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Alltas Engineering PTY LTD Crushing Plant Collins Cap Quarry EER Report

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Prepared by Scott Murison & Danielle Smith

31st May 2024

Revision	Date	Recipient
Version 1	Year 2022	EPA
Version 2	11 February 2023	EPA
Version 3	29th May 2023	EPA
Version 4	23 November 2023	EPA
Version 5	25th April 2024	EPA
Version 5	25th April 2024	EPA
Version 6	31st May 2024	EPA

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PART A - PROPONENT INFORMATION

TABLE 1: PROPONENT DETAILS

Lessee	Alltas Engineering Pty Ltd	
Proponent	Alltas Engineering Pty Ltd	
ABN	69 145 320 912	
ACN	145 320 912	
Address	116 Mount Hull Road COLLINSVALE TAS 7012	
Contact	Scott Murison	
Phone	Scott Murison	0404 887 295
Email	Scott@alltasengineering.com.au	

PART B – PROPOSAL DESCRIPTION

Collins Cap Quarry is located at 685 Collins Cap Road, which is private freehold. Alltas Engineering Pty Ltd currently lease the land for the Collins Cap Quarry. The Land is Subject to the mining lease 1104/PM, which expired on 2/10/2022 and is pending renewal. Alltas Engineering Pty Ltd, the parent company, is predominantly an Engineering based business supplying goods and services to local industry. Alltas Engineering currently hold the lease 1104P/M and have operated as a level 2 operation since Dec 2017.

The existing material extraction at the Site is subject to the provisions of the Permit (Licence to Operate Schedules Premises) No.3468 issued 14 June 1988.

Alltas Engineering Pty Ltd wish to increase activities, on Lease 1104P/M to include crushing and mechanical screening. For several years these operations have been undertaken outside of the current permit.

Table 2. Proposed Activity

New Activity	The Property at 685 Collins Cap Road, Molesworth, has a quarry located in a cleared section of land, with natural bushland on the property and surrounds. The gravel pit is currently used to screen fine red gravel and road base for paths, roads and driveways. Collins Cap Quarry is seeking to extend its licence to allow the addition of a screening and crushing plant. Under the Environmental Management & Pollution Control Act 1994 (EMPCA) this requires assessment by the Board of EPA. DA103/2021 has been amended to include the machinery shed & submitted to Council for Machinery Shed with Council undertaking the assessment under the LUPA Act 1993. The proposal represents a new activity, under schedule 2 of EMPCA; section 6 (a) (ii), being the crushing and (mechanical) screening of rocks, which does not form part of the current permit.
Material extracted	6,250m3 Volume of Dolerite Material to be extracted is 10,000 tonnes with no intensification proposed or required. The source material is weathered dolerite with some bluestone rock. The estimated life of the quarry is 10 years.
Maximum extraction and	The annual extraction rate is currently 6,250m3 / 10,000 Tonnes per annum, with no mechanical screening or crushing currently permitted.

processing quantity.	The by-product of extracted materials is Large Rocks which is unable to go through the Screening/Crushing plant, this material can be sold as garden retaining wall rocks. We have not actively sold this material to date, and it is accumulating in our stockpile area in Zone 3 (Please Ref Illustration Page 13/14) but we estimate this to be 1,000.00 Tonne = 625m3 pa, Rock Extraction & 9,000 Tonne = 5625m3 pa - Dolerite Density equals 2700 kg/M3 Crushed Rock & Screened
Maximum Processing Quantity	The maximum processing quantity is 6,250m3 / 10,000 Tonnes per annum including rocks sales. Process of Extraction is by digging ripping, removing large rocks from won material, and proposed Screening and crushing plant.
Material extraction and processing	Extraction using a 32 Tonne excavator utilised to dig out and ripping technique using the arm of Excavator to remove product from benches in Zone 2, Material is planned to be sifted by a screening bucket on the 32-tonne excavator to remove large rocks & then it is proposed to transport the material to the Crushing Plant in zone 2 area by wheel loader, material then is proposed to be processed through a crushing / screening plant to render fine red gravel and crushed road base. *Refer Diagram Page 11. C.T 135933/1 – 1104P/M Ref Page 15 for Site Illustration for planning areas e.g. Zone 2 marked Benching, Zone 2 marked Crushing Plant ref page 15*
Transport	Traffic assessment calculation 16 movements per week on Collins Cap Road in both directions (*See Map Page 16 for Location of 685 1104 P/M Quarry Site*) Based on 10,000 Tonnes of extraction. Opening hours for Collins Cap Quarry are between 7.30am to 4.00pm Monday to Friday, 10 yard Trucks will be used for transportation of materials usually between 11am – 3pm Thursday and or Friday (weekdays).
Materials Stockpiled	Stockpiled Material in Zone 1 – Fine Red Gravel & 20mm Crushed Dolerite. Stockpiled Material in Zone 2 - Material extracted for processing. Stockpiled over size rocks for sale Zone 2 (Zoning Map Page 13/14)
Area of Disturbance	Area of disturbance is 1 hectare. Total land area 37 hectares. There will be no requirement to open further land area (as benching area future plans are cliff face). Current area open from recent activity will reduce in size by 0.5 – 1 hectare as progressive remediation occurs.
Stockpiling	Processed material, road base and red gravel will be stockpiled in zone one. Extracted source material will be stockpiled in zone 2 to allow enough material for a day's crushing. We estimate 4 to 5 hundred tonnes to be crushed in a day and stockpiled at any one time. Overburden to be used in remediation of the benches and general mine site will be stockpiled in a separate area as marked on the Site Plan. Ref Site Plan on Page 13/14
Major equipment	1 x 32 tonne Hyundai excavator 193KW 1 x wheel loader Victory VL470 134KW 1x Wheel Loader 92KW Fixed crushing/ screening plant Unknown 10yard Mack Truck (Delivery Vehicle)
Infrastructure	The site infrastructure consists of Fixed shipping container /workshop (Existing) Removable Site office (Existing) Machinery Shed (Existing)

	Fixed screening/crushing (Installed) *Access Roads and existing structures are illustrated on page 13/14.*
Proposal timeline	Revised: Document submitted June 2024 Advertising: July 2024 EPA assessment June 2024 EPN issue September 2024
Operating hours	7.00 am to 7.00 pm weekdays 8.00 am to 4.00pm Saturdays Sundays No Work. Proposed operation area by area – Weather permitting and compliance of our Safety Operational Policy. Zone 1 operation collection Times & Delivery Schedule between 11am – 3pm Thursday & Fridays Crusher operation times Zone 2 will be between 11am to 3 pm Wednesdays with No operations on the weekend. Excavation, wheel loaders and 10 yard trucks will operate intermittently throughout opening times which are 7.00am and 4pm weekdays. Occasional weekend operation between 8 am and 4pm Saturday. Remediation Activities will operate between opening hours of Site. Note: this site is very small so potential operational hours will range from 2 hours a week to 1 X 8hr day per month for Crushing, planning is scheduled as per the above, however the normal operating hours will be fluctuating. *Ref: Site Illustration page 13/14*

Table 3. Location and Planning Context

Location	Collins Cap Quarry is located North of Hobart at 685 Collins Cap Road, Collinsvale and comes under the Derwent Valley Council. PID (5798082) CT (135993/1). The altitude is 470 metres. Grid Ref: 509990 E., 5257850 N
Land zoning and tenure	The land zoning is Rural Resource. The land Tenure is private freehold. The land bordering the Eastern boundary is classed as rural residential. The site consists of highly to slightly weathered blocky dolerite located within an area of Medium to Large Gum Trees.
Use Class Permissibility	A permit is required under LUPAA. The use class (extractive Industry) is a discretionary use in the Rural Resource Zone Under the Derwent Valley interim Planning Scheme 2015. The current permit is for extraction only and introduction of mechanical screening and crushing requires extension to the current permit. Retrospective Council approval is required for the machinery shed DA103/2021 was amended March 20 2024 to include the Machinery shed.
Mining Lease (ML)	Mining Lease Number 1104P/M granted on 01/06/1983 Term 21 Years Expiry Date 21 Years – 2/10/2022 Status – Pending Renewal (estimated eta June 2024) Area – 37 Hectares Lease pending renewal subject to the matters raised by MRT being addressed.
Lease Area	The Lease area of Collins Cap Quarry is 37 Hectares with the current open quarry site being 1 Hectare.

Table 4. Rationale for proposal and alternatives

Improved Product Quality	The proponent Alltas Engineering wish to apply to the extension of the current permits to be able to compliment the fine red gravel materials currently produced with a courser crushed road base.
Alternatives	Removal of the crushing plant and stockpiling the larger materials which do not pass through the screen, but this ends up with material which is limited in uses. This material must also be stockpiled or sold. Alternately Stockpiling of material and hiring a mobile crushing plant on site when required. Deemed too expensive resulting in a disadvantage to business trading.

Table 5 Description of existing site and surrounds

Land Use	The land on which Collins Cap Quarry is located is classed as Rural Resource. Properties to the North are classed as rural living. Land use Extraction of Dolerite material. The closest Recreation Areas Wellington Range & Myrtle Forest are situated approximately 300m to the south of the site. Closest residents are within the 750metre Road 235m (residential properties only – no surrounds are commercial businesses to our knowledge however most of the neighbours in private residents do appear to own large machinery and trucks nearby. 808 Collins Cap Road 400m

	908 Collins Cap Road 800m 860 Collins Cap Road 640m 700 Collins Cap Road 500m 724 Collins Cap Road 530m 805 Collins Cap Road 340m 839 Collins Cap Road 470m 811 Collins Cap Road 605m
Topography	Collins Cap Quarry is in the South of Tasmania. The mining lease encompasses mountain terrain with elevation of 470m. The Southern Side of site is cut into the slope, while the northern side of the site consist of site office and machinery shed. Mainly low brush, wild ferns, and Gum Trees *Refer Maps on Pages 13/14*
Climate	Mean max.-min. temperature 2020 - 18.1 degrees to 5.8 degrees Mean annual rainfall for 2020 - 571mm Predominant wind speed for Annual Data was Calm 6% for 9am and 3pm Calm 2% both Annually. Collins Cap Quarry is a 52 minute drive North from where weather measurements are taken at Hobart Airport, weather can change from temperatures dropping a few degrees heading up the hills and winds can fluctuate speeds of a few knots from the surrounding mountains in comparison to where the location of the weather station is to Collins Cap Quarry Site Location, the terrain between these locations is the Weather Station being at an elevation of 110m & Collins Cap Quarry being at 470m Elevation. Driving between these locations you will discover the City of Hobart, built up residential areas of Moonah & Glenorchy, as you head up towards Collinsvale the terrain changes to Rural with bush setting scattered residences, reaching Molesworth where the quarry is situated majority of residences reside on around 90 acre lots or more with lots of farm animals e.g. cows will be seen from the road happily residing in their paddocks. REF Bureau of Meteorology - Wind Roses (bom.gov.au), Collinsvale Detailed Forecast - Bureau of Meteorology (bom.gov.au), *Refer Illustrations Pages 16 - 18*
Geology	The core material which is extracted is dolerite, a small amount of bluestone with a thin colluvial cover. Acid Forming (PAF) not likely at this Site
Soils	Collins Cap Quarry is situated on land underlain by Dolerite Compound, with a Loose Unconsolidated Sediments in sections with Topsoil classed as Calcarosol. The outer extremities of the mine site which are not part of the disturbed land are Chromosol. There are currently no signs of potential acid forming materials (PAF) on this site according to the natural values atlas, no known contaminated soil on this Site either.
Hydrology	Mean annual rainfall 2020, 571mm there are no waterbodies on the property. The neighbouring property has Counts Creek on the Southeast side downhill and Location from Collins Cap Quarry is East of the lease 277 meters from the Quarry entrance. Flora Falls Creek is located to the South-east & South-west of the property with a Tributary which flows into Floras Falls Creek located to the Southeast. Floras Falls Creek comes within 12m of the Southern Boundary at its closest point. Distance from activities on Quarry Site 260m to nearest Waterbody being Counts Creek.

	Neighbouring Properties both have dams (North-west, 805 & 808 Collins Cap Road and 724 Collins Cap Road to the East), Quarry is located around 50m from the Dam at 805 Collins Cap Road, these dams drain into a tributary of the Glen Dhu Rivulet to the West which discharges the drainage also to the west. Based on GIS data in LISTMap the site discharges into the catchment of the Glen Dhu Rivulet to the west. The site footprint is in the groundwater recharge areas of both the Glen Dhu an Counts creek catchments Source: GIS Data in LISTMap NRE.tas.gov.au Page 10
Natural Values	The vegetation on the land consists of Eucalyptus Pulchella forest and woodlands and Eucalyptus Delegatnsis dry forest. There is no threatened fauna, flora and vegetations listed for this site.

2. Site Layout and Development

Collins Cap Quarry occupies a site on the western side of Collins Cap Road number 685. Collins Cap Road runs through the property and land to the eastern side of the road falls steeply towards Counts Creek. Access to the quarry site has been cut into the lower area on the western side of Collins Cap Road. The Quarry land is 36.42 Hectares in total. The actual disturbed land is around 1 hectare.

The entrance to the site is gated and immediately on the right of the entrance gate is a sediment pond. There is an incline to zone one (the loading area) and another incline road to the quarry working area which is zone two (the hard stand area), this is the area the crusher feeding is proposed to be carried out. The southern side of the site is cut into the slope, while the northern side of the site consists of placed fill, with site offices and the machinery shed placed on natural colluvium. There is a primary sediment pond on the western side of the quarry area. There is also a large sediment pond on the Northern boundary to collect run off and sediment from the primary sediment pond. Overburden will be stored in zone 2 where rock pile 8 is currently located and used for remediation in a continuous process.

2.1 Location Map

Page 10 shows the mining lease.

The nearest residences within 1.5km of the proposed activity and within the applicable attenuation distance and the distances are listed on page 7-8. The attenuation distance for the quarry with crushing is 750m, as per table E9.1 Attenuation Distances, Derwent Valley Interim Planning Scheme 2015.

2.2 Map of the land

Residences in other ownership and residential zones within 1.5km – please Refer to Page 8 for Residences Addresses & Page 10/11 for Residential Map.

Residential Zoning Map – Land Zoning map refer Page 11 The properties adjacent and to the northwest of the subject site are zoned Rural Resource. Wellington Park, to the south, is zoned Open Space.

