Statement of environmental effects, proposed quartz extraction,
Budgalong, Wellington
STATEMENT OF
ENVIRONMENTAL EFFECTS,
PROPOSED QUARTZ EXTRACTION,
BUDGALONG, WELLINGTON

For
KEL CUMMINGS EARTHMOVING & PLANT HIRE,
15 SAMUELS STREET, WELLINGTON

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Appendix A - Diagrams
1.0 INTRODUCTION

1.1 PRELUDE

This Statement of Environmental Effects (SEE) is to accompany a development application by Kel Cummings Earthmoving and Plant Hire for a proposed quartz quarry within "Budgalong", Spicer's Creek, Wellington NSW 2820.

This statement of environmental effects aims to:
- Describe the existing property and locality;
- Provide a description of the quarry proposal;
- Address the objectives of the zoning and regulatory requirements; and
- Consider the design elements in relation to environmental management.

1.2 OBJECTIVES OF THE DEVELOPMENT

The main objective of the development is:
- To produce a supply of quartz suitable for use in landscaping by Kel Cummings Earthmoving and Hire.

1.3 OUTLINE OF THE DEVELOPMENT

It is proposed that the area outlined in this Statement of Environmental Effects, be utilised for quartz extraction. The quartz deposits will be won using an excavator or front-end loader. Quartz will be won; the quartz will be stockpiled temporarily prior to transportation by trucks for use off site. A truck will haul the quartz via the existing internal gravel roads and the Goolma Road (Main Road 223).

As the applicant, Kel Cummings Earthmoving and Plant Hire aims to ensure that operations undertaken are in accordance with environmental management
procedures described in this SEE, to make certain protection of the amenity of the nearby residences. Mr Kel Cummings of Kel Cummings Earthmoving and Plant Hire will carry out overall management of the quartz extraction operations.
2.0 EXISTING ENVIRONMENT

2.1 LOCATION

The land is located approximately 30km from the town of Wellington. The property, 'Budgalong', is located in the Parish of Wondaby in the Local Government area of Wellington (refer to Appendix A for Diagram 1: Locality Map). The proposed quartz quarry is located within rural land with the grazing of stock and some cropping occurring with the property. The subject land is located between two residences located within ‘Budgalong’, including the main homestead down slope from the site, and manager’s residence uphill from the site (refer to Appendix A Diagram 2: Existing Site Plan).

2.2 LAND OWNERSHIP

The property ‘Budgalong’ is owned by Mr Rob Sutherland. The owner of the land does not have any objection to the proposed extraction of quartz on the land. In fact, the owner has expressed that the proposed final shaping of the land will benefit the area in the improvement of the slope and potentially reduce existing erosion. Correspondence from Mr Rob Sutherland, providing permission for the submission of the development application was to be provided with the application form.

2.3 TOPOGRAPHY

With reference to the site and general locality is characterised by undulating slopes and valleys. The existing site features are depicted with contours on Diagram 2 Existing Site Plan (plan 4505), provided in Appendix A.
2.4 **SOILS/GEOLOGY**

The Dubbo geological series sheet SI 55-4 describes the geological material to be of the Silurian period and consist of Chesleigh Formation:

- Quartz rich greywacke & slates.


The Dubbo soil landscapes series sheet SI 55-4 describes the soils of the area as within the group called:

- **Mullion Creek**: slate, greywacke, shale, acidic volcanics.

  Undulating low hills often strewn with quartz gravel. Relief 40-80m, slopes 3-<12%. Mainly Red Podzolic soils on crests and upper slopes. Yellow Soloths and yellow Solodic soils on mid to lower slopes and in drainage lines. Limitations: Low fertility, seasonal water logging, sodic subsoils on lower slopes, high erosion hazard under cultivation; acidic surface soils salinity common on lower slopes, low permeability.

The descriptions are consistent with the soils and quartz found on site. The subject site has two main occurrences of white seam quartz, which is the resource sought from the development.

2.5 **SURROUNDING LAND USE**

The land is located within a paddock currently use for grazing of sheep. The site is located approximately 900 metres down slope from the nearest residence. Potential conflict with surrounding land use has been addressed in this SEE.
2.6 FLORA AND FAUNA

An extensive flora and fauna survey was not completed as part of this SEE; land affected by this proposal has been predominantly cleared of native vegetation. The area has faced disturbance due to the running of livestock in the area. Trees that occur at the site are identified and depicted in the existing site layout provided in Appendix A. Flora species occurring at the site include isolated Currajong trees and grasses. No noxious weeds were identified during site inspections.

During inspection, no rare, endangered or threatened species were identified on site or habitat for such species recorded. Extensive clearing has reduced the suitability of the subject site as dwelling sites for native fauna. Fauna species occurring at the site would be limited to the occasional visitors utilising the nearby trees for resting areas, such as birds. The area to be disturbed does not have any habitat of significance. No long-term utilisation of the habitat would be expected due to the proximity to residences and roads, and the lack of habitat. Visitors would include common fauna species in most habitats in the region, such as:

- Sulphur crested cockatoo, *Cacatua galerita*;
- Galah, *Cacatua roseicapilla*;
- Laughing Kookaburra, *Dacelo navaehollandiae* & other smaller birds; and
- Eastern grey kangaroo, *Macropus giganteus*.

2.7 AESTHETICS

The setting requires special treatment to preserve protection of amenity of the nearest residence located up slope from the proposed extraction site. It is the existing exotic tree and bush plantation around the yard of the residence that currently restricts views of the extraction site. The topography is such that only portion of the extraction site can be seen from any one dwelling. The proposed quarry will have an impact upon the existing landform and activities will be visible from the entrance road of the manager's residence. The management and impact of the proposal is discussed in section 4.1. In addition to this, views of the quartz
quarry operations will not be visible from the adjoining properties or from Goolma Road, if operations are restricted as described in section 4.1.

2.8 NOISE ENVIRONMENT

Noise surveys were not undertaken at the site due to the scale and frequency of the proposed activities. The current sources of noise observed in the vicinity of the proposed extraction site during inspections include: operation of farm machinery near sheds, stock i.e. sheep, and birds. There were no continuous noise sources near the subject land. Traffic noise from the Goolma Road was not observed at the site.

