometric spreading of noise from a point source and an excess attenuation of 3 dB(A)/km. The stone cutter generates 5.6 dB(A) more noise at 28 m than the excavator – noting that the stone cutting blade is operated by an excavator, hence the noise created is greater than just the excavator alone. Calculations were performed for each machine and the noise levels were combined as shown in the last column below.

The table of calculated noise figures is from the report prepared by Mr Terts in Attachment 1 -

<table>
<thead>
<tr>
<th>Site in Figure S-1</th>
<th>Address</th>
<th>Distance to nearest quarry (m)</th>
<th>Stonecutter Leq dB(A)</th>
<th>Excavator Leq dB(A)</th>
<th>Both Leq dB(A)</th>
</tr>
</thead>
</table>
All predicted noise levels from the operation of the machinery alone or concurrently are low, and in most cases would be inaudible.

**B.3.3 Truck Noise and Sensitive receptors**

The issue of truck noise and its attenuation/impact to sensitive receptors was explored by Mr Terts in his revised report of November 2015 (Attachment 1), particularly to the residence at 5826 Tasman Highway as this is the closest residence to the access road where it meets the Tasman Highway (see location A in Figure S-1).

The table of calculated noise figures is from the report prepared by Mr Terts in Attachment 1 -

<table>
<thead>
<tr>
<th>Site in Figure S-1</th>
<th>Address</th>
<th>Distance to nearest quarry (m)</th>
<th>Attenuation dB cf. 90m</th>
<th>Leq(11 h) dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5826 Tasman Highway</td>
<td>90</td>
<td>-</td>
<td>43.6</td>
</tr>
<tr>
<td>B</td>
<td>76 Sally Peak Rd (SPR)</td>
<td>570</td>
<td>16.0</td>
<td>27.6</td>
</tr>
<tr>
<td>C</td>
<td>104 SPR</td>
<td>560</td>
<td>15.9</td>
<td>27.7</td>
</tr>
<tr>
<td>D</td>
<td>104 SPR</td>
<td>450</td>
<td>14.0</td>
<td>29.6</td>
</tr>
<tr>
<td>E</td>
<td>30 SPR</td>
<td>1,020</td>
<td>21.1</td>
<td>22.5</td>
</tr>
<tr>
<td>F</td>
<td>9 SPR</td>
<td>1,280</td>
<td>23.0</td>
<td>20.5</td>
</tr>
<tr>
<td>G</td>
<td>101 SPR</td>
<td>1,030</td>
<td>21.2</td>
<td>22.4</td>
</tr>
<tr>
<td>H</td>
<td>168 SPR</td>
<td>730</td>
<td>18.2</td>
<td>25.4</td>
</tr>
<tr>
<td>I</td>
<td>169 SPR</td>
<td>900</td>
<td>20.0</td>
<td>23.6</td>
</tr>
</tbody>
</table>

All predicted noise levels from the operation of a truck are low.

Mr Terts in his assessment (Attachment 1) notes in conclusion of his work –

‘The measured ambient noise levels in terms of Leq indicate that the 10 dB(A) differential requirement of the Quarry Code of Practice, between the noise level with the sandstone quarry operating and when shut down, is likely to be met at the nearest residents.

The timbered rural sound scape has an assemblage of noises such as irrigation systems, harvesting machines, tractors, trail bikes, pumps. The diesel based noise of this proposal is similar in
characteristics to the existing rural sounds. It is not a different sound that might be associated with a large sub station or chipper or a jet engine testing facility.

My opinion is that one truck every 14 minutes is unlikely to generate complaints from the occupants of the house at sensitive site A (5826 Tasman Highway, Figure S-1) because of the rural noise climate (tractors in the fields, chain saws etc.). It is not as if there is an increase of continuous noise. The truck noise event passes and then there is quiet.

In this analysis we have taken the ambient noise at site A (Figure S-1) as being Leq = 38.4 dB(A). This was the background L90 noise level. We used this as the measured ambient noise level was 52.6 dB(A) at location 7 (a noise measuring site as shown on page A2 of Appendix A). See page A11 in the Loc 7 column. Since location 7 was closer to the Tasman Highway than the sensitive site A Figure S-1 I would still expect the ambient noise during the daytime at site A to be higher than the assumed 38 dB(A) used in the analysis. Consequently, the difference between the ambient noise Leq(11 h) and the Leq(11 h) noise when trucks use the Jacob (Jake) brake may be less than 5 dB(A).

Should the use of Jacob (Jake) brakes annoy the residents at site A (5826 Tasman Highway), then drivers can be instructed not to use them when passing site A. However, we have assumed that all the 48 truck movements are done by large old 1982 trucks. Modern trucks are less noisy and are often fitted with eddy current type (Telma retarders) braking systems. In addition, not all the trucks going to the quarry are heavy trucks.’

The use of air/engine (Jacob/Jake) brakes is unlikely to occur on the Land as it is relatively flat to only slightly undulating. Vehicle speed will also be low. In recognition of the potential nuisance that may be caused by the use of such brakes Commitment 13 has been added to the existing Commitments already made by the proponent -

**Commitment 13** – Trucks will avoid using air brakes (Jacob/Jake brakes) when on the Land unless they need to be used in the event of an emergency where stopping quickly is of paramount importance for safety of workers, visitors or the environment.

### B.3.4 Dropping of blocks

The potential for noise propagation from the dropping of blocks onto trucks during loading was virtually dismissed for the assessment for two fundamental reasons. The dropping of blocks onto trucks could cause (i) potentially high damage to the truck (especially the tray and suspension) and/or (ii) potential damage to the block - it may cause them to split or chip. Sawmills have the same issue with ‘log drop’ - noise can be excessive when logs are dropped off the truck rather than placed onto the ground in a careful and appropriate manner (it is not a deliberate practice; indeed, it is avoided as the logs can be damaged or shatter which can render them useless for sawmilling). In the sawmill example there is often an EPA imposed condition that logs will not be deliberately dropped. A similar management - permit condition scenario could be applied here to manage this risk and to ensure that the operator is aware if the noise generating potential of dropping blocks onto trucks. This approach is proposed as Commitment 14 to the existing Commitments already made by the proponent.

