

# **NI 43-101 Technical Report on the Moolyella Lithium Property, Western Australia**

---



**Prepared for  
SunMirror AG  
Steinhauserstrasse 74  
6300 Zug  
Switzerland**

**EurGeol Dr. Sandy M. Archibald, PGeo  
Aurum Exploration Services (Canada) Limited**


**June 16, 2021**

**IMPORTANT NOTICE**

This report was prepared as a National Instrument 43-101 Technical Report, in accordance with Form 43-101, for SunMirror AB, by EurGeol Dr. Sandy M. Archibald, PGeo. The quality of information, conclusions, and estimates contained herein is consistent with: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This report is intended for use by SunMirror AG and is approved for filing as a Technical Report (or Competent Person's Report) any internationally recognized stock exchange. The stock exchange can rely on this report without risk.

**Report Title: NI 43-101 Technical Report on the Moolyella Lithium Property, Western Australia**

Issue Date: June 16, 2021

Report author:   
EurGeol Dr. S. M. Archibald, PGeo  
Principal Geologist

Aurum Exploration Services (Canada) Limited  
Durham Corporate Centre  
105 Consumers Drive  
Whitby, Ontario  
Canada

## TABLE OF CONTENTS

1	SUMMARY .....	6
2	INTRODUCTION.....	8
	2.1 Terms of Reference, Scope & Purpose of Report.....	8
	2.2 Sources of Information & Data .....	8
	2.3 Visit to the Property by the Qualified Person .....	8
3	RELIANCE ON OTHER EXPERTS.....	9
4	PROPERTY DESCRIPTION & LOCATION .....	9
	4.1 Size and Location .....	9
	4.2 Mineral Tenure .....	10
5	ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY .....	14
	5.1 Accessibility .....	14
	5.2 Climate.....	14
	5.3 Local Resources .....	15
	5.4 Physiography .....	15
6	HISTORY .....	16
7	GEOLOGICAL SETTING & MINERALIZATION.....	20
	7.1 Regional Geology and local Geology .....	20
	7.1 Property Geology.....	21
	7.2 Mineralization.....	23
8	DEPOSIT TYPES.....	27
9	EXPLORATION .....	28
10	DRILLING .....	28
11	SAMPLE PREPARATION, ANALYSES & SECURITY.....	28
12	DATA VERIFICATION.....	28
13	MINERAL PROCESSING & METALLURGICAL TESTING .....	28
14	MINERAL RESOURCE ESTIMATES .....	28
15	ADJACENT PROPERTIES.....	29
16	OTHER RELEVANT DATA & INFORMATION .....	30
17	INTERPRETATIONS & CONCLUSIONS .....	31
18	RECOMMENDATIONS .....	32
19	REFERENCES.....	34

### List of Tables

Table 4-1: Property Tenure Corner Point Coordinates.....	12
Table 4-2: Summary details of the Moolyella exploration licence .....	13
Table 23-1: Archer Mineral Resources reported above a cut-off grade of 0.6% Li <sub>2</sub> O (Jones and Cody, 2020).....	29
Table 26-1: Summary of Proposed Expenditure.....	33

**List of Figures**

Figure 4-1: Property Location .....	10
Figure 4-2: Property Tenure Map .....	12
Figure 5-1: Property Location and Access Routes .....	14
Figure 5-2: Average temperature, precipitation and rainfall at Marble Bar, WA, by month .....	15
Figure 5-6: Physiography of the Moolyella licence showing water in historic alluvial workings ...	16
Figure 6-1: Dryblowing tin at Moolyella (ca. 1921) .....	17
Figure 6-2: Previous licences over current Moolyella licence (outlined in red) .....	18
Figure 7-1: Geological sketch map of the Pilbara Craton with the major pegmatite fields (yellow stars) .....	20
Figure 7-2: Geological map of the Moolyella Property (GSWA 250k geological map). .....	22
Figure 7-3: Pegmatites intruding the Fig Tree Gneiss.....	22
Figure 7-3: Pegmatite containing coarse columbite-tantalite (coltan).....	23
Figure 7-5: Sampling a flat-lying pegmatite in the licence area in 2016. ....	25
Figure 7-6: Location of all bedrock RC drillholes on the Moolyella licences. Labelled drillholes contained Li <sub>2</sub> O intervals > 0.15%. .....	26
Figure 7-7: Exterra geologist resampling discarded Lithex Resources' RC chip samples from Pegmatite Gully .....	26
Figure 8-1: Schematic diagram for an idealised pegmatite swarm illustrating the spatial distribution of different pegmatite types.....	27
Figure 23-1: Location of the adjacent Marble Bar Project and Archer Mineral Resource (Global Lithium).....	30

**Standard Units & Abbreviations**

%	Percent
<	Less than
>	Greater than
°	Degree
°C	Degrees Celsius
µm	Micrometre (micron)
a	Year (annum)
Ce	Cesium
cm	Centimetre
CP	Competent Person
g	Gram
GPS	Global Positioning System
h	Hour
in	Inch(es)
k	Kilo (thousand)
kg	Kilogram
km	Kilometre
km <sup>2</sup>	Square kilometre
kt	Thousand tonnes
Li	Lithium
m	Metre
M	Million
m <sup>2</sup>	Square metre
Ma	Million years ago
mm	Millimetre
NI 43-101	National Instrument 43-101
P.Geo	Professional Geologist (Canadian/Irish Designation)
PLA	Prospecting Licence Area
ppm	Parts per million
pXRF	Portable X-Ray Fluorescence
QP	Qualified Person
REE	Rare Earth Elements
Sn	Tin
t	Tonne (metric, 1,000 kg = 2,205 lbs)
Ta	Tantalum
W	Tungsten

## 1 SUMMARY

---

This report was commissioned by SunMirror AG (“SunMirror”) with offices at Steinhäuserstrasse 74, 6300 Zug, Switzerland, and was prepared by EurGeol Dr. Sandy M. Archibald, P. Geo. The author is a “qualified person” who is “independent” of SunMirror within the meaning of National Instrument 43-101 – Standards of Disclosure for Mineral Projects. As an independent geologist the author was asked to undertake a review of the available data and recommend (if warranted) further work on the Moolyella Lithium Property (the “Property”). The purpose of this report is to summarize historic work carried out on this property towards a listing on an internationally recognized stock exchange.

The Moolyella Property consists of one exploration licence covering an area of approximately 93 km<sup>2</sup> and is located in East Pilbara Shire, Pilbara Region, Western Australia. The licence is owned by Lithium 1 Pty Ltd, which is a wholly owned subsidiary of SunMirror.

Alluvial cassiterite (SnO<sub>2</sub>) was first identified in the Moolyella area in 1898 during exploration for alluvial and bedrock gold. Mining took place from 1898 until 1986 in the ore field, with a few brief hiatuses, and it is estimated that nearly 8,000 tonnes of tin concentrate was recovered. The tin grades at Moolyella, 2.40 kg/m<sup>3</sup>, represent some of the highest alluvial tin grades in the World. Approximately 141 tonnes of tantalite ((Fe,Mn)Ta<sub>2</sub>O<sub>6</sub>) ore and concentrates were also recovered in these operations, confirming the presence of tantalum in the area. Mining and exploration focused exclusively on tin.

The source of the tin mineralization is the Moolyella Monzogranite (2830 Ma), which has intruded older Archean orthogneisses of the Fig Tree Gneiss Group (3490-3460 Ma) and the Johansen Monzogranite (3131-3307 Ma). The Fig Tree Gneiss and the Johansen Monzogranite comprise the Mount Edgar Batholith, which is a gneiss-granitoid complex surrounded by contemporaneous greenstone belts. The highly evolved (fractionated) Moolyella Monzogranite has produced aplite dykes, greisen, and pegmatite sheets, all of which contain elevated concentrations of incompatible elements such as tin (Sn), tantalum (Ta), niobium (Nb), tungsten (W), and lithium (Li). Weathering of low-angle pegmatite sheets (varying in thickness from a few centimetres to 3 m) and greisen zones at the edge of the monzogranite resulted in the formation of the Sn placer deposits.

Most of the early exploration on the licence focused on alluvial and eluvial tin, but Endeavour Resources targeted bedrock mineralization in an 18-hole drilling program in 1981-1982. Endeavour intersected numerous pegmatites with grades varying between 10 and 6,750 ppm (0.675%) Sn, 4 to 110 ppm Nb, and 10 to 120 ppm Ta. The best intercept recorded was 12 m averaging 1,099 ppm Sn. Samples were not analysed for lithium (or rare earth elements).

In 2011 Lithex Resources conducted the first exploration for lithium on the licence while exploring for tin. Lithex identified lithium-bearing pegmatites in outcrop at Pegmatite Gully and Eluvial Gully with the two highest lithium concentrations of 1.25% and 1.06% Li<sub>2</sub>O. A 19-hole follow-up reverse circulation (RC) drilling programme in 2012 in the same area confirmed the presence of lithium pegmatites at depth. Most holes contained short (1 to 6 m) intercepts of mineralization greater than 0.15% Li<sub>2</sub>O, with the highest-grade interval being 3 m @ 0.30% Li<sub>2</sub>O (from 55 m) in drillhole

NERC005. In 2014 Exterra Resources worked the property and conducted limited exploration, including reanalysis of Lithex RC reject samples, and outcrop sampling of lepidolite-bearing pegmatites. The best assay results returned 1.98%, 0.75% and 0.15% Li<sub>2</sub>O from the Pegmatite Gully area. The last exploration on the licence was in 2018, when Duketon reported the results from pegmatite outcrop sampling that returned one sample with 0.98% Li<sub>2</sub>O.

Since being awarded the Moolyella licence in December 2020, Lithium 1 has not performed any exploration work on the property.

Based on reviews of historic exploration, the Moolyella licence is considered highly prospective for presence of additional lithium-bearing pegmatites. A two-stage, contingent, work program is recommended for the property. A work program consisting of remote sensing structural/alteration study, geological mapping, mineralogical studies, lithogeochemical sampling, airborne geophysical (magnetic, radiometric) surveying, and limited auger drilling are proposed for Phase One. Additional RC drilling, if warranted, will take place in Phase Two. The cost estimate for the Phase One program is €451,000. If warranted, the cost for Phase Two is €356,400, for a total work programme cost of €807,400.

## 2 INTRODUCTION

---

### 2.1 Terms of Reference, Scope & Purpose of Report

In May 2021, SunMirror AG (“SunMirror”) retained Aurum Exploration Services (Canada) Limited to prepare a technical report in accordance with the requirements and standards of National Instrument 43-101, ‘Standards of Disclosure for Mineral Projects’, for the Moolyella Lithium exploration project currently held by Lithium 1 Pty Ltd (“Lithium 1”). SunMirror is a Swiss-based mineral exploration company focused on exploration of strategic minerals (gold, iron ore and technology minerals). SunMirror is using this report towards admission to an international stock exchange to facilitate public trading. Additional information about SunMirror can be viewed at the company's website [www.sunmirror.com](http://www.sunmirror.com).

The technical report was successfully completed in June 2021 and the author is responsible for the entire report.

The primary objectives of this report are to:

- consolidate and review all available past and present work
- identify risks and opportunities for the project
- make recommendations for a path forward and for further work

This report was prepared in accordance with the requirements and standards for disclosure of the stock exchanges overseen by the Canadian Securities Administrators, namely, NI 43-101, Companion Policy 43-101CP, Form 43-101F and the Canadian Institute of Mining, Metallurgy and Petroleum (“CIM”) Standards on Mineral Resource and Reserves – Definition and Guidelines.

