

MINERAL HOLDINGS AUSTRALIA PTY LTD

RETENTION LICENCE RL9/1997 REDPA

ANNUAL REPORT ON EXPLORATION APRIL 2014 to APRIL 2015

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ABSTRACT

RL9/1997 was granted to Mineral Holdings Australia Pty Ltd (MHA) on 8 May 1998, over an area of 3km², 2km south of Redpa and 6km south-east of Marrawah, in Northwest Tasmania. The Licence is a flow on title from EL31/1990 and covers exploration for Category 3 Construction materials and Category 5 Industrial minerals and semi-precious stones.

The Licence has been extensively explored for Tertiary Limestone, Precambrian magnesian limestone and Precambrian dolomite.

Evaluation work has included:

- 23 hand samples,
- 26 hammer drill holes for 257 metres (mostly in limestone),
- 7 shallow diamond drill holes (mostly testing dolomite),
- 10 shallow hammer holes (to test the magnesian limestone),
- Several 250 tonne bulk samples for furnace testing, and
- 9 backhoe pits to sample magnesian limestone in basement.

Some 5 million tonnes of high quality limestone are available within and around RL9/1997 and the Licence is currently being marketed under MHA's 'Pilbara of Carbonates' project in Northwest Tasmania.

Discussions and field visits have been arranged with companies interested in joint venture or outright purchase of the retention licence. These include Adelaide Brighton Cement, Edward Lee, Holcim and Lafarge, Osborne Cement, Carmeuse Group, Cemex, Cement Australia, BlueScope, Arrium, Grow Resources, Litmus Group, East West Line Parks, Arete Capital, Grange Resources and Pacific Minerals.

1.0 INTRODUCTION

RL9/1997 was granted to Mineral Holdings Australia Pty Ltd (MHA) on 8 May 1998 over an area of 3km² in Northwest Tasmania. The Licence is a flow on title from EL31/1990 and covers exploration for Category 3 Construction materials and Category 5 Industrial minerals and semi-precious stones.

The Licence covers a series of remnant hills of Tertiary limestone which extends under thin basalt cover to the north and west, towards the coast at Marrawah. Although Tertiary in age, the limestone is hard and compact and eminently suitable for use in vertical lime kilns.

The Licence is located in gently rolling pasture land, adjacent to the Bass Highway, about 30km due west of Smithton. Access is by all-weather roads, Fairview Road and Kings Road, from the Bass Highway and by 4WD track joining Kings Road to the Bass Highway, near the eastern boundary of the Licence

2.0 PREVIOUS EXPLORATION

Threader (1997) outlines previous exploration at Redpa in an information sheet accompanying the application for Retention Licence 9/1997.

Exploration in 1991 and 1992 included rock chip sampling, hammer drilling and diamond drilling of the Tertiary limestone and the underlying Smithton dolomite. Boreholes 2 to 22 and DDH 2 to 7 were drilled in Tertiary limestone, while the remaining boreholes were drilled to test the continuity of the limestone between outcrops. Of those boreholes, DD1 and BH 1, 23, 24 and 26 were drilled into dolomite and BH 23 and 25 in magnesian limestone.

In 1994/95, two half-tonne samples of dolomite were taken from outcrops in King's and Edward's properties. Half the material was shipped overseas for evaluation testing in the production of magnesium metal by a plasma process. The process was apparently unsuccessful and the tests were never carried out.

In 1995/96, 10 shallow percussion holes were developed to test the dolomite bedrock in King's property. The evidence from mapping and drilling indicates that the dolomite is of the order of 100m thick and occurs in the trough of a south-easterly plunging fold. It is, as far as is known, restricted to the north-eastern part of the licence.

In 1996/97, 40kg rock chip samples of dolomite and limestone were sent overseas for assessment as a slagging agent in steel making. Nippon Steel reported very favourably on the tests. David Mitchell also conducted furnace tests on the Tertiary limestone, reporting that in tests at 1150 and 1350°C the material remained hard, with no tendency to crumble or powder, and that it would maintain integrity in a shaft kiln.