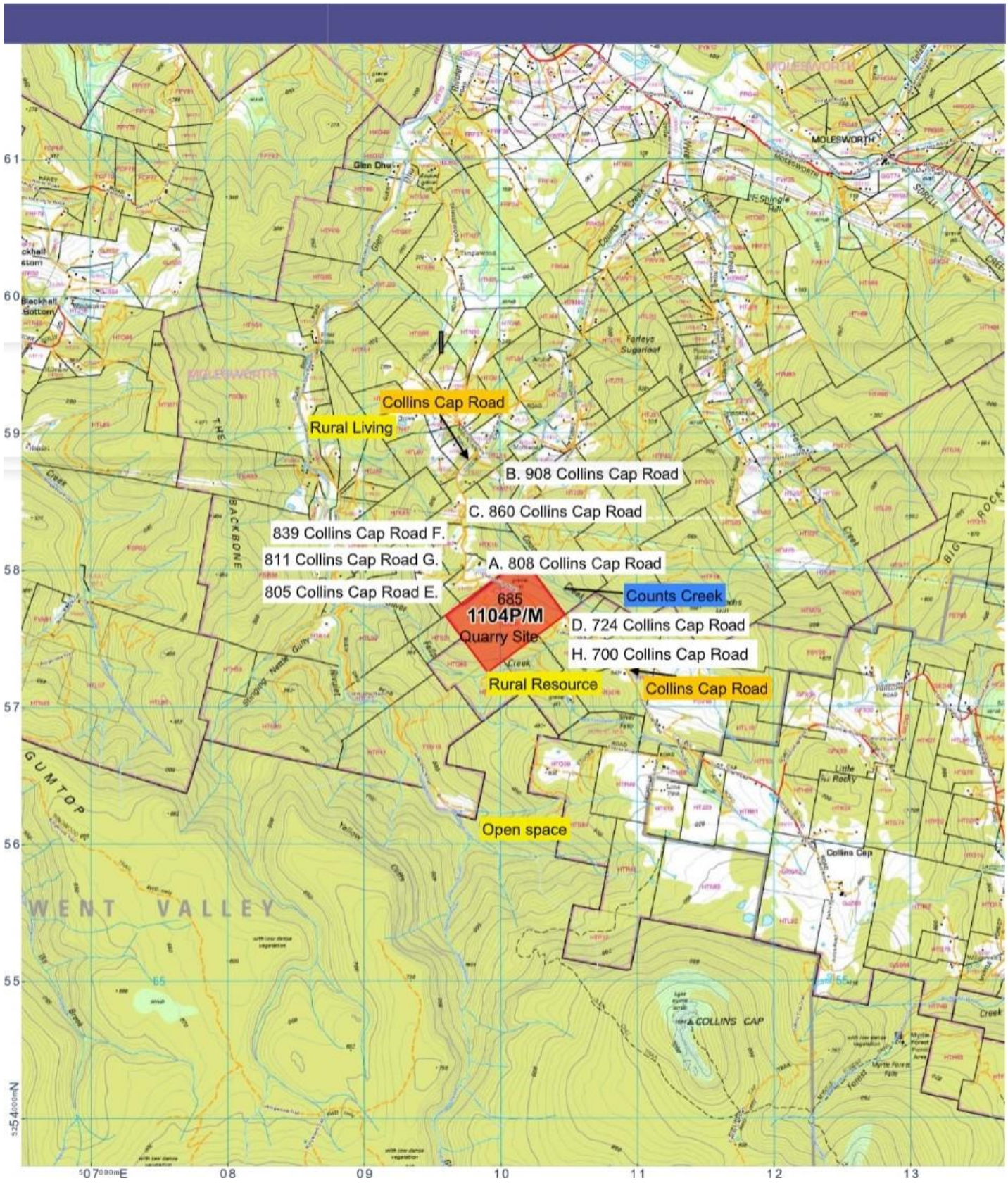
2.3 Site Plan Showing – Reference Page 13 - 14

Quarry site.

Building/structures, crushing plant and machinery.

Location and orientation of benches.

Stockpiles as marked.


Collins Cap Road
Rural Living
B. 908 Collins Cap Road
C. 860 Collins Cap Road
839 Collins Cap Road F.
811 Collins Cap Road G.
805 Collins Cap Road E.
A. 808 Collins Cap Road
685
1104P/M
Quarry Site
Counts Creek
D. 724 Collins Cap Road
H. 700 Collins Cap Road
Rural Resource
Collins Cap Road
Open space
MOLESWORTH
BACKBONE
GUMTOP
WENT VALLEY
COLLINS CAP
Glen Dhu
Blackhall Bottom
Farleys Sugarloaf
Mt Shingle Hill
Little Rocky
Collins Cap
Myrtle Forest
61
60
59
58
57
56
55
5407000mN
507000mE
08
09
10
11
12
13


C.T. 123575/1
Collins Cap Road
C.T. 27938/7
C.T. 27938/5
C.T. 27938/4
C.T. 249932/1
C.T. 17202/2
Mining Lease
1104P/M
C.T 135933/1
Counts Creek
N
C.T. 35618/1
C.T. 35618/2
Collins Cap Road
Grid Interval 100m (GDA94 MGA55)

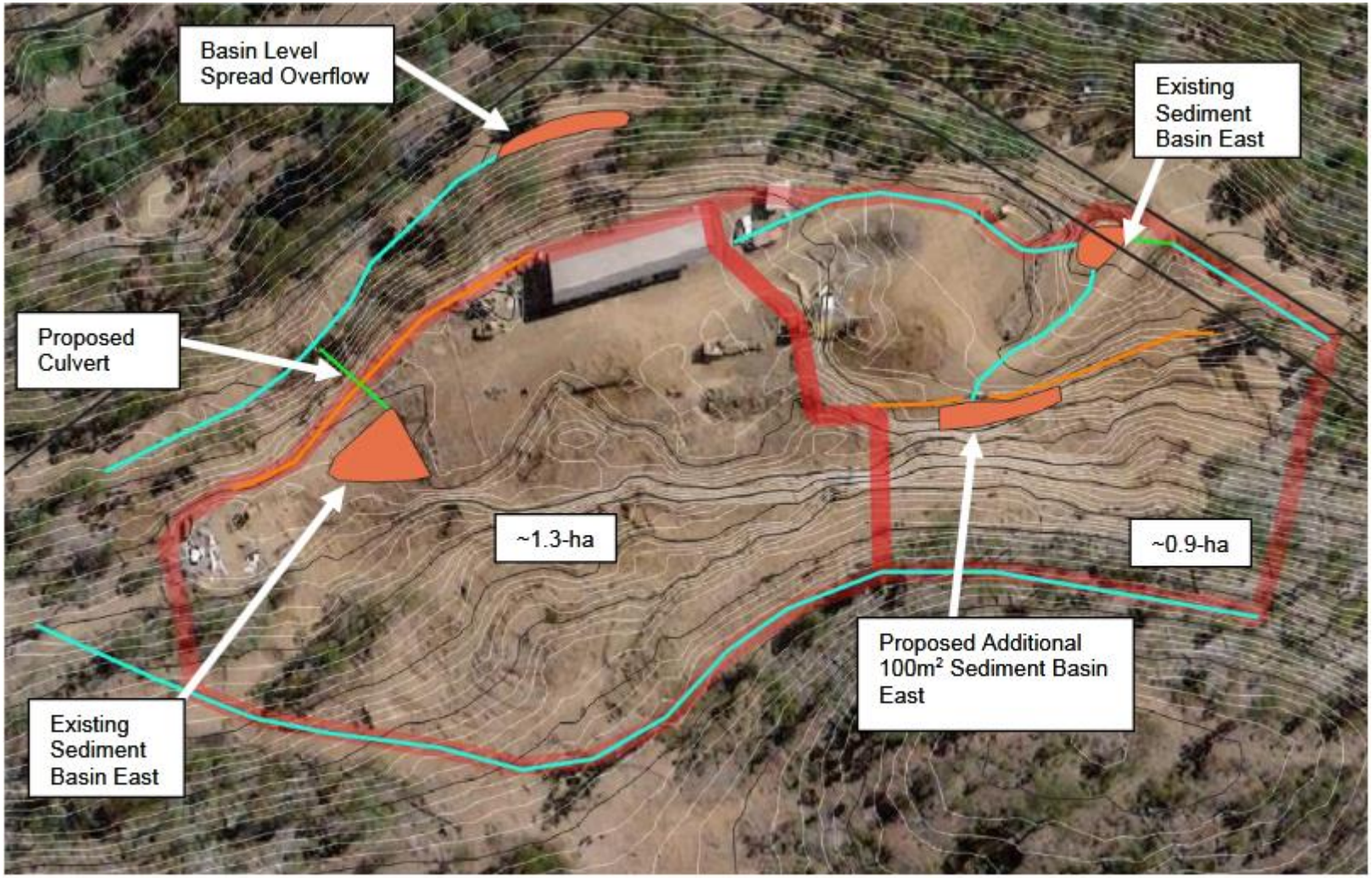
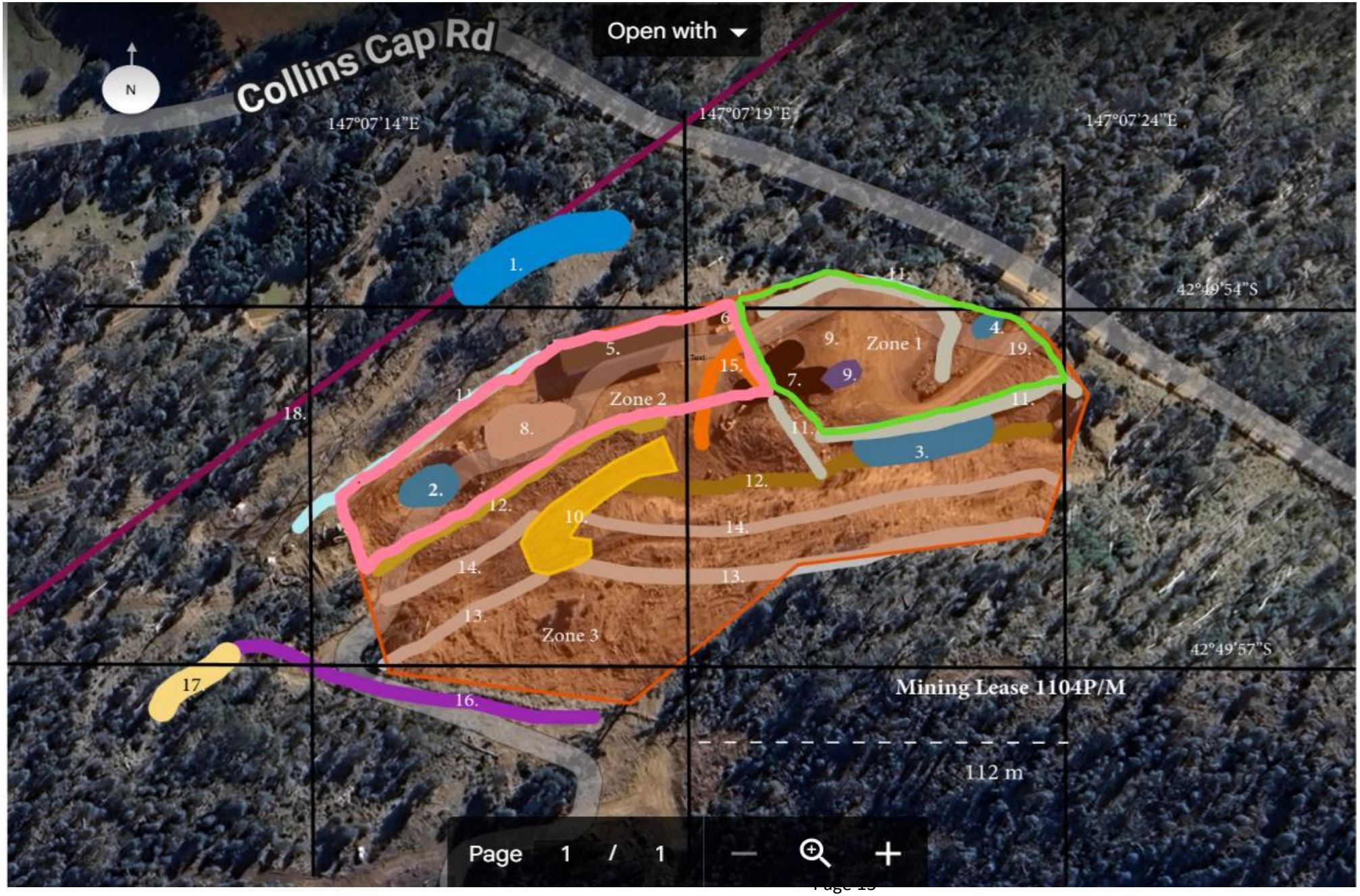


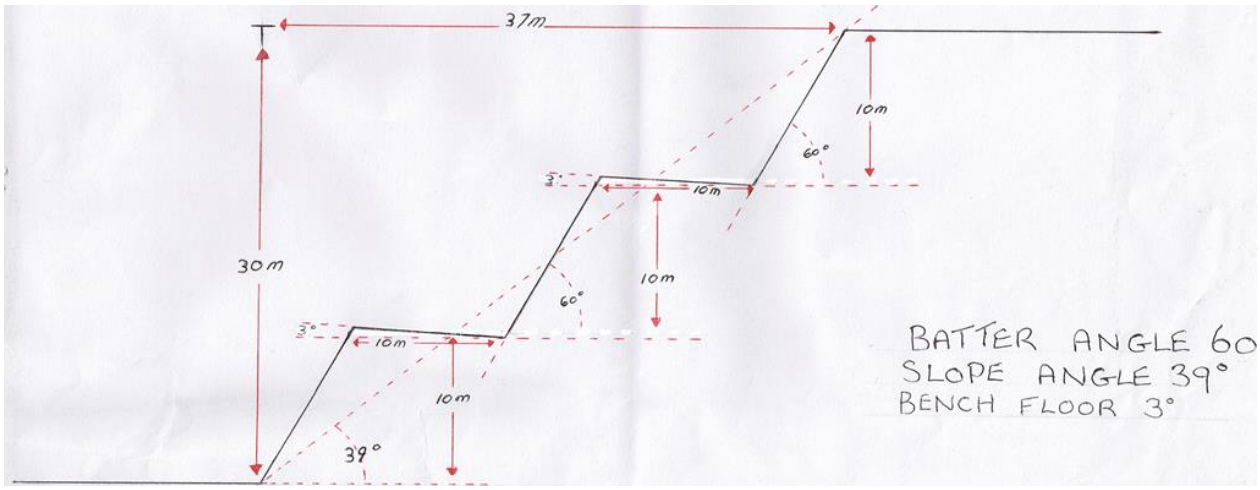
Figure 2: Major Site Drainage Features (drains blue, culverts green, bunding orange lines, catchments red)