2.9 WATER RESOURCES

The nearest watercourse is Spicer's Creek located at a distance greater than approximately 6km from the proposed quartz quarry. Groundwater will not be reached or affected by the proposed extractive activities at the site.

2.10 ROAD NETWORK

Site access is via Goolma Road and an internal private gravel access road (1km to site). The intersection with Goolma Road will have adequate sight distance and is suitable for access by trucks to the site. The proposed entrance is the existing entrance forming the main entrance to the property ‘Budgalong’. The gravel access road is marked on Diagram 3: Proposed Site Layout.
2.11 ARCHAEOLOGICAL ARTEFACTS

Items of European heritage are not associated with the site and are not an issue of concern. The National Parks and Wildlife Act 1974 provides for the protection of Aboriginal relics/sites across New South Wales regardless of significance, land tenure and whether or not they are recorded in the NPWS Sites Register. It is an offence to knowingly damage, deface or cause or permit the destruction of an Aboriginal relic or place without the prior written consent of the director general of NPWS.

An archaeologist or Aboriginal consultant has not surveyed the subject lot; hence no sites are recorded within the NSW National Parks and Wildlife Service Sites Register. In correspondence to Barnson Pty Ltd, 6th February 2001, Paul Houston, Aboriginal Sites Registrar Cultural Heritage Division, outlined the criteria, which the NPWS relied upon to determine whether an area proposed for development should be subject to Aboriginal heritage assessment. The criteria are quoted below:

"1) The NPWS would normally recommend an Aboriginal heritage assessment under the following circumstances:
   - The Sites Register identifies sites in or near the development area, and these could be impacted during or after the development (this includes indirect impacts, such as increased runoff or sedimentation, changes in visitation, etc).
   - The proposed development is likely to impact areas of bushland or undisturbed ground.
   - The proposed development is likely to impact areas containing sandstone outcrops (greater than 1m²), rock shelters and overhangs, old growth trees, sand bodies, and ground adjacent to creeks, rivers, lakes and swamps.
   - The proposed development is likely to impact an area of importance to the Aboriginal community not included in the above (eg. Story places, buildings, missions, etc)

2) The NPWS would not normally recommend an Aboriginal heritage assessment under the following circumstances:
   - The proposed development is within land previously subject to intensive ground disturbance, such as quarrying, repeated market gardening, earthworks for pipelines, roads, sports fields etc. However it should be noted that sites could still
occur in these context for example, ploughing generally impacts the top 20cm of ground and there is potential that undisturbed archaeological deposit may occur in areas where soil depth exceeds 20cm. Scarred trees may be located within road reserves and adjacent sport fields, etc.

- The development is within an existing residential or industrial area, or the redevelopment of an existing building is proposed, and the above criteria (listed in section 1) do not apply”.

No sites are identified in close vicinity of the proposed development site. The area of the proposed development has been cleared in past years for farming. The Currajong trees onsite do not have markings, which have the potential to be ‘scarred trees’, and trees are not likely to be scarred due to their species type and age. No sandstone outcrops occur within the site area. The subject site is not adjacent any waterways. No known areas of importance to the Aboriginal community are located within the subject land.

The criteria listed in part 1, do not apply to the land. Therefore based on NPWS criteria a survey of the land is not pertinent.

2.12 AIR QUALITY

Dust measurements were not taken at the site due to the scale and frequency of the proposed activities. The major potential source of air pollution will be the dust from use of the internal gravel access road and as a result of quartz extraction. Kel Cummings and the land owner, Mr Rob Sutherland, have considered the proposal’s compatibility with their nearby operations and residences and do not see dust as a major concern from the proposed quarry.
3.0 PROPOSED DEVELOPMENT

3.1 OUTLINE OF THE DEVELOPMENT

Kel Cummings Earthmoving and Plant Hire seek consent from Wellington Council for the extraction of quartz from the proposed quarry located within ‘Budgalong’ Goolma Road.

The quarry material consists of weathered rock below the natural surface level. The proposed method of extraction is as follows:

- An excavator will clear the unwanted vegetation and stockpile any topsoil and overburden for rehabilitation purposes.

- The quartz is won utilising the excavator, then placed into stockpiles.

- An excavator &/or front-end loader will load the stockpiled quartz into a truck as and when needed.

- A truck will transport the quartz to places of requirement.

- The quartz will be hauled via Goolma Road.

Mr Kel Cummings will supervise the proposed operation of the quarry. It is proposed that less than 30,000 cubic metres of quartz are to be extracted from the site per annum for use in the landscaping industry. Based on current demands the rate of extraction will be in the vicinity of 5,000 –10,000 cubic metres per year, however this will alter with market demands.
3.2 PROPOSED QUARRY PLAN

The proposed site plan including details regarding the plan of the quarry is shown in Diagram 3: Proposed Site Layout. The proposed area of extraction shown represents at least 2-5 years supply of quartz based on current demands. The area of the extraction is separated into two areas, based on the natural availability of quartz in seams (depicted as areas A and B).

3.3 SEQUENCE OF EXTRACTION

The sequence of extraction is also depicted in Diagram 3: Proposed Site Layout. The quartz will be removed in a south to north direction, with the area of extraction worked as to contain any runoff within the disturbed area.

3.4 REMOVAL OF VEGETATION

The proposed site has faced clearing in the past years as described in section 2.6 Flora and Fauna. Removal of vegetation is generally restricted to grasses and forbs, which will be removed during the stripping of topsoil. Also vegetation will only be removed gradually as the quartz is extracted.

No further removal of large trees is proposed. However it is possible that four trees, or part of their root systems, could be impacted by the proposed quartz extraction from the down slope seam. Therefore assessment of the potential impact to flora is based on these trees being removed. It is noted however that is the intention of the developer to avoid the unnecessary disturbance or removal of trees from the site.
3.5 QUANTITIES AND ESTIMATED LIFE OF THE QUARRY

No more than 30,000 cubic metres of quartz will be extracted from the site in one year. The estimated life of the quarry is 2-5 years, based on current demands. The availability of quartz at the site is not fully known, and the life will depend on availability of suitable material. Kel Cummings of Kel Cummings Earthmoving and Plant Hire has undertaken some limited testing of the site. The area of quartz extraction was based on availability of the material in the local area, with the site providing one of the most appealing known quartz supplies.