A further 6 percussion drill holes were developed in the dolomite and dolomitic limestone basement rocks.

| | | | | |
|---------------------------------|---------|------|------------|------------|
| The drilling record to date is: | 1991/92 | 257m | percussion | (26 holes) |
| | | 70m | diamond | (7 holes) |
| | 1995/96 | 110m | percussion | (10 holes) |
| | 1996/97 | 91m | percussion | (6 holes) |

In 2011, MHA developed 9 backhoe pits to sample magnesia-enriched limestone along the upper contact of the Precambrian dolomite.

3.0 GEOLOGY

The Tertiary limestone was originally a wide spread sheet over the relatively flat Precambrian basement of dolomite and magnesian limestone. It now occurs as a series of low remnant hills around the edge of an extensive sheet of Tertiary basalt and extends under shallow basalt cover to the coast at Merrawah.

The limestone is white to pinkish in colour and is generally dense and compact in texture. There are occasional cavities and the limestone can be sugary immediately adjacent to the cavity. Thickness, from drilling, ranges from 1 to 18 metres and averages around 10 metres.

The limestone averages 54.02% CaO, 0.9% MgO, 0.66% SiO₂, 0.17% TiO₂, 0.28% Al₂O₃, 0.61% Fe₂O₃, 0.03% MnO₂, less than 0.01% alkalis, 0.096% P₂O₅, 0.595% SO₃, and 45.11% LOI.

Some 5 million tonnes of high-quality limestone is available in and around Redpa and more would be available under the thin basalt cover.

The magnesian limestone and dolomite occur as subcrop through the Redpa retention licence. The rock is hard and marbleised but is very fine grained, dense and massive in appearance. It is usually light grey in colour but some of the magnesian limestones tend to be of lighter colour and this difference is believed to increase with depth. From the limited amount of shallow drilling, it appears the magnesian limestone predominates at Redpa but the true distribution is not yet clear.

The structure in the basement rocks appears to be a broad shallow syncline and at least 1000m of section is present. Any resource of dolomite or magnesian limestone is therefore quite large.

The dolomite ranges from 31 to 32% CaO and 18.8 to 19.5% MgO. Silica is generally below 0.2%, although occasional spikes to 10% do occur.

The magnesian limestone contains 36 to 50% CaO, 5 to 16% MgO, 0.2 to 1.4% SiO₂, with all other oxides very low and Loss On Ignition of 43.5 to 46.5%.

4.0 CURRENT AND FUTURE PROGRAM

During 2014, Alcoa requested MHA supply two 10kg samples of calcined carbonates - one of Tertiary limestone and the other of magnesian limestone (5 to 10% MgO), from the basement carbonate rocks. Commercial calcining of samples of this size was not available in Australia and MHA has had to send 25kg samples of raw material to Maerz/Polysius in

Germany. Apart from freight charges, the cost is A\$8,200 per sample. The samples were tested by Alcoa and considered to meet their standard requirements. They would be prepared to purchase material from the site but do not want to mine the material.

Apart from interest from Alcoa, MHA have made considerable efforts to interest major Australian and overseas groups in its carbonate holdings in Northwest Tasmania and RL9/1997 is an integral part of the 'Pilbara of Carbonates' program. A major part of program is to interest those companies in the benefits of mining high-purity materials that are cryptocrystalline in nature and therefore suitable for use in vertical kilns, where it is possible to trap the CO₂ off-gas. There would appear to be large commercial advantages once a CO₂ penalty or tax is introduced.

Discussions and field visits have been arranged with Adelaide Brighton Cement, Edward Lee, Holcim and Lafarge, Osborne Cement, Carmeuse Group, Cemex, Cement Australia, BlueScope, Arrium, Grow Resources, Litmus Group, East West Line Parks, Arete Capital, Grange Resources and Pacific Minerals.