Open with
Collins Cap Rd
N
147°07'14"E
147°07'19"E
147°07'24"E
42°49'54"S
42°49'57"S
Zone 1
Zone 2
Zone 3
Mining Lease 1104P/M
112 m
Page 1 / 1

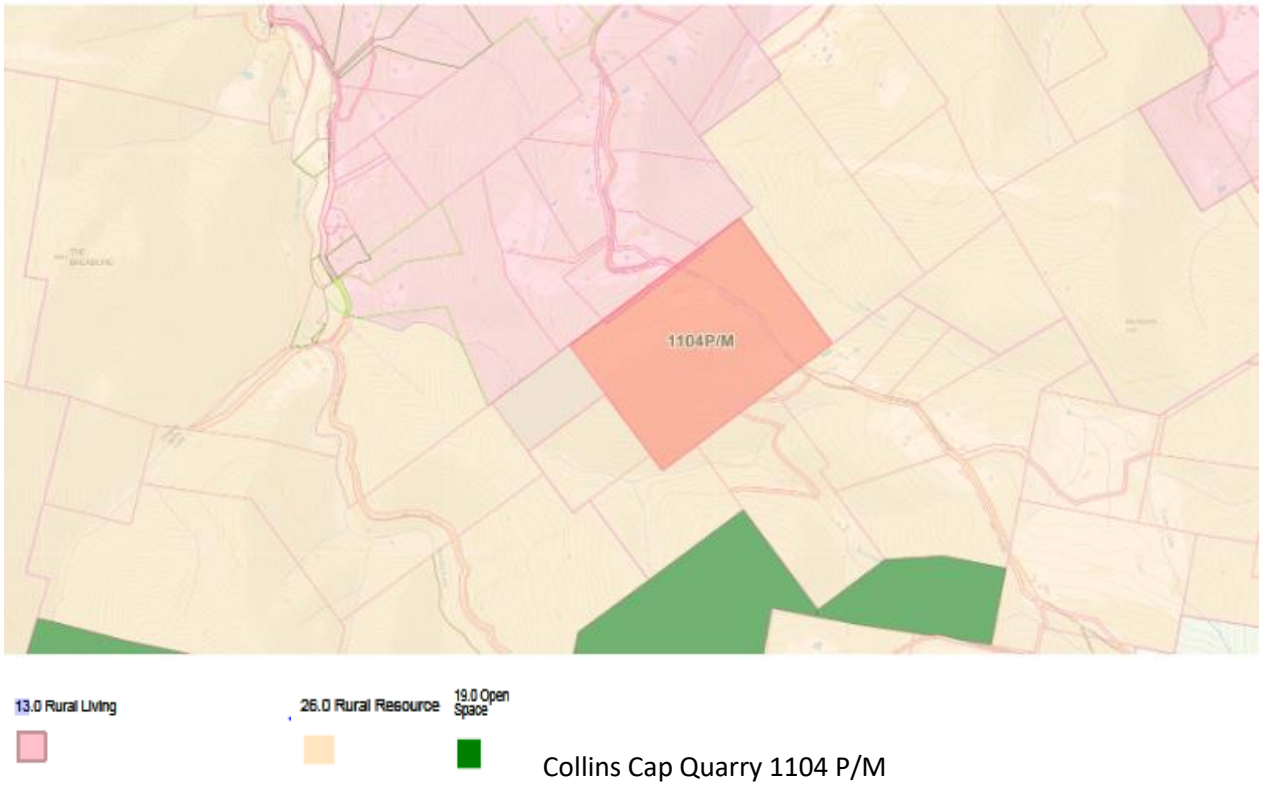
Collins Cap Illustration Key

1. Basin Level Spread Overflow
2. Sediment Basin West
3. Sediment Basin South East quarry Face
4. Sediment Basin East/Gate
5. Machinery Shed
6. Site Office
7. Crushing Plant
8. Stockpile Overburden/Rock
9. Processed material Stockpile
10. Haulage way (Bench Access)
11. Site Bunding
12. Base Line of Cutting
13. Stage 2 Benching
14. Stage 3 Benching
15. Wheel Loader Path for Crusher Feed
16. Site Top Drain
17. Top Drain Spread Overflow
18. Boundary
19. Main Gate Access

Benching Illustration



Land Zoning



Collins Cap Quarry 1104 P/M

Wind speed and direction rose

Product ID code: IDCJCM0021

Location: HOBART AIRPORT		**Site Number:** 094008
Latitude: 42.83°S	**Longitude:** 147.5°E	**Elevation:** 4 metres (above sea level)
Period: 9am Annual	**Start year:** 1958	**End year:** 2016

Download: PDF | Wind Frequency Data

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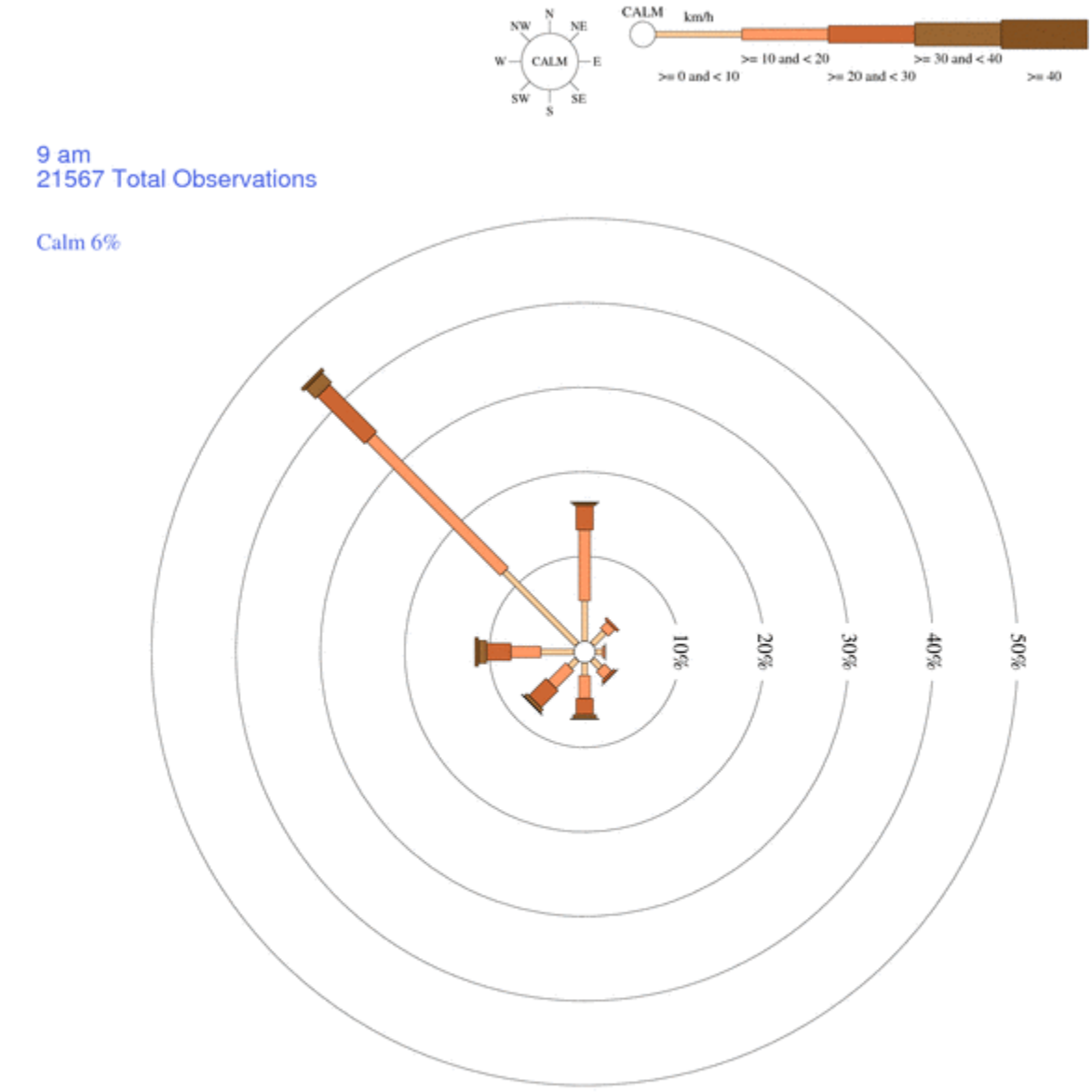

Australian Government
Bureau of Meteorology

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Wind speed and direction rose

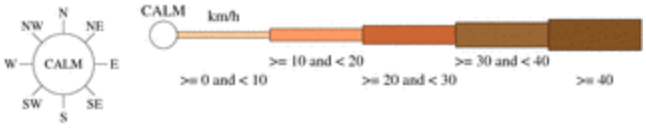
Product ID code: IDCJCM0021

Location: HOBART AIRPORT **Site Number:** 094008

Latitude: 42.83°S **Longitude:** 147.5°E **Elevation:** 4 metres (above sea level)

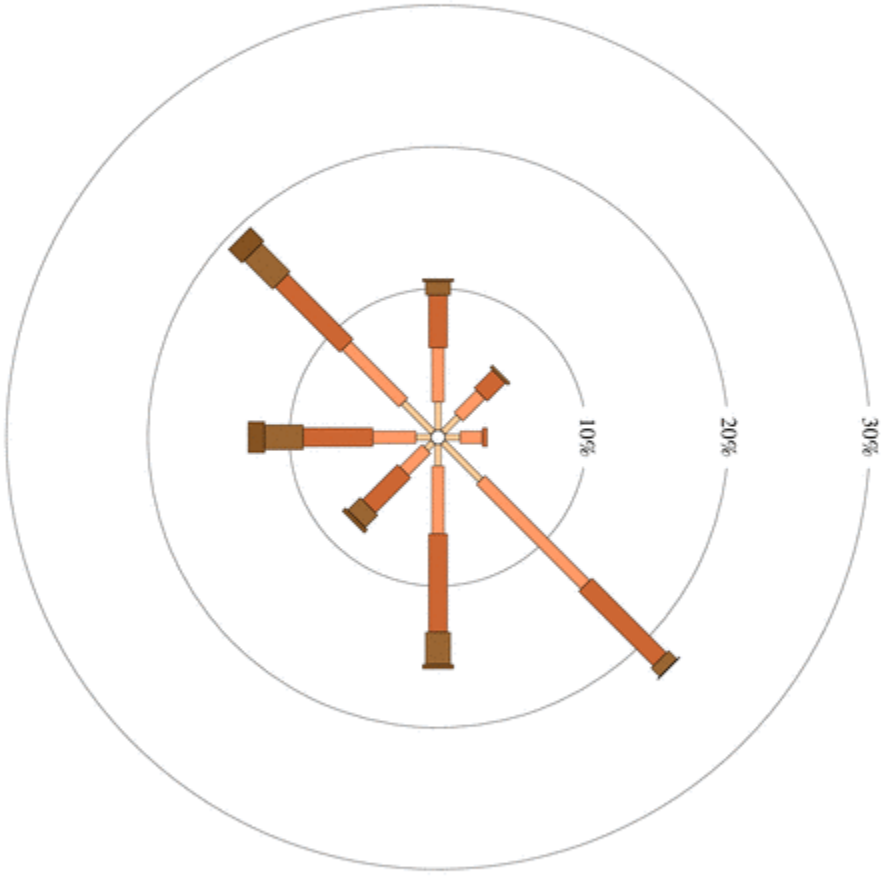
Period: 3pm Annual **Start year:** 1958 **End year:** 2016

Download: PDF | Wind Frequency Data



3 pm
21564 Total Observations

Calm 2%



Australian Government
Bureau of Meteorology

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3. Description of Existing Activity

3.1 Collins Cap Quarry is currently awaiting renewal of mining lease 1104P/M and extension of the existing permit PCE 3468. There is a crushing and mechanical screening plant on site. The proponent (Alltas Engineering) is attempting to gain the appropriate permits to allow the use of a crushing and screening plant. The quarry is currently at a reduced capacity and with the addition of this permit we wish to become a more consistent supplier to the local community. In accordance with Section 27C of the Environmental Management and Pollution Control Act 1994 ("the EMPC Act"). The EPA Board have determined the class of assessment will be 2B.

Collins Cap Quarry currently has a level 2 permit for extraction of 10,000 tonnes per year, which is under review as part of the 2B assessment.

3.2 A – Regulatory Approvals

The existing material extraction a the site is subject to the provisions of the Permit (Licence to Operate Scheduled Premises) No. 3468 issued 14 June 1988. This allows for Level 2 extraction only and is currently in assessment status, Licence 3468 Supersedes Licence 2835 which extraction amount was 10,000T/PA

The mining lease, 1104P/M expired on 2/10/2022 and is pending renewal.

Noise testing has been completed with results added to this submission (Refer - Noise – Noise Emissions, full NVC report pages 31 - 50)

3.2 B Breaches

Alltas Engineering are seeking to upgrade to add Mechanical Screening/Crushing to its existing Licence. If we were to use this equipment currently onsite it would be a breach of the existing permit, which is now sitting in assessment stage.

Working area of land is exceeding 1ha. The Collins Cap Quarry open area is documented to be 1 hectare but on the renewal application in Dec 2017 open area is stated as allowing 1.5 hectares open. Please know remediation of all open land is continually being revegetated when the area is no longer being disturbed for business use. We re-seed as local wildlife/Birds enjoy eating Seedling/new vegetation. There is a quarterly budget that allows for this to occur in Alltas Engineering's financial recurring expenses.

REF: Alltas Engineering renewal Mining Lease Document 1104 p/m Page 18 Schedule 2 Item 3

Use of Crusher/Mechanical Screen as previously discussed with MRT & EPA, Alltas Engineering Pty Ltd – Seeking extension to Licence 3468 to add the appropriate mechanical/screening permit

5 Bay Shed was constructed without Council approval – Plans have been submitted for approval on DA103/2021 awaiting Council Response.

Landslip – A landslip occurred resulting in materials entering neighbouring property, with consultation with MRT & Pitt & Sherry (geologist) Collins Cap Quarry made extensive changes to the Water Flow of the Property to ensure no further erosion can occur, Breach now rectified with approvals.

Inspection report and landslide reinstatement sign off.pdf Refer appendix

Part C Potential Environmental Impacts

Air quality

Collins Cap Quarry has 7 residences within 750m of the fixed crushing plant. We have great consideration for residents and are very aware of the potential impact of dust emissions from the quarry. To our knowledge there have not been any complaints relating to dust from any neighbouring properties. If dust is visibly seen to be crossing the lease boundary production will be ceased until weather conditions are more suitable. Suppression techniques will be applied to minimise the likelihood of visible dust emissions being carried over the mining lease boundary in any direction, to date of the time the quarry has been in operation there have been no complaints made by residences in relation to Dust nor any dust sited by quarry employees that Dust was traversing to resident's land area's.

