PLAN 2

PLANNING APPLICATION P17-164

805 HOBART ROAD, BREADALBANE

ATTACHMENTS

A Application & plans, correspondence with applicant

B Responses from referral agencies

C Representations & applicant's response

1-560

PLANNING APPLICATION

Proposal

ATTACHMENT A

Description of proposal: ...

...Proposed New Cattery, Extension to Existing Kennels, Road Sign, Extension to Existing Pet Crematorium and Residence.....

.....

.....

(attach additional sheets if necessary)

Site address:

805 Hobart Road, Breadalbane.....

Council's property no: ..... *and/or ID no:* .....

Area of land: ..... *ha/m²* *and/or CT no:* .....131512/9.....

Estimated cost of project ...*$500,000*.....
(include cost of landscaping, car parks etc for commercial/industrial uses)

Are there any existing buildings on this property?

If yes – main building is used as Existing Kennels, Pet Crematorium etc.....

If variation to Planning Scheme provisions requested, justification to be provided:

.....

.....

.....
(attach additional sheets if necessary)

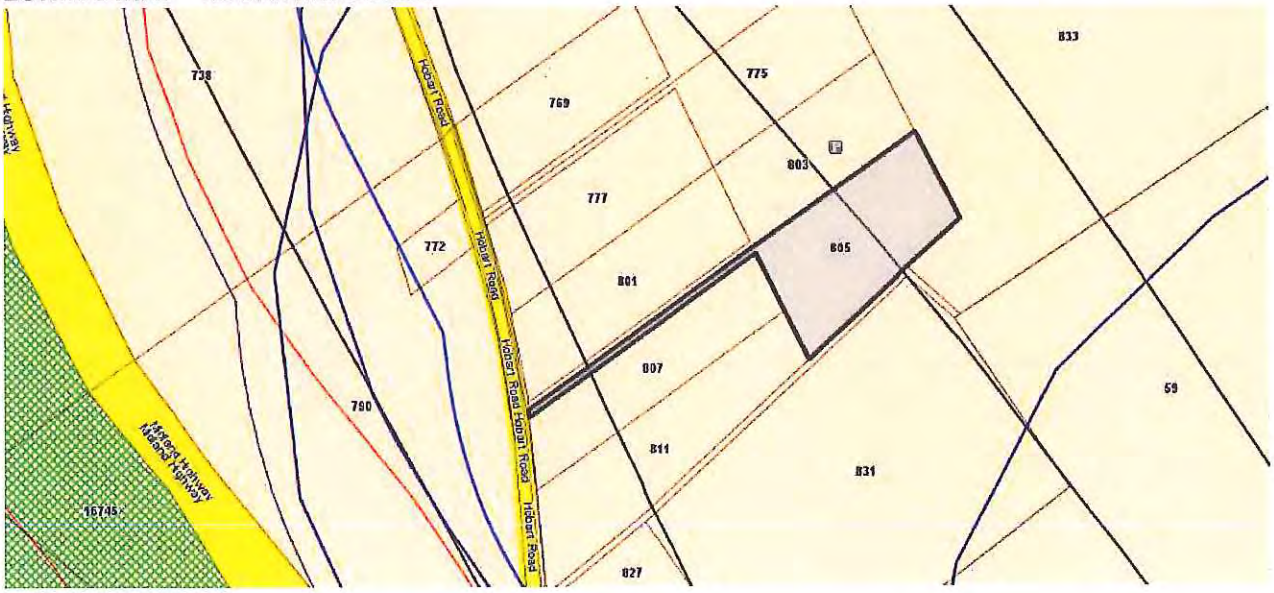
... .

.....
(attach additional sheets if necessary)

P17-164

AERIAL PHOTOGRAPH & SERVICES MAP for 805 HOBART ROAD, BREADALBANE

ZONING MAP - RURAL RESOURCE

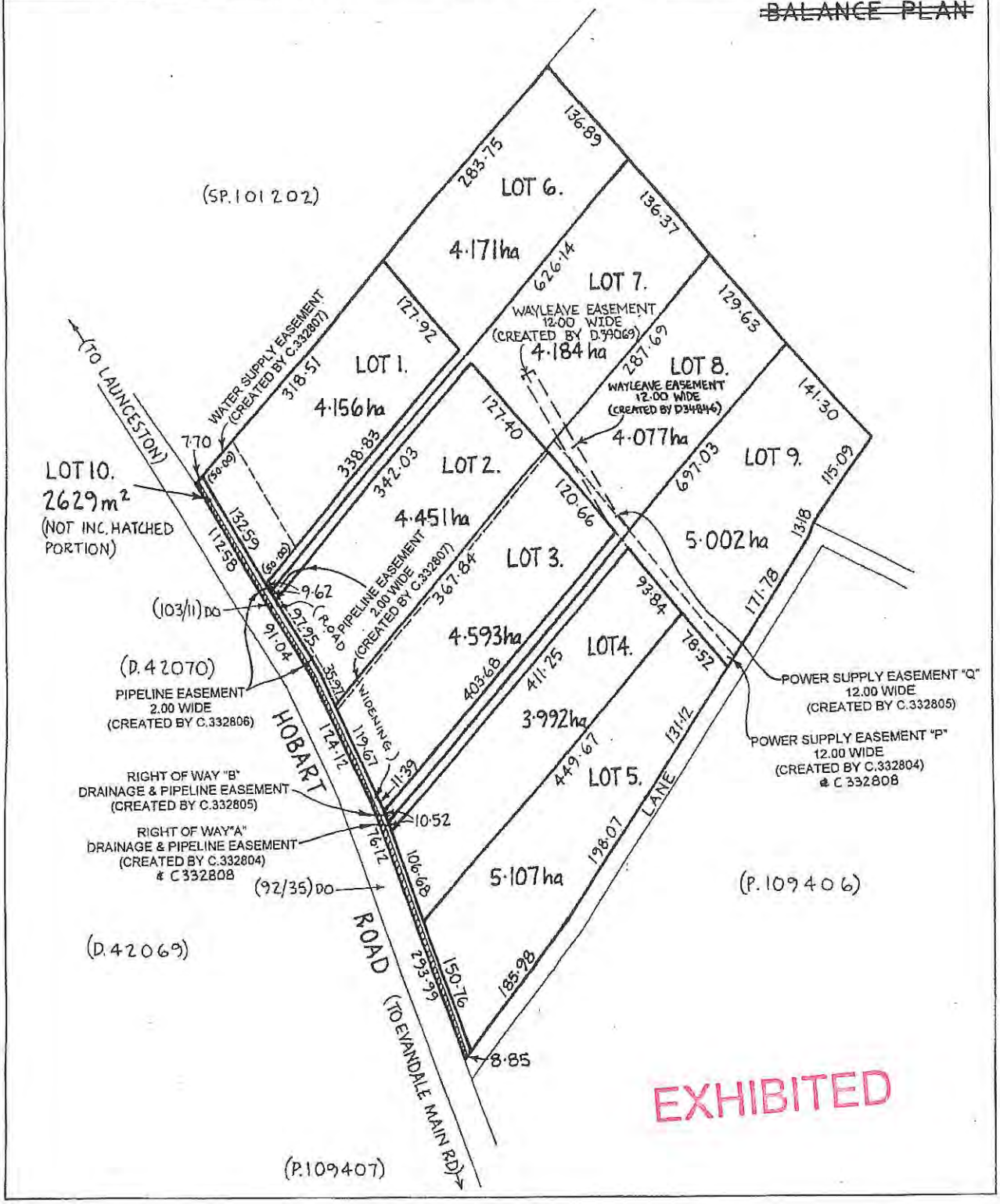


EXHIBITED

OWNER	PLAN OF TITLE	Registered Number
FOLIO REFERENCE F.R. 127710-1	LOCATION CORNWALL - BREADALBANE	P 131512
GRANTEE	FIRST SURVEY PLAN No. (81-88D.O.)	APPROVED .....
	COMPILED BY LTO	
	SCALE 1: 4000 LENGTHS IN METRES	Recorder of Titles

MAPSHEET MUNICIPAL CODE No. 120 (5040)	LAST UPI No FKF74	LAST PLAN No. P.127710	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN

~~BALANCE PLAN~~



Rebecca Green & Associates

Planning Submission

Proposed New Cattery, Extension to Existing Kennels, Road Sign, Extension to Existing Pet Crematorium and New Dwelling

805 Hobart Road, Breadalbane (with road sign partly on 803 Hobart Road)

Wilkin Design

01

Rebecca Green & Associates

Contents

1. Executive Summary

1.1 Proposal Overview

This submission is prepared in support of a proposal for a new cattery, extension to existing kennels, road sign, extension to existing pet crematorium and new dwelling at 805 Hobart Road, Breadalbane.

The owner of the subject land is Anna McFarlane. This application is made with the consent of the owner. The entrance feature is partly upon 803 Hobart Road, Breadalbane, where the driveway is shared between the two properties.

This application is made under Section 57 of the *Land Use Planning and Approvals Act 1993*, which provides for the submission of an application for a discretionary planning permit. The proposal has been prepared in accordance with the provisions of the Northern Midlands Interim Planning Scheme 2013 and the objectives of the *Land Use Planning and Approvals Act 1993*.

The proposal is summarised as:

- Proposed new cattery, extension to existing kennels, road sign, extension to existing pet crematorium, and single dwelling, and is illustrated in plans, provided at Appendix B.

2. Subject Land and Locality

2.1 Subject Land Description

The subject site is comprised in Certificate of Title Volume 131512 Folio 9. The registered owner of the site is Anna McFarlane. A copy of the title is contained in Appendix A.

Lot 9 has an area of 5.002 hectares and has road frontage to Hobart Road. The site slopes up to the north east. The site is used for kennels and a pet crematorium at present.

2.2 Locality Description

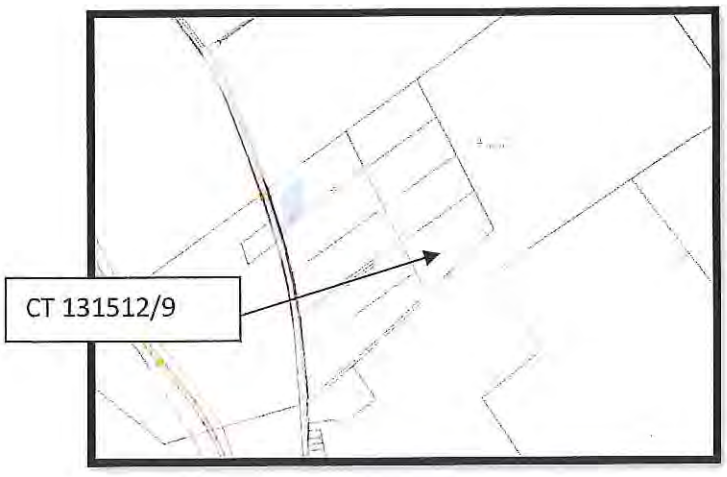


Figure 1: Locality Map

The subject site is located north of the Breadalbane settlement. The site is surrounded by small rural lifestyle allotments, principally containing single dwellings, with a quarry to the southeast of the site.

2.3 Access and Movement

One existing vehicular access point to Hobart Road is present, and will be maintained as part of the proposal.

2.4 Services

The subject site is located within the area of Breadalbane; it is not provided with reticulated sewerage and stormwater, however the site is provided with power and communications supplies. Onsite collection and disposal of wastewater and stormwater is proposed for the development. The size of the site and soils on the site are suitable for waste water disposal. A water main runs along Hobart Road.

2.5 Heritage

The subject site is not identified to be of heritage significance.

2.6 Flora and Fauna

The site is located within the rural area on the outskirts of Breadalbane settlement and does not support any remnant native vegetation and hence, any habitat of threatened species. A search of the Natural Values Atlas has revealed no recorded species on the subject site.

3. Proposal

3.1 Development Proposal

The proposal is for a new cattery. The cattery building will accommodate 50 cat kennels, an indoor cat play area and cleaning area. The 128.9m^2 new cattery will be clad with weatherboard walls and Colorbond roof sheeting. The building will be 4.83 metres in height.

The existing kennels will be extended with two additional kennel areas, including an extension to the existing kennel building. Kennel 1 will accommodate 33 dog kennels in an area of 128.9m^2. Kennel 2 is an extension to the existing kennel building. The extension will accommodate an additional 33 dog kennels in an area of 160.5m^2. The addition is 5.316 metres in height. Kennel 3 will accommodate 14 dog kennels in an area of the existing crematorium building. The additions will increase the dog kennels from an existing 40 to 120 in total. A Doggy Day Care building is proposed as well. This building will also accommodate a hydrotherapy area and pool. The building will be 128.9m^2 and have a height of 5.316 metres.

The proposal includes an extension to the existing pet crematorium on the site. The extension is 162m^2 and accommodates the re-located animal cremator and a future animal crematorium area

and storage. The extension will have a wall height of 5.846 metres and will match the existing building in terms of height, and cladding materials.

The proposal includes a new single dwelling. The dwelling will comprise of four bedrooms, main with ensuite and walk-in-robe. Living, dining and kitchen together with laundry, bathroom, and attached garage.

The dwelling is proposed to be clad using weatherboard wall cladding. The roof will be clad using colorbond custom orb roof sheeting.

The height of the dwelling is proposed to be maximum 4.7 metres.

A new rendered brick entrance feature adjacent to Hobart Road also forms a part of this submission. Graphics in the form of signage is proposed to be placed on one section of the entrance feature. A pole sign also within the property boundary is proposed that will be illuminated.

Attached at Appendix B to this submission are plans and elevations of all proposed buildings.

4. Planning Assessment

4.1 Northern Midlands Interim Planning Scheme 2013

The subject site is zoned Rural Resource within the Northern Midlands Interim Planning Scheme 2015.

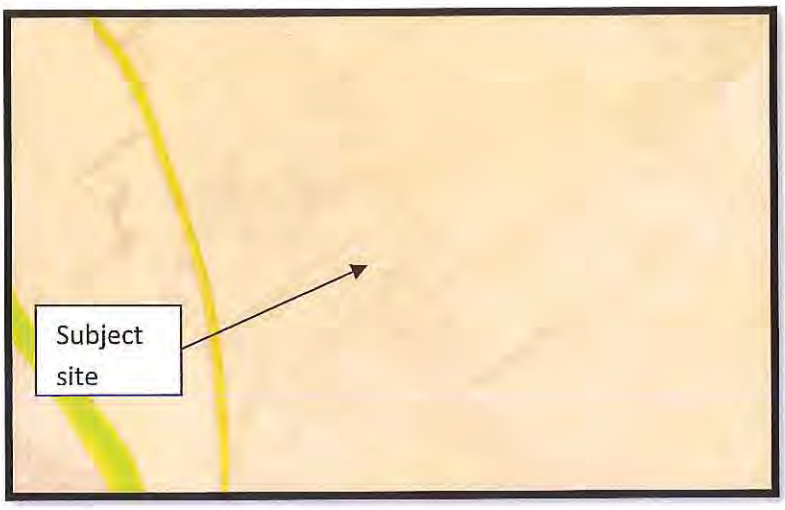


Figure 2: Zoning Map

(Cream = Rural Resource Zone, Yellow = Utilities Zone)

26 Rural Resource Zone

26.1 Zone Purpose

26.1.1.1 To provide for sustainable use or development of resources for agriculture, aquaculture, forestry, mining and other primary industries, including opportunities for resource processing.

26.1.1.2 To provide for other use or development that does not constrain or conflict with resource development uses.

26.1.1.3 To provide for economic development that is compatible with primary industry, environmental and landscape values.

26.1.1.4 To provide for tourism-related use and development where the sustainable development of rural resources will not be compromised.

Proposal Response

The proposal clearly meets the zone purpose statements, as it provides for a complementary use which does not constrain or conflict with resource development uses. The site is restricted due to its associated limitations, including size, adjacent land uses and minimal water resources in terms of primary industry usage. The proposed development would be located to nearby existing residential dwellings; the site is currently used for animal kennels and a pet crematorium.

The development of the single dwelling will not negatively impact the existing nearby residences nor does it have any impact on the nearby current rural and primary industry related enterprises, and vice versa.

This is complied with.

26.2 Use Table

The proposed use best fits the use class of **Residential** of which is a Discretionary use within the Rural Resource Zone, as the proposal is for a single dwelling.

The proposed use also best fits the use class of **Domestic Animal Breeding, Boarding or Training** of which is a Permitted use within the Rural Resource Zone, as the proposal is not on prime agricultural land. The pet crematorium best fits the use class of **Crematoria and Cemeteries** of which is a Permitted use within the Rural Resource Zone, as the proposal is a crematoria and not on prime agricultural land.

Residential as defined by the Scheme means:

> "Use of land for self-contained or shared living accommodation. Examples include an ancillary dwelling, boarding house, communal residence, home-based business, hostel, residential aged care home, residential college, respite centre, retirement village and single or multiple dwellings."

Domestic Animal Breeding, Boarding or Training as defined by the Scheme means:

> "Use of land for breeding, boarding or training domestic animals. Examples include an animal pound, cattery and kennel."

Crematoria and Cemeteries as defined by the Scheme means:

> "Use of land for the burial or cremation of human or animal remains, and is land is so used, the use includes a funeral chapel."

26.3 Use Standards

26.3.1 Discretionary Uses if not a single dwelling – not applicable.

26.3.2 Dwellings

Objective
To ensure that the:
(a) Ability to conduct extractive industries and resource development will not be constrained by conflict with sensitive uses; and
(b) Development of buildings is unobtrusive and complements the character of the landscape.

Acceptable Solution	Performance Criteria	*Proposal Response*
A1.1 Development must be for the alteration, extension or replacement of existing dwellings; or A1.2 Ancillary dwellings must be located within the curtilage of the existing dwelling on the property; or A1.3 New dwellings must be within the resource development use class and on land that has a minimum current capital value of $1 million a demonstrated by a valuation report or sale price less than two years old.	P1.1 A dwelling may be constructed where it is demonstrated that: a) It is integral and subservient to resource development, as demonstrated in a report prepared by a suitably qualified person, having regard to: i) Scale; and ii) Complexity of operation; and iii) Requirement for personal attendance by the occupier; and iv) Proximity to the activity; and v) Any other matters as relevant to the particular activity; or b) The site is practically incapable of supporting an agricultural use or being included with other land for agricultural or other primary industry use, having regard to: i) Limitations created by	*P1.1 b) The land classification is Class 4 and Class 5 for the site, and is Class 5 where the proposed dwelling is to be located. The land is not prime agricultural land. The site is restricted due to its associated limitations, including size (5.002ha), adjacent land uses (residential, extractive industry and rural lifestyle type allotments) and minimal water resources. The proposed development would be located to nearby existing residential dwellings. The use of the site is for boarding kennels and a pet crematorium. The development of the dwelling will not*

	any existing use and/or development surrounding the site; and ii) Topographical features; and iii) Poor capability of the land for primary industry operations (including a lack of capability or other impediments); and	*negatively impact the existing nearby residences nor does it have any impact on the nearby current rural and primary industry related enterprises, and vice versa.*
	P1.2 A dwelling may be constructed where it is demonstrated that wastewater treatment for the proposed dwelling can be achieved within the lot boundaries, having regard to the rural operation of the property and provision of reasonable curtilage to the proposed dwelling; and	*P1.2 Wastewater treatment can be achieved within the lot boundaries, with the land area available and the soil characteristics as well as the building setbacks and curtilage. A Special Plumbing Permit will be applied for once planning approval is provided.*
	P1.3 A dwelling may be constructed where it is demonstrated that the lot has frontage to a road or a Right of Carriageway registered over all relevant titles.	*P1.3 The lot has frontage to Hobart Rad, where existing access to the lot is to be maintained.* *The proposal meets the performance criteria.*

26.3.3 Irrigation Districts – not applicable, the subject site is not on land within an irrigation district.

26.4 Development Standards

26.4.1 Building Location and Appearance

Objective **To ensure that the:** **(c) Ability to conduct extractive industries and resource development will not be constrained by conflict with sensitive uses; and** **(d) Development of buildings is unobtrusive and complements the character of the landscape.**		
Acceptable Solution	**Performance Criteria**	***Proposal Response***
A1 Building height must not exceed: (a) 8m for dwellings; or (b) 12m for other purposes.	P1 Building height must: (a) Be unobtrusive and complement the character of the surrounding landscape; and	*A1 The proposed buildings range in height between 4.7m for the dwelling, and 4.83m for the cattery to*

	(b) Protect the amenity of adjoining uses from adverse impacts as a result of the proposal.	*5.846m for the crematorium extension.*
A2.1 Buildings must be set back a minimum of: (a) 50m where a non sensitive use or extension to existing sensitive use building is proposed; or (b) 200m where a sensitive use is proposed; or (c) The same as existing for replacement of an existing dwelling.	P2 Buildings must be setback so that the use is not likely to constrain adjoining primary industry operations having regard to: a) The topography of the land; and b) Buffers created by natural or other features; and c) The location of development on adjoining lots; and d) The nature of existing and potential adjoining uses; and e) The ability to accommodate a lesser setback to the road having regard to: i) The design of the development and landscaping; and ii) The potential for future upgrading of the road; and iii) Potential traffic safety hazards; and iv) Appropriate noise attenuation.	*P2 Due to the size of the lot, and existing buildings on site, the dwelling is to be located 15m to the north-eastern boundary and 30m to the north-western boundary. The cattery building and crematorium extension are less than 50m to the south-eastern boundary.* *The dwelling is "inline" with the adjacent dwelling at 803 Hobart Road to the northeast, and located within Class 5 land as well as separation between the kennels and the dwelling. The subject site immediately adjoins access and land to the southeast to access land owned by extractive industry companies. A 3.0m high soil mound (bund) to a minimum of level with the dwelling is to be located adjacent to the north-eastern boundary.* *The development of the dwelling will not negatively impact the existing nearby residences nor does it have any impact on the nearby current rural and primary industry related enterprises, and vice versa. The bund along the back boundary of the property has been based on the noise*

	report prepared by Dr Alex McLeod (See Technical Memo at Appendix E).

26.4.2 Subdivision – not applicable, the proposal does not include subdivision.

4.2 Other Planning Considerations

E1 Bushfire Code – Not applicable at planning application stage.

E2 Potentially Contaminated Land Code – Not applicable, the subject site is not potentially contaminated land.

E3 Landslip Code – Not applicable. The subject site is not located within any proclaimed landslip zones; nor any overlay subject to the Planning Scheme.

E4 Road and Railway Assets Code – Applicable.

E4.6.1 Use and road or rail infrastructure

Objective **To ensure that the safety and efficiency of road and rail infrastructure is not reduced by the creation of new accesses and junctions or increased use of existing accesses and junctions.**		
Acceptable Solution	**Performance Criteria**	***Proposal Response***
A1 Sensitive use on or within 50m of a category 1 or 2 road, in an area subject to a speed limit of more than 60km/h, a railway or future road or railway, must not result in an increase to the annual average daily traffic (AADT) movements to or from the site by more than 10%.	P1 Sensitive use on or within 50m of a category 1 or 2 road, in an area subject to a speed limit of more than 60km/h, a railway or future road or railway must demonstrate that the safe and efficient operation of the infrastructure will not be detrimentally affected.	*A1 Not applicable as the proposed use is not on or within 50 metres of a Category 1 or 2 road.*
A2 For roads with a speed limit of 60km/h or less the use must not generate more than a total of 40 vehicle entry and exit movements per day.	P2 For roads with a speed limit of 60km/h or less, the level of use, number, location, layout and design of accesses and junctions must maintain an acceptable level of safety for all road users, including pedestrians and cyclists.	*A2 Not applicable.*
A3 For roads with a speed	P3 For limited access roads and	*A3 The proposed additions to the*

limit of more than 60km/h the use must not increase the annual average daily traffic (AADT) movements at the existing access or junction by more than 10%.	roads with a speed limit of more than 60km/h: a) Access to a category 1 road or limited access road must only be via an existing access or junction or the use or development must provide a significant social and economic benefit to the State or region; and b) Any increase in use of an existing access or junction or development of a new access or junction to a limited access road or a category 1, 2 or 3 road must be for a use that is dependent on the site for its unique locational attributes and an alternate site or access to a category 4 or 5 road is not practicable; and c) An access or junction which is increased in use or is a new access or junction must be designed and located to maintain an adequate level of safety and efficiency for all road users.	*existing kennels, the cattery and the new dwelling is not expected to increase the annual average daily traffic (AADT) movements at the existing access to Hobart Road by more than 10%. The average daily usage of the road is estimated at least 4000. Assessing a 10% allowance of 400 cars per day, which is well in excess of what is estimated for this development.*

E4.7 Development Standards

E4.7.1 Development on and adjacent to Existing and Future Arterial Roads and Railways – not applicable, no new roads will be created.

4.7.2 Management of Road Accesses and Junctions

Objective **To ensure that the safety and efficiency of roads is not reduced by the creation of new accesses and junctions or increased use of existing accesses and junctions.**		
Acceptable Solution	**Performance Criteria**	***Proposal Response***

A1 For roads with a speed limit or 60km/h or less the development must include only one access providing both entry and exit, or two accesses providing separate entry and exit.	P1 For roads with a speed limit or 60km/h or less, the number, location, layout and design of accesses and junctions must maintain an acceptable level of safety for all road users, including pedestrians and cyclists.	*Not applicable.*
A2 For roads with a speed limit of more than 60km/h the development must not include a new access or junction.	P2 For limited access roads and roads with a speed limit of more than 60km/h: a) Access to a category 1 road or limited access road must only be via an existing access or junction or the development must provide a significant social and economic benefit to the State or region; and b) Any increase in use of an existing access or junction or development of a new access or junction to a limited access road or a category 1, 2 or 3 road must be dependent on the site for its unique resources, characteristics or locational attributes and an alternate site or access to a category 4 or 5 road is not practicable; and c) An access or junction which is increased in use or is a new access or junction must be designed and located to maintain an adequate level of safety and efficiency for all road users.	*A2 The proposal will utilise an existing access.*

E4.7.3 Management of Rail Level Crossings – Not applicable.

E4.7.4 Sight Distance at Accesses, Junctions and Level Crossings

Objective To ensure that use and development involving or adjacent to accesses, junctions and level crossings allows sufficient sight distance between vehicles and between vehicles and trains to enable safe movement of traffic.		
Acceptable Solution	**Performance Criteria**	***Proposal Response***
A1 Sight distances at: a) An access or junction must comply with the Safe Intersection Sight Distance shown in Table E4.6.4; and b) Rail level crossings must comply with *AS1742.7 Manual of uniform traffic control devices – Railway crossings*, Standards Association of Australia; or c) If the access is a temporary access, the written consent of the relevant authority has been obtained.	P1 The design, layout and location of an access, junction or rail level crossing must provide adequate sight distances to ensure the safe movement of vehicles.	*A1 The SISD exceeds the distance shown in Table E4.6.4. The proposal will utilise an existing access.*

E5 Flood Prone Areas Code – Not applicable.

E6 Car Parking and Sustainable Transport Code

Table E6.1: Parking Space Requirements

Use	Parking Requirement		
	Vehicle	Bicycle	Required
Residential	1 space per bedroom or 2 spaces per 3 bedrooms + 1 visitor space for every 5 dwellings	1 space per unit or 1 spaces per 5 bedrooms in other forms of accommodation	2 space – Vehicle 1 bicycle space
Crematoria and Cemetery	1 space per employee + 1 visitor space + 1 space per 4 chapel seats	1 space per 50 chapel seats	2 spaces – vehicle 0 bicycle space

Domestic animal breeding, boarding or training	**1 space per staff member + 2 visitor spaces**	**No requirement set**	**Minimum 3 spaces**

Proposal Response

The proposal provides for a minimum of 2 spaces, within the garage for vehicles and/or bicycles for the single dwelling. The capacity of this area and the site in general is capable of accommodating well in excess of the required parking spaces. The existing site accommodates ample vehicle parking spaces to comply with the requirements.

E6.6 Use Standards

E6.6.1 Car Parking Numbers

Objective		
To ensure that an appropriate level of car parking is provided to service use.		
Acceptable Solutions	**Performance Criteria**	***Proposal Response***
A1 The number of car parking spaces must not be less than the requirements of: a) Table E6.1; or b) A parking precinct plan contained in Table E6.6: Precinct Parking Plans (except for dwellings in the General Residential Zone).	P1 The number of car parking spaces provided must have regard to: a) The provisions of any relevant location specific car parking plan; and b) The availability of public car parking spaces within reasonable walking distance; and c) Any reduction in demand due to sharing of spaces by multiple uses either because of variations in peak demand or by efficiencies gained by consolidation; and d) The availability and frequency of public transport within reasonable walking distance of the site; and e) Site constraints such as existing buildings,	*A1 The proposal complies with the acceptable solution. The proposal provides a minimum capacity of 2 spaces for the Residential use and at least 5 parking spaces for the kennels, cattery and crematorium.*

slope, drainage, vegetation and landscaping; and

f) The availability, accessibility and safety of on-road parking, having regard to the nature of the roads, traffic management and other uses in the vicinity; and

g) An empirical assessment of the car parking demand; and

h) The effect on streetscape, amenity and vehicle, pedestrian and cycle safety and convenience; and

i) The recommendations of a traffic impact assessment prepared for the proposal; and

j) Any heritage values of the site; and

k) For residential buildings and multiple dwellings, whether parking is adequate to meet the needs of the residents having regard to:

   i) The size of the dwelling and the number of bedrooms; and

   ii) The pattern of parking in the locality; and

   iii) Any existing structure on the land.

E6.7 Development Standards

E6.7.1 Construction of Car Parking Spaces and Access Strips

Objective To ensure that car parking spaces and access strips are constructed to an appropriate standard.		
Acceptable Solutions	**Performance Criteria**	***Proposal Response***
A1 All car parking, access strips manoeuvring and circulation spaces must be: a) Formed to an adequate level and drained; and b) Except for a single dwelling, provided with an impervious all weather seal; and c) Except for a single dwelling, line marked or provided with other clear physical means to delineate car spaces.	P1 All car parking, access strips manoeuvring and circulation spaces must be readily identifiable and constructed to ensure that they are useable in all weather conditions.	*A1 With appropriate conditions contained in an approval, the proposal is considered to comply with the Acceptable Solution.*

E6.7.2 Design and Layout of Parking Areas

Objective To ensure that parking areas are designed and laid out to an appropriate standard.		
Acceptable Solutions	**Performance Criteria**	***Proposal Response***
A1.1 Where providing for 4 or more spaces, parking areas (other than for parking located in garages and carports for dwellings in the General Residential Zone) must be located behind the building line; and A1.2 Within the general residential zone, provision for turning must not be located within the front setback for residential buildings or multiple dwellings.	P1 The location of car parking and manoeuvring spaces must not be detrimental to the streetscape or the amenity of the surrounding areas, having regard to: a) The layout of the site and the location of existing buildings; and b) Views into the site from the road and adjoining public spaces; and c) The ability to access the site and the rear of buildings; and d) The layout of car parking in the	*A1 The car parking is proposed behind the building line.*

	vicinity; and e) The level of landscaping proposed for the car parking.	
A2.1 Car parking and manoeuvring space must: a) Have a gradient of 10% of less; and b) Where providing for more than 4 cars, provide for vehicles to enter and exit the site in a forward direction; and c) Have a width of vehicular access no less than prescribed in Table E6.2; and d) Have a combined width of access and manoeuvring space adjacent to parking spaces not less than as prescribed in Table E6.3 where any of the following apply: i) There are three or more car parking spaces; and ii) Where parking is more than 30m driving distance from the road; or iii) Where the sole vehicle access is to a category 1,2,3 or 4 road; and A2.2 The layout of car spaces and access ways must be designed in accordance with *Australian Standards AS 2890.1 – 2004 Parking Facilities, Part 1: Off Road Car Parking.*	P2 Car parking and manoeuvring space must: a) Be convenient, safe and efficient to use having regard to matters such as slope, dimensions, layout and the expected number and type of vehicles; and b) Provide adequate space to turn within the site unless reversing from the site would not adversely affect the safety and convenience of users and passing traffic.	*A2.1 The site used currently for car parking is relatively flat with a gradient of less than 10%. The site allows for vehicles to enter and exit the site only in a forward direction with the width of vehicular access no less than prescribed in Table E6.2 and E6.3.* *A2.2 The layout of car spaces and access ways will be designed in accordance with Australian Standards AS 2890.1 – 2004 Parking Facilities, Part 1: Off Road Car Parking.*

E6.7.3 Parking for Persons with a Disability

Objective

To ensure adequate parking for persons with a disability.		
Acceptable Solutions	**Performance Criteria**	***Proposal Response***
A1 All spaces designated for use by persons with a disability must be located closest to the main entry point to the building.	P1 No performance criteria.	*A1 Not applicable.*
A2 One of every 20 parking spaces or part thereof must be constructed and designated for use by persons with disabilities in accordance with *Australian Standards AS/NZ 2890.6 2009.*	P2 No performance criteria.	*A2 Not applicable.*

E6.7.4 Loading and Unloading of Vehicles, Drop-off and Pickup

Objective To ensure adequate access for people and goods delivery and collection and to prevent loss of amenity and adverse impacts on traffic flows.		
Acceptable Solutions	**Performance Criteria**	***Proposal Response***
A1 For retail, commercial, industrial, service industry or warehouse or storage uses: a) At least one loading bay must be provided in accordance with Table E6.4; and b) Loading and bus bays and access strips must be designed in accordance with Australian Standard AS/NZS 2890.3 2002 for the type of vehicles that will use that site.	P1 For retail, commercial, industrial, service industry or warehouse or storage uses, adequate space must be provided for loading and unloading the type of vehicles associated with delivering and collecting people and goods where these are expected on a regular basis.	*A1 Not applicable.*

E6.8 Provisions for Sustainable Transport

E6.8.1 Bicycle End of Trip Facilities – not used in this planning scheme.

