



EXPLORATION LICENCE  
EL61/2007, EL62/2007, EL63/2007  
SORELL PENINSULA REGION, WESTERN TASMANIA

COMBINED ANNUAL REPORT FOR THE YEAR ENDED  
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## 1 EXECUTIVE SUMMARY

EL61/2007, EL62/2007 and EL63/2007 are separate licences in the Macquarie Harbour region in Western Tasmania which were granted on 27 April 2007. All three have common boundaries with other licences held by Macquarie Harbour Mining Limited. EL61/2007 and EL63/2007 lie in zones of meta-sedimentary Proterozoic rocks on the Sorell Peninsula while EL62/2007, which straddles Macquarie Harbour, covers a magnetic high which reflects a continuation of the prospective nickel-bearing ultramafic rocks northwards offshore.

Work during the second year of tenure has continued on a high purity silica resource near Cape Sorell on EL63/2007. The impetus for this programme has been due largely to the strong interest shown by a large European company in establishing a silicon metal operation in Tasmania.

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## 2 INTRODUCTION

This is the second annual report on EL61/2007 (57 sq km), EL62/2007 (67 sq km) and EL63/2007 (80 sq km) which are held in the name of Goldstock Mining Pty Ltd, a wholly owned subsidiary of Macquarie Harbour Mining Ltd ("MHM"). EL61/2007 lies between EL21/2007 and EL22/2007 with the ocean along its south western boundary, EL63/2007 forms the northwest extremity of Cape Sorell Peninsula and EL62/2007 covers part of Macquarie Harbour between EL20/2007 to the north and EL's 21 & 22/2007 to the south (see Figure 1). The licences all fall within the South West Conservation Area and any exploration requires continual consultation with the relevant government authorities, particularly Mineral Resources Tasmania and Parks and Wildlife Services.

### 3 REGIONAL GEOLOGY

EL 61/2007 and EL63/2007 represent two areas of older rocks (Mesoproterozoic-Neoproterozoic) which form thrust boundaries with younger Neoproterozoic and Cambrian sequences. EL62/2007 has no geological outcrop but observation of airborne geophysical data indicates that the NNE trending magnetic high which reflects the Hibbs ultramafic belt (known to host nickel mineralisation) on the south side of Macquarie Harbour, continues to the north (see Figure 2). A simplified geological map of EL61/2007 and EL63/2007 is shown as Figure 3.

#### EL61/2007:

The principal geological unit within this licence is a metamorphosed turbidite sequence of interbedded quartzwacke and mudstone/siltstone considered to be of lower Neoproterozoic age. In the southwest of the tenement there are also metamorphosed impure dolomite-rich sequences of mudstone, siltstone and sandstone which correlate to the Oonah Formation. There are also minor early Cambrian gabbroic intrusions.

#### EL63/2007:

This licence covers metamorphic rocks of Mesoproterozoic age comprising a multiply-folded sequence of clean orthoquartzite beds with minor interbedded phyllitic siltstone and locally developed siliceous conglomerate lenses. Along its eastern boundary the quartzite sequence overlies Neoproterozoic rocks along a sub-horizontal thrust sheet.

The sequence shows at least three phases of deformation, the massive siliceous rocks behaving competently to form broad truncated folds while the phyllites and thin laminated quartzites are contorted with boudinage structures. The regional strike is north to northeast. Due to their resistance to weathering the massive quartzite beds form prominent outcrops and strike ridges. Quartzite scree often covers the softer eroded phyllites giving the false impression of the quartzite beds being thicker than in fact they are.

The quartzite varies in quality from pure (almost 100% SiO<sub>2</sub>) to high clay and/or high iron where it is strongly crossbedded. The colour, hardness and quality of the quartzite is dependent on the nature and thickness of the bedding, percentage of silica, and the amount of clay and iron minerals present. High purity silica represents an important commodity of commercial interest to MHM.

Quaternary sand dunes have built up along the western coast of Cape Sorell peninsula and in the extreme northeast.

#### 4 REVIEW OF WORK BY PREVIOUS EXPLORERS

Modern exploration commenced south of Macquarie Harbour in the mid-1950's and has been carried out intermittently since then, led by a relatively small number of companies which have expended considerable time and effort in an area with no existing infrastructure and a climate which limits concerted field programmes to the warmer months. This work was directed mainly towards base and precious metals but regional airborne geophysics and geological mapping by Lyell – EZ Explorations (1956-1962) and BHP (1965-1972) were instrumental in providing a strong basis for the structural understanding of the area.

