

MINERAL HOLDINGS AUSTRALIA PTY LTD

**RETENTION LICENCE 1/2001
MEUNNA, NW TASMANIA**

ANNUAL REPORT TO MARCH 2005

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RL 1/2001- MEUNNA, NW TASMANIA – ANNUAL REPORT 2005**ABSTRACT**

This report describes the work carried out by Mineral Holdings Australia Pty Ltd in Year 3 of the licence covering 2 sq km in the Meunna Hills, some 25 km south-west of Wynyard.

The licence, granted on 1st March 2002, was designed to cover the silica resources of the 1130m thick Proterozoic Jacob Quartzite, a quartz arenite formation within the Rocky Cape Group. The resources lie along a NE-SW trending 2km length of the Meunna Hills.

Exploration carried out by MHA under EL 11/1992 over the period 1992-2002 has outlined an indicated resource of 90,000cu m and an inferred resource of 270,000 cu m of silica sand and gravel. In addition, there is an inferred, insitu, quartzite resource of 700,000 cu m or 1.7 million tonnes, assuming an SG factor of 2.5.

The targets are high-grade quartzite and sand to supply local and overseas markets with fracturing (frac) sand, silicon or ferrosilicon products and material for the glass-making industry.

In the current Year 3, an excavator program of five pits as a follow up of a program completed in 1995 was carried out to provide further material for testing with improved treatment and analytical techniques. Chemical analyses are presented which show that the tested area of Meunna silica sand is not of suitable purity for use as silica flour.

This excavator program has proved that this technique is not suitable for further evaluating the deposit given the hardness of the sandstone bedrock and that drilling is the preferred option for the future.

Future sampling and field work should be directed at testing the Meunna deposits for their frac sand and silica flour potential as well as investigating their utility for fused silica, silicon carbide, silicon metal, glass sand and other specialist uses such as the production of automobile windows, liquid crystal screens and solar panels.

Marketing studies will continue with industrial companies with suitable expertise being approached for potential joint ventures with down stream processing as part of any future development.

RL 1/2001- MEUNNA, NW TASMANIA – ANNUAL REPORT 2005**1.0 INTRODUCTION**

RL 1/2001 of 2 sq km was applied for by Mineral Holdings Australia Pty Ltd (MHA) on 20th November 2001 and was granted for a period of 3 years on 1st March 2002.

The licence was designed to cover the silica resources of the 1130m thick Proterozoic Jacob Quartzite, a quartz arenite formation within the Rocky Cape Group. The resources lie along a NE-SW trending 2km length of the Meunna Hills, some 25 km south west of Wynyard (Plans 1 and 2).

Exploration carried out by MHA under EL 11/1992 over the period 1992-2002 (Threader, 1993-1997 and Duncan, 2002 & 2004) has outlined an indicated resource of 90,000 cu m and an inferred resource of 270,000 cu m of silica sand and gravel. In addition, there is an inferred, insitu, quartzite resource of 700,000 cu m or 1.7 million tonnes, assuming an SG factor of 2.5 (Plan 3).

The targets are high-grade quartzite and sand to supply local and overseas markets with fracturing (frac) sand, silicon or ferrosilicon products and material for the glass-making industry.

2.0 PREVIOUS WORK

In Year One, efforts were focused on marketing the deposits in RL 1/2001 Meunna as part of the total silica resource inventory available to MHA at EL 38/2002 Dip Range, ML 8M/89 (Thomas Mountain) and RL 2/1996 Champion Road. Coburn Cement and INCOR, both of WA visited the area during the year for field inspections as potential joint venture partners. As no technical results were available for reporting, MHA was granted a waiver of reporting for this year.

In Year Two (to 1st March 2004), marketing letters were sent out to a number of overseas and Australian companies. These mainly relate to frac sand potential at Thomas Mountain and Meunna but also to silicon carbide.

As a result, field visits to the silica properties including Meunna, resulting from these letters, were carried out by Unimin personnel on two occasions in company with Mr Kevin Pinner representing MHA.

The following companies indicated their intention to visit the silica areas- Rockla, Queensland Gas, Oil Company of Australia, Tri-Star Petroleum and Haliburton Australia. However, no visits were carried through. In addition, Degussa Australia were provided with silica and carbonate samples for testing including a quartzite sample from Hebe River, Meunna. These results will be reported in future when available.

3.0 CURRENT EXPLORATION

In Year 3, it was decided to follow up previous exploration by excavating sand samples from the indicated resource of 90,000cu m for further testing by improved treatment, both washing and magnetic, and analytical techniques.

In 1994-95, an area of 25,000 sq m was defined by an excavator program of 11 pits with an average depth of 3.6m as part of EL 11/1992 (Threader, 1995). Pit logs and screen analyses are given in Table 1 showing that 50% of the material was minus 425 micron grain size. The iron content (Fe₂O₃) was variable with the average being 113ppm but three of the samples were less than 20ppm meeting the highest purity classification for the silica sand market.

Accordingly in Year 3, a program of re-sampling was carried out on western part of the sand resource near those pits (E 1, E 4 and E 10) with an iron content of less than 20ppm. E 10 site was particularly interesting as the material was very fine grained with 52% of the mass less than 75 um whereas the other two had only 10% in that category.

