JENKINS HIRE PTY LTD AND STROUD PTY LIMITED

EXPLORATION LICENCE 17/2014

ANNUAL REPORT - 8 September 2015 to 7 September 2016

15 November 2016

Prepared by

Van Diemen CONSULTING PO BOX 1 NEW TOWN TAS 7008

FOR

Jenkins Hire Pty Ltd and Stroud Pty. Limited

PO Box 616

Glenorchy TAS 7010

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Document Status

Revision	Author	Reviewer and Organisation	Date
1	R Barnes C McCoull	R Barnes, VDC	30-12-2016
1	R Barnes C McCoull	T Jenkins and C Bignell	9-1-2017

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	GEOCHEMICAL AND MINERALOGICAL ANALYSES: LIMESTONE, MAYDENA An unpublished Mineral Resources Tasmania report for Van Diemen Consulting by R S Bottrill and R N Woolley 4 April 2016
Attachment 5	Grid coordinates for drill holes

1. STATEMENT BY OPERATOR

This Annual Report 2015-16 for EL 17/2014 has been prepared by Van Diemen Consulting Pty Ltd on behalf of Jenkins Hire Pty and Stroud Pty Limited ('Licensee').

Jenkins Hire Pty (Mr Tim Jenkins) and Stroud Pty Limited (Mr Charles Bignell) acknowledge the contents of this Report are true and correct to the best of their knowledge.

Name Mr Tim Jenkins Date……

Position……..

Signature……

Name Mr Charles Bignell Date……

Position……..

Signature……

2. ABSTRACT

Objective

The objectives of the exploration works were to –

- Drill core samples in the northern extent of the limestone deposit to compliment the existing knowledge from previous works of limestone occurrence and chemical compisition; and
- Collect and analyse samples for calcium carbonate content.

The exploration program for the first two years, when the EL was issued, was focused on –

- Preliminary hydro geological survey and report;
- Civil works to establish a track for drill rig;
- Closed space rock chip sampling program;
- Drilling of at least two 20 m depth drillholes (or to proposed bench level depth) to test the continuation of the limestone;
- Additional geological mapping; and
- Laboratory analysis of sampling results.

Methodology

Hydrogeological review

A hydrogeological review was prepared by William C. Cromer Pty. Ltd (Cromer 2014) to provide guidance on:

- the likelihood that the quarry site has significant karst features that will be affected by operations,
- measures that may be introduced to minimise the impact of the operation on known karst features, and
- whether there are areas within the quarry footprint with potentially lower risk of encountering unknown karst features during operations.

Drilling and Sampling

Drilling was conducted using a Sandvik DP1100. A total of seven drill holes were made into the bedrock as shown in Figure 3 (coordinates for holes are in Attachment 5).

The depth to which the drill holes were drilled reflects the depth of the likely quarrying faces that would be installed for the quarry, if approved. That is, the holes were drilled to a depth no lower than Pillingers Creek, indicating why Drill Holes 6 and 7 were only drilled to shallow depths (14 and 7 m respectively).

The sampled material was a fine powder formed by the percussion drill used to drill the sampling holes (Plate 4). Approximately 1 kg of sample material per sampling location was provided to MRT for analysis. Samples were not sieved in the field. Samples were collected at every 3.5 to 4 m depth, making a total of 6 samples per 21 m deep bore hole. The sample number per bore hole is recorded in Attachment 3.

Sample Analyses

Drill chip samples were analysed chemically by Mineral Resources Tasmania. The techniques employed by MRT in conducting the laboratory-based analyses are described in Attachment 4.

Results

The works conducted in the reporting period are listed below –

- Preliminary hydro geological survey and report;

- Civil works to reinstate a disused track for drill rig access;
- Drilling of seven drillholes to test the continuation of the limestone (maximum drill hole depth was 21 metres); and
- Laboratory analysis of sampling (drill hole acquired samples) results.

Hydrogeological review

From a hydrogeological perspective, the key observations and inferences made by Cromer (2014) for the middle reaches of the Pillingers Creek catchment are:

- A series of moderately northeast-dipping, Ordovician Gordon Group limestones faulted against Parmeener Supergroup sediments to the north; all extending to depths below mean sea level;
- One or more unconfined (locally confined) fractured rock aquifers with a water table as a subdued replica of the land surface, in which local, intermediate and regional groundwater conditions exist;
- The water table seasonally intersects Pillingers Creek over parts of its length, but in other parts, groundwater conditions are disrupted by karst so that water flow is underground and the watercourse is a dry valley;
- Depth to groundwater exceeds 15m most if not all the time on the slopes near the proposed quarry; and
- The karst features include dolines, sinkholes, caves and springs in the limestone. Water flow in most features is intermittent or ephemeral, and some appear to be currently dry.

Drilling, Sampling and Analyses

Exploration works in the northern section of the exposure, near Roberts Road, identified in Drill Holes 1, 4, 5, 6 and 7 limestone at surface or very shallow depth (<10 cms). Drill holes 2 and 3 were in mudstone from surface (with overlaying mudstone derived pebbly sandy silty soil).

The geological mapped mudstone – limestone fault is approximately shown in Figure 1 however the exploratory works place the fault slightly to the west, downslope of its mapped extent.

The colour and structure of the sampled material is consistent with the descriptions provided by Calver (1990) for the Benjamin and Cashion units. The material was not described nor assessed to the lithofacies described by Calver 91990), at least for the Benjamin Unit, as this level of detail was not the focus of the exploratory work – it was simply to determine the presence of limestone and its calcium carbonate content.

The samples ranged between 32-86 wt.% CaCO3, averaging 75wt.% CaCO3, assuming all Ca calculated as $CaCO_3$. Pure limestone is 100% calcite or $CaCO_3$. The geochemical and mineralogical analyses of the drill holes indicate impure limestones, which appear to be a little lower in grade than many other Ordovician limestones in the area, which typically range between 77-99 wt/% $CaCO_3$ (Calver, 1990). Despite this, the limestone present is of sufficient grade to be used as a soil ameliorant to manage the undesirable consequences of soil acidification and its subsequent losses to agricultural production.

Recommendations

Given the results, no further exploration works are proposed for the immediate area as it is evident that there is limestone (Gordon Group) present near Roberts Road, and that this is an extension of the limestone unit present further south (as described and mapped by Calver 1990, 1992).

A Mining Lease application, which includes a proposed mine plan, has been submitted to Mineral Resources Tasmania on the back of the results of the exploratory works. MRT have issued a number, 2018P/M, for the lease which is pending.

The mine plan in Figure 4 forms the basis of an application for a Mining Lease and is the subject of an assessment currently being conducted by the planning authority (Derwent Valley Council) in consultation with the Environment Protection Authority.

Future exploratory works would be focused on the mine plan prepared for the extraction of material, as identified in Figure 4. These works would likely occur when blasting is scheduled to occur to minimise expenditure for floating machinery to and from the location.

3. INTRODUCTION

3.1 GEOLOGICAL SETTING

The Maydena area is an irregular depression bounded by the Maydena Range to the south and east, and the Mt. Field plateau to the north. The regional geology of the district comprises inliers of Ordovician and Cambrian rocks juxtaposed with and overlain by Parmeener Supergroup sediments, the latter intruded by sheets of Jurassic dolerite (Hughes 1957, Calver *et al.* 2007). The older rocks are mostly obscured by Quaternary unconsolidated sediments in valley floors. The Parmeener rocks and dolerite tend to occupy the higher ground (eg Mt Field plateau, and Maydena Range). Major normal faulting is roughly NW – SE, and E – W (Cromer 2014).

The presence of a limestone resource at Risbys Basin/Pillinger Creek, which is the target area of the Exploration Licence for exploratory works, has been documented since the 1950's as a potential source of limestone for industrial and agricultural purposes.

Information about the historical works can be found in Hughes (1957), Hughes and Everard (1953) Calver (1977, 1990, 1992) and Wrigley (1992, 1993).

The Roberts Hill area (includes Risbys Basin/Pillinger Creek) is composed of Ordovician Limestone units capped by mudstone and sandstone units of the Permian Lower Parmeener supergroup (Figure 1). The limestone has been subdivided into three major units based on stratigraphic relationships, purity and other characteristics (Calver 1990, 1992, Wrigley 1992, 1993).

From youngest to oldest the geological units are –

- the Benjamin Limestone (c.1300m thick; possibly prospective);
- the Cashions Creek Limestone (c. 150m thick; massive, oncolitic limestone; prospective); and
- the Karmberg Limestone (c. 450m thick; chert-bearing, impure; not prospective)

The Cashions Creek limestone is the highest grade of the three units with $CaCO_3$ content of > 95% (Wrigley 1992). It is also the unit most prone to developing karst features/systems as evident from research in the nearby Junee-Florentine karst where all three comparable limestone units outcrop extensively of which the Cashions Creek unit has the most caves and sinkholes.