Because of the low prospectivity for metallic mineralisation in EL61/2007 and EL63/2007 there has been no ground based follow-up base or precious metals exploration over the area covered by these two licences. However considerable work has been carried out in the Cape Sorell area (EL63/2007) on high grade silica deposits within the quartzites by Comalco Ltd in the 1970's. This is considered a highly attractive target for MHM and the previous exploration is reviewed below.

##### Evaluation of Cape Sorell Silica 1970-1976:

In January 1971 EL1/71 was granted to Comalco. It covered the entire north western extremity of Cape Sorell Peninsula as far south as Sloop Point and the company's ultimate objective was to acquire reserves of quartzite suitable for producing silicon metal to alloy with aluminium.

Prominent quartzite outcrops in the area include Mount Antill, Mount Obvious and The Grandfathers. To the east of Mount Obvious is an abrupt change in topography referred to by Comalco as "North Escarpment". It is at these localities where most of Comalco's exploration was focussed.

A preliminary surface sampling programme was carried out during 1971 which indicated that the softer and finely bedded quartzite as well as the harder massively bedded quartzite was mostly of high SiO<sub>2</sub> content. This was followed up by five inclined diamond holes which were drilled by Associated Diamond Drillers during 1974 to test some of the quartzite outcrops at depth. Two of these drill holes were located in an area northwest of Mount Antill, one to the northwest of North Escarpment, and the remaining two in The Grandfathers area. Holes 1 (18.6m), 2 (20.4m) and 3 (24.7m) encountered only thin beds of quartzite with interbedded phyllite. Holes 4 (20.0m) and 4a (71.9m) at Grandfathers were drilled in quartzite however analysis of samples indicated these were just below "silicon grade" requirements.

During January 1975 Comalco applied for four 100 hectare Mineral Leases within EL1/71 but the following month these were converted to a Consolidated Lease 16M/75 which was formally granted in March 1975.

Over the 1974-75 field season an intensive costean sampling programme by drilling and blasting of the quartzite was accompanied by a topographical/geological mapping programme to infer an adequate tonnage and grade so that plans could be made for a silicon smelter. The minimum inferred tonnage from Mount Antill, Mount Obvious and North Escarpment was 2.78 million tonnes, having an average grade of 99.13% SiO<sub>2</sub>, 0.34% Al<sub>2</sub>O<sub>3</sub> and 0.05% Fe<sub>2</sub>O<sub>3</sub>. North Escarpment alone was 0.80 million tonnes at 99.60% SiO<sub>2</sub>, 0.07% Al<sub>2</sub>O<sub>3</sub> and 0.01% Fe<sub>2</sub>O<sub>3</sub>. Ten diamond holes totalling 755m were recommended from the costeaning and mapping to raise the status of inferred to measured or proven. Note that these figures are prior to the introduction of the JORC reporting standards and for this reason should be considered as "pre-JORC estimates". The recommendation for drilling was never implemented "for various economic reasons" and eventually ML 16M/75 was relinquished.

## 5 PREVIOUS WORK BY MHM

Literature review and data compilation comprised a major part of the work carried out on these three tenements during 2008. A reconnaissance 3 day helicopter trip was also made by the company's Managing Director, Chief Geologist and Consulting Geologist to visit these and other MHM tenements in the area. This included 3 hours on the ground in the Mount Obvious/North Escarpment area of EL63/2007.

Most work was directed towards the high grade silica potential of EL63/2007 which has involved investigating the market demand for raw silica and silicon metal products, consideration of the environmental aspects of open pit mining on Cape Sorell, and infrastructure requirements. Strong interest in high purity (>99%SiO<sub>2</sub>) "lump" quartzite was indicated at this early stage by large European and Asian companies wishing to expand into silicon metal production.

