

MINERAL HOLDINGS AUSTRALIA PTY LTD

RETENTION LICENCE 1/2005 HOGARTH CREEK, NW TASMANIA

ANNUAL REPORT ON EXPLORATION TO JUNE 2013

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1 May 2013

TABLE OF CONTENTS

	Page No.
ABSTRACT	3
1.0 INTRODUCTION	4
2.0 GEOLOGY	4
3.0 PREVIOUS EXPLORATION AND EVALUATION	5
4.0 CURRENT EXPLORATION AND MARKETING	6
5.0 EXPENDITURE	7
6.0 CONCLUSIONS	7
7.0 REFERENCES	7
8.0 KEYWORDS	8
PLAN 1: Location Diagram	9
PLAN 2: Geology & Exploration	10

RL 1/2005 HOGARTH CREEK, NW TASMANIA, ANNUAL REPORT 2013

ABSTRACT

This report gives a review of the marketing and exploration work carried out by Mineral Holdings Australia Pty Ltd (MHA) over the past 12 months on RL 1/2005.

The licence covers 5 square kilometres in the Dip Ranges and encloses the Thomas Mountain Silica Mine within 23M2009.

The licence covers the Detention Quartzite of the Rocky Cape Group and the target of exploration is silica, silica sand and quartzite for the chemical, metallurgical glass and coal seam gas industries.

Previous exploration by Mineral Holdings Australia Pty Ltd and its joint venture partners has outlined a substantial inventory of potential silica products in the RL, namely 0.35Mt of hard, silicified quartzite, 1.55Mt of hard sandstone, 0.65Mt of poorly consolidated, soft sandstone and 2.45Mt of very soft unconsolidated sand. Some infill drilling would be required to raise this resource estimate to the Indicated Level (JORC Code).

The 300 tonne sample sent to China is still awaiting full furnace testing. A small test trial was conducted with the quartzite mixed with their normal quartz pebble feed. The quartzite was highly reactive and they will wait for an off season to run a full trial.

Marketing of the quartzite and frac sand resources has continued. Meetings and discussions were held with numerous companies and several site visits were made. Samples were taken for testing in their own laboratories and results should be available shortly.

RL 1/2005 HOGARTH CREEK, NW TASMANIA, ANNUAL REPORT 2013

1.0 INTRODUCTION

RL 1/2005 was applied for by Mineral Holdings Australia Pty Ltd (MHA) on 21 February 2005 and was granted on 15 June 2005. RL 1/2005 covers the site of the Thomas Mountain silica resource which was originally covered by CML 8M/1989 and 1W/1088. Under its policy of revoking non-performing mining leases, Mineral Resources Tasmania suggested that a Retention Licence would be a more appropriate title for the marketing and industrial testing activities currently being pursued by MHA. Consequently RL1/2005 was granted and the mineral leases cancelled.

The Thomas Mountain mine and prospect occurs in the northern Dip Range about 25 km south-west of Wynyard and 20 km south-east of a deep water harbour at Port Latta. Access is via the township of Montumana on the Bass Highway, 25 km west of Wynyard, thence 6 km south along Montumana and Newhaven roads to a turn-off just east of Hogarths Creek. The mine site is held within 23M/2009, a 2 square kilometre area inside RL1/2005.

Over the past several years, MHA has had discussions with a number of industrial companies, within Australia and overseas, as potential customers or developers of the deposit. There has been considerable interest in the potential for producing 'frac' sands from the site and renewed interest in the area as a source of fine silica sand for the glass and specialized silica products.

A 300 tonne sample of quartzite was sent for full-scale furnace trials in China, in early 2012. A full trial is still to take place.

2.0 GEOLOGY

Resources of high grade quartzite have been reported in various government publications as occurring within the Proterozoic rocks of north-west Tasmania. The better quartzite occurred within the Detention Quartzite sub-group and rocks of this sub-group underlie most of the licence area.

Gee (1971) described the Proterozoic sequence within the Rocky Cape Group from youngest to oldest as – the Jacob Quartzite (1130m in thickness), the Irby Siltstone (760m) and the Detention Sub-group (1400m). Gee suggested the Detention Sub-group contained about 10% siltstone in beds from a few metres to more than 80 metres in thickness. The Rocky Cape Group, in turn, overlies the Cowrie Siltstone which was at least 2400m in thickness.