### 2.2 Sources of Information & Data

The author prepared this report using information from the following sources:

- licensing data obtained from the permit holders, Lithium 1 Pty Ltd
- technical reports and data by previous licence holders submitted to the Western Australian government as part of licensing and exploration expenditure obligations
- academic literature from peer reviewed journals and government reports
- press releases and presentations from publicly traded companies

The author has no reason to doubt the reliability of the information provided by SunMirror or the other sources listed.

### 2.3 Visit to the Property by the Qualified Person

Due to the ongoing COVID-19 pandemic it was not possible to complete a site visit.



### 3 RELIANCE ON OTHER EXPERTS

---

This evaluation of the Moolyella Property is partially based on historical data derived from Western Australian Mineral Exploration (WAMEX) assessment files and their regional reports that are derived from <https://www.wa.gov.au/service/natural-resources/mineral-resources/access-the-wamex-database>. Rock sampling and assay results are critical elements of this review. The description of sampling techniques utilized by previous workers is poorly described in the assessment reports and, therefore, the historical assay results must be considered with prudence.

As of the date of this report, the author is not aware of any material fact or material change with respect to the subject matter of this technical report that is not presented herein, or which the omission to disclose could make this report misleading.

### 4 PROPERTY DESCRIPTION & LOCATION

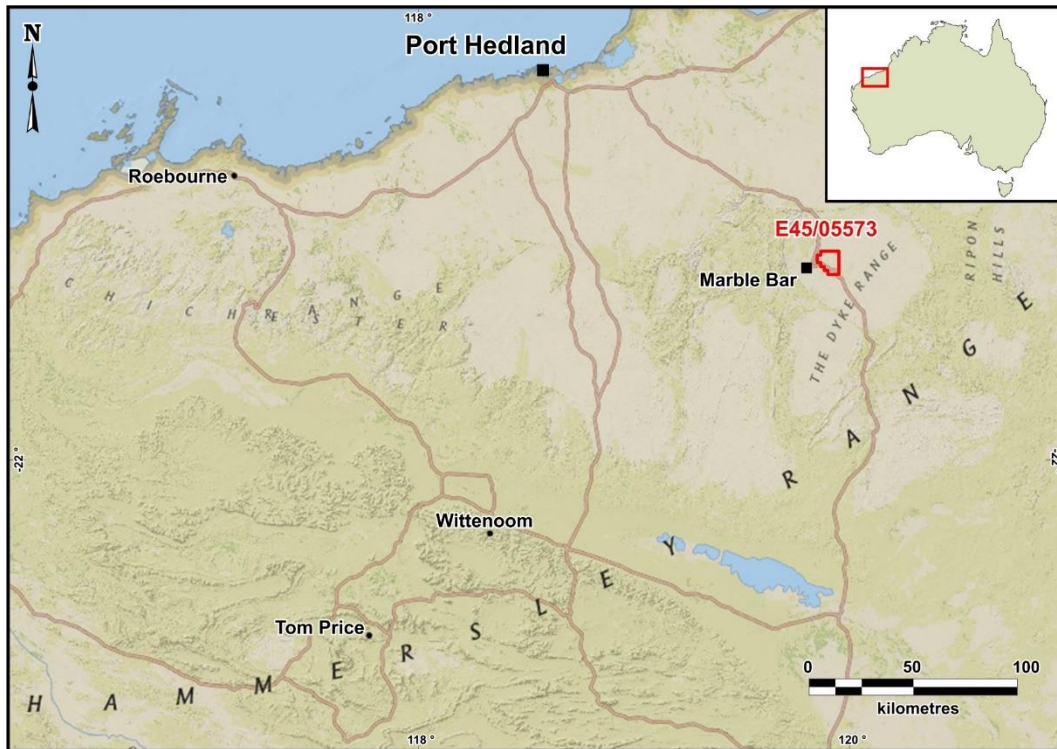
---

#### 4.1 Size and Location

The Moolyella lithium-tin (Li-Sn) Project is situated in East Pilbara Shire, which is one of the four local government areas in the Pilbara region of Western Australia (Figure 4-1). East Pilbara Shire has a surface area approximately 380,000 sq. km.

The Moolyella licence covers an area of 9277.30 hectares (92.773 sq km<sup>2</sup>) and is located 1270 km north-northeast from Perth (pop. 2,125,114), 160 km southeast of Port Hedland (pop. 14,320), and 15 km east of the settlement of Marble Bar (pop. 174).

Figure 4-1: Property Location



Source: drafted by Archibald, 2021

## 4.2 Mineral Tenure

### 4.2.1 General Tenure Rights

All mineral rights in Western Australia are held by the Crown and are administered by the Department of Mines, Industry Regulation and Safety. *The Mining Act 1978 (WA)* is the principal statute governing mining in Western Australia and allows people to apply for rights to explore for and extract minerals. These rights, including prospecting licences, exploration licences, retention licences and mining leases, are known collectively as “mining tenements”.

A prospecting licence covers a maximum area of 200 hectares (2 km<sup>2</sup>) and entitles a person to enter land to prospect for minerals and to undertake activities necessary for that purpose. These activities include drilling bores, digging trenches and pits, taking samples for testing, and taking water. Prospecting licences are valid for four years, with the possibility of renewal for an additional four-year extension under certain circumstances.

An exploration licence permits a person to enter land and to undertake exploration activities. These activities may include extraction of a relatively small quantity of material to test the quality of the resource. The main difference between a prospecting licence and an exploration licence is that an exploration licence can apply over a large area (up to 21,700 ha / 217 km<sup>2</sup>) and is made up of pre-determined graticular blocks. The initial term of an exploration licence is five years; however, if the Department of Mines and Petroleum (“DMP”) is satisfied that grounds exist, it may be extended once for five years, and by further periods of two years.

If a prospecting or exploration licence holder identifies potential economic mineralization on the licence area but need more time to determine the feasibility of extraction, then they can apply to convert the licence to a retention licence. This gives the licence holder more time to evaluate the resource, develop plans, obtain finance, or wait for better economic conditions. During this period, the holder may have to comply with an approved work programme and may be required to demonstrate why a mining lease has not been made.

To commence commercial mining production, a person must have a mining lease. The holder of a mining lease can mine the land, extract minerals and conduct any other operations that are necessary for that purpose. A mining lease may be granted for a term of up to 21 years and is renewable for further 21-year periods.

An application for a mining lease must either be accompanied by a mining proposal or a mineralization report and a supporting statement. A mining proposal is submitted to the DMP for the purpose of assessing the environmental impacts of a proposal. The DMP will also consult with other departments regarding the impacts of the proposal. If it does not trigger referral to the Environmental Protection Authority (“EPA”) and is approved by the DMP, the mining proposal is used to determine the conditions on the mining lease.

Exploration licence and mining lease holders are required to contribute towards the Mining Rehabilitation Fund Levy (MRF). The MRF levy is calculated annually based on the disturbance data for tenements.

Under the Mining Regulations 1981 Agreement Acts, Western Australia royalty rates for spodumene (lithium) and tantalum are 5%, and tin is 2.5% *ad valorem*.

Lithium 1 has reported it is not aware of any significant factors and risks that may affect access, title, or the right or ability to perform work on the property.

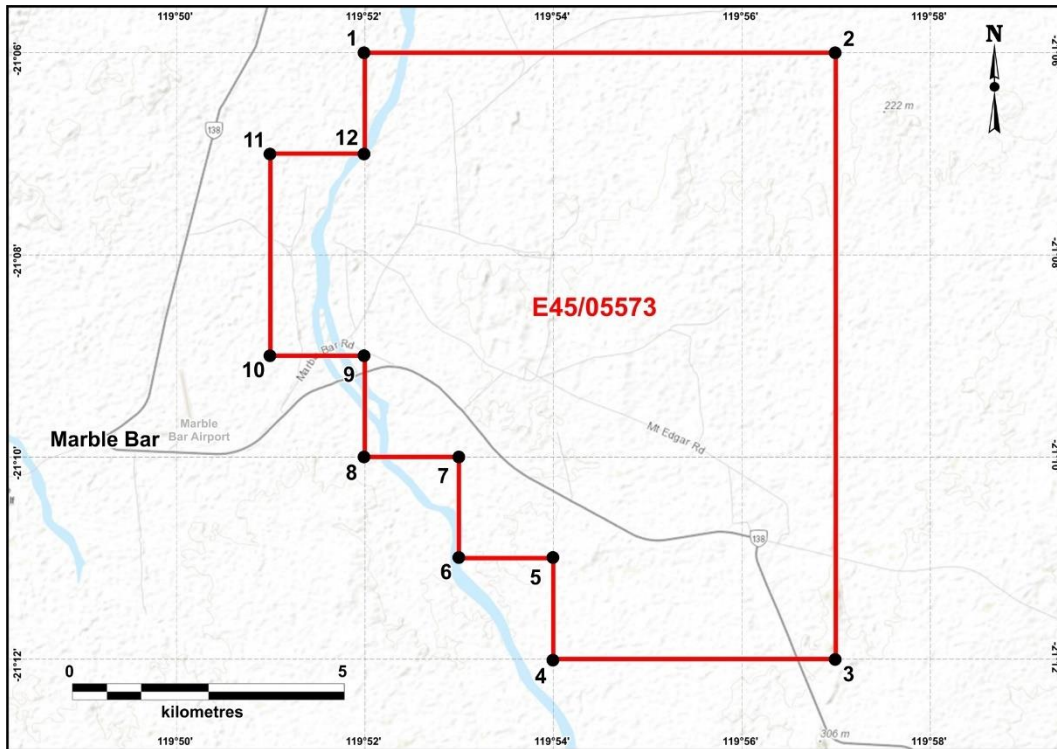
#### 4.2.2 Moolyella Licence Tenure Rights

The property consists of a single exploration licence granted to Lithium 1 Pty Ltd on December 23, 2020, for a period of five years. The licence area is outlined in Figure 4-2 and corner point presented in **Table 4-1**. There is no requirement to survey or mark the corner points on the ground under the Mining Law. A summary of the key details is presented in **Table 4-2**.

The licence was issued primarily for lithium (Li) and tin (Sn) and associated elements including beryllium (Be), niobium (Nb), rubidium (Rb), tantalum (Ta) and rare earth elements (REE), and secondary mineralization for zinc (Zn), lead (Pb), silver (Ag), and gold (Au).

If the project proves to be economic, the government will levy a royalty on the project of 2.5% for Sn, and 5.0% for Li and Ta (and the metallic minerals if sold as a concentrate).

Figure 4-2: Property Tenure Map



Source: Archibald, 2021

Table 4-1: Property Tenure Corner Point Coordinates

Node	Geographic coordinates		Grid coordinates (Zone 50)		Grid coordinates (Zone 51)	
	Latitude (South)	Longitude (East)	Easting	Northing	Easting	Northing
1	21° 06' 00.01"	119° 51' 59.99"	797823	7664101	174453	7663578
2	21° 05' 59.99"	119° 56' 59.98"	806486	7663943	183117	7663747
3	21° 12' 00.01"	119° 56' 59.98"	806280	7652864	183330	7652667
4	21° 12' 00.01"	119° 54' 00.00"	801086	7652960	178135	7652566
5	21° 10' 59.99"	119° 54' 00.01"	801120	7654807	178099	7654413
6	21° 11' 00.01"	119° 53' 00.00"	799388	7654838	176367	7654379
7	21° 09' 59.99"	119° 53' 00.01"	799422	7656685	176331	7656226
8	21° 10' 00.00"	119° 52' 00.00"	797690	7656716	174599	7656192
9	21° 09' 00.01"	119° 51' 59.99"	797723	7658562	174562	7658038
10	21° 08' 59.98"	119° 50' 59.99"	795991	7658594	172830	7658004
11	21° 07' 00.00"	119° 50' 59.98"	796057	7662286	172756	7661697
12	21° 07' 00.00"	119° 52' 00.00"	797790	7662255	174489	7661732

**Table 4-2: Summary details of the Moolyella exploration licence**

Tenement No.	Status	Type	Area (km <sup>2</sup> )	Expenditure commitment (Aus\$)	Grant Date	Expiry date
E45/5573	Granted	Exploration	92.773	29,000	23/12/2020	22/12/2025

#### 4.2.3 Current Agreement

The Moolyella licence is owned by Lithium 1 Pty Ltd, which is a wholly owned subsidiary of SunMirror Group. Therefore, SunMirror has full rights to the licence.