The extent and grade of the limestone resource in the Pillingers Creek catchment has previously been mapped by Calver (1990) and Wrigley (1992). The areas of drilling and rock chip sampling by previous workers is shown in Figure 2.

Current geological knowledge indicates that the widest extent of exposed limestone outcrop is in the upper catchment of Pillingers Creek, on the lower slope of Scotts Lookout. Local relief of the limestone is in the order of 280 m in the southern section of the Pillingers Creek Basin and c.70 m on the northern end of Roberts Hill. The limestone units thin to the north where limestone outcrops on the western slopes of Roberts Hill. The limestone units' dip to the east beneath cover strata (Permian sedimentary sequences).

Upslope sections of limestone bedrock are often covered with a thin layer (<0.3 m thick) of colluvium comprised of silty sandy pebbly mudstone derived sediments. Colluvium is deeper in drainage areas and those associated with historical mass movement of soil. In steeper sections of exposed bedrock, the only covering of the limestone is provided by moss and leaf litter (Plate 1), with some areas covered by a humic-rich soil held together by tree roots (mainly *Pomaderris apetala* which thrives on limestone skeletal soils in moderately high rainfall areas – eg. Mole Creek, Florentine Valley).

Plate 1. Rock and soil types associated with relevant sections of Exploration Licence E17/2014

Exposed limestone outcrop covered with moss and ferns

Exposed limestone bedrock with moss covering and some humic soil formation

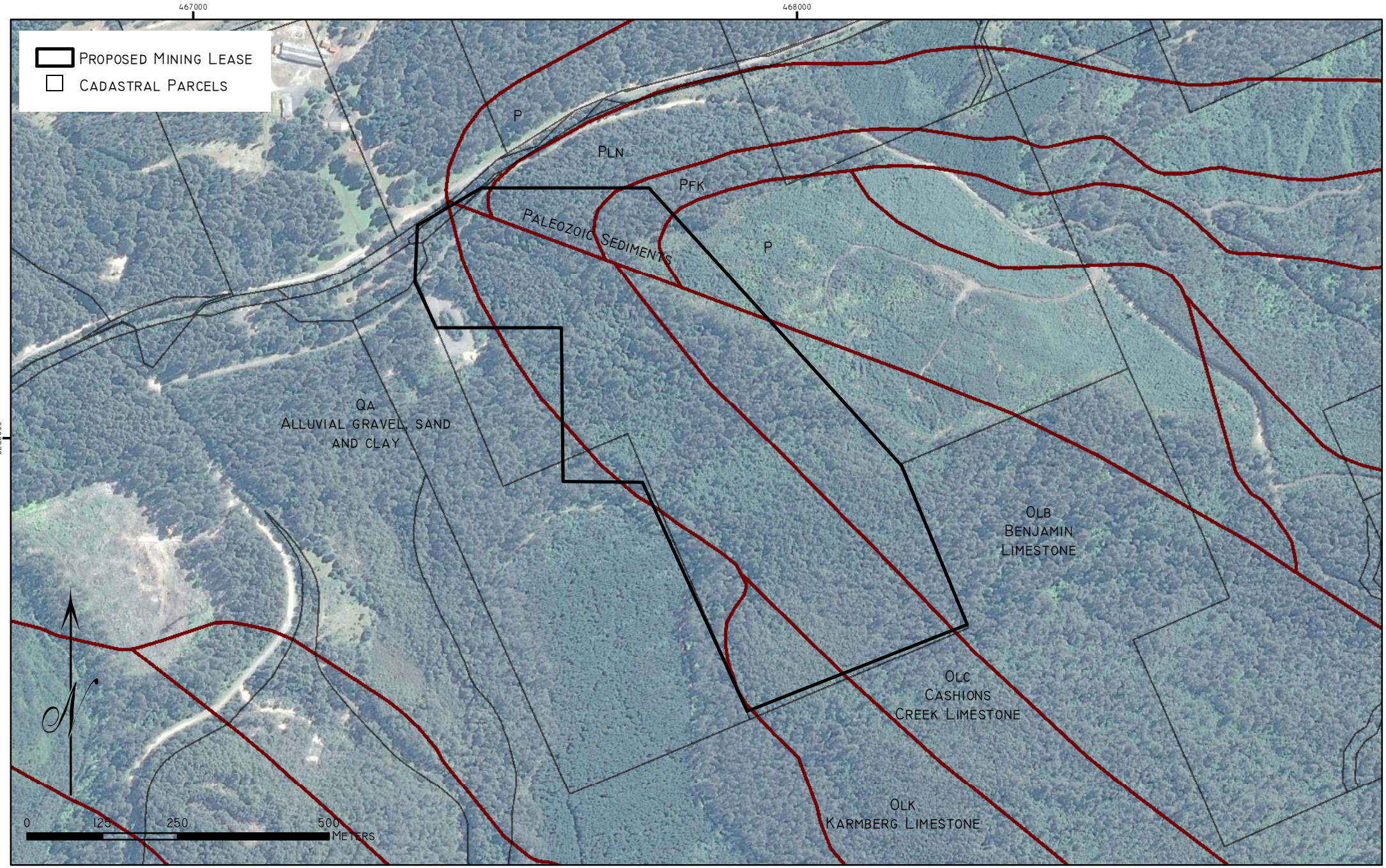
Pebbly mudstone derived soils occur on upper slopes of Roberts Hill

Rounded alluvial cobbles and associated Quaternary deposits dominate Risbys Basin

3.2 OBJECTIVES OF EXPLORATION

The objectives of the exploration works were to –

- Drill core samples in the northern extent of the limestone deposit to compliment the existing knowledge from previous works of limestone occurrence and chemical composition (see Figure 2); and
- Collect and analyse samples for calcium carbonate content.



Upper Derwent Valley Hard-Rock Quarry
EL17/2014 Annual Report
Figure 1: Geology (1:25000 - MRT)

Van Diemen Consulting

PO Box 1 Newtown TAS 7008

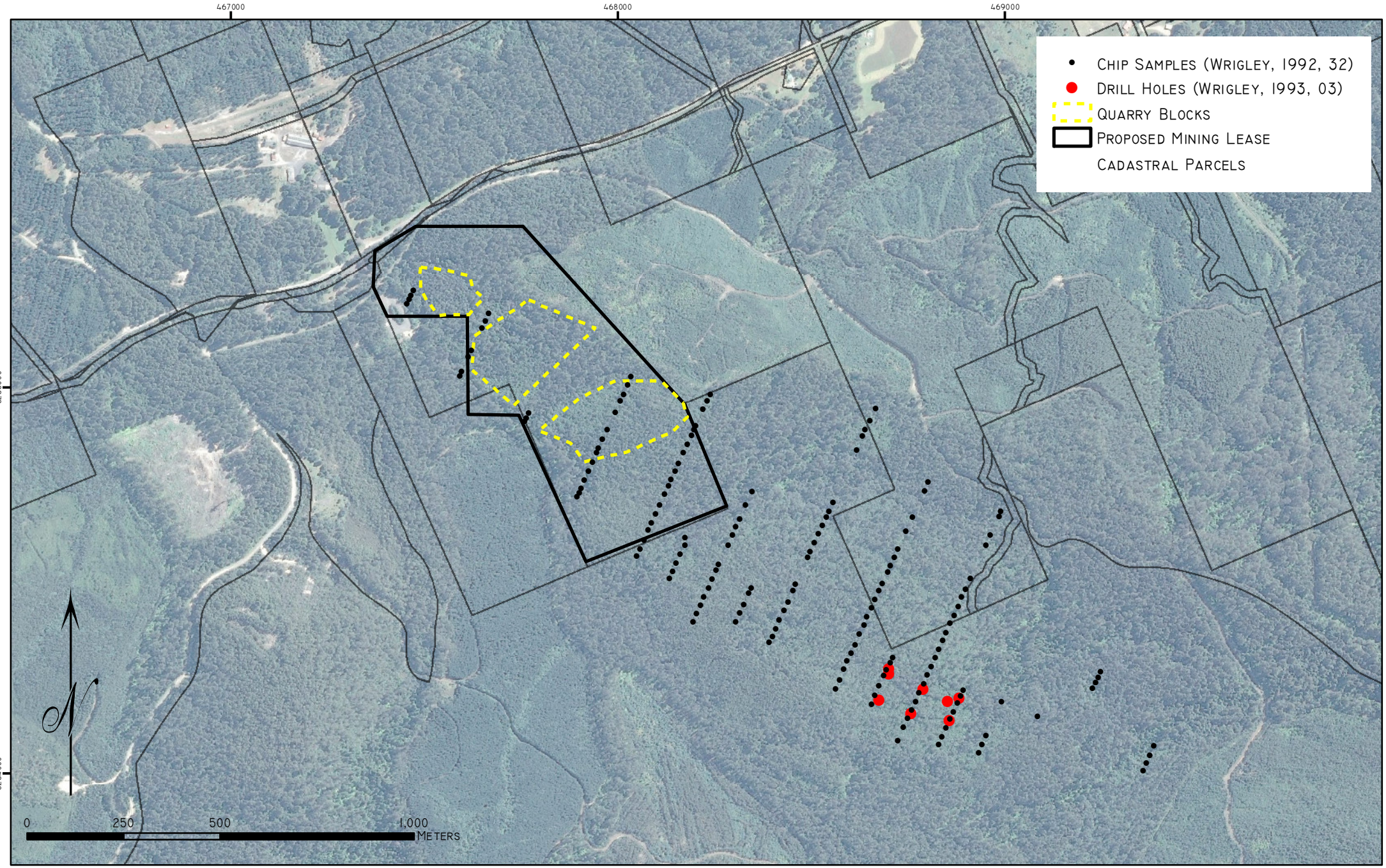
Base data by TASMAP. © State of Tasmania
Base image © Google Earth

