

MINERAL HOLDINGS AUSTRALIA PTY LTD

EXPLORATION LICENCE EL47/2011 DIP RANGE, NW TASMANIA

ANNUAL REPORT ON EXPLORATION TO AUGUST 2017

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28 August 2017

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ABSTRACT

This report gives a review of the exploration work carried out by Mineral Holdings Australia Pty. Ltd. (MHA) over the past 12 months on EL47/2011. The Licence originally covered 186 km² but this was reduced to 38 km² in September 2013. A further 22.7 km² is to be relinquished with this renewal so that the area of the licence is now reduced to 15.3 km². The Licence is located in the Dip Ranges and surrounds retention licence RL1/2005, which contains the Thomas Mountain silica mine.

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

Previous exploration by MHA and its previous joint venture partners has outlined a substantial inventory of potential silica products in retention licence RL1/2005 and the intention was to explore the adjacent areas for any further silica resources, with a primary focus on the discovery of additional frac sand deposits.

Two new frac sand deposits have been located within EL47/2011, one in the Shakespeare Hills, in the north-west of the licence, and a second and larger deposit at Alarm River, to the south-west of the frac sand deposits in RL1/2005.

An access track to Alarm River was constructed and a detailed program of back-hoe sampling was carried out at Alarm River to evaluate the frac sand deposit. Five back-hoe holes were dug, 20 metres apart, on each of 5 traverse lines, which were separated by 200 metres. Two separate bodies were outlined with an estimated resource of 97,000 tonnes of frac sand.

A detailed programme of foot traversing was carried out to locate any extension to the two known deposits and to locate any additional deposits of frac sand. No new significant bodies were located and this southern area, below grid line 5,460,000 N, has now been relinquished.

1.0 INTRODUCTION

EL47/2011 was granted to Mineral Holdings Australia Pty. Ltd. (MHA) on 16 September 2012 for a period of 5 years. The Licence originally covered 186 km² in the Dip Ranges, surrounding retention licence RL1/2005, which contains the Thomas Mountain silica mine. The Licence was reduced to 38 km² on the first renewal in September 2013 and further reduced at this renewal to 15.3 km².

The Thomas Mountain mine contains significant resources of high-quality quartzite and frac sand located 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.

Exploration licence EL47/2011 covers outcrops of the Detention Quartzite and the Jacobs Quartzite of the Rocky Cape Group surrounding the Thomas Mountain mine and the target of the exploration program is for any additional resources of silica, silica sand and quartzite for the chemical, metallurgical, glass and coal seam methane industries.

Initial exploration during 2013 located an area of silica sand in the Alarm River area. Follow-up mapping and auger sampling from 2014 to 2016 indicated the sand extended over a length of at least 800 metres and a width of 80 metres, running south-west from the boundary with retention licence RL1/2005. This area is directly along strike from the large area of frac sand south of Hogarths Creek.

During the 2016 and 2017 season, an access track to Alarm River was constructed and a detailed program of back-hoe sampling was carried out over the Alarm River deposit to evaluate the frac sand resource. Five back-hoe holes were dug, 20 metres apart, on each of 5 traverse lines, which were separated by 200 metres. Two separate bodies were outlined with an estimated resource of approximately 60,400 tonnes in the south-west deposit and 36,700 tonnes in the north east deposit.

A detailed program of foot traversing was carried out in the northern section of the Licence in the Shakespeare Hills area. A second area of sand was located, covering an area of 300 metres by 100 metres. Size analysis of the sand from both areas showed the bulk of the material fell within the favourable 20-40, 40-70 and 70-140 US mesh size fractions.

During 2016, a detailed programme of foot traversing was carried out to the south of Alarm River to locate any further frac sand deposits. No new bodies were located and this 22.7 km² area, below grid line 5,460,000 N, has now been relinquished.