E6.8.2 Bicycle Parking Access, Safety and Security

Objective

To ensure that parking and storage facilities for bicycles are safe, secure and convenient.		
Acceptable Solutions	**Performance Criteria**	***Proposal Response***
A1.1 Bicycle parking spaces for customers and visitors must: a) Be accessible from a road, footpath or cycle track; and b) Include a rail or hoop to lock a bicycle to that meets *Australian Standard AS 2890.3 1993*; and c) Be located within 50m of and visible or signposted from the entrance to the activity they serve; and d) Be available and adequately lit in accordance with Australian Standard *AS/NZS 1158 2005 Lighting Category C2* during the times they will be used; and A1.2 Parking for residents' and employees' bicycles must be under cover and capable of being secured by lock or bicycle lock.	P1 Bicycle parking spaces must be safe, secure, convenient and located where they will encourage use.	*A1 Bicycle parking is adequately available within the garage of the single dwelling.*
A2 Bicycle parking spaces must have: a) Minimum dimensions of: i) 1.7m in length; and ii) 1.2m in height; and iii) 0.7m in width at the handlebars; and b) Unobstructed access with a width of at least 2m and a gradient of no more 5% from a public area where cycling is allowed.	P2 Bicycle parking spaces and access must be of dimensions that provide for their convenient, safe and efficient use	*A2 Although not strictly delineated, the site can accommodate bicycle parking with sufficient dimensions to meet the acceptable solution.*

E6.8.3 Pedestrian Walkways

Objective **To ensure pedestrian safety is considered in development.**		
Acceptable Solutions	**Performance Criteria**	***Proposal Response***

A1 Pedestrian access must be provided in accordance with Table E6.5.	P1 Safe pedestrian access must be provided within car park and between entrances to buildings and the road.	*A1 Pedestrian access throughout the development as appropriate.*

E7 Scenic Management Code – Not applicable.

E8 Biodiversity Code – Not applicable. No vegetation except grass is to be removed as part of the development of the site.

E9.0 Water Quality Code – Not applicable.

E10 Recreation and Open Space Code – Not applicable, the proposal is not for a subdivision.

E11 Environmental Impacts and Attenuation Code - The proposed use of the single dwelling is considered to a sensitive use.

E11.6 Use Standards

E11.6.1 Attenuation Distances

Objective **To ensure that potentially incompatible use or development is separated by a distance sufficient to ameliorate any adverse effects.**		
Acceptable Solutions	**Performance Criteria**	***Proposal Response***
A1 No acceptable solution.	P1 Sensitive use or subdivision for sensitive use within an attenuation area to an existing activity listed in Tables E11.1 and E11.2 must demonstrate by means of a site specific study that there will not be an environmental nuisance or environmental harm, having regard to the: a) Degree of encroachment; and b) Nature of the emitting operation being protected by the attenuation area; and c) Degree of hazard or pollution that may	*P1 The proposed use of the single dwelling is considered a sensitive use. The subject site is within an attenuation area of existing quarries (including Raeburn Quarry, and McGrath Quarry), and the proposed new Cocked Hat Hill Quarry and as such assessments have been undertaken in relation to noise, ground vibrations, air blast over pressure and dust. These assessments are contained at Appendix C, D and E to this submission.* *The applicant has been working in consultation with consultants of the McGrath Quarry and the proposed new Cocked Hat Hill Quarry. Technical advice has been provided, which has provided*

	emanate from the emitting operation; and d) The measures within the proposal to mitigate impacts of the emitting activity to the sensitive use.	*for the inclusion of a shortened setback to the north-eastern boundary to 15.0 metres and the inclusion of a bund 3.0m in height.* *A noise assessment is contained in Appendix E which incorporates the 3m bund along the north-eastern boundary. Also attached at Appendix D is the Noise Assessment report for the quarry, which includes blasting measurements etc. This report will be appended to the DPEMP for the new quarry, so it does consider more than just the proposed dwelling at 805 Hobart Road.* *These reports conclude that the proposed dwelling is unlikely to suffer environmental nuisance or environmental harm from environmental noise, air blast over pressure, ground vibration or dust emissions from the existing and proposed quarry with the inclusion of the bund.*
A2 Uses listed in Tables E11.1 and E11.2 must be setback from any existing sensitive use, or a boundary to the General Residential, Low Density Residential, Rural Living, Village, Local Business, General Business, Commercial zones, the minimum attenuation distance listed in Tables E11.1 and E11.2 for that activity.	P2 Uses within the potential to create environmental harm and environmental nuisance must demonstrate by means of a site specific study that there will not be an environmental nuisance or environmental harm having regard to: a) The degree of encroachment; and b) The nature of the emitting operation being protected by the attenuation	*A2 – Not applicable. No new use listed in Tables E11.1 and E11.2.*

	area; and c) The degree of hazard or pollution that may emanate from the emitting operation; and d) Use of land irrigated by effluent must comply with *National Health and Medical Research Council Guidelines.*	

E12 Airports Impact Management Code

E12.5 Use Standards

E12.5.1 Noise Impacts

Objective **To ensure that noise impacts on use within the ANEF contours from aircraft and airports are appropriately managed.**		
Acceptable Solutions	**Performance Criteria**	***Proposal Response***
A1 No acceptable solution.	P1 All new buildings must comply with the *Australian Standard 2021-2000 Acoustics – Aircraft Noise Intrusion – Building Siting and Construction.*	*P1 The new buildings will comply with* the *Australian Standard 2021-2000 Acoustics – Aircraft Noise Intrusion – Building Siting and Construction.*
A2 Sensitive use (whether ancillary to other use or development or not) must not occur within the 25 ANEF contour.	P2 No performance criteria.	*A2 – The proposal complies. The proposed dwelling lies beyond the ANEF 25 contour line.*

E12.6 Development Standards

E12.6.1 Obstacles to Aircraft

Objective **To ensure that development does not impact on the safety of prescribed airspace.**		
Acceptable Solutions	**Performance Criteria**	***Proposal Response***

A1 Development must be approved pursuant to the *Airports Act 1996* and the *Airport (Protection of Airspace) Regulations 1996* and the Manual of Standards.	P1 No performance criteria.	*A1 Should Council require that the development be approved pursuant to the Airports Act 1996 and the Airport (Protection of Airspace) Regulations 1996 and the Manual of Standards, then referral to the relevant agency can be undertaken by Council as part of the normal assessment process.*

E13 Local Historic Heritage Code – Not applicable.

E14 Coastal Code – Not applicable.

E15 Signs Code

Other sign – Any sign not listed.

Pole sign – A sign fixed to a pole(s) that is no more than 7m above ground level.

E15.5.3 Design and siting of signage

Objective **To ensure that the design and siting of signs complement or enhance the characteristics of the natural and built environment in which they are located.**		
Acceptable Solutions	**Performance Criteria**	***Proposal Response***
A34 No acceptable solution.	P34 Other signs can be located in any zone except the General Residential Zone and the Low Density Residential Zone, provided it can be shown that: a) No other form of permitted signage will meet the needs of the proprietor; and b) The sign does not dominate the streetscape and reflects the	*P34 The signage proposed is considered to best fit within "Other sign". The entrance signage is discretionary as it relies on the performance criteria. The proposed signage is similar to that required by the home business sign in terms of dimension. One sign is proposed. The small nature and location of the signage is considered to comply with the performance criteria and will not contribute to visual clutter, and will not distract*

	prevailing character of the area, in terms of shape, proportions and colours; and c) It does not conflict with the Zone Purpose as outlines in Part D of this planning scheme; and d) Be sympathetic to the architectural character and detailing of the building; and e) Be of appropriate dimensions so as not to dominate the streetscape or premises on which it is located; and f) Not result in loss of amenity to neighbouring properties; and g) Not involve the unnecessary repetition of messages or information on the same street frontage; and h) Not contribute to or exacerbate visual clutter; and i) Not cause a safety hazard or obstruct movement of anyone inside or outside the associated building; and j) Not distract	*motorists or cause a safety hazard. The angle of the sign to the road will help the sign be sympathetic to the streetscape. The sign will not be illuminated.*

	motorists as a result of size, illumination or movement.	
A35 No acceptable solution.	P35 A pole sign located in the: • General Business zone; or • General Industrial zone; or • Local Business zone; or • Light Industrial zone; or • Rural Resource zone; or • Village zone Must demonstrate that: a) The sign is integral to the particular use of the site; b) No other form of permitted signage will meet the needs of the proprietor; and c) The sign does not unreasonably dominate the streetscape and reflects the prevailing character of the area, in terms of shape, proportions and colours; and d) It does not conflict the Zone purpose as outlined in Part D of this planning scheme.	*P35 The subject site and hence location of the proposed pole sign is within the Rural Resource zone. The signage portrays details of the services available at the facility and is necessary to detail to services that are available to the passing traffic. Limited other signage options are available to the zone.* *Given the large expansive setting, the size and dimensions of the sign and the location of the sign behind the entrance feature is not considered to be dominant in its setting and streetscape. The sign is also two sided and is side on to the road. It is hence setback from the frontage and within a landscape setting. The signage does not conflict with the zone purpose.* *The pole sign is considered to comply with the performance criteria.*

A36 A pole sign must: a) Be in proportion to the viewable portion of the open space and building to which it is associated; and b) Have a maximum height of 5m; c) Have a minimum clearance of 2.7m above the ground; and d) Have a maximum area of $6m^2$ with respect to each face; and e) Have maximum face dimensions of 2.5m horizontally and 3 vertically; and f) Not have any part projecting beyond the boundaries of the site; g) Not be rotating or moving.	P36 If greater than 5m in height or a face greater than 3m in height, it must be demonstrated that the sign will: a) Be sympathetic to the architectural character and detailing of the building; and b) Be of appropriate dimensions so as not to dominate the streetscape or premises on which it is located; and c) Not result in loss of amenity to neighbouring properties; and d) Not involve the unnecessary repetition of messages or information on the same street frontage; and e) Not contribute to or exacerbate visual clutter; and f) Not distract motorists as a result of size illumination or movement; and g) Under no circumstances exceed 7m in height.	*A36* *The pole sign is maximum 5 metres in height and has a clearance of 2.7m above the ground. Each of the two faces have a maximum face dimensions of 2.3m vertically and 1.2m horizontally and has an area of each face of $2.76m^2$. The whole of the sign is within the property boundaries and is not to be rotating or moving.*
A37 A pole sign must be limited to one per site.	P37 For more than one sign per site it must be demonstrated that: a) More than one sign is justified by the	*A37 Only one pole sign is proposed for this subject site.*

size of the site or its location on a corner; and

b) They will be sympathetic to the architectural character and detailing of the building; and

c) They will be of appropriate dimensions so as not to dominate the streetscape or premises on which it is located; and

d) They will not result in loss of amenity to neighbouring properties; and

e) They will not involve the unnecessary repetition of messages or information on the same street frontage; and

f) They will not contribute to or exacerbate visual clutter; and

g) Not distract motorists as a result of size illumination or movement.

4.3 State Policies

4.3.1 State Coastal Policy 1996

The State Coastal Policy was created under the *State Policies and Projects Act 1993*. This Policy applies to the Coastal Zone, which is defined as the area within State waters and all areas within one kilometre of the coast.

Proposal Response

The subject site is located not within one kilometre from the coast, meaning that the provisions of the State Coastal Policy 1996 do not apply.

4.3.2 State Policy on Water Quality Management 1997

This Policy applies to all surface waters, including coastal waters, and ground waters, other than:

i. Privately owned waters that are not accessible to the public and are not connected to, or flow directly into, waters that are accessible to the public; or
ii. Waters in any tank, pipe or cistern.

The purpose of the Policy is to achieve the sustainable management of Tasmania's surface water and groundwater resources by protecting or enhancing their qualities while allowing for sustainable development in accordance with the objectives of Tasmania's Resource Management and Planning System (Schedule 1 of the *State Policies and Projects Act 1993*).

The objectives of this Policy are to:

1. *Focus water quality management on the achievement of water quality objectives which will maintain or enhance water quality and further the objectives of Tasmania's Resource Management and Planning System;*
2. *Ensure that diffuse source and point source pollution does not prejudice the achievement of water quality objectives and that pollutants discharged to waterways are reduced as far as is reasonable and practical by the use of best practice environmental management;*
3. *Ensure that efficient and effective water quality monitoring programs are carried out and that the responsibility for monitoring is shared by those who use and benefit from the resource, including polluters, who should bear an appropriate share of the costs arising from their activities, water resource managers and the community;*
4. *Facilitate and promote integrated catchment management through the achievement of objectives (1) to (3) above; and*
5. *Apply the precautionary principle to Part 4 of this Policy.*

Proposal Response

The proposal involves collection and discharge of stormwater via tank and in-ground filtration. The objectives of this Policy will therefore be managed in this rural environment.

The proposal is consistent with the policy.

4.3.3 State Policy on Protection of Agricultural Land 2009

The subject site is Class 4 and Class 5 land meaning that that site is not prime agricultural land.

The proposal involves a land parcel that does accommodate residential use, animal boarding, and animal crematorium. This proposal represents an ideal use for the subject site and an extension to an already approved use. The lot has no prospect of supporting any level of commercial agriculture of an extensive nature.

The proposal is unlikely to impact on adjacent agricultural use. As such, the proposal does not conflict with the objectives of this Policy.

4.4 Land Use Planning and Approvals Act 1993

The *Land Use Planning and Approvals Act 1993* provides objectives for all development considered under this Act. The proposal has been considered against the objectives of this Act. The proposal has been prepared to be consistent with the provisions of the Northern Midlands Interim Planning Scheme 2013. The proposal is therefore considered to be consistent with the objectives of the Act.

4.5 National Environment Protection Measures

A series of National Environment Protection Measures (NEPMs) have been established by the National Environment Protection Council. These measures are:

- Ambient air quality;
- National pollutant inventory;
- Movement of controlled waste;
- Use packaging materials;
- Assessment of site contamination; and
- Diesel vehicle emissions.

Proposal Response

It is considered that the NEPMs are not relevant to the proposed development.

5. Conclusion

The proposal is for the use and construction of a new cattery, extension to existing kennels, road sign, extension to existing pet crematorium and new dwelling at 805 Hobart Road, Breadalbane, and is illustrated in plans, provided at Appendix B.

The proposal complies with the development standards prescribed by the Scheme, and can be approved under the Northern Midlands Interim Planning Scheme 2013. This application is therefore made due to the use and development pursuant to Section 57 of the *Land Use Planning and Approvals Act 1993.*

The proposal is consistent with the relevant State and local policies, Planning Scheme objectives and considerations and objectives of the *Land Use Planning and Approvals Act 1993.* It is therefore recommended that the proposal be considered for planning approval.

Author	Version	Date
Rebecca Green	4	18 June 2017

Appendix A: Certificate of Title

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
131512	9
EDITION	DATE OF ISSUE
9	18-Sep-2014

SEARCH DATE : 07-Aug-2016
SEARCH TIME : 09.57 AM

DESCRIPTION OF LAND

Parish of BREADALBANE, Land District of CORNWALL
Lot 9 on Plan 131512
Derivation : Part of 584 Acres Gtd. to T. Scott
Prior CT 127710/1

SCHEDULE 1

M317955 TRANSFER to ANNA MCFARLANE Registered 09-Feb-2011 at noon

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
C332804 BURDENING EASEMENT: a right of drainage (appurtenant to Lots 4 & 8 on P.131512) over the Right of Way `A' Drainage & Pipeline Easement on P.131512
C332804 BURDENING EASEMENT: a right of carriageway (appurtenant to Lots 4 & 8 on P.131512) over the Right of Way `A' Drainage & Pipeline Easement on P. 131512
C332804 BURDENING EASEMENT: pipeline rights (fully defined therein) (appurtenant to Lots 4 & 8 on P.131512) over the Right of Way `A' Drainage & Pipeline Easement on P.131512 (subject to provisions)
C332808 BURDENING EASEMENT: a right of carriageway (appurtenant to Lot 3 on P.131512) over the Right of Way `A' Drainage & Pipeline Easement on P.131512
C332808 BURDENING EASEMENT: pipeline rights (fully defined therein) (appurtenant to Lot 3 on P.131512) over the Right of Way `A' Drainage & Pipeline Easement on P. 131512 (subject to provisions)
C332808 BURDENING EASEMENT: power supply easements (fully defined therein) (appurtenant to Lot 3 on P.131512) over the Power Supply Easement `P' 12.00 Wide on P. 131512 (subject to provisions)
C332804 BURDENING EASEMENT: a power supply easement (fully defined therein) (appurtenant to Lots 2, 4, 6 & 8 on P.131512) over the Power Supply Easement `P' 12.00

Wide on P.131512 (subject to provisions) Registered 09-Sep-2002 at 12.02 PM

C332808 BURDENING EASEMENT: a right of drainage (appurtenant to Lot 3 on P.131512) over the Right of Way `A' Drainage & Pipeline Easement on P.131512 Registered 09-Sep-2002 at 12.08 PM

C396903 BENEFITING EASEMENT: a right of drainage and a right of carriageway over the Right of Way `B' Drainage & Pipeline Easement on P.131512 Registered 09-Sep-2002 at 12.09 PM

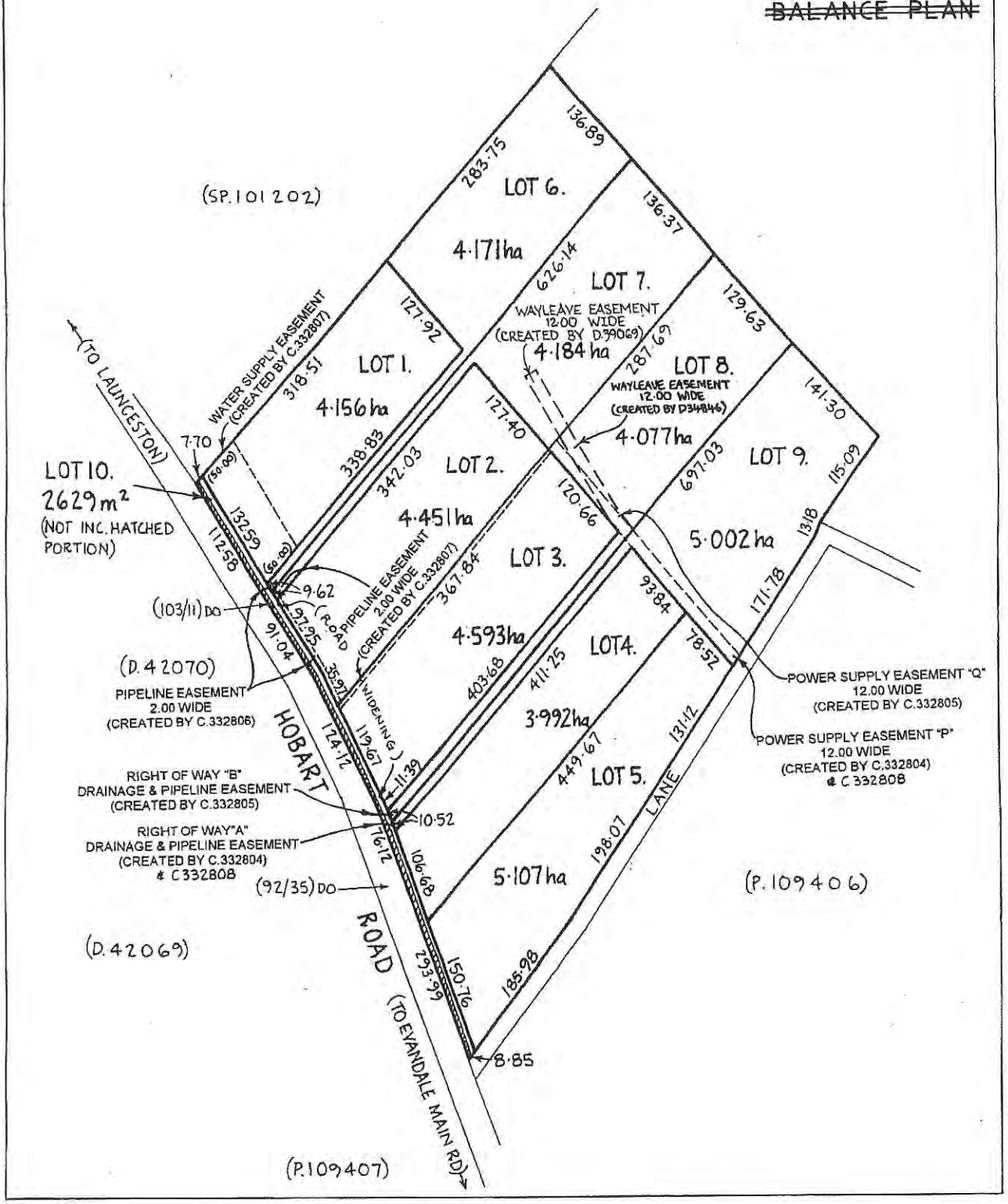
D139047 MORTGAGE to Australia and New Zealand Banking Group Limited Registered 18-Sep-2014 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

OWNER FOLIO REFERENCE F.R. 127710-1 GRANTEE	**PLAN OF TITLE** LOCATION CORNWALL - BREADALBANE FIRST SURVEY PLAN No. (81-88D.O.) COMPILED BY LTO SCALE 1: 4000 LENGTHS IN METRES	Registered Number **P 131512** APPROVED ..... Recorder of Titles
MAPSHEET MUNICIPAL CODE No. 120 (5040)	LAST UPI No FKF74	LAST PLAN No. P.127710 — ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN

~~BALANCE PLAN~~



Rebecca Green & Associates

Appendix B: Site Plan, Floor Plans and Elevations

Wilkin Design

CHECK CAREFULLY ALL ASPECTS OF THESE DOCUMENTS BEFORE COMMENCING ASSESSMENT.

ANY ERRORS OR ANOMALIES TO BE REPORTED TO THE DRAWER BEFORE ASSESSMENT IS CONTINUED

CONFIRM ALL SIZES AND HEIGHTS ON SITE

DO NOT SCALE OFF PLAN

THESE DOCUMENTS ARE INTENDED FOR COUNCIL PLANNING APPLICATION ONLY, THEY ARE NOT TO BE USED FOR ANY OTHER PURPOSE.

1-598

PROPOSED NEW CATTERY, EXTENSION TO EXISTING KENNELS, ROAD SIGN, EXTENSION TO EXISTING PET CREMATORIUM AND RESIDENCE AT 805 HOBART RD. BREADALBANE 7258

TOTAL DOG KENNELS INCLUDING EXISTING 40 = 120
TOTAL CAT KENNELS = 50
NOT INCLUDING DOGGY DAY CARE

wilkin design
P.O. BOX 478
LAUNCESTON
TASMANIA 7250

ACCREDITATION NO: CC678 X

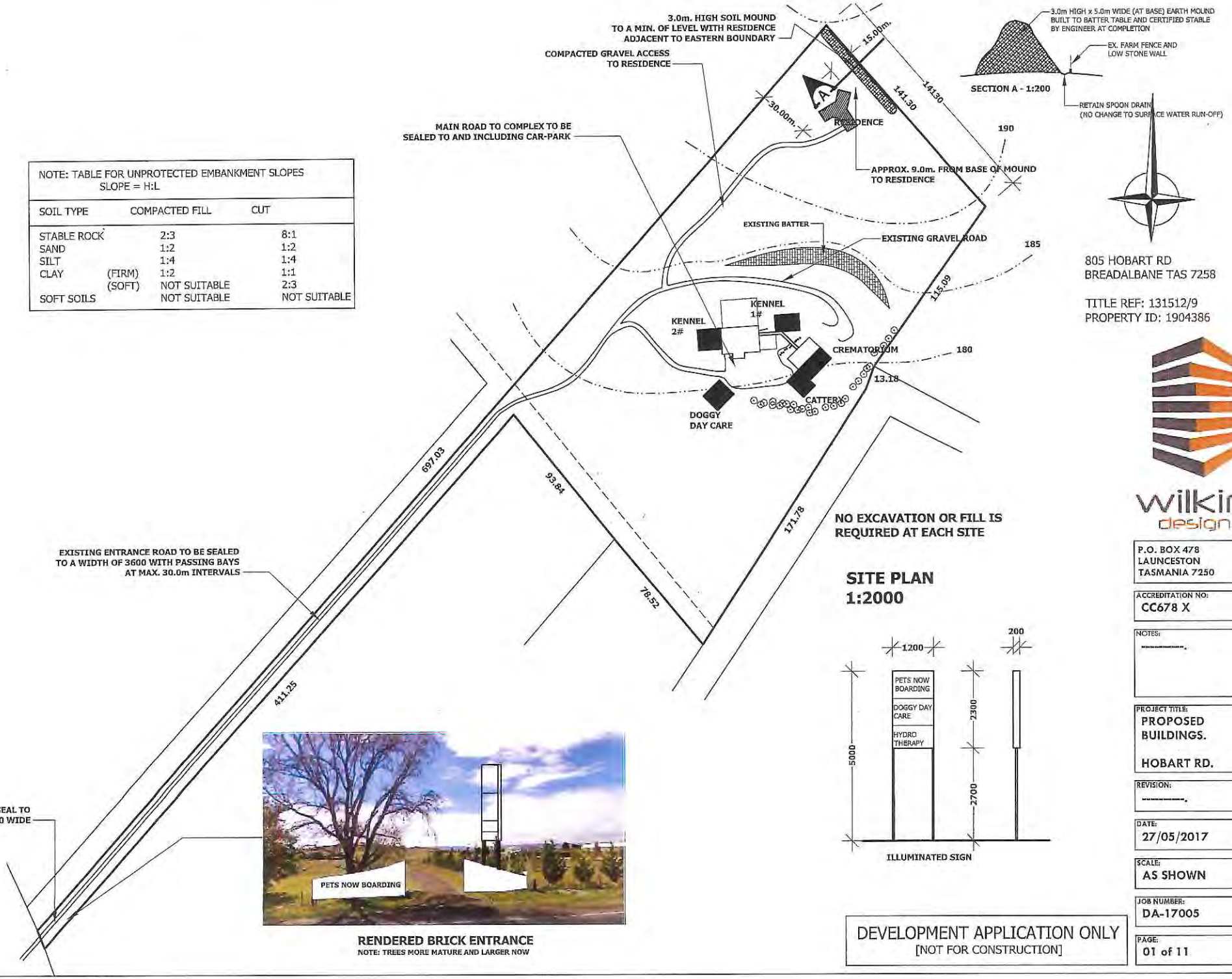
DATE: 27/05/2017

JOB NUMBER: DA-17005

DEVELOPMENT APPLICATION ONLY
[NOT FOR CONSTRUCTION]

1-599

NOTE: TABLE FOR UNPROTECTED EMBANKMENT SLOPES SLOPE = H:L			
SOIL TYPE		COMPACTED FILL	CUT
STABLE ROCK		2:3	8:1
SAND		1:2	1:2
SILT		1:4	1:4
CLAY	(FIRM)	1:2	1:1
	(SOFT)	NOT SUITABLE	2:3
SOFT SOILS		NOT SUITABLE	NOT SUITABLE



NO EXCAVATION OR FILL IS REQUIRED AT EACH SITE

SITE PLAN
1:2000

ILLUMINATED SIGN

RENDERED BRICK ENTRANCE
NOTE: TREES MORE MATURE AND LARGER NOW

805 HOBART RD
BREADALBANE TAS 7258

TITLE REF: 131512/9
PROPERTY ID: 1904386

wilkin design
P.O. BOX 478
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TASMANIA 7250

ACCREDITATION NO: CC678 X

NOTES: ----------.

PROJECT TITLE: PROPOSED BUILDINGS. HOBART RD.

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DATE: 27/05/2017

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PAGE: 01 of 11

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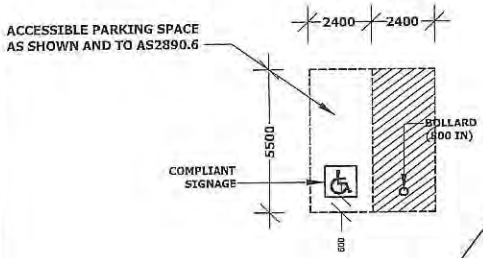

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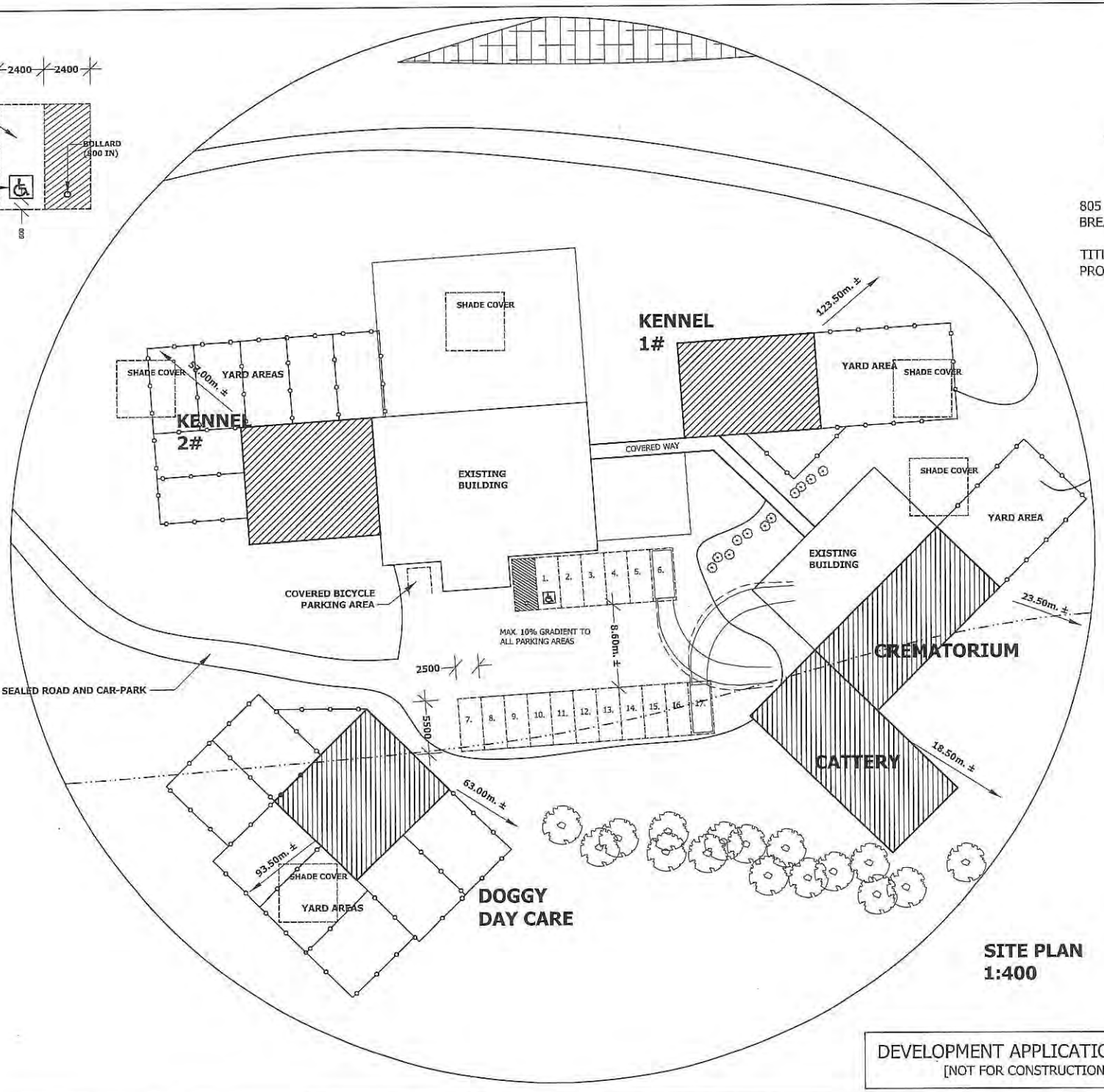

SITE PLAN
1:400

805 HOBART RD
BREADALBANE TAS 7258

TITLE REF: 131512/9
PROPERTY ID: 1904386

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DA-17005

PAGE:
02 of 11

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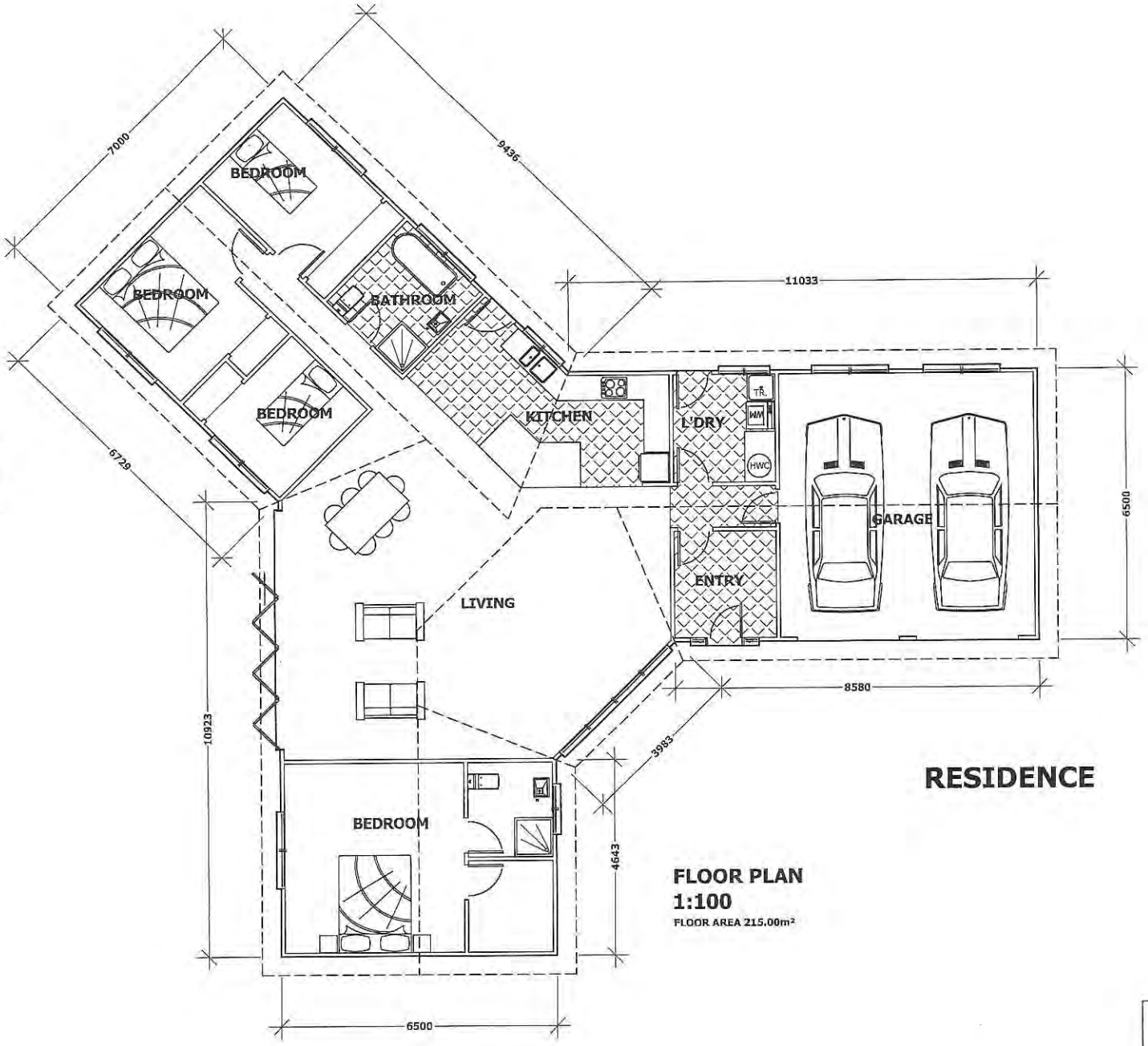
1-601



