



# Mole Creek EL4/2015

## Annual Report

11 March 2017 to 10 March 2018

**Sibelco Mining Services**  
49-55 Woodlands Drive  
Braeside, Victoria  
AUSTRALIA

Holder: Sibelco Lime (Tasmania) Pty Ltd  
Authority: EL4/2015  
Grant Date: 11/03/2016  
Expiry Date: 10/03/2021  
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Distribution: Mineral Resources Tasmania  
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## **ABSTRACT**

This report details work completed by Sibelco Lime (Tasmania) Pty Ltd (**Sibelco**) on EL4/2015 during the period 11 March 2017 to 10 March 2018.

Sibelco extracts limestone from Mining Lease 96M/1971 located on Crown Land near Mole Creek. Exploration on EL4/2015 is initially targeted at locating an extension of this deposit.

Drilling was undertaken during this reporting period being 71 holes for 428 metres.

Good quality  $\text{CaCO}_3 > 95\%$  limestone is present in the northern part of the lease at the Knoll, but is extensively clayed due to deep weathering. The Knoll is a small hill which lies to the west of Cave Hill Road, which is an along strike continuation of the SW deposit.

Only poorer quality limestone is found in the south of the lease which has large hills because the rock is more siliceous and less weathered.

Further drilling is recommended east of Cave Hill Road to better define the SW Deposit on EL4/2015.

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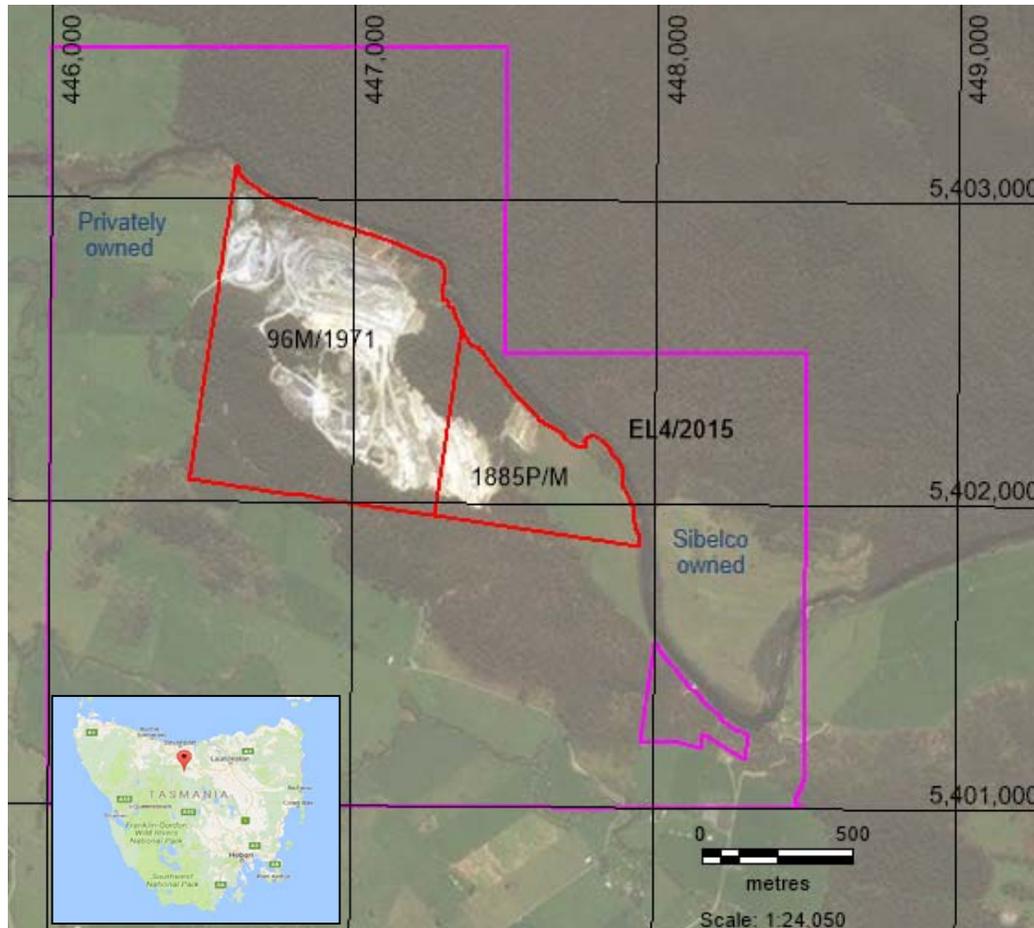
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# **I. INTRODUCTION**