Late in 2008 planning was undertaken to facilitate a diamond drilling programme at North Escarpment (Figure 4) where the highest quality silica was delineated by Comalco. This was regarded as an essential step in establishing a JORC compliant resource/reserve by testing the continuity of grade at depth. With this in mind MHM engaged Coffey Mining to review drill planning in order to optimise the proposed programme. A Works Programme comprising thirteen inclined diamond drill holes for approximately 800m was proposed and submitted to Mineral Resources for approval. Another short reconnaissance visit was made to the area to check the topography and geology of the proposed drill collars and investigate possible camp sites. The drilling programme was approved and discussions with several drilling groups took place.

As a prerequisite for approval of the above Works Programme environmental and Aboriginal heritage requirements were investigated. Adam Marshall of Aboriginal Heritage Tasmania advised that no sites have previously been recorded over the area earmarked for drilling while Wildlife Consultant David James conducted a breeding season survey for Orange-bellied Parrot, Wedge-tailed Eagle, White-bellied Sea Eagle, Grey Goshawk and Masked Owl in December 2008. A summary of findings from this survey noted that no Orange-bellied Parrots or Grey Goshawks were detected, evidence of Masked Owl and Wedge-tailed Eagles was located but not breeding activity, and White-bellied Sea Eagles were detected and an active nest site located. It was recommended that specialist advice be sought from DPIW regarding helicopter flight paths and operating distances from nest locations prior to any field work commencement.