RESIDENCE

FLOOR PLAN
1:100
FLOOR AREA 215.00m²

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DA-17005

PAGE:
03 of 11

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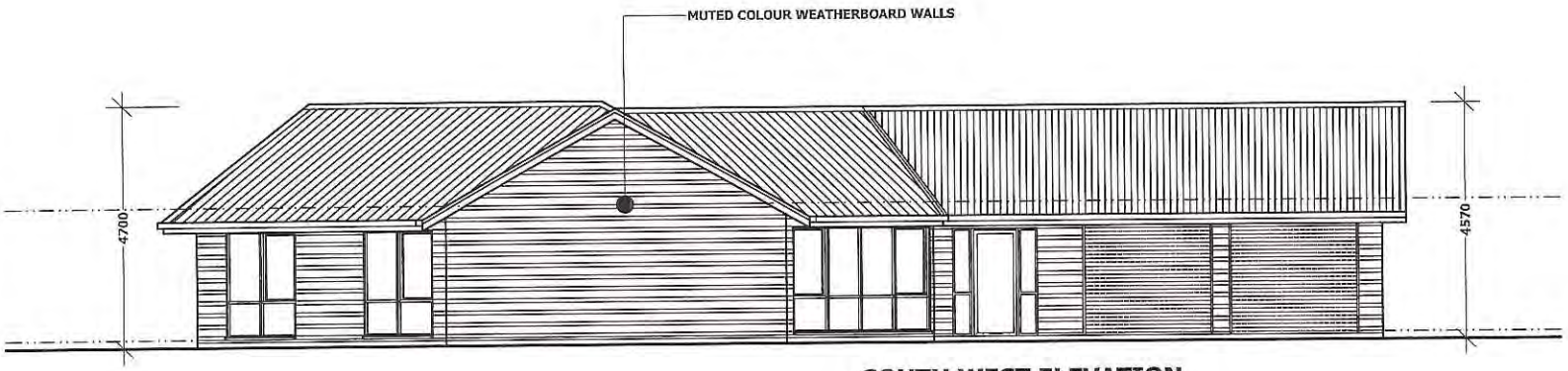
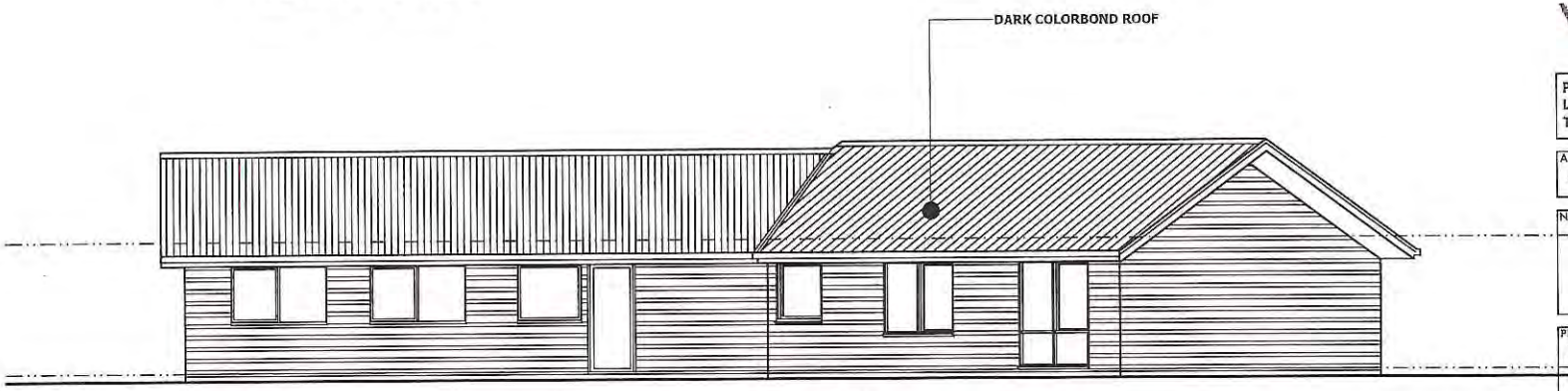


SOUTH WEST ELEVATION
1:100

RESIDENCE



NORTH EAST ELEVATION
1:100

1-602

A3

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PAGE:
04 of 11

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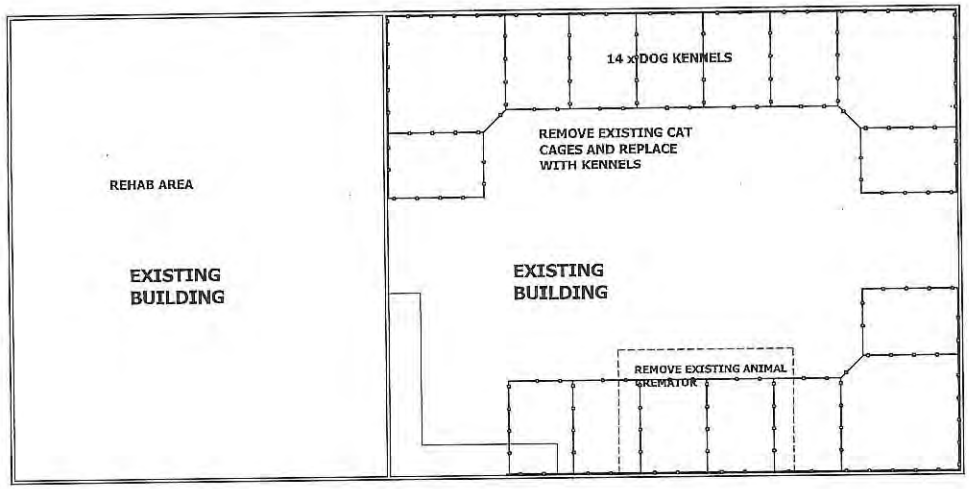
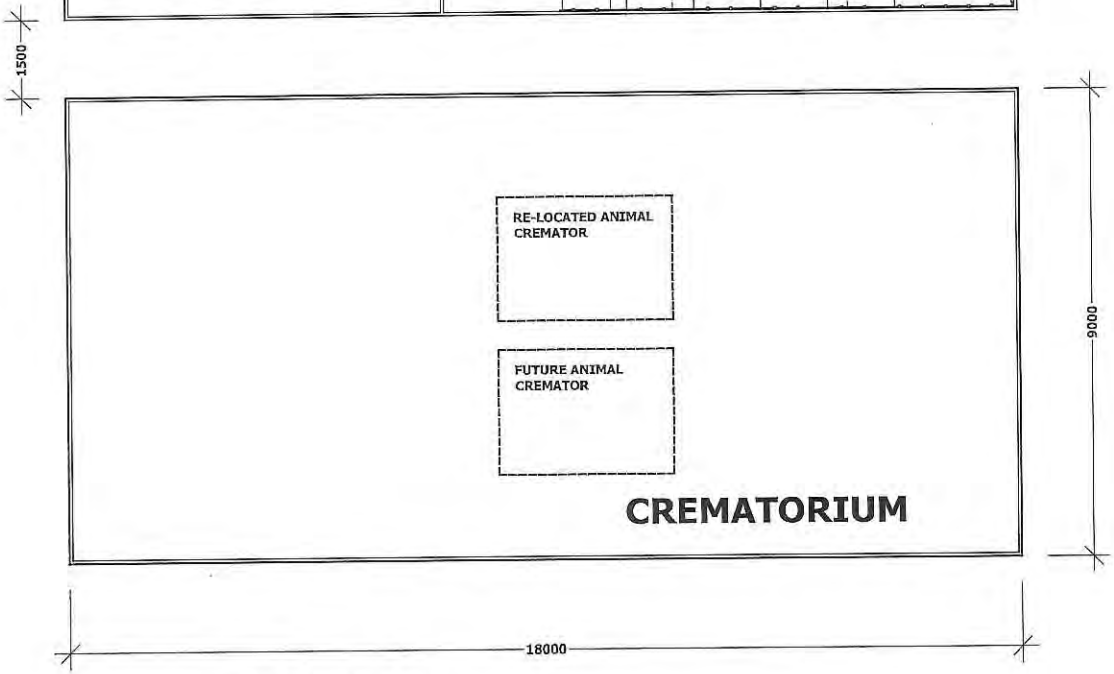
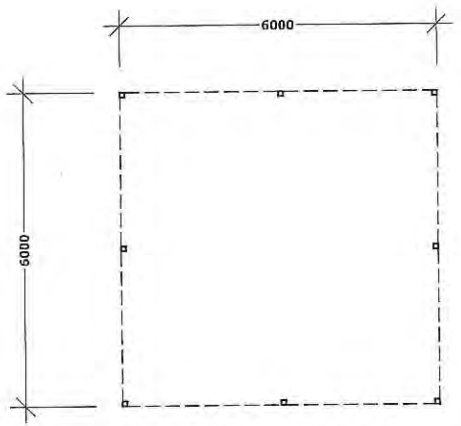




FLOOR PLAN
1:100



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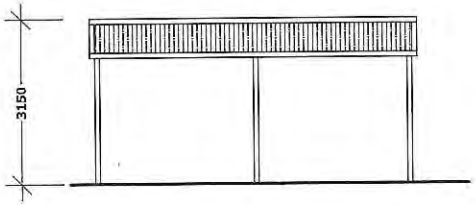

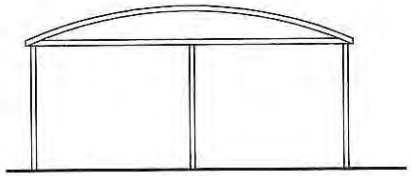

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DA-17005

PAGE:
05 of 11

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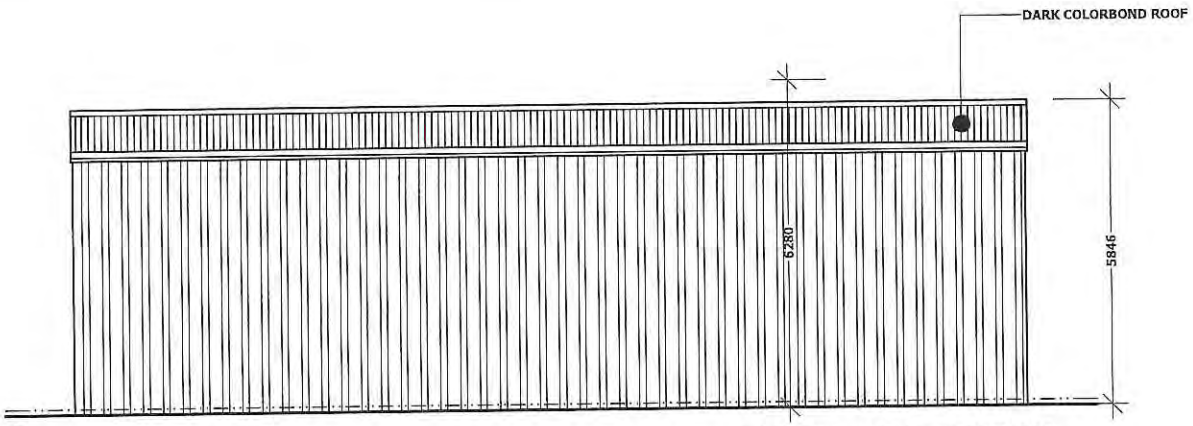

SOUTH EAST ELEVATION
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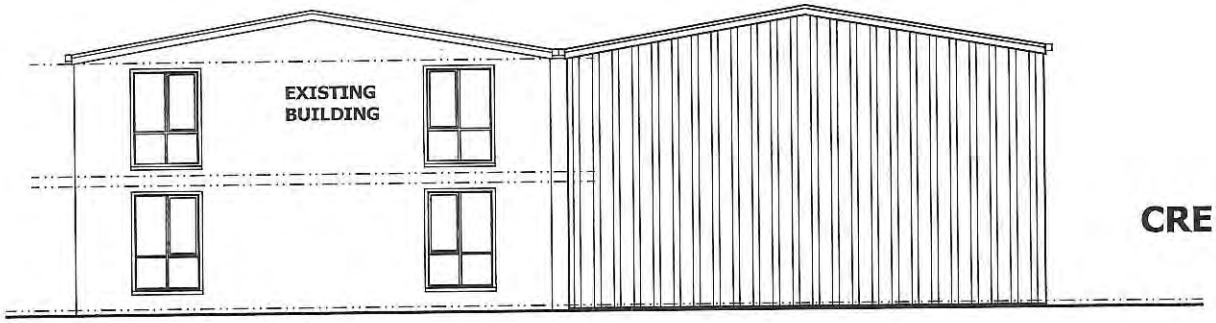
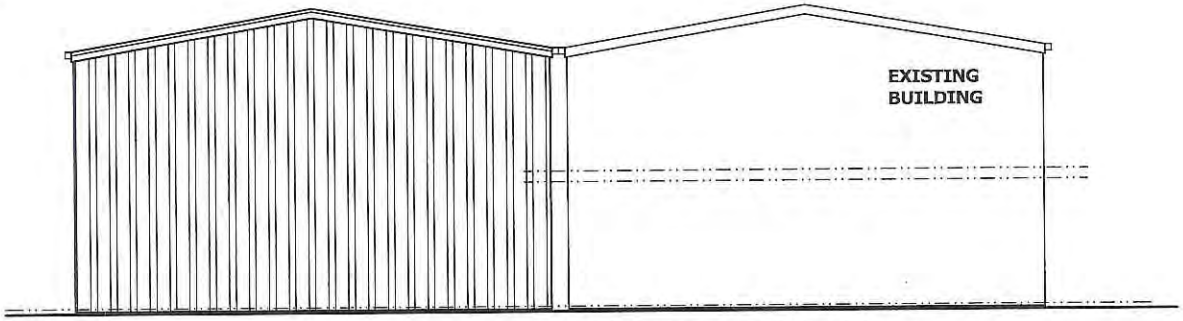


SOUTH WEST ELEVATION
1:100

CREMATORIUM



NORTH EAST ELEVATION
1:100

1-604

A3

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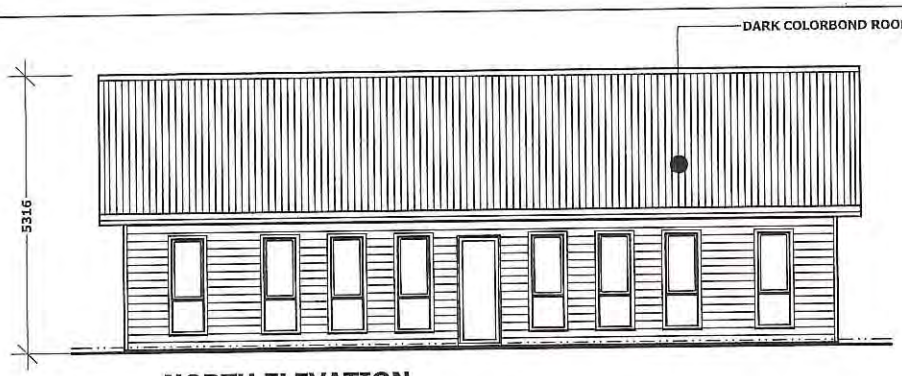
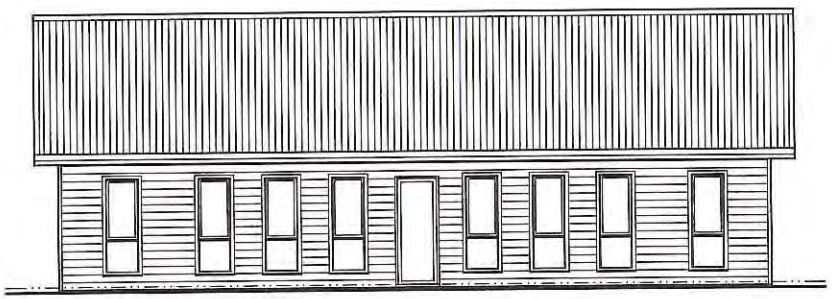
DA-17005

PAGE:
06 of 11



NORTH ELEVATION
1:100



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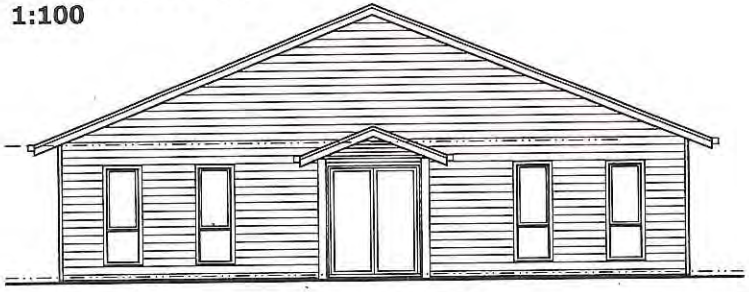

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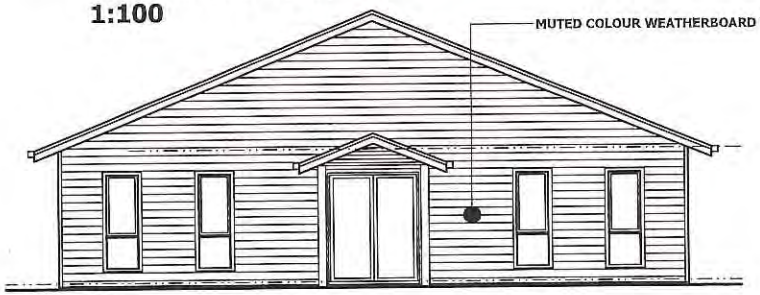
1:100



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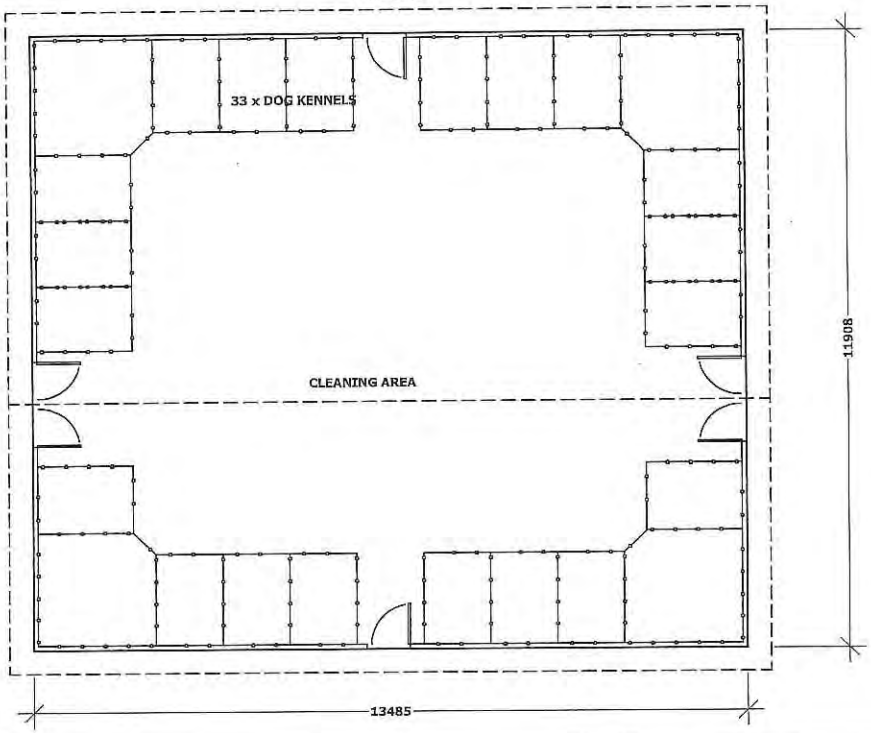

FLOOR PLAN
1:100
FLOOR AREA 128.90m²

KENNEL 1#

1-605

A3

wilkin design

P.O. BOX 478
LAUNCESTON
TASMANIA 7250

ACCREDITATION NO:
CC678 X

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PROJECT TITLE:
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REVISION:
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DATE:
27/05/2017

SCALE:
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JOB NUMBER:
DA-17005

PAGE:
07 of 11

DEVELOPMENT APPLICATION ONLY
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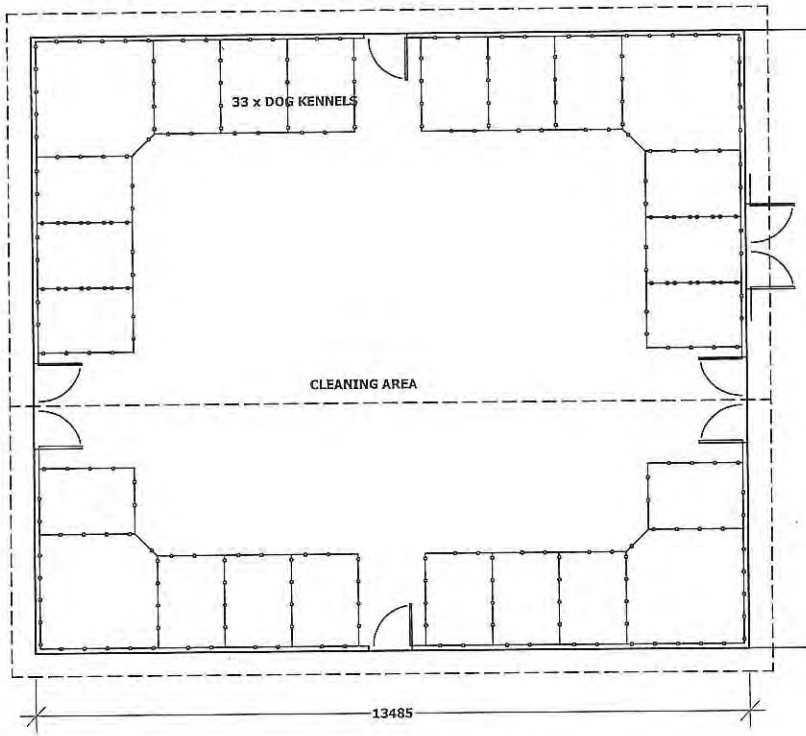
KENNEL 2#



EXISTING KENNELS

FLOOR PLAN
1:100
FLOOR AREA 160.50m²

1-606

A3

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PAGE:
08 of 11

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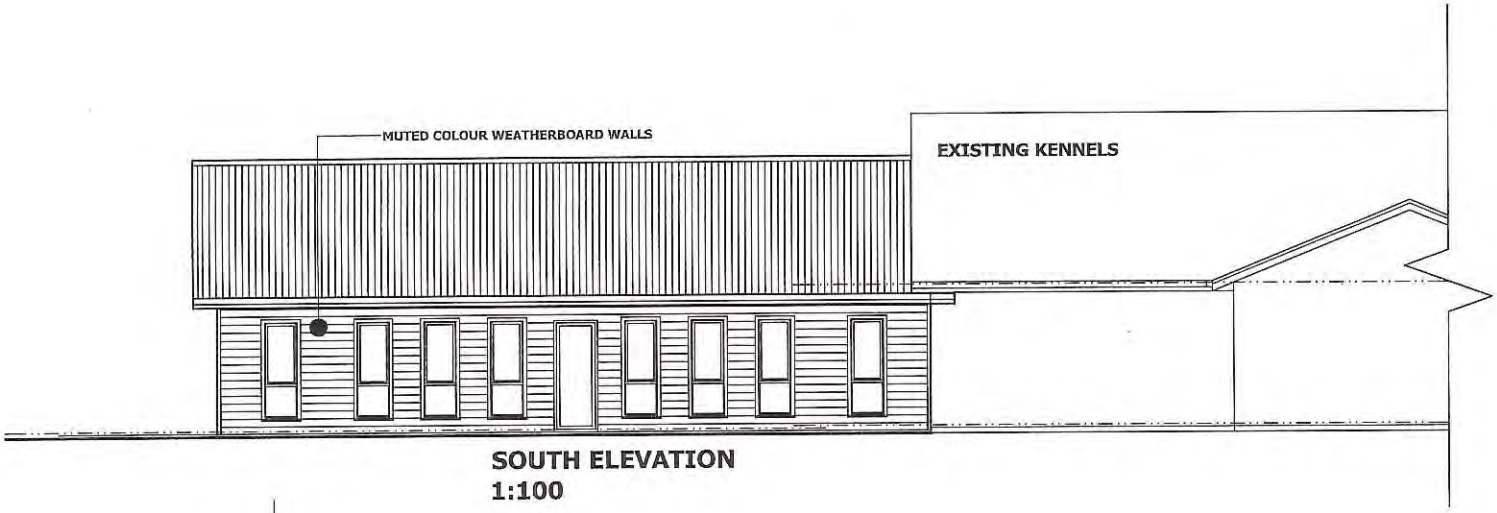
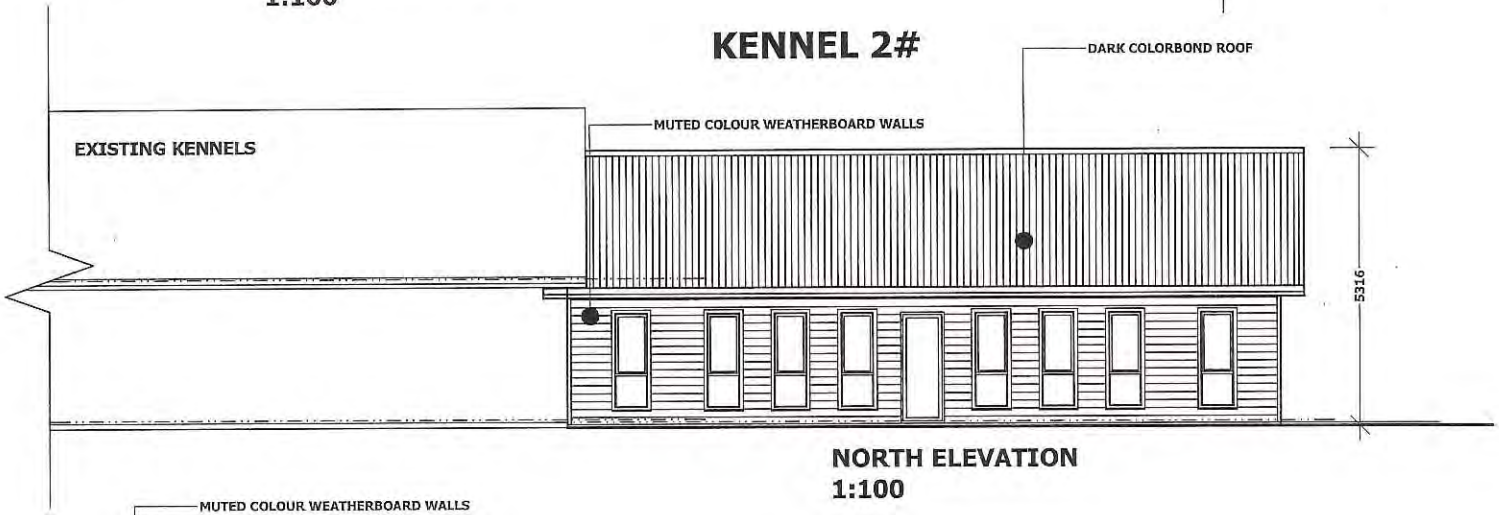
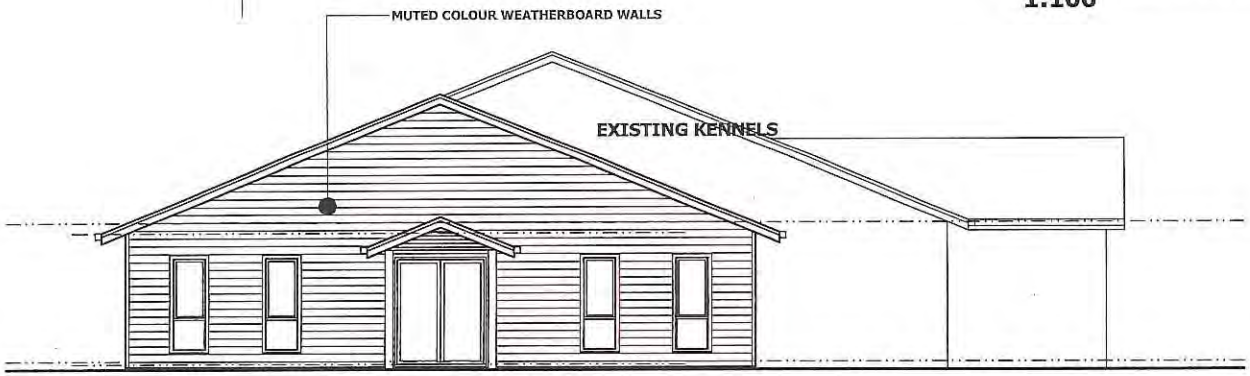


SOUTH ELEVATION
1:100

KENNEL 2#



NORTH ELEVATION
1:100



WEST ELEVATION
1:100

1-607

A3

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PAGE:
09 of 11

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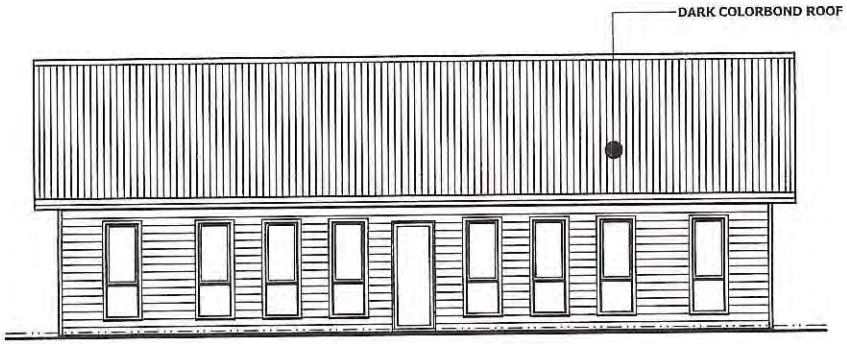

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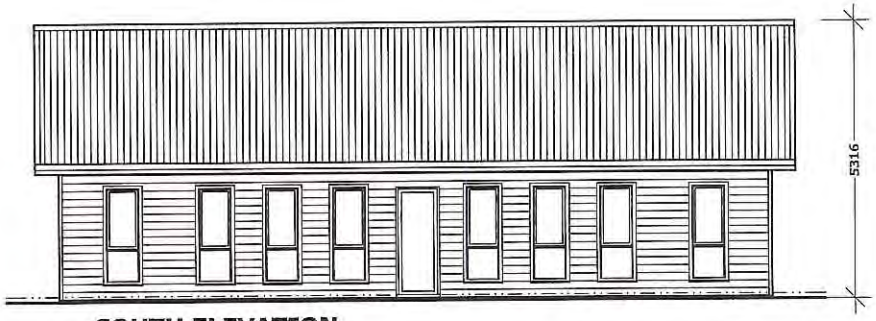
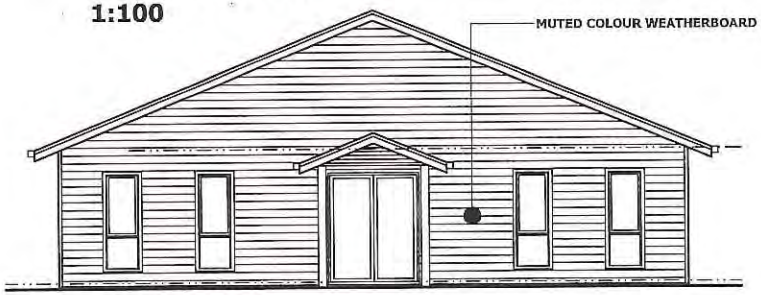


SOUTH ELEVATION
1:100

EAST ELEVATION
1:100



WEST ELEVATION
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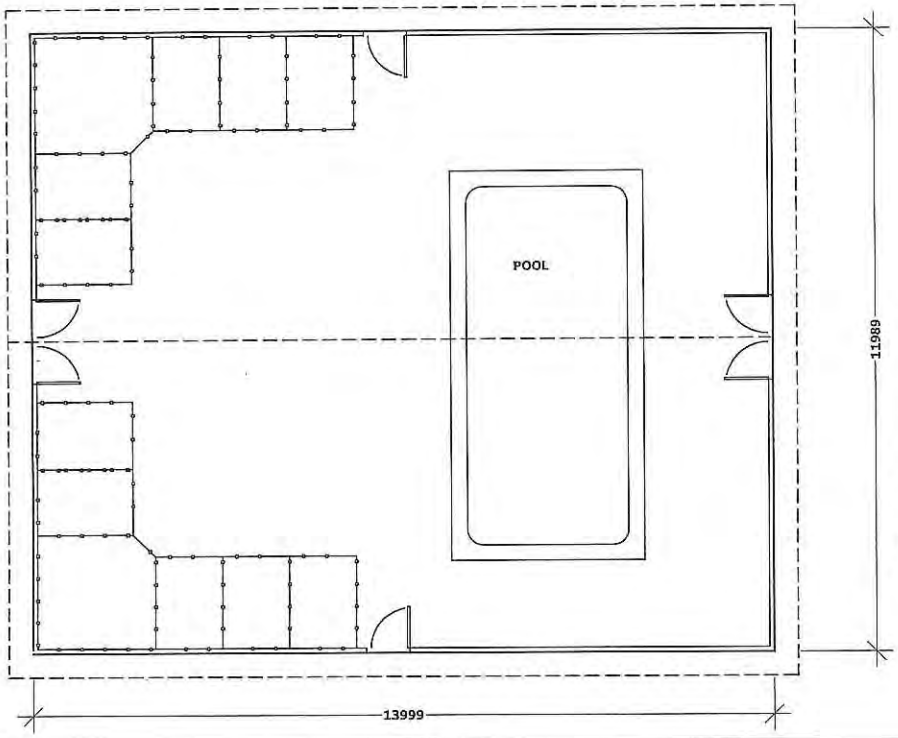

FLOOR PLAN
1:100
FLOOR AREA 128.90m²

DOGGY DAY CARE HYDROTHERAPY AREA AND POOL

1-608

A3

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27/05/2017

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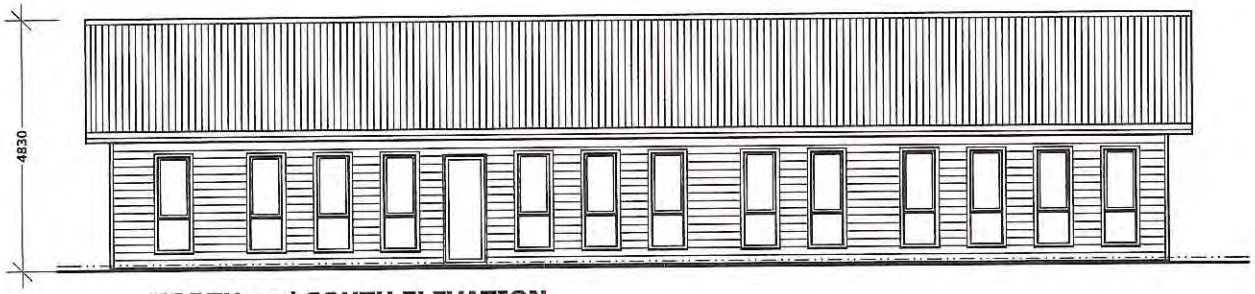
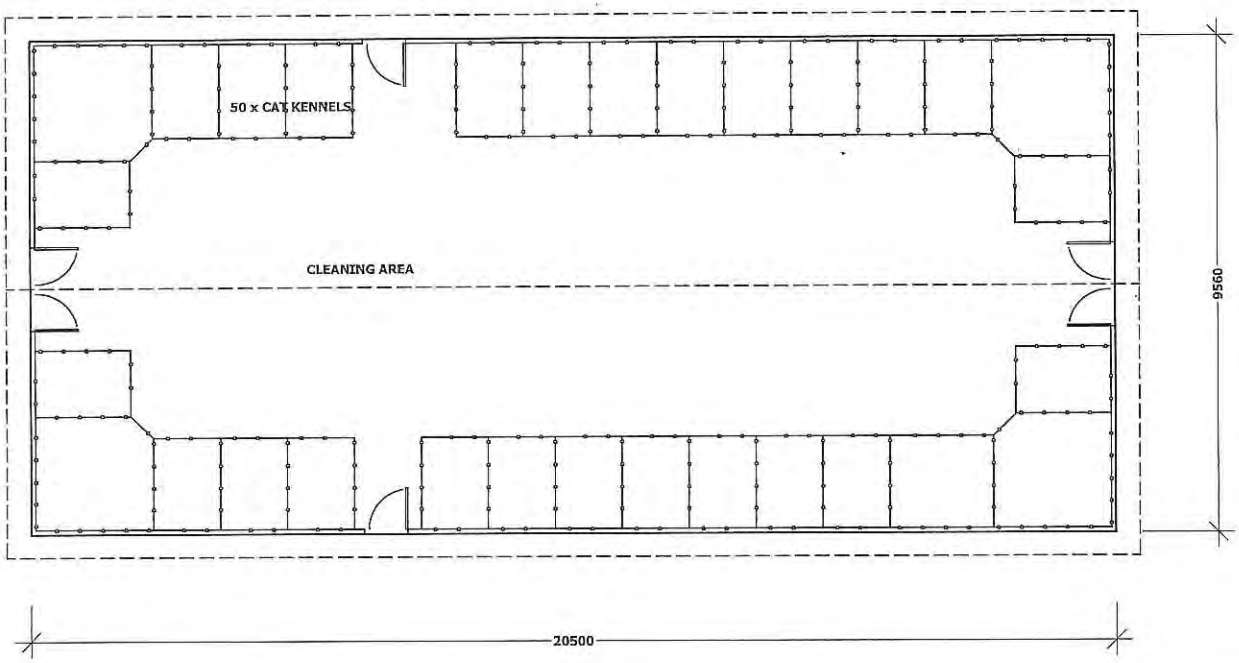
DA-17005

PAGE:
10 of 11



NORTH and SOUTH ELEVATION
1:100

EAST and WEST ELEVATION
1:100



CATTERY

FLOOR PLAN
1:100
FLOOR AREA 128.90m²

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1-609

A3

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Rebecca Green & Associates

Appendix C: Environmental Assessment

Vipac Engineers & Scientists Limited

Tarkarri Engineering

Air Quality • Acoustics • Environment • Vibration

Technical Memo

14 July 2017

Wilkin Design
PO Box 478
Launceston, 7250

5044_AC_R
AJM

Attn: Mr Todd Wilkin

Dear Sir,

RE: Comment on Vipac report 421453-01

Please find below a technical memo report commenting on the environmental noise, air blast over pressure, ground vibration and dust assessment for 805 Hobart Rd presented in Vipac report 421453-01.

