

**STONE RIDGE QUARRY PROJECT**  
**IPC 14 November 2024**

**Additional Context to DPHI Assessment  
Report (SSD-10432)**

**Graham Lee**

## From the DPHI Assessment Report - October 2024

### 3.3 Resource and markets, Point 11:

- *“While it is difficult to quantify the amount of hard rock material required over the next few years, the recent influx of SSD applications for hard rock quarries in the region points to a strong demand for rock material in the short-to-medium term.”*
- Table 3.1 Proposed and Operating SSD Quarries within 30km of the Project

**Table 3-1 | Proposed and operating SSD hard rock quarries within 30km of the Project**

<b>Proposal / Project</b>	<b>Location</b>	<b>Production rate</b>	<b>Status</b>
Hillview Quarry	Stroud	750,000 tpa over 20 years	Applicant preparing EIS
Seaham Quarry	Eagleton	2 Mtpa over 30 years	Applicant preparing Submissions Report
Deep Creek Quarry	Limeburners Creek	500,000 tpa over 30 years	Approved in 2024, yet to commence operations
Eagleton Quarry	Eagleton	600,000 tpa over 30 years	Approved in 2024, yet to commence operations
Karuah South Quarry	Karuah	600,000 tpa over 25 years	Applicant preparing Submissions Report
Karuah East Quarry	Karuah	1.5 Mtpa until December 2034	Operating quarry approved in 2014
Brandy Hill Quarry	Brandy Hill	1.5 Mtpa until July 2050	Operating quarry approved in 2020

Table 3-1 | Proposed and operating SSD hard rock quarries within 30km of the Project

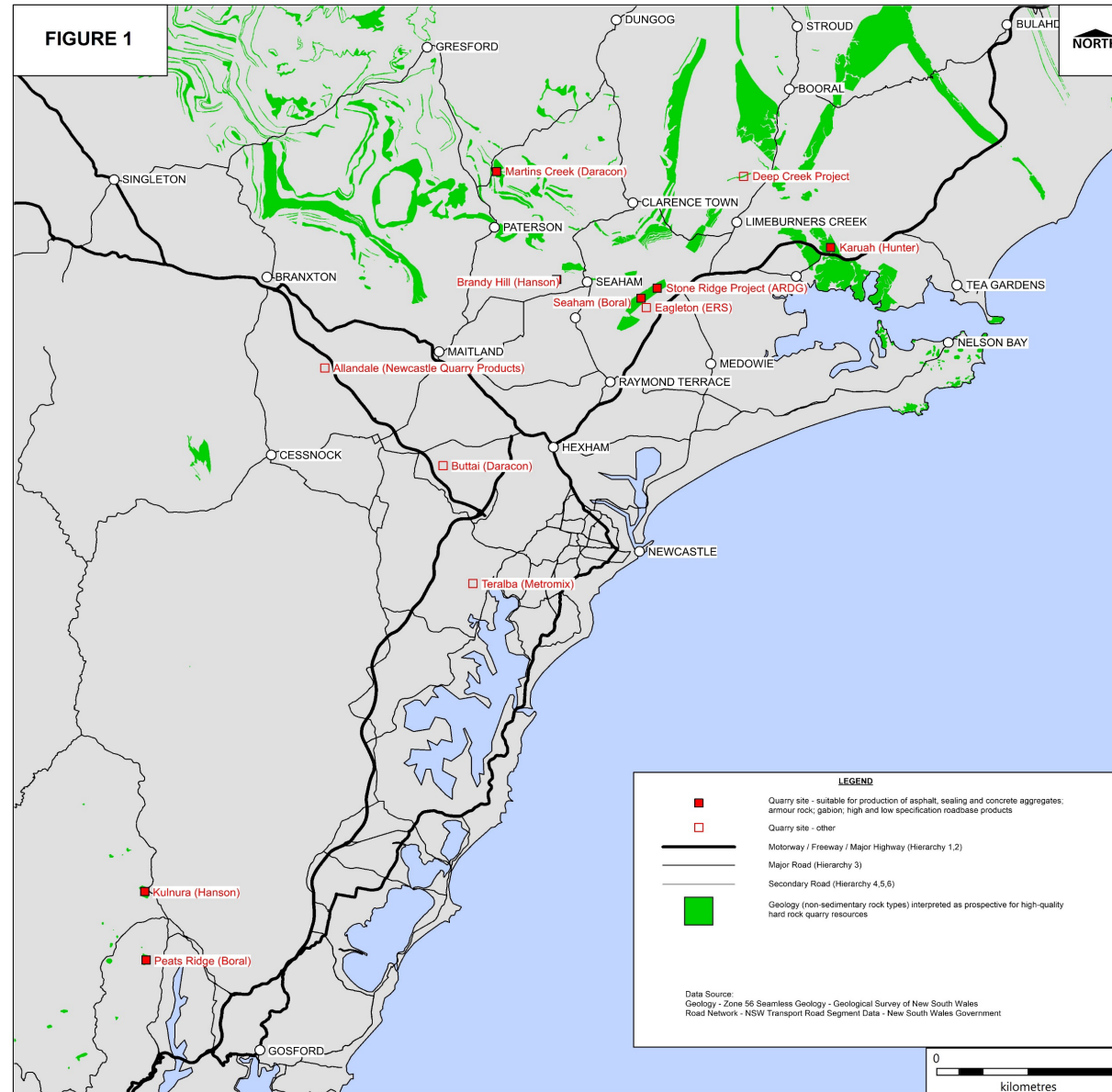
Proposal / Project	Location	Production rate	Status	
Hillview Quarry	Stroud	750,000 tpa over 20 years	Applicant preparing EIS	
Seaham Quarry	Eagleton	2 Mtpa over 30 years	Applicant preparing Submissions Report	← Yes
Deep Creek Quarry	Limeburners Creek	500,000 tpa over 30 years	Approved in 2024, yet to commence operations	
Eagleton Quarry	Eagleton	600,000 tpa over 30 years	Approved in 2024, yet to commence operations	
Karuah South Quarry	Karuah	600,000 tpa over 25 years	Applicant preparing Submissions Report	?
Karuah East Quarry	Karuah	1.5 Mtpa until December 2034	Operating quarry approved in 2014	← Yes
Brandy Hill Quarry	Brandy Hill	1.5 Mtpa until July 2050	Operating quarry approved in 2020	← Yes
Martins Creek Quarry	Martins Creek		Approval refused by IPC	← Yes