DATUM: GDA94
GRID: MGA ZONE 55

TASMAP: MAYDENA

CLIENT: JENKINS HIRE PTY LTD AND STROUD PTY LIMITED

DATE: 3rd MAY 2016



Upper Derwent Valley Hard-Rock Quarry
EL17/2014 Annual Report
Figure 2: Exploration works – historical

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TASMAP: MAYDENA

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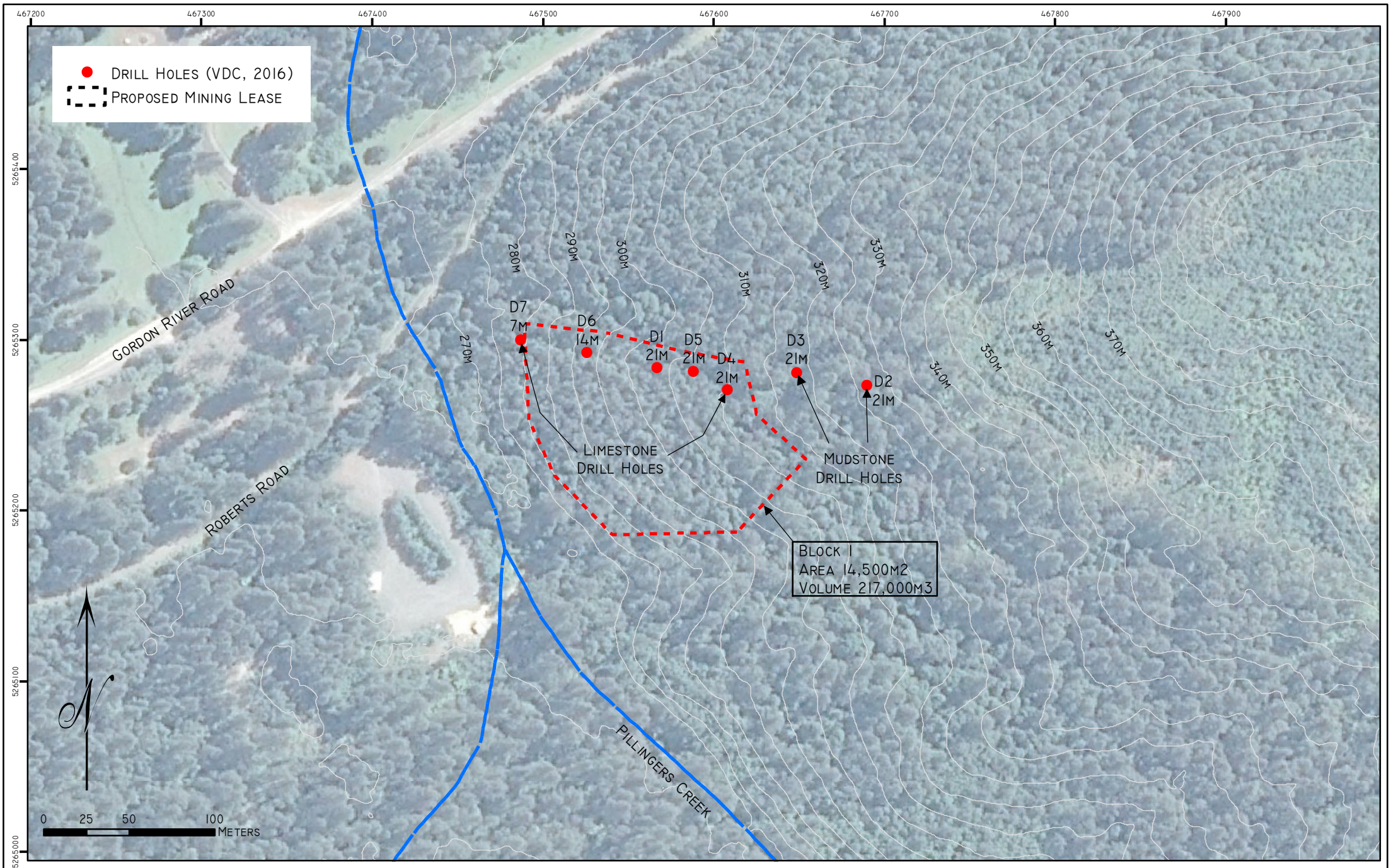

Upper Derwent Valley Hard-Rock Quarry
EL17/2014 Annual Report
Figure 3: Exploration works – recent

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DATUM: GDA94
GRID: MGA ZONE 55

TASMAP: MAYDENA

CLIENT: JENKINS HIRE PTY LTD AND STROUD PTY LIMITED

DATE: 3rd MAY 2016

3.3 TENEMENT DETAILS

The following details describe the licence –

Licence EL17/2014 - 3 sq km/blocks	
Status:	Granted
Holder:	Jenkins Hire Pty Ltd and Stroud Pty. Limited PO Box 616 Glenorchy TAS 7010 Jenkins Hire Pty Ltd and Stroud Pty. Limited is a 50 - 50 joint venture project.
Locality:	Roberts Road (2km SW of Maydena)
Product Category(s):	Category 3 - Construction Minerals, Category 5 - Industrial Minerals, Semi/Precious Stone

GDA94 is the datum used in this report.

3.3 REPORTING PERIOD

The reporting period is 8 September 2015 to 7 September 2016.

This is the first annual report for EL17/2014.

4. REVIEW OF PREVIOUS WORK

Drilling at Maydena by the Division of Mines and Mineral Resources between 1990 and 1992 (Calver 1990 and 1992) defined a resource of 5.5 million tonnes at 93% $CaCO_3$ and 0.6% Mg. This recent work (see Bacon *et al.* 2008) revealed a resource of 5.5 million tonnes at 93% $CaCO_3$ and 0.6% Mg, with very large reserves of lower grade limestone occurring in the nearby Florentine Valley. As noted by Bacon *et al.* (2008), the resource at Maydena (Wrigley 1993) remains undeveloped.

Previous exploratory works of the most relevant sections of bedrock geology for the proposed quarry are by Wrigley (1992 and 1993) and Calver (1990).

The areas of drilling and rock chip sampling by previous workers is shown in Figure 2.

The wealth of information available highlights the presence of a large suitable resource for agricultural, and possibly industrial, uses.

5. EXPLORATION COMPLETED DURING THE REPORTING PERIOD

5.1 PROGRAM FOCUS

The exploration program for the first two years, when the EL was issued, was focused on –

- Preliminary hydro geological survey and report;

- Civil works to establish a track for drill rig;
- Closed space rock chip sampling program;
- Drilling of at least two 20 m depth drillholes (or to proposed bench level depth) to test the continuation of the limestone;
- Additional geological mapping; and
- Laboratory analysis of sampling results.

5.2 WORKS CONDUCTED IN REPORTING PERIOD

The works conducted in the reporting period are listed below –

- Preliminary hydro geological survey and report;
- Civil works to reinstate a disused track for drill rig access;
- Drilling of seven drillholes to test the continuation of the limestone (maximum drill hole depth was 21 metres); and
- Laboratory analysis of sampling (drill hole acquired samples) results.

5.2.1 Hydrogeological survey/report

A hydrogeological review (mainly desktop-based) was prepared by William C. Cromer Pty. Ltd (Cromer 2014) to provide guidance on:

- the likelihood that the quarry site has significant karst features that will be affected by operations,
- measures that may be introduced to minimise the impact of the operation on known karst features, and
- whether there are areas within the quarry footprint with potentially lower risk of encountering unknown karst features during operations.

The report is in Attachment 1.

From a hydrogeological perspective, the key observations and inferences made by Cromer (2014) for the middle reaches of the Pillingers Creek catchment are:

- A series of moderately northeast-dipping, Ordovician Gordon Group limestones faulted against Parmeener Supergroup sediments to the north; all extending to depths below mean sea level;
- One or more unconfined (locally confined) fractured rock aquifers with a water table as a subdued replica of the land surface, in which local, intermediate and regional groundwater conditions exist;
- The water table seasonally intersects Pillingers Creek over parts of its length, but in other parts, groundwater conditions are disrupted by karst so that water flow is underground and the watercourse is a dry valley;
- Depth to groundwater exceeds 15m most if not all the time on the slopes near the proposed quarry; and
- The karst features include dolines, sinkholes, caves and springs in the limestone. Water flow in most features is intermittent or ephemeral, and some appear to be currently dry.