**Commitment 14** – When handling sandstone blocks, all reasonable and practicable care must be taken to avoid the dropping of sandstone blocks from height, which may otherwise cause excessive noise, by placing them either onto the ground or directly onto the truck.

### B.3.5 Noise Assessment Summary

As noted in the DPEMP –

‘No immediate mitigation measures are deemed to be necessary by the quarry operator at this stage based on the noise assessment. If noise matters become an issue then mitigation measures, subject to the type and extent of the noise nuisance, will be considered and implemented by the quarry proponent."
[Commitment 4]. These may include, for example, additional muffling of the excavator/loader engine and the erection of appropriate fencing/structures near the residence at 5826 Tasman Highway where it is adjacent to the Access Road’ - noise complaints would be recorded and investigated. It is presumptuous at this stage, based on the evidence presented in the noise assessment (Attachment 1), to explore in any detail the noise mitigation measures that may be applied in response to complaints that may be received. The measures would or could be unique to the set of circumstances presented by the complaint, and each should therefore be considered on its merits. Notwithstanding this, there are options to limit noise emissions through the ongoing maintenance of machinery (Commitment 8) and the wetting of the blade that is cutting the sandstone (where additional moisture is required beyond that which is already present within the sandstone being cut).

The most substantial measure could be the installation of a fence or structure along the boundary to the access road with 5826 Tasman Highway, however the evidence suggests that noise propagation from the use of the access road would not cause or is unlikely to cause environmental nuisance to the residential dwelling on the Land given the limitation to the operating hours and avoidance of using air (Jacob/Jake) brakes (Commitment 13). The nature (form, location, shape, width, height, material of construction etc) of the structure would largely be dictated by the nature of the complaint, however those details can be addressed and sought later, the point is that a structure could be built to address the complaints/issues if they arise.

New Commitments (13 and 14) have been proposed by the proponent, as shown in Attachment 2.

B.4 AIR EMISSIONS (WATER SUPPLY)

Water for wetting the blade during cutting (if it is required) and for the dampening of the roadway internal to the property to prevent/minimise dust emissions will be sourced from -

1. the sediment ponds associated with each quarry face; or
2. the on-farm water storage.

Water will not be taken from the Brushy Plains Rivulet. The extraction of water from the on-farm water storage dam is not a planning matter. The alleged ‘big appetite’ for water consumption is conjecture.

B.5 AIR EMISSIONS

The existence of the hardwood plantation is only one part of dust mitigation for the activity. Commitment 5 (Appendix 2 of this Supplement) includes measures that will be used to suppress dust include the following industry environmental practices for quarries:

- Watering of internal roads as required during dry and windy conditions;
- Use of water to wet the cutting blade during sandstone cutting; and
- Minimising the geographic extent of areas of exposed soil.

As noted under B.4, water for wetting the blade during cutting (if it is required) and for the dampening of the roadway internal to the property to prevent/minimise dust emissions will be sourced from -

1. the sediment ponds associated with each quarry face; or
2. the on-farm water storage.

A representor raised the matter of ‘The dust from the extra sandstone processing at Sally Peak may interfere with the only water I can collect to drink, which would be contaminated’.

The representor may be confused with the Level 2 activity – it is for cutting only, not processing. Sandstone processing is occurring at 76 Sally Peak Road as part of the approved level 1 activity.

Notwithstanding this apparent confusion, the sandstone cutting process generates little dust due to the low speed of the cutting blade and damp nature of the parent sandstone material being cut. The blade can be wetted to cut drier sandstone where it may have been left to dry before being cut. The damp nature of the
sandstone when freshly exposed ready for cutting also reduces noise of the cutting as the moist material better absorbs and dissipates vibration (a source of noise).

The potential source of dust is most likely to be from the sandy soils around the exposed void on windy dry days in summer, which will be addressed by dampening with water from a truck (using water from a dam on the property), the establishment of grass cover in some locations and also engineered products to stabilise the soil surface (Hydroguard is a useful product for this sort of quarry activity, http://www.envirosupplies.com.au/product/hydroguard-soil-stabilisation/).

B.6 WASTE MANAGEMENT

There will be no permanent toilet or other amenities provided on site. During periods of high or extended use a ‘portaloo’ will be provided on-site until quarry usage no longer justifies the provision of the portaloo. The contents of the portaloo will be disposed of at an approved sewage processing facility. This approach is proposed as Commitment 15 to the existing Commitments already made by the proponent.

Commitment 15 - During periods of high or extended use a ‘portaloo’ will be provided on-site until quarry usage no longer justifies the provision of the portaloo. The contents of the portaloo will be disposed of at an approved sewage processing facility.

Public toilets are available at Buckland when the portaloo is not provided at the quarry.
Attachment 1  Revised Noise Assessment November 2015
Sally Peak Sandstone Pty. Ltd. Quarry Noise Issues 18/11/2015

SUMMARY

1. The quarry operations were not heard at a location near the nearest resident dwelling. The Quarry Code of Practice requirements are likely to be met.
2. The quarry truck traffic (48 movements maximum) may increase the noise level from about Leq (11 h) = 38 dB(A) to 39.4 dB(A) at the curtilage of the house on the western access route (5826 Tasman Highway, Buckland) if trucks do not use Jacob brakes. If they do use Jacob brakes as they approach the highway, the noise level is likely to be Leq (11 h) = 43.6 dB(A). At other sensitive receptor sites Leq(11 h) is less than 30 dB(A).
3. Complaints are unlikely from the noise of one truck every 14 minutes (maximum) in a working rural setting.

INTRODUCTION:

Noise annoyance depends on the following factors:

1. the level of the existing ambient noise
2. the level of the new noise with the quarry in operation
3. whether the new noise has tonal components
4. whether the new noise has impulsive components
5. the time of the day the new noise occurs
6. whether the new noise carries unwanted intelligence such as waning announcements
7. noise annoyance is also dependent on the listener’s perception of whether the noise is regretfully caused, imposed in ignorance or inflicted as an act of aggression.

The Tasmania Quarry Code of Practice (June 1999), page 10 states: “With the exception of blasting where permitted, noise from activities in a quarry affecting residential premises, must not exceed 10 dB(A) above the normal ambient noise levels during daytime operations”.

