

**MINERAL HOLDINGS AUSTRALIA PTY LTD**

**EXPLORATION LICENCE 47/2011  
DIP RANGE, NW TASMANIA**

**FINAL REPORT ON EXPLORATION  
TO JUNE 2018**

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## **EL 47/2011 DIP RANGE, NW TASMANIA, ANNUAL REPORT 2016**

### **ABSTRACT**

This report gives a review of the exploration work carried out by Mineral Holdings Australia Pty. Ltd. over the past 12 months on EL 47/2011. The Licence originally covered 186 km<sup>2</sup> but this was reduced to 38 Km<sup>2</sup> in September 2013. A further 22 Km<sup>2</sup> was relinquished in August 2017 so that the area of the licence is 15.25 Km<sup>2</sup>. The Licence is located in the Dip Ranges and surrounds the Thomas Mountain Silica Mine within RL1/2005.

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 Mineral Holdings Australia Pty. Ltd. and its previous joint venture partners has outlined a substantial inventory of potential silica products in the RL1/2005 and the intention was to explore the adjacent areas for any further resources of those products and especially frac sand deposits.

Two new deposits have been located within EL 47/2011, one in the Shakespeare hills in the north west of the Licence and a second and larger deposit at Alarm Creek to the south west of the frac sand deposits in RL 1/2005. Five back-hoe holes were dug at Alarm Creek in 2017 each 20 metres apart on each of 5 traverse lines separated by 200 metres. Two separate bodies were outlined one within RL1/2005 and the other within EL 47/2011 with a potential resource of 60,000 tonnes.

The deposit at Shakespeare hills was tested by 14 back hoe pits on three lines in February 2018. Sand was present only on line 1 with a resource of possibly 50,000 tonnes.

A detailed program 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 the title is to be relinquished.

## **1.0 INTRODUCTION**

EL 47/2011 was granted to Mineral Holdings Australia Pty Ltd on 16th September 2012 for a period of 5 years. The Licence originally covered 186 sq km in the Dip Ranges surrounding the Thomas Mountain Silica Mine within RL1/2005. The Licence was reduced to 38Km<sup>2</sup> on the first renewal in September 2013 and further reduced at this renewal to 15.25 Km<sup>2</sup>.

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 20km 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 Exploration Licence 47/2011 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 RL 1/2005. This area is directly along strike from the large area of frac sand south of Hogarth Creek.

During the 2016 and 2017 season an access track to Alarm Creek was constructed and a detailed program of back-hoe sampling was carried out over the Alarm Creek deposit to evaluate the frac sand resource. Five back-hoe holes were dug 20 metres apart on each of 5 traverse lines separated by 200 metres. Two separate bodies were outlined with an estimated resource of approximately 60,400 tonnes in the south-west deposit. The northeast deposit lies within RL 1/2005.

The deposit at Shakespeare hills was tested by 14 back hoe pits on three lines in February 2018. Sand was present only on line 1 with a resource of possibly 50,000 tonnes. Size analysis of the sand from the area showed the bulk of the material fell within the favorable 20-40, 40-70 and 70-120 mesh size fractions.

A detailed program 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 the title is to be 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 (1130m in thickness), the Irby Siltstone (760m) and the Detention Quartzite (1400m). 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 2400m 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 call the mature, quartzose, sandy sediments quartz arenites and attributes 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 100 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. 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. Sample 2 from the Shakespeare hills area was sent to for testing to Stim lab. The result is quite encouraging and is reported in the 2016 annual report.

The Alarm Creek deposit is located on the western boundary of RL 1/2005. A new access track was developed to the area and backhoe traverses were developed 200 metres apart with five back- hoe developed at 20 metre intervals on each line. Two of those traverses fell within RL 1/2005 and have outlined a small isolated deposit of frac sand in that area.