5.2.2 Re-instatement of access track

An existing track was used to access the bore hole locations. The track was quite overgrown in parts with understorey ferns and scrub species, mainly native currant, bracken, mother-shield fern and dolly bush. The

track continues south-easterly from the final bore hole. Trees and scrub species that were growing along the track were either felled and pushed parallel to the side of the track. The road and track (snig) construction principles of the *Forest Practices Code* (2015) were applied. The soils are not highly erodible.

Plate 2. Track re-furbishment to enable access to the drill hole locations

Grass verge of Roberts Road leading into the existing track which was refurbished for site access to conduct drilling

Grass verge of Roberts Road leading into the existing track which was refurbished for site access to conduct drilling

5.2.3 Drilling

Drilling was conducted using a Sandvik DP1100 (see Attachment 2 for machine specifications).

A total of seven drill holes were made into the bedrock as shown in Figure 3.

The depth to which the drill holes were drilled reflects the depth of the likely quarrying faces that would be installed for the quarry, if approved. That is, the holes were drilled to a depth no lower than Pillingers Creek, indicating why Drill Holes 6 and 7 were only drilled to shallow depths (14 and 7 m respectively).

Exploration works in the northern section of the exposure, near Roberts Road, identified in Drill Holes 1, 4, 5, 6 and 7 limestone at surface or very shallow depth (<10 cms).

Drill holes 2 and 3 were in mudstone from surface (with overlaying mudstone derived pebbly sandy silty soil).

The geological mapped mudstone – limestone fault is approximately shown in Figure 1 however the exploratory works place the fault slightly to the west, downslope of its mapped extent.

The sampled material was a fine powder formed by the percussion drill used to drill the sampling holes (Plate 4). Approximately 1 kg of sample material per sampling location was provided to MRT for analysis. Samples were not sieved in the field. Samples were collected at every 3.5 to 4 m depth, making a total of 6 samples per 21 m deep bore hole. The sample number per bore hole is recorded in Attachment 3.

The colour and structure of the sampled material is consistent with the descriptions provided by Calver (1990) for the Benjamin and Cashion units. The material was not described nor assessed to the lithofacies described by Calver 91990), at least for the Benjamin Unit, as this level of detail was not the focus of the exploratory work – it was simply to determine the presence of limestone and its calcium carbonate content.

Drill rig in operation on the access track at Drill Hole 1

Drill rig on access track at Drill Hole 7

5.2.4 Laboratory analyses

Drill chip samples collected from the site under EL17/2014 were analysed chemically by Mineral Resources Tasmania and most have high limestone contents. The techniques employed by MRT in conducting the laboratory-based analyses are described in their report contained in Attachment 4.

The samples ranged between 32-86 wt.% CaCO3, averaging 75wt.% CaCO3, assuming all Ca calculated as $CaCO_3$. Pure limestone is 100% calcite or $CaCO_3$.

The geochemical and mineralogical analyses of the drill holes indicate impure limestones, which appear to be a little lower in grade than many other Ordovician limestones in the area, which typically range between 77-99 wt/% $CaCO_3$ (Calver, 1990). Despite this, the limestone present is of sufficient grade to be used as a

soil ameliorant to manage the undesirable consequences of soil acidification and its subsequent losses to agricultural production.

Plate 3. Limestone drill samples from the northern end of the Exploration Licence

Limestone powder generated by percussion drilling

Limestone powder adjacent to the percussion drill rig

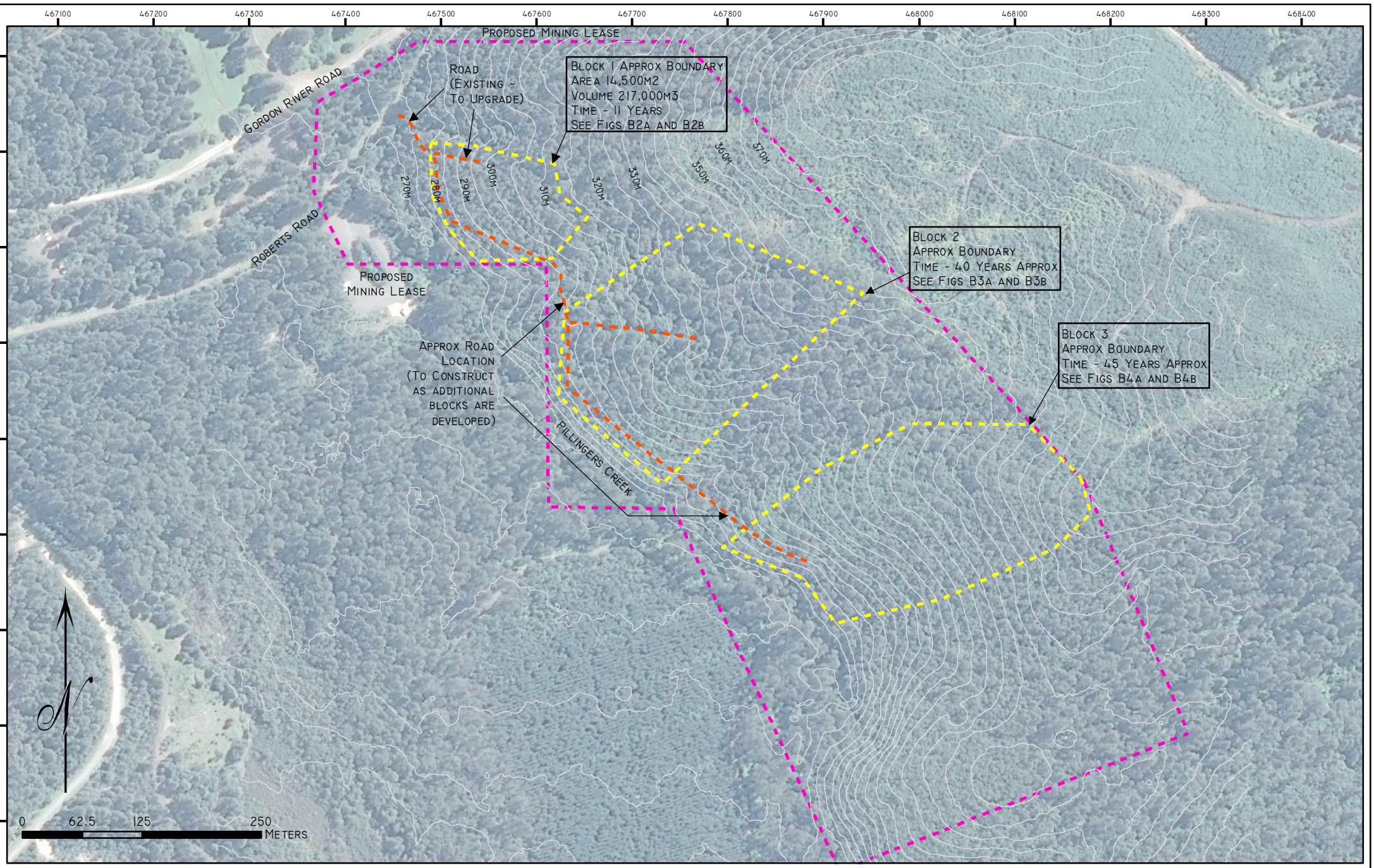
6. EXPENDITURE DURING THE REPORTING PERIOD

In accordance with s.26 of the *Mineral Resources Development Act 1995*, the minimum expenditure for the first two years of the licence was determined to be $26,000.00.

Task/Item	Projected 2-year expenditure (ex GST)	Expenditure for reporting period (ex GST)
Geohyrological survey and report	$5,000.00	$5,000.00
Civil works to re-furbish access track	$2,000.00	$2,000.00
Drill rig hire and use (hole drilling)	$10,000.00	$3,750.00
Geological oversight	$2,000.00	$1,863.75
Sample analysis and report	$2,000.00	$2,992.00
Final report (geological)	$5,000.00	$0
Annual report	$5,000.00	$1.980.00
TOTAL	**$26,000.00**	**$15,605.75**

7. ESTIMATED VOLUMES

The mine plan shown in Figure 3 shows that for block 1 there is approximately 217,000 cubic metres of extractable material. Blocks 2 and 3 are likely to generate material for 40 and 45 years respectively at the full extraction rate of 30,000 cubic metres per annum – a resource of 1.2 and 1.35 million cubic metres respectively.



Upper Derwent Valley Hard-Rock Quarry
EL17/2014 Annual Report

Figure 4: Approximate full extent of quarry within proposed Mining Lease

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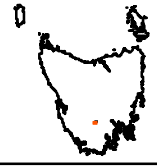

DATUM: GDA94
GRID: MGA ZONE 55

TASMAP: MAYDENA

CLIENT: JENKINS HIRE PTY LTD AND STROUD PTY LIMITED

DATE: 13th April 2016

8. DISCUSSION

The recent exploratory works were conducted to

- identify the depth of limestone in a localised area; and
- to provide information of the likely continuance or otherwise of the limestone seams which had been well described by Calver (1990, 1992) to the south near the Pillinger Creek and Risbys Basin caves.