#### 4.2.4 Obligations on the Property

Based on the amounts stated in **Table 4-1**, Lithium 1 has a committed expenditure of A\$29,000 in the next annual period (December 2020 to December 2021). The licence also has a rent of approximate A\$4,000 per annum, which has been paid for 2021.

#### 4.2.5 Surface Rights and Access

Surface rights can be held by the State, local authorities, or held by individuals. Holding an exploration licence does not automatically grant the owner surface access rights. Permission must be granted by the surface rights holder, including local pastorals and indigenous groups. This has not been an issue with Lithium 1 or previous operators in the area.

#### 4.2.6 Environmental Liabilities

The author is not aware of any existing environmental liabilities related to the Moolyella property. The company also reports that they unaware of any environmental liabilities and will be contributing to the Mining Rehabilitation Fund Levy as stipulated under the mining law.

#### 4.2.7 Exploration Permits and Significant Risk Factors

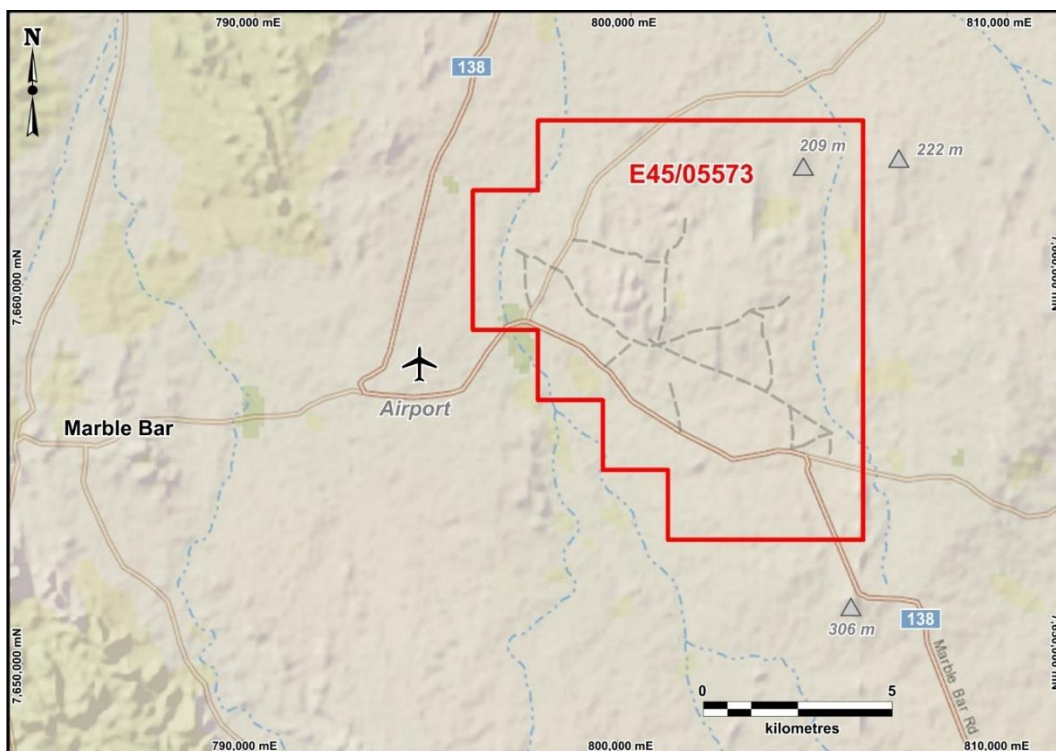
The author is not aware of any significant factors and risks that may affect access, title, or the right or ability to perform work on the property. In addition, Lithium 1 has reported that it is not aware of any significant factors and risks that may affect access, title, or the right or ability to perform work on the property. There are no permits on the properties, nor is any required for the initial recommended work program. If drilling is performed in Phase 2 an application for a drilling permit will be made.

## 5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

### 5.1 Accessibility

The settlement of Marble Bar (pop. 172, 2020) is located 18 km to the east of the licence and is on the paved 138 highway. This highway bisects the southern part of the licence, and the access to the western and southern parts are via unpaved tracks. The northeastern part of the licence does not have marked tracks, but vehicle access is possible. Marble Bar boasts a 1,200 m paved runway, which is generally used for charter flights to service the nearby goldfields. The closest schedule airline service is to Port Hedland (200 km by paved road), which is serviced by three airlines with several flights per day.

Figure 5-1: Property Location and Access Routes



Source: Archibald, 2021

### 5.2 Climate

The East Pilbara region has a hot desert climate (Köppen BWh), which is characterized by extremely high summer temperatures and large daytime temperature variations. December and January are the hottest months with maximum temperatures near or above 40°C, and record high of 49.3°C (120.7°F) recorded at Marble Bar. Annual rainfall varies between 1 and 93 mm, August to October are the driest months, and there is an average of 10.5 hours of sunshine a day over the entire year.

Incidentally, Marble Bar holds the record for being the hottest town in Australia. For 161 consecutive days (from October 31, 1923, to April 7, 1924), the temperature never dropped below 37.8°C (100°F).

**Figure 5-2: Average temperature, precipitation and rainfall at Marble Bar, WA, by month**

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Avg. Temp (°C)	32.5°C	31.5°C	30.6°C	28.6°C	23.8°C	19.7°C	19.6°C	21.8°C	25.8°C	30.2°C	31.9°C	33°C
Min. Temp (°C)	26.5°C	25.9°C	25.2°C	22.6°C	18.1°C	14.2°C	13.4°C	14.7°C	18°C	22.5°C	24.3°C	26.2°C
Max. Temp (°C)	39.5°C	37.9°C	36.7°C	34.9°C	30.2°C	26.1°C	26.4°C	29.2°C	33.5°C	37.8°C	39.5°C	40.4°C
Precipitation / Rainfall mm	71	93	56	14	19	19	14	4	1	2	3	28
Humidity (%)	40%	44%	41%	31%	31%	37%	33%	25%	22%	22%	25%	32%
Rainy days (d)	6	6	4	1	1	1	1	0	0	0	1	3
avg. Sun hours (hours)	11.2	10.6	10.2	10.1	9.7	9.4	9.6	10.2	10.7	11.3	11.7	11.9

Data from [Climate-data.org](http://Climate-data.org)

### 5.3 Local Resources

The distance from the central part of the licence to Marble Bar is 18 km, and from there 200 km to the deep-water port and container terminal at Port Hedland via the paved 138 highway and National Highway 1. The electrical power supply for Marble Bar is unknown, but if a mine did operate in the region, it would likely be powered by diesel generators.

### 5.4 Physiography

The licence is located within the Dyke Range of the eastern Pilbara (Figure 4-1). Topographically the area consists of gently rolling low hills with an elevation difference for 55 m, with the topography controlled by the underlying granite intrusive bodies. The maximum elevation is recorded at the centre of the licences (245 m), and the lowest point is the water course of Brockman Creek which is present on the western part of the licence. Brockman Creek is a tributary of the Talga River, and only flows in periods of high rainfall. Standing bodies of water are present in the west season, particularly associated with the old alluvial cassiterite workings (Figure 5-6).

**Figure 5-3: Physiography of the Moolyella licence showing water in historic alluvial workings**



Source: Exterra Resources Limited, 2016

## 6 HISTORY

---

The first recorded claim in the Moolyella licence was for gold in 1896 near Brookman Creek, and in 1898 alluvial cassiterite ( $\text{SnO}_2$ ) was discovered. *In situ* pegmatites were also discovered at this time. Production records are poor, but it appears that 76.5 tonnes of cassiterite were recovered from the alluvial gravels in the first year of operation (Blockey, 1980). Peak production occurred in 1907 when 585 tonnes of cassiterite was recovered. Mining operations were reduced and ceased production by 1921, and after a brief hiatus the field was work from 1927 to 1934 by local First Nations People. Small placer operations were consolidated when the Mineral Concentrates Limited cooperative was formed in 1958, which was then taken over by Kathleen Investments Pty Ltd in 1964. Tin mining operations at Moolyella area were generally continuous from their discovery in 1898 until 1986. By 1978 the Moolyella field had produced a total of 8,864 tonnes of tin concentrate (Ferguson and Ruddock, 2001) and from approximately  $3.2 \times 10^6 \text{ m}^3$  of placer. The tin grades at Moolyella,  $2.40 \text{ kg/m}^3$  represent some of the highest alluvial tin grades in the world (ranked 9<sup>th</sup> out of 63 tin fields; Bliss and Menzies, 1995). The Moolyella field has also produced approximately 9,000 ounces of gold (1887-1983), and 141.35 tonnes of tantalite ore and concentrates that contained 50.0 tonnes of  $\text{Ta}_2\text{O}_5$  (Ferguson and Ruddock, 2001). Endeavour Resources reported that the tin concentrate contained 3.5 to 4%  $\text{Ta}_2\text{O}_5$ .

Between 1965 and 1985 Endeavour Resources Ltd performed mining and exploration for alluvial, eluvial, deep lead and pegmatite hosted tin-tantalum mineralization (Figure 6-2). The exploration work resulted in the identification of several alluvial and eluvial tin-tantalum deposits, employing



widely spaced costeaning (deep pitting with underground drifting along the vein), pitting, and some auger drilling.

Vertical holes drilled by Endeavour in 1981 in the Pegmatite Gully and Universal Gully prospects indicated thin pegmatites less than three metres wide that dip east at between 5° and 20°. Lithium concentrations were recorded as being from 70 ppm to 500 ppm with an average 250 ppm (Turner, 1981). The fall in tin prices in 1985 resulted in the cessation of alluvial mining operations in 1986.