## **1.1 Location and Access**

Mole Creek is located in Northern Tasmania. The Mole Creek Limestone Operation is located to the west of Mole Creek, Tasmania from 96M/1971 located on Crown Land.



**Figure 1 – Location Plan**

Sibelco has taken out an Exploration Licence EL4/2015 on land which surrounds the mining lease.

## **1.2 Tenure**

EL4/2015, was granted to Sibelco Lime (Tasmania) Pty Ltd on 11th March 2016 for a period of 5 years. EL4/2015 is on Crown Land, Sibelco owned land and privately owned land.

## **1.3 Geology**

Limestones in Tasmania are predominantly Ordovician age in the west, Permian to the east with Tertiary deposits in low lying coastal areas. The Mole Creek area has extensive Ordovician Limestones being the Gordon Limestone of the June Group. The Gordon Limestone is typically fine grained, crystalline, medium to dark grey but locally light-grey, pink and cream coloured. The rock is impervious but transmits water through cavities.

The limestone deposit at the mine can be sub-divided based on lithology and grade. The Upper Limestone unit has the highest grade calcium carbonate and is therefore capable of producing by calcining the highest calcium oxide lime product.

#### **1.4 Exploration rational and objectives**

EL4/2015 is located surrounding Sibelco's limestone operation in an area where historical mapping has shown the presence of limestone occurrences. The aim of the proposed work is to investigate the size and quality of the limestone. If a suitable resource is defined, studies will be undertaken to determine the economic viability of mining the limestone subject to landowner agreement.

Exploration on EL4/2015 is initially targeted at locating an extension of the SW Deposit, which is a structural controlled offset of the Main Deposit.



**Figure 2 – Site Geology**

## **2. REVIEW OF PREVIOUS WORK**

The Mole Creek Limestone has been extensively studied for economic, academic and environmental reasons. In 1957 the Geological Survey reported on the nature and distribution of limestones in Tasmania and outlined deposits which are accessible and suitable for development. The Geological Survey considered the Ordovician limestones to be the most important actual and potential sources of lime in Tasmania.

Detailed geological investigations have been undertaken such as a study by Rao in 1989 who assessed the geochemistry of the Gordon Limestone at Mole Creek. Rao considered the Gordon limestone to be characterized by low Manganese, moderate Sodium and high Strontium concentrations and concluded that the formation is mainly marine. In 1996 the Karst National Park was declared to provide protection for some cave systems which has also generated an ongoing environmental based interest in the geology and geomorphology of limestone in the area.

### **3. WORK CONDUCTED DURING THE REPORTING PERIOD**

Works undertaken during the reporting period included:

- Drilling Program of 71 holes for 428 metres;
- Carbonate suite analysis undertaken of drill samples;
- An assessment of results.

#### **3.1 Drilling**

Drilling was undertaken to assess the broader proceptivity of EL4/2015 and to assess a small hill, known as the Knoll, which is an along strike continuation of the SW deposit (shown in Figure 2).

The May 2017 Drilling Program on EL4/2015 consisted of 71 holes for 428 metres. Of these holes 53 were 2 metre length holes drilled into rock to obtain high quality rock chip samples. A total of 19 deeper holes were drilled.



**Figure 3 – Drilling (white dots collared in rock, tan dots collared in clay)**

A photograph of the Knoll is shown in Figure 4.



**Figure 4 – The Knoll**

### 3.2 Sample Analysis

Carbonate suite analysis was undertaken of all drill-holes and are digitally provided with this report with all drilling details.