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 and Jacob Quartzite sub-groups and rocks of these sub-groups 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 (1130 m in thickness), the Irby Siltstone (760 m) and the Detention Quartzite (1400 m). Gee suggested the Detention Quartzite contained about 10% siltstone in beds from a few metres to more than 80 metres in thickness, while the Jacob Quartzite is a pure quartz sandstone and is the coarser grained of the two. The Rocky Cape Group, in turn, overlies the Cowrie Siltstone which was at least 2,400 m in thickness.

Structurally the Detention Quartzite and the Jacob Quartzite are 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 refer to the mature quartzose sandy sediments as quartz arenites and attributed their variable physical character as mostly due to variable silicification and occasionally to metamorphism.

Along with the quartzites are areas of loose silica sand which appear to be areas of uncemented quartzite. The sands are high purity silica sand and are suitable for use in coal bed methane extraction.

3.0 CURRENT EXPLORATION

The Shakespeare Hills area was extensively traversed on foot by prospector, Mr Kevin Pinner, and much of the area was better exposed after recent bushfires, giving a much better look at the geology. Roads and tracks are very rare in this area and traversing on foot is the only available method of exploration. The sand body in this area is approximately 300 metres by 100 metres.

Three hand auger samples were taken for size and roundness analysis and reports were detailed in the 2014 Annual Report. The yield of the important -20+40 and -40+70 size fractions was very good and the roundness of the grains was also acceptable.

It is proposed to cut an access track to the area and develop a series of back-holes to better outline the deposit during the next year.

The Alarm River deposit is located on the western boundary of RL1/2005. A new access track was developed to the area and 5 backhoe traverses were developed 200 metres apart with five back-hoe holes developed at 20 metre intervals on each line. Two of those traverses fell within RL1/2005 and have outlined a small isolated deposit of frac sand in that area (Alarm River Area A). It is estimated to contain 36,700 tonnes of frac sand to a depth of 4 metres.

A second deposit (Alarm River Area B) lies to the south-west, within EL47/2011, and is estimated to contain an additional 60,400 tonnes of frac sand to a depth of 4 metres. Details of backhoe traverses are given in Appendix A.