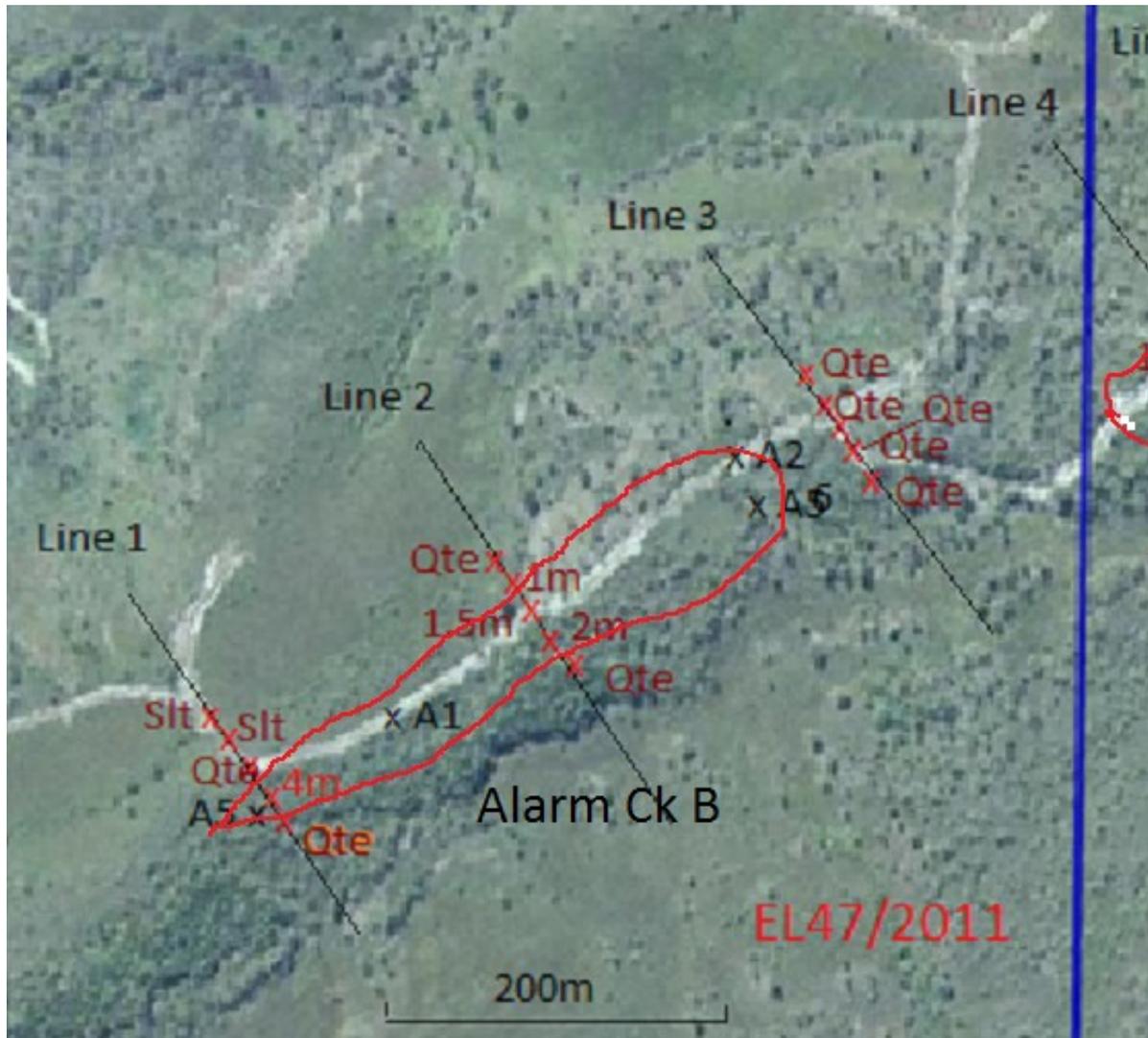
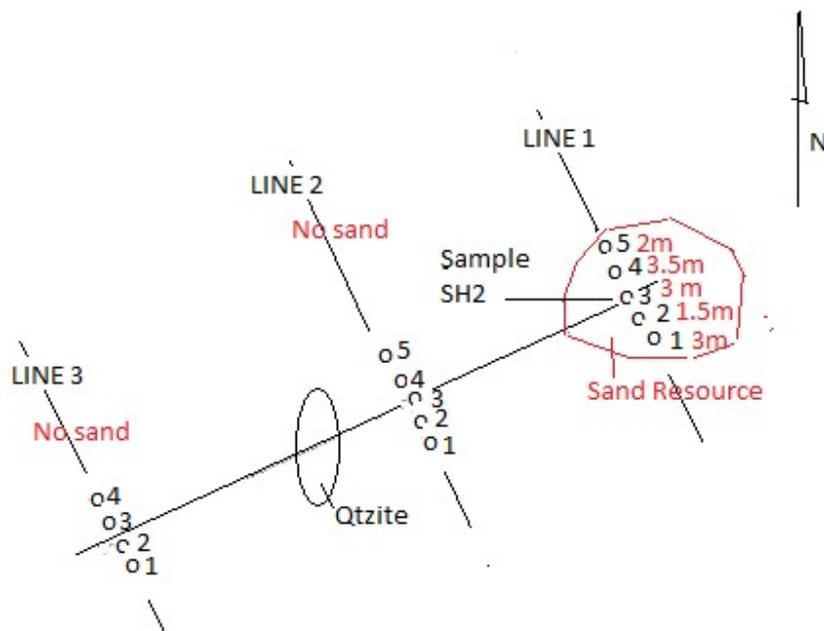