Potential dust sources – note very Low Impact to Neighbouring properties

Extraction of the source rock from ripping and excavation, Water sprayed by water carrier system (to be installed) when determined dust is an issue to be actioned

Transport to Crusher – Wheel Loader. Water sprayed by water carrier system when determined dust is an issue to be actioned.

Stockpiles & Exposed Unvegetated Surfaces Ref: Page 13/14

Crushing, screening and processed material Ref: Page 13/14

Loading out the final product are all activities likely to generate dust emissions. Refer Dust Management Plan page 22.

Wind Speed & Direction Rose - Frequency Observations over a 12 month period show this area to be Calm by 2% at 3pm & Calm by 6% at 9am Annually, Direction of Wind is dominantly South Westerly & North Westerly Directions with Annual Rainfall, wind to date has not been a concerning factor for Collins Cap Quarry Site or neighbouring dwellings.

please *ref Climate Section on Page 9 Table 5 & Pages 16 – 18 Wind Rose, for further Wind Details Ref* www.bom.gov.au

The Quarry's terrain consists of trees and low lying brush which in the unlikely event dust were to traverse to the neighbour's land area, the thickness of the trees and shrubbery further dissolute any heavy dust particles if strong winds were to arise, in this event the plant would shut off to be in accordance with OH&S Policy and WH&S requirements. Factually there is no heavy lying dust on Shed roof or equipment to date to be impactful.

Employee	Measure	Schedule of Monitoring	Responsible
Director Scott Murison	Monitor Dust from all Sources	Quarterly in an annual year and when Weather has been more extreme than Usual	Proponent
Director Chris King	Monitor Dust from all Quarry Sources	Quarterly and when quarry is operational by any powered machinery	Proponent

Measures that will be employed to reduce the potential for environmental nuisance or harm.

The operator will monitor dust conditions and deploy suppression techniques to minimize the likelihood of visible dust emissions being carried over the mining lease boundary in any direction.

Keep drop distances low as practicable when loading trucks or developing stockpiles.

Water down stock piles if wind is inspected and visually determined to be reducing air quality utilising water carrier system.

Vehicles operating on quarry site are to keep their speed to 10km per hour

Excavation working to extract materials will stop works where wind is determined to be carrying too much dust through the air, Site SSO will determine this and put into effect when necessary. Water carrier system will be sprayed on top when excavation has stopped to allow dust to be suppressed and air quality to return to normal.

Roads to be watered down by water carrier when visually determined to be required on dry wind effected days to suppress dust on trafficked surface.

Stop production on windy days when there is potential for dust emissions to be carried past the mining lease boundary.

Remediating progressively as site area's are completed will reduce dust – sowing seed and keeping site damp for seedlings to culture will help alleviate any dust flowing through the air. Refer Site Plan Illustration page 13/14

Quarry Code of Practice 2017 is utilised as a guide in planning site remediation and dust control future measures.

Complaints procedure for residents/members of community outside of quarry is to contact the Proponent being either Chris King or Scott Murison who are both Directors of Company Alltas Engineering Pty Ltd and Land Owners of Quarry Site.

Silica testing has been undertaken while the crushing plant was operating and from 10 sample points around our site, unremarkable results were confirmed, Silica not relevant to this quarry site as testing confirmed results easily complied with WH&S, WorkSafe Tasmania guidelines with Air quality notification not required.

Dust Management Plan for Collins Cap Quarry

Visual Observation

Responsible Person Chris King mobile 0458 076 079

Under normal circumstances the quarry operator will Keep drop distances low as practicable when loading trucks or developing stockpiles

Keep travel speeds within the quarry to 10 km/hr and 50km/hr on the local roads.

Use a water cart or sprinkler system to dampen the quarry access road and trafficable surface within the quarry.

The operator will monitor dust conditions and deploy suppression techniques to minimize the likelihood of visible dust emissions being carried over the mining lease boundary in any direction.

Stop production on windy days when there is potential for dust emissions to be carried past the mining lease boundary.

For process See Table 2 Page 4 – 6 Material and extraction processing.

Water Quality (surface discharge)

Collins Cap Quarry have undertaken extensive drainage works to prevent potential erosion and sediment loss beyond our site. Collins Cap Quarry engaged a Geological Engineer (Andrew Tyson from Pitt & Sherry) on site to develop an efficient drainage and catchment plan for us to follow.

There is a sediment Pond (number 4) located immediately at the entrance to the site main gate. This has a capacity and geometric size of -60m2, Drains on upper benching are redirected to sediment basin (number 3) with a capacity of 100m2 and the effective catchment area (Number 1) is increased.

An Evaporation/Seepage Trench/drain 16/17 designed to hold a capacity of 150m3 was constructed in 2019 at the top of the site above the quarry face to catch and direct water running from above the site and redirect it away from the quarry area. The drain runs towards the west and terminates in along flat drain to promote evaporation and spreading of the discharge water. This has been installed to prevent drainage lines running downhill.

A large (approximately) 1000m3 sediment pond (number 2) has been dug at the western end of the quarry site to contain run off from the quarry face, there is a 300mm overflow pipe installed to direct excess water to the perimeter basin sediment catchment (number 1) of approximately 150m3 Capacity. This is a level spread overflow pond on the lower side of the sites Northern boundary.

(Ref numbers, Illustration key Page 14, Site Illustration page 13)

Area at the bottom of the quarry face has been directed away from the northern boundary directing towards the screening plant and then the sediment pond at the main gate, overflow from this sediment trap flows into the roadside culvert.

There has been a further perimeter drain/sediment catchment 150m3 (Approximately) area created along the northern boundary to reduce the potential of any excess water flowing onto the neighbouring property.

The sediment traps and perimeter drains will have maintenance performed on as required and Scheduled for Quarterly Maintenance.

There is no direct flow into Counts Creek located on the site's Eastern boundary.

Site Drainage Page 12

Pitt & Sherry have recently completed a Water Quality Management plan and there is more work to be undertaken before the end of 2024.**Quarry Intensification Water Quality.pdf as per appendix**

Progressive works below have been recommended and approved for works to be completed throughout the 2024 year as follows:-

Sediment basins in this environment require frequent maintenance to ensure the basin maintains operational capacity and reduces the likelihood of sediment re-suspension during large storm events. Cleaning should be undertaken preferably in the absence of rain and spoil from basin cleaning should be located away from concentrated flow paths – Scheduled Quarterly starting March 2024

The overflow spillway from sediment basin east should be provided with rock lining transitioning into the roadside drain on Collins Cap Road – Scheduled May 2024

Rock pitching and widening of approach drains is recommended where possible to promote shallow and low velocity flow entry into basins – Ongoingly scheduled for June 2024

All primary flow paths/drains should be rock lined to lower velocities and capture sediment and reduce loads on sediment basins. Steep concentrated flow paths should be avoided where possible Scheduled for June 2024

Despite a basin being sized in line with best practice guidelines this does not ensure that the quality of discharge will meet targets. If issues remain present options available include: - quarry has added Sediment Basin which was constructed on opposite side to existing Sediment Basin to alleviate capacity buildup

Further increase the basin size (space is available); and/or Use of flocculants and/or coagulants. On agenda in August 24 if water volumes are still a concern

Noise Emissions

The site, accessed off Collins Cap Road, comprises a north-facing quarry pit/face, a large shed for mobile equipment storage, a fixed crushing/screening plant, and a site office. The raw product is easily broken from the quarry face via excavator ripping. The material is then transferred to the Crushing, screening plant via a wheel loader. We estimate that for the 10,000t/a, the crushing plant should only be run minimally 1-2 days a week at most (potentially Thursday & Fridays) with Machinery equipment being utilised intermittently to match Crusher activities and remediation works being weekdays and potentially Saturdays in accordance with the Quarry Code of Practice operational hours listed.

Results from Testing = "*The spectrum measured at location B during which the crushing noise was dominant was also assessed for impulsiveness, which determined an adjustment of 2dB was required. The overall level of crushing noise at location B, adjusted for impulsiveness and tonality, is then 41 dBA$_{Adj}$."* . Please let us note here that as Collins Cap Quarry is not operational due to lease restrictions, noise testing was reduced accordingly and deemed that testing of non-operational equipment would be unnecessary especially as the Noise levels completed fall underneath the guidelines stated by quarry code of practice 2017 documentation at its peak.

The equipment and power consumption used to conduct these operations are listed in the table below.

Table 6 Equipment Noise Levels

Equipment	Qty	Make / Model	Power, kw	Hours potential Usage
Excavator (tracked)	1	Hyundai Rolex 320 LC-7	193	1-5 hours per week (11am – 3pm
Wheel Loader	1	Victory VL470 1341	134	5 hours per week (11am – 3pm)
Wheel Loader	1	Changlin WCM30*	92	Back up for Victory Loader – Usage requirement unknown
Crushing/Screening Plant	1	Unknown	Unknown	5 hours at most per week until quota is reached (11am – 3pm)

NVC Noise Specialist has undertaken the noise monitoring for this document, this company has conversed with EPA/MRT on many occasions and has provided an extensive noise assessment reporting all monitoring completed relating to Collins Cap Quarry Site *referenced on Pages 31 - 50*

The proponent Alltas Engineering does not intend to use blasting on this site.

NVC document Page 31 - 50

Environmental Department Queries Page

REF Illustration page 10 when completed itemising Residents close by and where the existing quarry activities are located on map, Noise Report page 31 – 50 Ref Quarry Code of Practice 2017 on Epa.tas.gov.au site.

4. Waste

Any wastes accumulating as a result of machine repairs will be removed at regular (quarterly) intervals throughout the year, next Scheduled is March 2024. Environmental waste such as waste engine oil will be transferred to appropriate disposal facilities. Litter arising from lunches and servicing of equipment will be removed at the end of each working day.

Stripping new areas to expose the source rock is likely to produce a volume of overburden however acid forming material This will be overburden from the three benches. Overburden will be either deposited directly on areas previously worked out or if no areas are suitable overburden stockpiles will be constructed to store the overburden in zone 2. Ref Sitemap illustration Page 15, *Ref Soils table Page 7-8*

Sediment traps will fill over a period of time and will be monitored and cleaned out to maintain the capacity. The silt recovered from the sediment trap will be blended with the select products depending on suitability. Unsuitable sediment will be stockpiled with overburden and reused in subsequent rehabilitation activities. These activities will be monitored quarterly and be completed ongoingly.

Any packaging brought onsite along with spares and lubricating fluids, or litter associated with workers lunches will be kept in the site office/crib room and disposed of off-site. The existing laydown at the Northern end of the quarry site (ref Site Map page 13/14) is currently being remediated with topsoil and seed to be sown in august 2024 as Spring starts and weather accommodated growth.

Environmental Impact is limited due to the above mentioned cleaning and monitoring with no impact for nearby residences from quarry operations currently, noting on management of rubbish this area surrounding the quarry has experienced recently illegal dumping of materials to a large quantity to which the council have recently taken actions in preventing.

Ref: www.derwentvalleytas.gov.au

5. Environmental Hazardous Substances

Hydraulic and engine oils are required to be used on site. These substances are stored in a suitable bunded areas in the machinery shed and container/workshop. The quarry operation may also have the need for weed spraying. These chemicals will be secured in the locked shipping container/ workshop.
The site operator currently uses a utility mounted refuelling tank to refuel mobile equipment. Mobile Plant on Quarry Site is only refuelled on average every second week.

Fuel is delivered to site in a 400ltr utility mounted mobile tank. Refuelling is to occur inside of the machinery shed. When Vehicle Carrying Fuel is on Site it must only be parked in the machinery shed. Any Spills while refuelling must Immediately be cleaned up. A hydrocarbon spill clean-up kit is available for immediate deployment if a fuel spill occurs.

Table 7 Site Hazardous Substance List

Substance	Quantity	Where stored
Hydraulic Oil	200 Litres	Machinery Shed Bund
Engine Oil	20 Litres	Container
Grease cartridges	24	Container
Weed Killer	20 Litres	Container

6. Natural values

The vegetation on the land consists of Eucalyptus Pulchella forest and woodlands and Eucalyptus Delegatnsis dry forest. There are no endangered fauna, flora or vegetation communities listed for this site using reference the natural Values Atlas. There are small patches of conservation significance flora to the north of the mine site. There is a raptor nest listed two kilometres south west of the Quarry inside the Wellington reserve.

There is no scheduled plan to remove any vegetation in future operating activities.

Please reference E. Pulchella and E.delegatensis description on Page 26

7. Weeds, pests' pathogens

There are no Weeds or Pathogens listed for this site. There have been small Californian thistles identified in the recently disturbed areas above the quarry. Other common agricultural weeds such as Scotch (spear) thistle, wild mignonette, scarlet pimpernel and pasture grasses are present within the quarry area. There is an active weed Spraying Schedule in place and will continue to be monitored fortnightly, Quarry Clean (inspection services for weeds & diseases) conducted an investigative report in 2020 where this site received certification that the quarry was clear of impactful weeds and diseases and with an active weed spraying program should stay that way.

Trucks attending site are only operational in Zone 1 (refer map Illustration Page 13/14) so very low impact to transferring weeds & pathogens from outside sources to quarry site and vice versa.

Weed spray used on quarry site comes highly recommended and have used recently " Lontrel Advanced" Ref SDS Form www.garrards.com.au/administrator/components/com_msds/files/447/1639017324Lontrel-advanced-herbicide-sds.pdf please see Appendix.

8. Environmental Impacts of Traffic

The road to the quarry (Collins Cap Road) is clearly signed. Trucks travelling on the road to the quarry can pose a threat to animals that may be present on the access road. We believe the risk affecting native fauna species including Tasmanian devil is greatly mitigated by adhering to signed speed limits posted in areas and driving to road conditions. The roads are limited to 50 kmph. The quarry permitted operating hours are between 7am and 7pm weekdays and 8am to 4pm Saturdays.

All off site traffic on the quarry site is limited to the zone 1 area. There is adequate area for trucks to enter the quarry turn around and be loaded, exit to the quarry allows adequate view in either direction to enter Collins Cap Road. The Derwent Valley Council have recently installed traffic warning lights on southern approach to the quarry entrance on Collins Cap Road.

With our operation only utilising a truck on a Thursday and Friday for deliveries between the hours of 11 – 3pm this has a very low impact on environmental surrounds of quarry. Transport & Dust Particles are explained in reference area below as is the weather patterns.