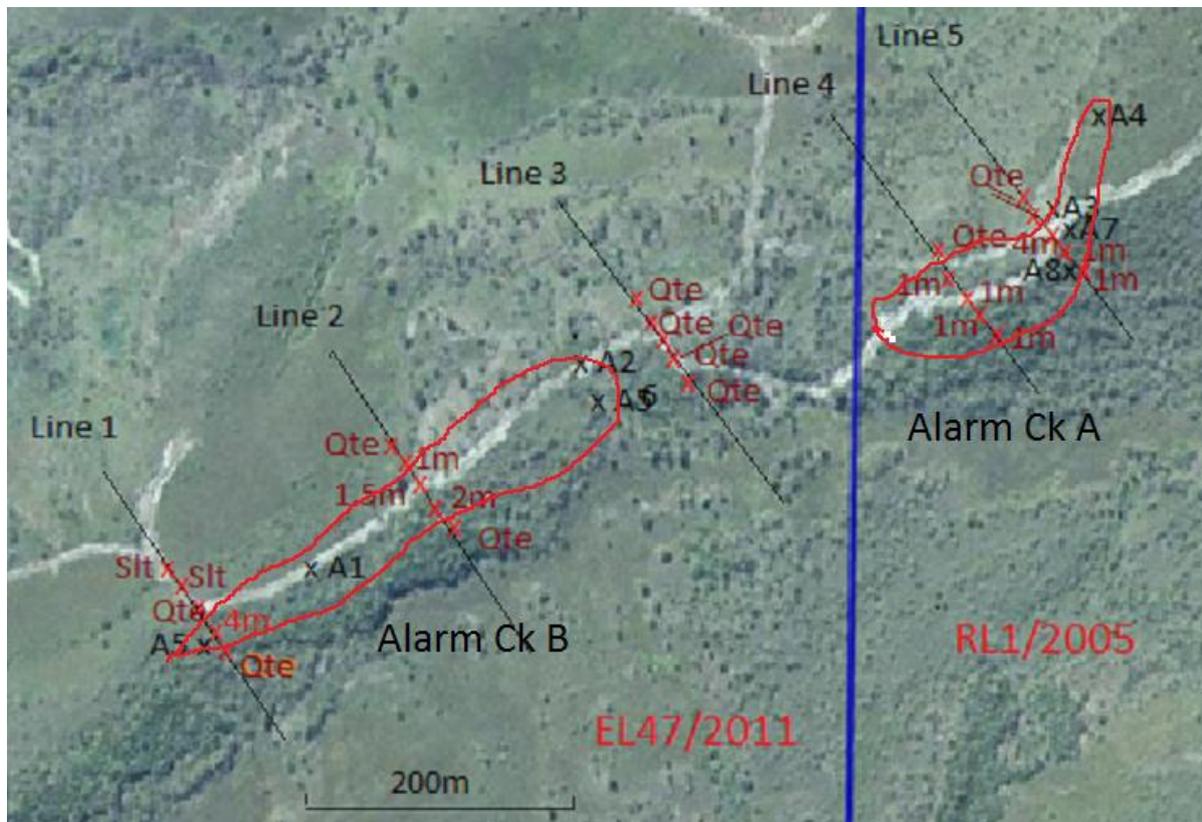


FIGURE 1: Alarm River Deposits Straddling Boundary of RL1/2005 & EL47/2011

4.0 FUTURE EXPLORATION

An old, overgrown access track to the Shakespeare Hills site will be cleared to allow a tractor mounted power auger to access the site. Back-hoe holes will then be developed to fully outline the resource.

5.0 CONCLUSION

Several new sources of potential frac sand material have been identified and evaluation of the sand is continuing.