**Figure 6-1: Dryblowing tin at Moolyella (ca. 1921)**



Source: E. L. Mitchell, 1921 (State Library of Western Australia)

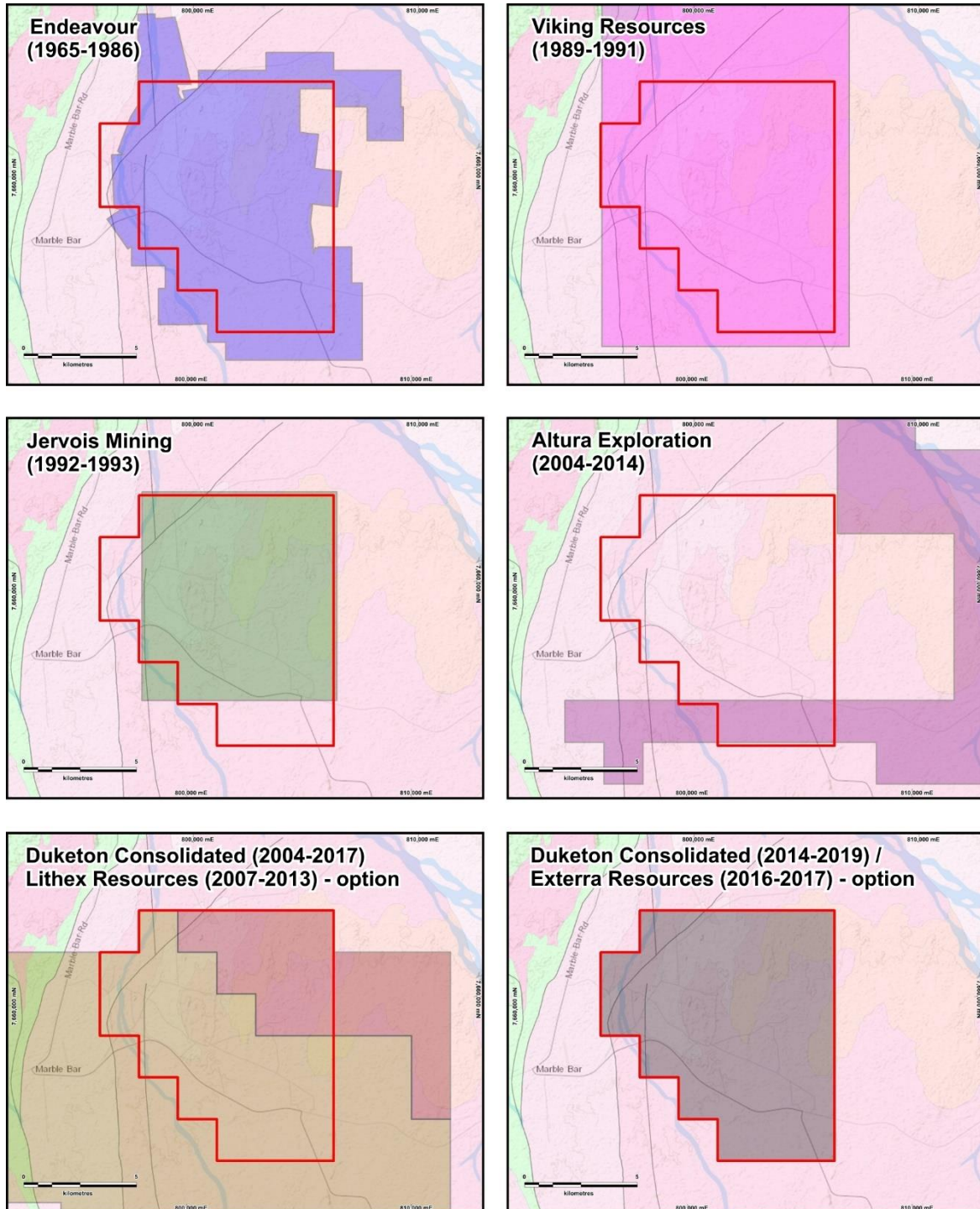
Between July 1989 and October 1991 **Viking Resources**, a wholly owned subsidiary of Centramin Limited held a licence which covered the current licence area (Figure 6-2). Viking's work focused on reappraising the alluvial and eluvial Sn targets identified by Endeavour and identified an exploration target of 1.40 to 1.55 million cubic metres, for between 934 and 1,040 tonnes of raw tin concentrate.

In October 1992 **Jervois Mining N.L.** (Jervois) were awarded licence E45/1275 that covered approximately 90% of the current licence area (Figure 6-2). Jervois assessed the potential for tin-tantalum placer extraction (McKenna, 1993). No field work was performed and due to poor metal prices, the permit was relinquished after one year.

Between November 2000 and June 2014, the southern part of the licence area was held by REM PTY Ltd and operated by **Altura Exploration Pty Ltd** (Figure 6-2). Work over this period consisted of reviewing previous work, a reconnaissance survey focusing on tin and tantalum, although

lithium was also mentioned in their commodity focus (Trautman, 2013; Bourke, 2014). No meaningful exploration was performed in this reporting period.

**Figure 6-2: Previous licences over current Moolyella licence (outlined in red)**



Source: Redrawn from GIS data from Department of Mines, Industry Regulation and Safety, 2021

Between 2004 and 2009 **Duketon Consolidated** Pty Ltd (Duketon) held approximately 70% of the Moolyella licence area, but no assessment reports were lodged to determine what work, if any was performed.

From November 2007 to October 2013, **Lithex Resources** (Lithex) held large parts of the current licence area in conjunction with Duketon (Figure 6-2). Work during the period comprised of geological mapping, rock chip sampling, auger drilling of tailings stockpiles, and RC drilling of hard rock targets at Eluvial Gully (previously know as Universal Gully by Endeavour Resources) and Pegmatite Gully. Based on the results of the auger drilling programme Lithex identified a JORC compliant Inferred Mineral Resource (not verified by the author of this report) of 1.9 million tonnes with a grade of 160 ppm Sn and 20 ppm Ta from eight historic tailing stockpiles.

The drill logs from Lithex's 2012 drilling program at Pegmatite Gully and Eluvial Gully indicated the presence of 11 pegmatite bodies with downhole thicknesses of 10 m or greater, with the widest intercept being 25 m (Borg, 2012). All of Lithex's RC holes were drilled at an angle of 60° to the west, with lengths varying from 30 to 160 m (average 107.5 m). The widest intersections were all at Pegmatite Gully East. Assay data from the drilling indicates a maximum Li<sub>2</sub>O value of 0.36% (3,600 ppm) over 2 m from a depth of 56 m (NERC005). Lithex also performed auger drilling in areas of alluvial and eluvial cover, with some of the auger holes showing elevated values of caesium and rubidium. Lithex did not follow-up with additional drilling and confined their work to limited rock chip samples (Borg, 2014 and 2015).

In September 2014, the current licence was licensed by Duketon and held until September 2019. The licence optioned first to Lithex (see above), and then to **Exterra Resources** (Exterra) between April 2016 and April 2017 (Figure 6-2). Exterra completed desktop studies on the previous data, which included including determining areas of interest and target zones within geologically prospective environments. This was primarily using aerial photographs of outcrop locations. Two field programmes were conducted, which included geological mapping, rock chip and drill spoil geochemical sampling (from Lithex collar points), with follow-up data compilation, analysis, and reporting. Resampling of three Lithex RC spoil rejects returned maximum Li<sub>2</sub>O concentrations of 0.228% (P6RC01-01), 0.176% (P6RC03-01) and 0.146% (P6RC05). These samples are in reasonable agreement with the results reported by Lithex. Limited prospecting (11 rock chip samples) collected from lepidolite-bearing pegmatites, with the best assay results returning 1.98%, 0.75% and 0.15% Li<sub>2</sub>O from the Pegmatite Gully area (Jones, 2017).

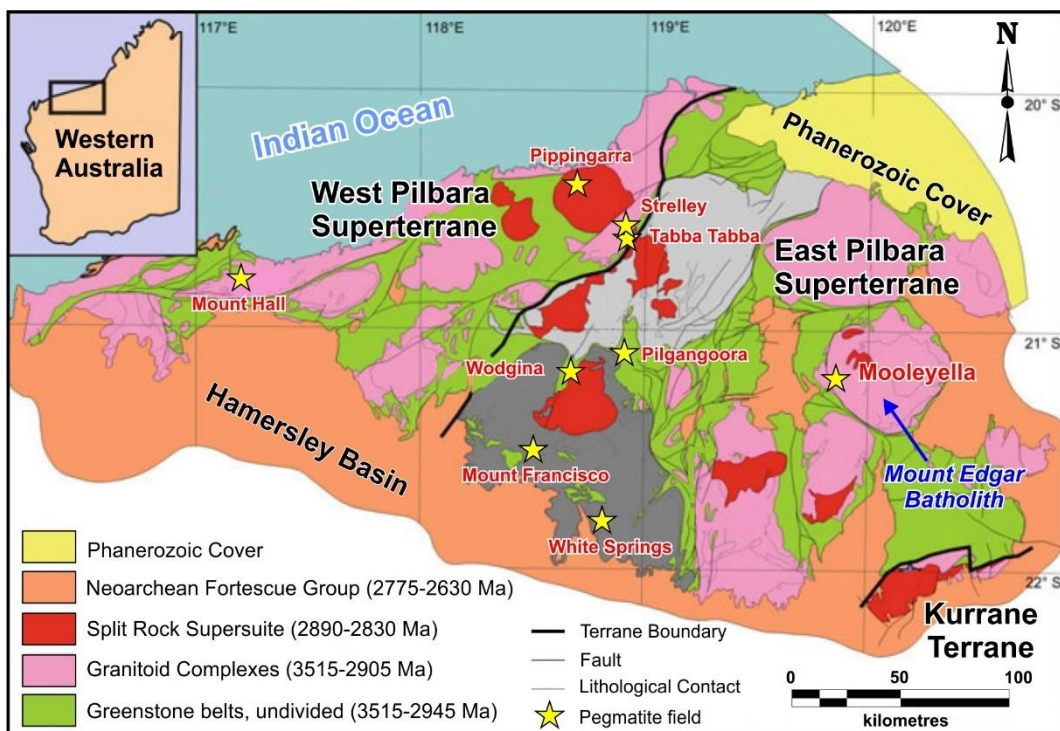
In 2018 it appears the property was returned to Duketon, and the company performed limited field mapping and rock chip sampling in June-July 2018. A total of 14 outcropping pegmatite samples were collected and analysed for Li, Sn and Ta (Cornelius, 2018; Giles, 2019). Lithium concentrations ranged from 16 to 3,160 ppm (0.980% Li<sub>2</sub>O) with an average of 500.5 ppm, tin ranged from 10 to 710 ppm (average 99 ppm), and tantalum from 1 to 68.5 ppm (average 25 ppm).

## 7 GEOLOGICAL SETTING & MINERALIZATION

### 7.1 Regional Geology and local Geology

The Moolyella lithium project lies within the Archean North Pilbara Craton (Figure 7-1) that formed during two major periods from approximately 3530 to 3240 Ma (Pilbara Supergroup) and from 2,970 to 2,930 Ma (De Gray Supergroup; Smithies et al., 2005, van Kranendonk et al. 2006). Structurally the craton consists of large, domal, multiphase granitoid-gneiss complexes bordered by curving synformal to monoclinical greenstone belts (Hickman, 1983, Griffen, 1990, Barley, 1997; Blewett, 2002). The granitoid-gneiss complexes were emplaced over a similar, but slightly younger time span (2890 to 2830 Ma) than the greenstones belts (Champion and Smithies, 1998). The greenstone belts in the eastern part of the Pilbara Craton belong to the 12 km thick Warrawoona Group, and range in age from ~3530 Ma to ~3430 Ma. Several volcanogenic cycles are present within the Warrawoona Group comprising of laterally extensive units of ultramafic, tholeiitic, and felsic lava with minor shallow-water sediments and banded iron formations. The Warrawoona Group is overlain by the sediment-dominated Gorge Creek Group as turbidites or coarser clastics restricted to small, intracratonic, fault bounded basins between the batholithic domes (Williams and Collins, 1990). The major rock units of the Warrawoona Group wrap around the granitoid-gneiss complex known as the Mount Edgar Batholith, in response to superimposed deformation.