Structurally, the Detention Quartzite is folded into a tight series of anticlines and synclines with north-east trending and dipping axes with folds becoming overturned in the east resulting in north-west dipping beds at 45 degrees or above.

Gee (1971) described the quartzites as uniformly fine grained orthoquartzites with 99% quartz grains and a granular to glassy texture depending on the degree of cementation by silica. Turner (1989) on the other hand preferred to call the mature, quartzose, sandy sediments quartz arenites and attributes their variable physical character as mostly due to variable silicification and occasionally to metamorphism.

The silica resources currently outlined in the licence are 0.35Mt of very hard, silicified sandstone or quartzite, 1.55 Mt of hard sandstone, 0.65 Mt of poorly consolidated or soft weathered sandstone and 2.45 Mt of unconsolidated sand. The potential uses of the resources include silicon metal, silica sand and quartzite for the chemical, metallurgical, glass petroleum and coal seam gas industries.

3.0 PREVIOUS EXPLORATION AND EVALUATION

There has been a long history of exploration by MHA and a series of joint venture partners for a wide range of silica products at Thomas Mountain. Details of that work were provided in the 2007 report.

In 1993/4 MHA developed 42 hammer drill holes along 8 sections for 666m in the area south-west of Hogarths Creek. This has allowed a resource estimate to be made for an area of about 25ha extent to a depth of 10 metres extending south-west of the Quarry site.

Duncan (2005) estimated an inferred resource of **5 million tonnes** of siliceous material in the area just south of Hogarths Creek which breaks down to:

**0.35 Mt of very hard, silicified sandstone,
1.55 Mt of hard sandstone,
0.65 Mt of poorly consolidated, soft sandstone and
2.45 Mt of very soft sand**

Duncan suggested some infill drilling would be necessary to lift the resource to the Indicated level of the JORC Code. He also suggested a significant increase in resource was likely at depth and along strike to the NE and SW, with an inferred 20 Mt of high grade sand and sandstone available as a conservative figure in the area of the Retention Licence.

In 2010, MHA was asked by Temco to supply a bulk sample of quartzite from Hogarth Creek to determine its suitability in the manufacture of ferro-silicon at the Temco plant

in Bell Bay. About 8,000 tonnes of quartzite was mined and crushed on site to +25 - 60mm size and 5,000 tonnes of sized material was shipped to Bell Bay. A full report has not yet been supplied but verbal information suggests the Hogarth Creek material provided superior furnace returns but the cost of transport to Bell Bay more than offset the cost of inferior local quartzite. (Great material but cost of transport is too high). Temco has subsequently ceased production of ferro-silicon and the Bell Bay plant is for sale.

In recent times considerable effort was put into testing the unconsolidated sand from Thomas Mountain as a propping agent in oil drilling. Dip Range sand was tested by **Stim-Lab, Halliburton Services and Dowell Schlumberger** of the USA and **Santos and Amdel** in Australia. Tests were carried out on the 20/40 size range (US screen) which is the -850 to +420um fraction. Dip range sand is a fine/medium-grained sand with a median value of about 250um with about 50% in the 20/40 size fraction

As summarised by Stim-Lab, the Dip Range sample passed the size analysis, the acid solubility test and the turbidity test but was slightly below standard for shape factor, grain clusters and crush resistance tests for deep wells. From the Amdel tests, it is found that the sand grains have a dramatic decrease in crush resistance at about 4000 psi which would, according to Halliburton, restrict the use of the sand to shallow wells where less than 1200 psi is required in the recovery of methane gas from coal seams.

4.0 CURRENT EXPLORATION AND MARKETING

In November 2011, MHA and Jericho resources collected 300 tonnes of quartzite from the Thomas Mountain mine site, bagged it and shipped it to Burnie. It was then shipped to China for furnace trials. The material arrived in China on 17 January 2012 and test results are awaited.

Temco was supplied with 61kg of quartzite in January 2012, which they requested for a university research program. No results have yet been obtained.

Attempts to Market the quartzite and frac sand resources have continued. A number of meetings have been made with Sibelco Australia Ltd., Heemskirk Consolidated Ltd., Macquarie Harbour Minerals., Stratum Resources, DDM Capital Holdings, Mangalore Minerals Pvt. Ltd. and Fairmont Minerals Ltd. Correspondence was maintained with Norton Abrasives, Baker Hughes (USA), Schlumberger, Halliburton, Stikine Energy, US Silica and Simcoa.