No blasting takes or crushing will place at the sandstone quarries.
Noise measurements were conducted on 16/3/2015 at the proposed North and South Sally Peak Sandstone quarries and at 5 other locations, with the adjoining Level 1 quarry operating not operating, to obtain ambient, background and operating noise levels. The location of noise monitoring/measuring are shown in Appendix A.

In addition, we measured and calculated the likely noise impact of quarry trucks using the proposed quarry access road, especially the residence at 5826 Tasman Highway, Buckland, Tas. 7190 designated as Loc. 7 on the aerial photograph on pages A 2 and A 3).

The noise monitoring/measuring results are given in Appendix A.

RESULTS:

Field Measurements

Pages A 1 to A23 (Appendix A) give the results of field measurements conducted on 16/3/2015.

The Komatsu PC200 is powered by a 110 kW 6 cylinder turbo engine had a 2.1 m diameter saw with 76 teeth. It cuts 800 mm deep.

The Kobelco SK330 excavator of 245 hp was fitted with a 3 m³ bucket.

The main results of the noise measuring are shown on page A 11 - consider the table on page A 11.

Explanation of terms:

Ln is the noise level exceeded for n % of the time. Hence, L90 is a good descriptor of the base or background noise level. For example, if L90 = 31.9 dB(A) then that means that for 90 % of the 10 minute sample, that is, 9 minutes, the noise level was 31.9 dB(A) or more. Similarly, L10 is a good descriptor of the average of the higher noise events encountered. If, for example, L10 = 44.6 dB(A) then that means that for 10 % or 1 minute, the noise level was 44.6 dB(A) or more.

Leq is the equivalent ‘A’ weighted noise level. A fluctuating noise having an Leq = 42.8 dB(A) has the same acoustic energy as a steady noise of 42.8 dB(A).

The results showed that the sandstone quarry operations, using the stone cutters and the excavator, could not be heard at Locations 2 or 3.

Calculations to sensitive receptors/property boundaries

The likely noise levels from the operation of the stone cutter (Leq = 68 dB(A) at 28 m) and the excavator (Leq = 62.4 dB(A) at 28 m) have been calculated for the locations A to I shown on Fig S – 1: Sensitive Receptor Locations, ‘Sally Peak’ Sandstone Quarries – DP & EMP dated 28 October 2015, TASMAP: Buckland 5428. Locations A to I are shown on Fig S-1 of the ‘Sally Peak’ Sandstone Quarries – DP& EMP distances to nearest quarries based on extent year 5.

The calculations are based on geometric spreading of noise from a point source and an excess attenuation of 3 dB(A)/km. The stone cutter generates 5.6 dB(A) more noise at 28 m than the excavator. Calculations were performed for each machine and the noise levels were combined as shown in the last column below -
<table>
<thead>
<tr>
<th>Site</th>
<th>Address</th>
<th>Distance to nearest quarry (metres)</th>
<th>Stone Cutter Leq dB(A)</th>
<th>Excavator Leq dB(A)</th>
<th>Both Leq dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>5826 Tasman Highway</td>
<td>870</td>
<td>35.5</td>
<td>29.9</td>
<td>36.5</td>
</tr>
<tr>
<td>B</td>
<td>76 Sally Peak Road</td>
<td>435</td>
<td>42.8</td>
<td>37.2</td>
<td>43.8</td>
</tr>
<tr>
<td>C</td>
<td>104 &quot; &quot; &quot;</td>
<td>440</td>
<td>42.8</td>
<td>37.2</td>
<td>43.8</td>
</tr>
<tr>
<td>D</td>
<td>104 &quot; &quot; &quot;</td>
<td>460</td>
<td>42.3</td>
<td>36.7</td>
<td>43.4</td>
</tr>
<tr>
<td>E</td>
<td>30 &quot; &quot; &quot;</td>
<td>980</td>
<td>34.2</td>
<td>28.6</td>
<td>35.2</td>
</tr>
<tr>
<td>F</td>
<td>9 &quot; &quot; &quot;</td>
<td>1130</td>
<td>32.5</td>
<td>26.9</td>
<td>33.5</td>
</tr>
<tr>
<td>G</td>
<td>101 &quot; &quot; &quot;</td>
<td>910</td>
<td>35.0</td>
<td>29.4</td>
<td>36.1</td>
</tr>
<tr>
<td>H</td>
<td>168 &quot; &quot; &quot;</td>
<td>740</td>
<td>37.3</td>
<td>31.3</td>
<td>38.4</td>
</tr>
<tr>
<td>I</td>
<td>169 &quot; &quot; &quot;</td>
<td>910</td>
<td>32.8</td>
<td>27.2</td>
<td>33.8</td>
</tr>
</tbody>
</table>

**QUARRY TRUCK TRAFFIC NOISE**

**Sensitive Receptor Site A (5826 Tasman Highway)**

Measurements at location 2, page A3, using the truck shown on page A6 gave a 10 minute Leq = 55 dB(A) at 7.5 m when recording 6 truck pass by tests. See result shown on page A11.

It is estimated that to remove 110,000 tonnes of sandstone requires a maximum of 48 truck movements in an 11 hour working day (0700 h to 1800 h). There are 66 ten minute periods in this time, with 8 ten minute periods due to 48 truck movements at Leq = 55 dB(A) and 66–8 = 58 ten minute periods having a noise level of Leq = 39.3 dB(A). The combined Leq = 46.6 dB(A) at 7.5 m at location 2. However, for the western access route, the sensitive residence is at site A, near location 7 shown on page A4. The house curtailage is 90 m from the road, therefore there is an attenuation due to geometric spreading of the sound, of 20 log(90/7.5) = 21.6 dB(A). We subtract this from 46.6 dB(A) to give 46.6– 21.6 = 25 dB(A) due to the trucks alone. The truck was estimated to carry a 5 tonne sandstone block.

As we did not have at our disposal for the tests a large truck, we use the results of truck noise measuring tests done at another location.