Dominant volcanic resource suited to production of high-specification aggregates

## Additional Context

- Important to differentiate between the two types of quarries represented in Table 3.1 - high-specification concrete and road surfacing vs lower-specification fill type products
- Market demand for concrete and road surfacing aggregate products is particularly high
- Homogeneous rock resource, with consistent properties, required for producing aggregate products that can obtain market acceptance
- A common misconception is that rocks are common and that each rock is the same as next rock
- All rocks are NOT the same - finding an appropriate high-specification aggregate resource requires very specific geology
- Volcanic rock types often suitable
- Sedimentary rock types (e.g. sandstone and conglomerate) are not suited for concrete and road surfacing
- Demanding geological constraints for high-specification aggregate resource Vs lower-spec fill resource

# Prospective Rock Occurrences & Quarries/Projects

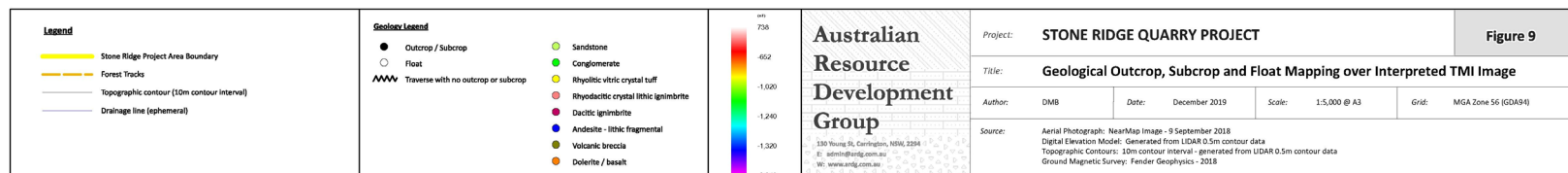
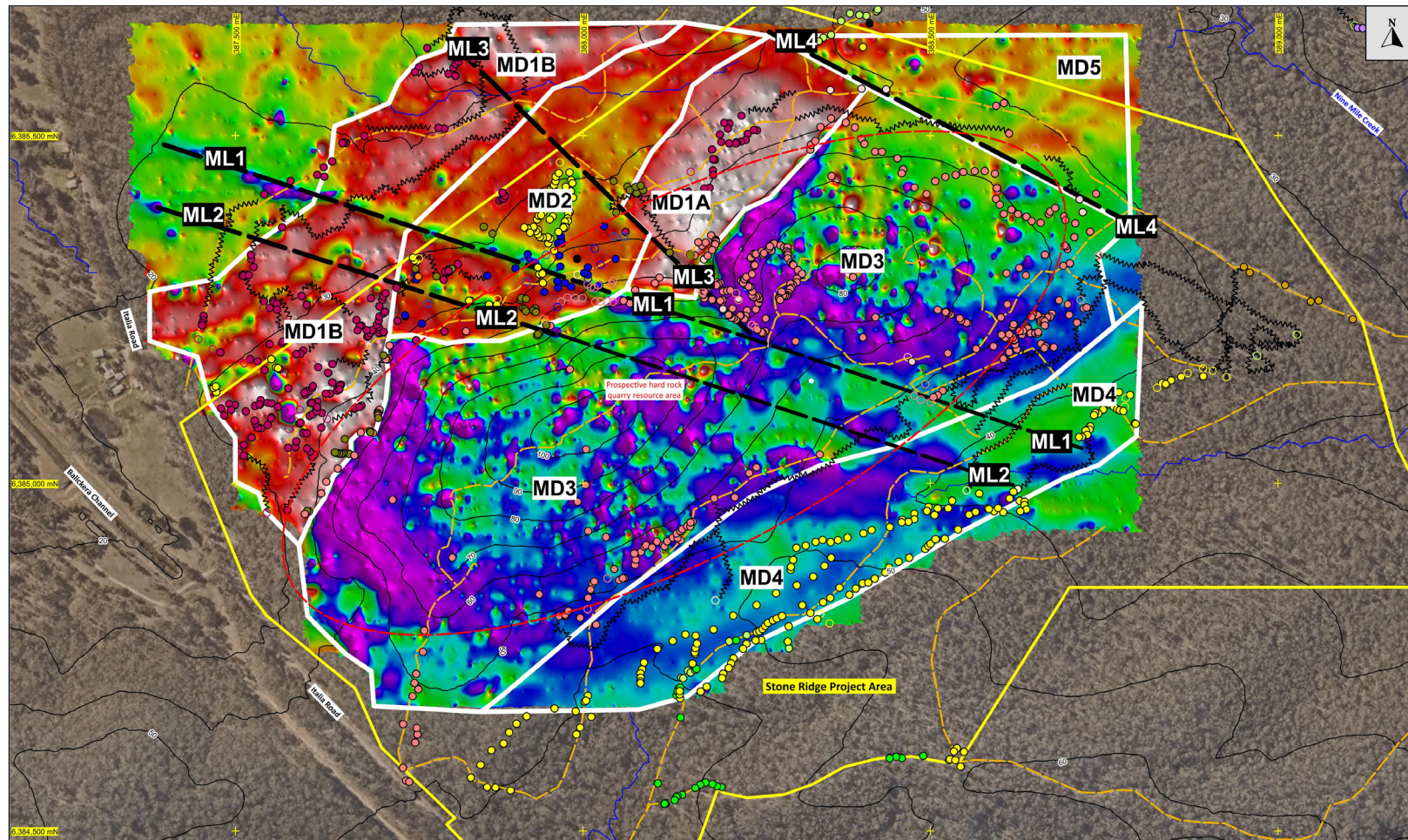


# Stone Ridge Resource Assessment

**How do we know that the Stone Ridge resource meets the high-quality aggregate specifications?**

- Detailed geological mapping
- Detailed ground magnetic survey
- 20 diamond drill holes for 1748.9 metres of drilling
- Down hole geophysical logging of all drill holes
- Microscopic petrographic examinations of 52 core samples
- 31 bulk samples for geotechnical testing – with wide range of critical tests undertaken on each sample
- Interpretative modelling of the results