Macquarie Harbour Minerals, Sibelco and Heemskirk have visited the site and collected samples of quartzite and frac sand for testing in their own laboratories. Results are awaited.

5.0 EXPENDITURE

MHA's audited accounts show it has spent \$473,865 on Dip Range. This has been reported to MRT over the years but it should be noted these accounts do not include any overheads or any expenditure incurred by third parties. Sibelco have indicated their field inspection costs were \$14,500 and their testing of frac sand samples would run to many thousands of dollars more. Heemskirk have not indicated their sampling and testing costs as yet.

6.0 CONCLUSION

Temco have suggested the higher transport costs make the Thomas Mountain quartzite uneconomic at this stage; however, Sibelco and Jericho Resources are taking considerable interest in the quartzite and are currently evaluating further participation.

Considerable interest in the potential for the Thomas Mountain mine to produce proppant sands for the expanding coal seam methane industry has also been generated. Some 40 to 60% of the unconsolidated sand falls within the favourable 20 to 40 mesh size range and in a commercial operation the run of mine material could be screened to produce a +20 mesh fraction of metallurgical silica, a 20 to 40 mesh fraction of frac sand and a -40 mesh fraction for glass sand. Sibelco Australia Limited, Heemskirk Consolidated Ltd and Fairmont Minerals Ltd are currently evaluating the frac sand potential.