Our firm has recently (20/3/2015 at Rekuna, Tea Tree) measured. empty and loaded quarry trucks at a distance of 84 m from the unsealed quarry access road. The empty truck was a 1998 Volvo NH with a 420 hp diesel engine. The loaded truck was a 1998 Mack CH with a 400 hp diesel engine. Both trucks were rated at 21.5 tonnes. The trucks were travelling at about 30 kmh. The following noise levels were obtained -

<table>
<thead>
<tr>
<th>Leq(10 min) dB(A)</th>
<th>Loaded, from quarry</th>
<th>Empty, to quarry</th>
</tr>
</thead>
<tbody>
<tr>
<td>44.8</td>
<td></td>
<td>47.0</td>
</tr>
<tr>
<td>48.6</td>
<td></td>
<td>47.4</td>
</tr>
<tr>
<td>46.6</td>
<td></td>
<td>45.3</td>
</tr>
<tr>
<td>Mean 46.66</td>
<td>mean 46.56</td>
<td></td>
</tr>
</tbody>
</table>

Mean (to and from) = 46.6 dB(A) at 84 metres

The location A (Figure S-1) house curtailage to road distance is approximately 90 m. Hence we subtract 20 log(90/84) = 0.6 dB(A) from 46.6 dB(A), making a total of 46 dB(A).
So now we have 66 lots of 10 minutes, in the 11 hour working day, of which 48 lots of 10 minute samples contain the truck noise of $\text{Leq} = 46$ dB(A) and $66 - 48 = 18$ lots of 10 minutes contain the ambient noise of about 38.4 dB(A). This combination results in $\text{Leq}(11\ h) = 44.9$ dB(A).

$$\text{Leq}(11\ h) = 10 \log(1/66)(18 \times 10^{3.84} + 48 \times 10^{4.6}) = 44.9\ \text{dB(A)}$$

However, following the up/down truck pass-by tests, we measured three 10 minute samples of ambient noise at the site, with the following results -

$$\text{Leq (10 min)} = 46.2\ \text{dB(A)}, 43.6\ \text{dB(A)}, \text{and } 45.7\ \text{dB(A)}$$

to give a mean ambient noise of $\text{Leq} = 45.2$ dB(A).

The truck pass-by measuring location was about 300 m from a major country arterial road and the traffic noise from the road was dominant. The above analysis is an indication of the likely noise levels.

On 27/10/2015 there was an opportunity to measure the pass-by noise of a large 1982 rigid Kenworth truck, model W9-81A, Reg. No E10 KB. The diesel engine (2 stroke) has a capacity of 14021 cc, and a GVM = 23590 kgm. The noise measuring test consisted of the loaded truck going up and down a gravel road that had a gradient of 15.8%. The sound level meter was located 10 m from the closest wheels. At 90 m (cartilage to nearest house to access road at location A in Figure S-1) the noise level is reduced by $20 \log(90/10) = 19.1$ dB(A) due to geometric spreading of sound. This time we used a 1 minute $\text{Leq}$ rather than the 10 minute $\text{Leq}$ used previously, in order to get a better signal to noise ratio of the truck noise.

The following results were obtained at 10 m and calculated for 90 m -

<table>
<thead>
<tr>
<th></th>
<th>Leq (1 min) dB(A)</th>
<th>Lmax dB(A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(10 m)</td>
<td>(90 m)</td>
</tr>
<tr>
<td>Up</td>
<td>66.6</td>
<td>47.5</td>
</tr>
<tr>
<td>Up</td>
<td>65.7</td>
<td>46.6</td>
</tr>
<tr>
<td>Mean</td>
<td>66.2</td>
<td>47.1</td>
</tr>
<tr>
<td>Down</td>
<td>60.2</td>
<td>41.1</td>
</tr>
<tr>
<td>Down (Jake brake)</td>
<td>75.1</td>
<td>56.0</td>
</tr>
</tbody>
</table>

Hence, there are 24 movements to the quarry, 24 movements from the quarry (total of 48, each 1 min.) and $660 - 48 = 612$ lots of 1 minute ambient noise. If we assume that the engine brake is used as the truck approaches the highway, then the combined noise level over 11 working hours, due to quarry truck traffic is -

$$\text{Leq (660 min)} = 10 \log(1/660)(24 \times 10^{5.6} + 24 \times 1064.71 + 612 \times 10^{3.84})$$

$= 43.6$ dB(A) if using Jake brake and

$$\text{Leq(660 min)} = 10 \log (1/660)( 24 \times 10^{4.11} + 24 \times 10^{4.71} + 612 \times 10^{3.84})$$

$= 39.4$ dB(A) if not using Jake brakes.
This is due to geometric spreading and gives an indication of the likely noise due to passing quarry trucks. There will be at the most, on the average one truck per 14 minutes. The trucks will only travel in daylight hours and are unlikely to generate community noise complaints.

**QUARRY TRUCK TRAFFIC NOISE**

**Sensitive Receptor Sites B to I**

Using only the geometric spreading of sound from a point source, the truck, as it passes the sensitive receptor sites at the closest distance (locations A to I in Figure S-1), the truck noise for the 11 hour working day was calculated for the other sites and the results are given below -

<table>
<thead>
<tr>
<th>Site</th>
<th>Distance (Metres)</th>
<th>Attenuation (dB cf. 90 m)</th>
<th>Leq (11 h) (dB(A))</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>90</td>
<td>-</td>
<td>43.6</td>
</tr>
<tr>
<td>B</td>
<td>570</td>
<td>16.0</td>
<td>27.6</td>
</tr>
<tr>
<td>C</td>
<td>560</td>
<td>15.9</td>
<td>27.7</td>
</tr>
<tr>
<td>D</td>
<td>450</td>
<td>14.0</td>
<td>29.6</td>
</tr>
<tr>
<td>E</td>
<td>1,020</td>
<td>21.1</td>
<td>22.5</td>
</tr>
<tr>
<td>F</td>
<td>1,280</td>
<td>23.0</td>
<td>20.5</td>
</tr>
<tr>
<td>G</td>
<td>1,030</td>
<td>21.2</td>
<td>22.4</td>
</tr>
<tr>
<td>H</td>
<td>730</td>
<td>18.2</td>
<td>25.4</td>
</tr>
<tr>
<td>I</td>
<td>900</td>
<td>20.0</td>
<td>23.6</td>
</tr>
</tbody>
</table>

The above calculation does not include excess attenuation due to propagation over grasslands, through trees, through atmosphere and so on.