# Ground Magnetics





# 20 drill hole locations showing trace



**Legend**

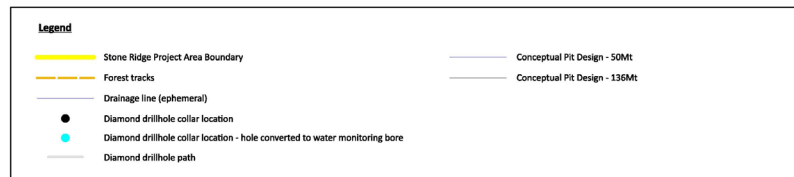
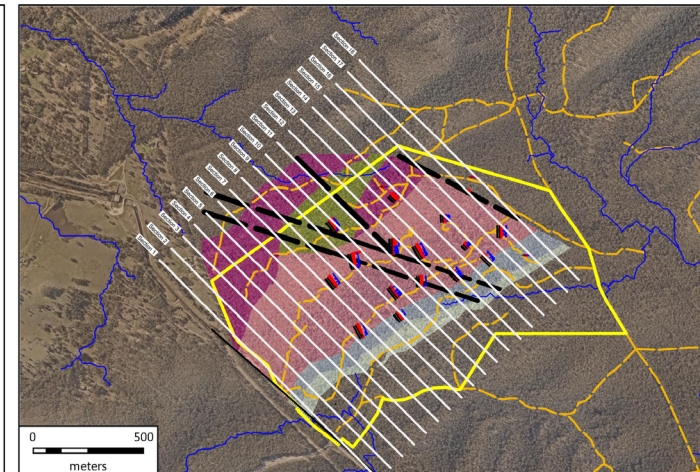
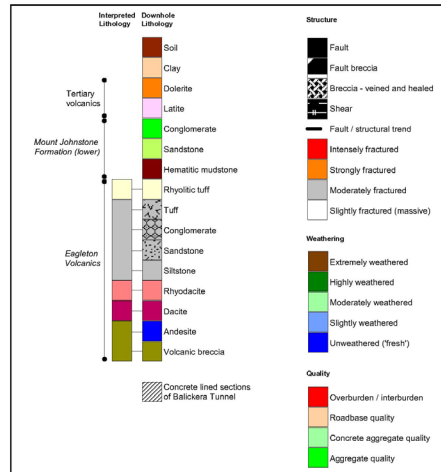
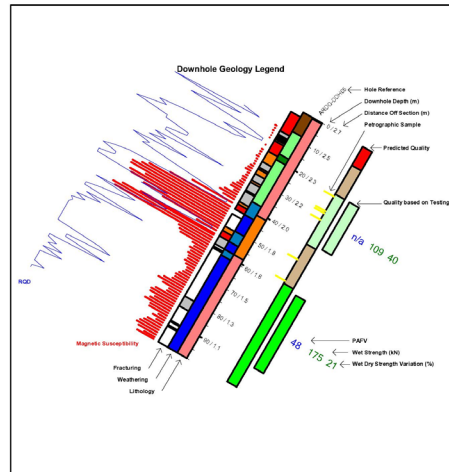
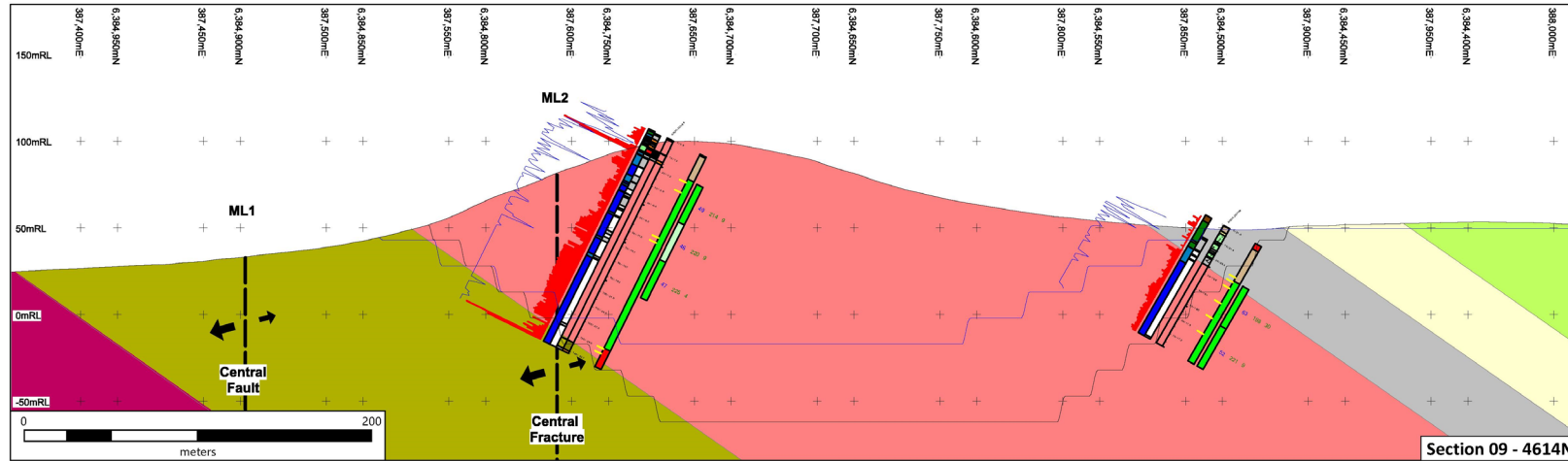
- Stone Ridge Project Area Boundary
- Forest tracks
- Topographic contour (10m contour interval)
- Drainage line (ephemeral)
- Diamond drill hole collar location
- Diamond drill hole collar location - hole converted to water monitoring bore
- Diamond drill hole path