As the crusher/Mechanical Screening Plant has been operational previously there is no increase to transport with no complaints received alike relating to transport movements or dust particles. For example, many vehicles traverse up and down Collins Cap Road, loaded trucks included, machinery operating and the crushing screening plant on our site appears to have little impact on surrounding dwellings or general road conditions.

Ref: Transport, Page 5 Table marked Transport, Ref: Dust Ref page 22, Ref: Climate Ref Page 8 of this document.

9 Monitoring

The Quarry Responsible Person (SSO) will continuously monitor the following parameters during operational phases of the Collins Cap Quarry operation:

Air Emissions will be monitored constantly by the operator.

If excessive amounts of visible dust are generated and is observed at the site, suppression techniques will be applied to minimise the likelihood of visible dust emissions being carried over the mining lease boundary in any direction.

Ref: Page 23 for Dust Explanation and quarry has an MTR Approved Dust Management Plan in place.

Sediment Traps will be monitored by the operator and be maintained when required.

The sediment traps will be monitored to ensure the total capacity of the impoundment is not reduced by more than half determined by visual inspection, this is scheduled quarterly next due March 2024. If accumulated sediment is excessive, the trap will be cleared out and the spoil set aside with overburden *Ref Site Illustration*, to be blended with product or used in future rehabilitation works.

Ref Page 27 for Monitoring

Weed Propagation will be continually monitored again on record confirmed at a quarterly minimum with next scheduled date being March 2024. Weed Reporting will be recorded with Date and quantities of Spray used approximately and locations weed spraying was completed.

The quarry site will be continually monitored to manage any potential mitigation of weeds and diseases. Machinery tracks will be washed cleaned out if removed or returned to site, Site access for customers will be limited to the zone 1 area which is below the crushing plant.

10 Rehabilitation and Decommissioning

Rehabilitation works on Collins Cap Quarry will seek to restore the site to a regenerated native Bushland. All decommissioning and rehabilitation will be in accordance with current permit conditions complying with Licence 3468 Reference Section 7.

The total area of disturbed (un-rehabilitated) land required to support the operation of the Collins Cap Quarry is 1 hectare.

Part D Table 8 Summary of proposed management Measures

No.	Proposed measure	Timeframe	Status
1	Tidy drainage on North side of quarry boundary.	Completed July 2023 as discussed with neighbour.	Completed
2	Complete work from Water Quality Management Report	December 20 2023	Completed
3	Reduce the materials in the laydown area at the northern end of the quarry site	Progressing	Estimated to be fully complete July 2024 Ref Page 13/14
4	Sediment Pond/Traps to be cleaned every quarter and after heavy rainfall	Next Scheduled March 2024	ongoing

Monitoring of ongoing remediation of this Site and rehabilitation of land required to date has been attended to by Management of Alltas Engineering Pty Ltd the Quarry SSO & with the aid of MRT's representative offering advice on bush seedlings to rehabilitate areas with.

Historical Remediation- has consisted of sowing wild bushland seedlings purchased from business named Wildseed Tasmania – Land area concerned has been recontoured and Soiled in sections of land to allow growth to take place. *Ref Page13/ 14*

Immediate to Progressive Rehabilitation – overburden has been used and continual plans are in place to continually close worked land no longer required for mining use. Please see remediation Illustrations.

Decommissioning and Rehabilitation – Estimated (planned for) no more than 1ha to rehabilitate with wild bushland seedlings and Grass Seed to turn this back to the natural Land habitat for the area. Proposal time for Decommissioning/Rehabilitation will be determined upon lease continuation and work in accordance with MRT and EPA guidance complying with Quarry Code of Practice Section 8.

Removal of all non-fixed infrastructure will be completed, returning land to its original state and reporting this to the MRT & EPA for their Guidance in conforming with the relevant Statutory and legal obligations.

Part D: Summary of Proposed Management Measures

No	Proposed Management Measure	Timeframe	Responsibility
1	Weed Site Monitoring & Evaluation Inspection of Quarry Site in full quarterly in an annual year	Ongoing Next date due March 2024	Proponent
2	Weed Control – Lontrel Advanced weed killer used for Weedspraying Quarterly	Ongoing – Next Recording Date is March 2024	Proponent
3	Surface Waters – Sediment qty in drains/Traps and sediment ponds to be visually inspected, Weather Conditions to be monitored Sediment Traps – Cleaned out accordingly	Ongoing – Next Recording Due March 2024 Visual Inspections completed after large rain events	Proponent
4	Dust Control Measure – Monitoring, meteorology reports and visual inspections to occur when crusher is operations and large machinery is in effect	Ongoing to Site operations	Proponent
5	Stock Pile Area – Visually Monitored and assessed, weather conditions in the area monitored and wind strength and rains Assessed	Ongoingly – Site monitoring when operating and after large rain events – recorded in reports	Proponent
6	Rehabilitation – continue to rehabilitate worked land no longer required for Mining Operations	Ongoingly – all disturbed land	Proponent
7	Waste Management – Disposal of Oils and other Waste Materials	Quarterly in an Annual Year next Due March 2024	Proponent

Part E - Public Stakeholders required

The following parties have invested interest of the Lease Requirements for this EER Document and Processing Plant, Collins Cap Quarry. The groups below all are aware there is a quarry located on the site and that the lease is currently being a

Derwent Valley Council (planning section)

Mineral Resources Tasmania (MRT)

Neighbours adjacent to the Collins Cap Quarry Site

Environmental Protection Authority (EPA)

Collinsvale Community Group

References

https://nre.tas.gov.au/conservation/development-planning-conservation-assessment

https://www.naturalvaluesatlas

https://www.stategrowth.tas.gov.au/__data/assets/pdf_file/0019/225325/tas_eucalypt_key.pdf

https://en.wikipedia.org/wiki/Eucalyptus_pulchella
https://en.wikipedia.org/wiki/Eucalyptus_delegatensis

https://nre.tas.gov.au/Documents/hobasoil.pdf

https://epa.tas.gov.au/regulation/waste-management/controlled-waste

Vegetation Description

Eucalyptus Pulchella, commonly known as the white peppermint or narrow-leaved peppermint,[2] is a species of small to medium-sized tree that is endemic to Tasmania. it has smooth bark, sometimes with rough fibrous bark on older trees, linear leaves, flower buds in groups of nine to twenty or more, white flowers and cup-shaped to shortened spherical fruit.

Eucalyptus Delegatensis, commonly known as alpine ash, gum-topped stringybark, white-top[3] and in Victoria as woollybutt,[4] is a species of tree that is endemic to southeastern Australia. It has a straight trunk with rough, fibrous to stringy bark on the lower half of the trunk, smooth white bark above, lance-shaped to curved adult leaves, flower buds in groups of between seven and fifteen, white flowers and barrel-shaped or hemispherical fruit.

Collins Cap Quarry

Noise Impact Assessment

Ref: 1622-1 Noise Impact Assessment

10 October 2022

Executive Summary

Alltas Engineering Pty Ltd operates a quarry at 685 Collins Cap Road, Collinsvale. The quarry is well established, having been in operation for approximately 38 years within mining lease 1104P/M. The quarry has not historically operated under an Environmental Protection Notice (EPN), and thus the operators are seeking a permit from the EPA to conduct extraction and operate their existing fixed crushing plant. NVC has thus been engaged to conduct a noise assessment, the results of which are detailed in this report.

Noise measurements were conducted on site to determine the sound power level of the existing semi-permanent crushing/screening plant. Measurements were also conducted at the nearest and most sensitive residential premises in the area, to determine quarrying noise levels at these locations.

Software noise modelling has also been implemented, to confirm that the measurement locations are representative of worst-case.

It was determined that the crushing/screening plant is the strongest noise source within the quarry, resulting in a noise level of approximately 41 dBA_{Adj} (adjusted for tonality and impulsiveness) at location B (the location of the strongest measured quarry noise).

Noise criteria were taken from the EPA Tasmania Quarry Code of Practise 2017 (the QCoP). As operations are within the day-time only, the adopted criterion is 45 dBA, applicable at the nearest sensitive premises in other ownership.

All predicted and measured levels, adjusted for tonality, are beneath the day time criterion under the QCoP, and thus quarry noise emissions are deemed acceptable.

Collins Cap Quarry Noise Impact Assessment

Prepared for:

Alltas Engineering Pty Ltd

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Document Control

Ref	Date	Author	Reviewed	Comments
1622-1 Noise Impact Assessment	10/10/22	J Pitt	J Parry	Issued

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SITE DESCRIPTION

Background Information

Alltas Engineering Pty Ltd operates a quarry at 685 Collins Cap Road, Collinsvale. The quarry is well established, having been in operation for approximately 38 years, however it has not previously operated under an Environmental Protection Notice (EPN). As such, the operators are seeking a permit from the EPA to conduct extraction and operate their existing fixed crushing plant. The proponents have engaged NVC to conduct an environmental noise assessment, to analyse the potential for noise from the activity to cause nuisance at nearby sensitive uses. This report details the results of such a noise assessment, conducted in August 2022. It is noted that the quarry is within an existing mining lease, 1104P/M.

Site Location & Surrounding Area

The site, accessed off Collins Cap Road, comprises a north-facing quarry pit/face, a large shed for mobile equipment storage, a fixed crushing/screening plant, and a site office. The site and surrounding area are shown in Figure 1.1. Note that the mining lease (1104P/M) is shown in red, with the blue circle describing a 750m radius from the fixed crushing plant (the typical separation distance for quarries conducting crushing activities only, as per the Quarry Code of Practice 2017).

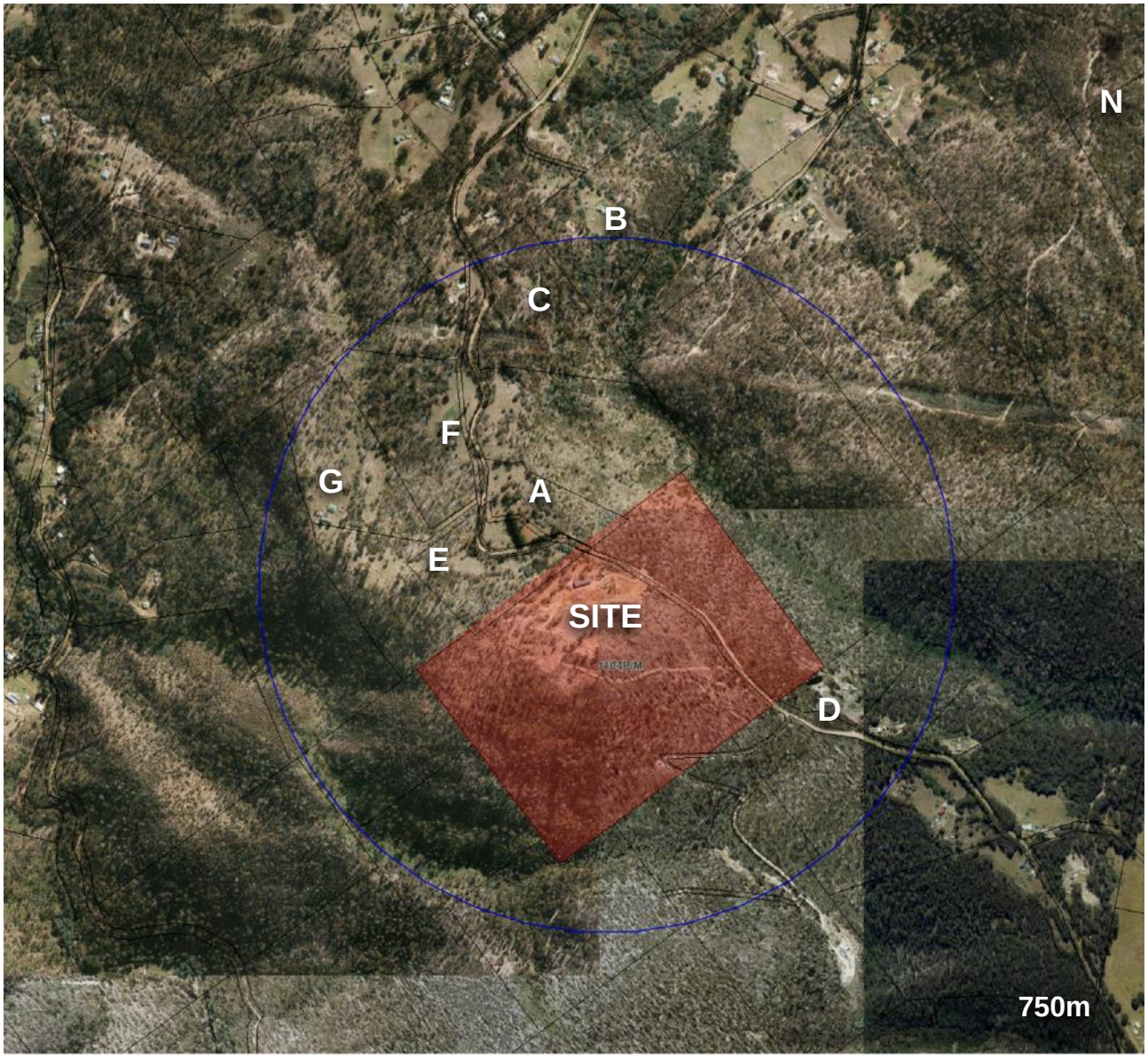

FIGURE 1.1: SITE AND SURROUNDING AREA

The site and area to the south of it is zoned Rural Resource (including location D in Figure 1.1). To the north is a Rural Living zone, which includes the remaining locations denoted in the figure. The zoning of the area is detailed in Figure 1.2, with the Rural Resource zone shown in tan, with the Rural Living zone shown in pink.