**CONCLUSION:**

The measured ambient noise levels in terms of Leq indicate that the 10 dB(A) differential requirement of the Quarry Code of Practice, between the noise level with the sandstone quarry operating and when shut down, is likely to be met at the nearest residents.

The timbered rural sound scape has an assemblage of noises such as irrigation systems, harvesting machines, tractors, trail bikes, pumps. The diesel based noise of this proposal is similar in characteristics to the existing rural sounds. It is not a different sound that might be associated with a large sub station or chipper or a jet engine testing facility.

My opinion is that one truck every 14 minutes is unlikely to generate complaints from the occupants of the house at sensitive site A (5826 Tasman Highway, Figure S-1) because of the rural noise climate (tractors in the fields, chain saws etc.). It is not as if there is an increase of continuous noise. The truck noise event passes and then there is quiet.

In this analysis we have taken the ambient noise at site A (Figure S-1) as being Leq = - 38.4 dB(A). This was the background L90 noise level. We used this as the measured ambient noise level was 52.6 dB(A) at location 7 (a noise measuring site as shown on page A2 of Appendix A). See page A11 in the Loc 7 column. Since location 7 was closer to the Tasman Highway than the sensitive site A Figure S-1 I would still expect the ambient noise during the daytime at site A to be higher than the assumed 38 dB(A) used in the analysis. Consequently, the difference between the ambient noise Leq(11 h) and the Leq(11 h) noise when trucks use the Jacob (Jake) brake may be less than 5 dB(A).
Should the use of Jacob (Jake) brakes annoy the residents at site A (5826 Tasman Highway), then drivers can be instructed not to use them when passing site A. However, we have assumed that all the 48 truck movements are done by large old 1982 trucks. Modern trucks are less noisy and are often fitted with eddy current type (Telma retarders) braking systems. In addition, not all the trucks going to the quarry are heavy trucks.

Pearu Terts
Buckland Sandstone Quarry
Field report for site visit 16/3/2015
Appendix A to be read in conjunction with main report

General

The sandstone quarry (2 sites in close proximity) south of Buckland intends to increase operating intensity, cutting bedrock blocks and transporting off site to domestic and export customers. The operation does not involve blasting or crushing. There are a number of residential neighbours alongside access routes to the Tasman Highway. This report describes the findings of noise monitoring and observations from the site visit 12:30-18:30, 16/3/2015.

Instruments used

- Brüel & Kjær Sound Level Calibrator Type 4230 s/n 1169836, Laboratory Certified February 2014;
- Norsonic Precision Sound Level Meter Nor131, s/n 1312829, Laboratory Certified December 2014;
- Rion Precision Integrating Sound Level Meter Model NL-11, s/n 150321, with Rion Octave Band Filter Model NX-01A, s/n 10851228,
- Brüel & Kjær Precision Sound Level Meter Type 2232 s/n 1129761;
- Standard Sound Level Meter/Datalogger ST8852, s/n 12104155
- Weather Instruments (Aneroid barometer, Zeal Wet/Dry bulb Psychrometer, Suunto KB-14/360R compass, Kaindl Windmaster 2 wind speed meter);
- 100 m fiberglass tape

Location definitions

The locations for measurements were defined as follows:

<table>
<thead>
<tr>
<th>#</th>
<th>Location</th>
<th>Definition/comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Church corner 1</td>
<td>Neighbour access road off road bend by church graveyard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>118 m from edge of Tasman Highway.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 m from nearest edge of sealed road corner,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>11 m from neighbour’s gate. Microphone at 1.5 m height.</td>
</tr>
<tr>
<td>2</td>
<td>House corner</td>
<td>Neighbour house at 2nd corner of eastern access route.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>At boundary fence 25 m from gate at corner, approx level with house.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.5 m from edge of sealed road. Microphone at 1.2 m height.</td>
</tr>
<tr>
<td>3</td>
<td>Castle house</td>
<td>On access road by shed near house facing the stone processing area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Microphone at 1.2 m height.</td>
</tr>
<tr>
<td>4</td>
<td>North quarry</td>
<td>Side on view at 28 m from operating Komatsu PC200 with stone cutter.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>At north quarry. Microphone at 1.2 m height.</td>
</tr>
<tr>
<td>5</td>
<td>South quarry 1</td>
<td>Side on view at 28 m from operating Kobelco SK330 with bucket.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>At south quarry. Microphone at 1.2 m height.</td>
</tr>
<tr>
<td>6</td>
<td>South quarry 2</td>
<td>Side on view approx 60 m from operating Kobelco SK330 with bucket.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>At south quarry. Microphone at 1.2 m height.</td>
</tr>
<tr>
<td>7</td>
<td>Western access</td>
<td>At western access route, 75 m from junction of Tasman Hwy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Microphone at 1.2 m height.</td>
</tr>
<tr>
<td>8</td>
<td>Church corner 2</td>
<td>By neighbour gate, off road bend by church graveyard.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18.5 m from nearest edge of sealed road corner,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 m from neighbour’s gate. Microphone at 1.5 m height.</td>
</tr>
</tbody>
</table>

Aerial photos, map, plan and photographs are on the following pages.

[Last revised 18/3/2015]
Airphoto overview showing monitoring locations

Location 4 is the site of the north quarry, Location 5 & 6 is at the southern quarry.
Image sourced from TheList 17/3/2015; note 500 m scale bar, 5 m contours and boundary lines.
Airphoto showing eastern monitoring locations

Location 1 & 8 are by the entry to the neighbour residence approximately 100 m to the south, Location 2 is roadside by the house 25 m to the west.

Image sourced from Google 18/3/2015; note 50 m scale bar.
Location 7 is on the western access track, the relating house is 160 m to the WSW. Image sourced from Google 18/3/2015; note 50 m scale bar.
Panorama photograph – South Quarry

View of quarry showing machinery before tests, looking to western-southern arc, 16/3/2015

Note the 4-photo composite has minor join error and distortion
Site photographs

Location 1, 118 m from Tasman Hwy, noting test truck passing, 16/3/2015

Location 2, level with house, 16/3/2015

Location 2 during test truck pass, 16/3/2015
Site photographs

Location 3, by shed behind house, 16/3/2015

Location 4, measuring stone cutting noise 28 m away at North quarry, 16/3/2015
Site photographs

Location 5, measuring stone cutting noise 28 m away at South quarry, 16/3/2015

Location 7, measuring ambient noise 75 m away from highway junction, 16/3/2015

Location 8, alternative position to Location 1, 16/3/2015
Weather observations

Conditions were suitable for noise measurements. Breeze increased and then decreased. Details are shown alongside.