1. COMMENT

Tarkarri Engineering has been commissioned by Wilkin Design to provide comment on the environmental noise, air blast over pressure, ground vibration and dust assessment for 805 Hobart Rd presented in Vipac report 421453-01. The assessment provided in the report was in regard to a Development Application under the Northern Midlands Council Interim Planning Scheme 2013.

Since the assessment conducted by Vipac the location of the proposed dwelling on the block at 805 Hobart Rd has been altered. The new location is approx. 22 m closer to the north-west boundary of the property and approx. 19 m closer to the north-east boundary.

This new location doesn't significantly alter the analysis presented in Vipac report 421453-01 with regard to potential impact of environmental noise, air blast over pressure, ground vibration and dust emissions from the Raeburn Quarry. The distances to key locations with the Reburn Quarry remain such that the analysis and conclusions presented in the Vipac report in relation to the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion document remain valid. Additionally, environmental noise measurements and dust emission observations presented in the report are valid for the new dwelling location.

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p +61 (0) 3 6343 2077

Tarkarri Engineering Pty Ltd
ABN 98 009 561 488
PO Box 506 Kings Meadows
Tasmania 7249 Australia

I hope this information meets your immediate requirements.

Please contact me directly if you have any questions concerning this work.

Yours faithfully,
Tarkarri Engineering Pty Ltd

Dr. Alex McLeod
Principal Consultant

p. +61 3 6343 2077
m. +61(0)439 357 297
email: alex.mcleod@tarkarri.com

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alex.mcleod@tarkarri.com

4 August 2016

Wilkin Design
PO Box 478
Launceston, 7250

421453-01
AJM

Attn: Mr Todd Wilkin

Dear Sir,

RE: 805 Hobart Rd environmental noise, air blast over pressure, ground vibration and dust assessment.

Please find below our report on the environmental noise, air blast over pressure and ground vibration assessment of a proposed dwelling at 805 Hobart Rd, Breadalbane.

1. INTRODUCTION

Vipac was commissioned by Wilkin Design, on behalf of Pets Now Boarding, to conduct an environmental noise, air blast over pressure, ground vibration and dust assessment for a proposed residential dwelling at 805 Hobart Rd, Breadalbane. The assessment is a requirement under the Northern Midlands Council Interim Planning Scheme 2013 with the proposed dwelling within the attenuation zone of a quarry that conducts blasting (1000 m), Raeburn Pit, Mt Oriel, Breadalbane (known from here as the Raeburn Quarry). Under the Environmental Impacts and Attenuations Code (E11) the emissions to be considered for this type of quarry are noise, vibration and dust with a site specific study required addressing the following:-

> P1 Sensitive use or subdivision for sensitive use within an attenuation area to an existing activity listed in Tables E11.1 and E11.2 must demonstrate by means of a site specific study that there will not be an environmental nuisance or environmental harm, having regard to the:
>
> a) degree of encroachment; and
> b) nature of the emitting operation being protected by the attenuation area; and
> c) degree of hazard or pollution that may emanate from the emitting operation; and
> d) the measures within the proposal to mitigate impacts of the emitting activity to the sensitive use.

To address the above Vipac proposed the following approach:-

- Logging of Ln-statistics at the dwelling location, including observation during set up and decommissioning with assessment against predicted noise levels at the dwelling based on data from the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion.
- Assessment of potential ground vibration and air blast overpressure based on data from the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion.
- Assessment of potential dust emission impact based on visual assessment at setup and decommissioning of the sound level meter and management practices outlined in the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion.

2. SITE DESCRIPTION

The proposed residence at 805 Hobart Rd would be located at the eastern end of the property on elevated ground approx. 670 m from Hobart Rd. The surrounding land is predominantly low density residential and agricultural land.

Critical land use activities in the vicinity of 805 Hobart Rd that are also pertinent to this assessment are as follows:-

- Hobart Rd traffic (approx. 670 m away) and Midland Hwy (approx. 1 km away).
- Launceston Airport (northern end of the runway approx. 2 km to away to the south south-east with northern approach and take-off flight paths effectively overhead).
- Agricultural activity.
- Dog kennel (located on the land at 805 Hobart Rd).

Figure 1 provides an aerial view of the land (marked in aqua) at 805 Hobart Rd with the location of the Raeburn Quarry also marked. Also shown on figure 1 is the location of the sound level meter (SLM) used to log Ln-statistics.

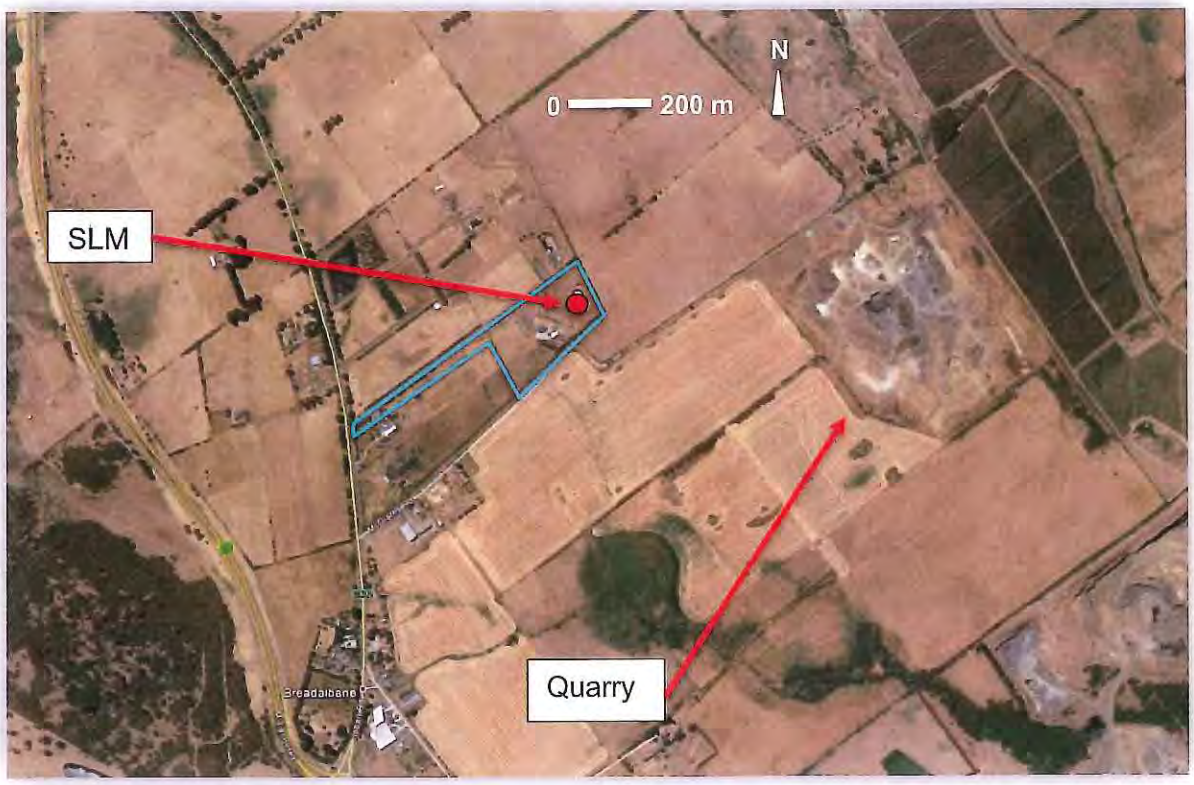
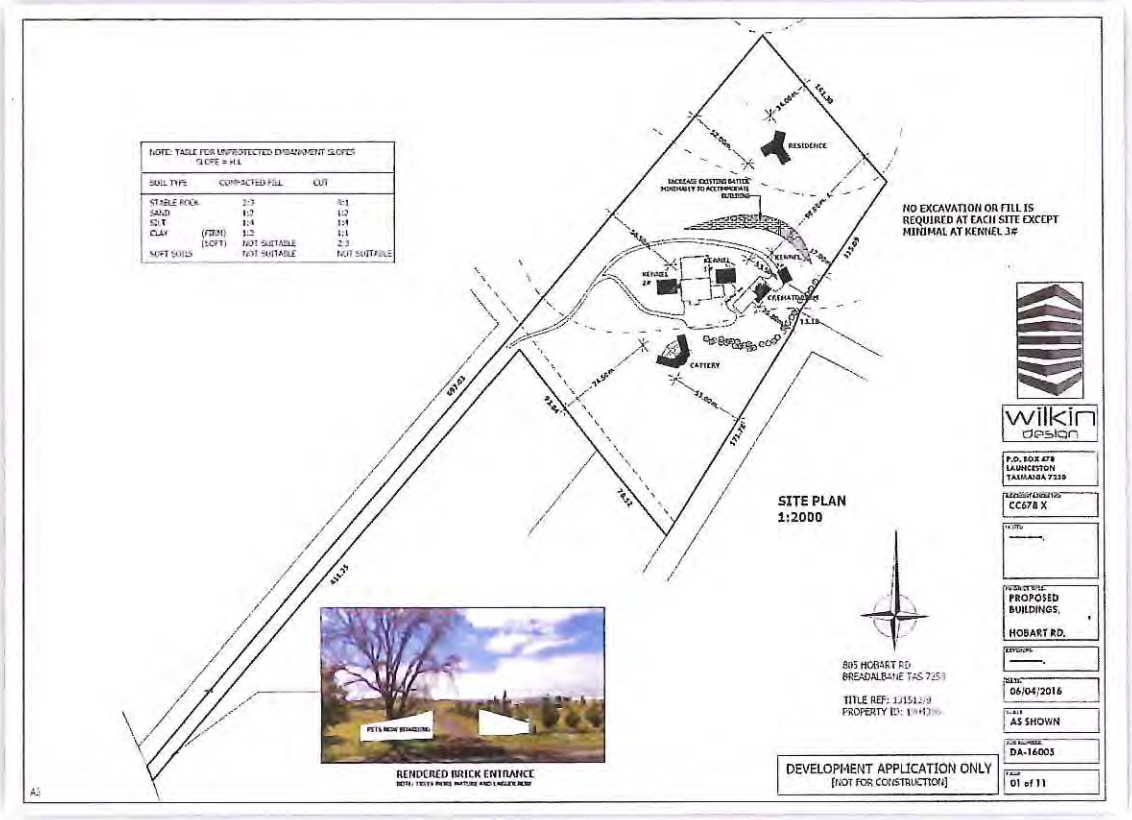


Figure 1 – Aerial view with the land at 805 Hobart Rd, the Raeburn Quarry and SLM location marked.

Figure 2 provides plan views of the dwelling location on the land at 805 Hobart Rd and a plan view of the dwelling layout.



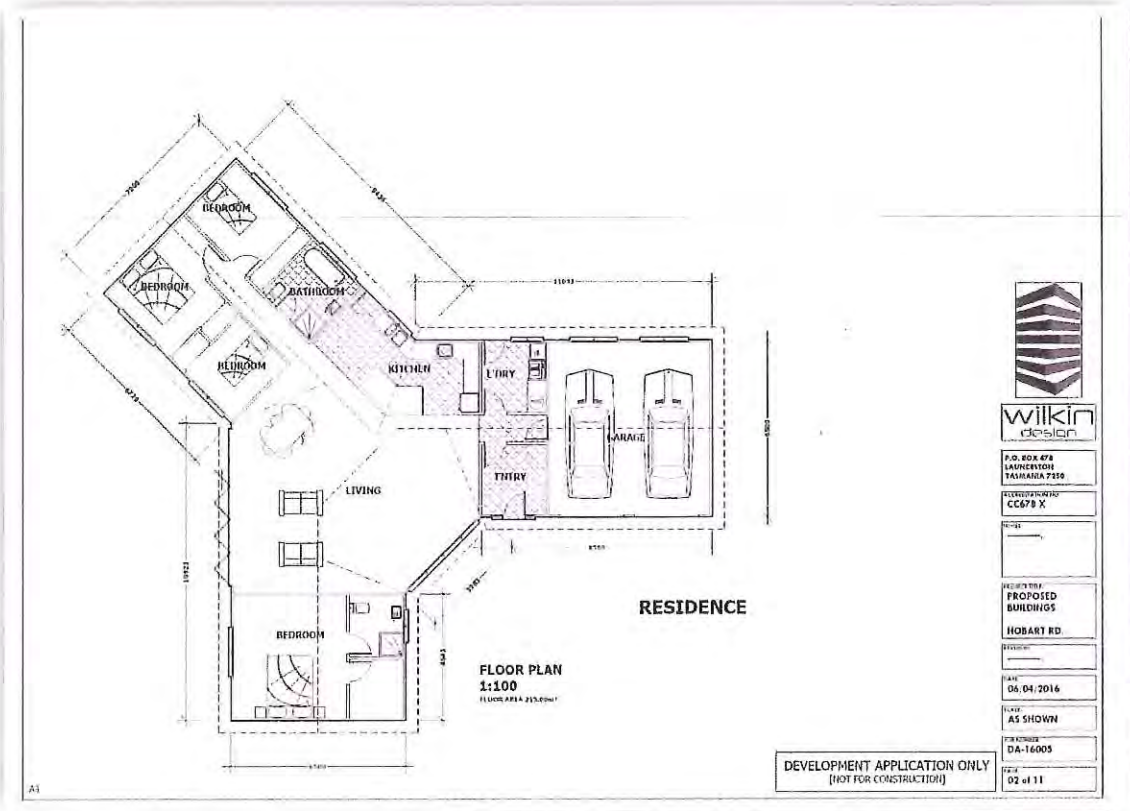


Figure 2 – Plan views of the land at 805 Hobart Rd and the dwelling layout.

3. QUARRY PERMIT CONDITIONS

The Raeburn Quarry is regulated as a level 2 activity by the Tasmanian Environmental Protection agency (EPA) through a Permit Conditions – Environmental (PCE), no. 7776. Relevant conditions form PCE 7776(r1) are provided below in relation to the regulation of noise, air blast over pressure, ground vibration and dust emissions. These conditions will form the basis for the assessment of potential environmental nuisance or harm from the quarry at proposed residence at 805 Hobart Rd.

Noise Control

N1 Noise emission limits

1 Noise emissions from the activity when measured at any noise sensitive premises in other ownership and expressed as the equivalent continuous A-weighted sound pressure level must not exceed:

1.1 50 dB(A) between 0700 hours and 1800 hours (Day time); and

1.2 40 dB(A) between 1800 hours and 2200 hours (Evening time); and

1.3 40 dB(A) between the hours of 0600 and 0700 (early morning period); and

1.4 35 dB(A) between 2200 hours and 0600 hours (Night time).

2 Where the combined level of noise from the activity and the normal ambient noise exceeds the noise levels stated above, this condition will not be considered to be breached unless the noise emissions from the activity are audible and exceed the ambient noise levels by at least 5 dB(A).

3 The time interval over which noise levels are averaged must be 10 minutes or an alternative time interval specified by the Director.

4 Measured noise levels must be adjusted for tonality, impulsiveness, modulation and low frequency in accordance with the Tasmanian *Noise Measurement Procedures Manual.*

5 All methods of measurement must be in accordance with the Tasmanian *Noise Measurement Procedures Manual*, issued by the Director.

N2 Operating hours

1 Unless otherwise approved by the Director, activities associated with the extraction of rock, gravel, sand, clay or minerals, and loading of product, and screening/crushing must not be undertaken outside the hours of 0700 hours to 1900 hours on weekdays and 0800 hours to 1600 hours on Saturdays.

2 Notwithstanding the above paragraph, activities must not be carried out on Sundays and public holidays that are observed Statewide.

N3 Batching plant operating hours

1 Unless otherwise approved in writing by the Director, the operation of the concrete batching plant and dispatch of concrete must not be undertaken outside the hours of 0600 hours to 1900 hours on weekdays and 0800 hours to 1600 hours on Saturdays.

2 Notwithstanding the above paragraph, activities must not be carried out on Sundays and public holidays that are observed Statewide.

Blasting

B1 Blasting times
Blasting on The Land must take place only between the hours of 1000 hours and 1600 hours Monday to Friday. Blasting must not take place on Saturdays, Sundays or public holidays unless prior written approval of the Director has been obtained.

B2 Blasting - noise and vibration limits

1 Blasting on The Land must be carried out in accordance with blasting best practice environmental management (BPEM) principles, and must be carried out such that, when measured at the curtilage of any residence (or other noise sensitive premises) in other occupation or ownership, air blast and ground vibration comply with the following:

1.1 for 95% of blasts, air blast over pressure must not exceed 115dB (Lin Peak);

1.2 air blast over pressure must not exceed 120dB (Lin Peak);

1.3 for 95% of blasts ground vibration must not exceed 5mm/sec peak particle velocity; and

1.4 ground vibration must not exceed 10mm/sec peak particle velocity.

2 All measurements of airblast overpressure and peak particle velocity must be carried out in accordance with the methods set down in *Technical basis for guidelines to minimise annoyance due to blasting overpressure and ground vibration*, Australian and New Zealand Environment Council, September 1990.

Atmospheric

A1 Covering of vehicles
Vehicles carrying loads containing material which may blow or spill must be equipped with effective control measures to prevent the escape of the materials from the vehicles when they leave The Land or travel on public roads. Effective control measures may include tarpaulins and load dampening.

A2 Control of dust emissions from plant

1 Dust produced by the operation of all crushing and screening plant must be controlled by the use of one or more of the following methods to the extent necessary to prevent environmental nuisance:

1.1 the installation of fixed water sprays at all fixed crushers and at all points where crushed material changes direction due to belt transfer;

1.2 the installation of dust extraction equipment at all fixed crushers and at all points where crushed material changes direction due to belt transfer, and the incorporation of such equipment with all vibrating screens;

1.3 the enclosure of the crushing and screening plant and the treatment of atmospheric emissions by dust extraction equipment; and

1.4 any other method that has been approved in writing by the Director.

A3 Control of dust emissions
Dust emissions from roads, disturbed areas, storage heaps, and machinery on The Land must be controlled to the extent necessary to prevent environmental nuisance.

4. ENVIRONMENTAL NOISE

4.1. Ambient noise measurements

A logging sound level meter (Larson Davis 831) was located at approx. the eastern corner of the proposed dwelling (see figure 1, SLM) for a approx. 15 days measuring L_{eq} and L_{max}, L_{min}, L_1, L_{10}, L_{50}, L_{90} and L_{99} A-weighted sound pressure levels on a 10-minute basis.

Figure 3 provides photographs of the sound level meter (SLM) location.

Figure 3 – SLM location; a) view to the east (quarry direction) and; b) view to the south-east

Figure 4 presents a graph of the main 10-minute statistical data logged at the SLM position as follows:-

- L_{Aeq}: Ambient noise level
- L_{A10}: Represents transient noise levels
- L_{A90}: Considered the background noise level.

For sake of clarity the other 5 data sets measured are not shown in this graph. The data has been filtered for poor weather conditions (winds > 5 m/s and rain) based on meteorological data recorded at the Bureau of Meteorology station at the Launceston Airport.

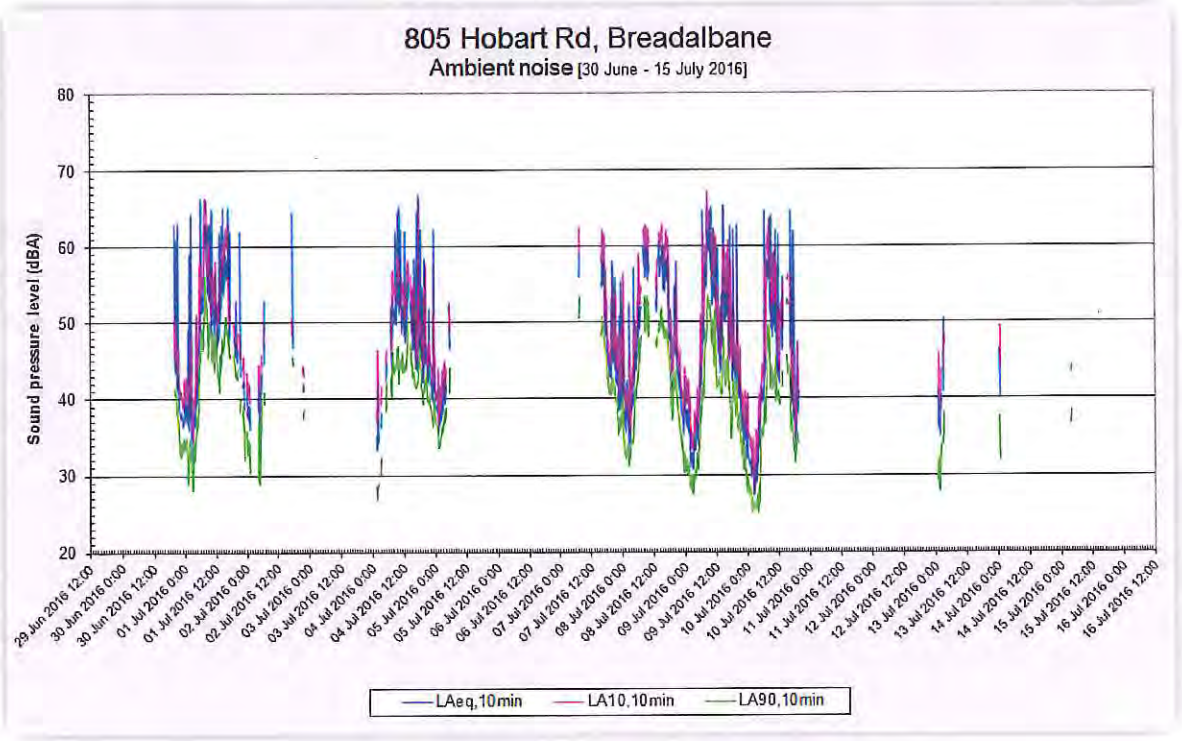


Figure 4 – Measured Ln-statistics.

From the above:-

- During the operational hours allowed under the Raeburn Quarry PCE (0700 to 1900 hrs) noise levels at the SLM position where as follows:-
  - L_{A90} levels were between 40 and 50 dBA and predominantly above 45 dBA.
  - L_{Aeq} levels during the day where generally above 50 dBA and frequently above 60 dBA for short periods (this is likely to have been the result of flight activity at the Launceston Airport). During the early evening (after 1700 hrs) levels dropped below 50 dBA but never below 45 dBA.
  - L_{A10} levels showed a similar pattern to that shown in the L_{Aeq} data set. This suggests a noise environment controlled by transient noise sources.

During decommissioning of the SLM the following observations were made:-

- Distant traffic, predominantly Midland Hwy traffic, controlled the background of the noise environment.

- Barking dogs in the nearby dog kennel facility (on the land at 805 Hobart Rd) controlled the L_{Aeq} and L_{A10} levels.
- Truck pass-bys on the access Rd to the Raeburn quarry (Raeburn Rd) were audible but didn't influence L_{Aeq} or L_{A10} levels.
- Activity within the Raeburn Quarry was not audible.

4.2. Predicted noise levels

Figure 5 presents a worst case noise contour prediction (with regard to weather conditions and quarry operations) from the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion. Also marked on the figure (in aqua) is the land at 805 Hobart Rd.

NB: The operational scenario modelled was for 30 – 40 years into the future (based on the time of the DPEMP application).

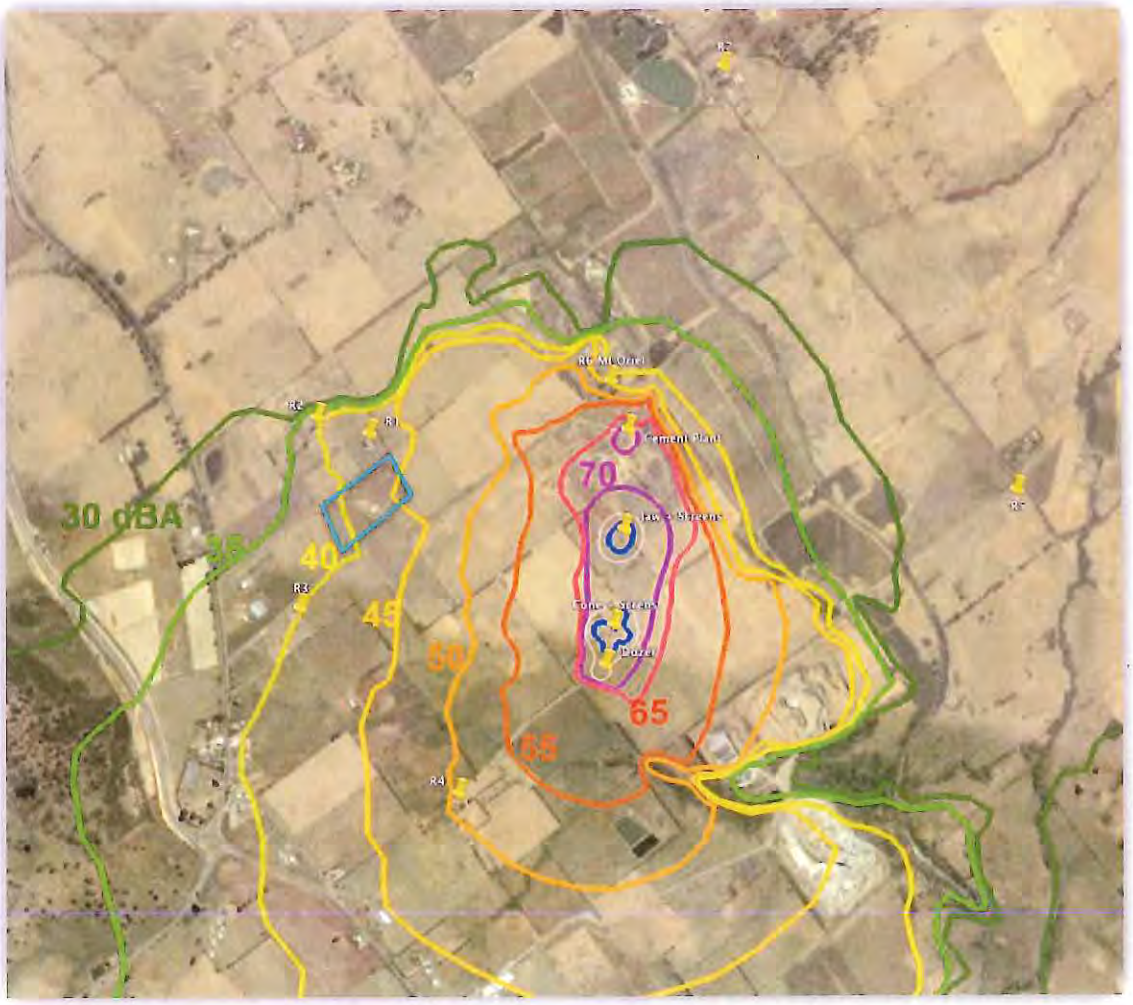


Figure 5 – Predicted noise emission contours from the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion.

From the above:-

- The predicted noise level at the proposed dwelling location is below the day time PCE noise emission limit (50 dBA) for the Raeburn Quarry.

- During the final hour when operations are allowed under the Raeburn Quarry PCE conditions (1800 to 1900 hrs) the noise emission limit drops to 40 dBA. The predicted level at the proposed dwelling locations exceeds this limit. However, current ambient noise levels are at or above the predicted levels.

5. AIR BLAST OVERPRESSURE AND GROUND VIBRATION

5.1. Airblast overpressure

Figure 6 presents air blast overpressure predicted contours from the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion for blasting at the Raeburn Quarry out to a 70 year quarry life. Marked on the figure (in aqua) is the land at 805 Hobart Rd.

NB: The predictions are based on the use of a charge mass/delay of 48 kg, 3 m front row burden and blast direction oriented to minimise over pressure in the direction of sensitive receivers.

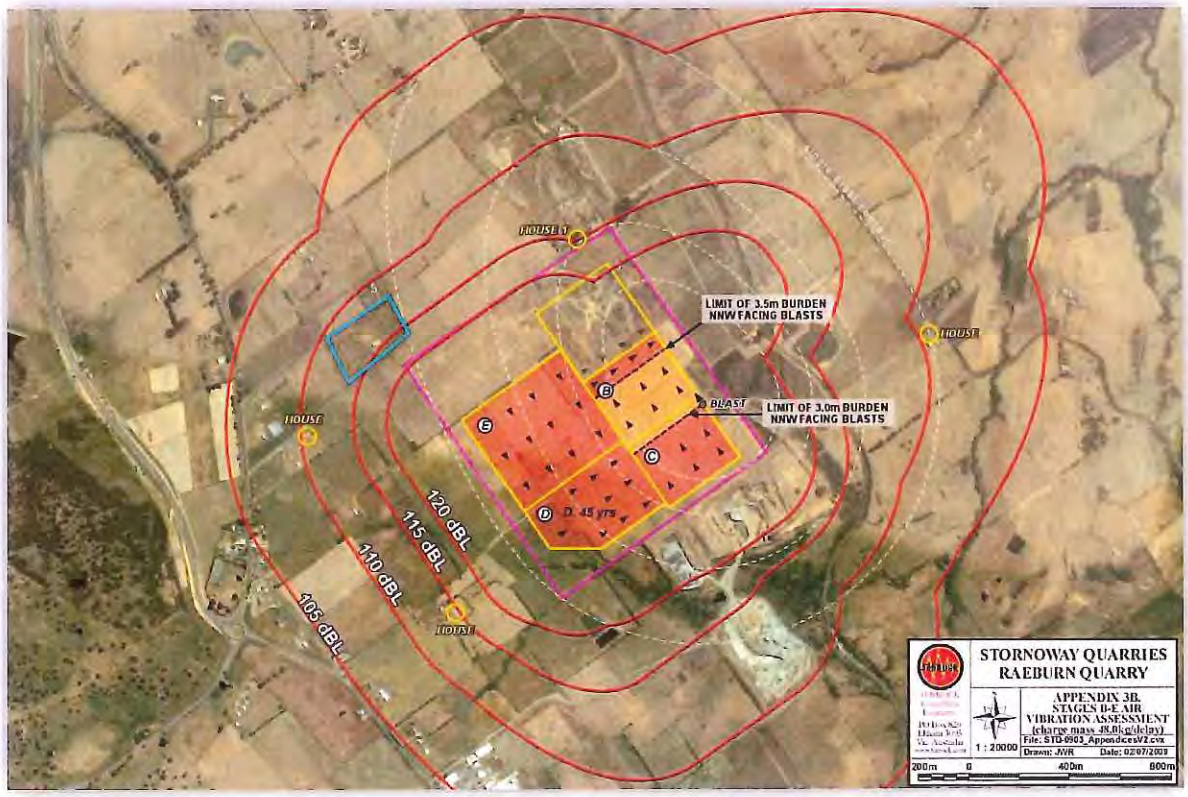


Figure 6 – Predicted air blast over pressure contours (out to 70 year quarry life) from the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion.