The exploratory works conducted have demonstrated the occurrence of limestone deposits at the northern extent of the Roberts Hill – Pillingers Creek formation. Indeed, the limestone is at least 21 m deep and the drilling provided no evidence that there are voids (either supporting groundwater or air).

9. CONCLUSIONS

Given the results, no further exploration works are proposed for the immediate area as it is evident that there is limestone (Gordon Group) present near Roberts Road, and that this is an extension of the limestone unit present further south (as described and mapped by Calver 1990, 1992).

A Mining Lease application, which includes a proposed mine plan, has been submitted to Mineral Resources Tasmania on the back of the results of the exploratory works. MRT have issued a number, 2018P/M, for the lease which is pending.

The mine plan in Figure 4 forms the basis of an application for a Mining Lease and is the subject of an assessment currently being conducted by the planning authority (Derwent Valley Council) in consultation with the Environment Protection Authority.

Future exploratory works would be focused on the mine plan prepared for the extraction of material, as identified in Figure 4. These works would likely occur when blasting is scheduled to occur to minimise expenditure for floating machinery to and from the location.

10. ENVIRONMENT

Several studies have been completed in relation to hydrology, karst/geoconservation and flora/fauna of the exploration area and the area now proposed as the Mining Lease.

10.1 ECOLOGICAL ASSESSMENT

The purpose of the study by Van Diemen Consulting Pty Ltd was to undertake field surveys to document the biodiversity values in the area and surrounds proposed to be developed for the Upper Derwent Valley Hard-rock Quarry (limestone quarry) near Maydena.

The report from the study has been provided to MRT previously.

The following tasks were undertaken as part of the flora and fauna values assessment:

1. A review of flora and fauna values recorded previously in the area within and adjacent to a geographically defined Survey Area.
2. The potential for the occurrence of threatened fauna species listed under the TSP Act and the EPBC Act in the Survey Area was evaluated using the
   (a) EPBC Protected Matters Search Tool, and
   (b) DPIPWE Natural Values Atlas database.
3. Field surveys were undertaken to investigate and verify the potential fauna and flora issues identified in the desktop assessment. The field survey included:

(a) The ground-truthing and mapping of vegetation communities in the Survey Area;

(b) A survey of terrestrial and riparian flowering annual and perennial plants and aquatic flora, including potential habitat for conservation significant species;

(c) Habitat assessment for threatened raptor and mammal species; and

(d) The identification and mapping of declared weeds listed on the schedules of the *Weed Management Act 1999* within and near the Survey Area.

The surveys directly assessed the range of habitat types present in the Survey Area, especially wet soaks, riparian areas and rocky outcrops as these tend to support rare or interesting flora species or vegetation communities.

10.2 KARST AND GEOMORPHOLOGICAL ASSESSMENT

To explore and understand the significance of the karst in the Roberts Hill region, and with focus on the area proposed to be quarried, a geomorphologist with field and 'karst-significance' assessment expertise in Tasmanian karst systems was commissioned to survey and assess the site.

The report from the study (UniQuest (2015). Karst Survey and Water Flow Assessment: Derwent Valley Hard-Rock Quarry DPEMP. Report prepared by Mr Adrian Slee (BSc(Hons)). UniQuest Pty Limited, Level 7, GP South Building Staff House Road, The University of Queensland, Brisbane QLD 4072, Australia.) has been provided to MRT previously.

The main requirements of the karst survey were to:

1. Assess the existence of karst processes and landforms in an area proposed to be quarried and the immediate vicinity; and to
2. Assess issues posed by the quarry's operation to the hydrology and karst conservation significant values in the Survey Area and Greater Risbys Basin karst area.

The following is the summary by UniQuest of recent exploration works of limestone caves and karst features in Risbys Basin – Roberts Hill region -

> 'Karst landforms including caves and sinkholes occur sporadically throughout the extent of limestone in Risbys Basin. The three most notable caves explored and documented are Pillingers Creek cave, Risbys Basin cave and Purgatory Pot (JF453).
>
> Pillingers Creek cave extends from a large collapsed doline at (469290mN: 5264030mE) and was first explored to a depth of >120 m by the Southern Tasmanian Caveneers (STC) in the late1950's (Sexton1960). After this initial discovery, there seems to have been very limited follow-up work on the Risbys Basin Karst and no further significant caves were documented until the work of Houshold and Eberhard in 1992. The most significant discovery during their survey was that of the Risbys Basin cave (468600mN: 5263940mE) - a 300 m long horizontal stream passage.
>
> Exploration of the southern section (south of Pillingers Creek Riser) of the Risbys Basin karst by Sharples (2000) documented some large dolines and several cave entrances indicative of a well-developed karst system. Forest harvesting operations in the early 2000's resulted in exploration of coupe TN31n and surrounds on the upper eastern boundary of the karst. This exploration identified the vertical Purgatory Pot (468765Mn: 5264710mE) which was surveyed to a depth of >120 m by Eberhard and Duhig (2002); however, no extensive horizontal cave network was located at the base of the shaft. Several small caves were also discovered and surveyed by STC led by M. Cracknell in the southern sector of the karst during this period. While there is clear evidence that the southern section (south of Pillingers Creek Riser) of the Risbys Basin Karst is heavily karstified. Sharples (2000) noted that no major karst features had been observed to the north of the large resurgence of Pillingers Creek (hitherto to be called the Pillingers Creek Riser - PCR) at (467925: 5264730). He

suggested that while most the Risbys Basin Karst was a highly developed and significant karst system warranting a classification of category A management priority the area to the north of the PCR "may in time have a reduced classification to category B or C karst". The Risbys Basin Karst was nominated by C. Sharples in1996 (TGD 2015) as a notable example of a karst system of sub-regional significance in the Tasmanian Geoconservation Database (TGD).'

11. REFERENCES

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ATTACHMENTS

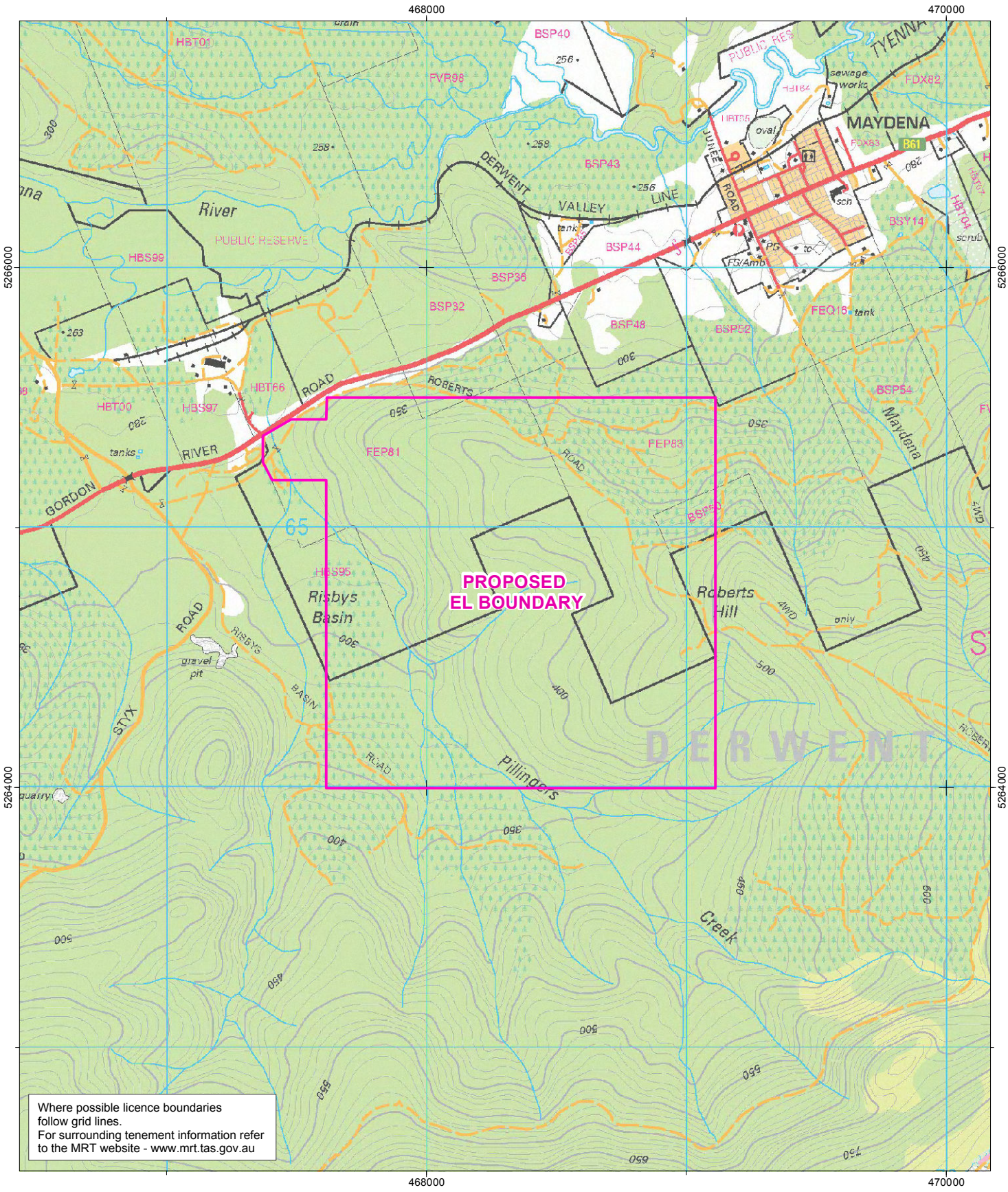
Attachment 1	Exploration License Map
Attachment 2	Machinery Specifications – DP1100
Attachment 3	Sample Form - Maydena Limestone EL program samples
Attachment 4	Mineral Resources Tasmania Mineralogy/Petrology Report LJN2016-009 GEOCHEMICAL AND MINERALOGICAL ANALYSES: LIMESTONE, MAYDENA An unpublished Mineral Resources Tasmania report for Van Diemen Consulting by R S Bottrill and R N Woolley 4 April 2016
Attachment 5	Grid coordinates for drill holes