5.0 ENVIRONMENT

There are no outstanding environmental issues.

6.0 REFERENCES

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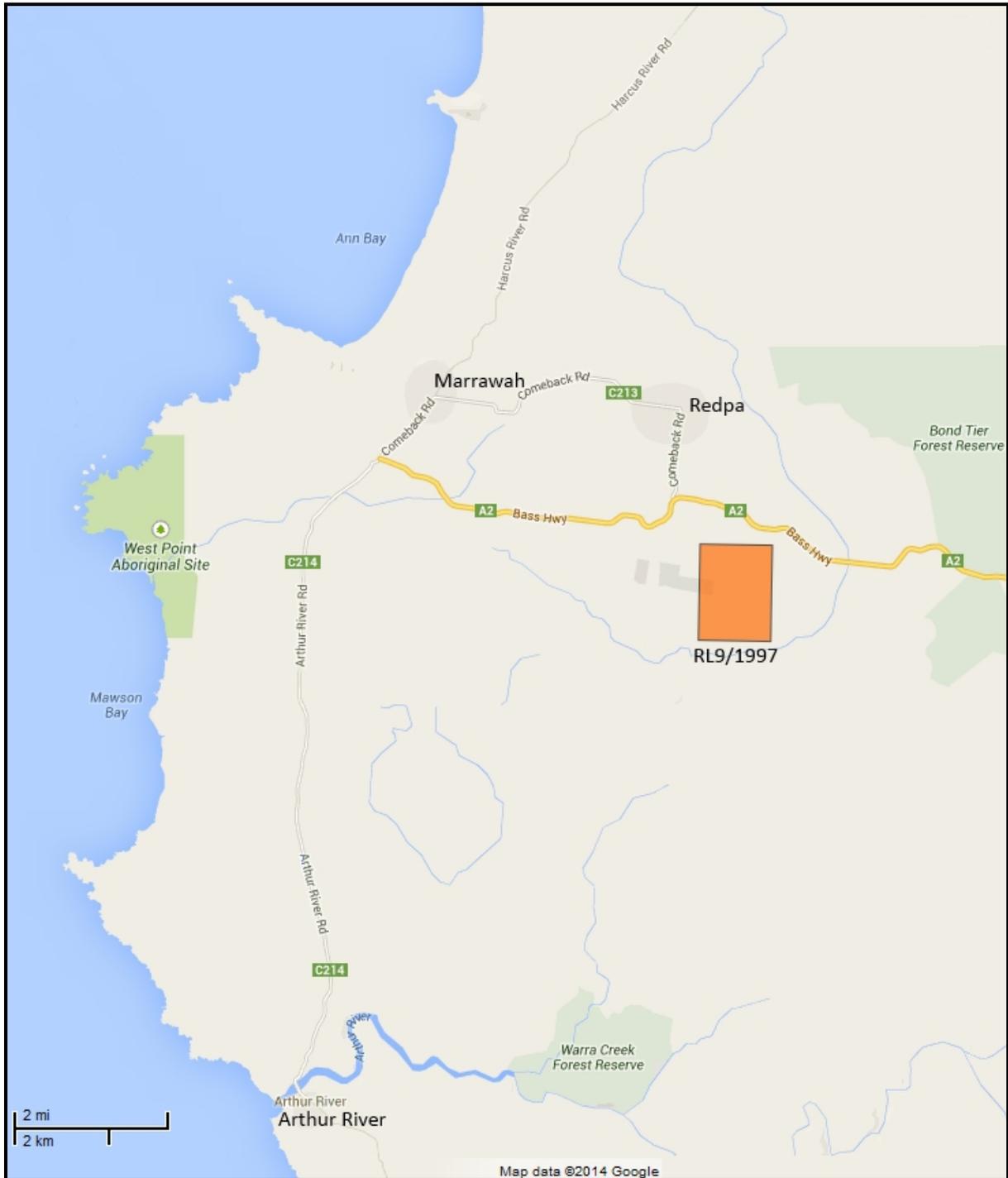