3.6 TOPSOIL STOCKPILES

Topsoil and overburden will be stockpiled on site in previously disturbed areas. The stockpiles will be constructed in a safe manner, at a height no more than 0.5m. No topsoil will be removed from the site. All topsoil will be respread during ongoing rehabilitation of the quarry site.

3.7 QUARTZ STOCKPILES

The extracted raw quartz will be temporarily stockpiled on site until hauled to sites of use. The stockpiles will be constructed in the previously disturbed areas, in association with proposed method of sediment control. Stockpiles are not to interfere with any rehabilitation works being carried out in other quarry areas.

3.8 QUARTZ HAULAGE

A truck will undertake the quartz haulage with a load capacity of 25 tonnes. Goolma Road is sealed, whereas the internal roads are gravel. Goolma Road is suitable for the movement of such heavy vehicles, whereas the internal roads will require maintenance to provide a suitable access road. Kel Cummings has discussed this
wit the site owner, and will maintain the roads to a suitable standard. Kel Cummings Earthmoving and Plant Hire have the capacity to undertake this work due to their involvement and experience in the construction industry. The existing entrance to 'Budgalong', utilised by the current residents of the property is to be shared with the quarry vehicles. The entrance provides facility for the entrance of vehicles through a stock grid, or via a gate for heavy vehicles. The existing entrance is the most suitable for the proposal, as the creation of new driveways is not required, and conflict with existing users is not likely due to the frequency of the proposed operations.

3.9 HOURS OF OPERATION

The proposed operating hours for the quartz extraction related activity would be within the times of 7.30am to 5.30pm. At a maximum the site could be accessed approximately three times per week for loading quartz for use, including screening of quartz.

3.10 WORKFORCE

The proposed quartz extraction and haulage of quartz from the site will utilise staff members supplied by Kel Cummings Earthmoving and Plant Hire. Staff will operate all machinery and trucks used in haulage from the site.

Mr Kel Cummings will undertake the supervision and management of the proposed quarry, which includes:

- The clearing of vegetation;
- Removal and stockpiling of topsoil and overburden;
- Removal of quartz and its stockpiling;
- Loading of quartz into trucks; and
- Quartz haulage.
3.11 SITE FACILITIES

There will be no permanent infrastructure at the site except for access roads. No storage or parking facilities will be constructed on site due to the scale of the operations. Equipment will be housed on site, occasionally only during periods of operation. The only possible exceptions would be the excavator, which could be housed for only a short period of time i.e. 15-20 days out of a year (only during periods of operation). Fuels and lubricants will not be stored on site. Water will not be stored on site for dust suppression purposes. Carts may bring water to the site when required only.

3.12 EXTRACTED PRODUCT AND USE

The quartz has not been extracted from the site in previous years. Kel Cummings, who has worked in the earthmoving and construction industry for many years, has identified the quartz as suitable for use in landscaping to be sold in the Sydney market. The site provides a valuable resource in supplying high-grade white quartz suitable for various uses in landscaping.
4.0 ENVIRONMENTAL MANAGEMENT

4.1 TOPOGRAPHY AND LANDFORM

The nature of quartz extraction involves obvious interactions with the environment. Controls will be necessary to mitigate potential adverse impacts from the operations. The extraction will be restricted to minimise impact to topography, especially for protection of views and for the minimisation of impact to the nearby residences. It is proposed that the extraction be restricted to the area depicted in Diagram 3: Proposed Site Layout.

The following controls will be necessary to prevent undue impacts to the topography and landform:
- The boundaries of the proposed extraction should be marked with pegs prior to the commencement of work.
- Rehabilitation of the site will be progressive where possible and will be initiated in the disturbed areas not being utilised for stockpiling of quartz, while operations are ongoing.

4.2 SALINITY AND LANDSCAPING

Due to the lifespan of the quarry, undertaking landscaping of the site for screening is not feasible. Trees would not establish themselves to be adequate for this purpose. Retention of the existing exotic garden trees and other plantation would have to be retained during the life of the quarry to restrict views of the proposed quarry. Rehabilitation of the quarry site is described in section 4.5.2.

No areas of current salinity outbreaks have been identified during field investigations. Soil sampling and analysis was not performed to determine soil data. The location of the site in relation to known area of outbreaks does not raise issues of risk of salinity at the site. No ongoing monitoring is deemed necessary for rural salinity issues.
4.3 CONTAMINATION ISSUES

The proposed site use is not a known potentially contaminating activity as identified in ANZECC & NHMRC 1992 The Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites. The proposal does not involve the storage of potentially contaminating materials on site. Since no fuels, chemicals, lubricants or machinery are to be stored on site, the chances of groundwater contamination are decreased; there is little chance for contaminants to seep through the ground material to the groundwater level. The proposal does not require special provisions for the protection of the environment in relation to potential soil contamination.

4.4 FLORA AND FAUNA

4.4.1 WEED & DISEASE MANAGEMENT

Vehicles can carry sources of noxious weeds and possible plant and livestock diseases. Measures should be undertaken to minimise this risk, as the site is located within a farming area. Some appropriate measures include:

- Ensuring all vehicle movements are within the proposed quarry area and on the proposed access roads.
- Inspection and cleaning of the under body and wheels including tyres of all vehicles before entering the site, particularly for the removal of foreign vegetative matter.
- Ensuring weeds are controlled within the quarry area, especially on the stockpiles of topsoil, which is to be respread at a later date for rehabilitation.
- Fencing of the quarry area to ensure that livestock does not access the area. This is required to prevent undue transport of weeds and for the safety of stock.
4.4.2 THREATENED SPECIES ASSESSMENT

The proposed quarry site does not support significant native habitat as described in section 2.6. The existing trees are to be protected during the life of the operation and vehicle movements and quarrying activities are to remain clear of treed areas. As mentioned, assessment will consider that the development may involve the removal of approximately four, Currajong trees during the life of the extraction activities. Other trees occurring within the area of the site will be avoided. Changes due to noise of machinery operation are likely to have a short-term impact upon the fauna, birds in particular, at the site. However no long term problems are foreseen, due to the small scale of the operations, also the work will not be continuous or regular in the long term.

Environmental management measures that are to be undertaken in relation to flora and fauna, include:

- The quartz extraction should confine itself to the area outlined in the site plan, so that the remaining flora is retained with the least damage.
- Rehabilitatory plantings and seeding is to be made using native species and/or pasture species, including grasses and forbs. Trees are to be planted only with the agreement of the landowner in consideration to future use of the land following the completion of the quarrying activities.