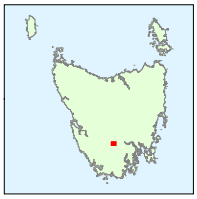
Attachment 1 **Exploration License Map**

Department of State Growth

MINERAL RESOURCES TASMANIA

Tasmanian Government





Jenkins Hire Pty Ltd & Stroud Pty Ltd
PROPOSED EL BOUNDARY
Vicinity of Roberts Road (2km SW of Maydena)

0 1 KM

1:20,000

Coordinate Datum - GDA94 MGA Zone 55

GDA

Base image by TASMAP
(www.tasmap.tas.gov.au)
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Attachment 2 **Machinery Specifications – DP1100**

Technical Specification
09511-1
2009-02-02

Sandvik DP1100
Surface Top Hammer Drills

Sandvik DP1100 is a hydraulic, self-propelled, self-contained, crawler based surface drilling rig equipped with a cabin (F.O.P.S. and R.O.P.S.) and a rod changer.

DP1100 is designed for efficient production drilling in medium large to large quarries or open pit mines and construction work sites. It suits well also for wall control and development works. To customize the rig it can be equipped with a variety of options to meet special requirements.

Hole Diameter:	89 - 140 mm (3½" - 5½")
Rock Tools:	51 and 60 mm (2" and $2^{3}/_{8}$") or 102-140 mm (4" and $5^{1}/_{2}$") rods
Rock Drill:	25 kW
Engine Output:	224 kW
Flushing Air:	14 m^3/min, up to 10 bar
Production Capacity:	1,5 Mt/year
Total Weight	18 800 kg

© 2009 Sandvik Mining and Construction

Sandvik DP1100

STANDARD COMPONENTS

Rock drill	HL 1010, hydraulic
Feed	LF 1514
Rod changer	RC 1514
Boom	ZB 1550 H, telescopic
Carrier	FL 6, oscillating
Powerpack	Diesel driven, hydraulic pumps and on board compressor
Hydraulic system	Load sensing and open center
Control system	THC Pro with Rock Pilot
Operator's cabin	Ergo Pro
Dust collector	DC 1520 H, hydraulic
Working lights	8 pcs
Gauge set	For accumulator pressure checking
Reversing alarm	
Manuals	Service and spare parts manuals: 1 x paper copy 1 x CD-ROM (ToolMan)

THE JAWS FOR DRILL STEELS

Drill steel type	Drill steel diameter	Recommended hole diameter
Extension rods / MF rods	51 mm 2"	89 - 127 mm 3 ½" - 5"
MF-rods	60 mm 2 3/8"	102 - 140 mm 4" - 5 ½"
Pilot tube	76 mm 3"	89 - 127 mm 3 ½" - 5"
Pilot tube	87 mm 3 ½"	102 - 140 mm 4" - 5 ½"

ADJUSTMENT INFORMATION FOR DELIVERY

Extension rod lengths

3 660 mm	12’
4 270 mm	14’

Rotation motor

Rotation motor OMT 400 for 76 - 127 mm, 3" - 5" holes
Rotation motor OMT 500 for 127 - 152 mm, 5" - 6" holes

SELECTION OF OPTIONS

1.	Heating and air conditioning
2.	Rod greasing
3.	P&Q electric angle indicator
4.	Electric angle indicator TIM 2302
5.	Measuring system TIM 2303
6.	Laser based measuring system TIM 2305
7.	Power extractor
8.	Electric filling pump for refuelling
9.	Remote control box & hydraulic winch (7 tons)
10.	Rollers for rod changer RC 1514
11.	Hose reel
12.	Three-bar grouser plates
13.	Guides for grousers
14.	Flushing control automatics
15.	Shut-down of suction for water holes
16.	Water injection system
17.	Water injection system w/o tank
18.	Hydraulic ground support HM 75
19.	Fuel heater for cabin, hydraulic oil and engine
20.	Kit for alternative steels
21.	Tube drilling kit
22.	Movable drill steel support
23.	Horizontal drilling kit (includes hose reel)
24.	Towing hook
25.	Readyness for Power extractor
26.	Extra manuals
27.	First service kit for DP1100
28.	Special tools for HL 1010, field kit
29.	Special tools for HL 1010, complete
30.	Central lubrication system
31.	Fast fill connection for fuel and water tanks
32.	Fast fill connection for engine coolant, hydraulic oil, engine oil
33.	Sanrock Mini H hydraulic bit grinder
34.	Radio and CD player
35.	Biogradeable hydraulic oil, Shell naturelle HFE 46 or HFE 68 (synthetic ester)
36.	Antifreeze for air lines
37.	Dustmizer system

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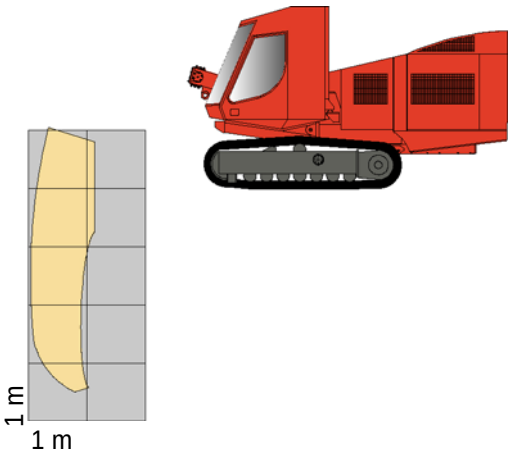
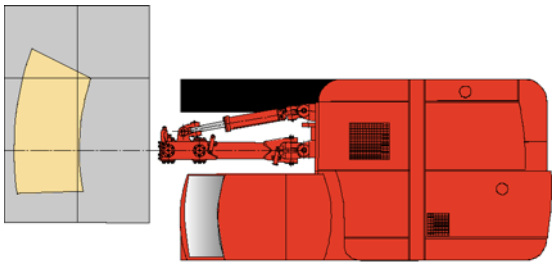
Sandvik DP1100

COVERAGE AREA

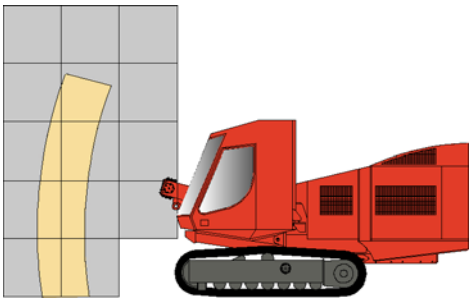
Vertical drilling



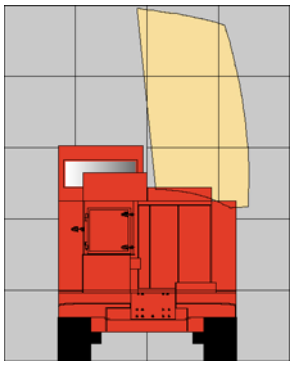
Vertical drilling



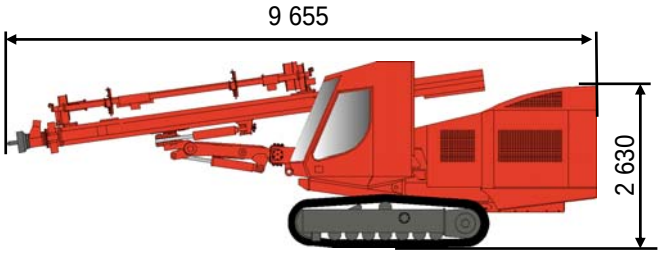
Horizontal drilling, sidewards

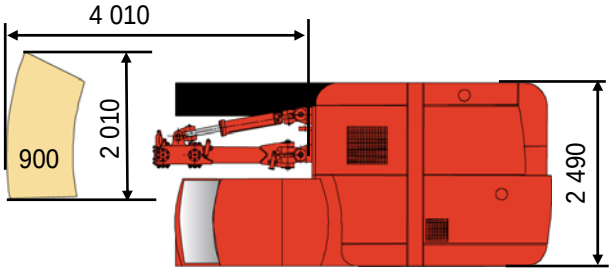


Horizontal drilling, forwards



TRAMMING AND TRANSPORT DIMENSIOS





Weight	18 800 kg
Width	2.52 m
Height	3.2 m
Total length	10.5 m

Sandvik Mining and Construction reserves the right to change this specification without further notice.