<p><b>Australian Resource Development Group</b></p> <p><small>130 Young St, Carrington, NSW, 2204          P: www.ardg.com.au          W: www.ardg.com.au</small></p>	Project: <b>STONE RIDGE QUARRY PROJECT</b>		Figure 10		
	Title: <b>Diamond Drill Hole Collars and Hole Paths</b>				
	Author: DMB	Date: December 2019	Scale: 1:5,000 @ A3	Grid: MGA Zone 56 (GD494)	
	Source: Aerial Photograph: NearMap Image - 9 September 2018 Digital Elevation Model: Generated from LIDAR 0.5m contour data Topographic Contours: 10m contour interval - generated from LIDAR 0.5m contour data Diamond Drilling: Blacklows Drilling - 2018-2019				

# Diamond core — rhyodacite from hole ARDG-DDH16

<b>Australian Resource Development Group</b>	<b>Project:</b> STONE RIDGE QUARRY	<b>Drill Hole:</b> ARDG-DDH16	<b>Page:</b> 2 of 3
	<b>Collar Details</b> <b>Easting:</b> 388,063 mE <b>Northing:</b> 6,385,145 mN <b>Grid:</b> MGA Zone 56 (GDA94) <b>Elevation:</b> 100.0 mAHD <b>Dip:</b> -60 degrees <b>Azimuth:</b> 346 degrees grid <b>Hole Depth:</b> 141.3 m	<b>Hole Details</b> <b>Drilling Contractor:</b> Blacklaws Drilling <b>Drill Rig:</b> Hanjin <b>Drill Method:</b> HQ//I from surface <b>Date Commenced:</b> 25 March 2019 <b>Date Completed:</b> 1 April 2019 <b>Supervising Geologist:</b> Damon Bird	
			

# Section 14i - rhyodacite (pink)



<b>Australian Resource Development Group</b> <small>130 Young St, Carrington, NSW, 2334                  E: ardg@ardg.com.au                  W: www.ardg.com.au</small>	Project: <b>STONE RIDGE QUARRY PROJECT</b>	Figure 14i	
	Title: <b>Cross Section 9 - 4614N (+/- 37.5m) with Interpreted Geology</b>		
	Author: DMB	Date: December 2019	Scale: 1:2200 @ A3
	Source: Diamond Drilling: Blacklives Drilling - 2018-2019 Geological Logging: Damon Bird (ARDG) and Graham Lee (Graham Lee and Associates) Geological Interpretation: Damon Bird (ARDG)		Grid: MGA Zone 56 (GD84)

## Resource Assessment at Stone Ridge:

- ... is comprehensive
- ... has confirmed a substantial high-specification hard rock resource ideally suited for concrete and road surfacing applications
- ... suited to producing high wet-weather skid resistance aggregates for road surfacing - **safe roads**
- Has developed a Quarry development strategy for the site around this resource
- Ensures only those areas that need to be disturbed are disturbed
- The work undertaken confirms that the Stone Ridge Site resource is capable of supplying high-quality products listed in the modified DPHI Assessment Report Table 1 shown in slide 3

# Investigations

- Stone Ridge investigations are thorough and best practice in the industry
- Benchmark what should be expected generally in quarry assessment
- Aim to:
  - **Maximise** recovery of good rock
  - **Minimise** waste

## Concluding remarks

- Growing demand for quarry products in the Lower Hunter and Central Coast, driven by growth and supporting infrastructure development
- Very limited resource opportunities to locate suitable high-specification material sites for extraction
- More opportunities for low-grade producers (e.g. fill materials)
- Good sound investigation avoids costly mistakes and unnecessary disruption to neighbours and environment