**Figure 7-1: Geological sketch map of the Pilbara Craton with the major pegmatite fields (yellow stars)**



Source: Redrawn from Dittrich et al., 2019

The Mount Edgar Batholith is a composite gneiss complex that has been intruded by seven variably deformed granite suites. Whole-rock Sm-Nd model ages of 3280 to 3310 Ma have been obtained on the “gneisses” (Collerson and McCulloch, 1983) from the batholith, and U-Pb age of  $3280 \pm 20$  Ma on two foliated granites (Pidgeon, 1978). Intruding the gneiss complex is the “younger granite

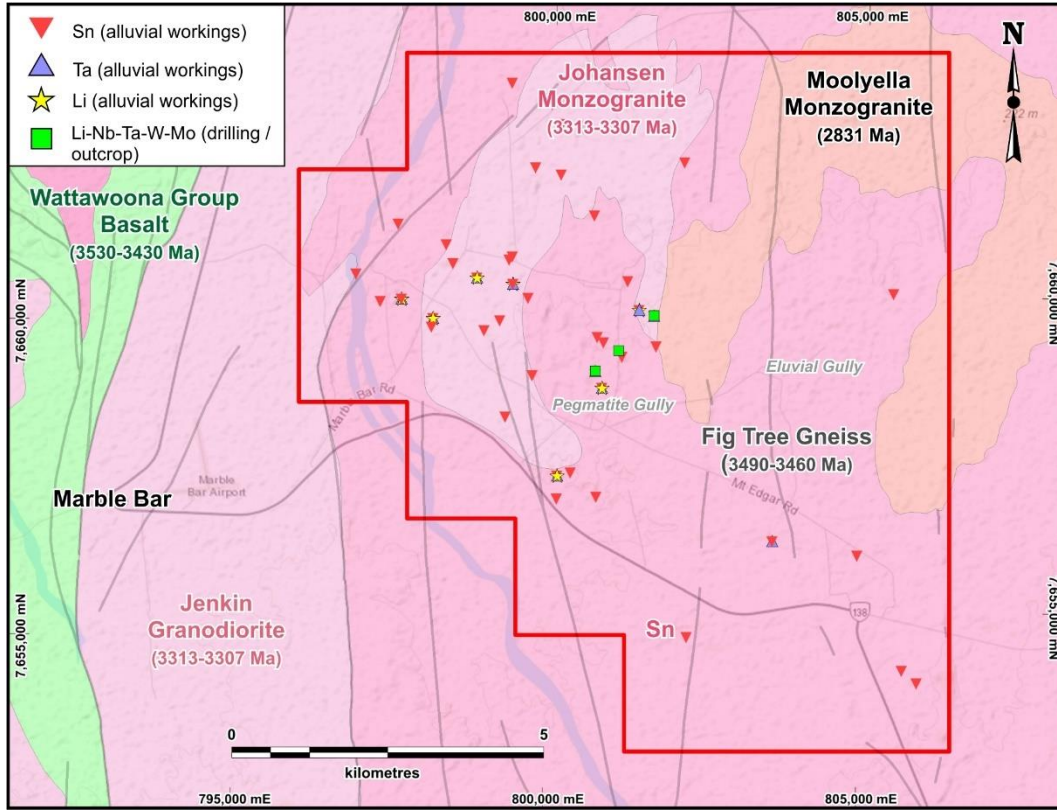
suite” (ca. 2890 to 2830 Ma) and a 2760 Ma suite of small A-type granites and stocks of tourmaline-rich S-type peraluminous granites (Smithies and Champion, 1989). It is these rocks that host lithium mineralization in the Pilbara Pegmatite Province, including the Pilgangoora, Wodgina, and Tabba Tabba lithium-tantalum pegmatite deposits (Sweetapple, 2000). Four main granites are recognised within the Mt Edgar Batholith: Callina (including the Homeward Bound Granite), Tambina (including Fig Tree Gneiss), Emu Pool (including Jenkin Granodiorite) and the Cleland and Split Rock Supersuite (which includes Moolyella Monzogranite). The Moolyella Monzogranite is the youngest granitic intrusion within the Mount Edgar batholith and is considered to be the source of the pegmatites hosting lithium, tantalum and tin mineralisation in the project area. Similar aged granites to the Split Rock Supersuite are considered to be the source of pegmatites hosting the Pilgangoora and Wodgina lithium and tantalum deposits (Sweetapple and Collins, 2002).

## 7.1 Property Geology

The Moolyella licence underlain by a series of orthogneisses and granitoids associated with the Mount Edgar Granite Complex adjacent to the Warrawoona Group greenstone belt rocks (Figure 7- 1). The oldest and most extensive rocks underlying the property belong to the Tambina Supersuite (3490-3460 Ma) and comprise of the Fig Tree Gneiss. This unit is composed of highly metamorphosed and deformed banded metatonalite, metagranodiorite, local metatrandhjemite, monzogranite and syenogranite gneiss, and migmatite. Within the Fig Tree Gneiss, remnants of undivided Warrawoona Group greenstone lithologies have been mapped in the south of the licence (Figure 7-2). The second oldest rocks on the licence belong to the Jenkin Granodiorite (3313-3307 Ma) which is a member of the Emu Pool Supersuite (3325-3290 Ma). The Jenkin granodiorite occurs on the extreme west of the licence with a faulted contact and an intrusive contact and is a medium- to coarse-grained biotite granodiorite; it is locally foliated and is metamorphosed. Also intruding the Fig Tree Gneiss is another member of the Emu Pool Supersuite – the Johansen Monzogranite (3303 Ma). The Johansen Monzogranite is a medium- to coarse-grained, foliated biotite monzogranite, and is present in the northwest quadrant of the licence. The youngest major rock unit is the Moolyella Monzogranite ( $2830 \pm 30$  Ma; Pidgeon, 1978), previously termed the Moolyella Adamellite, which belongs to the Split Rock Supersuite (2890-2830 Ma). The Moolyella Monzogranite is a massive to weakly foliated medium-grained muscovite-biotite monzogranite and occurs in the northeast quadrant of the licence. Three late phases of the monzogranite emplacement are aplite dykes, greisen lenses, and pegmatite veins. The aplite dykes were intruded along the joints of the monzogranite and are composed of albite, quartz and green mica (fuchsite?). The greisen forms small joint controlled pipes within the monzogranite and as lenses up to 50 m long or close to the contact of the granite in the Fig Tree Group orthogneisses. The greisen comprises of quartz and muscovite, with accessory fluorite. Blockley (1980) notes that cassiterite was detected in samples of the greisen, and the distribution of the tin workings suggests that the greisen is not the source of the alluvial cassiterite. The pegmatites associated with the Moolyella Monzogranite intrude the Fig Tree Gneiss (Figure 7-3), have a north-trending strike, and dip between 10 and 40° to the east. They are best exposed in the hills at the head waters of Moolyella Creek, where, over an area of about 3 sq. km, they make up about 15 to 20% of the total rock (Blockley, 1980). The pegmatite sheets vary from a few centimetres up to 3 m in thickness and are present over distances over 300 m. Mineralogically they are composed of microcline and quartz, with accessory spessartine garnet,

green muscovite, cassiterite, zinnwaldite and lepidolite (both lithium-bearing micas), fluorite, tantalite, and magnetite (Figure 7-4).

**Figure 7-2:** Geological map of the Moolyella Property (GSWA 250k geological map).



Source: Archibald, 2021, after Geological Survey of Western Australia (Hickman, 2009)

**Figure 7-3:** Pegmatites intruding the Fig Tree Gneiss



Source: Exterra, 2016

**Figure 7-4: Pegmatite containing coarse columbite-tantalite (coltan)**



Source: Exterra, 2016

The youngest rocks on the licence are northeast- and east-west trending dolerite dykes of uncertain age.

Quaternary alluvial and colluvial is present in the southern and western part of the licence and is associated with the general north-south drainage trend. Weathering of the pegmatites form alluvial cassiterite and columbite-tantalite (coltan) deposits.

Six pronounced north-south trending faults and one northeast-trending fault are present on licence. Only minor offsets are noted in the dolerite dykes, and no displacement within the Moolyella monzogranite.

## 7.2 Mineralization

Forty-one unique mineral showings occur within the licence area, with the majority of these being alluvial tin workings/mines, thus forming the Moolyella Tin Field (Figure 7-2). All lithium and tantalum occurrences are associated with the placer tin, whereas the niobium occurrences are associated with bedrock tin, lithium, tungsten, and molybdenum. The alluvial workings varied in thickness from less than one metre to more than seven metres deep, with the placers present at the base of the alluvial sequence. As expected, the placers are present in the present water courses, but also occur as flat lying plateaus between the drainages. Eluvial (regolith-hosted) hosted cassiterite (tin) and tantalite-columbite are also present and are usually less than 0.5 m thick.

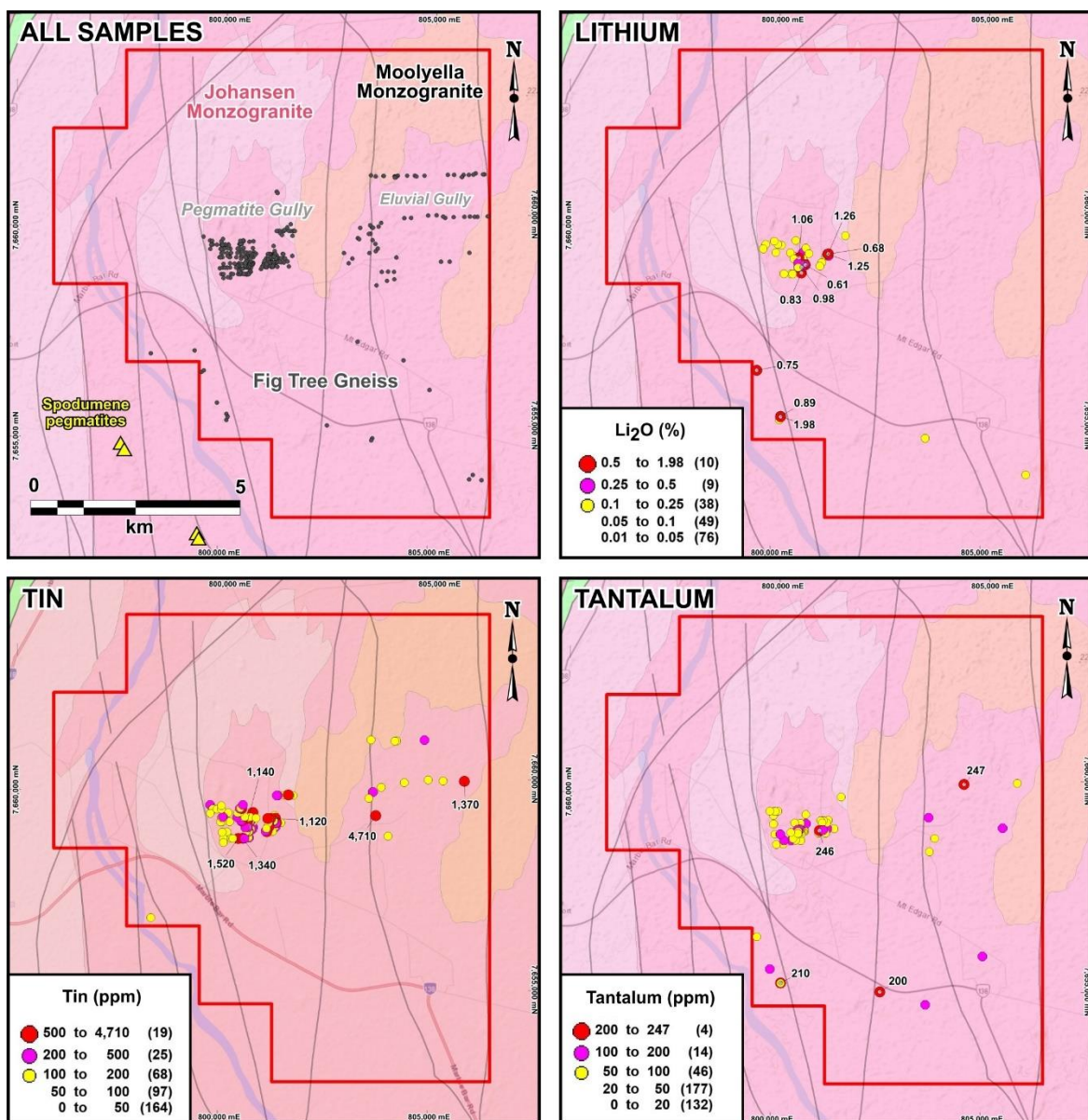
Gold mineralization occurs within the volcanic rocks of the Warrawoona Group greenstone belt 12 km to the northwest and west of the licence. Small amounts of alluvial gold (9,000 ounces) have been recorded from the Moolyella licence area during cassiterite mining.