An eight-part test has been performed as part of the assessment of the proposed quartz quarrying. The eight-part test is contained within section 5A of the Environmental Planning and Assessment Act 1979 and consists of eight factors, which are required to be addressed for informed decisions to be made regarding the effect of a proposed development or activity on threatened species, populations or ecological communities, or their habitats. Species that had both bioclimatic prediction and occurrence of suitable habitat within the site are considered in the eight-part test of significance below.
Section 5A of the EP&A Act is repeated below:

"For the purposes of this Act and, in particular, in the administration of section 78A, 79C(1) and 112, the following factors must be taken into account in deciding whether there is likely to be significant effect on threatened species, populations or ecological communities, or their habitats:

a) in the case of a threatened species, whether the lifecycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction,

b) in the case of an endangered population, whether the lifecycle of the species that constitutes the endangered population is likely to be disrupted such that the viability of the population is likely to be significantly compromised,

c) in relation to the regional distribution of the habitat of a threatened species, population or ecological community whether a significant area of known habitat is to be modified or removed,

d) whether an area of known habitat is likely to become isolated from currently interconnecting or proximate areas of habitat for a threatened species, population or ecological community,

e) whether critical habitat will be affected,

f) whether a threatened species, population or ecological community, or their habitats, are adequately represented in conservation reserves (or other similar protected areas) in the region,

g) whether the development or activity proposed is of a class of development or activity that is recognised as a threatening process,

h) whether any threatened species, population or ecological community is at the limit of its known distribution."

The eight part test of significance has been conducted for the study area, assuming that the area to be disturbed as a result of the proposed development is restricted to the area shown in Diagram 3: Proposed Site Layout. This encompasses an area of less than two (2) hectares. No threatened species populations or ecological communities, or their habitats are known to occur within the proposed development's site boundary.
Threatened flora and fauna potentially occurring within the study area, as identified in Ayers et al. (1997): 'Threatened Species of New South Wales', are listed in the following table. The occurrence of these species is based upon bioclimatic prediction, recorded sightings and recorded habitat of the Wellington district. The notes below indicate intentions for the consideration of certain species in the eight-part test or indicate reasons for the exclusion of certain species from the eight-part test eg: lack of suitable habitat for some species. Despite bioclimatic prediction, those species that have no suitable habitat or conditions within the subject area, will not be considered further.

**FROGS**

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Species Name</th>
<th>TSC Act Status</th>
<th>Notes</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green and Golden Bell Frog</td>
<td><em>Litoria aurea</em></td>
<td>Endangered</td>
<td>Found near permanent or ephemeral water.</td>
<td>Ayers et al 1996</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Suitable habitat not available.</td>
<td></td>
</tr>
</tbody>
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**REPTILES**

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Species Name</th>
<th>TSC Act Status</th>
<th>Notes</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western Blue-Tongued Lizard</td>
<td><em>Tiliqua occipitalis</em></td>
<td>Vulnerable</td>
<td>This lizard is often in close association with Mallee communities and therefore is not expected at this site.</td>
<td>Ayers et al 1996 Cogger 1983</td>
</tr>
<tr>
<td>Pale-headed Snake</td>
<td><em>Hoplocephalus bitorquatus</em></td>
<td>Vulnerable</td>
<td>The species is not expected to occur since they are not known for grossly disturbed environments or recently regenerated vegetation.</td>
<td>Ayers et al 1996 Cogger 1983</td>
</tr>
</tbody>
</table>