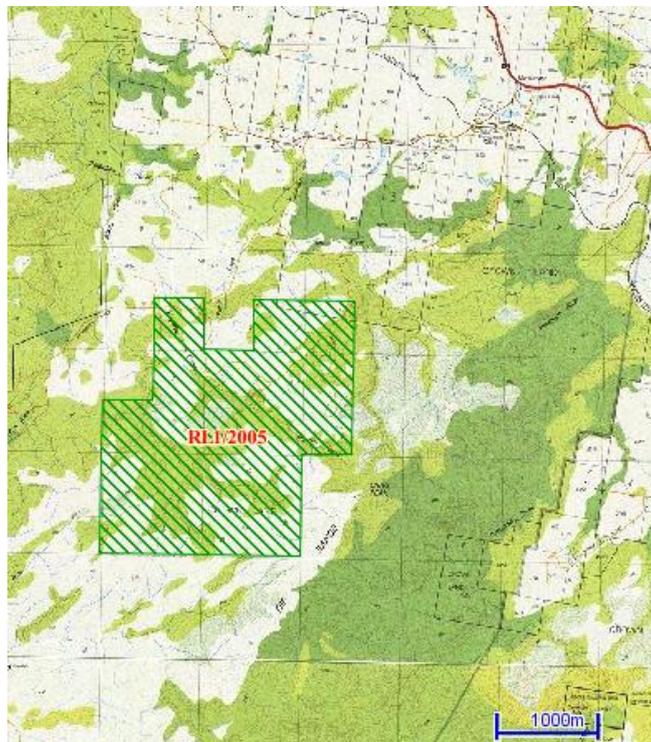
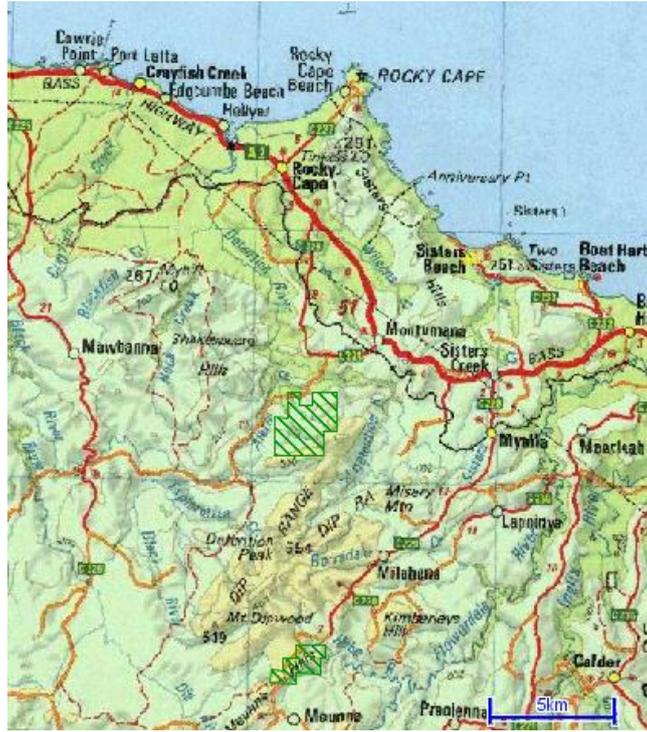
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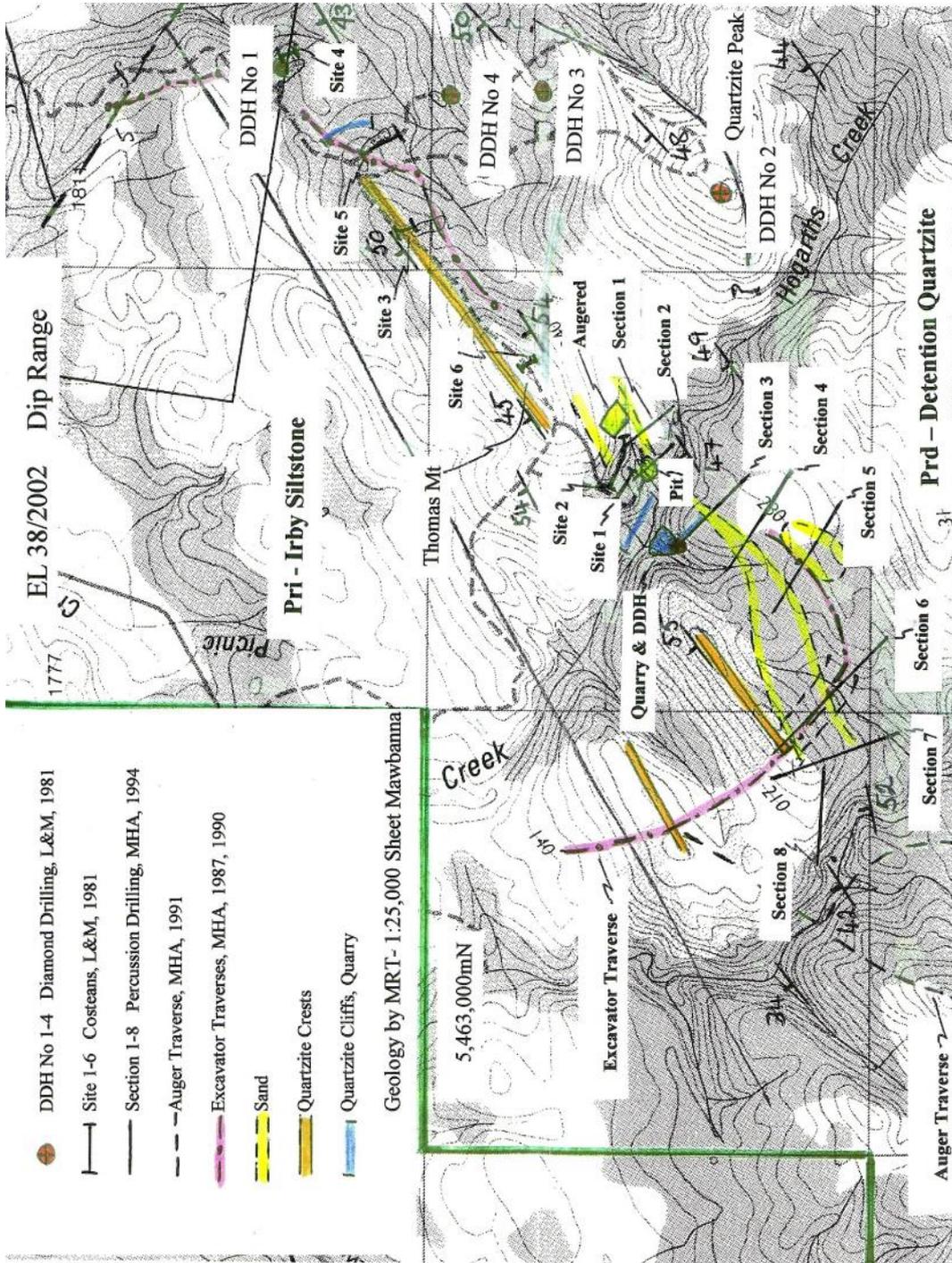
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8.0 KEYWORDS

Dip Range, Thomas Mountain, Detention Subgroup, Rocky Cape Group, Sand, Quartzite,
Silica Resources.



PLAN 1: Location Diagram RL 1/2005



PLAN 2: Geology & Exploration