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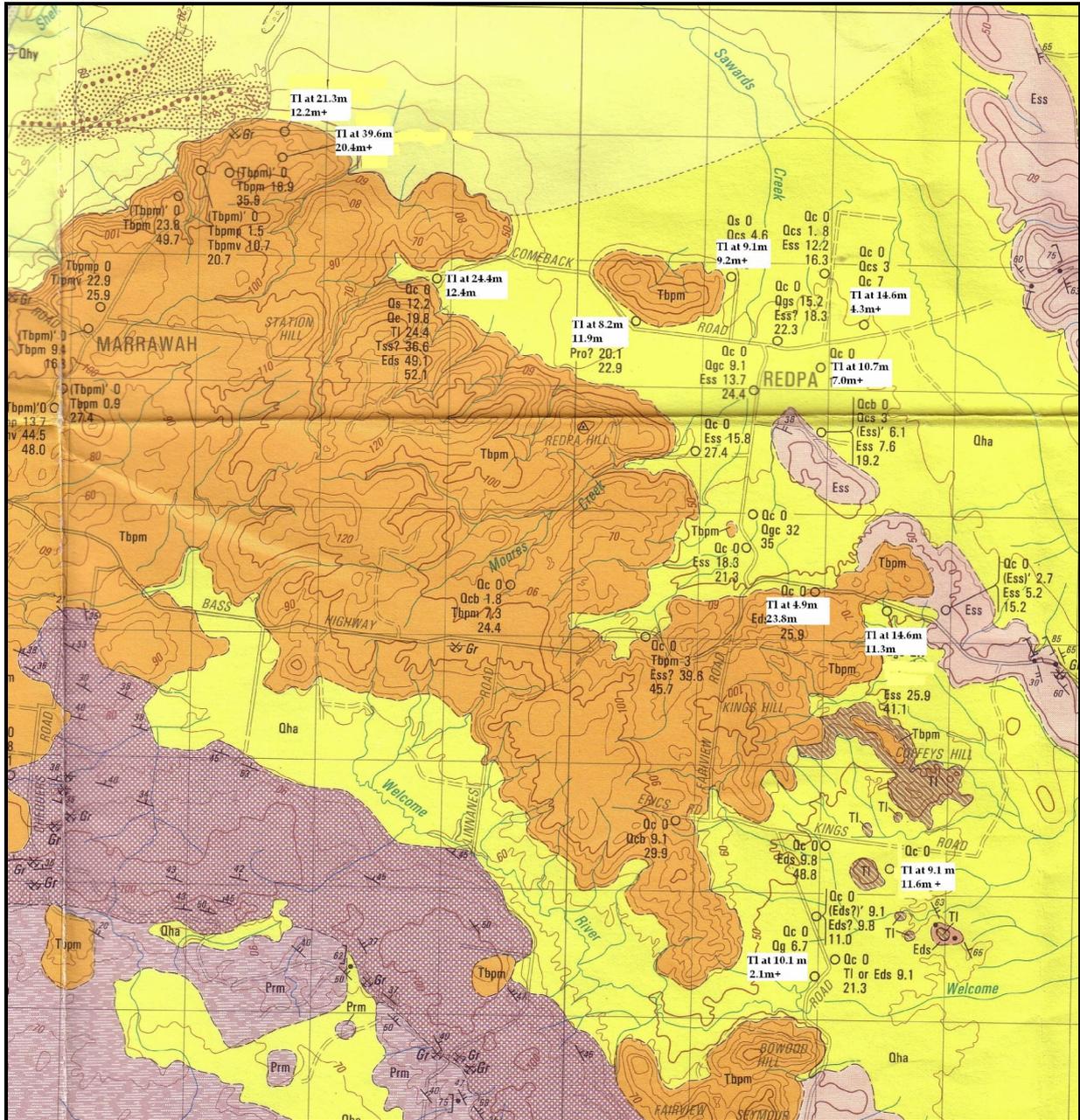
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7.0 KEYWORDS