As noted above, tin-tantalum±lithium-bearing pegmatites are associated with the Moolyella Monzogranite where it intrudes the Fig Tree Gneiss. The pegmatites occur over distances of over 300 m, dip to the east at shallow angles (10 to 40°) and vary from a few centimetres up to 3 m in thickness. The primary minerals containing elements of interest are cassiterite [SnO<sub>2</sub>], zinnwaldite

[KLiFeAl(AlSi<sub>3</sub>)O<sub>10</sub>(OH,F)<sub>2</sub>] and lepidolite [K(Li,Al)<sub>3</sub>(Al,Si,Rb)<sub>4</sub>O<sub>10</sub>(F,OH)<sub>2</sub>], fluorite, tantalite [(Fe, Mn)Ta<sub>2</sub>O<sub>6</sub>]. So far, the primary lithium mineral spodumene [LiAl(SiO<sub>3</sub>)<sub>2</sub>] has not been identified at Moolyella, but it has been identified at the Archer deposit, 5 km to the northwest (see Section 15).

Most of the previous exploration work on the bedrock pegmatites has taken place at Pegmatite Gully and Eluvium Gully by Lithex Resources, Exterra, and Duketon. This work consisted of bedrock chip (grab) samples, with 410 samples collected and analysed, and the drilling of 24 reverse circulation holes. Figure 7-5 illustrates the location of the samples collected and the concentration of lithium, tin and tantalum associated with the pegmatites. The best lithium grades were recorded at Pegmatite Gully (seven samples > 0.61% Li<sub>2</sub>O) and an area 5 km to the south near Brockman Creek (three samples > 0.61% Li<sub>2</sub>O, including the highest sample collect that contained 1.98% Li<sub>2</sub>O).

Figure 7-4: Results of the sampling of pegmatite outcrop and subcrop by various operators.



Source: Archibald, 2021, using data from Lithex (2012), Exterra (2017), and Duketon (2018).

In 2005, Moly Mines identified spodumene-bearing pegmatites during a tungsten-molybdenum exploration programme adjacent to the permit at Brockman Creek (Figure 7-5). Surface samples



returned grades of up to 3.72% Li<sub>2</sub>O, and RC drillholes contained intercepts of 4 m @ 1.52% Li<sub>2</sub>O (from 14 m) and 3 m @ 1.63% Li<sub>2</sub>O (from 32 m).

The highest tin concentration was recorded in Eluvial Gully (4,710 ppm Sn), but the greatest concentration was noted at the Pegmatite Gully area with five samples containing more than 1,000 ppm Sn. This was also the site of bedrock tin extraction and close to the area containing the greisen. As expected, tantalum concentrations (up to 247 ppm Ta) closely follow the tin grades, except for several elevated samples noted in the south of the licence. Some of these occurrences appear to be associated with mapped faults, which might open new target areas for follow-up work.

**Figure 7-5:** Sampling a flat-lying pegmatite in the licence area in 2016.



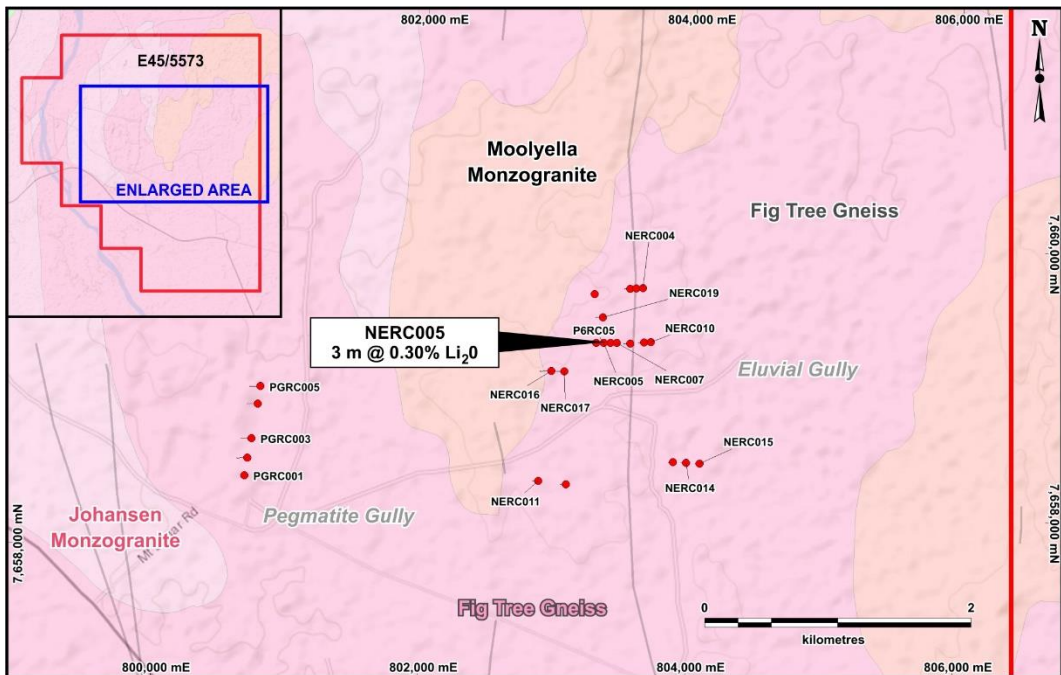
Source: Exterra, 2016

The only known bedrock drilling on the Moolyella licences was performed by Lithex in 2012, who drilled 19 RC holes at Eluvial Gully and 5 RC holes at Pegmatite Gully for a total depth of 2,581 m. From a total of 1920 m of drilling at Eluvial Gully only 19 intervals contained more than 0.15% Li<sub>2</sub>O, with the widest zone being 6 m @ 0.21% Li<sub>2</sub>O, and the highest grade 3 m @ 0.30% Li<sub>2</sub>O. Within the lithium-rich intervals, tin reached a maximum concentration of 84.3 ppm, and tantalum 43.2 ppm intervals.

No lithium assays for the RC drilling at Pegmatite Gully appear to have been performed by Lithex, but Exterra were able to conduct limited sampling on discarded material at the drill site (Figure 7- 7). This resampling and assaying showed that three of the five holes drilled contained intervals greater than 0.15% Li<sub>2</sub>O (up to 0.19%) with the widest and highest lithium concentration being 4 m @ 0.19% Li<sub>2</sub>O. The maximum recorded tin in RC chip samples from this area was 33.9 ppm, and tantalum was 25.8 ppm.

No mineral analysis was performed on the RC chips, so the mineral responsible for the elevated lithium concentration is unknown. Based on previous work at Moolyella it is probably zinnwaldite or lepidolite. It is critical to determine the lithium-bearing mineral(s).

**Figure 7-6:** Location of all bedrock RC drillholes on the Moolyella licences. Labelled drillholes contained  $Li_2O$  intervals > 0.15%.



Source: Archibald, 2021

**Figure 7-7:** Exterra geologist resampling discarded Lithex Resources' RC chip samples from Pegmatite Gully

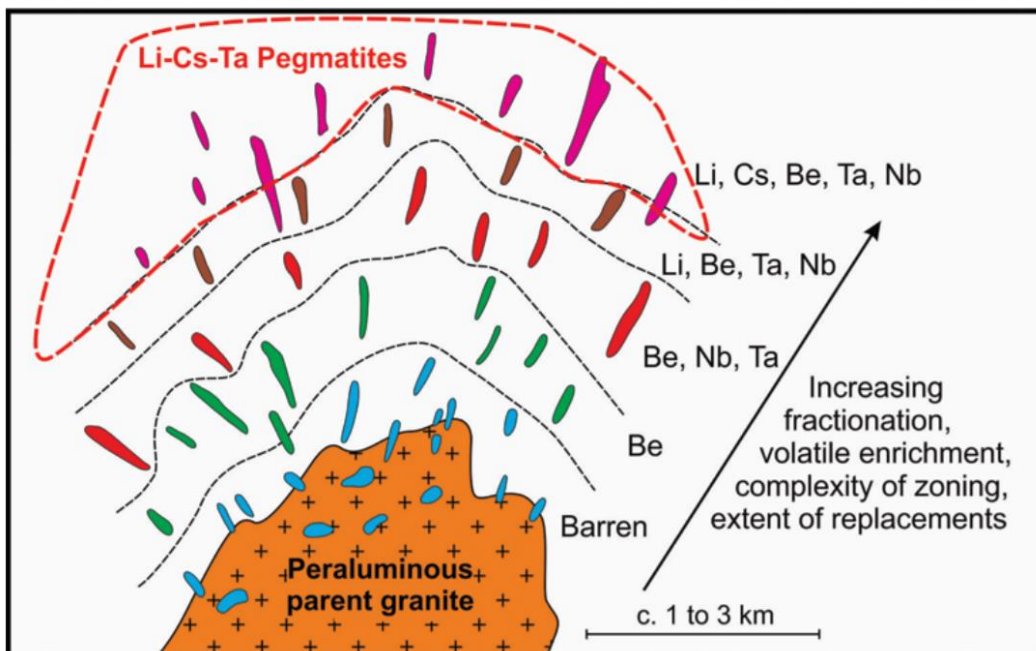


Source: Exterra, 2016

## 8 DEPOSIT TYPES

Granitic pegmatites host many important metals, including lithium, Cs, Sn, Nb, Ta, U, Th, and the rare earth elements (REE; Cerny 1993). Pegmatites that host economically significant concentrations of lithium belong to the Lithium-Caesium-Tantalum (LCT) family of pegmatites (Cerny et al. 2005). These deposits are typically low tonnage (< 1 Mt), and high-grade (>0.6% Li<sub>2</sub>O), (Bradley et al., 2017b). The parent magmas of these pegmatites are dominantly peraluminous granitoids derived from melting of continental crust at depth (Cerny et al. 2005). Enrichment in lithium and other metals occurs because of extensive fractionation that concentrates these metals into the last magmatic components to crystallize. Pegmatites form as veins, dykes, and pods, and can vary in size from a few centimetres in width to tens of metres. Pegmatites are typically concentrated toward the tops of plutons (Bradley et al., 2017a). Lithium-Cs-Ta pegmatites are usually the most distal of all pegmatites from their parent granite (Figure 8- 1).