**MAMMALS**

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Species Name</th>
<th>TSC Act Status</th>
<th>Notes</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Quoll</td>
<td><em>Dasyurus viverrinus</em></td>
<td>Endangered</td>
<td>Suitable habitat not available.</td>
<td>Ayers et al 1996 Goodsell in Strahan 1983</td>
</tr>
<tr>
<td>Spotted-tailed Quoll</td>
<td><em>Dasyurus maculatus</em></td>
<td>Vulnerable</td>
<td>Clearing for agriculture is also identified as a major threat to the survival of the species. Inhabits River Red Gum forests in the Western Division. Suitable habitat not available.</td>
<td>Ayers et al 1996 Edgar in Strahan 1983</td>
</tr>
<tr>
<td>Brush-tailed Phascogale</td>
<td><em>Phascogale tapoatafa</em></td>
<td>Vulnerable</td>
<td>An absence of the preferred habitat types of the species</td>
<td>Ayers et al 1996</td>
</tr>
</tbody>
</table>
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<th>TSC Act Status</th>
<th>Notes</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BIRDS</strong></td>
<td></td>
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</tr>
<tr>
<td>Red-tailed Tropicbird</td>
<td>Phaethon rubricauda</td>
<td>Vulnerable</td>
<td>Not expected as a resident, this bird is usually solitary at sea and rarely breeds on Australia's mainland.</td>
<td>Ayers et al 1996, Slater 1986</td>
</tr>
<tr>
<td>Australasian Bittern</td>
<td>Botaurus poiciloptilus</td>
<td>Vulnerable</td>
<td>Inhabits vegetation around wetlands and wet paddocks. Suitable habitat is not available.</td>
<td>Ayers et al 1996, Slater 1986</td>
</tr>
<tr>
<td>Black Bittern</td>
<td>Ixobrychus</td>
<td></td>
<td>Black Bitterns are found</td>
<td></td>
</tr>
<tr>
<td>Species</td>
<td>Habitat Description</td>
<td>Threats</td>
<td>Status</td>
<td></td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
<td>------------</td>
<td></td>
</tr>
<tr>
<td>Black-necked Stork</td>
<td>Inhabits terrestrial wetlands. Suitable habitat not available.</td>
<td>With the presence of surface water and food being the principal determinants of species distribution, the lack of terrestrial wetlands at the site indicates its absence.</td>
<td>Vulnerable</td>
<td></td>
</tr>
<tr>
<td>Magpie Goose</td>
<td>With the presence of surface water and food being the principal determinants of species distribution, the lack of terrestrial wetlands at the site indicates its absence.</td>
<td>With the presence of surface water and food being the principal determinants of species distribution, the lack of terrestrial wetlands at the site indicates its absence.</td>
<td>Vulnerable</td>
<td></td>
</tr>
<tr>
<td>Freckled Duck</td>
<td>Utilise a variety of plankton rich wetlands. Suitable habitat is not available.</td>
<td>With the presence of surface water and food being the principal determinants of species distribution, the lack of terrestrial wetlands at the site indicates its absence.</td>
<td>Vulnerable</td>
<td></td>
</tr>
<tr>
<td>Blue-billed Duck</td>
<td>Predominantly a coastal species, which inhabits a variety of marine and littoral habitats. Suitable habitat not is available.</td>
<td>With the presence of surface water and food being the principal determinants of species distribution, the lack of terrestrial wetlands at the site indicates its absence.</td>
<td>Vulnerable</td>
<td></td>
</tr>
<tr>
<td>Osprey</td>
<td>Predominantly a coastal species, which inhabits a variety of marine and littoral habitats. Suitable habitat not is available.</td>
<td>With the presence of surface water and food being the principal determinants of species distribution, the lack of terrestrial wetlands at the site indicates its absence.</td>
<td>Vulnerable</td>
<td></td>
</tr>
<tr>
<td>Square-tailed Kite</td>
<td>Associated habitat is not available at site. Not expected.</td>
<td>Predominantly a coastal species, which inhabits a variety of marine and littoral habitats. Suitable habitat not is available.</td>
<td>Vulnerable</td>
<td></td>
</tr>
<tr>
<td>Black-breasted Buzzard</td>
<td>Suitable habitat is not available.</td>
<td>Predominantly a coastal species, which inhabits a variety of marine and littoral habitats. Suitable habitat not is available.</td>
<td>Vulnerable</td>
<td></td>
</tr>
<tr>
<td>Grey Falcon</td>
<td>Occurrence not expected due to cleared nature of land and disturbances from grazing and human development, which are both threatening processes to the species survival.</td>
<td>With the presence of surface water and food being the principal determinants of species distribution, the lack of terrestrial wetlands at the site indicates its absence.</td>
<td>Vulnerable</td>
<td></td>
</tr>
<tr>
<td>Malleefowl</td>
<td>Malleefowl predominantly inhabit mallee communities, preferring the tall dense and floristic-rich mallee found in higher rainfall areas. Associated habitat not found at site.</td>
<td>With the presence of surface water and food being the principal determinants of species distribution, the lack of terrestrial wetlands at the site indicates its absence.</td>
<td>Endangered</td>
<td></td>
</tr>
<tr>
<td>Brolga</td>
<td>Roosts beside swamps, waterholes and lakes. Suitable habitat is not available.</td>
<td>With the presence of surface water and food being the principal determinants of species distribution, the lack of terrestrial wetlands at the site indicates its absence.</td>
<td>Vulnerable</td>
<td></td>
</tr>
<tr>
<td>Australian Bustard</td>
<td>The preferred habitat of the species is tussock to hummock grasslands. Clearing, grazing and human disturbance are also major threats to the species. Occurrence is therefore not expected.</td>
<td>With the presence of surface water and food being the principal determinants of species distribution, the lack of terrestrial wetlands at the site indicates its absence.</td>
<td>Endangered</td>
<td></td>
</tr>
<tr>
<td>Wildlife</td>
<td>Scientific Name</td>
<td>Conservation Status</td>
<td>Environmental Impact</td>
<td>Considered Further</td>
</tr>
<tr>
<td>--------------------------</td>
<td>--------------------------</td>
<td>---------------------</td>
<td>--------------------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>Bush Thick-knee (Curlew)</td>
<td>Burhinus magnirostris</td>
<td>Endangered</td>
<td>The Bush Thick-knee (Curlew) favours riverine woodlands and is rare in cleared and settled parts. Therefore not expected.</td>
<td>Ayers et al 1996 Slater 1986</td>
</tr>
<tr>
<td>Painted Snipe</td>
<td>Rostratula benghalensis</td>
<td>Vulnerable</td>
<td>Inhabits the fringes of swamps and other marshy areas.</td>
<td>Ayers et al 1996 Slater 1986</td>
</tr>
<tr>
<td>Black-tailed Godwit</td>
<td>Limosa limosa</td>
<td>Vulnerable</td>
<td>Infrequently occurs on inland mudflats. Suitable habitat not available.</td>
<td>Ayers et al 1996</td>
</tr>
<tr>
<td>Glossy Black-cockatoo</td>
<td>Calyptorhyncus lathamii</td>
<td>Vulnerable</td>
<td>Not expected due to absence of forage habitat and habitat requirements.</td>
<td>Ayers et al 1996 Slater 1986</td>
</tr>
<tr>
<td>Superb Parrot</td>
<td>Polytelis swainsonii</td>
<td>Vulnerable</td>
<td>Has an association with water, nesting sites are mostly in dead trees. This indicates that the habitat available is not optimal, and is not considered further.</td>
<td>Ayers et al 1996 Slater 1986</td>
</tr>
<tr>
<td>Swift Parrot</td>
<td>Lathamus discolor</td>
<td>Vulnerable</td>
<td>Not expected to occur due to the lack of suitable habitat.</td>
<td>Ayers et al 1996 Slater 1986</td>
</tr>
<tr>
<td>Turquoise Parrot</td>
<td>Neophema pulchella</td>
<td>Vulnerable</td>
<td>Not expected as this species needs to drink daily and the nearby creek is not permanent.</td>
<td>Ayers et al 1997 Slater 1986</td>
</tr>
<tr>
<td>Barking Owl</td>
<td>Ninox connivens</td>
<td>Vulnerable</td>
<td>The Barking Owl primarily inhabits open forest and woodland, including paperbark swamps in warm lowland areas on gentle terrain. Associated habitat is not found onsite.</td>
<td>Ayers et al 1996 Flegg and Longmore 1984</td>
</tr>
<tr>
<td>Powerful Owl</td>
<td>Ninox strenua</td>
<td>Vulnerable</td>
<td>Suitable habitat is not available.</td>
<td>Ayers et al 1996 Slater 1986</td>
</tr>
<tr>
<td>Masked Owl</td>
<td>Tyto novaehollandiae</td>
<td>Vulnerable</td>
<td>Due to lack of nest sites and diversity of habitat this species is not expected.</td>
<td>Ayers et al 1996 Slater 1986</td>
</tr>
<tr>
<td>Pink Robin</td>
<td>Petrioca rodinogaster</td>
<td>Vulnerable</td>
<td>Inhabits dense fern filled gullies and areas of shady undergrowth within temperate rainforest and tall wet sclerophyll forests. Suitable habitat not available.</td>
<td>Ayers et al 1996 Slater 1986</td>
</tr>
<tr>
<td>Gilberts Whistler</td>
<td>Pachycephala inornata</td>
<td>Vulnerable</td>
<td>Habitat requirements not satisfied at the subject site. Clearing and grazing are also</td>
<td>Ayers et al 1996 Slater 1986</td>
</tr>
</tbody>
</table>
Calamanthus  |  Sericornis fuliginosus  |  Vulnerable  |  Inhabits open gibber or rocky areas with low, shrubby vegetation. Suitable habitat not available.  |  Ayers et al 1996 Slater 1986
---|---|---|---|---
Painted Honeyeater  |  Grantiella picta  |  Vulnerable  |  Generally found where there is mistletoe. The quarry area does not support mistletoe. Not considered further.  |  Ayers et al 1996 Slater 1986
Pied Honeyeater  |  Certhionyx variegatus  |  Vulnerable  |  Food species and habitat requirements are not available at the site; therefore this species is not expected.  |  Ayers et al 1996 Slater 1986