<table>
<thead>
<tr>
<th>Location</th>
<th>Date</th>
<th>Time</th>
<th>Temp °C</th>
<th>Relative Humidity %</th>
<th>Pressure hPa</th>
<th>Wind speed average m/s</th>
<th>Wind speed maximum m/s</th>
<th>Wind direction</th>
<th>Cloud cover x/8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loc 2</td>
<td>16/3/2015</td>
<td>14:00</td>
<td>19</td>
<td>58</td>
<td>1010</td>
<td>1.8</td>
<td>4.3</td>
<td>NE</td>
<td>3</td>
</tr>
<tr>
<td>Loc 3</td>
<td>16/3/2015</td>
<td>15:15</td>
<td>18</td>
<td>56</td>
<td>1008</td>
<td>2</td>
<td>3.5</td>
<td>NNE</td>
<td>4</td>
</tr>
</tbody>
</table>

Noise descriptions

For each location, ambient noise by source noted during the site visit is listed (in descending order of significance by loudness, noticeability, duration and incidence):

Location 1 & 8
- Test truck passes
- Highway traffic (80 km/h zone) including occasional trucks and motorbikes
- Local vehicle passes
- Dog, voices
- Birds including crows
- Breeze in trees

Location 2
- Test truck passes
- Highway traffic
- Local vehicle passes
- Birds
- Crickets
- Breeze in trees

Location 3
- Highway traffic (100 km/h zone)
- Birds
- Crickets
- Breeze in trees
- Seaplane

Location 4, 5 & 6
- Test operations (excavator/s using cutter or bucket) dominate during tests
- Highway traffic (100 km/h zone)
- Birds
- Crickets
- Breeze in trees

Location 7
- Highway traffic
- Crickets
- Birds
- Breeze in trees
Comments

- Daytime noise measurements were conducted under suitable conditions 16/3/2015.
- Quarry operations during test periods were not audible at Location 2 or 3. Locations 1 and 7 were not attended during quarry tests but these are farther distant from the quarry than Locations 2 and 7.
- Neighbours adjacent may expect noise events from trucks entering and leaving the quarry, when passing the eastern or western access road. Trucks arrive empty and leave loaded.
- Machinery noted at or associated with the Quarry:
  - Komatsu PC200 20 t excavator with cutter attached
  - Kobelco SK330 excavator with loader bucket attached
  - 8 t rigid truck
  - each used for separate tests
- The remoteness, topography, and depressions of both quarries assists in local noise abatement.
- No reversing alarms were evident during the tests from any vehicle.
### Statistical analysis and measurements of noise over 5-10 minute periods

<table>
<thead>
<tr>
<th>Location</th>
<th>Loc 1</th>
<th>Loc 2</th>
<th>Loc 2</th>
<th>Loc 3</th>
<th>Loc 3</th>
<th>Loc 3</th>
<th>Loc 4</th>
<th>Loc 5</th>
<th>Loc 7</th>
<th>Loc 1</th>
<th>Loc 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
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<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
<td>16/03/2015</td>
</tr>
<tr>
<td>Duration</td>
<td>10 min</td>
<td>10 min</td>
<td>10 min</td>
<td>10 min</td>
<td>10 min</td>
<td>10 min</td>
<td>10 min</td>
<td>5 min</td>
<td>10 min</td>
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</tr>
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<td>6000</td>
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<tr>
<td>Comment</td>
<td>Ambient</td>
<td>Ambient</td>
<td>6x trucks 7.5 m</td>
<td>Ops</td>
<td>Ambient</td>
<td>Ambient</td>
<td>Cutting 28 m</td>
<td>Excavator 28 m</td>
<td>Ambient</td>
<td>6x trucks 11 m</td>
<td>1x trucks 18.5 m</td>
</tr>
<tr>
<td>Lmax</td>
<td>62.0</td>
<td>60.4</td>
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<td>69.7</td>
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<tr>
<td>L0.1</td>
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<td>70.0</td>
<td>55.2</td>
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<td>73.3</td>
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<td>Leq C</td>
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<td>81.7</td>
<td>58.4</td>
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<td>63.2</td>
</tr>
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</table>

Test quarry operations were not audible at Location 2 or 3.
Statistical analysis of ambient and truck test noise at Location 1 and 8

Statistical analysis of ambient and truck test noise over 10 minute periods at Location 2
Statistical analysis of ambient and north quarry test noise at Location 3

Quarrying was not audible in the first test period. The 15:15 measurement included a seaplane pass.

Statistical analysis of ambient noise over 10 minute period at Location 7
Statistical analysis of ambient and quarry test noise at Location 4 and 5

![Graph showing noise level distribution](image)

Location 4: cutter test at 28 m in north quarry
Location 5: excavator test at 28 m in south quarry
# Spectral (octave) analysis of ambient and test noise

<table>
<thead>
<tr>
<th>Location</th>
<th>Loc 1</th>
<th>Loc 2</th>
<th>Loc 2</th>
<th>Loc 3</th>
<th>Loc 4</th>
<th>Loc 5</th>
<th>Loc 7</th>
<th>Loc 1</th>
<th>Loc 8</th>
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<tbody>
<tr>
<td>Comment</td>
<td>Ambient</td>
<td>Ambient</td>
<td>6x trucks 7.5 m,</td>
<td>Ops</td>
<td>Ambient,</td>
<td>Cutting 28 m</td>
<td>Excavator 28 m</td>
<td>Ambient</td>
<td>6x trucks 11 m,</td>
</tr>
<tr>
<td>Duration</td>
<td>10 min</td>
<td>10 min</td>
<td>10 min</td>
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<td>10 min</td>
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<td>68.0</td>
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<tr>
<td>C</td>
<td>57.3</td>
<td>53.6</td>
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<td>59.4</td>
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<td>63</td>
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<td>46.5</td>
<td>63.6</td>
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<td>53.4</td>
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<td>43.1</td>
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<td>68.1</td>
<td>60.5</td>
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<td>35.4</td>
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<td>63.7</td>
<td>55.3</td>
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<td>1k</td>
<td>37.9</td>
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<td>36.1</td>
<td>36.0</td>
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<td>62.5</td>
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<td>8k</td>
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<td>27.3</td>
<td>28.1</td>
<td>49.4</td>
<td>42.0</td>
</tr>
</tbody>
</table>
Spectral (octave) analysis of ambient and truck test noise at Location 1