FIG 1 Alarm Creek deposits straddling boundary of RL 1/205 and EL 27/2011

A second deposit lies to the south west within EL 47/2011 and is estimated to contain an additional 60,400 tonnes of frac sand to a depth of 4 metres. Details of the two backhoe traverses are given in Appendix 1.

The Shakespeare Hills deposit was investigated by 3 lines of back hoe lines. Sand was present only on line 1 where the 5 holes averaged 3 metres in depth. Only less than half a metre of sand was located in the 9 holes on lines 2 and 3 directly overlying hard quartzite. The resource in this area is limited to a maximum of 50,000 tonnes.



#### 4.0 CONCLUSION

Several new sources of potential frac sand material have been identified but both appear to be too small to be developed economically. There is little likely any other sand deposits exist in the area and as a result the licence will be relinquished.

#### 5.0 REFERENCES

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## **7.0 KEYWORDS**

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

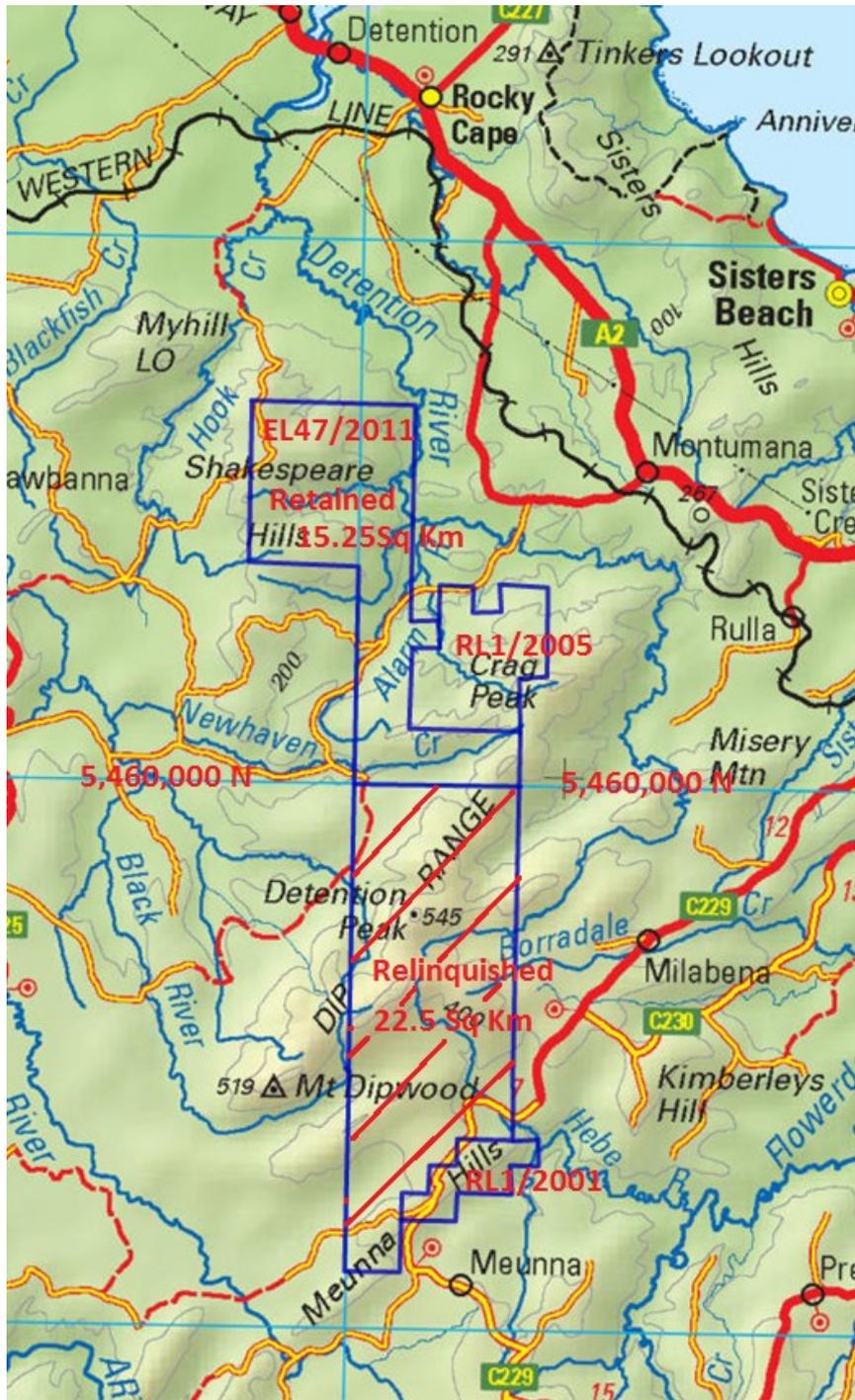