**Figure 8-1:** Schematic diagram for an idealised pegmatite swarm illustrating the spatial distribution of different pegmatite types



Source: Adapted after Muller et al., 2017

The Moolyella monzonite (adamellite) is a peraluminous granite which is undergone a high degree of fractionation. This fractionated (highly evolved) rock is an ideal source for incompatible elements, e.g., lithium, tantalum, tin, and tungsten. The presence of economic quantities of tin (and tantalum) derived from the pegmatites shows enrichment has occurred and suggests economic concentrations of lithium might also be present.

## 9 EXPLORATION

---

Since acquiring the permits in December 2020, Lithium 1 has not conducted any field work on the licence. The only work performed has consisted of review of the previous owners' data and performing an initial target generation study.

## 10 DRILLING

---

Lithium 1 have not performed any drilling on the Moolyella licence and the only recorded drilling for lithium mineralization took place in 2012 by Lithex Resources.

## 11 SAMPLE PREPARATION, ANALYSES & SECURITY

---

Lithium 1 have not performed any field work on the licence. When the field work begins, all industry best practices (including certified reference materials, blanks, and duplicate samples) will be followed.

## 12 DATA VERIFICATION

---

Due to the ongoing COVID-19 pandemic the author was unable to visit the Property to verify the geology of the area or to observe the field relationship of the known pegmatite mineralization. However, the geology of the Marble Bar was compiled from previous studies and remapped by the Geological Survey of Western Australia Survey (van Kranendonk *et al.*, 2006).

All geological information (maps, historic reports, and samples descriptions) were obtained from the Department of Mines open file system. These reports do not mention the insertion of blanks, standards, or field duplicates, making it difficult to gauge the accuracy of the geochemical data.

The author is generally satisfied that the information in this report from previous operators was true and accurate.

A field visit is planned by an independent qualified person, Arnel Mendoza (BSc, MAIG), in July 2021. This work will confirm key geological rock types and field relationships, and sample known pegmatite outcrops.

## 13 MINERAL PROCESSING & METALLURGICAL TESTING

---

This is an early-stage exploration project and to date no metallurgical testing has been undertaken.

## 14 MINERAL RESOURCE ESTIMATES

---

This section is not applicable at this time.

## 15 ADJACENT PROPERTIES

### Marble Bar Lithium Project

The Marble Bar Lithium Project covers an area of 243 sq. km, and it is located immediately to the north of the Moolyella licence. The project is wholly owned by Global Lithium Resources Limited (ASX: GL1). Exploration in the 1980s identified several targets for pegmatite-hosted tin-tantalum mineralization. Extensive exploration for lithium started in the 2018 and in June 2020 an inferred maiden resource was reported based on the results of 91 RC drill holes for 12,284 m (**Table 23-1**; Jones and Cody, 2020).

**Table 15-1:** Archer Mineral Resources reported above a cut-off grade of 0.6% Li<sub>2</sub>O (Jones and Cody, 2020).

Classification	Million tonnes	Li <sub>2</sub> O (%)	Ta <sub>2</sub> O <sub>5</sub> (ppm)	SnO <sub>2</sub> (ppm)
Indicated	-	-	-	-
Inferred	10.5	1.0	53	49
<b>Total</b>	<b>10.5</b>	<b>1.0</b>	<b>53</b>	<b>49</b>

The Inferred Resource Estimation was based on an initial 200 m line spacing, reduced to 100 m, over the 1600 m strike length and 800 m width of main resource, with holes spaced between 50 and 100 m. Drilling was typically to depths of approximately 150 m. Additional infill drilling at a spacing of 50 to 60 m will be required to estimate an Indicated Resource.

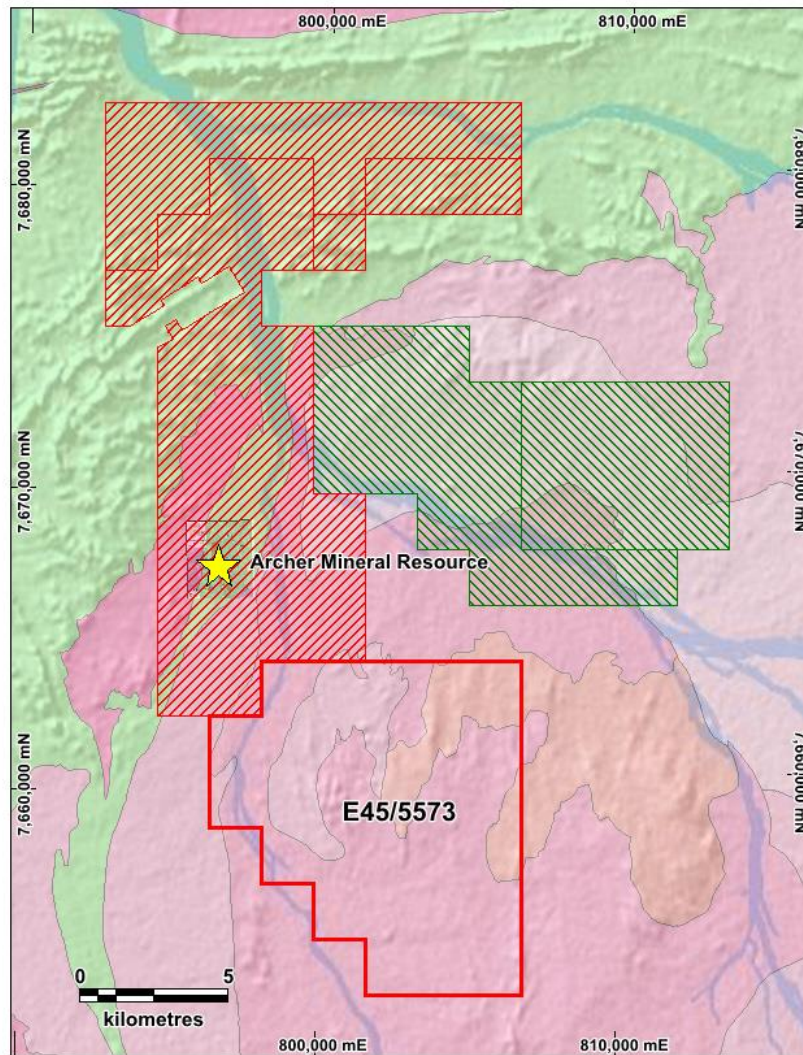
Several of the spodumene-bearing pegmatites modelled within the Archer Mineral Resource remain open both along strike and down dip. These priority areas will be the focus for additional work to build the Mineral Resource at the Archer deposit.

Mineralization occurs as a series of shallow dipping (40°) spodumene-bearing pegmatites that vary in thickness of 1 to 10 m, and strike in a north-south direction, within a metabasalt (amphibolite) unit of the North Star Basalt Group. The pegmatites are composed of feldspar-quartz-mica, with spodumene present as disseminated tabular or bladed crystals. Mineralization remains open along strike (north and south) and down dip (towards the east). Drilling has intercepted the pegmatite between 191 and 217 m, albeit only weakly mineralized, but with a width of 26 m. Notable intercepts from the drilling include:

- 19 m @ 1.2% Li<sub>2</sub>O from 22 m (MBRT0041)
- 16 m @ 1.4% Li<sub>2</sub>O from 37 m (MBRT0077)
- 15 m @ 1.3% Li<sub>2</sub>O from 30 m (MBRT0035)
- 14 m @ 1.5% Li<sub>2</sub>O from 64 m (MBRT0114)

The main difference between the geology at the Archer Deposit and the Moolyella licence is that the latter comprises of granitoid rocks and there is no evidence of greenstone belt lithologies. Lithium mineralization at Tabba Tabba, Pilgangoora (Pilbara Minerals, ASX:PLS) and Wodgina (Albermarle 60%, Mineral Resources ASX:MIN 40%) is present within greenstone lithologies, whereas the historic lithium-caesium-tantalum pegmatites and alluvial tin at Cooglegong were associated with Shaw Granitoid Complex.

Figure 15-1: Location of the adjacent Marble Bar Project and Archer Mineral Resource (Global Lithium).



Source: Archibald (2021)

**Cautionary statement:** Investors are cautioned that the potential quantities indicated above, have not been verified by the author, and are not necessarily indicative of the mineralization on the Leinster Property; it has been provided only for illustration purposes. At this time, there is insufficient public information to verify the information.

## 16 OTHER RELEVANT DATA & INFORMATION

There is no other relevant information with respect to the Property as of the effective date of this report.

## 17 INTERPRETATIONS & CONCLUSIONS

---

The Moolyella Property has undergone over 120-years of exploration almost exclusively focused on alluvial and eluvial cassiterite, and only limited exploration focused on lithium in the last decade. Previous lithium exploration has focused on geological mapping and surface lithochemical sampling, with drilling taking place on two areas on the licence. The known pegmatites are shallow dipping and discontinuous over depths greater than 200 m, meaning they are difficult to trace in an area covered by thick overburden. To overcome these difficulties, it is necessary to employ airborne geophysics (magnetic and radiometric) to fully appraise the subsurface geology, which should be followed up by auger/air core drilling to penetrate the eluvium, or RC drilling to test the bedrock targets. Appraisal of surface and underground geochemical data will help determine the most likely location for a potential mineral resource.

The Moolyella property show features that are considered important to the exploration for spodumene (Li-Cs-Ta) pegmatites, including:

- Underlain by a highly evolved monzogranite
- Intrusive rocks emplaced into country rocks at a deep crustal level
- Abundance of pegmatite swarms following clearly define corridors, suggesting a structural control on emplacement
- Presence of lepidolite-bearing pegmatite outcrops and drill intercepts on the property, and spodumene-bearing proximal to the licence and similar lithologies

The mineralization found to date on the Moolyella property and adjacent properties indicates that it is highly likely that additional bedrock lithium pegmatites are present, including spodumene-bearing ones, especially to the south of Pegmatite Gully and Eluvial Gully, where much of the previous work has focused. The shallow dipping nature of the pegmatite sheets suggest that there might not be a surface representation of mineralization, i.e., the targets might be blind.

The author is of the opinion that the present study has met the original objective of determining if the property has merit and the possibility of hosting an economic lithium resource.

The property is considered an early-stage exploration project (“greenfield”) and the significant risk for this project is the same as all other early-stage exploration properties in that there may be no economic mineral resource. As of the effective date of this report the author is not aware of any other significant risks that could affect, access, mineral title, ability to obtain permits, ability to undertake exploration, or the general economic viability of the property.

## 18 RECOMMENDATIONS

---

Most of the previous exploration has focused on identifying alluvial and eluvium tin mineralization, and little material work has been performed on a licence wide scale to fully appraise the lithium pegmatite potential of the licence. Spodumene-bearing pegmatites have been identified on adjacent licences underlain by similar geology, and by using multidisciplinary approach different exploration involving geological mapping, geochemical sampling, remote sensing, and airborne geophysics it is anticipated that viable drilling targets will be identified for follow-up work.

It is recommended that exploration of the Moolyella licence should include the following two phases of activities.

### Phase 1

- Remote sensing structure studies, consisting of structural and hyperspectral analysis
- General float/outcrop prospecting and geological mapping on other potentially anomalous areas
- Mineralogical study of pegmatites to determine the lithium bearing minerals (petrography and XRD)
- Deep overburden (power auger or air core drilling) geochemistry program to cover most of the prospective targets identified by remote sensing and
- Perform airborne geophysics (magnetic, and radiometric) surveys to identify igneous/metasedimentary contacts, potential faults zones, and areas of pegmatite bodies

The expected total cost for Phase 1 is €451,000.

### Phase 2

If warranted, reverse circulation drilling should be employed to test bedrock targets associated with the most promising auger/air core geochemistry targets. The total cost for Phase 2 drilling (totaling 1,000 m) is €356,400.