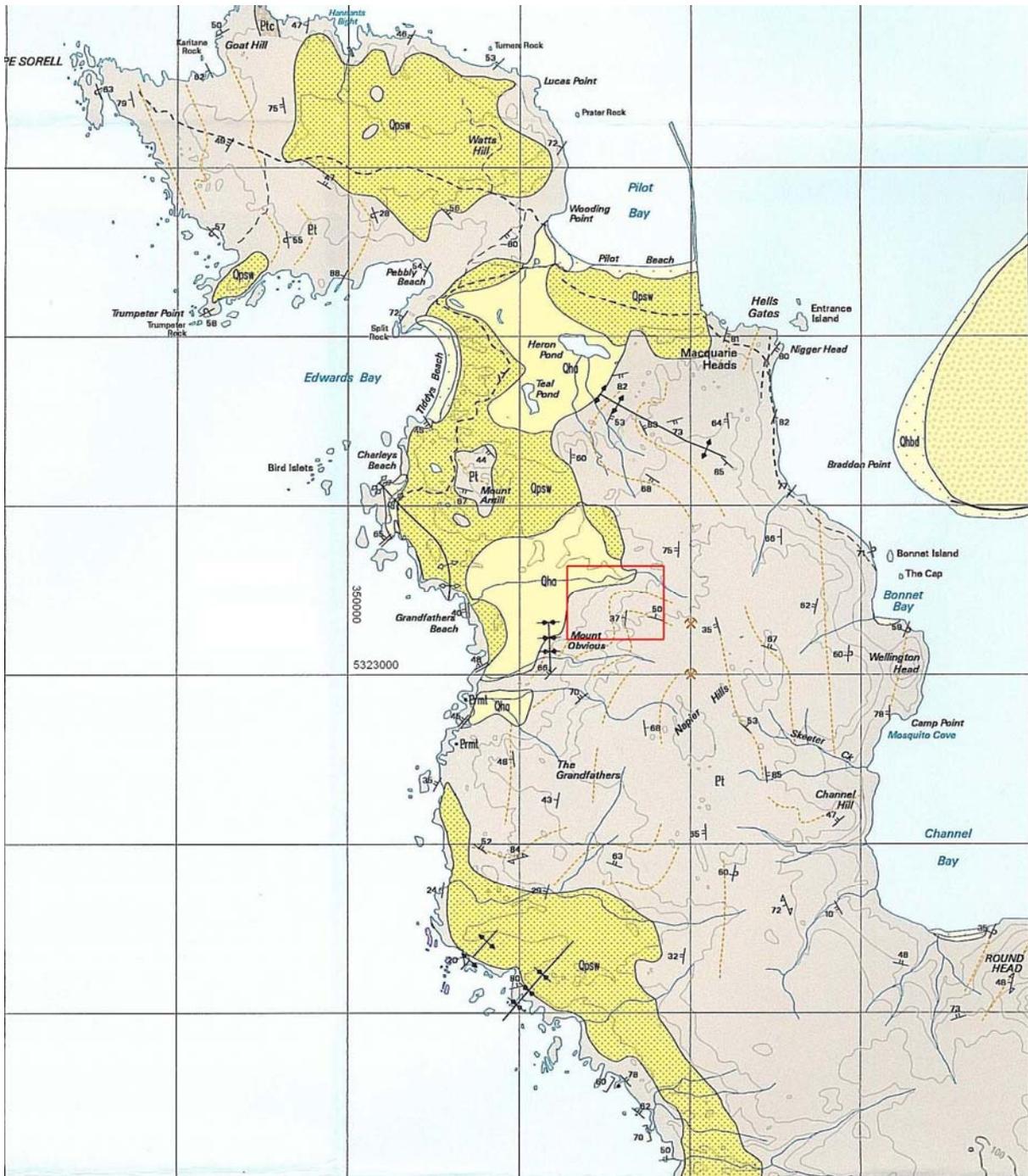


Figure 4: Geological map of Cape Sorell with North Escarpment area marked in red (1 km grid).

## 6 EXPLORATION COMPLETED DURING THE REPORT PERIOD

Activities in the second year of tenure have been focussed on the silica resource located near the north western extremity of EL63/2007. Much of this was driven by strong continuing interest in the high quality silica for the production of silicon metal by one large European company in particular. No field work was conducted on EL61/2007 or EL62/2007.

The proposed drilling programme referred to in last year's annual report was cancelled due to budgetary constraints during the global financial crisis.

In July 2009 a two day silica sampling programme was carried out by a three man team in the North Escarpment area (see Figure 4) where previous work by Comalco had delineated three "blocks" of quartzite outcrop containing high grade silica. Ten bulk samples were taken (approx. 8 kgs each), from outcrops spread over a 200m x 100m area. These were collected from rock shattered using a sledge hammer and returned to the company's office in Kingston to be hand-washed and scrubbed to remove surface impurities. Eight representative samples, which appeared on visual inspection to be of high purity, were despatched to laboratories owned by two large corporations. Five of these went to the European company (CSW1 – CSW5), and three (CSS1 – CSS3) to a Japanese company interested in buying the product. GPS locations for these samples are shown in Table 1 and analytical results in Appendix 1 (Japanese Laboratory) and Appendix 2 (European Laboratory).

**Table 1 Bulk Silica Samples, North Escarpment Area**

| Block | Sample | Easting | Northing |
|-------|--------|---------|----------|
| 1     | CSW1   | 351600  | 5323296  |
| 1     | CSW2   | 351604  | 5323279  |
| 1     | CSS1   | 351623  | 5323281  |
| 2     | CSS2   | 351622  | 5323365  |
| 2     | CSW3   | 351610  | 5323380  |
| 3     | CSS3   | 351552  | 5323435  |
| 3     | CSW4   | 351629  | 5323432  |
| 3     | CSW5   | 351664  | 5323443  |

Note: Coordinates are AGD66

Results from both laboratories indicate high purity silica in all the samples with the most variable major impurity being aluminium. In conclusion the quartzite is considered suitable for the production of silicon metal.

Discussions regarding the marketing of the silica and the feasibility of establishing processing facilities in Tasmania are continuing at the time of writing this report.

## 7 REFERENCES

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## 8 EXPENDITURE

Total annual expenditure for EL61/2007, EL62/2007 and EL63/2007.

|  |                   |
|--|-------------------|
| <b>Geoscientific Costs</b>                 |                   |
| Geology                                    | 58,605.00         |
| Geochemistry                               | 9,850.00          |
| Geophysics                                 |                   |
| Remote sensing                             |                   |
| <b>Drilling &amp; Gridding Costs</b>       |                   |
| Gridding                                   |                   |
| Drilling                                   |                   |
| Earthmoving                                |                   |
| <b>Land Access Costs</b>                   |                   |
|  |                   |
| Feasibility Costs                          | 20,000.00         |
| <b>Other Costs</b>                         | 23,339.00         |
| Rental fees                                |                   |
| Vehicular track Construction               |                   |
| Surveying, contract drafting etc           |                   |
| Capital equipment purchase                 |                   |
| Administration Costs                       | 8,642.00          |
| (note: not to exceed 10% of annual expend) |                   |
| Legal                                      | 3,195.00          |
| Office & Admin                             |                   |
|  |                   |
| <b>Total</b>                               | <b>123,631.00</b> |

# APPENDICES