Sandvik Mining and Construction Oy
P.O.Box 100, FIN–33311 Tampere, Finland
Tel. +358 205 44 121, Telefax +358 205 44 4771
www.sandvik.com

Attachment 3 **Sample Form - Maydena Limestone EL program samples**

MRT Laboratory Submission Form

Job No.		**Trim Nos.:**	

Date:	30/01/2016	**Submitting Company Order No:**	
Submitter:	Richard Barnes	**Dispose, store or collect residue**	Dispose
Collector:	Richard Barnes	**Priority**	
Company:	Van Diemen Consulting	**Is this in TIGER:**	No
Address:	32 Banticks Road Mangalore TAS 7030	**Aim of Analysis:**	To calculate calcium carbonate content for ENV caluclation; to determine contamination by Mg - objectibve is to know %CaCO3 and %Mg of sample
Email:	rwbarnes73@gmail.com		
Phone:	0438 588 695		
Project:	Maydena Limestone	**Legend:**	
Hazards:	None known	Entered by Submitter	
Risk	High	Entered or Approved by Lab Manager	
Other Information:			

					Instructions										
Registration Number	**Field No.**	**MRT Lab Number**	**Location**	**Sample Description**	**XRF Majors**	**XRF Traces**	**XRD**	**TS**	**PTS**	**Other Analysis**	**Comment**	**AMG mE**	**AMG mN**	**Registration Number**	**Field No.**
EL17/2014	D1 Sample1		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D1 Sample1
EL17/2014	D1 Sample2		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D1 Sample2
EL17/2014	D1 Sample3		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D1 Sample3
EL17/2014	D1 Sample4		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D1 Sample4
EL17/2014	D1 Sample5		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D1 Sample5
EL17/2014	D1 Sample6		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D1 Sample6
EL17/2014	D4 Sample1		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D4 Sample1
EL17/2014	D4 Sample2		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D4 Sample2
EL17/2014	D4 Sample3		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D4 Sample3
EL17/2014	D4 Sample4		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D4 Sample4

MRT Laboratory Submission Form

EL17/2014	D4 Sample5		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D4 Sample5
EL17/2014	D4 Sample6		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D4 Sample6
EL17/2014	D5 Sample1		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D5 Sample1
EL17/2014	D5 Sample2		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D5 Sample2
EL17/2014	D5 Sample3		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D5 Sample3
EL17/2014	D5 Sample4		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D5 Sample4
EL17/2014	D5 Sample5		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D5 Sample5
EL17/2014	D5 Sample6		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D5 Sample6
EL17/2014	D6 Sample1		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D6 Sample1
EL17/2014	D6 Sample2		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D6 Sample2
EL17/2014	D6 Sample3		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D6 Sample3
EL17/2014	D6 Sample4		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D6 Sample4
EL17/2014	D7 Sample1		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D7 Sample1
EL17/2014	D7 Sample2		Pillinger Creek, Maydena	limestone	Yes	Yes					CaO, MgO,SiO2 Fe2O3 Al2O3, P2O3				D7 Sample2

Please fill out the blue cells.

Attachment 4

Mineral Resources Tasmania Mineralogy/Petrology Report LJN2016-009

GEOCHEMICAL AND MINERALOGICAL ANALYSES: LIMESTONE, MAYDENA

An unpublished Mineral Resources Tasmania report for Van Diemen Consulting by R S Bottrill and R N Woolley 4 April 2016

Mineral Resources Tasmania

Mineralogy/Petrology Report

LJN2016-009

GEOCHEMICAL AND MINERALOGICAL ANALYSES: LIMESTONE, MAYDENA

An unpublished Mineral Resources Tasmania report for

Van Diemen Consulting

by R S Bottrill and R N Woolley

4 April 2016

Mineral Resources Tasmania
Department of State Growth

Tasmanian Government

ABSTRACT

The 24 drill chip samples collected from the above site have all been analysed chemically as requested and most have high limestone contents. These range between 32-86 wt.% $CaCO_3$, averaging 75wt.% $CaCO_3$, assuming all Ca calculated as $CaCO_3$. Pure limestone is 100% calcite or $CaCO_3$. However XRD analyses on two samples indicate that considerable Ca is present as dolomite ($CaMg(CO_3)_2$) also (up to 18wt.% in one sample).

DRAFT

INTRODUCTION

Twenty four rock samples were collected from drillholes at Pillinger Creek, near Maydena, with their details listed in table 1 below. They were submitted for chemical and mineralogical analyses, in regards to possible use of the deposit as industrial limestone.

The chemical analyses were done by XRF (X-Ray Fluorescence), and the mineralogy by XRD (X-Ray diffraction, to confirm the carbonate minerals present), in the MRT laboratories, Rosny Park, Tasmania, and reported here.

TABLE 1: SAMPLE DETAILS.

Registration Number	Field No.	MRT Lab Number	Location	Sample Description
G406386	D1Sample1	20160012	Pillinger Creek, Maydena	Limestone
G406387	D1Sample2	20160013	Pillinger Creek, Maydena	Limestone
G406388	D1Sample3	20160014	Pillinger Creek, Maydena	Limestone
G406389	D1Sample4	20160015	Pillinger Creek, Maydena	Limestone
G406390	D1Sample5	20160016	Pillinger Creek, Maydena	Limestone
G406391	D1Sample6	20160017	Pillinger Creek, Maydena	Limestone
G406392	D4Sample1	20160018	Pillinger Creek, Maydena	Limestone
G406393	D4Sample2	20160019	Pillinger Creek, Maydena	Limestone
G406394	D4Sample3	20160020	Pillinger Creek, Maydena	Limestone
G406395	D4Sample4	20160021	Pillinger Creek, Maydena	Limestone
G406396	D4Sample5	20160022	Pillinger Creek, Maydena	Limestone
G406397	D5Sample1	20160023	Pillinger Creek, Maydena	Limestone
G406398	D5Sample2	20160024	Pillinger Creek, Maydena	Limestone
G406399	D5Sample3	20160025	Pillinger Creek, Maydena	Limestone
G406001	D5Sample4	20160026	Pillinger Creek, Maydena	Limestone
G406002	D5Sample5	20160027	Pillinger Creek, Maydena	Limestone
G406003	D5Sample6	20160028	Pillinger Creek, Maydena	Limestone
G406004	D6Sample1	20160029	Pillinger Creek, Maydena	Limestone
G406005	D6Sample2	20160030	Pillinger Creek, Maydena	Limestone
G406006	D6Sample3	20160031	Pillinger Creek, Maydena	Limestone
G406007	D6Sample4	20160032	Pillinger Creek, Maydena	Limestone
G406008	D7Sample1	20160033	Pillinger Creek, Maydena	Limestone
G406009	D7Sample2	20160034	Pillinger Creek, Maydena	Limestone
G405555	D7Sample3	20160035	Pillinger Creek, Maydena	Limestone

XRF

The samples were analysed for major elements on a fused disk, in a Bruker ASX58 XRF, with proprietary Bruker software and a series of commercial standards. The results are shown in Appendix 2.

The XRF results on these samples indicate they are all dominated by Calcium (Ca), silicon (Si) and magnesium (Mg) with lesser aluminium (Al) and iron (Fe), and minor other elements.

XRD

The samples were prepared, examined and analysed in the MRT laboratories, Rosny Park, Tasmania. They were run on an automated Philips X-Ray diffractometer system: PW 1729 generator, PW 1050 goniometer and PW 1710 microprocessor with nickel-filtered copper radiation at 35kV/25mA, a graphite monochromator (PW1752), sample spinner and a proportional detector (sealed gas filled PW1711). Our typical step-size is 0.02 degrees, and the standard scanning speed is 0.02 degrees/second. The PW1710 system is presently driven by the CSIRO XRD software: "VisualXRD" , "PW1710 for Windows" and "XPLOT for Windows". Interpretation and quantification is largely manual, using a series of prepared standards of the more common minerals to enable some semi-quantitative analysis. Quartz, if present, is used as an internal standard; and if not present, it is often added to the sample for a supplementary scan. Our semi-quantitative results are calculated using single-peak calibration factors derived from scans of known mixtures of minerals.