**PLANTS**

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Species Name</th>
<th>TSC Act Status</th>
<th>Notes</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Swainsona recta A.Lee</td>
<td>Endangered</td>
<td>Found in woodland and open forest with a grassy understorey and on dark grey sandy loam or silt loam. Therefore not expected.</td>
<td>Ayers et al 1997</td>
</tr>
<tr>
<td></td>
<td>Eriostemon ericifolius Cunn.ex Benth.</td>
<td>Vulnerable</td>
<td>It is a moisture loving species, which occurs in open forest on sandstone. Therefore is not expected.</td>
<td>Ayers et al 1997</td>
</tr>
</tbody>
</table>

Based on bioclimatic prediction and occurrence of potentially suitable habitat within the site and the assessment above, the endangered species, the Plains Wanderer (*Pedionomus torquatus*) is considered in the eight-part test of significance below.
a) **In the case of a threatened species, whether the lifecycle of the species is likely to be disrupted such that a viable local population of the species is likely to be placed at risk of extinction.**

The habitat within the local area will not be disturbed to the extent that the lifecycle of the Plains Wanderer is disturbed. There are no known viable local populations in the vicinity of the proposed quarry site. The Plains Wanderer constructs simple nests consisting of a grass lined depression or scrape under a low bush or grass tuft. The proposed quarry will result in disturbance to an area not greater than 2 hectares. Nesting requirements of the species are found throughout the local area surrounding the proposed quarry site. The above factors indicate that a viable local population of the species will not be placed at risk of extinction.

b) **In the case of an endangered population, whether the lifecycle of the species that constitutes the endangered population is likely to be disrupted such that the viability of the population is likely to be significantly compromised.**

There are no endangered populations listed in the TSC Act within the study area. No threatened species populations, ecological communities, or their habitats are known to occur within the proposed development sites boundaries or surrounding local area.

c) **In relation to the regional distribution of the habitat of a threatened species, population or ecological community whether a significant area of known habitat is to be modified or removed.**

The amount of available habitat within the study area is small in comparison to the available habitat occurring within the region. References to region are to the NSW South Western Slopes (NPWS in Interim Biogeographic Regionalisation of Australia).

The Plains Wanderer requires extensive areas of sparse grassland containing a variety of grasses and herbs, particularly unimproved pastures.
In a regional context, the area to be disturbed for the proposed development does not constitute a significant area of habitat (the species is considered due to potential habitat in an area of bioclimatic prediction and not known locations of habitat).

Endangered ecological communities listed in Part 3 of Schedule 1 are not near the subject site and will not be affected by this proposal.

Given the above factors and considering that the quality of habitat available to the species in local surrounding areas will not be degraded as a result of the proposed development, it is concluded that in relation to the regional distribution of the habitat, the area of land to be disturbed is not significant.

d) Whether an area of known habitat is likely to become isolated from currently interconnecting or proximate areas of habitat for a threatened species, population or ecological community.

The habitat within the subject site is ‘potential habitat’ for the Plains Wanderer based on bioclimatic prediction and not an area of known habitat.

The area encompassed within the subject site has been extensively cleared in the past for human development with only isolated tree occurrences and mixed grasses forming what is considered to be an area, which is of little habitat significance. The proposal will result in disturbance to approx four trees and mixed grass species only.

The existing remnant vegetation holds no strategic significance in relation to habitat connectivity between areas of potential or ‘known’ habitat within the region. Therefore the proposed development will not significantly increase or reduce connectivity of habitat within the region.

e) Whether critical habitat will be affected.

The habitat present within the study site is not listed as critical under the TSC Act, or on the register of Critical Habitat, nor is any critical habitat located in close proximity
to the study site. Hence, the proposed works are not expected to impact upon any critical habitat either directly or indirectly.

f) Whether a threatened species, population or ecological community, or their habitats, are adequately represented in conservation reserves (or other similar protected areas) in the region.

The Plains Wanderer occurs in extensive areas of sparse grassland containing a variety of grasses and herbs, particularly unimproved pastures. The habitat requirements of the species is adequately represented within several conservation reserves within the region including:

- Warrumbungle National Park;
- Munghorn Gap Nature Reserve;
- Goobang National Park;
- Girralang Nature Reserve;
- Nangar National Park.

The species has also been recorded in the following conservation reserves:

- Willandra National park;
- Mallee Cliffs National Park.

g) Whether the development or activity proposed is of a class of development or activity that is recognised as a threatening process.

The proposed development is not identified as a threatening process under Schedule 3 of the TSC Act.

h) Whether any threatened species, population or ecological community is at the limit of its known distribution.

The Plains Wanderer is recorded as having occurred east to the ACT, in central and southern Victoria, western NSW and south-eastern South Australia. Single birds or
pairs have also been recorded from the Riverina in the southern Murray-Darling region. Has also been recorded for the Broken Hill region between Tibooburra and the Queensland border and in the Willandra National park.

Therefore the potential habitat of the species is not at the limit of its known distribution.