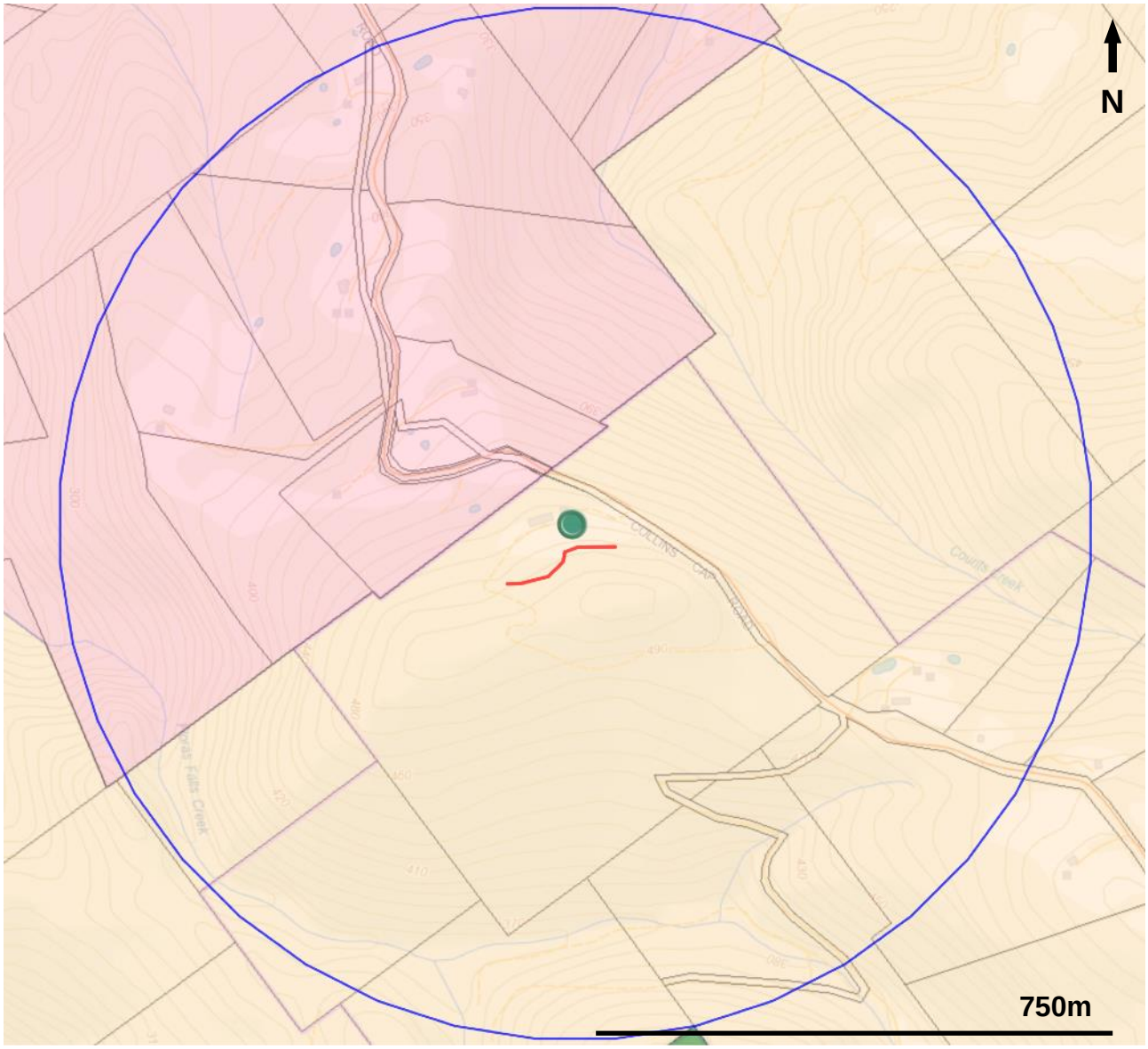

FIGURE 1.2: ZONING OF SITE AND SURROUNDING AREA

The quarry itself is located to the north of the brow of a relatively steep hill, and is thus exposed from the north-west through north-east, but well screened to the south. The natural ground contours in Figure 1.2 show the topography surrounding the site - note that these contours do not reflect the current contours on the quarry site, as the quarry has been cut into this portion of the hill, further increasing screening to the south. The approximate location of the quarry face at the time of writing is shown by the red line in Figure 1.2, with the green dot denoting the location of the fixed crushing/ screening plant.

The nearest sensitive premises (NSPs) in each direction (within a ~1km radius) are denoted A to G in Figure 1.1, and described in Table 1.1.

The quarry pit has been significantly cut into the hill in the vicinity of the crusher, and as such the natural land contours provide screening between the nearest locations to the north (A, E, F and G). Locations B and C are further away but at similar elevation, and thus experience less screening.

Figures 1.3 and 1.4 show the quarry at the time of writing.

TABLE 1.1: NEAREST SENSITIVE RECEIVERS

Location	Address	Distance from crusher (m)
A	808 Collins Cap Road	235
B	908 Collins Cap Road	800
C	860 Collins Cap Road	640
D	724 Collins Cap Road	530
E	805 Collins Cap Road	340
F	839 Collins Cap Road	470
G	811 Collins Cap Road	605

FIGURE 1.3: VIEW OF QUARRY FROM WEST, LOOKING EAST

FIGURE 1.4: VIEW OF QUARRY PIT FROM EAST, LOOKING SOUTH-WEST

FIGURE 1.5: VIEW OF QUARRY PIT FROM LOCATION B, NORMAL AND ZOOMED-IN VIEWS

Quarry Site Operations

The quarry operator is seeking to obtain a permit for extraction and processing of raw material up to 10,000 tonnes p.a. No significant changes to the operations, equipment or operating hours are envisaged, with the existing plant and equipment capable of delivering this quantity within the proposed operating hours.

Allowed operating hours are specified as:

0700 to 1900 hours Monday to Friday

0800 to 1600 hours Saturdays

Actual operating hours are expected to be 0730 to 1630 hours Monday to Friday.

Quarry operations are summarised in brief as follows:

Raw material ('red gravel') is pulled from the quarry face via ripping, using a 33T excavator.

Loosened / broken up material is then loaded into the crushing/screening plant via wheel loader.

The crushing/screening plant is a semi-permanent installation, which utilises a jaw crusher and vibratory screen, to output two grades of material.

The crusher is primarily utilised on-demand, and thus stockpiles are relatively small.

The two stockpiles are moved/shaped as required prior to loading onto trucks for transport offsite.

These trucks are not owned or operated by the quarry operator; clients collect product from the quarry directly.

The site is generally operated by one to two personnel; one operating an excavator and/or loader, and one operating the crushing/screening plant. A secondary smaller wheel loader is also located on site, but is only used intermittently, as required.

NVC has been informed that the raw product is easily broken from the quarry face via excavator ripping, and thus drilling/blasting is not proposed nor envisaged to be required. The equipment used to conduct these operations are listed in Table 1.2.

TABLE 1.2: SITE EQUIPMENT

Equipment	Qty	Make / Model	Power, kW
Excavator (tracked)	1	Hyundai Rolex 320 LC-7	193
Wheel Loaders	1	Victory VL470	134
	1	Changlin WCM30*	92
Crushing/Screening Plant	1	Unknown	Unknown

* Only used intermittently as required.

CRITERIA

The EPA Tasmania maintains the Quarry Code of Practise (QCoP)[1], which specifies typical noise criteria for quarrying operations in Tasmania, which are thus deemed appropriate for this assessment. The QCoP stipulates typical hours of operation and noise emission limits as follows:

7.2.2.1 Hours of operation

Hours of operation should be restricted to:

- 0700 to 1900 hours, Monday to Friday
- 0800 to 1600 hours, Saturdays, and
- No operations on Sundays.

7.2.2.2 Level of noise

Noise from quarrying and associated activities, including equipment maintenance, when measured at any neighbouring sensitive use must not exceed the greater of:

- the A-weighted 10 minute L90, excluding noise from the quarry, plus 5 dB(A), or
- the following levels:
  - 45 dB(A) from 0700 to 1900 hours (daytime)
  - 40 dB(A) from 1900 to 2200 hours (evening), and
  - 35 dB(A) from 2200 to 0700 hours the following day (night time)

when measured as a 10 minute L_{eq}.

Quarry operations are to occur during the day time only, and thus the adopted criterion is 45 dBA, applicable at the nearest noise sensitive premises (NSPs) in other ownership.

It is noted that all measured levels are required to be assessed for the presence of intrusive characteristics, as per the Tasmanian Noise Measurement Procedures Manual 2008.

[1] *Quarry Code of Practice, 3rd Edition*, EPA Tasmania, May 2017

NOISE MEASUREMENTS

Site Noise Measurements

Noise measurements were made on site on the 2nd August 2022, to characterise the noise emissions from the crushing/screening plant. Measurements used a Svan Type 1 sound level meter, logging overall levels, and one-third octave and narrowband spectral data at 1s intervals with a *Fast* time weighting. Overall level measurements were also recorded with *Impulse* time weighting.

The individual sources within the crushing/screening plant were combined and treated as a single source, with measurements made at various angular positions and distances from the plant, sufficient to determine its sound power level.

The plant is dominated by broad-band noise in the 500 - 2000Hz frequency range, which is associated with the crushing. The overall sound power level was determined to be 116 dBA, which is typical of similar plant, and is thus deemed accurate.

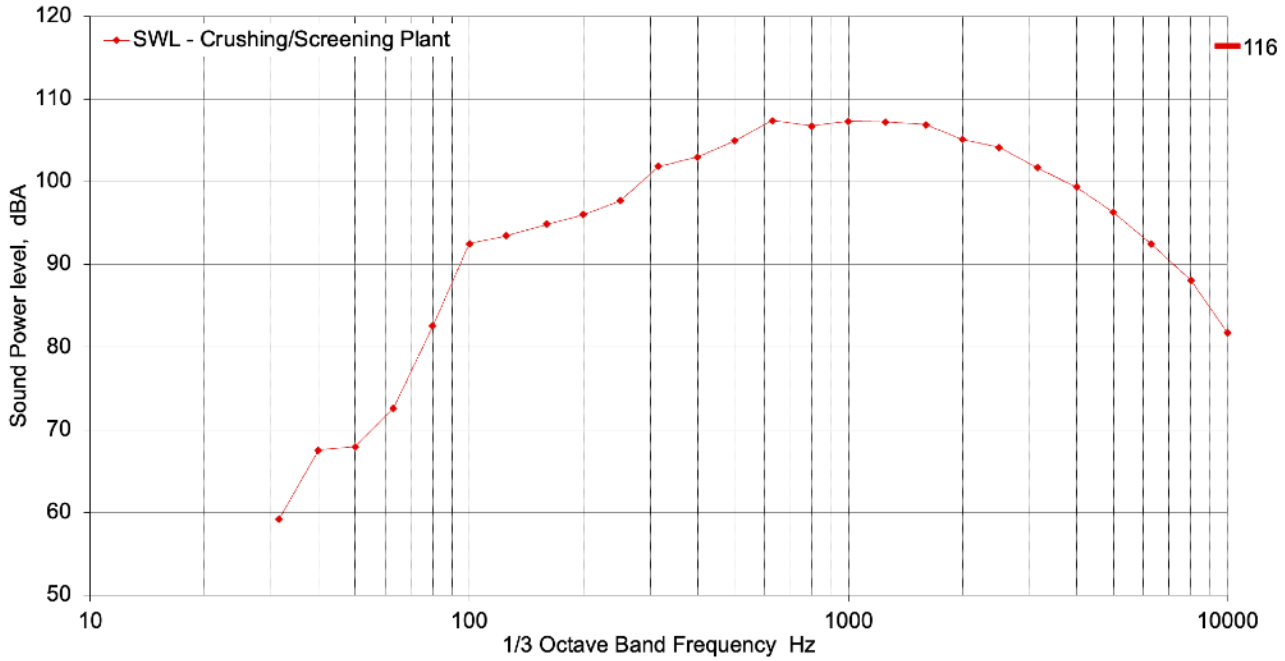

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FIGURE 3.1: MEASURED SOUND POWER SPECTRA - CRUSHING/SCREENING PLANT

Noise Measurements at NSPs

Attended noise measurements were made at locations A and B on the 2nd August 2022, to determine quarry noise levels at these locations. Measurements used a Svan Type 1 sound level meter, logging overall levels and one-third octave spectral data at 1s intervals, and statistical data at 10 minute intervals. Measurement periods were nominally 15 minutes.

The weather was clear and fairly still, with a light west-south-westerly breeze intermittently (i.e. location B being cross-downwind from the quarry). It is noted that the crusher was operating continuously during these measurements, and being loaded with the larger of the two wheel loaders. The excavator was not operational.

Location C was not accessible (fenced with clear signage at the beginning of the driveway prohibiting entry) and thus no measurements were able to be made here. Locations D and E were also attended, but the

quarrying activities were completely inaudible at these locations, and so no measurements were made there.

The following comments are relevant to the measurements: Location A

The measurement location was on the south-eastern side of the clearing near the residence, being the highest point on the clearing and the nearest to the quarry, and thus likely to experience the most quarrying noise.

Animal / insect noise was perceived as the dominant noise, with a light breeze rustling nearby trees also contributing.

The quarry was intermittently just audible via the jaw crusher. No engines or loader operation were audible.

A heat pump was operational during the measurements, with the outdoor unit nominally 30m from the measurement location, and partially screened by the dwelling. This unit was audible when it switched on.

Location B

Similar to location A, the measurement location was on the south-eastern side of the clearing near the residence, being the highest point on the clearing and the nearest to the quarry.

The quarry face was visible from here, with the top of the crusher and the site office visible through the tops of the trees - see Figure 1.5 for a view of the quarry from here.

The crusher was generally audible, and intermittently clearly audible. This change was perceived to be from the slight varying breeze occurring during the measurements, with the strongest perceived audibility occurring when the breeze was directly from the quarry to the measurement location.

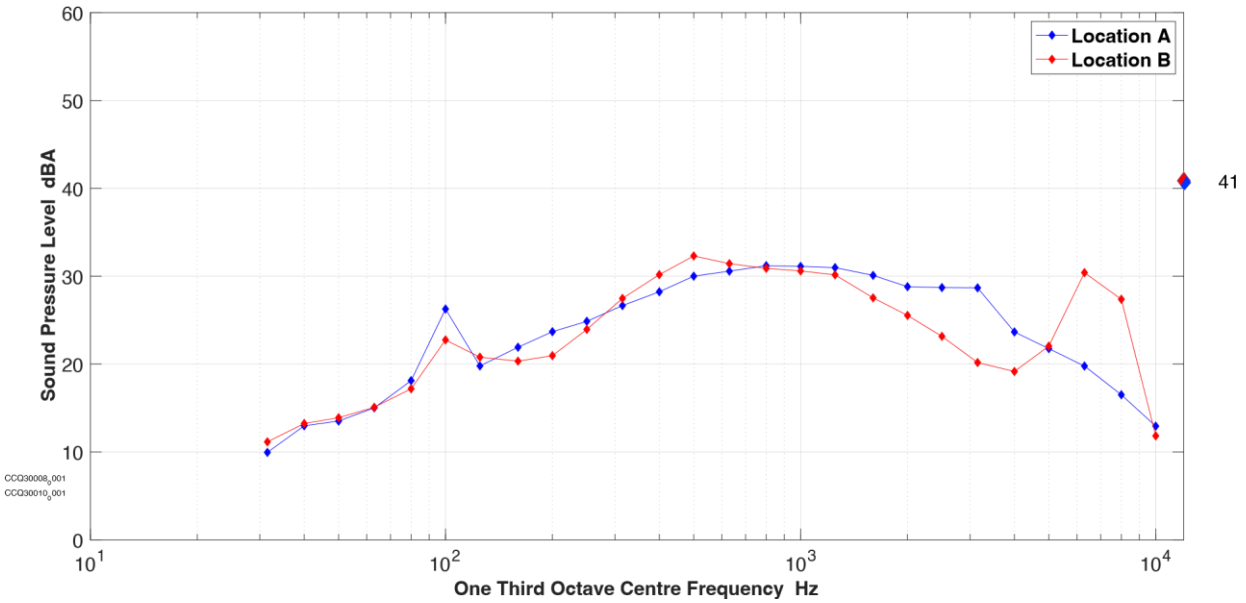
Insect / animal / rural noise was again audible, as was tree rustling due to the breeze.