The XRD results on these samples (Appendix 1) indicate they are generally all dominated by calcite and quartz, with lesser ferroan dolomite, kaolinite, mica, chlorite and other minerals:

DISCUSSION AND CONCLUSIONS

Most of these samples have high limestone contents, ranging between 32-86 wt.% $CaCO_3$, averaging about 75wt.% $CaCO_3$, assuming all Ca calculated as $CaCO_3$. Pure limestone is 100% calcite or $CaCO_3$. Only one sample has less than 50wt.% $CaCO_3$ (a limey mudstone), all the others would be classified as siliceous limestones, weakly argillaceous.

However XRD analyses on two samples indicate that considerable Ca is present as ferroan dolomite ($CaMg(CO_3)_2$) also (up to 18wt.% in one sample). This means the true $CaCO_3$ value will be somewhat lower. Some of the samples could be considered weakly dolomitic limestones.

DRAFT

These geochemical and mineralogical analyses indicate impure limestones, which appear to be a little lower in grade than many other Ordovician limestones in the area, which typically range between 77-99wt.% $CaCO_3$. (Calver, 1990).

REFERENCES

Calver, C.R., 1990, Limestone resources of the Maydena-Florentine Valley area. UR1990_06 Mineral Resources Tasmania.

DRAFT

R S Bottrill

MINERALOGIST-PETROLOGIST

R N Woolley

TECHNICAL OFFICER

Disclaimers

While every care has been taken in the preparation of this report, no warranty is given as to the correctness of the information and no liability is accepted for any statement or opinion or for any error or omission. No reader should act or fail to act on the basis of any material contained herein. Readers should consult professional advisers. As a result the Crown in Right of the State of Tasmania and its employees, contractors and agents expressly disclaim all and any liability (including all liability from or attributable to any negligent or wrongful act or omission) to any persons whatsoever in respect of anything done or omitted to be done by any such person in reliance whether in whole or in part upon any of the material in this report.

DRAFT

Mineral Resources Tasmania

Appendix 1: Laboratory Report - XRD analyses

Client: R Barnes, Van Diemen Consulting
Sample Source: Maydena
MRT Job Number: LJN2016-009
Analysis: Approximate Mineralogy
Method: X-Ray Diffraction

Results:

20160016:
Calcite (70 ± 4),
Fe-Dolomite (18 ± 2),
Quartz (7 ± 1),
Mica (3 ± 1),
Chlorite (1 ± 0.5),
possible trace Smectite and K-Feldspar

20160020:
Calcite (76 ± 4),
Quartz (12 ± 2),
Mica (7 ± 1),
Kaolinite (3 ± 1),
Fe-Dolomite (1 ± 0.5),
possible trace Smectite

Analyst: R.N. Woolley
Date: 23/3/2016

DRAFT

Mineral Resources Tasmania

Appendix 1: Laboratory Report - XRF analyses

Lab Job. LJN2016/009
Submitted by: R Barnes, Van Diemen Consulting
Analysis type: XRF (majors)
Date completed 23/3/2016
Project Contract
XRF & NDIR Analysts: Richie Woolley& Lia Unwin
MRT Laboratory Manager: Ralph Bottrill

Results: Wt.% (page 1 of 2)

Reg No	Field No	Lab No	SiO_2	TiO_2	Al_2O_3	*Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	L.O.I.	TOTAL	CaCO3, calc	CO2, calc
G406386	D1Sample1	20160012	17.64	0.22	4.67	1.64	0.01	1.48	40.00	0.06	1.15	0.04	33.18	100.09	71.37	31.37
G406387	D1Sample2	20160013	13.10	0.16	3.74	1.33	0.01	1.39	43.90	0.02	0.84	0.03	35.50	100.02	78.33	34.43
G406388	D1Sample3	20160014	14.06	0.18	4.00	1.56	0.01	2.67	41.50	0.02	0.84	0.03	35.04	99.91	74.05	32.55
G406389	D1Sample4	20160015	13.98	0.19	4.24	1.67	0.02	3.21	40.60	0.04	0.91	0.03	35.23	100.12	72.44	31.84
G406390	D1Sample5	20160016	9.37	0.12	2.81	1.34	0.02	3.05	45.10	0.03	0.38	0.02	37.91	100.15	80.47	35.37
G406391	D1Sample6	20160017	13.81	0.19	4.31	2.02	0.02	1.31	43.30	0.04	0.60	0.04	34.55	100.19	77.26	33.96
G406392	D4Sample1	20160018	14.76	0.18	4.16	1.51	0.02	0.85	42.80	0.04	0.71	0.03	35.06	100.12	76.37	33.57
G406393	D4Sample2	20160019	11.34	0.14	3.24	1.63	0.02	0.85	45.70	0.04	0.55	0.03	36.59	100.13	81.54	35.84
G406394	D4Sample3	20160020	15.12	0.18	4.15	1.50	0.01	1.01	42.70	0.04	0.88	0.04	34.43	100.06	76.19	33.49
G406395	D4Sample4	20160021	26.58	0.32	6.50	1.92	0.01	1.31	33.90	0.03	1.49	0.06	27.83	99.95	60.49	26.59
G406396	D4Sample5	20160022	29.54	0.36	7.29	1.99	0.01	1.30	31.60	0.02	1.70	0.07	25.99	99.87	56.38	24.78
G406397	D5Sample1	20160023	7.95	0.11	2.73	1.10	0.02	0.87	48.30	0.04	0.51	0.02	38.61	100.26	86.18	37.88
G406398	D5Sample2	20160024	6.69	0.09	2.21	0.90	0.01	0.84	49.50	0.03	0.36	0.02	39.36	100.01	88.32	38.82
G406399	D5Sample3	20160025	9.85	0.13	3.15	1.10	0.02	0.95	46.70	0.03	0.68	0.02	37.47	100.10	83.33	36.63
G406001	D5Sample4	20160026	9.48	0.13	2.97	1.12	0.02	1.35	47.10	0.03	0.60	0.02	37.35	100.17	84.04	36.94
G406002	D5Sample5	20160027	12.85	0.17	3.68	1.53	0.02	1.78	44.00	0.02	0.87	0.03	35.25	100.20	78.51	34.51

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Results: Wt.% (page 1 of 2)

Reg No	Field No	Lab No	SiO_2	TiO_2	Al_2O_3	*Fe_2O_3	MnO	MgO	CaO	Na_2O	K_2O	P_2O_5	L.O.I.	TOTAL	CaCO3, calc	CO2, calc
G406003	D5Sample6	20160028	16.43	0.21	4.36	1.54	0.03	1.24	41.50	0.05	0.92	0.04	33.57	99.89	74.05	32.55
G406004	D6Sample1	20160029	8.95	0.13	2.90	1.24	0.03	0.87	47.30	0.02	0.54	0.02	37.99	99.99	84.40	37.10
G406005	D6Sample2	20160030	8.21	0.12	2.76	1.19	0.02	0.76	48.20	0.02	0.40	0.02	38.30	100.00	86.00	37.80
G406006	D6Sample3	20160031	11.80	0.15	3.39	1.38	0.02	0.85	45.40	0.03	0.57	0.03	36.32	99.94	81.01	35.61
G406007	D6Sample4	20160032	13.86	0.17	3.56	1.45	0.01	2.41	42.10	0.04	0.57	0.04	35.85	100.06	75.12	33.02
G406008	D7Sample1	20160033	45.37	0.47	10.39	4.29	0.04	0.93	18.28	0.15	1.86	0.05	18.12	99.95	32.62	14.34
G406009	D7Sample2	20160034	16.25	0.19	3.53	1.84	0.02	0.55	42.80	0.05	0.43	0.03	34.39	100.08	76.37	33.57
G405555	D7Sample3	20160035	25.34	0.31	6.16	1.92	0.02	1.62	34.60	0.03	1.45	0.06	28.59	100.10	61.74	27.14
Average			15.51	0.19	4.20	1.61	0.02	1.39	41.95	0.04	0.83	0.03	34.27	100.06	74.86	32.90
Detection Limits			**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
Units			Wt.%	Wt.%	Wt.%	Wt.%	Wt.%	Wt.%	Wt.%	Wt.%	Wt.%	Wt.%	Wt.%	Wt.%	Wt.%	Wt.%

Notes: All Fe shown as Fe_2O_3 FeO not determined
LOI: loss on ignition, mostly CO_2.

Attachment 5 **Grid coordinates for drill holes**

Location	TimeStamp	EAST	NORTH
Location 7	28/01/2016 0:00	467,487	5,265,299
Location 6	28/01/2016 0:00	467,526	5,265,292
Location 5	28/01/2016 0:00	467,588	5,265,281
Location 4	28/01/2016 0:00	467,608	5,265,271
Location 3	28/01/2016 0:00	467,649	5,265,281
Location 2	28/01/2016 0:00	467,690	5,265,273
Location 1	28/01/2016 0:00	467,567	5,265,284