In total, the cost of this work is expected to be approximately €807,400. A summary of the expenditure break-down is presented in Table 26-1.



**Table 18-1: Summary of Proposed Expenditure**

<b>Phase 1</b>	
<b>Work Programme</b>	<b>Cost (€)</b>
Project management	64,000
Remote sensing study (Alteration/Structure)	15,000
General prospecting	60,000
Deep overburden sampling	36,000
Airborne geophysics (magnetic / radiometrics)	55,000
Petrographic / XRD study	5,000
Geological mapping	27,000
Assay costs	15,000
General and administrative (flights, accommodation, vehicle rental, etc)	133,000
Subtotal	410,000
Contingency 10%	41,000
<b>Total Phase 1</b>	<b>€ 451,000</b>

<b>Phase 2 (if warranted)</b>	
<b>Work Programme</b>	<b>Cost (€)</b>
Project management	20,000
RC drilling (1,000 m)	145,000
Geology team	63,000
Assay costs	66,000
General and administrative (flights, accommodation, vehicle rental, etc)	30,000
Subtotal	324,000
Contingency 10%	32,400
<b>Total Phase 2</b>	<b>€ 356,400</b>

<b>Total (Phase 1 &amp; 2)</b>	<b>€ 807,400</b>
--------------------------------	------------------

## 19 REFERENCES

---

- Barley, M. E. 1997. Pilbara Craton, in De Wit, M.J., and Ashwal, L.D., eds., *Greenstone belts*: Oxford, Clarendon Press, p. 657–664.
- Blewett, R. S. 2002. Archaean tectonic processes: a case for horizontal shortening in the North Pilbara Granite-Greenstone Terrane, Western Australia. *Precambrian Research*, 113, 87–120.
- Bliss, J. D. and Menzies, W. D. 1995. Preliminary Grade and Volume Model of Alluvial Sn-Au Placers. USGS Open File Report 95-649, 14pp.
- Blockley, J. G. 1980. The Tin Deposits of Western Australia, Geological Survey of Western Australia, Mineral Resource Bulletin 12, 184pp.
- Borg, B. 2012. Combined Annual Report E 45/3172 & E45/3424 Moolyella. Lithex Resources Limited, 30pp.
- Borg, B. 2014. Final Surrender Report E 45/3172 & E45/3424 Moolyella. Lithex Resources Limited, 28pp.
- Borg, B. 2015. Combined Annual Report P45/2845, P45/2846 and P45/2847 Moolyella. Lithex Resources Limited, 15pp.
- Bourke, B. G. 2014. Exploration Licence 45/2273 Surrender Report 2014. Altura Exploration Pty Ltd, 12pp.
- Bradley, D. C., McCauley, A. D., and Stillings, L. M. 2017a. Mineral-Deposit Model for Lithium-Cesium-Tantalum Pegmatites. U.S. Geological Survey Scientific Investigations Report 2010–5070–O, 48 pp.
- Bradley, D.C., Stillings, L.L., Jaskula, B.W., Munk, LeeAnn, and McCauley, A.D., 2017b, Lithium, Chap. K of Schulz, K.J., DeYoung, J.H., Jr., Seal, R.R., II, and Bradley, D.C., eds., *Critical mineral resources of the United States—Economic and environmental geology and prospects for future supply*: U.S. Geological Survey Professional Paper 1802, p. K1– K21, <https://doi.org/10.3133/pp1802K>
- Cerny P. 1993. Rare-element granitic pegmatites. Part 1: Anatomy and internal evolution of pegmatite deposits. *Geoscience Canada*. 18(2):49-67.
- Cerny P, Blevin PL, Cuney M, London D. 2005. Granite-related ore deposits. In: Hedenquist JW, Thompson JFH, Goldfarb RJ, Richards JP, editors. *Economic Geology one hundredth anniversary volume, 1905-2005*. Littleton (CO): Society of Economic Geologists. p. 337-370.
- Champion, D.C., and Smithies, H., 1998, Archaean granites of the Pilbara and Yilgarn cratons. *Australian Geological Survey Organisation Record 1998/33*, 24–25.
- Collerson, K. D. and McCulloch, M. T. 1983. Field and Sr-Nd isotopic constraints on Archean crust and mantle evolution in the East Pilbara Block, Western Australia. Abstract, 9<sup>th</sup> Australian Geological Convention, 167-168.
- Cornelius, L. 2018. Annual Mineral Exploration Report, E45/4462, Moolyella Project, for the period 19/04/2017 to 18/04/2018. Duketon Consolidated Pty Ltd, 26pp.
- Giles, M. 2019. Annual Mineral Exploration Report, E45/4462, Moolyella Project, for the period 19/04/2018 to 18/04/2019. Duketon Consolidated Pty Ltd, Annual Assessment Report, 18pp.
- Griffin, T.J., 1990, North Pilbara granite-greenstone terrain: Geology and mineral resources of Western Australia: Western Australian Geological Survey Memoir 3, 128–157.
- Hickman A. H. and Lipple, S. L. 1978. Marble Bar Western Australia Sheet SF 50-08. Geological Survey of Western Australia, 1:250 000 Geological Series Explanatory Notes.

- Jones, S. 2017. Annual Mineral Exploration Report, E45/4462, Moolyella Project, for the period 19/04/2016 to 18/04/2017. Exterra Resources Ltd, 49pp.
- McKenna, D. 1993. Final Report on Exploration Licence 45/1275 Moolyella, WA. Jervois Mining, 20pp.
- Muller A, Romer RL, Pedersen R-F. 2017. The Sveconorwegian pegmatite province – thousands of pegmatites without parental granites. *The Canadian Mineralogist*. 55(2):283-315.
- Pidgeon, R. T. 1978. 3450 m.y. old volcanics in the Archaean layered greenstone succession of the Pilbara Block, Western Australia. *Earth and Planetary Science Letters*, 37, 423–428.
- Smithies R. H., Champion D. C., van Kranendonk M., Howard H. M., Hickman A. H. 2005. Modern-style subduction processes in the Mesoarchaeon; geochemical evidence from the 3.12 Ga Whundo intra-oceanic arc. *Earth Planetary Science Letters*, 231, 221–237.
- Sweetapple, M.T. 2000. Characteristics of Sn-Ta-Be-Li-industrial mineral deposits of the Archaean Pilbara Craton, Western Australia. *Australian Geological Survey Organisation Record 2000/44*, 54pp.
- Sweetapple, M. T. and Collins, P. L. F. Genetic Framework for the Classification and Distribution of Archean Rare Metal Pegmatites in the North Pilbara Craton, Western Australia. *Economic Geology*, 97, 873-895.
- Trautman, R. L. 2013. Exploration Licence 45/2273 Annual Report 2013. Altura Exploration Pty Ltd, 13pp.
- van Kranendonk M. J., Hickman A.H., Smithies R. H., Williams I. R., Bagas L., Farrell T. R. 2006. Revised lithostratigraphy of Archean supracrustal and intrusive rocks in the northern Pilbara Craton, Western Australia. *Geological Survey of Western Australia Record*, 15, 63pp.
- Williams, I. S. and Collins, W. J. Granite-greenstone terranes in the Pilbara Block, Australia, as coeval volcano-plutonic complexes; evidence from U-Pb zircon dating of the Mount Edgar Batholith. *Earth and Planetary Science Letters*, 97, 41–53

## Certificate of Qualified Person

I, Sandy M. Archibald, P. Geo., am a consulting geologist at Aurum Exploration Services (Canada) Limited, Durham Corporate Centre, 105 Consumers Drive, Whitby, Ontario, Canada, as an author of this report entitled “NI 43-101 Technical Report on the Moolyella Lithium Property, Western Australia” dated April 30, 2021, prepared for Technology Minerals Limited (the “Issuer”), do hereby certify that:

1. I am a Principal Consultant Geologist with Aurum Exploration Services (Canada) Limited.
2. I graduated with a B.Sc. (Hons) degree in Geology from University of Glasgow in 1992, was awarded an M.Sc. degree in Geology from Memorial University of Newfoundland in 1995, and a Ph.D. in Economic Geology from McGill University, Montreal, Canada in 2002.
3. This certificate applies to the technical report entitled “NI 43-101 Technical Report on the Moolyella Lithium Property, Western Australia” dated June 16, 2021 (“Technical Report”) prepared for the Issuer.
4. I have been employed in my profession by Aurum Exploration Services since completing my final postgraduate degree in 2002. My relevant experience includes designing and implementing mineral exploration programs for a variety of commodities and deposit types, including pegmatite-hosted and intrusion related mineral systems (UK, Ireland, Sweden, Czech Republic, Mauritania, and Canada).
5. I am a member of the European Federation of Geologists (Title No. 873), I am a Professional Geologist (Title No. 193) associated with the Institute of Geologists of Ireland, and a Professional Geologist (Title No. 2860) associated with Professional Geoscientists Ontario. I am also a Fellow of the Society of Economic Geologists, and a Member of the Society for Geology Applied to Mineral Deposits.
6. I have read the definitions of “Qualified Person” set out in National Instrument 43-101 – Standards of Disclosure for Mineral Projects (“NI 43-101”) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be a “Qualified Person” for the purposes of NI 43-101.
7. Due to travel restrictions related to COVID-19, I have been unable to visit the Property.
8. I am taking responsibility for all sections of the Technical Report.
9. I am independent of the Issuer applying all the tests in Section 1.5 of NI 43-101.
10. I am independent of the Vendor and the property that is the subject of the Technical Report.
11. I have had no prior involvement with the property that is the subject of the Technical Report.
12. I have read NI 43-101 and NI 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.
13. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

“Signed Sandy M. Archibald”

EurGeol Dr. Sandy M. Archibald, P.Geo.

DATED this 16 day of June, 2021.





**ASHGILL AUSTRALIA Pty. Ltd**

[www.ashgill.com.au](http://www.ashgill.com.au)

**SunMirror AG**

Steinhauserstrasse 74  
6300 Zug  
Switzerland

Thursday 17 June 2021

**Re: Moolyella E45/5573 Evaluation Statement Letter**

Ashgill Australia Pty. Ltd have reviewed the Moolyella NI 43-101 Technical Report, completed by EurGeol Dr. Sandy M. Archibald, PGeo Aurum Exploration Services (Canada) Ltd, dated 16 June 2021.

We have appraised the Moolyella Project on the basis of the above Report, our 2005 site visit, work completed by several Australian companies between 1965 to 2016, and taking into consideration the total area of the tenement (97<sup>2</sup> Km ) with its high Lithium and REE mineralisation potential. It is on this basis that we have reached our final valuation assessment for the project.

As such, Ashgill Australia Pty. Ltd has assigned a valuation of between GBP £15 Million and GBP £17.5 Million to the Moolyella E45/5573 tenement located at the Pilbara Region of Western Australia.

Sincerely Yours,  
Baker Khudeira

Geologist. Baker Khudeira

**Competent Person Statement**

The information in this report that relates to geology and historic exploration results are based on information compiled or reviewed by Geologist Baker Khudeira, who is a Geology Consultant at Ashgill Australia Pty. Ltd, Mr. Khudeira is a Member of the Australian Institute of Geoscientists (AusIMM) and has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr. Khudeira consents to the inclusion in this report of the matters based on information in the form and context in which it appears.

**Ashgill Australia Pty. Ltd**

ACN 149 785 106

Level 9 – 444 Collins St Melbourne VIC 3000 Australia  
PO Box 700 Brentford Square VIC 3131 Australia