6.0 REFERENCES

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7.0 KEYWORDS

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

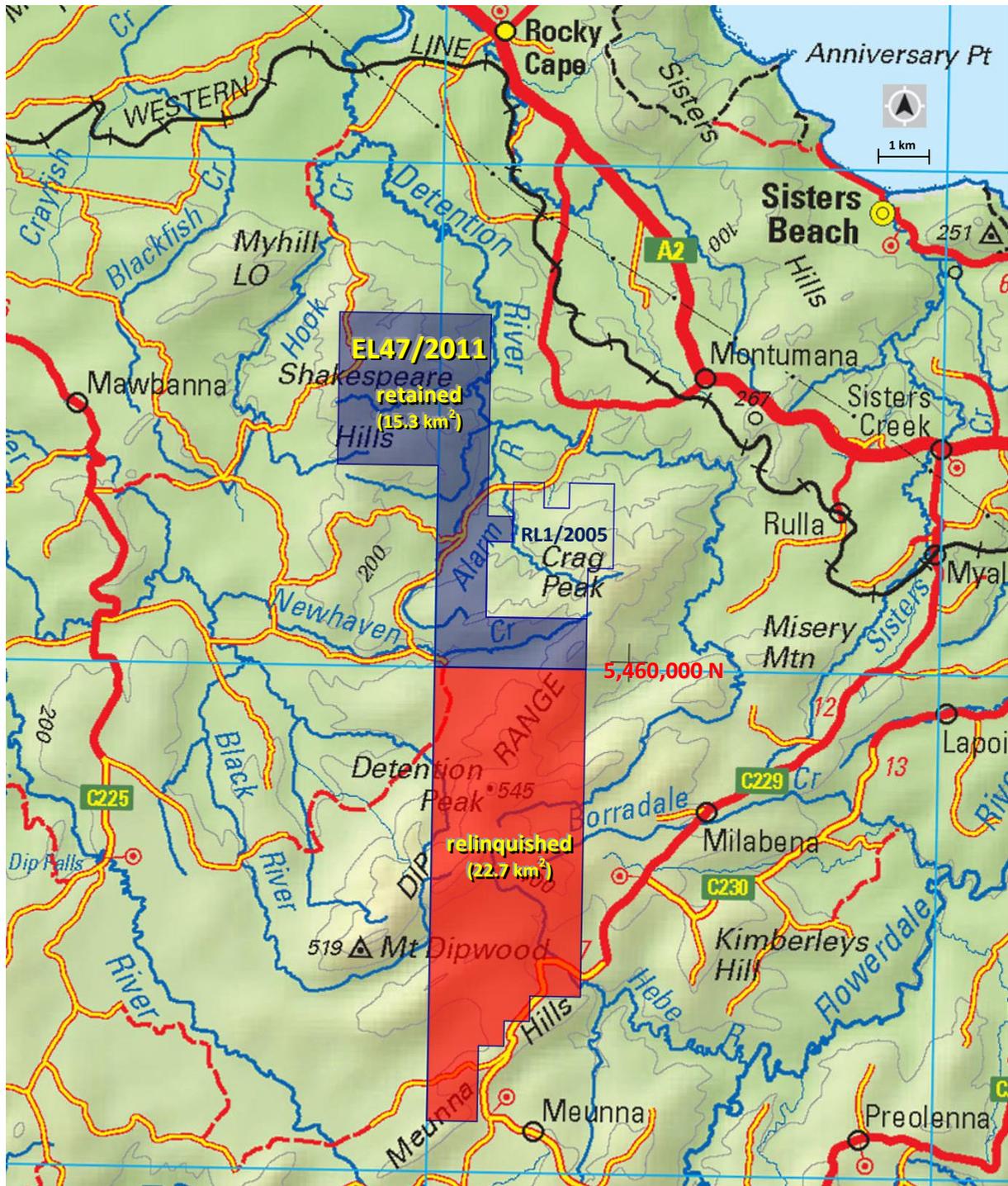


FIGURE 2: Location Diagram - EL47/2011 Dip Range (showing areas retained and relinquished)

APPENDIX A

ALARM RIVER BACK-HOE RESULTS

TABLE 1: ALARM RIVER AREA A - BACK-HOE SAMPLING

LINE	PIT	EASTING	NORTHING	DEPTH (m)	DESCRIPTION
1	1	370 453	5 461 450	0.0	slate
1	2	370 466	5 461 435	0.0	slate
1	3	370 486	5 461 409	0.0	slate/quartzite contact
1	4	370 501	5 461 391	4.0	sand and sandstone
1	5	370 522	5 461 364	0.0	quartzite and sandstone
2	1	370 619	5 461 543	0.0	quartzite
2	2	370 635	5 461 525	1.0	sand/sandstone
2	3	370 655	5 461 506	1.5	sand/sandstone
2	4	370 670	5 461 492	2.0	sand/sandstone
2	5	370 691	5 461 469	0.0	hard quartzite
3	1	370 820	5 461 677	0.5	quartzite
3	2	370 831	5 461 658	1.0	sand/sandstone
3	3	370 842	5 461 629	1.0	sand/sandstone
3	4	370 861	5 461 608	0.0	hard sandstone
3	5	370 880	5 461 586	1.0	sand/sandstone

TABLE 2: ALARM RIVER AREA B - BACK-HOE SAMPLING

LINE	PIT	EASTING	NORTHING	DEPTH (m)	DESCRIPTION
4	1	371 068	5 461 727	0.5	quartzite to 0.5m then clay
4	2	371 081	5 461 708	1.0	sand/sandstone
4	3	371 094	5 461 682	1.0	sand/sandstone
4	4	371 110	5 461 666	1.0	hard sandstone
4	5	371 127	5 461 646	1.0	sand/sandstone
5	1	371 117	5 461 763	1.0	hard sandstone
5	2	371 132	5 461 740	1.0	quartzite
5	3	371 144	5 461 715	4.0	sand to 2.5m then sandstone
5	4	371 156	5 461 697	1.0	sand/sandstone
5	5	371 173	5 461 682	1.0	sand/sandstone