Fig. 2 Location diagram EL 47/2011 with areas retained/relinquished

# APPENDIX 1

## ALARM CREEK AND SHAKESPEARE HILLS BACK-HOE RESULTS

Table 1. ALARM CREEK 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 2.5 then sandstone
5	4	371 156	5 461 697	1.0	Sand/sandstone
5	5	371 173	5 461 682	1.0	Sand/sandstone

Sizing results reported in Annual Report for 2013

TABLE 2 SHAKESPEARE HILLS BACK HOE SAMPLING

Line	Pit	Easting	Northing	Depth M	Description
1	1	370 308	5 466 091	3.0	Sand /quartzite at 3m
1	2	370 300	5 466 105	1.5	Sand over qtzite
1	3	370 294	5 466 116	3.0	Sand over qtzite
1	4	370 281	5 466 131	3.5	Sand over qtzite
1	5	370 269	5 466 145	2.0	Sand over qtzite
2	1	370 164	5 466 001	0	Quartzite
2	2	370156	5 466 016	0	Quartzite
2	3	370 145	5 466 029	0	Quartzite
2	4	370 135	5 466 043	0	Quartzite
2	5	370 128	5 466 057	0	Quartzite
3	1	369 965	5 465 886	0	Quartzite
3	2	369 955	5 465 904	0	Quartzite
3	3	965 948	5 465 914	0	Quartzite
3	4	965 938	5 465 930	0	Quartzite

Sizing reports reported in Annual Report for 2014. Stim lab report result for Sample 2 given in Annual Report for 2016