Two measurements are presented for this location; the overall levels across the 10-minute interval, and a ~30 second period during which the crusher was clearly audible.

These measurements are summarised in Table 3.1.

TABLE 3.1: SUMMARY OF NOISE LEVEL TREND - LOCATION A

Location	So	und Pressure Level, dBA	
	L10	L90	LEQ
A	43.6	35.2	40.7
B	42.9	36.5	40.7
B (crushing clearly audible)	39.9	36.0	38.2



As per the Tas Noise Measurement Procedures Manual 2008 (the NMPM), measured noise is required to be adjusted for intrusive/dominant characteristics, namely tonality, impulsiveness, modulation and excessive low frequency. Each of these is discussed below.

Tonality

The measured noise at both locations A and B exhibits tonality in the 100Hz one-third octave band, likely due to the crusher. At location A, a tonal adjustment of 7dB is applicable in the 100Hz band. However, the resulting overall level remains at 41 dBA_{Adj}.

At location B, a 6 dB adjustment is applicable in the 100Hz band, with the overall level again remaining at 41 dBA_{Adj}. The measured spectra at location B also shows tonality in the 6300Hz band, however this is deemed to be sourced from local sources, and thus no adjustment of the quarry noise is appropriate here.

The spectrum measured at location B, during which the crushing noise was dominant, also required a 6dB adjustment in the 100Hz band, which adds 1dB to the overall level, resulting in a level adjusted for tonality of 39 dBA_{Adj}.

Impulsiveness

Comparison of measurements with *Impulse* and *Fast* time weighting has been used to determine the impulsiveness of the measured noise. The overall measurements at locations A and B were not impulsive under the NMPM.

The spectrum measured at location B during which the crushing noise was dominant was also assessed for impulsiveness, which determined an adjustment of 2dB was required. The overall level of crushing noise at location B, adjusted for impulsiveness and tonality, is then 41 dBA_{Adj}.

Low Frequency / Modulation

No adjustment for these features is applicable to the measurements.

NOISE MODELLING

Noise emissions from the quarry operations have been modelled using iNoise[2] software, which implements the ISO9613 algorithms for environmental noise. The predictions account for geometric divergence, attenuation due to screening, atmospheric absorption, ground/foliage regions, and ground absorption. The model assumes meteorological conditions favourable to noise propagation (receiver downwind of the source or a mild temperature inversion). The following assumptions and notes are relevant to the predictions:

2m topographical contours (from LIDAR data) have been used for the site and surrounding area.

It is noted that these contours are current as of the time of modelling. As the quarry develops, it progresses deeper into the cut in the hill, and further down. As such, the mobile equipment can only experience increased screening from the residences as a result of this, and thus the current operation is deemed worst-case. The crusher is not proposed to be relocated, and thus crusher noise emissions will not change.

The sound power level (SWL) of each piece of equipment is presented in Table 4.1.

The locations of each piece of equipment, along with the ground contours (2m intervals), are shown in Figure 4.1. The excavator is the southern-most moving source in the image, with the other two being wheeled loaders.

The ground in the quarry pit is given a ground factor of 0.2 (80% reflective).

The remaining ground outside the quarry is predominantly bush. It has been assigned a ground factor of 0.5 (50% reflective), which is conservative.

All equipment is modelled as operating continuously/simultaneously. This is extremely conservative, as this does not occur in practical day to day operation of the quarry.

As per the Tasmanian Noise Measurement Procedures Manual, noise levels are predicted at 1.2m above ground level.

TABLE 4.1: EQUIPMENT SOUND POWER LEVELS

Equipment	SWL (dBA)	SWL Source
Crushing/screening plant	116	Site measurements
Wheeled loader #1	107	NVC database
Wheeled loader #2	107	NVC database
Excavator	106	NVC database

[2] iNoise V2022.1 Pro, DGMR Software

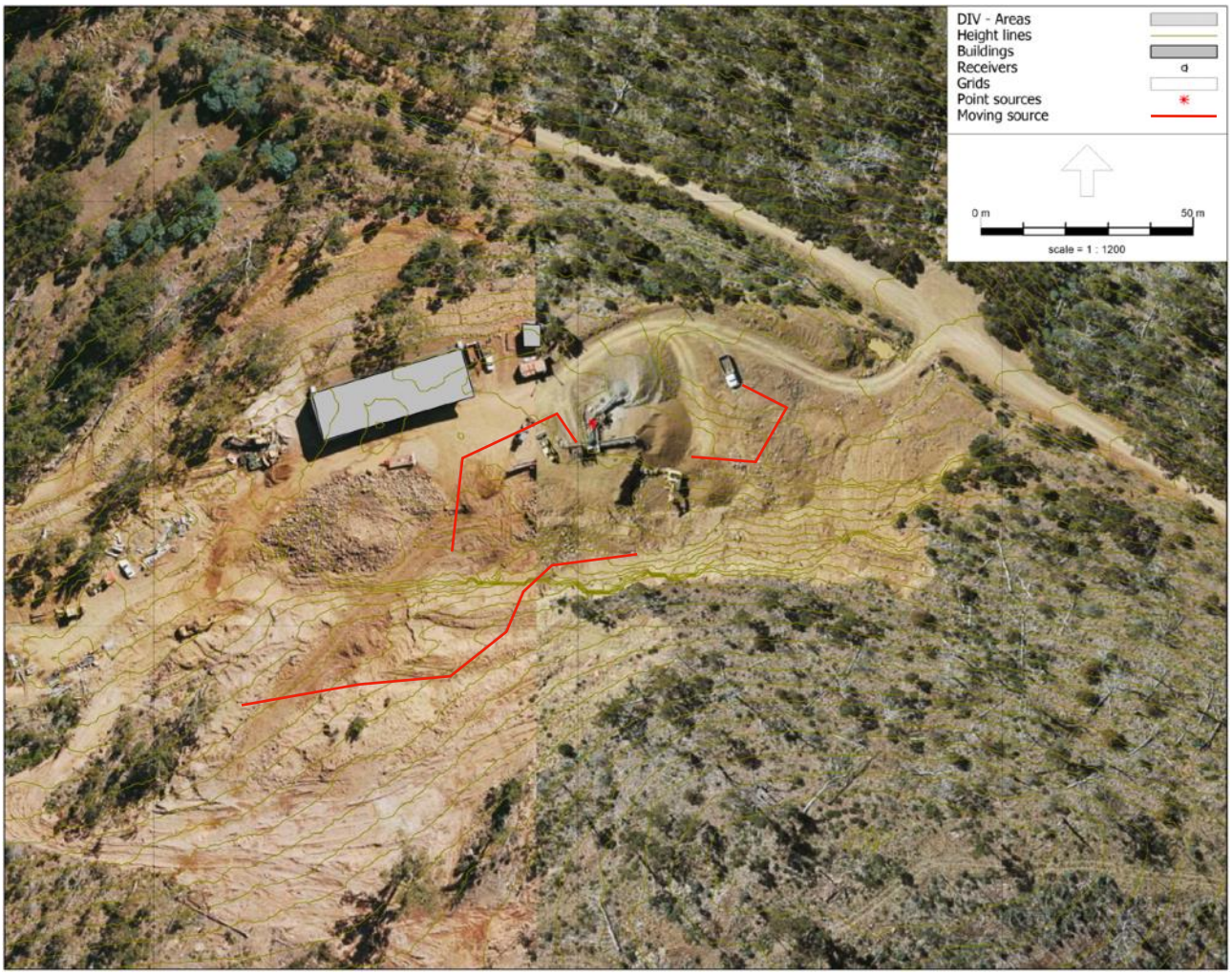


FIGURE 4.1: MODEL INPUTS - TOPOGRAPHICAL CONTOURS AND SOURCES SHOWN

The results are summarised in Table 4.2, and shown in Figure 4.2 via coloured noise contours, in 5dB increments. Note that no elevation data was available for the grey area at the bottom right of the figure, and thus the contours in this area are NOT accurate. Also note the jagged appearance in the contours at the edge of this region is an artefact of resolving the spatial resolution used to define the contour map (in this case a 20m square grid has been used), and not a physical effect.

TABLE 4.2: PREDICTED NOISE LEVELS AT RECEIVERS

Location	Sound Pressure Level [dBA]		
	Crushing plant only	Loaders/excavator	All Operations
A	37	39	41
B	40	32	41
C	41	33	42
D	< 20	< 20	20
E	31	34	36

F	39	30	40
G	27	30	32

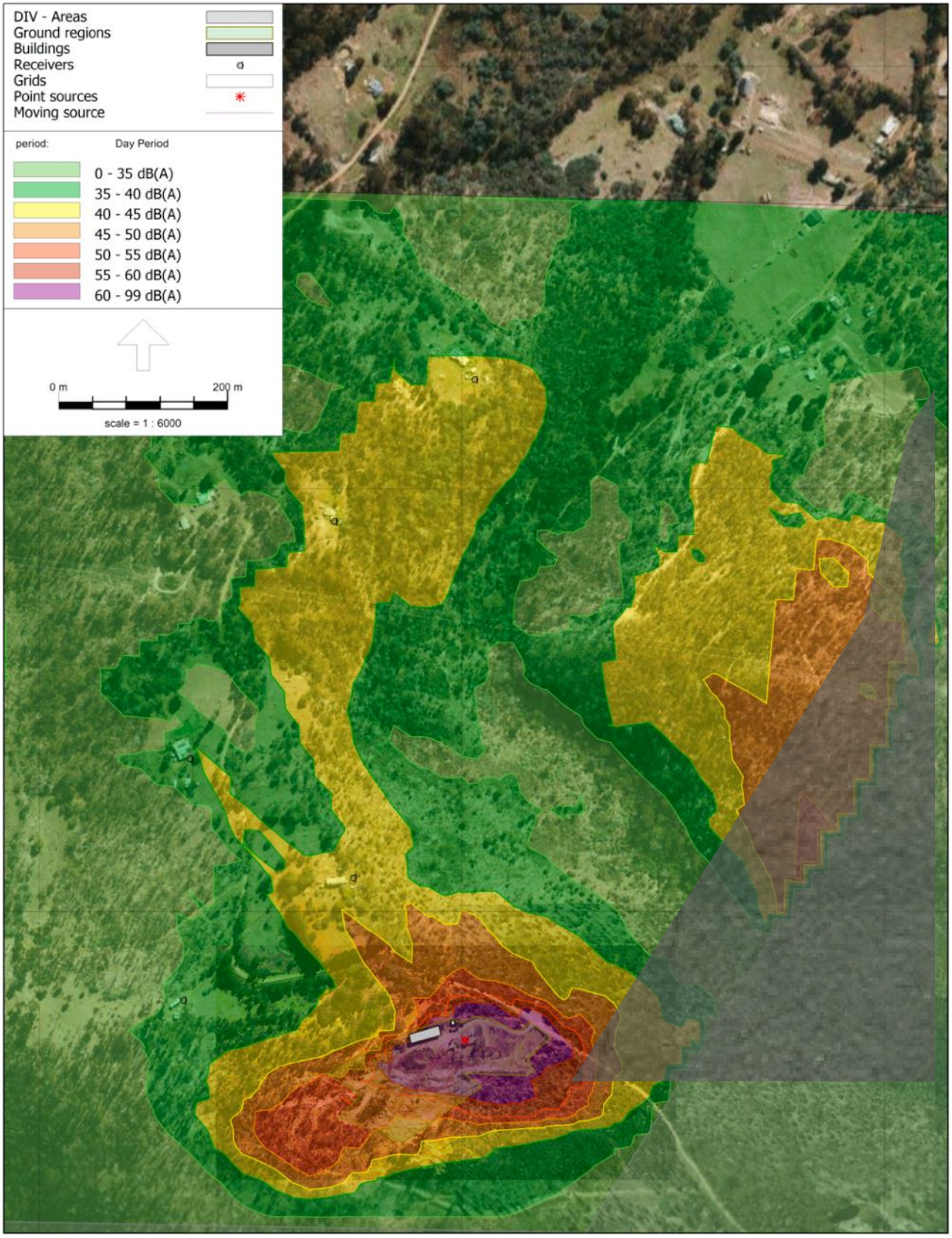

DIV - Areas
Ground regions
Buildings
Receivers
Grids
Point sources
Moving source
period:
Day Period
0 - 35 dB(A)
35 - 40 dB(A)
40 - 45 dB(A)
45 - 50 dB(A)
50 - 55 dB(A)
55 - 60 dB(A)
60 - 99 dB(A)
0 m
200 m
scale = 1 : 6000

FIGURE 4.2: PREDICTED NOISE CONTOURS - ALL EQUIPMENT OPERATIONAL

ASSESSMENT

Quarry operations, including crushing and all mobile equipment, are predicted to result in a maximum noise level (at any of the nearby residential receivers) of 42 dBA at location C, and 41 dBA at locations A and B. These levels are below the QCoP day time criterion of 45 dBA.

Measured levels at locations A and B were also 41 dBA. The measured noise level at location B, during a period of clear audibility of the crushing plant, was 38 dBA, and 41 dBA_{Adj}. These levels are again below the QCoP criterion.

It is noted that the proposed operating hours are entirely within the day time period under the QCoP, and thus the day time criterion is applicable. The assessment is summarised in Table 5.1, below.

In conclusion, the noise emissions from the quarrying operations are deemed to comply with the day time noise limit criterion under the EPA Tasmanian Quarry Code of Practice 2017.