Octave band spectra of measured noise
Loc 1 & 8, Buckland Sandstone Quarry project, 16/3/2015

Test at Location 8 was corrupted by close proximity of vehicle, dogs and voices
Spectral (octave) analysis of ambient and truck test noise at Location 2

Octave band spectra of measured noise
Location 2, Buckland Sandstone Quarry project, 16/3/2015

- Ambient 10 min
- 6x trucks 7.5 m, 10 min
Spectral (octave) analysis of ambient and quarry test noise at Location 3

Octave band spectra of measured noise
Location 3, Buckland Sandstone Quarry project, 16/3/2015

The quarry test was not audible.
The 15:15 measurement included a seaplane pass
Spectral (octave) analysis of ambient noise at Location 7

Octave band spectra of measured noise
Location 7, Buckland Sandstone Quarry project, 16/3/2015

Traffic passing at 100 km/h generates noticeable tyre noise 1-2 kHz
Spectral (octave) analysis of quarry test noise at Location 4 and 5

Octave band spectra of measured noise
Locs 4 & 5, Buckland Sandstone Quarry project, 16/3/2015

Location 4: cutter test at 28 m in north quarry
Location 5: excavator test at 28 m in south quarry
Datalogger monitoring of truck test noise at Location 2

Noise at Location 2, Buckland Sandstone Quarry project, data logged 14:34-14:44, 16/3/2015
sound pressure level, sampled once per second

Three round trips of test truck: each a sequence of a northbound pass followed by southbound pass.
Closest truck pass distance: 7.5 m.
Datalogger monitoring of truck test noise at Location 1

Noise at Location 1, Buckland Sandstone Quarry project, data logged 17:44-17:54, 16/3/2015
sound pressure level, sampled once per second

Three round trips of test truck: each a sequence of a downhill pass followed by uphill pass.
Closest truck pass distance: 11 m.
Datalogger monitoring of truck test noise at Location 8

Noise at Location 8, Buckland Sandstone Quarry project, data logged 18:02-18:12, 16/3/2015
sound pressure level, sampled once per second

- Truck test pass
- Ambient traffic noise
- Voices, dog barks

Single uphill trip of test truck at start of measurement. Following this was ambient traffic noise and a local car pass.
The final period featured dog barks and voices in close proximity to the microphone.
Closest truck pass distance: 18.5 m.
Attachment 2  Proponent Revised ‘DPEMP Commitments Table’
<table>
<thead>
<tr>
<th>Number</th>
<th>Commitment</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Operating hours will be – 0700 to 1900 hrs Monday to Friday, 0800 to 1600 hrs on Saturday; closed on Sunday and public holidays.</td>
<td>Ongoing once activity is approved</td>
</tr>
<tr>
<td>2</td>
<td>A Weed Management Plan will be prepared during the commissioning stage of both quarry faces for approval by the EPA.</td>
<td>Within 2 months of project approval</td>
</tr>
<tr>
<td>3</td>
<td>For ease of management each sediment pond will be cleaned out on a four monthly basis. The collected sediment will be mixed with stockpiled top soil for progressive rehabilitation of disused quarry areas.</td>
<td>Dams constructed with 3 months of activity approval, and then ongoing maintenance</td>
</tr>
<tr>
<td>4</td>
<td>If noise matters become an issue then mitigation measures, subject to the type and extent of the noise nuisance, will be considered and implemented by the quarry proponent.</td>
<td>Ongoing upon approval of the activity</td>
</tr>
<tr>
<td>5</td>
<td>Measures that will be used to suppress dust include the following industry environmental practices for quarries:</td>
<td>Ongoing upon approval of the activity</td>
</tr>
<tr>
<td></td>
<td>• Watering of internal roads as required during dry and windy conditions;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Use of water to wet the cutting blade during sandstone cutting; and</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Minimising the geographic extent of areas of exposed soil.</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>No chemicals, fuels or oils are stored on site overnight and refuelling is carried out using a mobile bund.</td>
<td>Ongoing upon approval of the activity</td>
</tr>
<tr>
<td>7</td>
<td>One hydrocarbon spill kit is to be stored at each quarry face and staff trained in how to use it in the event of a spillage.</td>
<td>Ongoing upon approval of the activity</td>
</tr>
<tr>
<td>8</td>
<td>Machinery owned and operated by the quarry operator is and will continue to be well maintained which ensures maximum fuel/oil efficiency.</td>
<td>Ongoing upon approval of the activity</td>
</tr>
<tr>
<td>9</td>
<td>No disturbance will take place in the immediate vicinity of a cave or shelter without first having it assessed by a suitably qualified and AHT recognised heritage practitioner.</td>
<td>Ongoing upon approval of the activity</td>
</tr>
<tr>
<td>10</td>
<td>The ‘Discovery of Cultural Heritage Items Procedure’ will be implemented if a suspected cultural heritage relic is encountered during excavation works.</td>
<td>Ongoing upon approval of the activity</td>
</tr>
<tr>
<td>11</td>
<td>The ‘Discovery of Skeletal Material Procedure’ will be implemented if skeletal material is encountered during excavation works.</td>
<td>Ongoing upon approval of the activity</td>
</tr>
<tr>
<td>12</td>
<td>In the event of permanent closure of the quarry a detailed Decommissioning and Rehabilitation plan will be developed and submitted to the EPA and MRT for approval.</td>
<td>DRP prepared and provided to the EPA Director within 30 days of formal written notice to the EPA of permanent quarry closure.</td>
</tr>
<tr>
<td>13*</td>
<td>Trucks will avoid using air brakes (Jacob/jake brakes) when on the Land unless they need to be used in the event of an emergency.</td>
<td>Ongoing</td>
</tr>
<tr>
<td></td>
<td>where stopping quickly is of paramount importance for safety of workers, visitors or the environment.</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>14*</td>
<td>When handling sandstone blocks, all reasonable and practicable care must be taken to avoid the dropping of sandstone blocks from height, which may otherwise cause excessive noise, by placing them either onto the ground or directly onto the truck</td>
<td></td>
</tr>
<tr>
<td>15*</td>
<td>During periods of high or extended use a ‘portaloo’ will be provided on-site until quarry usage no longer justifies the provision of the portaloo. The contents of the portaloo will be disposed of at an approved sewage processing facility.</td>
<td></td>
</tr>
</tbody>
</table>