Redpa, Merrawah, Limestone, Dolomite, Magnesian Limestone, Tertiary, Precambrian



PLAN 1: Location Diagram - RL9/1997 Redpa



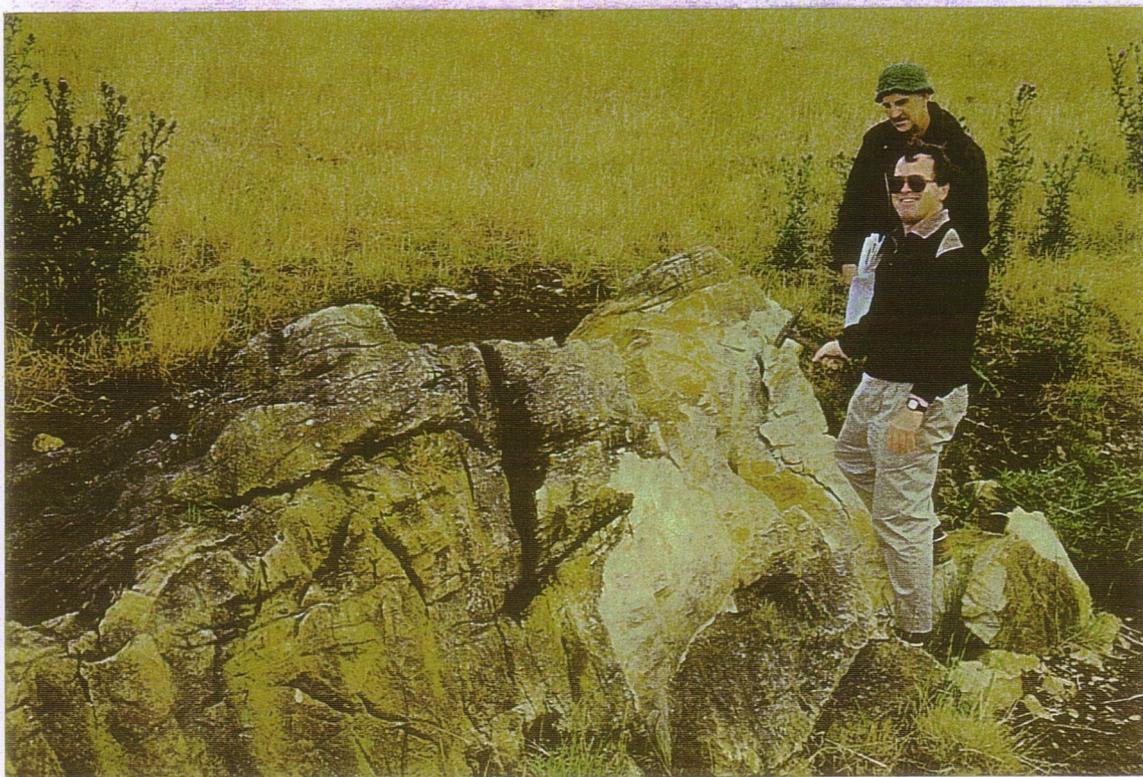
**PLAN 2: Geological Plan of Redpa Area
(showing drill holes with Tertiary limestone)**

Legend:
 Dark brown - Tertiary limestone
 Light brown - basalt

**RETENTION LICENCE – RL 9/1997
HIGH GRADE PRE-CAMBRIAN
DOLOMITIC LIMESTONE – REDPA**



SURFACE OUTCROPS AT CARBONATE HILLS



SURFACE OUTCROP AT CARBONATE HILLS

**RETENTION LICENCE – RL 9/1997
HIGH GRADE TERTIARY
LIMESTONE – REDPA**



SURFACE OUTCROPS AT CARBONATE HILLS



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