From the above:-

- The predicted over pressure levels at the proposed dwelling location are below the PCE limit (115 dB, Lin Peak for 95 % of blasts) for the Raeburn Quarry.

NB: Vipac notes that L_{Zpeak} (Lin Peak) levels recorded by the SLM during noise logging didn't exceed 105 dBA.

5.2. Ground vibration

Figure 6 presents ground vibration predicted contours from the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion for blasting at the Raeburn Quarry out to a 70 year quarry life. Marked on the figure (in aqua) is the land at 805 Hobart Rd.

NB: The predictions are based on the use of a charge mass/delay of 48 kg.

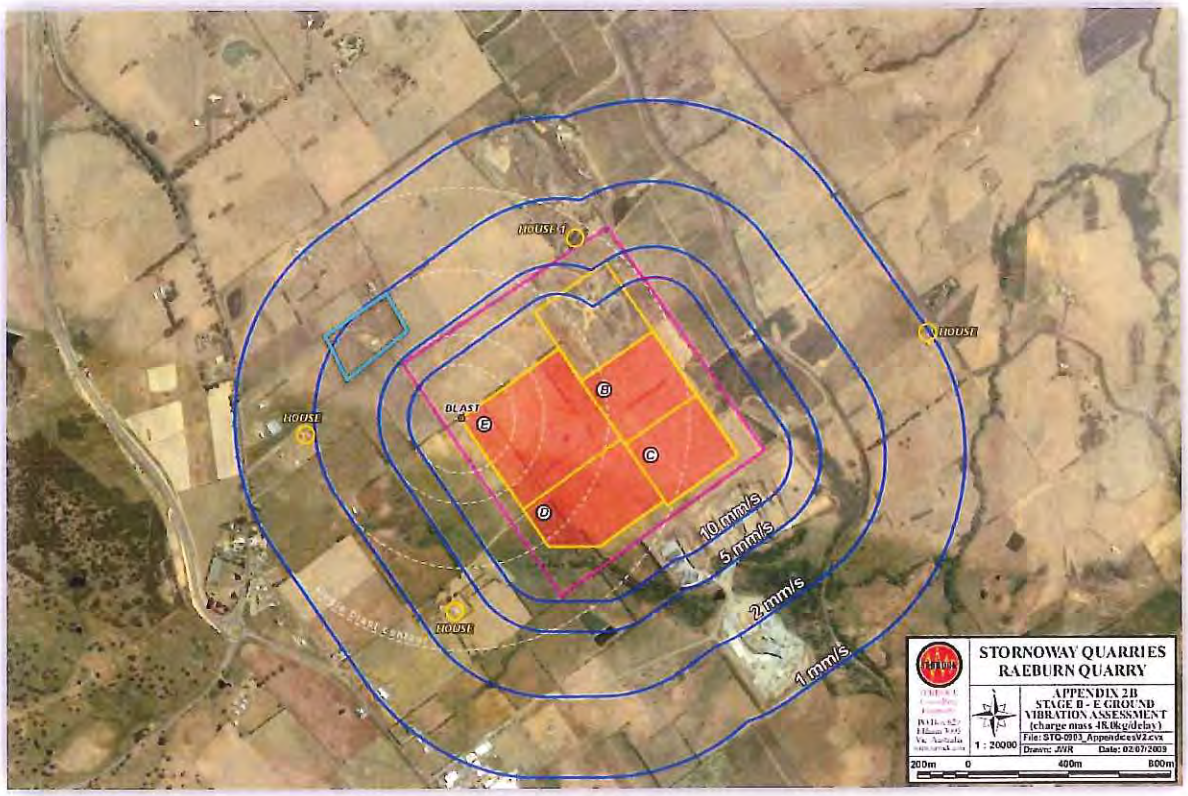


Figure 6 – Predicted air blast over pressure contours (out to 70 year quarry life) from the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion.

From the above:-

- The predicted over pressure levels at the proposed dwelling location are below the PCE limit (5 mm/s peak particle velocity for 95 % of blasts) for the Raeburn Quarry.

6. DUST

6.1. Meteorology

Long term weather data for the local area has been obtained from the Bureau of Meteorology (BoM) Launceston Airport Comparison meteorological station (Site number 091104). Table 2 presents the Launceston Airport Comparison data.

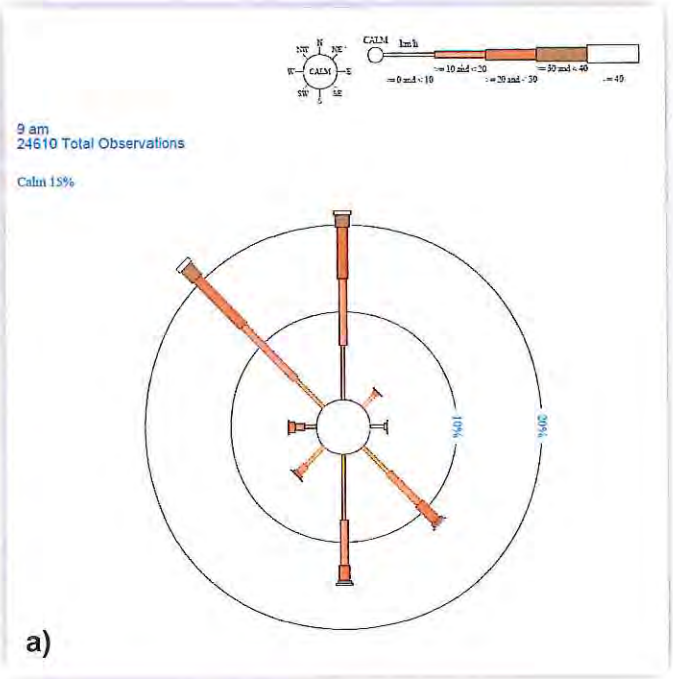
Long term weather data, Launceston Airport Comparison BoM meteorological station										
Month	Mean Temperature		Mean Rainfall (mm)	Mean number of days ≥ 1 mm	9 am Conditions			3 pm Conditions		
	Max (°C)	Min (°C)			Temp (°C)	RH (%)	Wind Speed (km/h)	Temp (°C)	Mean RH (%)	Wind Speed (km/h)
Jan	23.2	10.2	44.0	5.5	16.0	66	14.1	21.8	44	22.1
Feb	23.2	10.3	38.7	4.7	15.5	70	12.8	21.9	45	20.7
Mar	21.1	8.9	38.1	5.6	13.8	74	11.4	19.8	49	19.6
Apr	17.4	6.6	54.5	6.8	11.3	80	11.5	16.3	57	18.2
May	14.0	4.6	60.0	7.9	8.3	87	10.3	13.1	66	16.2
Jun	11.4	2.8	61.5	8.5	5.8	89	10.3	10.6	72	15.1
Jul	10.9	2.3	76.7	10.2	5.3	90	10.4	10.1	71	16.4
Aug	12.0	3.0	78.3	11.2	6.6	86	12.0	11.1	66	18.9
Sep	14.0	4.2	64.1	9.4	9.0	79	15.4	12.9	61	21.8
Oct	16.4	5.5	60.2	9.2	11.1	73	15.8	15.1	56	22.3
Nov	18.8	7.1	50.1	7.4	13.0	69	15.7	17.5	52	22.7
Dec	21.2	8.7	50.7	6.8	14.9	66	15.0	19.9	48	23.0
Annual	17.0	6.2	677.7	93.2	10.9	77	12.9	15.8	57	19.8

Table 2 – Long Term weather data for the BoM Launceston Airport Comparison meteorological station (source: BoM http://www.bom.gov.au/climate/averages/tables/cw_091104.shtml).

From the above Vipac:-

- The long term mean temperature range is between 10.9 and 23.2 °C with the coldest month being July and the hottest months being January and February.
- Most rainfall and days of rain are in winter (approx. double that of the summer months) with a mean annual rainfall of 677.7 mm.
- Wind speeds tend to be higher during Spring and Summer than Autumn and Winter.
- The above suggests that the potential for dust generation and impact is most likely during the Summer months resulting from the higher temperatures, dryer conditions and higher winds speeds.

Figure 5 presents long term average annual 9 am and 3 pm windroses for the Launceston Airport Comparison BoM meteorological station.



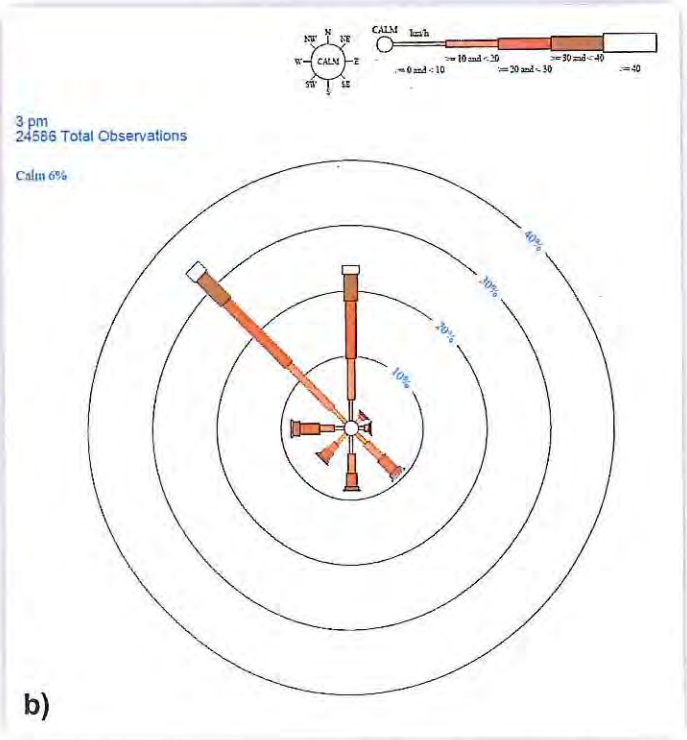


Figure 5 – BoM Launceston Airport Comparison long term average annual windroses, a) 9 am; and b) 3 pm.

From the above:-

- Winds are predominantly from the north-west and north.
- Afternoon winds tend to be stronger, i.e higher wind speeds.
- This reduces the likelihood of impact at 805 Hobart Rd from the Raeburn Quarry with the proposed dwelling located upwind of the predominant wind direction

6.2. DPEMP commitments

The following commitments were made in the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion with regard to the control of potential dust emissions from the Raeburn Quarry.

- Operate water sprays on crushing equipment.
- Minimise surface disturbance.
- Progressive rehabilitation of disturbed areas.
- Watering of internal roads.
- Maintain Quarry roads routinely.
- Transport trucks will be tarpaulin covered. 40 km/h truck speed limit on Raeburn Road.

NB: The above commitments were considered appropriate in the Tasmanian EPA's assessment of the DPEMP noting also that at the time of the assessment no complaints regarding dust emissions form the quarry had been received.

6.3. Observation

Observation during decommissioning of the logging SLM showed no indication of dust emissions from the Raeburn Quarry impacting on the proposed dwelling location at 805 Hobart Rd. Winds at the time of observation were from the north at approx. 15 km/h.

NB: Rainfall conditions during the month prior and month of observation were high for this location, based on rainfall records from BoM Launceston Airport meteorically station. The rainfall totals for June and July are presented below with the long term mean for each month in brackets:-

- June 94.4 mm (mean 61.5 mm)
- July 122.4 mm (mean 76.7 mm)

This suggests the generation of significant levels of fugitive dust (excluding process generated dust from crushing and screening activity) from the Raeburn Quarry was unlikely to have occurred through this period as ground conditions were likely to have been saturated.

7. CONCLUSIONS

From the above assessment Vipac concludes that the proposed residential dwelling is unlikely to suffer environmental nuisance or environmental harm from environmental noise, air blast over pressure, ground vibration or dust emissions from the Raeburn Quarry for the following reasons:-

Environmental noise

- Quarry operations are not currently audible at the proposed residential dwelling location. Quarry tuck movements are audible on Raeburn Rd but have minimal influence on the noise environment
- Predicted environmental noise levels (as provided in the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion) are below the sites PCE noise emission limit for the period of allowed operations. The exception to this is the final hour of allowable operations in the early evening where predicted levels exceed the noise emission limit, however, current ambient noise levels at the dwelling location are above the predicted level.

  NB: The predicted level is for an operational scenario 30 - 40 years into the future and the following is stated in the EPA's DEPEMP assessment report 'The Division noise specialist is of the opinion that within the next 20 years there will be… improvements in noise abatement for quarry machinery….'

Air blast over pressure

- Predicted air blast over pressure levels (as provided in the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion) are below the sites PCE limit for blasting scenarios out to a 70 year quarry life.

Ground vibration

- Predicted ground vibration levels (as provided in the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion) are below the sites PCE limit for blasting scenarios out to a 70 year quarry life.

Dust

- Meteorological conditions indicate the proposed dwelling is upwind from the quarry for the predominant wind directions in the area.
- The commitments regarding control of dust emissions made in the Stornoway Quarry 2010 DPEMP, Raeburn Quarry Expansion were considered appropriate in the Tasmanian EPA's assessment of the DPEMP and no complaints regarding dust emissions form the quarry had been received at the time.
- Dust emission from the quarry were not observed at the proposed dwelling location.

I hope this information meets your immediate requirements.

Please contact me directly if you have any questions concerning this work.

Yours faithfully,
VIPAC ENGINEERS & SCIENTISTS LTD

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Appendix D: Cocked Hat Hill Quarry Assessment

Tarkarri Engineering

Van Diemen Consulting

Cocked Hat Hill quarry environmental noise, ground vibration and air blast overpressure assessment

Report No. 5014_AC_R

TARKARRI ENGINEERING PTY LTD
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Kings Meadows TAS 7249

May 2017

Tarkarri Engineering

Air Quality • Acoustics • Environment • Vibration

DOCUMENT CONTROL

VAN DIEMEN CONSULTING
COCKED HAT HILL QUARRY
ENVIRONMENTAL NOISE, GROUND VIBRATION AND AIR BLAST OVERPRESSURE ASSESSMENT

Report No.
5014_AC_R
Prepared for
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Revision History

Revision No.	Date Issued	Reason/Comments
0	18/5/2017	Comments from VDC

Distribution

Copy No._____	Revision No.	Location
1	1	Project/Client File
2	1	Client
3	1	Tarkarri Engineering Library

Keywords environmental noise, ground vibration, air blast overpressure

Table of Contents

List of figures

List of tables

References

1] Office of Surface Mining Reclamation and Enforcement (http://www.osmre.gov/).

[2] Dept. of Primary Industries, Water and Environment (1999) Quarry Code of Practice.

[3] SoundPLAN Acoustic modelling software - Braunstein & Berndt GmbH.

[4] CONCAWE The oil companies' international study group for conservation of clean air and water – Europe (est. 1963) report 4/81.

Executive Summary

Tarkarri Engineering was commissioned to undertake an environmental noise, ground vibration and air blast overpressure assessment of operations of a proposed quarry at Cocked Hat Hill, Breadalbane, as part of a DPEMP.

Conservative noise emission criteria were adopted as follows:-

- $L_{Aeq,10min}$ **46 dBA**: Day (**0700 to 1800 hrs**).
- $L_{Aeq,10min}$ **40 dBA**: Evening (**1800 to 1900 hrs**).

Predicted noise emission levels from operations within the quarry boundary and haulage activity between Hobart Rd and the quarry were below the project noise emission criteria. Bunding along the pit edge and north-east boundary of the property at 805 Hobart Rd provides necessary shielding from noise emissions generated on the mine lease, particularly during early development phases.

Predicted ground vibration and air blast overpressure levels with a charge mass/ delay of 50 kg exceed human comfort criteria at critical receiver locations when blasting at certain locations within the lease. Recommendations are provided to meet human comfort criteria with a focus on blast design and orientation, and development of site specific scaled regressions to improve prediction.

1 Introduction

Tarkarri Engineering was commissioned by Van Diemen Consulting (VDC) on behalf of Mt Oriel Breadalbane to conduct an environmental noise, ground vibration and air blast overpressure assessment for a proposed quarry on the southern and eastern slopes of Cocked Hat Hill, Breadalbane. The assessment forms part of a Development Proposal and Environmental Management Plan (DPEMP). VDC have requested 'In addition to the matters stipulated in section 4.4 of the DPEMP General Guidelines the DPEMP must contain the following:-

- Location of all significant noise sources.
- All major sources of noise and vibration must be identified and described. Potential noise sources include drilling, blasting, materials handling (including sorting material, loading of material and transportation of the material within the land), materials processing, reversing alarms on mobile equipment, and transportation off the land.
- A description of land use and ownership in the vicinity of the site and those areas which may be affected by the proposal including any residential premises and subdivisions.
- A report on estimated air blast overpressure and ground vibration at nearby residences, structures and other premises (including tourism facilities), for typical proposed blasting.
- Proposed measures to mitigate noise and blasting impacts.

The relevant section in the DPEMP General Guidelines in relation to noise emissions is provided below:-

6.4 Noise emissions

Discuss impacts of the proposal on ambient (surrounding) noise levels (during both the construction and operational phases), including:-

- Identifying and describing all major sources of noise.
- A map of the location of all major sources of noise.
- Considering the potential for noise emissions (during both the construction and operational phases) to cause nuisance for nearby land users.
- The potential for noise emissions to affect terrestrial, marine and freshwater wildlife and livestock.

To address the above Tarkarri Engineering proposed the following approach:-

Environmental noise

- Ambient noise monitoring to establish typical ambient noise conditions in the area.
- Develop source sound power spectra for the major noise emitting equipment on site.
- Construct an environmental noise model of quarry operations using SoundPLAN.
- Predict noise levels at residential locations within 2 km of the quarry and assess against ambient noise levels and relevant regulations and guidelines including Quarry Code of Practice

Ground vibration and air blast overpressure

- Develop square root and cube root scaled regressions for the production of ground vibration and air blast overpressure.
- Predict potential ground vibration and air blast overpressure levels at residential locations within 1 km of the mine and assess against limits for human comfort.
- Provide charge mass limits and mitigation strategies to maintain levels at residences within limits for human comfort.

Ground vibration and air blast overpressure prediction is typically conducted using site specific scaled regression equations developed from monitored data from multiple blasts measured at multiple locations. Such data is not available and given this Tarkarri Engineering has sourced regression equations developed by the *Office of Surface Mining Reclamation and Enforcement*[1] in the USA from their extensive data sets. Some recent data from blasting at the adjacent McGraths Pit which operates in the same geologic formation has been provided to Tarkarri Engineering and will be considered in this assessment.

2 Site description

The Cocked Hat Hill quarry lease is located in Breadalbane approximately 10 km south south-east of the centre of Launceston and 3 km north of the Launceston Airport. The lease is located on the southern and western slopes of Cocked Hat Hill. The hill itself is near the top of a generally north north-west to south south-east trending ridgeline that separates the Midlands Highway and Relbia area.

Two locations within the lease, the northern and south-western boundaries, were selected for the monitoring of ambient environmental noise.

Nine noise sensitive receiver locations were identified and these locations form the basis for the prediction of environmental noise emission, ground vibration and air blast overpressure levels from quarry operations.

Table 1 provides location information for each of the nine receivers along with the two position at which a logging sound level meter (SLM) was located for the measurement of ambient noise levels. Figure 1 shows an aerial view of the lease with the nine receiver locations and two SLM locations marked.

Environmental noise receiver and measurement positions		
Number	Location	Coordinates (MGA94, Zone 55 G)
1	803 Hobart Rd	516132 / 5403591
2	775 Hobart Rd	515951 / 5403663
3	713 Marchington Dr	515554 / 5404334
4	717 Marchington Dr	516093 / 5404519
5	336 Relbia Rd	516467 / 5404872
6	Josef Chromy Wines	517114 / 5405054
7	567 Relbia Rd	518370 / 5403536
8	843 Hobart Rd	515671 / 5402755
9	805 Hobart Rd (proposed dwelling yet to receive planning approval)	516193 / 5403495
SLM_1	Mine lease south	516233 / 5403493
SLM_2	Mine lease north	516286 / 5404110

Noise sensitive locations.

Table 1 – Environmental noise receiver and measurement positions.

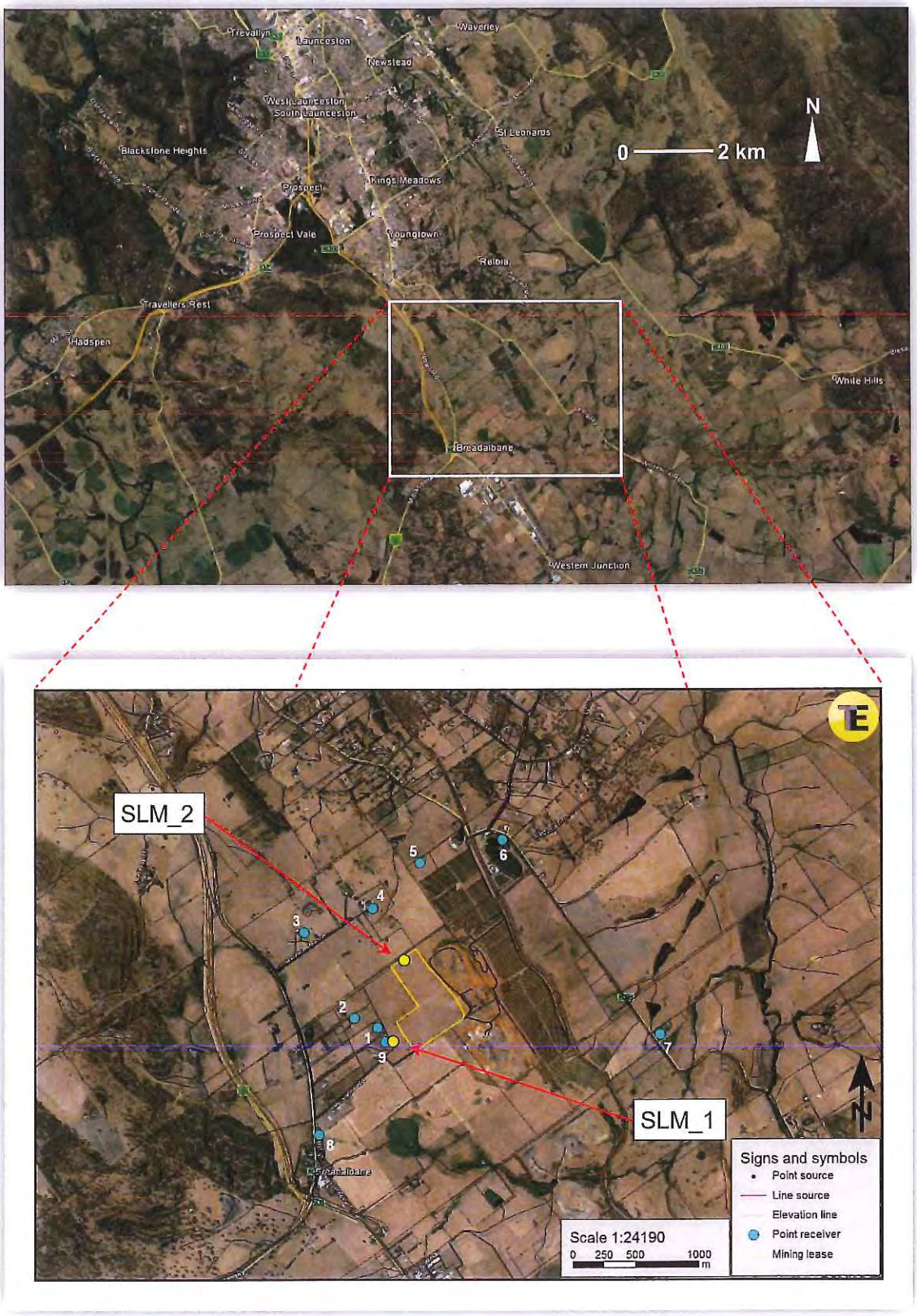


Figure 1 – Aerial view of the mine lease with environmental noise receiver and measurement positions marked.

The following information, provided in the VDC's Development Application (DA) supporting information, provides the proposed operating hours for the quarry; a list of mobile equipment to be used; and proposed extraction volumes and haul truck movements.

Table 1. Operating hours and times for blasting and crushing within the quarry

Operating Hours	Drilling and blasting	Crushing	Haulage
0600 to 1900 hrs Monday to Friday; 0800 to 1600 hrs on Saturday; and closed on Sunday and public holidays (those gazetted Statewide).	0800 and 1700 hrs Monday to Friday but closed on Sunday and public holidays (those gazetted Statewide).	0700 to 1700 hrs Monday to Friday but closed on Sunday and public holidays (those gazetted Statewide).	0700 to 1900 hrs Monday to Friday; 0800 to 1600 hrs on Saturday; and closed on Sunday and public holidays (those gazetted Statewide).

Excavators

- Komatsu Pc300-8 (30ton exc)
- Caterpillar 320DL (20 ton exc)
- Komatsu Pc200-8 (20 ton exc)

Crusher equipment

- Powerscreen 1400 chieftan twin deck screen
- Powerscreen metrotrac jaw crusher

Loader

- Volvo L150E Loader – loadrite scales
- Komatsu WA380 loader – loadrite scales

Bulldozer

- Caterpillar D9R with SU Blade and ripper
- Caterpillar D8R II with SU Blade and ripper

Other

- Trucks for haulage
- 15,000L capacity water cart truck
- Light vehicles for worker transport

Table 2. Examples of gravel supplies and associated truck generation

Type of Supply	Size of Supply	Period of Supply and Truck Movements
Campaign	20,000 tonnes using 30 t trucks (667 truckloads)	40 days = 17 trucks/day = 34 truck movements/day
Campaign	80,000 tonnes using 39.5 t trucks (2,025 truckloads)	60 days = 34 trucks/day = 68 truck movements/day

3 Environmental noise

3.1 Ambient noise environment

3.1.1 Ambient noise monitoring

A logging sound level meter (Larson Davis 824) was located at the SLM_1 position (see table 1 and figure 1) for a approx. 6 days measuring L_{eq} and L_{max}, L_{min}, L_1, L_{10}, L_{50}, L_{90} and L_{99} A-weighted sound pressure levels on a 10-minute basis between 24 February 2017 and 2 March 2017.

At the SLM_2 position (see table 1 and figure 1) a logging sound level meter (Larson Davis 831) was located for a approx. 9 hours measuring L_{eq} and L_{max}, L_{min}, L_1, L_{10}, L_{50}, L_{90} and L_{99} A-weighted sound pressure levels on a 10-minute basis on 2 March 2017.

Figures 2 and 3 provide photographs of the sound level meters at each of the measurement positions.

Figure 2 – Sound level meter at the SLM_1 position, view to the south.

Figure 3 - Sound level meter at the SLM_2 position, view to the north.

3.1.1.1 Monitoring results and discussion

Figures 3 and 4 present graphs of the main 10-minute statistical data logged at the two SLM position as follows:-

- L_{Aeq}: Ambient noise level
- L_{A10}: Represents transient noise levels
- L_{A90}: Considered the background noise level.
- L_{Amax}: Maximum fast response noise level.

For sake of clarity the other 5 data sets are not shown in these graphs. For the extended monitoring period at the SLM_1 position only data covering from one hour before the proposed commencement of operations (0600 hrs and 0800 hrs on Saturdays) to one hour after the proposed cessation of hauling (1900 hrs and 1600 hrs on Saturdays) is presented.

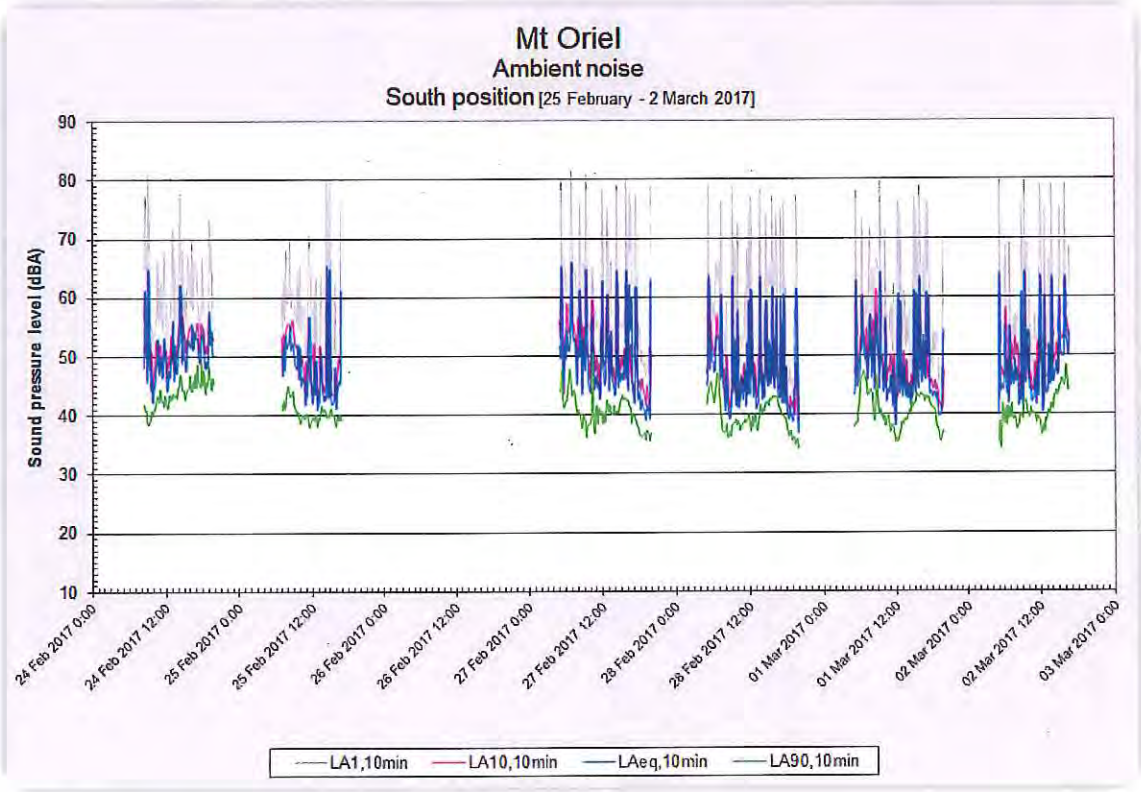


Figure 4 – Monitored Ln-statistics, position SLM_1.

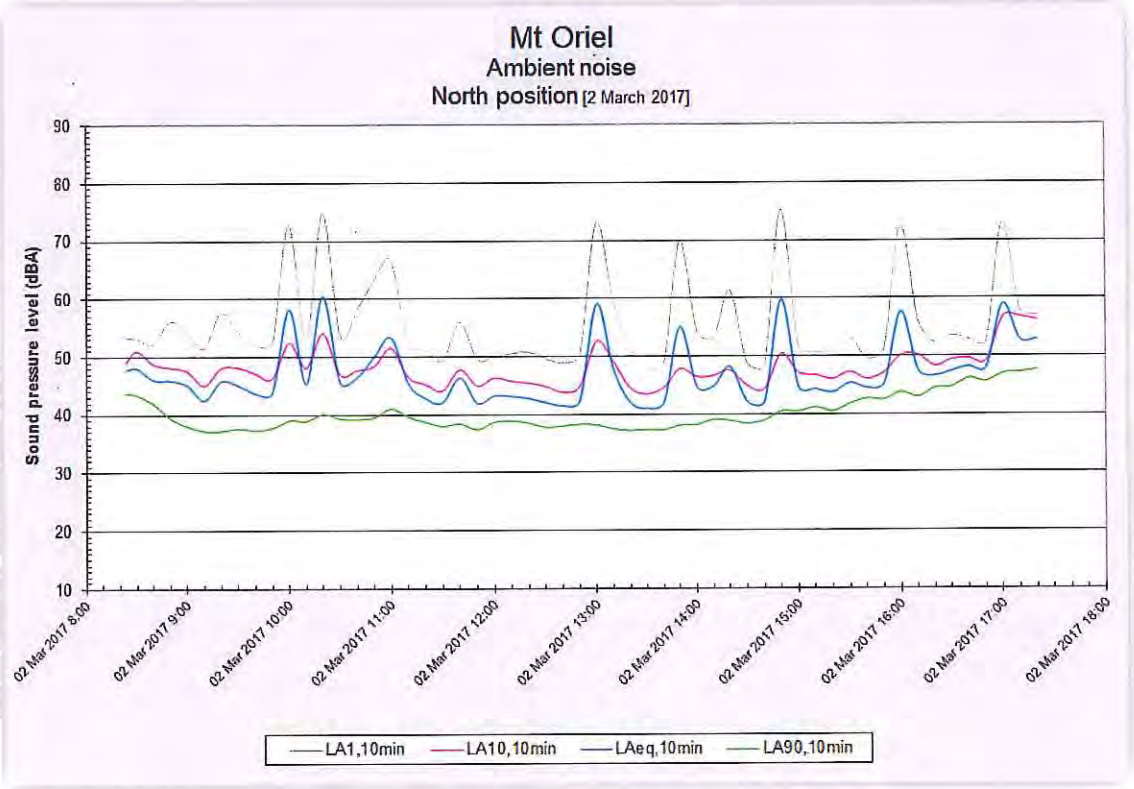


Figure 5 – Monitored Ln-statistics, position SLM_2.