**Outcomes of the threatened species assessment**

Based on the findings of the 'eight-part test of significance', it is concluded that the proposed development poses no significant risk to threatened species, populations or ecological communities, or their habitats. Therefore a Species Impact Statement is not required.

**4.5 STORMWATER MANAGEMENT**

All stormwater runoff from the proposed quarry will be retained within the quarry area, and the previously worked areas will form a sediment basin. The shaping of the quarry and the construction of drainage ditches where required will divert stormwater away from working area of the quarry. Evaporation and infiltration will reduce the volume retained in the quarry during periods of rainfall.

**4.5.1 EROSION AND SEDIMENT CONTROL**

Due to the nature of the soil, which exists at the site, infiltration rates of runoff are expected to be high. However the following measures are recommended for restriction and management of stormwater runoff:

- Quartz extraction performed by effecting gradual slopes and not steep slopes.
- Retention of the vegetation around the site, including grasses, to restrict wind induced erosion. Vehicle movements should also be restricted to working areas only.
- Application of seed to the topsoil stockpiles of native grasses and forbs found at the site will assist in the stabilisation of stockpiles. The use of sediment fence on the down slope side of such stockpiles should be considered and implemented at the discretion of Kel Cummings.
- Planting of native grasses (seeding) found in the area, in the respread topsoil of rehabilitated areas.

The shaping of the quarry and the construction of temporary drainage ditches where needed, will divert stormwater away from the working areas of the quarry. The water will be allowed to pond in the areas of the quarry that have already been mined. Evaporation and infiltration will reduce the volume retained in the quarry during periods of rainfall. Eventually these areas will be reshaped and topsoil will be respread as part of ongoing rehabilitation of the site.

4.5.2 SITE REHABILITATION

Rehabilitation of the site should have consideration of the compatibility with surrounding land uses. Therefore is has not been proposed that trees be planted on the rehabilitated areas, but native grasses. The visual impact of the work is to be rectified as well as provision of stabilisation of the ground surface against erosion. The site should be fully rehabilitated after the development is complete, thus ensuring measures are taken to 'restore' the natural habitat, and enable the land to be used for other purposes in the future (with the quarrying influencing the slope of the land other uses may present themselves in the future).

Site rehabilitation measures are to include:
- Progressive activity and will be initiated in the disturbed areas not being utilised for stockpiling of quartz, while operations are ongoing.
- Suitably reshaping landform and planting flora species, which are appropriate; species types to be decided in agreement with the owner of the land, Mr Rob Sutherland and will most likely include grasses/pasture species.
- Ongoing management of the site for the prevention of erosion and sedimentation as discussed in this SEE.
4.6 ARCHAEOLOGICAL MANAGEMENT

No known sites are identified or recorded at the site. Therefore no ongoing management is required. However, if any archaeological artefacts are discovered during operations works will cease, and the National Parks and Wildlife Service will be notified and the site recorded.

4.7 BUSHFIRE CONTROLS

Bushfire control management will form part of the broader management measures undertaken by Kel Cummings Earthmoving and Plant Hire. No timber is required to be removed as part of the proposed quarry; therefore removal of such timber is not required. The risk of bushfire will be minimised if the following measures are undertaken at the quarry:

- No fuels are to be stored on site.
- Machinery is to be adequately maintained and free of surplus oils and dry vegetative matter.
- Vehicles are to only be refuelled on site when other options are not suitable. Refuelling on site should only take place where the ground is free of flammable vegetation.
- Machinery is not to be left unattended during operation.

4.8 WASTE DISPOSAL

The proposed quartz quarry is not waste producing. Any general waste produced by the employees while on site will be taken from the site for disposal.
4.9 **NOISE & TRAFFIC MANAGEMENT**

It is not envisaged that the operation of the quarry will interfere with the amenity of the residences. Activities at the site will be short term and noise produced is comparable to the use of heavy farm machinery used in cropping on the property, (periodically undertaken by the occupants of the residences).

Noise impacts as a result of the proposed activities at the site are considered to be minimal. This conclusion is based on:

- Activities on the site will be limited and occasional.
- Activities are proposed for during daylight hours only.
- The proposed site is at a significant distance from the nearest residence and the owner of the land has encouraged the activity on site.
- No blasting will be taking place.
- All work vehicles will be required to be maintained to prevent excess noise generation.

The potential impact of noise on wildlife is discussed in section 4.4 above. The expected impact will be minimal, especially due to the lack of permanent native fauna residents on the site, and the grazing of stock.

Section 3.8 described the proposed route for quartz haulage. Vehicular traffic is unlikely to cause significant impact to the production of dust in the area, as only a small length of the proposed route will be unsealed. Traffic on Goolma Road currently includes heavy vehicles, and the number of movements required as part of the proposal, will not significantly increase the road traffic noise.

4.10 **QUARRY OPERATION MANAGEMENT**

Mr Kel Cummings will undertake the management of the 'Budgalong' quartz quarry. The operations are to consider the findings of this Statement of Environmental Effects and adhere to proposed management procedures. Quarrying will be
conducted in accordance with the Mines Inspection Act, 1901 and the Occupational Health and Safety Act, 1983.
5.0 ALTERNATIVES

5.1 ALTERNATIVES TO THE PROPOSAL

Both the applicant, Mr Kel Cummings, and the owner of the land, Mr Rob Sutherland, considered alternatives to the proposal prior to deciding on the proposed operations. The proposed development was considered the most appropriate for reasons of marketability of product as well as environmental considerations. The proposed location of the quartz quarry provides a unique supply of quality material suitable for use in various landscaping activities.

Also, the site is in an undesirable condition for Mr Sutherland’s, use for the land for access by stock, which will be improved with the final shaping of the rehabilitated quarry area. The site involves minimal disturbance to native habitat. It is envisaged that following the completion of quarrying activities the site will be shaped to a more desirable landform and be rehabilitated appropriately for grazing of stock and the steep slopes will be reduced improving access and reducing potential for erosion near the existing roadway.

The material has been identified as suitable for sale in Sydney, and the close vicinity of the quarry to the Kel Cummings Earthmoving and Plant Hire business, based in Wellington, provides cost benefits for the applicant. Alternative materials are not available at comparatively low costs for such uses.