In December 2004, 5 pits were dug by excavator for an aggregate depth of 11.9m. The pits are on sites E 1, E 4 and E 10 of the previous program and E 2/3 between E 2 and E3 and E 4A between E 4 and E 5 also of the previous program (Plan 4).

All pits terminated in hard sandstone basically when the hole refused to advance with ripping in any reasonable time. When dug out and brought to surface, the material presented as up to 30% blocks of sandstone/quartzite in a matrix of mainly fine grained, light brown sand.

The samples were taken from a channel sample done with the excavator bucket from the side of each pit. The material from the bucket was shoveled into 2 green plastic bags each nominally 20-25 kg amounts and 2 clear plastic bags, each nominally 2 kg amounts and all considered to be splits. Table 2 has the logs of the excavated material, the sample numbers and the AMG locations.

These sample split sets, each set being from the 5 pits E 1, E 2/3, E 4, E 4A and E 10, were allocated as follows for future testing -

Sample Set	Location	Sample Nos P 230-
No 1, Green plastic bags	Kevin Pinner, Flowerdale	052,055,060,064,067
No 2, Green plastic bags	David Collidge, Devonport	051,056,059,063,068
No 1, Clear plastic bags	Ernest Gutsa, Univ of Melb	053,057,061,065,069
No 2, Clear plastic bags	David Duncan, Kingston	054,058,062,066,070
Some rocks selected from No 2 set, green bags	Kevin Pinner, Flowerdale	071-075

4.0 CHEMICAL ANALYSES

The No 1 – 2kg, clear plastic bag set of sand samples were sent to Dr Ernest Gutsa, Department of Chemical and Biomolecular Engineering, University of Melbourne, Victoria for analysis.

The samples were prepared in the way that they would be processed in an industrial treatment plant to achieve simple beneficiation. They were washed to remove organic material, dried and passed over with a magnet to remove any magnetic material. They were then digested with acid to remove silica and the resulting salts were fused with a boric acid flux.

The fusion was then taken up in hydrochloric acid for ICP analysis. Full details of the preparation are contained in Appendix A 2.

The non-milled samples are presented in Appendix A 1 for the oxides Fe₂O₃, TiO₂, Al₂O₃, CaO, MgO, and K₂O and the metals Mn, Cu, Cr and Ni.

The Fe₂O₃ content of these test pit samples at 187- 455ppm does not repeat the minus 20ppm values of the first excavator program. In general, although the silica content is in the range 99.5-99.8%, the contaminants are at least an order of magnitude too high for most silica flour specifications particularly in Fe₂O₃, TiO₂, K₂O and the metals Mn, Cu, Cr and nickel (see specifications in Appendix A 3).

5.0 FUTURE PROGRAM

This excavator program has proved that this technique is not suitable for further evaluating the deposit given the hardness of the sandstone bedrock and that drilling is the preferred option for the future.

Enough outcrop is visible along the tracks to prove that this is an in-situ, weathered sandstone deposit in Jacob Quartzite. The weathering and/or other alteration has produced irregular zones of hard and soft sandstone and even quartzite (silicified sandstone) like the Detention Formation in the Dip Ranges at Thomas Mountain.

No tests to date have been carried out on the Meunna sand from the Jacob Quartzite for its frac sand potential. However, the sizing tests from samples from excavator pits in the area show that on average about 30% of the resource would be in the plus 420 um range considered optimum for frac sand (see Table 2, from Threader, 1995). Plotting on a conventional size-grading diagram shows that Meunna, Dip Range and Hebe River sand are closely related in grain size distribution (Threader, 1995). It is apparent that specific testing for this usage should be carried out on Meunna samples.

The presence of some very fine grained, pure material with 50% less than 75 um as described above suggests a possibility of a silica flour yield and that is being investigated with the present chemical analyses.

Future sampling and field work should be directed at testing the Meunna deposits for their frac sand potential as well as investigating their utility for fused silica, silicon

carbide, silicon metal, glass sand and other specialist uses such as the production of automobile windows, liquid crystal screens and solar panels.

Marketing studies will continue with industrial companies with suitable expertise being approached for potential joint ventures with down stream processing as part of any future development.

6.0 CONCLUSIONS

5.1 The silica resources on RL 1/2001 remain-

Sand and Gravel	Indicated	90,000 cu m
	Inferred	270,000 cu m
Sandstone/quartzite	Inferred	0.7M cu m or 1.7M tonnes

5.2 Exploration and evaluation carried out by Mineral Holdings Australia Pty Ltd over the period of RL 1/2001 as described above has cost over \$10,060.

5.3. Excavator testing during the current year suggests that the area tested does not have the purity required to meet silica flour specifications.

5.4 On the basis of that work, and to allow future investigation, Mineral Holdings applied for an extension of term on 2nd February 2005.

7.0 ENVIRONMENT

The five pits constructed along old forestry tracks in this licence area were backfilled immediately following logging and sampling. The surface was recontoured and slash and litter distributed around as appropriate.

One costean, on the track of the excavator, reported earlier by Mineral Holdings as illegal activity by unknown agencies, was filled in and recontoured. This leaves one other illegal costean to be dealt with on a future occasion.

8.0 REFERENCES

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KEYWORDS

Meunna Hills, Jacob Quartzite, Rocky Cape Group, Sand, Sandstone, Quartzite, Silica Resources

APPENDICES A 1, A 2 & A 3