From the above:-

- Background levels were typically above 38 dBA at the two SLM positions. Observation indicated that this statistic was largely controlled at both positions by traffic flow on the Midland Hwy and Hobart Rd to the west. L_{A90} levels increased to approx. 45 dBA during times when peak traffic on the Hwy was likely to be occurring, i.e. morning and afternoon periods associated with the travel to and from work.
- L_{Aeq} levels typically tracked background approx. 2 to 3 dB higher with 15 to 20 dBA spikes throughout the monitoring likely to be the result of overfly activity associated with flights to and from the nearby Launceston Airport. Maximum noise levels also spiked at these times to levels between 70 and 80 dBA. Other more sustained periods of high L_{Aeq} levels at SLM_1 were likely to have been associated with local rural or commercial activity.
- From local observation at the SLM_1 position it was noted that trucks movements on the haul road used by McGraths Pit and Raeburn quarry were audible but not such that it would control any of the measured statistics presented.

3.2 Assessment criteria

From the observed data presented above Tarkarri Engineering considered it appropriate to adopt environmental noise mission criteria similar to the environmental noise emission limits provided in the McGraths Pit Environmental Protection Notice (EPN) No. 8742/3 (r1). These are provided below for reference.

N1 Noise emission limits

1 Noise emissions from the activity when measured at any noise sensitive premises in other ownership and expressed as the equivalent continuous A-weighted sound pressure level must not exceed:

1.1 46 dB(A) between 0700 hours and 1800 hours (Day time); and

1.2 40 dB(A) between 1800 hours and 2200 hours (Evening time); and

1.3 35 dB(A) between 2200 hours and 0700 hours (Night time).

2 Where the combined level of noise from the activity and the normal ambient noise exceeds the noise levels stated above, this condition will not be considered to be breached unless the noise emissions from the activity are audible and exceed the ambient noise levels by at least 5 dB(A).

3 The time interval over which noise levels are averaged must be 10 minutes or an alternative time interval specified in writing by the Director.

4 Measured noise levels must be adjusted for tonality, impulsiveness, modulation and low frequency in accordance with the Tasmanian Noise Measurement Procedures Manual.

5 All methods of measurement must be in accordance with the Tasmanian Noise Measurement Procedures Manual.

With consideration of ambient noise levels presented in section 3.1 above and the *Quarry Code of Practice*[2], Tarkarri Engineering consider the following noise emission criteria for this assessment to be conservative and to reasonably reflect consideration of additional noise emissions to a noise environment with existing commercial, extractive and rural noise producing activities.

- $L_{Aeq,10min}$ **46 dBA**: Day (**0700 to 1800 hrs**).
- $L_{Aeq,10min}$ **40 dBA**: Evening (**1800 to 1900 hrs**).

3.3 Environmental noise modelling

SoundPLAN[3] software was used for carrying out detailed noise emission spectra and contour modelling. This program allows the use of the CONCAWE[4] calculation method for modelling atmospheric attenuation of noise. Parameters influencing sound propagation and attenuation include:

- Source type (point, line, plane).
- Relative source and receiver height.
- Topography and barriers.
- Industrial buildings as sources and/or barriers.
- Ground absorption.
- Distance attenuation.
- Atmospheric conditions (pasquill stability, temperature, humidity and vector wind speed).
- Reflecting surfaces.
- Source directivity.

As all propagation and attenuation parameters are frequency dependent, all input source data has been based on 1/3-octave band sound power spectra.

Geo-referenced topographic, transport, building and hydrologic data was obtained from Department of Primary Industry, Parks, Water and Environment. This provided contours at 10 m intervals; residential locations; road layouts; and river and stream courses for the area. More

detailed topographic data for the lease area and adjacent Cocked Hat Hill, McGraths Pit and Raeburn quarry was available, allowing for 5 m interval contours across these areas.

Quarry development phases where provided by VDC.

All source and geodata is referenced to the Map Grid of Australia (MGA).

3.3.1 Model input data

Input sound power (SWL) spectra were determined for potential noise sources from; equipment lists provided by VDC; near-field source SWL measurements of equipment operating in the adjacent McGraths Pit; and Tarkarri Engineering SWL library data for quarrying equipment.

Overall sound power levels (dBA)			
Area		SWL	Comment
Excavator 30 t	Engine	102	CAT 365C LME (McGraths Pit)
	Engine / Dig	111	
Excavator 20t		101	CAT 320 (Tarkarri Engineering SWL library)
Crusher		115	Pegson Premiertrak 1100 x 650 (Tarkarri Engineering SWL library)
Screen		109	Powerscreen Cheiftain 1400 (Tarkarri Engineering SWL library)
Front End Loader (FEL)		100	Komatsu WA470 (Tarkarri Engineering SWL library)
Bulldozer		108	CAT D7H (Tarkarri Engineering SWL library)
Haul / Water Truck		107	Road truck IVECO with CAT 650 engine (Tarkarri Engineering SWL library)
Drill	Engine	112	Roc F7 Atlas Copco (Tarkarri Engineering SWL library). Drilling and rattling scaled for time of operation in 10-minute period.
	Drill	124	
	Rattle	124	

Table 2 – Sound power levels.

3.3.2 Atmospheric conditions

SoundPLAN[3], via the CONCAWE[4] prediction algorithm, models atmospheric attenuation using Pasquill stability indices in combination with vector wind speed and direction to determine appropriate frequency dependent attenuation/amplification. In this study the following propagation condition was considered:-

- **Neutral propagation**: Situations where the atmospheric conditions are considered to be neutral occur with a Pasquill stability class D and no wind. These conditions can typically occur in the hour before sunset and the hour after sunrise. Neutral conditions also occur fairly frequently during still, cloudy conditions.

3.3.3 Model scenarios

Quarry development plans provided in VDC's DA supporting information formed the basis for the development of model scenarios for this project, particularly in relation to pit development

through the life of the quarry. Model plan views and wire frame model views are provided below for the following quarry operation model scenarios:-

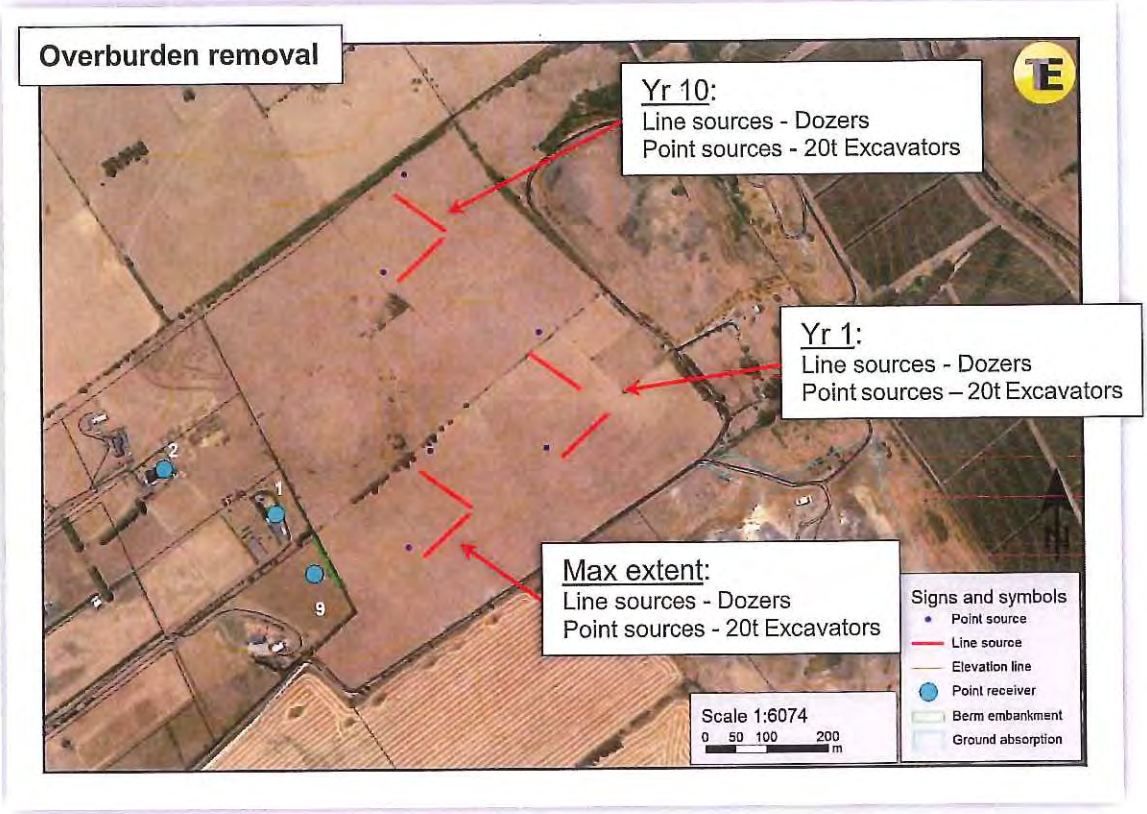
- Overburden removal
- Drilling (blast preparation)
- Quarrying

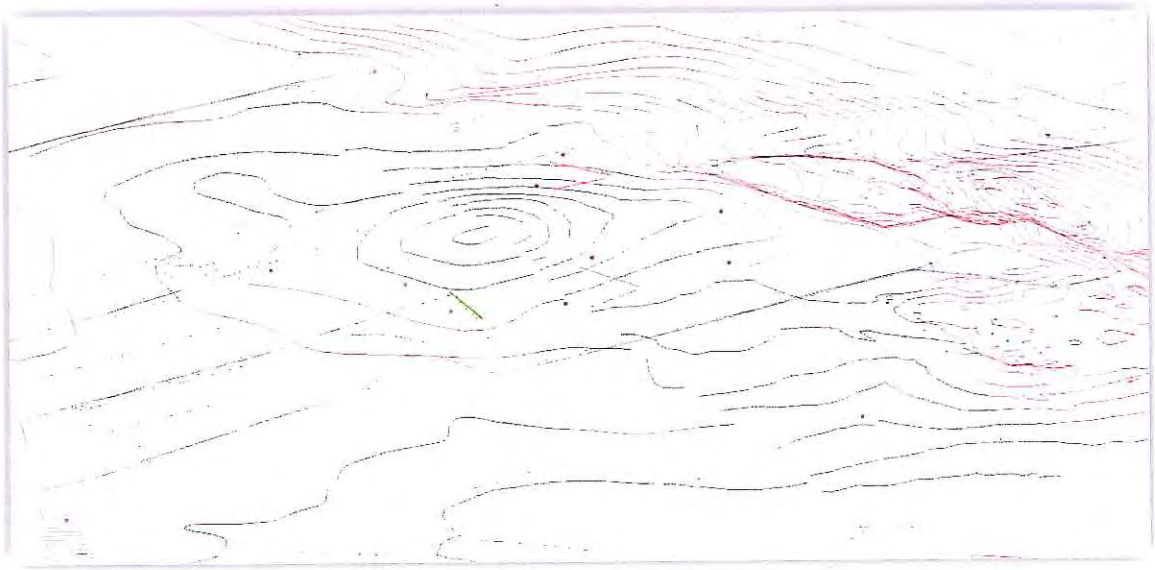
The following quarry stages were modelled:-

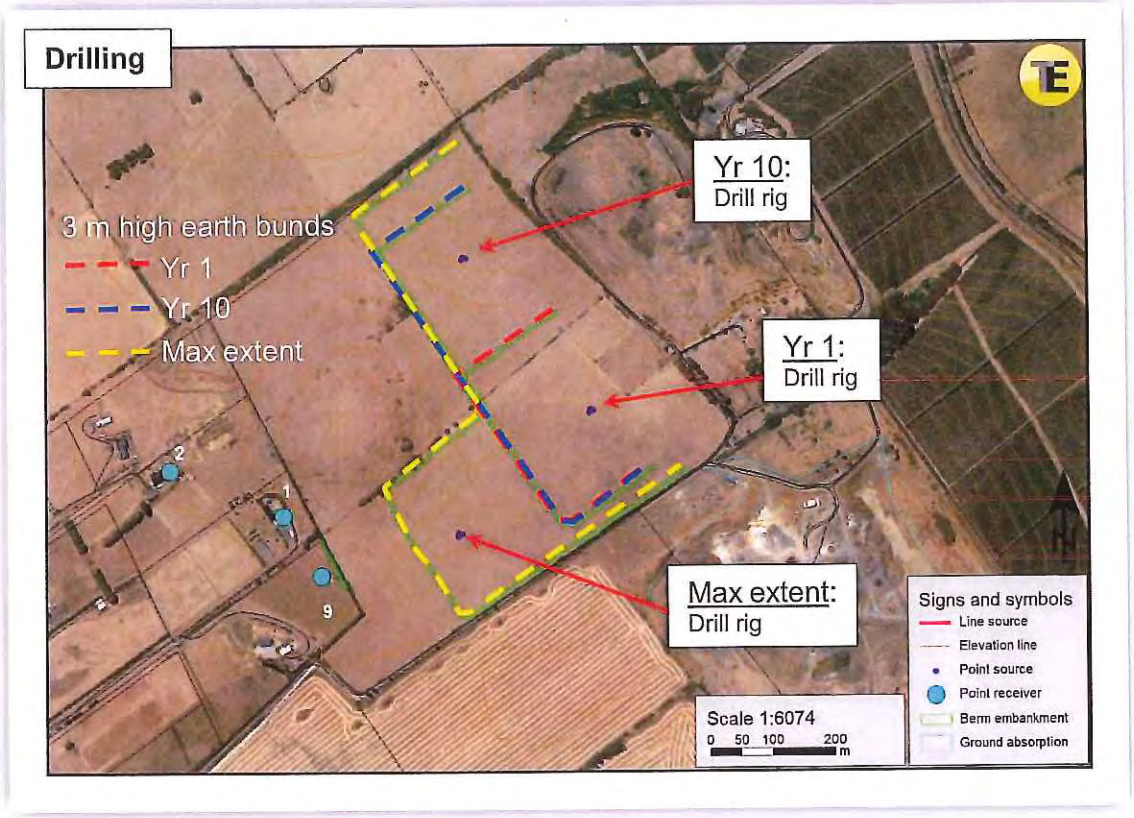
- Year 1
- Year 10
- Maximum extent

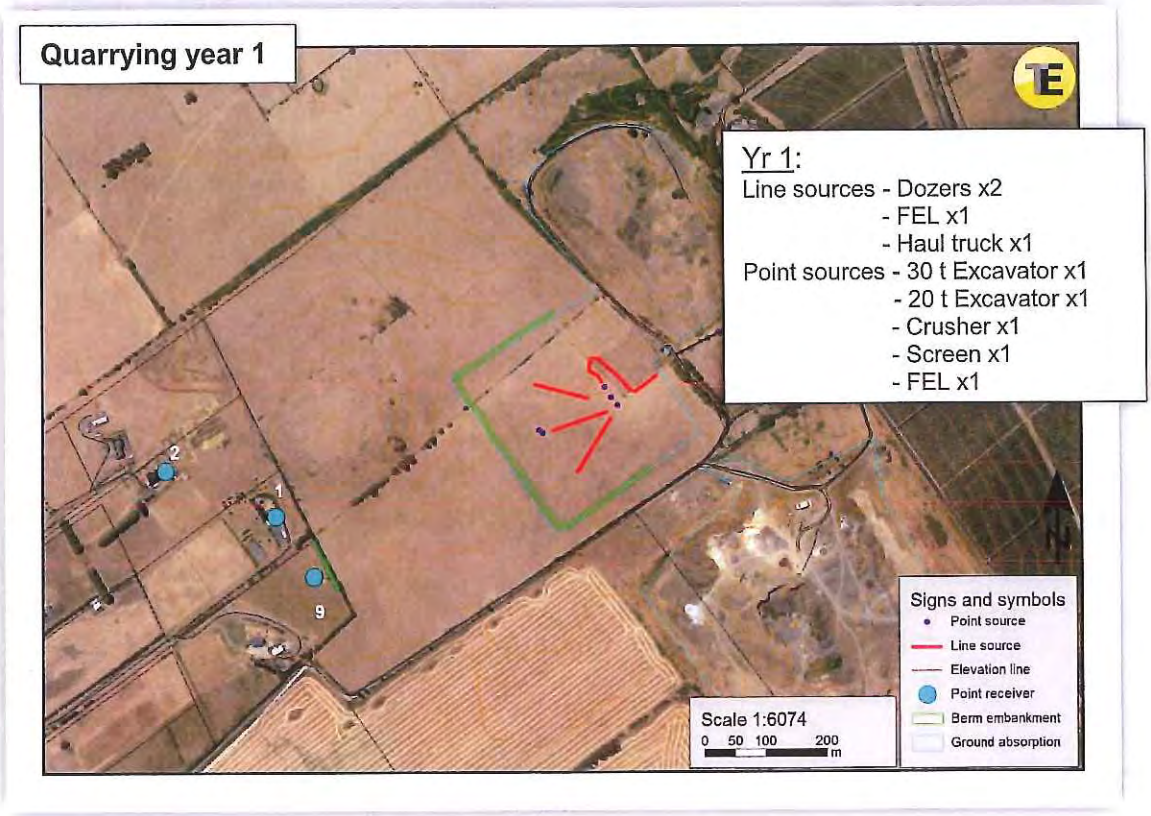
A list of sources, source locations and earth bunding locations are provided on the model plan views.

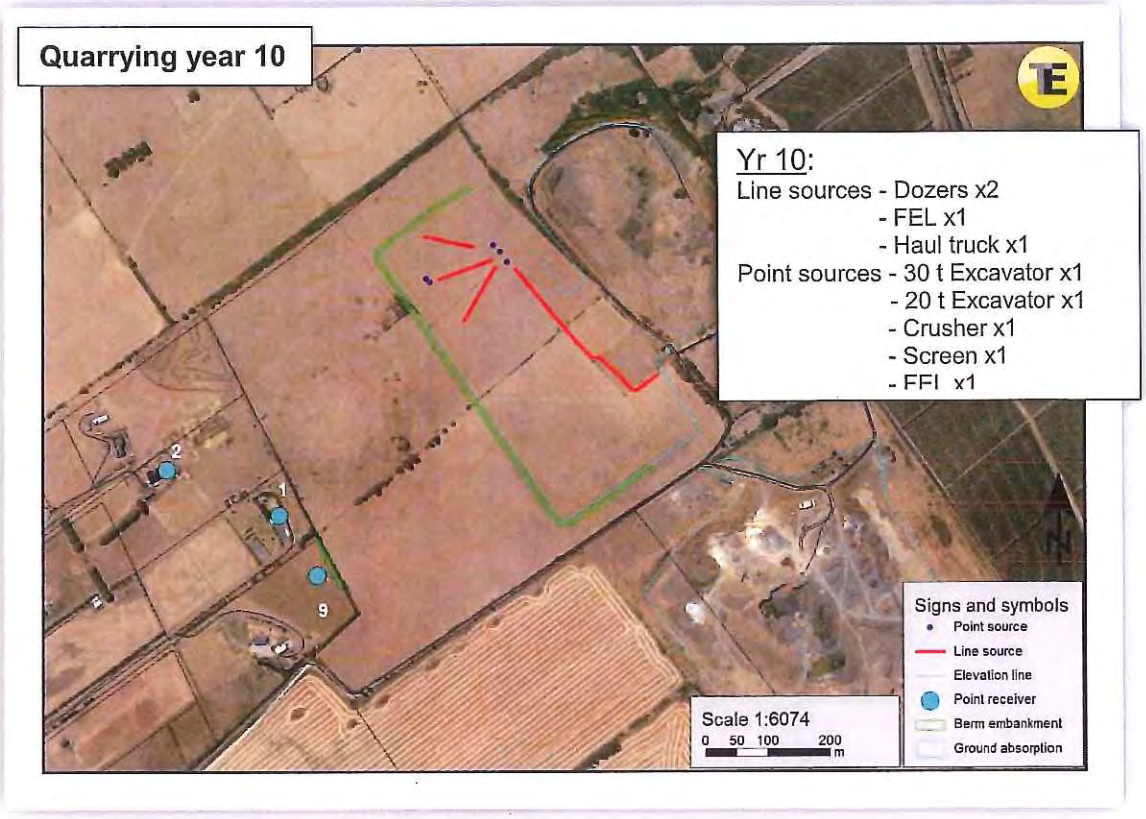
NB: All model scenarios include a 3 m high bund along the north-east boundary of the property at 805 Hobart Rd. The bund extends from the northern comer of the property to approx. 35 m past the south-eastern comer of the proposed residential building, resulting in a total bund length of approx. 85 m. This bund is to accommodate noise mitigation measures associated with the dwelling proposed for that property.

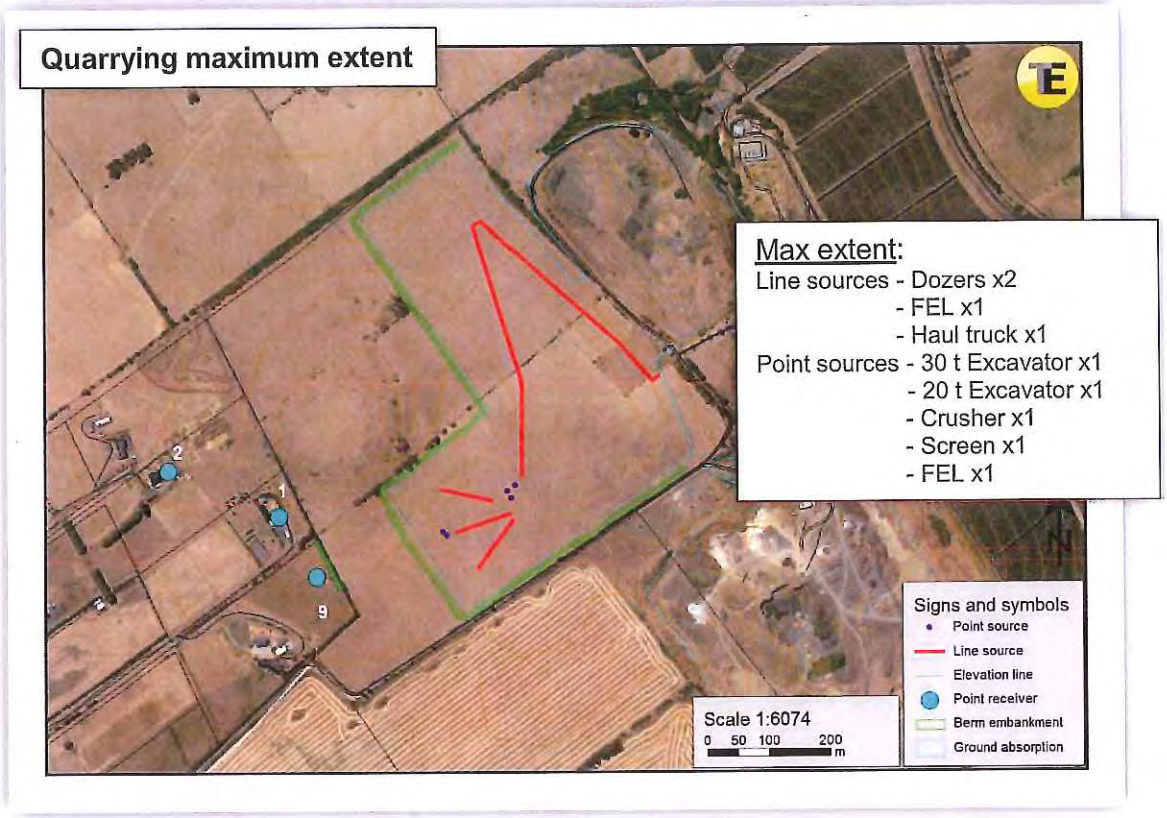

Overburden removal
Yr 10:
Line sources - Dozers
Point sources - 20t Excavators
Yr 1:
Line sources - Dozers
Point sources – 20t Excavators
Max extent:
Line sources - Dozers
Point sources - 20t Excavators
Signs and symbols
Point source
Line source
Elevation line
Point receiver
Berm embankment
Ground absorption
Scale 1:6074
0 50 100 200
m
1
2
9

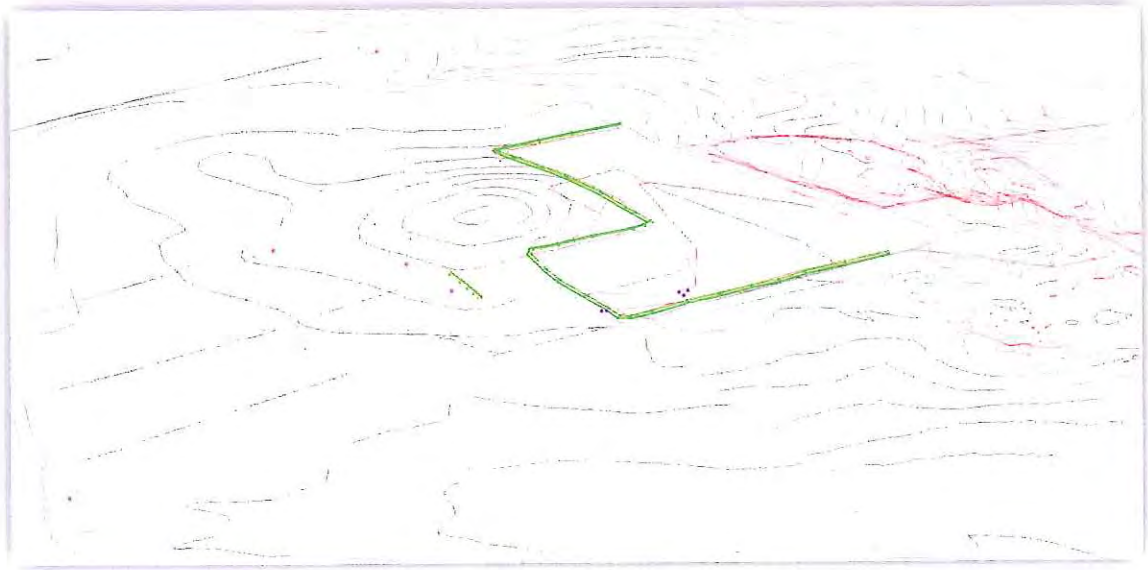



Drilling
3 m high earth bunds
Yr 1
Yr 10
Max extent
Yr 10:
Drill rig
Yr 1:
Drill rig
Max extent:
Drill rig
Signs and symbols
Line source
Elevation line
Point source
Point receiver
Berm embankment
Ground absorption
Scale 1:6074
0 50 100 200 m
N
1
2
9


Quarrying year 1
Yr 1:
Line sources - Dozers x2
- FEL x1
- Haul truck x1
Point sources - 30 t Excavator x1
- 20 t Excavator x1
- Crusher x1
- Screen x1
- FEL x1
Signs and symbols
Point source
Line source
Elevation line
Point receiver
Berm embankment
Ground absorption
Scale 1:6074
0 50 100 200 m
N
1
2
9


Quarrying year 10
Yr 10:
Line sources - Dozers x2
- FEL x1
- Haul truck x1
Point sources - 30 t Excavator x1
- 20 t Excavator x1
- Crusher x1
- Screen x1
- FFI x1
Signs and symbols
Point source
Line source
Elevation line
Point receiver
Berm embankment
Ground absorption
Scale 1:6074
0 50 100 200 m
1
2
9


Quarrying maximum extent
Max extent:
Line sources - Dozers x2
- FEL x1
- Haul truck x1
Point sources - 30 t Excavator x1
- 20 t Excavator x1
- Crusher x1
- Screen x1
- FEL x1
Signs and symbols
Point source
Line source
Elevation line
Point receiver
Berm embankment
Ground absorption
Scale 1:6074
0 50 100 200 m
N
1
2
9



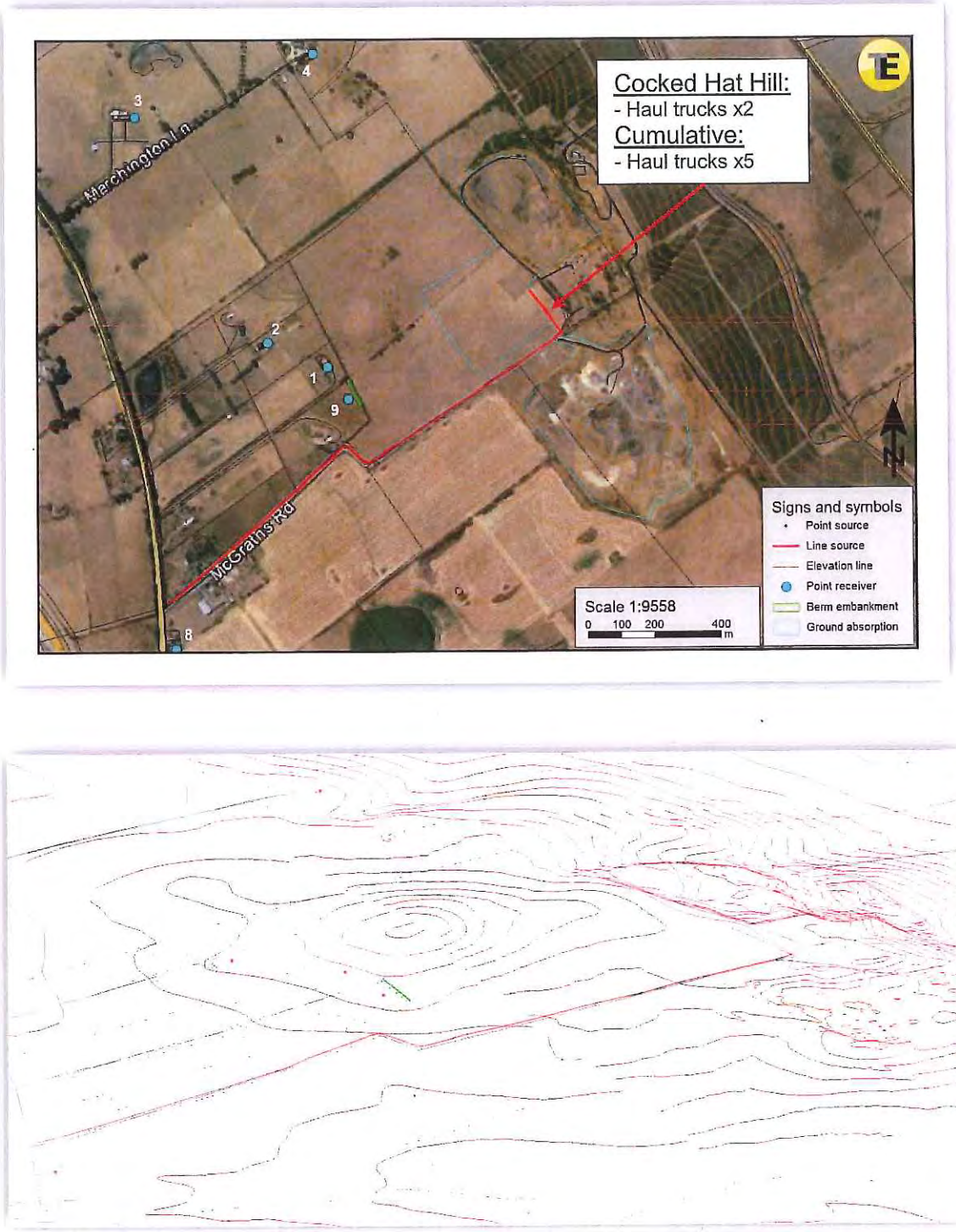


Figure 6 – Model plan view and wire frame model view.

3.3.4 Modelling results and discussion

3.3.4.1 Predicted noise emission contours

Using the environmental noise model noise contour maps were generated to assist in the visualisation of noise propagation to the surrounding environment for the following model scenarios:-

- Overburden removal yr 1
- Overburden removal yr 10
- Overburden removal max extent
- Drilling yr 1
- Drilling yr 10
- Drilling max extent
- Quarrying yr 1
- Quarrying yr 10
- Quarrying max extent
- Hauling (Cocked Hat Hill quarry haul trucks).

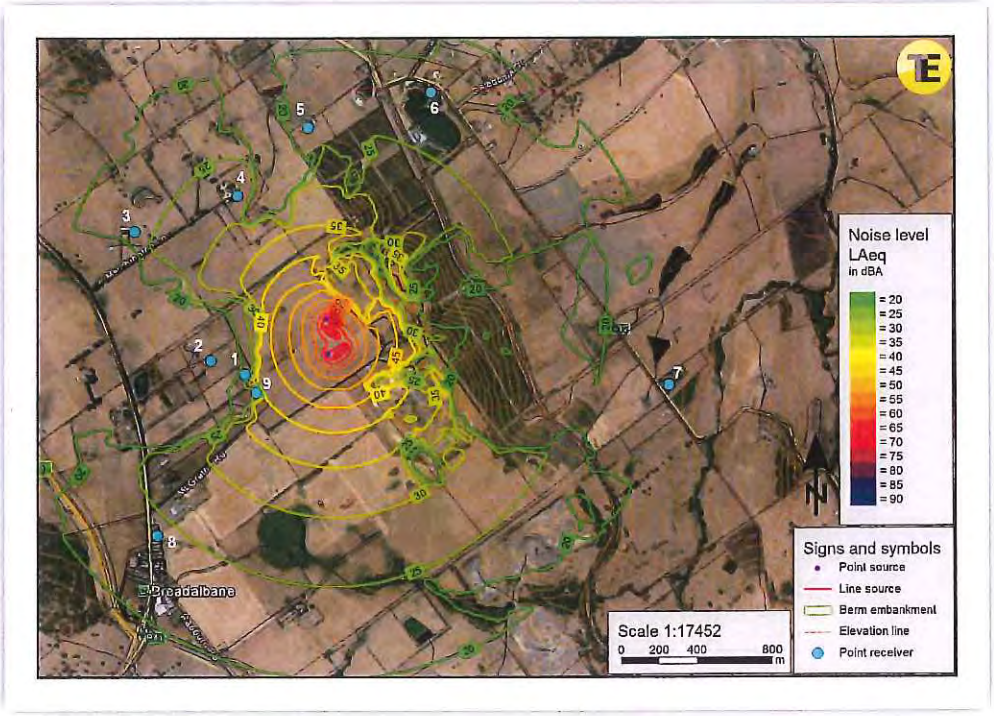


Figure 7 – Predicted noise emission contours, **Overburdon removal yr 1**.