* New commitment
Attachment 3  Community engagement 1 April 2015 – ‘PROPOSED SANDSTONE QUARRY – ‘SALLY PEAK’, TASMAN HIGHWAY, BUCKLAND’
PROPOSED SANDSTONE QUARRY – ‘SALLY PEAK’, TASMAN HIGHWAY, BUCKLAND

Dear Sir/Madam

I write as the planning consultant for Mr Nick Ferrar of ‘Sally Peak’, Buckland.

Mr Ferrar has contracted VDC Pty Ltd to compile the assessment documentation required by the Environment Protection Authority and Glamorgan – Spring Bay Midlands Council for the assessment of a Level 2 Quarry (sandstone blocks) on ‘Sally Peak’.

The activity is to extract up to 50,000 cubic metres of sandstone blocks per annum. It includes the opening of two sandstone faces on ‘Sally Peak’ to extract high-quality sandstone for construction purposes. Attached is a map which shows the site access onto the Tasman Highway and the two sandstone quarry faces that will be the subject of the environmental impact assessment.

The formal documentation that describes the development is yet to be lodged with the EPA and Council. Once lodged and deemed to be acceptable by the regulatory authorities, the development will be advertised by the Glamorgan – Spring Bay Council for public comment pursuant to the Land Use Planning and Approvals Act 1993. The documentation will be available for inspection at the Council Chambers and also the EPA webpage in electronic format. The statutory comment period for the development is 28 days.

To engage with the broader Buckland community about the development in the early stage of planning, Mr Ferrar has asked that I provide an opportunity for community members to discuss the development prior to the planning documentation being submitted to the EPA. This consultation process may result in material changes to the manner in which the activity is conducted to accommodate concerns or suggestions from the broader community but it sits outside the statutory process. The planning documentation is likely to be lodged with the EPA in early May 2015.

In planning the quarry, I can advise that special attention will be given to the potential noise emissions generated by the activity, especially from the sandstone block cutting. A specialist noise survey has been commissioned to inform the impact assessment process. Additional assessments commissioned address biodiversity, weed management and traffic impacts.

I would be pleased to meet with you to discuss the project, or alternatively I am happy to communicate with you by phone and/or email.

My details are: 0438 588 695  rwbarnes73@gmail.com

Yours sincerely

Dr Richard Barnes  B.Sc.(Hons). Ph.D. GDURP MESA MPIA
Director, Principal Regional/Urban Planner, Environmental Specialist, and Ecologist
Attachment 4  Community engagement 4 September 2015 – NOTICE - PUBLIC COMMENT PERIOD
PROPOSED SANDSTONE QUARRY – ‘SALLY PEAK’, TASMAN HIGHWAY, BUCKLAND
NOTICE - PUBLIC COMMENT PERIOD

PROPOSED SANDSTONE QUARRY – ‘SALLY PEAK’, TASMAN HIGHWAY, BUCKLAND

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I write this notice as the planning consultant for Mr Nick Ferrar of ‘Sally Peak’, Buckland.

Mr Ferrar has contracted VDC Pty Ltd to compile the assessment documentation required by the Environment Protection Authority and Glamorgan – Spring Bay Midlands Council for the assessment of a Level 2 Quarry (sandstone blocks) on ‘Sally Peak’.

The activity is to extract up to 50,000 cubic metres of sandstone blocks per annum. It includes the opening of two sandstone faces on ‘Sally Peak’ to extract high-quality sandstone for construction purposes.

Documentation that describes the development, including maps and specialist reports, has been lodged with the EPA and Council. Glamorgan – Spring Bay Council will advertise the development for public comment pursuant to the Land Use Planning and Approvals Act 1993 – on 5 September 2015 in The Mercury.

The documentation is available for inspection at the Triabunna Council Chambers (during their normal business hours) and also the EPA webpage in electronic format which can be viewed via the link http://epa.tas.gov.au/assessment

The statutory public consultation period for the development is 28 days. Please see the EPA webpage or Council advertisement for the closing date for the public comment period and the process for lodging a representation if you choose to do so.

In planning the quarry, I can advise that special attention has been given to the potential noise emissions generated by the activity, especially from the sandstone block cutting and truck movements. A specialist noise survey was commissioned to inform the impact assessment process.

The statutory public consultation period is an opportunity for you to have your say about the project and those matters in particular that may concern you – there is time to discuss and consider your concerns in the planning process, and any representations received will be considered by Council and the EPA.

If you would prefer to discuss your concerns with me directly then I would be pleased to meet with you to discuss the project, or alternatively I am happy to communicate with you by phone and/or email.

My details are: 0438 588 695 rwbarnes73@gmail.com

Yours sincerely

Dr Richard Barnes B.Sc.(Hons). Ph.D. GDURP MESA MPIA
Director, Principal Regional/Urban Planner, Environmental Specialist, and Ecologist
Van Diemen Consulting Pty Ltd

PO Box 1
New Town, Tasmania

T: 0438 588 695   E: rwbarnes73@gmail.com

This document has been prepared in accordance with the scope of services agreed upon between Van Diemen Consulting (VDC) and the Client.

To the best of VDC’s knowledge, the report presented herein represents the Client’s intentions at the time of completing the document. However, the passage of time, manifestation of latent conditions or impacts of future events may result in changes to matters that are otherwise described in this document. In preparing this document VDC has relied upon data, surveys, analysis, designs, plans and other information provided by the client, and other individuals and organisations referenced herein. Except as otherwise stated in this document, VDC has not verified the accuracy or completeness of such data, surveys, analysis, designs, plans and other information.

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This document does not purport to provide legal advice. Readers should engage professional legal advisers for this purpose.

**Document Status**

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