## 4. DISCUSSION OF RESULTS

Good quality  $\text{CaCO}_3 > 95\%$  limestone was encountered with drilling in the northern part of the lease at the Knoll whereas only poor quality  $\text{CaCO}_3 < 90\%$  limestone was encountered in drilling south of the Knoll. The May 2017 drilling results for limestone expressed as  $\text{CaCO}_3$  are shown in Figure 5.



**Figure 5 – May 2017 Drilling  $\text{CaCO}_3$  results**

Although the limestone on the Knoll is good quality, weathering at, beneath and lateral to this limestone has spatially limited this deposit by extensive clay formation and groundwater. Rock is present beneath the clay line at the Knoll but further work is required to determine the economics of mining because of the spatial limits of benching and rehabilitation costs following excavation. There is a deeply weathered profile up to 20 metres thick between the road and rock outcrop on the Knoll which isolates the Knoll from the Mining Lease SW Deposit.

## **5. CONCLUSIONS**

Good quality limestone was intersected west of Cave Hill Road at the Knoll, being an along strike continuation of the SW deposit. Further drilling is recommended east of Cave Hill Road to better define the SW Deposit on EL4/2015.

## **6. ENVIRONMENT**

All rehabilitation activities were completed post the drilling programme including capping of drill holes and track maintenance to the satisfaction of the landowner.

## **7. EXPENDITURE**

Expenditure is presented in Table I.

Table 1. Exploration Activity and Expenditure Table

Exploration Category	Description of Activity	Quality	Expenditure
<b>Office Administration</b>	Tenement Administration	2 Days	\$1,000
<b>Authority Management</b>			
<b>Office Activities</b>	Planning and reporting	5 days	\$6,000
	Data Assessment	2 days	\$10,000
<b>Field Activities</b>	<b>Geological Mapping</b>		
	Mapping		\$3,000
	Sampling	Number of samples	
	Equipment Hire	Type and period	
	Accommodation/Field Camp	days	
	Travel	days	
	Land Holder Liaison	1 day	\$1,000
	Survey mapping		
	<b>Geophysics</b>		
	<i>Airborne</i>		
	Type	Line Kms	
	<i>Ground</i>		
	Type	Line Kms	
	<b>Drilling (program cost)</b>		
	RAB/AC	71 Holes/ 428 total metres	\$20,000
	RC	Holes/total metres	
	Diamond	Holes/total metres	
	Other	Holes/total metres	
<b>Laboratory</b>			\$12,000
<b>Salaries / Wages</b>	Employees	No. and period	
	Contractors	No. and period	
		<b>Grand Total</b>	<b>\$53,000</b>

**Table 1 – Expenditure**

## 8. REFERENCES

Geological Survey (1957) Limestones in Tasmania. Mineral Resources No. 10.

Rao, C.P (1989) Geochemistry of the Gordon Limestone (Ordovician), Mole Creek, Tasmania. Australian Journal of Earth Sciences. Vol 36, 1989-Issue 1

## 9. APPENDICES

See appended digital data.

## 10. BIBLIOGRAPHIC DATA SHEET

<b>REPORT NUMBER</b>	IO201801
<b>TITLE</b>	ANNUAL REPORT FOR PERIOD 11 MARCH 2017 TO 10 MARCH 2018 EL4/2015 MOLE CREEK LIMESTONE TASMANIA
<b>AUTHOR</b>	I. OPPY
<b>DATE</b>	FEBRUARY 2018
<b>PROSPECT NAME</b>	MOLE CREEK LIMESTONE
<b>OWNER/OPERATOR</b>	SIBELCO LIME (TASMANIA) PTY LTD
<b>KEY WORDS</b>	LIMESTONE INDUSTRIAL MINERALS
<b>COMMODITY</b>	LIMESTONE
<b>TECTONIC UNITS</b>	LACHLAN FOLD BELT TASMANIA BASIN
<b>1: 250 000 MAP SHEET</b>	GEOLOGY OF NORTHWEST TASMANIA
<b>1: 63 360 MAP SHEET</b>	MIDDLESEX 8114N
<b>1: 25 000 MAP SHEET</b>	MOLE CREEK 4439