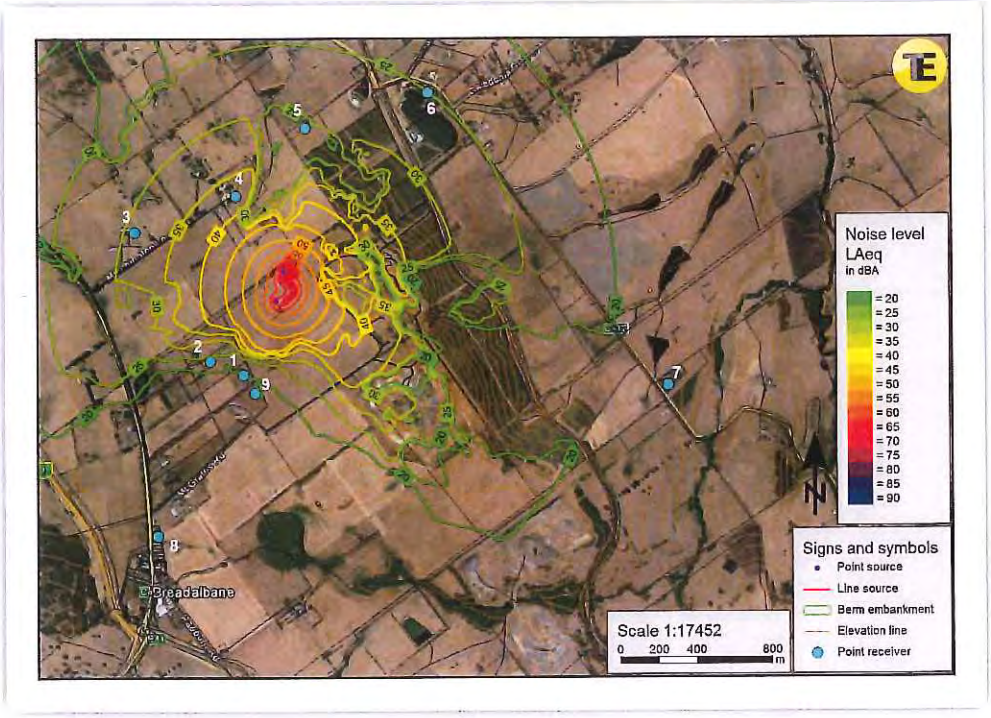


Figure 8 – Predicted noise emission contours, **Overburdon removal yr 10**.

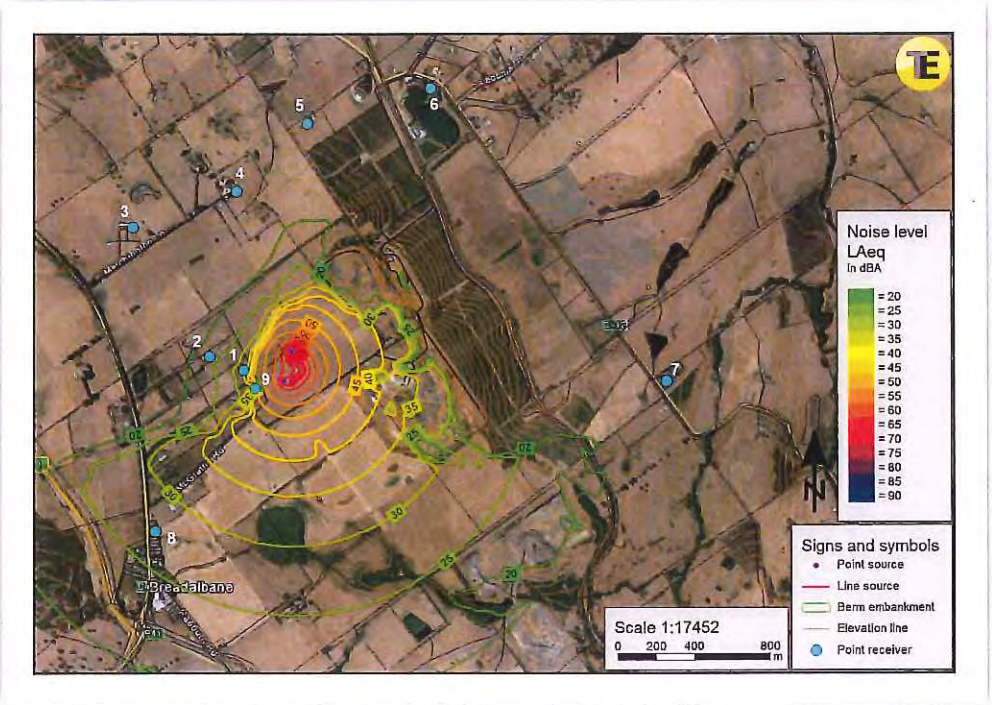


Figure 9 – Predicted noise emission contours, **Overburdon removal max extent**.

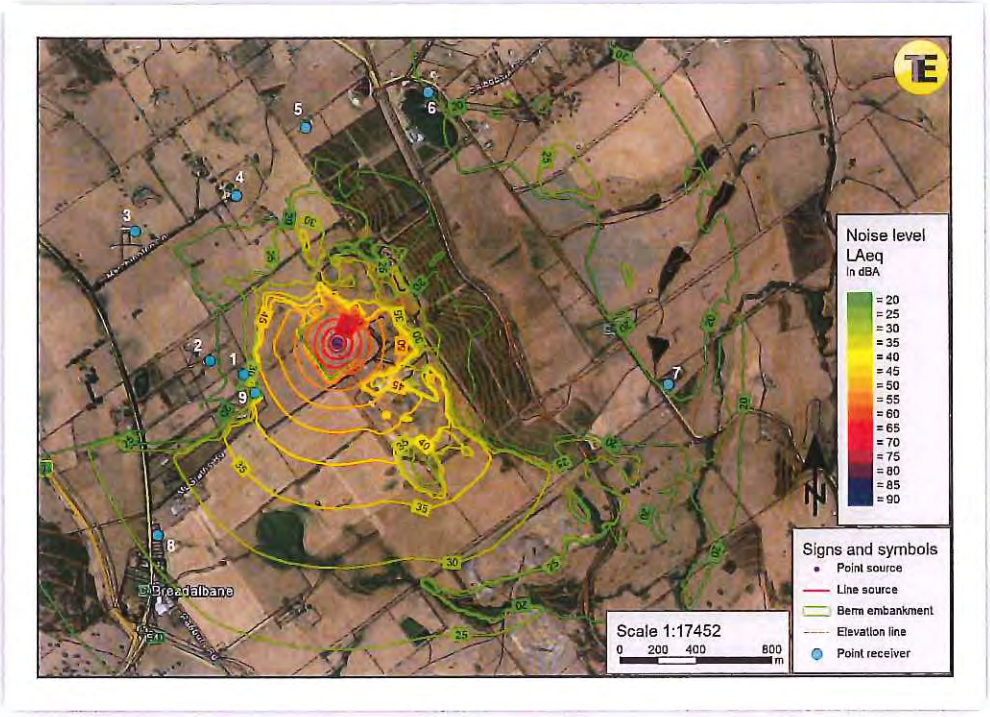


Figure 10 – Predicted noise emission contours **Drilling yr 1**.

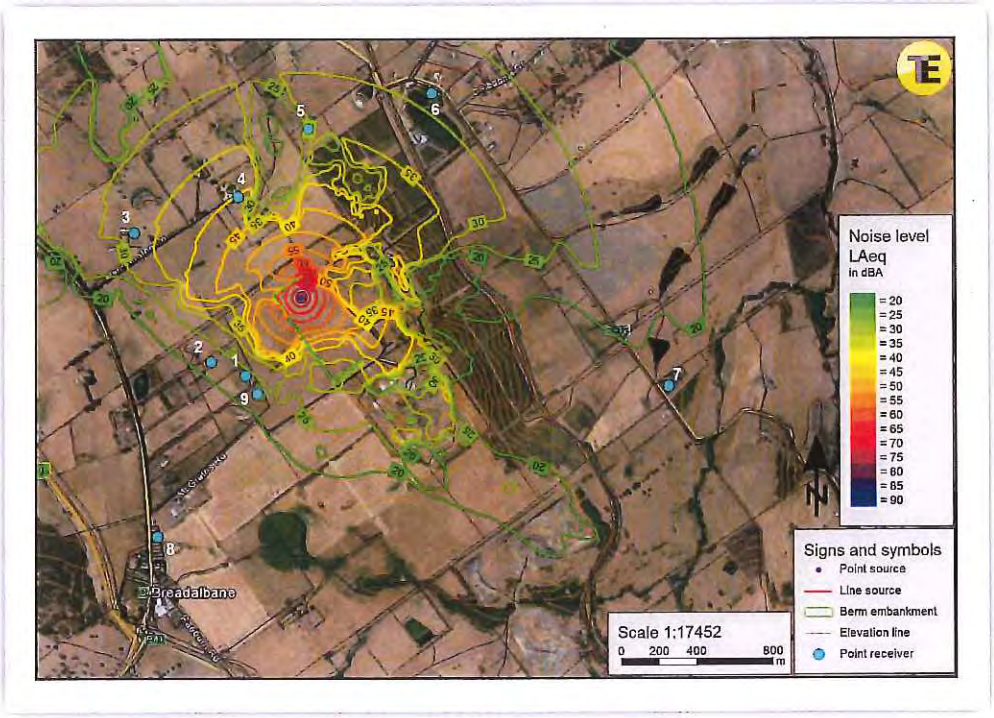


Figure 11 – Predicted noise emission contours, **Drilling yr 10**.

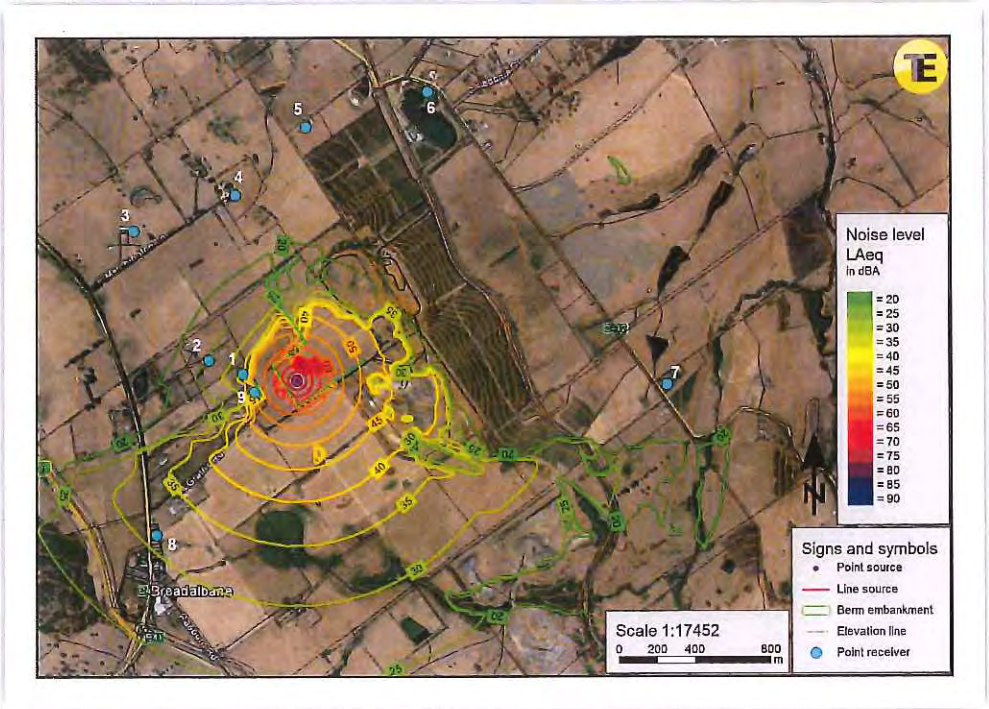


Figure 12 – Predicted noise emission contours, **Drilling max extent**.

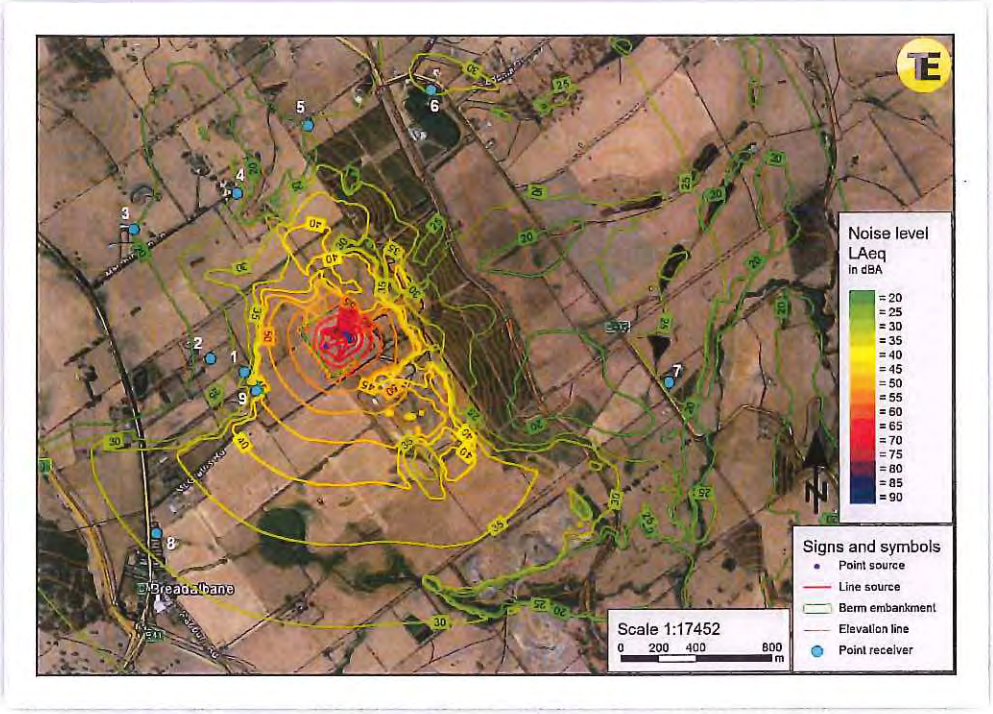


Figure 13 – Predicted noise emission contours, **Quarrying yr 1**.

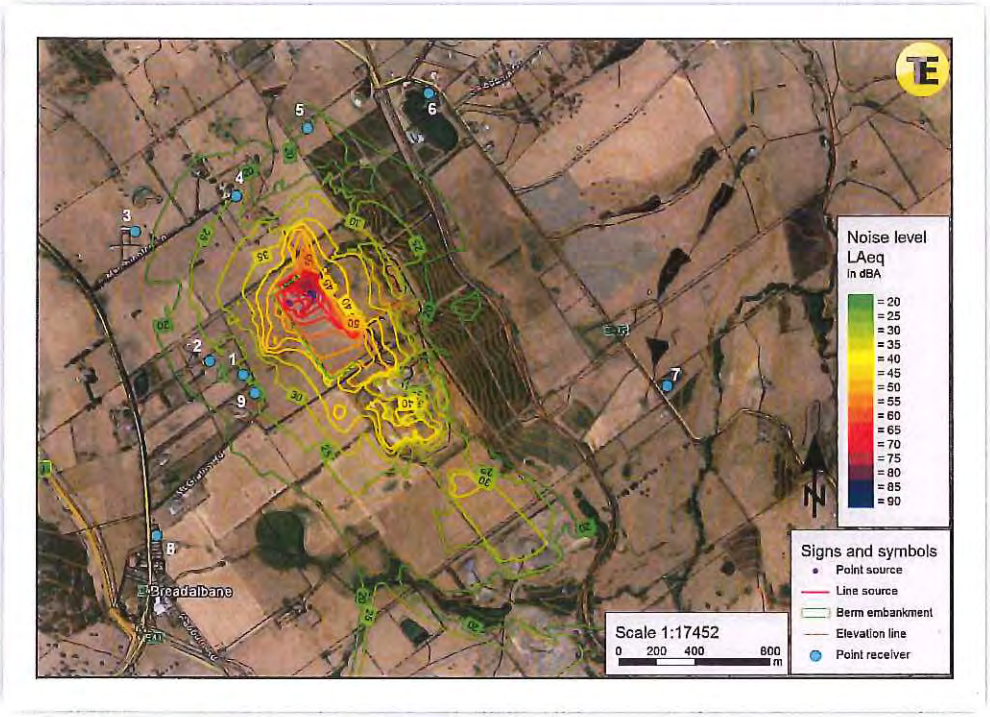


Figure 14 – Predicted noise emission contours, **Quarrying yr 10**.

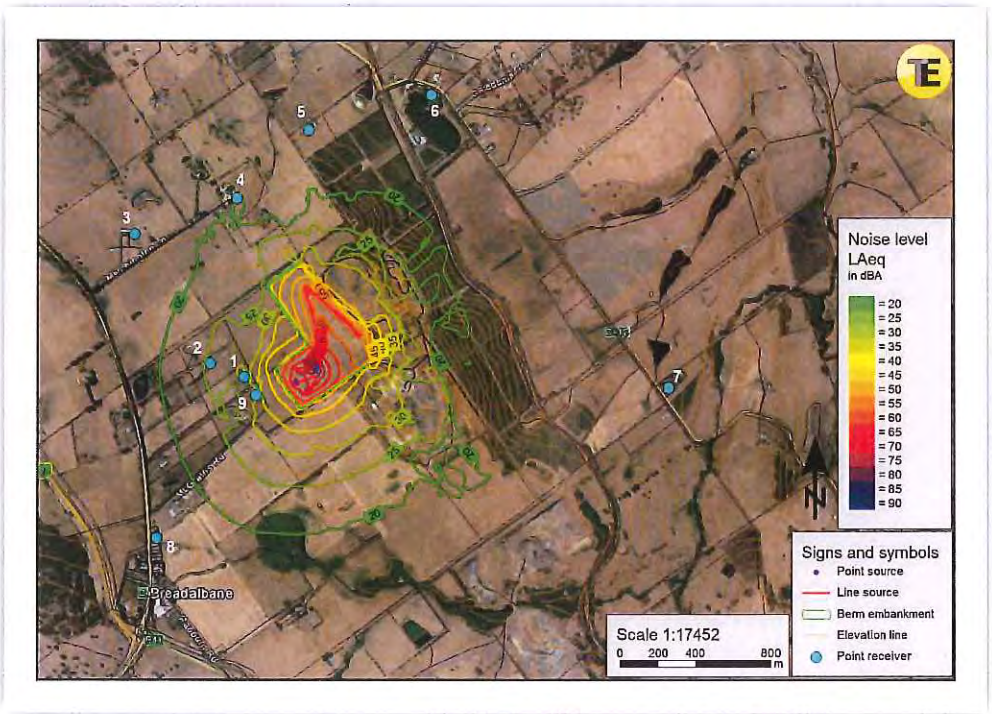


Figure 15 – Predicted noise emission contours, **Quarrying max extent**.

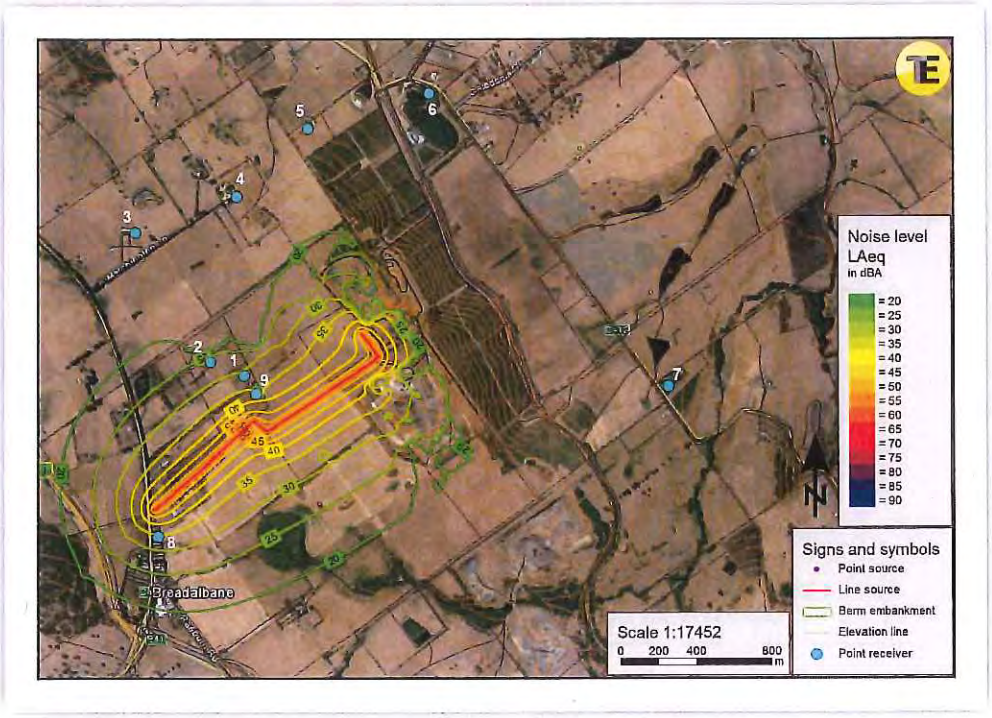


Figure 16 – Predicted noise emission contours, **Hauling**.

3.3.4.2 Predicted noise emission levels

Table 3 presents predicted noise emission levels at the nine receiver locations for each of the nine model scenarios. Where predicted noise levels exceed the relevant noise emission criteria outlined in section 3.2. cells are highlighted. Based on proposed operation times outlined in section 1 overburden removal, drilling and quarrying operations are assessed against the day criteria while hauling is assessed against the evening criteria - hauling activity is proposed to extend into the evening period.

Predicted noise emission levels (dBA)										
Receiver	Predicted noise emission level									
	Overburden removal			Drilling			Quarrying			Hauling
	yr 1	yr 10	max	yr 1	yr 10	max	yr 1	yr 10	max	
1	22	20	35	25	24	36	29	25	28	31
2	16	23	23	19	22	26	22	23	26	26
3	24	31	8	16	33	10	20	18	15	10
4	28	38	12	19	40	13	25	25	20	11
5	24	24	6	17	31	3	25	21	15	8
6	22	25	8	20	29	7	31	16	12	5
7	17	17	11	22	18	10	27	9	8	2
8	24	5	27	26	7	31	31	12	15	34
9	27	18	38	29	21	40	33	24	30	37

Exceeds day noise emission criteria. Exceeds evening noise emission criteria.

Table 3 – Predicted noise emission levels.

From the above:-

- Predicted noise levels are all below the relevant noise emission criteria.
- Predicted noise emission levels indicate that noise impact increase for receivers 3, 4, 5 and 6 as the quarry progresses north (yr 10) and increases for receivers 1, 8 and 9 as the quarry progresses west (max extent). For quarry operations, this is negated to some extent with noise impact reducing as quarry depth increases, the result of increased shielding.
- Bunding along the pit edge and along the north-east boundary of the property at 805 Hobart Rd is critical in preventing exceedances of the day noise emission criteria during drilling operations and quarrying during the first year. Bunding along the north-east boundary of the property at 805 Hobart Rd is also critical in preventing exceedances of the day noise emission criteria during overburden removal (yr 1 and max extent).
- Hauling impact is highest for receivers close to the haul road, receivers 1, 8 and 9.

3.4 Potential cumulative noise effects

With the Cocked Hat Hill quarry operating adjacent to two existing quarry operations the potential for cumulative noise impacts is considered here from both a quarrying and hauling perspective (all three quarries would utilise the same haul route to access Hobart Rd).

3.4.1 Quarrying

Table 4 below present predicted noise emission levels for the Raeburn quarry as presented in the 2010 DPEMP document for the quarry. The predicted levels are for quarrying activity in 20-30 yr stage with levels presented for locations where predicted levels were also generated in this assessment. Predicted levels for the yr 1, yr 10 and max extent operations at the Cocked Hat Hill Quarry are presented along with a summation of levels from the two quarries.

Potential cumulative noise levels – quarrying (dBA)							
Receiver	Raeburn quarry 20 – 30 yrs	Cocked Hat Hill quarry			Cumulative		
		yr 1	yr 10	max	yr 1	yr 10	max
1	43	29	25	28	43	43	43
2	40	22	23	26	40	40	40
7	26	27	9	8	29	26	26

Table 4 – Predicted quarrying noise levels form Raeburn quarry and Cocked Hat Hill quarry.

From the above:-

- The cumulative effect at the three receiver locations is negligible with the exception of receiver 7 to the east where a 2 dB increase could potentially occur, however, the cumulative impact is below 30 dBA and is highly unlikely to cause environmental nuisance.
- There is some potential for up to a 2 dB increase at some locations (receivers 1, and 9) during overburden removal and drilling operations.

  NB: Cumulative impact with consideration of McGraths Pit is not possible with predicted and/or measured noise levels at receiver locations from this quarry not available. However, noise impacts from this quarry are likely to be highest to the east given the pit orientation and predicted levels at receivers in this direction from the Cocked Hat Hill quarry are at or below 30 dBA, therefore any cumulative impact is expected to be minimal.

3.4.2 Hauling

The hauling environmental noise model scenario for the Cocked Hat Hill quarry was run assuming 5 trucks on the Haul road in a single 10-minute period. This is considered to represent potential truck movements from all three quarries. Predicted results are presented in table 5 below.

Potential cumulative noise levels – Hauling (dBA)		
Receiver	Cocked Hat Hill Hauling	Cumulative Hauling
1	31	35
2	26	30
3	10	14
4	11	15
5	8	12
6	5	9
7	2	6
8	34	38
9	37	41

Table 5 – Cumulative predicted noise emission levels from hauling.

From the above:-

- Predicted cumulative noise from hauling by all three quarries results in a 4 dB increase at all receiver locations. The highest level would be at receiver 9, the closest receiver to the haul route.

4 Ground vibration and Air blast overpressure

Ground vibration and air blast overpressure predictions are assessed here against the condition provided in the EPN for the adjacent McGraths Pit (EPN No. 8742/3 [r1]). These are in accordance with limits provided in the *Quarry Code of Practice*[2]. The condition is provided below for reference.

> **B2 Blasting - noise and vibration limits**
>
> 1 Blasting on The Land must be carried out in accordance with blasting best practice environmental management (BPEM) principles, and must be carried out such that, when measured at the curtilage of any residence (or other noise sensitive premises) in other occupation or ownership, airblast overpressure and ground vibration comply with the following:
>
> 1.1 for 95% of blasts, airblast overpressure must not exceed 115dB (Lin Peak);
>
> 1.2 airblast overpressure must not exceed 120dB (Lin Peak);
>
> 1.3 for 95% of blasts ground vibration must not exceed 5mm/sec peak particle velocity; and
>
> 1.4 ground vibration must not exceed 10mm/sec peak particle velocity.

Prediction of ground vibration and air blast overpressure was conducted using scaled regression equations developed by the *Office of Surface Mining Reclamation and Enforcement*[1] (OSM), a bureau of the United States Department of the Interior.

Predictions are made to residence up to approx. 1 km from the quarry. A typical maximum charge mass/delay of **50 kg** is assumed- this should be sufficient to liberate the type of rock being quarried.

Table 6 below provides the closest distances to receivers from the quarry pit boundary (receiver numbering as per environmental noise assessment) for each stage of the quarry development. Determined from quarry development plans provided in VDC's DA supporting information.

Minimum distances to receivers (m)						
Quarry stage	Receiver					
	1	2	3	4	5	9
Yr 1	430	540	> 1000	800	> 1000	430
Yr 10	385	490	850	550	850	400
Max extent	185	364	780	490	814	176

Table 6 – Minimum distances to receivers.

4.1 Ground vibration

Prediction of ground vibration was conducted using the following regression equation from OSM with a square root scaled distance:-

$$PPV = k\left(\frac{\sqrt{m}}{D}\right)^{a}$$

PPV = peak particle velocity (in/s)
k = constant
m = charge mass / delay (lb)
D = distance to receiver (ft)
a = exponent

The constant (k) and exponent (a) used were developed by OSM from quarry production blast data are as follows:-

Average: k = 52, a = 1.38
Upper bound: k = 138, a = 1.38

The equation above and the constants and exponent are for imperial data and as such all relevant data was first converted to imperial before PPV predictions were made. The subsequent answers were then converted back to metric and are presented in table 5 below.

Predicted ground vibration (mm/s) PPV for 50 kg charge mass/delay							
Quarry stage	Regression constant	Receiver					
		1	2	3	4	5	9
Yr 1	Average	1.53	1.11	< 0.48	0.65	< 0.48	1.53
	Upper bound	4.05	2.96	< 1.26	1.72	< 1.26	4.05
Yr 10	Average	1.78	1.09	0.60	1.09	0.60	1.69
	Upper bound	4.72	2.88	1.58	2.88	1.58	4.48
Max extent	Average	4.89	1.92	0.67	1.27	0.63	5.24
	Upper bound	12.98	5.10	1.78	3.38	1.68	13.90

exceeds 5 mm/s, exceeds 10 mm/s.

Table 7 – Predicted ground vibration.

From the above:-

- Predicted ground vibration levels are below the 5 mm/s limit at the yr 1 and yr 10 stages of quarry development.
- Predicted levels at the maximum extent using the average OSM regression exceeded 5 mm/s at receiver 9 and at receivers 1,2 and 9 using the upper bound regression. 10 mm/s was also exceeded at receivers 1 and 9 using the upper bound regression.

4.2 Air blast overpressure

Air blast overpressure prediction was conducted using the following regression equation from OSM with a cube root scaled distance:-

$$PSI = k\left(\frac{\sqrt[3]{m}}{D}\right)^{a}$$

PSI = pounds per square inch
k = constant
m = charge mass / delay (lb)
D = distance to receiver (ft)
a = exponent

Subsequent predictions of PSI are converted to dBL via the following equation:-

$$dBL = 20 \log_{10} \left(\frac{PSI}{2.9 \times 10^{-9}} \right)$$

These equations are for imperial input data and all relevant data was converted to imperial prior to prediction being made.

The predicted level is calculated from the equations presented above with the OSM constant (k) and exponent (a) for highwall blasting.

k=0.162
a=0.794

Table 6 presents the predicted air blast overpressure level with a charge mass/delay of 50 kg.

Predicted air blast overpressure (dB) for 50 kg charge mass/delay							
Quarry stage	Regression constant	Receiver					
		1	2	3	4	5	9
Yr 1	Highwall	115.7	114.2	109.9	111.4	109.9	115.7
Yr 10	Highwall	116.5	114.0	111.0	114.0	111.0	116.2
Max extent	Highwall	121.5	116.9	111.6	114.8	111.3	121.9

exceeds 115 dB, exceeds 120 dB.

Table 8 – Predicted air blast overpressure.

NB: The above prediction assumes adequate confinement of the charge mass. Where confinement is not adequate air blast overpressure levels would likely be considerably higher.

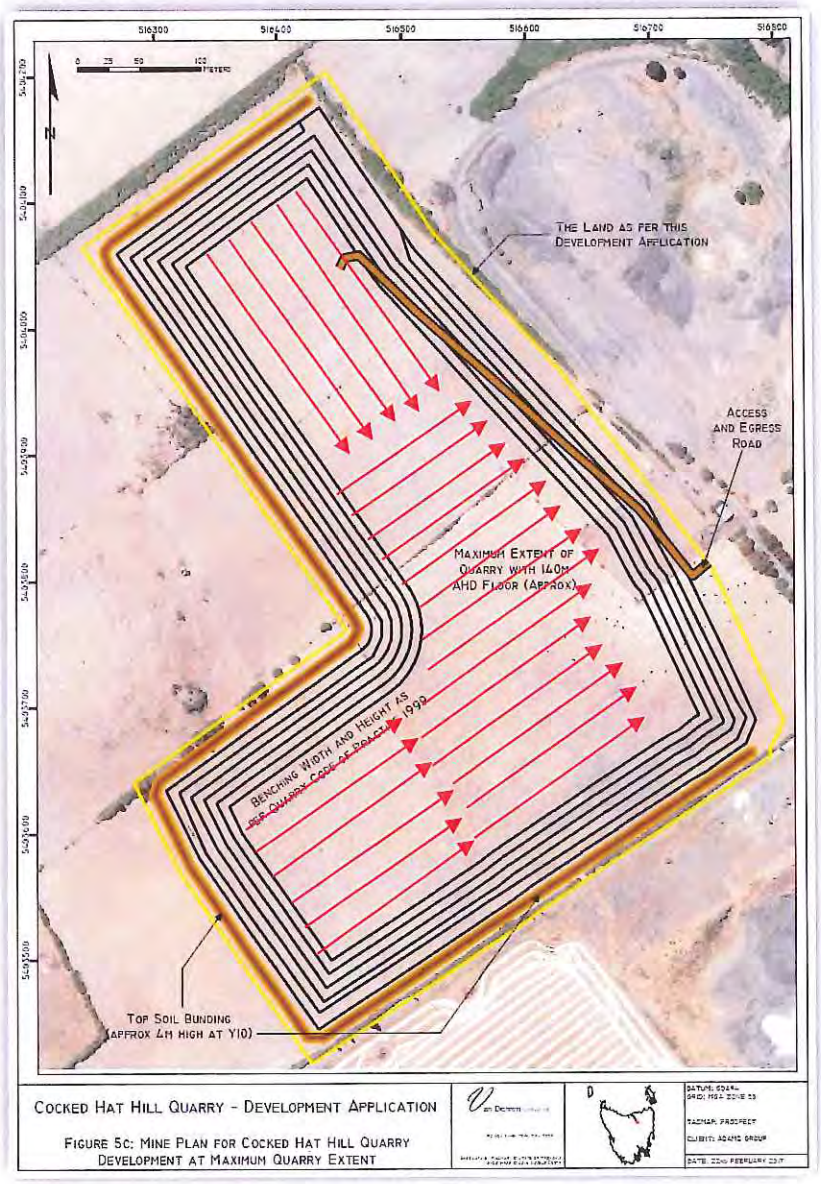
From the above:-

- Predicted air blast overpressure levels exceeded 115 dB at receivers 1 and 9 at all three quarry development stages and at receiver 2 at the maximum extent stage. 120 dB was also exceeded at receivers 1 and 9 at the maximum extent stage of quarry development

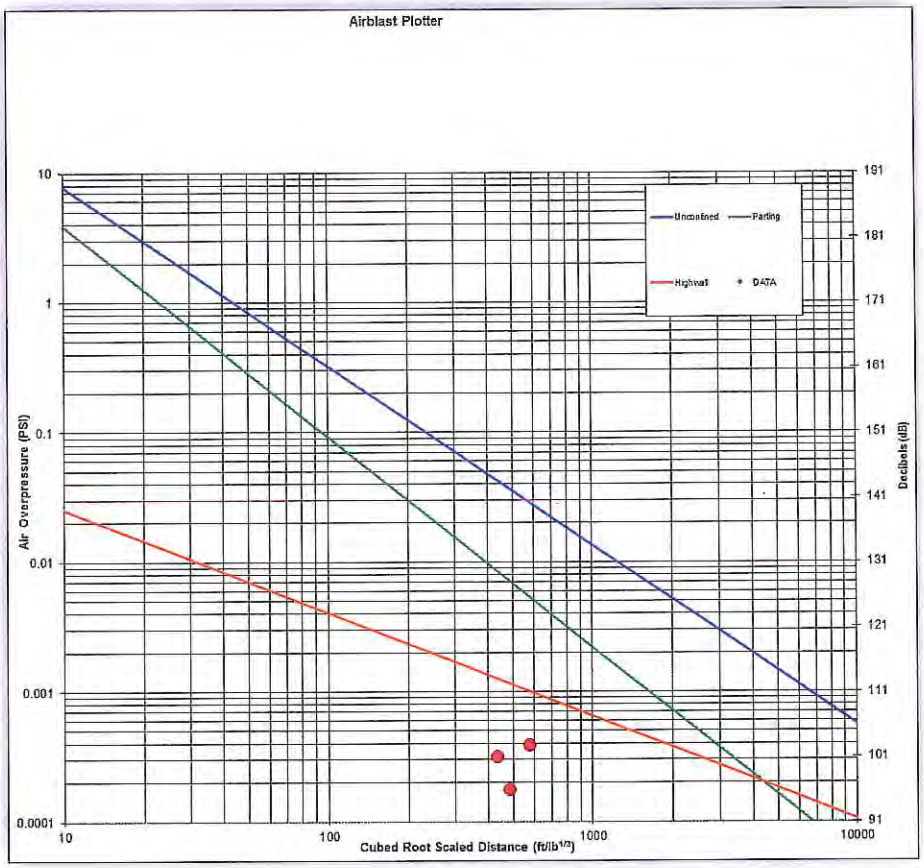
4.3 Blasting recommendations

Given the predicted exceedances of ground vibration and air blast overpressure criteria presented Tarkarri Engineering provides the following recommendations to minimise the potential ground vibration and air blast overpressure impact from blasting at the proposed Cocked Hat Hill quarry:-

- Utilise a charge mass of 35 kg/delay for initial development blasts.
- Blast design should incorporate a minimum stemming depth of 3 m.
- Increase to 50 kg/delay once highwall blasting is established with blast design to incorporate minimum front row burden of 3 m. Additionally, ensure that blast design allows for the highwall face to be oriented away from critical receiver locations as far as practically possible. This is to take advantage of directivity provided by highwall blasting (over pressure levels can be up to 9 dB lower at a given distance to the rear of a highwall blast as opposed to the same distance from the front) and topographic shielding provided by Cocked Hat Hill. Recommended face orientation across the Cocked Hat Hill quarry pit area is shown below on the maximum quarry extent development plan provided in VDC's DA supporting information.