TABLE 5.1: SUMMARY OF ASSESSMENT

Location	A	B	B (crusher dominant)
Measured SPL [dBA]	41	41	38
Tonality Adjustment	0	0	1
Impulsiveness Adjustment	–	–	2
Adjusted SPL [dBA_{Adj}]	41	41	41
Predicted SPL [dBA]	41	41	40*
Criterion	45	45	45
Assessment	Pass	Pass	Pass

* noise level for crusher only

Appendix – Acoustic Glossary

Ambient Noise	All noise associated with a measurement, and typically ignoring the particular noise under investigation. Typically measured as Leq and will usually comprise noise from many sources.
Background Noise	Background noise describes the underlying level of noise present in the ambient noise. It may be described as the average of the minimum noise levels measured, and is typically measured by the statistical L90 level.
Decibel [dB]	The scale used for describing sound. It is a logarithmic scale that uses a reference sound pressure of 20 µPa, or reference sound power of 10-12 Watts.
d*BA*	A-weighted decibel. The human ear does not perform linearly and is better at hearing high frequency rather than low frequency sounds, ie. low frequency sound at the same dB level as a high frequency sound will be perceived as quieter. To replicate the human ear response a frequency weighting, denoted as an A-weighting, is applied to the sound. A sound measured in this way is then an A-weighted sound pressure level with units dBA. Practically all noise is measured using the A-weighting.
Leq	Energy averaged sound pressure level over a period of time, usually 10 to 15 minutes. Units of decibels, typically A weighted (LAeq). Because the decibel scale is a logarithmic ratio, the higher noise levels have far more sound energy, and therefore the Leq level tends to indicate an average which is strongly influenced by short-term, high level noise events. Many studies show that human reaction to level-varying sounds tends to relate closer to the LAeq noise level than any other descriptor.
Frequency	Frequency is synonymous with pitch and has the units of Hertz (Hz) or cycles per second. A bass drum produces a low frequency sound, and a small bell a high frequency sound. The frequency range for human hearing is approximately 30Hz to 16kHz.
L10, L90…	Ln is the sound pressure level that is exceeded for n% of the time. Hence the L10 describes the noisier events during the interval, and L90 the quieter events. The L90 is often used to describe the background level. A significant variation between the L10 and L90 would indicate an environment where there is a strong variation in noise levels, and the background is not the dominant source. As the variation between the L10 and L90 decreases, the background becomes a more dominant.
Lmax	The instantaneous maximum level using the time response and frequency weighting set for the meter (typically Fast response, A weighted).
Inversion	A condition typically occurring on clear, still nights which is characterised by the air near the ground being colder than air at higher altitudes. The increasing speed of sound with altitude bends the sound back towards the ground causing a focussing of the sound in a small area. The inversion effect can cause increases in noise levels of 5 to 10 dB with greater increases in exceptional circumstances.

1622-2 Collins Cap Quarry 20/04/2023

Collins Cap Quarry - EPA Questions / NVC Followup

NVC conducted a noise assessment (document reference *1622-1 Noise Impact Assessment, 10/10/22*) in August 2022. The EPA has subsequently requested additional information. This document provides NVC's comment on this information.

Text in red if from the EPA. Text in black is by Jack Pitt, NVC.

It is noted that the text from the EPA was received via email from Scott Murison from Alltas Engineering. It appears to be missed some formatting and potentially content, particularly in the first paragraph. The text below is as-received from Alltas Engineering.

Comments on the Noise Impact Assessment by NVC are outlined below. Please note, a suitably qualified noise specialist will be required to respond to these comments.

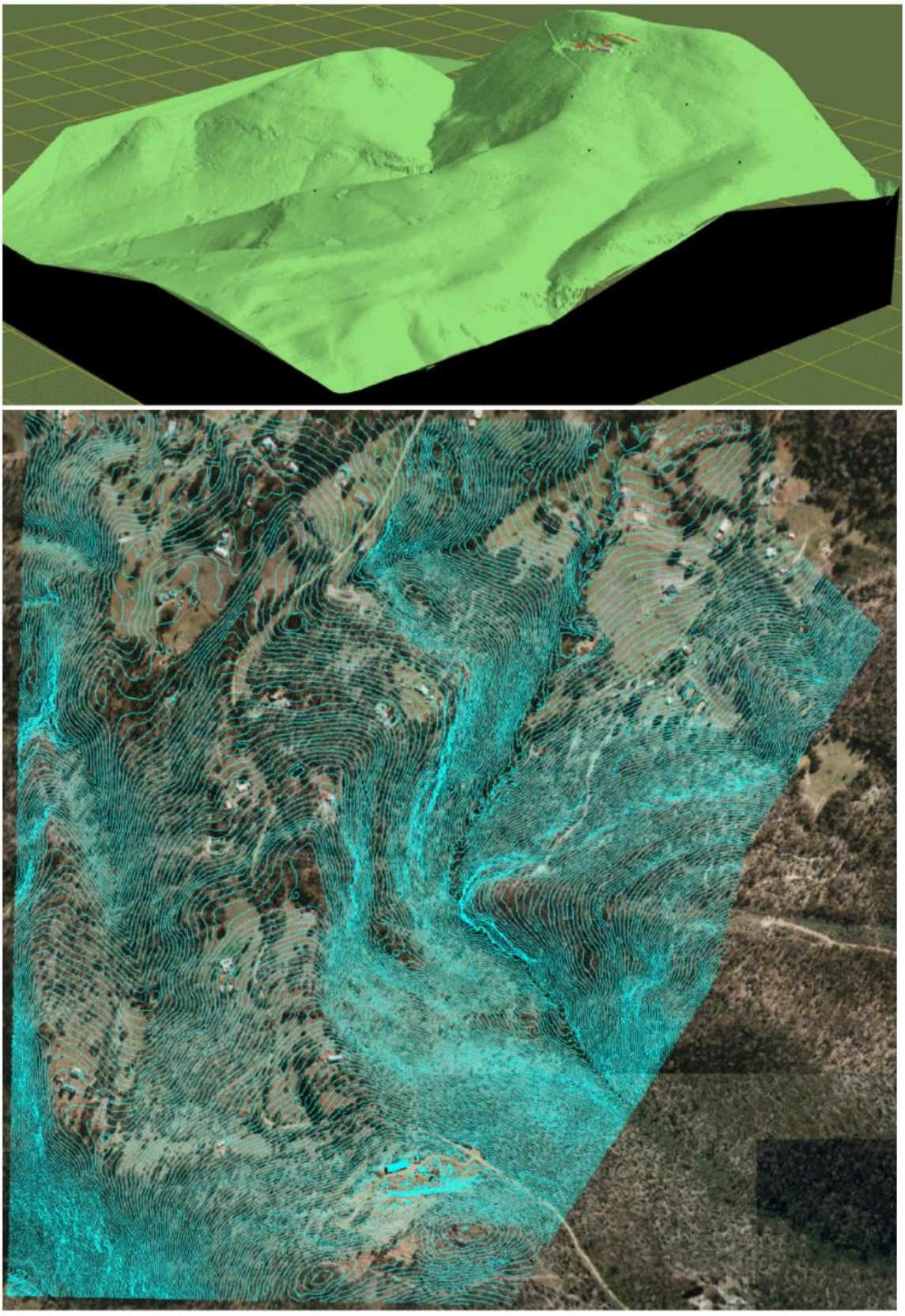
Background Noise - No background noise data has been provided in this report. Discuss why no background noise monitoring results are provided (note the EER to evaluate the existing acoustic environment of the surrounding noise sensitive

NVC were not provided any project-specific EER guidelines, and were told none were available. NVC were informed by Alltas Engineering that the EPA had only provided them with the Quarry Code of Practise (QCoP), thus it was assumed this was the relevant criteria for the project. The QCoP criteria does not rely on comparison to existing ambient/background noise levels, and thus none were measured.

Figures 1.2 and 4.1 are difficult to read and interpret the contour lines.
Please provide figures with clearly marked contours lines as the elevation information is highly relevant.

Please see figures below for additional context regarding elevation information.

1622-2 Collins Cap Quarry 20/04/2023



1622-2 Collins Cap Quarry 20/04/2023

Table 3.1 indicates that at receiver location B, the level is higher when the crusher was clearly audible, than when the crusher was not clearly audible. Please provide an explanation for these results.

The noise level in the area is variable, as it is sourced from a combination of rural noises (animals, local traffic, local private agricultural activity, trees rustling, etc. The crusher was only audible during periods when these other sources are at their lowest, hence the noise level during these periods is lower than the overall level across the measurement period.

1622-2 Collins Cap Quarry 20/04/2023

Table 4.1 lists four noise sources operating at the existing quarry, however, figure 4.2 shows only one point source. Model all noise sources (point and line) and clearly label them on both figures 4.1 and 4.2.

Figure 4.1 included one static (fixed) point source, and three moving point sources. This figure is included again below, with additional annotation (white text) to show which source is which piece of equipment.

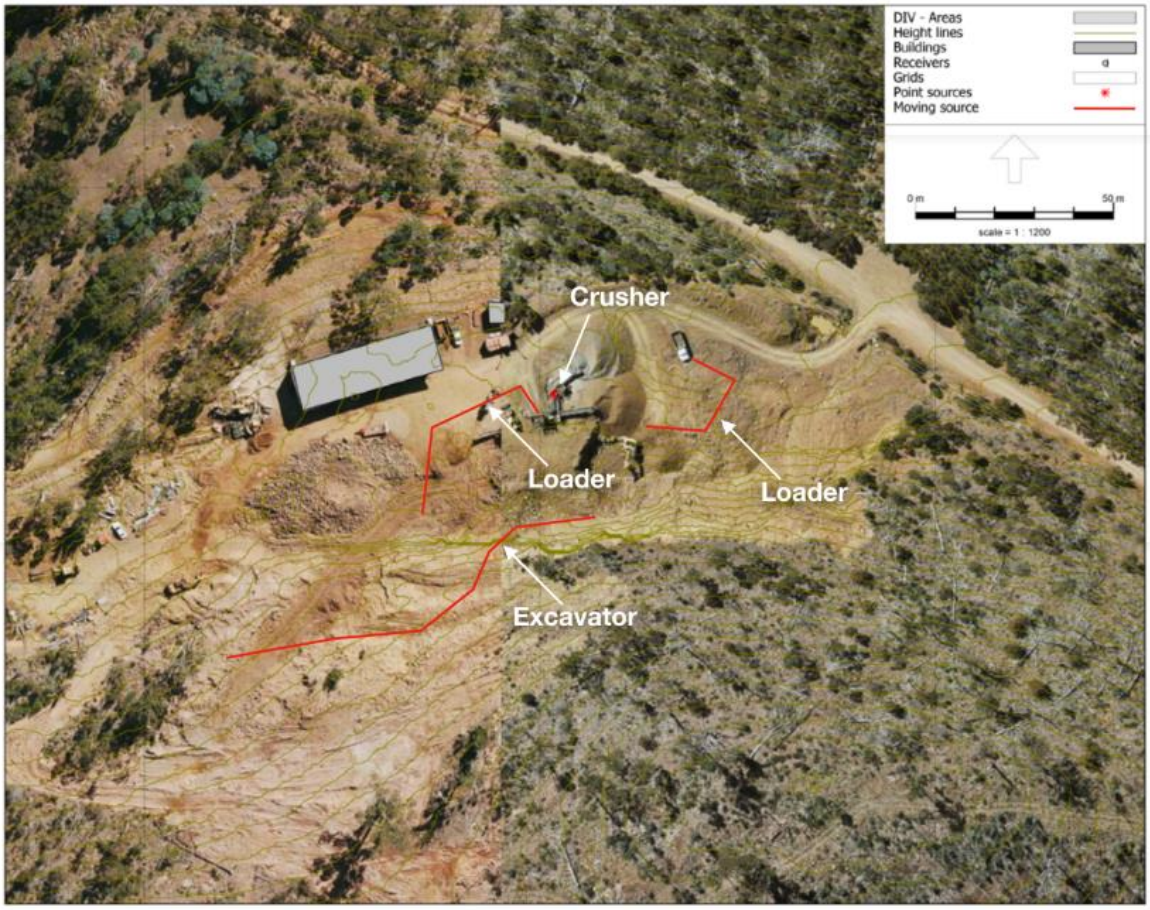


Figure 4.2 - The contour map does not include a wide radius and is not inclusive of all noise sensitive receivers listed in table 1.1. Please extend the model to include all noise sensitive receivers.

Limited contour information was available in this area - see the first two figures included in this document for the extents of the available contours. As such, predictions outside of this area will not be accurate. However, it is noted that all receivers for which predictions have not been completed are further from the quarry, and experience similar or more screening from it. As such, predicted levels at these receivers will all be below 40 dBA, and mostly below 35 dBA.

1622-2 Collins Cap Quarry 20/04/2023

Figure 4.2 - The northeast of the site is up to 60dB(A). There is no explanation as to why this is so much louder. Please provide an explanation as to why this is loud, and if any future developments are destined for this area. If so, what future mitigation measures might be required?

This portion of the hillside looks directly across to the quarry, and experiences no screening to the quarry noise sources. Due to the hilly terrain, most areas experience substantially more screening - see the topographical information included in this document for further context. Should future development for sensitive use occur in this area, substantial screening would be required to mitigate noise emissions from the quarry. It is noted this area is currently inaccessible, comprising dense bush.

Table 5.1 Tonality and impulse adjustments are not clearly described in this table. Please update this table to correctly read the measured results, the tonal adjustment, the impulse adjustment, and the overall value. Alternatively, the adjustments could be deleted from this table as they have been justified on page 57. In addition, please provide LCeq noise levels predicted at receivers to assess for low frequency noise.

As the comments above note, the adjustments are explained/justified in the report.

Modified version of Table 3.1 below, including measured C-weighted levels at worst-case receivers:

TABLE 3.1: SUMMARY OF MEASURED NOISE LEVELS

Location	Sound Pressure Level, dBA			SPL, dBC	Difference
	L10	L90	LEQ	LEQ	dBC - dBA
A	43.6	35.2	40.7	52.3	11.6
B	42.9	36.5	40.7	52.2	11.5
B (crushing clearly audible)	39.9	36.0	38.2	48.0	9.8

Table 5.1 - Measured results are the same as predicted (worst case scenario) results. It is understood the model simulates all equipment running simultaneously, continuously, and during adverse (for sound) weather conditions. Whereas the measured results were captured when only the crusher and 1 x loader were running intermittently. Please provide an explanation as to why the measured (adjusted) results are so similar to the predicted (modelled) values

The crushing / screening plant completely dominates noise emissions from the quarry, as it experiences the least screening to the receivers (compared to the mobile equipment), and has a sound power level 9-10 dB higher than the other items. As such, noise emissions from the site operations are controlled by the crusher.