5.2 ALTERNATIVE ACCESS ROUTES

As an alternative to the proposed access route, the construction of an alternative route was considered. This was not considered appropriate, as the proposed entrance allows for direct access to the site, and utilises existing facilities without the need to disturb further environment for the operation of a quarry.
6.0 JUSTIFICATION OF THE DEVELOPMENT

6.1 ENVIRONMENT

The environmental safeguards included as part of the management of the proposed quarry site are considered reasonable and adequate. This document has considered all relevant environmental issues. The adverse impacts arising from the proposed activities at the site will be mitigated by the planned actions in this document.

6.2 SOCIAL/ECONOMIC

The alternatives of not proceeding with the proposal would mean that Mr Kel Cummings would have to secure another less feasible source of quartz. The opportunity would be lost to utilise a high quality local resource. The employment of local people for the extraction of quartz could be lost, as the prospective purchasers would seek quartz outside of the local area of Wellington.

The end product will fulfil the primary objective associated with the proposed development. The community will benefit from the availability of a resource made available through local employment.

6.3 STATUTORY CONSIDERATIONS

This analysis is to confirm that the Proposal is not a development for the mentioned purposes or of the mentioned types in 'Schedule 3 – Designated Developments' of the Environmental Planning and Assessment Act 1979.

*Extractive industries* that obtain extractive materials by methods including excavating, dredging, tunnelling or quarrying or that store, stockpile or process extractive materials by methods including washing, crushing, sawing or separating and:
(a) obtain or process for sale, or reuse, more than 30,000 cubic metres of excavated material per annum;

The proposed development involves the extraction of less than 30,000 cubic metres of excavated quartz material per annum.

(2) disturb or will disturb a total area of more than two hectares of land by:
   (a) clearing or excavating
   (b) constructing dams, ponds, drains, roads, or conveyors; or
   (c) storing or depositing overburden, extractive material or tailings; or

The proposed quartz extraction involves the clearing of not more than 2 hectares of land over several years. Storing overburden and extractive material will be undertaken within the previously worked areas.

(3) are located:
   (a) in or within 40m of a natural water body, wetlands or an environmentally sensitive area; or
   (b) within 200m of a coastline; or
   (c) in an area of:
      i) contaminated soil; or
      ii) acid sulphate soil; or
   (d) on land that slopes at more than 18° to the horizontal; or
   (e) if involving blasting, within:
      i) 1000m of a residential zone; or
      ii) 500m of a dwelling not associated with the development; or
   (f) within 500m of the site of another extractive industry that has operated during the last five years.

Land slopes less than 18° to the horizontal. The development does not involve blasting. The nearest watercourse is Spicer's Creek located at a distance greater than approximately 6km from the proposed quartz quarry. The nearest dwelling not associated with the development is at least 900m away from the
site. There is no other extractive industry within 500m of the proposed site of activity.
7.0 BIBLIOGRAPHY


Lachlan Catchment Management Committee A Code of Practice for Establishing Managing and Rehabilitating Gravel Quarries.


APPENDIX A - DIAGRAMS

Diagram 1: Locality Map
Diagram 2: Existing Site Layout
Diagram 3: Proposed Site Layout
DIAGRAM 1: LOCALITY MAP

Approximate location of proposed quartz quarry

Excerpt from Goolma 8733-II & III Topographic Map 1: 50 000 First Edition

A4

DATE: OCT 01

DESIGN:

DRAWN: EY

APPROVED:

CLIENT: KEL CUMMINGS

PROJECT: PROPOSED QUARTZ QUARRY

TITLE: DIAGRAM 1: LOCALITY MAP

DRAWING No. 4505-E1

BARNSON

SHOP 3, "THE MORTIMER CENTRE"
90-94 MORTIMER STREET, MUDGEE NSW 2850.
This drawing is to be read in conjunction with general building drawings, specifications and other consultant's drawings applicable to this project. All figured dimensions are to be checked prior to the commencement of work. Immediately notify BARNSON PTY LTD of any discrepancies.

This drawing is copyright and the property of BARNSON PTY LTD and must not be retained, copied or used without their authority.

Notes:
1) Existing features of the land are depicted. The proposed access track relates to the location of an existing partially formed track.
2) The site supports grasses and weeds, with some forbs occurring. The trees depicted relate to the occurrence of established Currajong trees within the subject land. (All trees occurring are depicted).
NOTES:

1) The location of excavation within the boundary depicted will depend upon the availability of quartz. Quartz occurs naturally in two seams within the boundary depicted. The approximate locations of the seams are depicted as areas A and B.

2) The sequence of extraction is depicted. The area labelled A, will be the site of initial excavation work; and the area labelled B is to be excavated following the exhaustion of suitable quartz from area A.

3) Due to the slope of the site, worked areas are to be shaped to act as a sediment basin.

4) Topsoil and overburden are to be stockpiled on site in previously disturbed areas. Topsoil piles are to be constructed at heights no more than 0.5m.

5) Diversion banks are to be installed where relevant as works progress, around stockpile areas, at the discretion of Mr Kel Cummings. This is to divert 'clean' runoff from the stockpiles (see details for construction).

6) Mr Kel Cummings will be responsible for the construction and maintenance of erosion control measures, throughout the life of the project.

7) Once quartz resources have been exhausted from a particular area, the stockpiled topsoil is to be respread over that area and sown with grasses or pasture. Species are to be decided in agreement with the owner of the land, Mr Rob Sutherland.

8) The boundary of the proposed development as depicted represents an area of approx. 1.9 hectares, however the area of the proposed works including extraction, stockpiling and vehicle movements, are not likely to disturb the total area. Based on visual assessment and test pits the quartz seams are located as depicted in the diagram. It is these areas, labelled A and B, which will be the focus of site activities.

This drawing is to be read in conjunction with general building drawings, specifications and other consultant's changes applicable to the project. All figures and dimensions are to be checked prior to the commencement of work. Baronson Pty Ltd assumes no responsibility in the event of mistakes in the servicing of any error in the drawing.

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APPROVED: MR KEL CUMMINGS

TITLE: PROPOSED QUARTZ EXTRACTION SITE

PROJECT: "BUDGALONG" MUDGEE ROAD

WELLINGTON, NSW

SCALE: 1:1000

CONTOUR INTERVAL: 1 metre

HEIGHTS ON ASSUMED DATUM.