Results from recent blast monitoring at the adjacent McGraths Pit provide supporting evidence for the above recommendation. Results are plotted below against OSM air blast overpressure regression lines. The results show levels significantly below the OSM Highwall regression line indicting that it's likely that a combination of charge mass confinement, topographic shielding and directivity provided significant attenuation.



- Develop site-specific scaled regressions for the site via spatially varied monitoring of blasting.
- For south-west extent, out to the maximum extent of the quarry, adjust charge mass/delay levels in accordance with results from site-specific scaled regressions once within 400 m of receiver locations (receivers 1 and 9).

5 Conclusions

- Tarkarri Engineering was commissioned to undertake an environmental noise, ground vibration and air blast overpressure assessment of operations of a proposed quarry at Cocked Hat Hill, Breadalbane, as part of a DPEMP.
- Conservative noise emission criteria were adopted based on ambient noise data and current EPN noise emission limits applicable to the adjacent McGraths Pit quarry operation, the criteria are as follows:-
  - $L_{Aeq,10min}$ **46 dBA**: Day (**0700 to 1800 hrs**).
  - $L_{Aeq,10min}$ **40 dBA**: Evening (**1800 to 1900 hrs**).
- Predicted noise emission levels from operations within the quarry boundary and haulage activity between Hobart Rd and the quarry were below the project noise emission criteria.
- Bunding along the pit edge and north-east boundary of the property at 805 Hobart is critical in providing shielding from noise emissions generated on the mine lease at Cocked Hat Hill, particularly during early development phases.
- Predicted ground vibration and air blast overpressure levels exceed human comfort criteria at critical receiver locations. Recommendations are provided to minimise the potential for nuisance to be generated by blasting with a focus on blast design and orientation, and development of site specific scaled regressions to improve the prediction of ground vibration and air blast overpressure.

Rebecca Green & Associates

Appendix E: Technical Memo

Tarkarri Engineering

Tarkarri Engineering

Air Quality • Acoustics • Environment • Vibration

Technical Memo

7 May 2017

Van Diemen Consulting Pty Ltd
PO Box 1
New Town, TAS 7008

5014a_AC_R_R1
AJM

Attn: Dr Richard Barnes

Dear Sir,

RE: Cocked Hat Hill quarry environmental noise model contours.

Please find preliminary noise emission contours from selected model scenarios for the Cocked Hat Hill quarry environmental noise assessment.

1. INTRODUCTION

Tarkarri Engineering was commissioned by Van Diemen Consulting on behalf of the Mt Oriel quarry to conduct an environmental noise assessment for a proposed new quarry at Cocked Hat Hill.

Provided here are a set of preliminary noise emission contours from an environmental noise model of quarry operations. The contours are from selected model scenarios where noise emission impact is highest at receiver 9 (proposed residence at 805 Hobart Rd).

NB: All model scenarios include a 3 m high earth bund along the north-east boundary of the property at 805 Hobart Rd. The bund extends from the northern comer of the property to approx. 35 m past the south-eastern comer of the residential building, resulting a total bund length of approx. 85 m

Noise contours from the following scenarios are presented in figures 1 – 4 with predicted sound pressure levels at receiver 9 presented in table 1:-

- Overburden removal for the maximum western extent of the quarry.
- Drilling (for blasting purposes) for the maximum western extent of the quarry.
- Quarry operations at year 1
- Quarry operations at the maximum western extent of the quarry

The results show noise levels less then L_{Aeq} 45 dBA at receiver 9. The earth berm along the north-east boundary of the property at 805 Hobart Rd is required prevent noise levels exceeding 45 dBA under the following model scenarios:-

- Overburden removal for the maximum western extent of the quarry.
- Drilling (for blasting purposes) for the maximum western extent of the quarry.
- Quarry operations at year 1

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ABN 98 009 561 488
PO Box 506 Kings Meadows
Tasmania 7249 Australia

Van Diemen Consulting – Mt Oriel quarry environmental noise model contours.

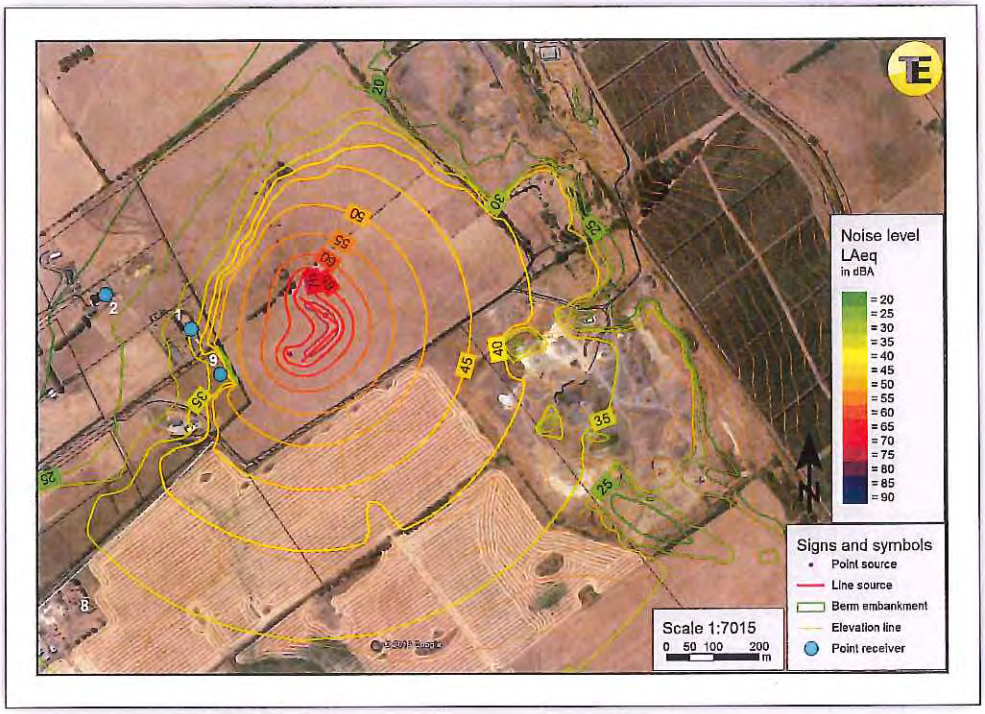

Figure 1 – Predicted noise emission contours, **Overburden removal, max extent.**

Van Diemen Consulting – Cocked Hat Hill quarry environmental noise model contours.

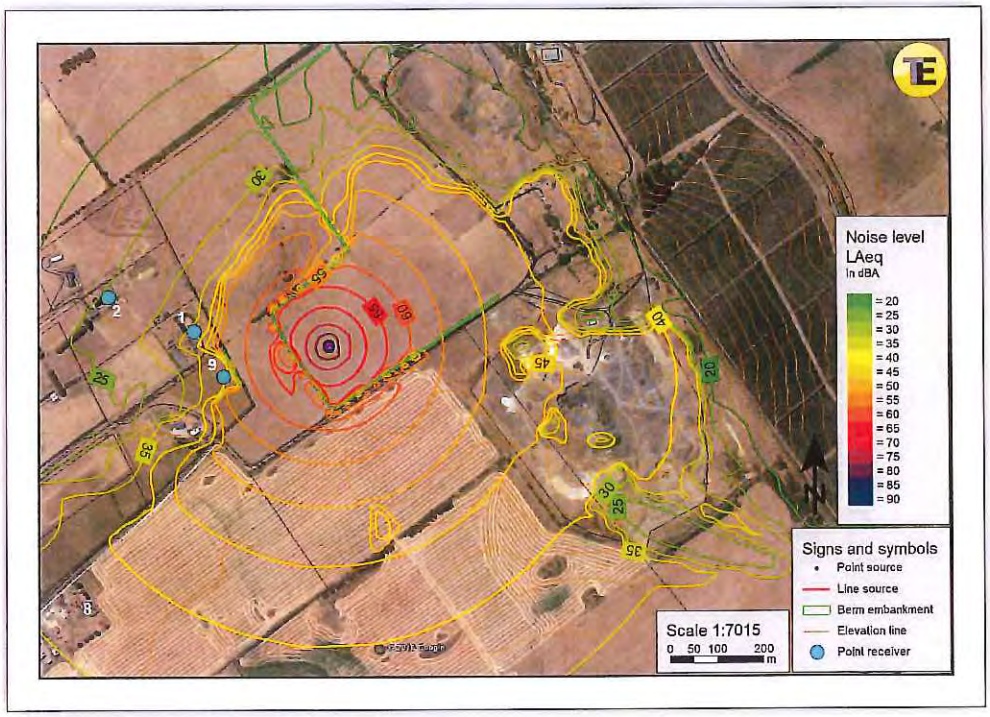

Figure 2 – Predicted noise emission contours, **Drilling, max extent.**

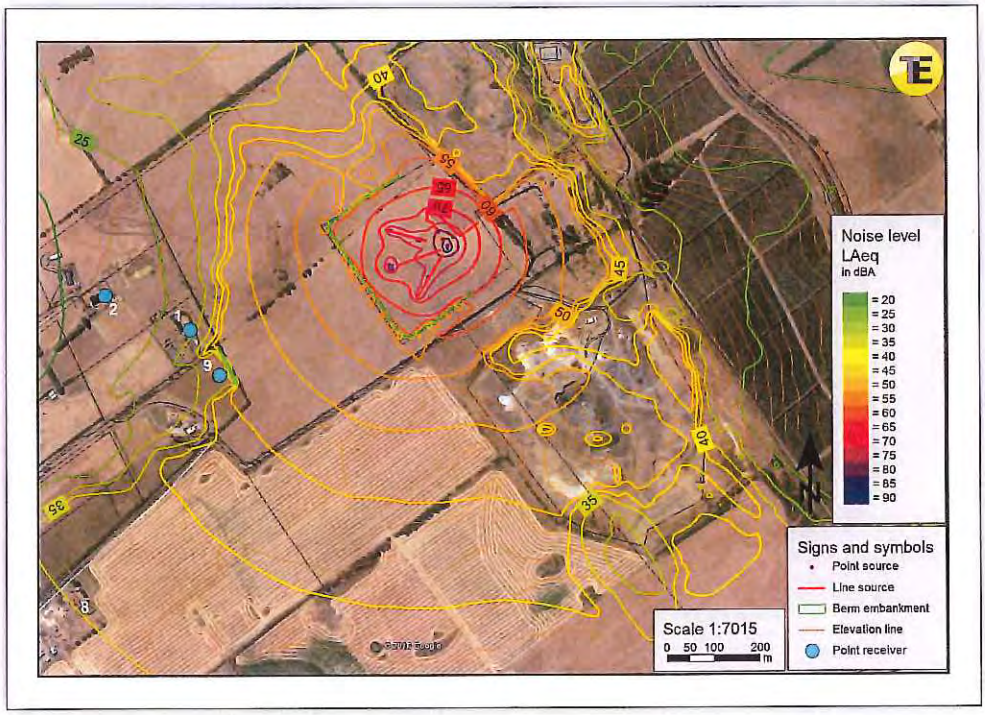

Figure 3 – Predicted noise emission contours, **Quarry operation, year 1.**

Van Diemen Consulting – Cocked Hat Hill quarry environmental noise model contours.

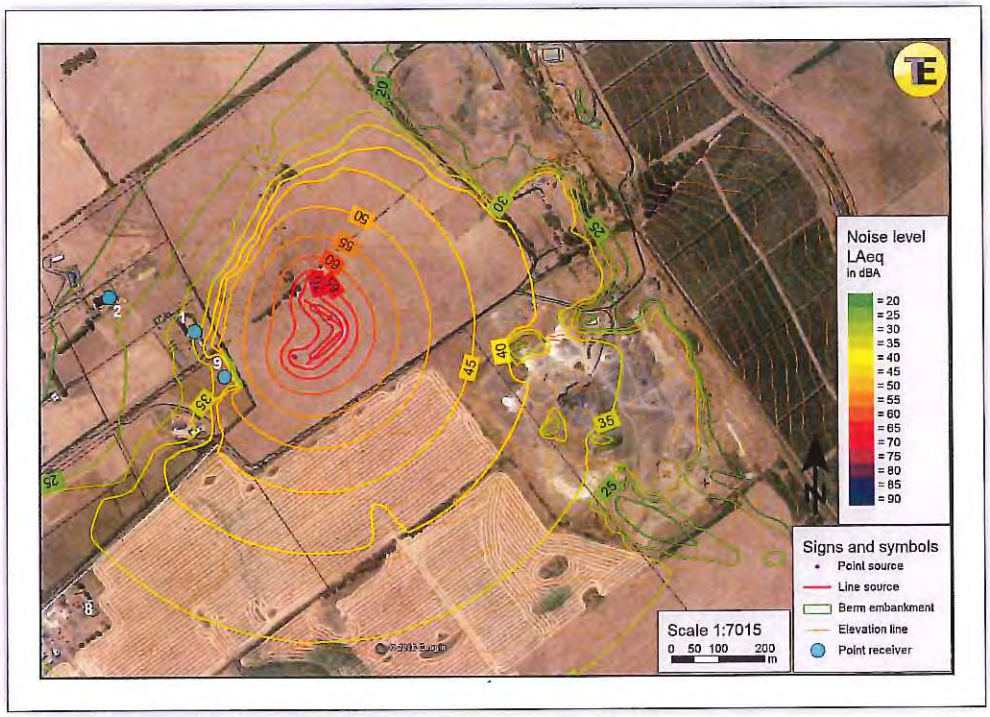

Figure 4 – Predicted noise emission contours, **Quarry operation, max extent.**

Predicted noise emission levels (dBA)				
Receiver	Overburden removal max	Drilling max	Quarrying	
			yr 1	max
9	38	40	33	30

Table 1 – Predicted noise emission levels at receiver 9.

I hope this information meets your immediate requirements.

Please contact me directly if you have any questions concerning this work.

Yours faithfully,
Tarkarri Engineering Pty Ltd

Alex McLeod

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Principal Consultant

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Terry Eaton
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1-676

29 Carey's Road
Bridgenorth Tas 7277
Tel/Fax: (03) 6330 1510

20 June 2017

The Planning Officer
Northern Midlands Council
Smith Street
LONGFORD TAS 7301

Dear Erin ,

RE: P16-209, Proposed Cattery, Kennel Extensions, 805 Hobart Road, Breadalbane
(Request for Additional Information – Traffic Assessment)

In response to your correspondence of September 21, 2016, the following information is provided for the traffic assessment requirements for this proposal :

Clause E4.6.1 A3

- Site traffic generation

  It is understood that the proposal is to:

  i) Add a residence to replace the present temporary residential use above the crematorium building – no change in site access traffic

  ii) Kennels and Cattery, generally double the boarding facilities from 60 to 110 units. Indications are that there is a high variability in the demand for boarding services with peak demand at holiday times, the proposed increase in boarding units is to cater for such time periods. Indications are that the present average daily demand is some 50% of the peak provisions, that is an AADT value of some 30 trips. Consideration of the increase in peak time usage suggests increasing the AADT value to some 54 trips as realistic.

  iii) Doggy Day Care, provision for 12 holding kennels, an AADT value at some 10 trips per day is considered realistic.

  Total, the increased site usage when fully operational is assessed as generating an AADT value of some 64 trips.

The planning interpretation of this particular clause varies from allowing for all movements at the access or junction by inclusion of through traffic on the servicing roadway to only considering use on the junctioning access road.

EXHIBITED

02.

The response to this clause by Rebecca Green & Associates is consistent with "all traffic use" at the junction, i.e. the increase from 30 movements per day to 54 movements per day is less than 10% of the traffic though the junctioning area.

However, based on the use of the accessing road only the increase is estimated from 30 to 64 movements per day that is an 213% increase and as such requires assessment in accord with E4.6.1 P3.

E4.6.1 P3 Assessment

a) Not applicable

b) Not applicable

c) The site access is via an existing driveway to Hobart Road within an 80 km/h speed zone.

The driveway is constructed with a sealed width of 3.0 metres and some 1.5 metre gravel shoulders, available width of some 5.7 metres, to the gateway some 11 metres back from the edge of the sealed Hobart Road carriageway. The driveway sealed width widens from the gateway to a throat width at the edge of the Hobart Road carriageway of some 16 metres. The driveway width within the road reservation is adequate for two vehicles to pass.

Hobart Road at this location is constructed to provide 2 south bound lanes and 1 north bound lane width 3.6 metres plus 0.5 metre gravel shoulder. This traffic lane configuration as a carry over from the previous use as a Category 1 Highway is considered significantly higher than the present use requirement as a local sub-arterial category for some 4,000 vehicles per day.

The road is unclassified in the State Road Hierarchy but is considered comparable to a Category 4 road in that classification.

The predicted increase in use of the driveway is not considered as likely to impact on the efficiency of Hobart Road, present passing volume of some 4,000 vehicles per day with a design capacity in the order of double that value. Based on peak turning movements to / from the site of some 7 vehicles per hour with a through highway peak hour volume of some 400 vehicles indicates that no special turn facilities are required on the highway, i.e. meets type BA junction guidelines.

The driveway width in proximity to the Hobart Road carriageway provides for two way use and is considered adequate for the proposed increase in use.

Available sight distance at the location, some 250 metres to the north and in excess of 500 metres to the south satisfy table E4.7.4 safe intersection sight distance for a 100 km/h approach speed for vehicles from the north and well in excess of 110 km/h for vehicles from the south and as such are considered satisfactory for the location just within an 80 km/h speed zone for traffic from the north, i.e. considered as a safe driveway location.

Crash statistics from the Department of State Growth for the last 5 years indicates one property damage accident only in the vicinity of the driveway to No. 805 Hobart Road with the report indicating "hit object on roadway" so not related to traffic turning to / from the driveway.

- deemed to comply

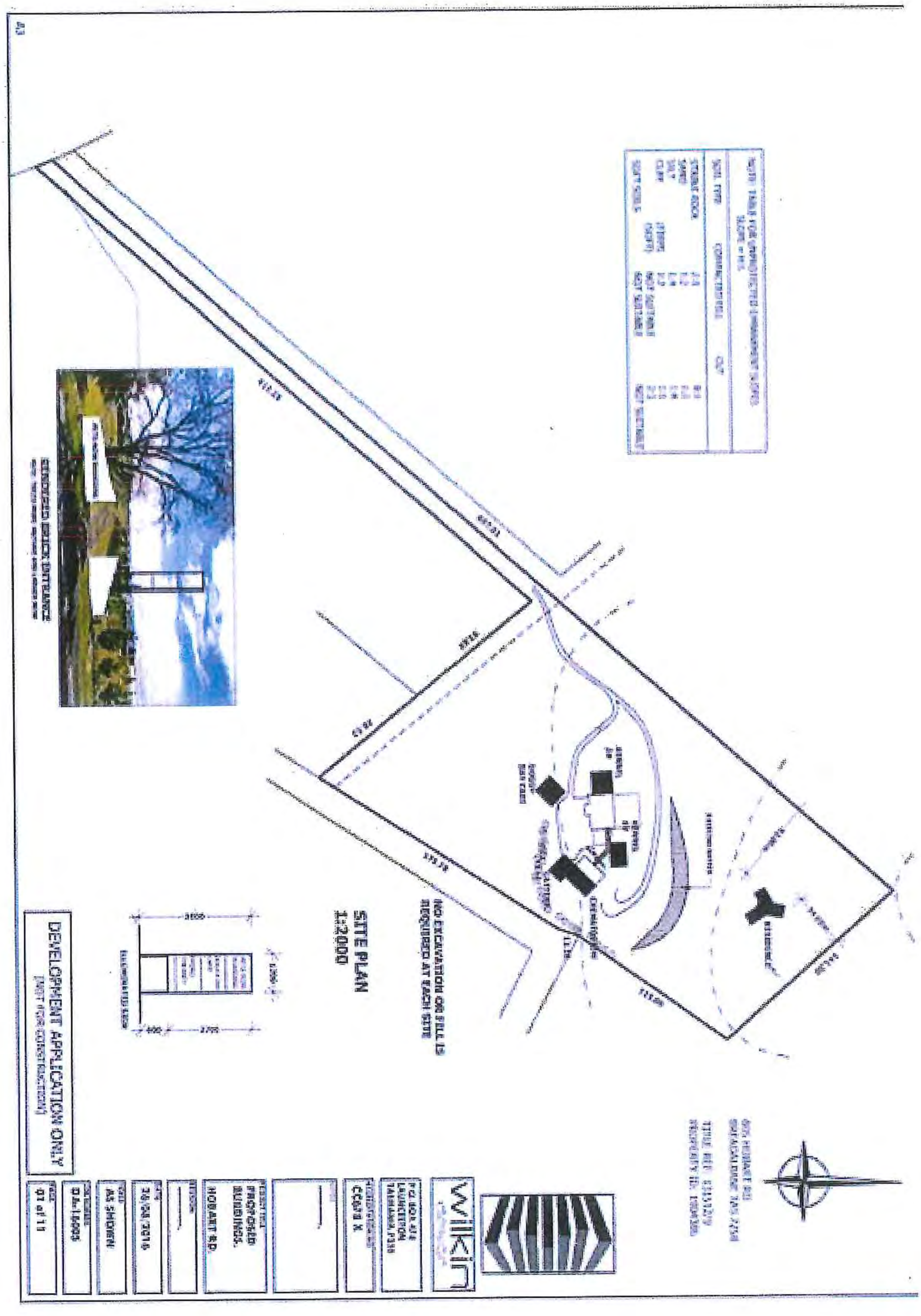
E4.7.2 A2 – proposal is to use an existing access. - complies

E4.7.4 A1 – (refer to previous sight distance assessment, this report) - complies

Conclusion

A traffic assessment update to the report provided by Rebecca Green & Associates indicates compliance with sections E4.6.1 P3 and E4.7.4 A1 of the Northern Midlands Interim Planning Scheme.

Terry Eaton
Traffic Engineer


SITE PLAN
1:2000
NO EXCAVATION OR FILL IS
REQUIRED AT EACH SITE
DEVELOPMENT APPLICATION ONLY
wilkin
HOBART RD.
AS SHOWN
01 of 11

EXHIBITED

LAUNCESTON AIRPORT
In the heart of Tasmania

ATTACHMENT B 1-680

P.O. BOX 1220
LAUNCESTON, TASMANIA 7250
PHONE: (03) 6391 6222
FAX: (03) 6391 8580

22 Sept 2017

Erin Boer
Planning Officer
Northern Midlands Council
13 Smith Street
LONGFORD TAS 7301

Dear Erin,

RE: Planning Application P17-164 805 Hobart Rd. Breadalbane

I refer to the above development application and after review of the proposal and prescribed airspace regulations, provide the following comments:

- The site does lie within the ANEF contours mapped and laid out in the Launceston Airport Masterplan 2015. The proposed habitable dwelling lies between the 20 and 25 ANEF contour which is conditionally acceptable;
- The proposed development will not infringe the Launceston Airport Obstacle Limitation Surfaces, and;
- It seems that the use of the proposal will not unduly attract wildlife which would have an effect on the safety of airport operations.

Therefore: Launceston Airport does not object to the development as proposed at 805 Hobart Rd. Breadalbane.

N.B. *Due to airport proximity and continuous 24 hour operation, the site will be affected by regular aircraft noise.*

The proponent need carefully consider the site in relation to N contours and the negative impact of continued aircraft noise upon quiet amenity and future property value. The applicant is encouraged to establish whether, for domestic dwellings, known aircraft noise must be declared in relevant title or, other documents.

The proponent will need also to consider the incorporation of noise control features in the construction of the residential building.

If you or the applicant has any questions relating to the above comments, please don't hesitate in contacting me.

Yours sincerely,

Ilya Brucksch-Domanski
Manager Planning and Development
Australia Pacific Airports (Launceston) Pty. Ltd.

Erin Boer

Subject: FW: REMINDER Referral to Launceston Airport - Planning Application P17-164
Attachments: Response P17-164 805 Hobart Rd. Breadalbane.pdf

From: Ilya Brucksch-Domanski [mailto:Ilya.Brucksch@lst.com.au]
Sent: Friday, 22 September 2017 1:41 PM
To: Erin Boer <erin.boer@nmc.tas.gov.au>
Cc: Rosemary Jones <rosemary.jones@nmc.tas.gov.au>
Subject: RE: REMINDER Referral to Launceston Airport - Planning Application P17-164

Hi Erin

We have received feedback from Flysafe and CASA. There doesn't seem to be an issue.

Are you please able to inform that the proponent needs to contact the airport if there are cranes or the like (with extending booms) used in the construction of the project?

Thank you for your patience.

Regards

Ilya Brucksch-Domanski
Manager Planning & Development

Mobile +61 **422 072 133**
Phone + 61 **3 6391 6207**
Fax + 61 **3 6391 8580**

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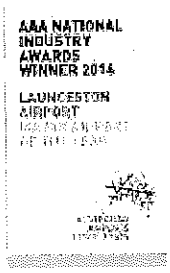

www.launcestonairport.com.au
PO Box 1220, Launceston, Tasmania 7250

Van Diemen CONSULTING

Van Diemen Consulting
PO Box 1
New Town TAS 7008
Mob: 0438 588 695
Email: rwbarnes73@gmail.com

Thursday, August 3, 2017

Attention:
General Manager
PO Box 156
Longford 7301
Email - Planning@nmc.tas.gov.au

P17-164 CATTERY, KENNEL & PET CREMATORIUM EXTENSIONS, DWELLING & NEW SIGN

(WITHIN ANEF CONTOURS & ATTENUATION DISTANCE)

Dear Sir

I write on behalf of Mt Oriel Breadalbane Pty Ltd to make comment about the application to construct a cattery, kennel, dwelling etc. at 805 Hobart Rd Breadalbane.

My client's comments relate solely to the dwelling, being a sensitive use, and its implications to the adjacent Mining Lease and associated activities that occur within it. Specifically, the sensitive use is proposed to be constructed within the attenuation distance of the Mining Lease owned by our client.

We, as the consultants for Mt Oriel Breadalbane Pty Ltd, have worked constructively with the applicant of P17-164 to assess and evaluate impacts on the existence of the sensitive use proposed by P17-164 and the Cocked hat Hill quarry proposed to the west (P16-311).

The reports prepared by Tarkarri Engineering Pty Ltd, at cost to Mt Oriel Breadalbane Pty Ltd, are appropriately attached to the P17-164 development application and are relied upon by the applicant to address attenuation code matters, namely –

- Cocked Hat Hill Quarry - environmental noise, ground vibration and air blast overpressure assessment, May 2017; and
- Technical Memo, 7 May 2017.

It is noted that the applicant of P17-164 has included the construction of an earthen bund along the north-western boundary of the property as part of the development. My client supports this because it is in accordance with the mitigation measures identified by Tarkarri Engineering Pty Ltd and agreed with the applicant as a co-operative approach to mutual co-existence of the house and quarry.

Yours sincerely

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

Rosemary Jones

From: michael heath <michael811@outlook.com.au>
Sent: Wednesday, 2 August 2017 3:24 PM
To: NMC Planning
Subject: Response to planning application no P17-164(Michael Heath 811 Hobart Rd., Breadalbane)

To The General Manager,

In response to the Application(P17-164 805 Hobart Rd Breadalbane) Re - expansion of kennels/cattery/dwelling and signage.

My position has remained unchanged since the first application(P16-209). I am still fully opposed to the expansion of the proposed dog kennels and increased dog numbers.

At this point in time I don't believe the kennels are operating anywhere near their maximum allowable capacity and at times the sound of barking dogs can be intolerable under the right conditions(ie northerly or zero wind conditions). The noise simply travels down the valley towards me. This is affecting my quality of life NOW, I'm also getting complaints from some of my retail customers. I also believe the increase in dog numbers will significantly de-value surrounding properties(my business property is my superannuation and future).

Mechanical noise barriers(trees etc) will take 10-12 years to be effective. That is completely unacceptable.

I can't imagine the impact of the proposed numbers of dog's will have on my happiness and mental well being into the future if Council allows this to proceed....

Yours Sincerely
Michael Heath(811 Hobart Rd., Breadalbane)
Mob 0435998862

To the General Manager;

I am writing to you with strong objections to the proposal from 805 Hobart rd Breadalbane, to increase the animal boarding clinics kennels & cattery, allow larger dogs to be kept, building a dwelling, and to put up a large sign in front of the premisis entry. These objections result from the potential increase of traffic, and the direct increase of noise.

Having a large sign put up in front of the premisis not only increases the traffic my family and I will have to cope with, but it also degrades the quality of the neighbourhood. This hidious and ridiculuously large sign shouldn't be installed. If anything the sign should be placed directly outside her premises (down 400m driveway), this would prevent customers from turning into our driveway, which has been causing my family grief. However one of other concerns I am having is the potential accessibility issues that arise from increased traffic to 805 Hobart rd Breadalbane. Since I have right of way on this road I find this unfair.

Additionally, increasing the amount of dogs by a factor of 1.83 (almost double) and no longer specifying 'small dogs' (as the original approved application stated), will directly increase the amount of noise around my home. I already have to cope with barking dogs througout the day, and additional noise from the outside exercise areas she has already constructed. Since she has constructed the outside exercise areas, the large barking dog noises have been distrupting my family and our private activities. On top of this, I also have horses on my land which are constantly spooked by the barking dogs, and this is a severe safety hazard for when I am handling my horses. In this application she has submitted places for doggy day care centre with outside exercise areas, this will greatly increase the noise produced from her premisis. Thus disrupting me and my family immensely.

Lastly, the house application should be rejected. The noise levels from the quarry activities, the airport plane noises and the boarding kennels are far to high to ever consider building a house on this land. Furthermore I was advised in the original boarding kennels application by a council member that because of the application size type and location to the quary and airport, this property would now be zoned commercial, why hasn't this been done?

Kind regards,
Michael Dalco & Karen Dalco (807 hobart rd breadalbane)

We can be contacted via email at Darkvictor_1@msn.com or via phone at 0417508878.

Erin Boer

From: Laura Walduck <laura@wilkindesign.com.au>
Sent: Thursday, 17 August 2017 11:59 AM
To: Erin Boer
Cc: Pets Now Boarding; Rebecca Green; Todd Wilkin
Subject: RE: Planning Application P17-164 - Cattery, kennel & pet crematorium extensions, dwelling & new sign - Mediation & Extension of time

Follow Up Flag: Follow up
Flag Status: Completed

Categories: Registered

Hi Erin,

Thank you for your email, we have read the representations.

I spoke with Paul last week in your absence about the representations and he suggested mediation. From our point of view we would be happy to discuss the possibility mediation re the signage, but would point out that from a safety point of view, this signage is essential. The section of road the signage is proposed on is just inside an 80km/hr zone and adequate signage is important to ensure clients are aware of the access well in advance as there is no possibility of alerting them prior to reaching the access. We would also like to point out that the proposed signage is only on our clients lot and there is no proposal to build on any adjoining lot.

The other concerns stated in the representation are over items that are of permitted use for the zone, we would ask Council to explain this to the representors.

I will point out that our client is proactive with the approach to noise management and has provided us with the following details:

7.30 - 8.00am The animals are let outside
11.00am The animals return inside
1.00 - 1.30pm The animals are let outside
5.00 - 5.30pm The animals return inside for the night

Solid panelling to the outside of runs have been installed for noise suppression and trees have been planted to the boundary and outside run areas.

If you wish to discuss any items further do not hesitate to contact me.

Kind Regards
Laura

Laura Walduck | Administration Assistant
Wilkin Design | PO Box 478 | Launceston | Tas | 7250
t. 0418 596 377 | e. laura@wilkindesign.com.au

From: Erin Boer [mailto:erin.boer@nmc.tas.gov.au]
Sent: Wednesday, 16 August 2017 4:S3 PM
To: Wilkin Design Office <office@wilkindesign.com.au>
Cc: NMC Planning <planning@nmc.tas.gov.au>
Subject: Planning Application P17-164 - Cattery, kennel & pet crematorium extensions, dwelling & new sign - Mediation & Extension of time