

# Superior Resources Limited

ABN 72 112 844 407

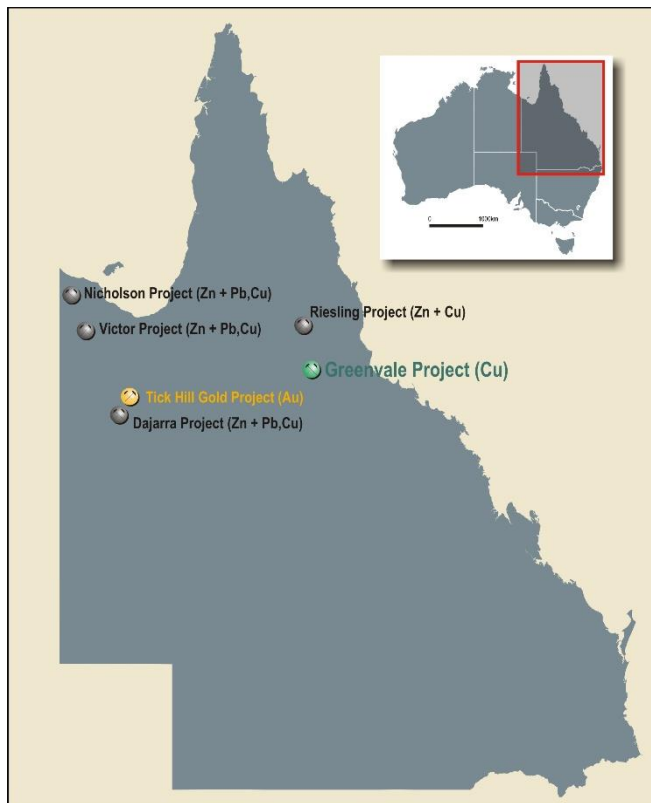
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## QUARTERLY ACTIVITIES REPORT Period ending 30 June 2016

### HIGHLIGHTS

- Tick Hill Surface Gold Project – Further metallurgical studies completed.
- Teck Australia Pty Ltd – Earn-in and JV – preparations completed for commencement of field exploration activities including AMT geophysical survey.
- Placement completed to sophisticated investors to raise \$299,000.00.
- Superior given priority in a competitive EPM application over the Steam Engine Gold Deposit.
- Gold Mining Alliance and Joint Venture agreement entered into with mining group, Dysart Mining Group.

### Project Locations



### Superior Resources Limited

**ASX:SPQ**

#### Board

Carlos Fernicola – Chairman  
Peter Hwang – Managing Director  
Ken Harvey – Non-exec Director  
Carlos Fernicola – Company Secretary

#### Securities

Ordinary Shares – 249,762,372  
Top 20 holders: 64.02% issued capital

#### Summary

Superior Resources Limited (SPQ) is a Brisbane based ASX-listed mineral explorer whose principle aim is the discovery of large base metal deposits in northern Queensland. Superior holds a number of exploration projects in northwest Queensland for large Mount Isa type copper and lead-zinc-silver deposits and exploration projects in northeast Queensland for copper-gold-lead-zinc-silver deposits. Superior also holds gold and uranium tenements.

#### Share Registry

Link Market Services  
Level 15, 324 Queens Street  
Brisbane, QLD, 4000

#### Web Site

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

#### Contact

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## SUMMARY

The main operational activities on the Company's projects comprised the following:

- completion of a Maiden Mineral Resource and a Scoping Study of the Tick Hill Gold Tailings Project; and
- continuation of exploration activities at the Nicholson Project (Zn-Pb-Cu) by Teck Australia Pty Ltd under a Farm-in and Joint Venture Agreement.

## PROJECT ACTIVITIES

### Tick Hill Gold Project (THGP)

#### Tick Hill Tailings Project

A maiden JORC compliant resource was announced to the market during the previous reporting quarter.

The announced Mineral Resource estimate for the Tick Hill tailings is repeated here for completeness as 630,000t at 1.08 g/t Au, using a 0.5 g/t Au cut-off grade (Table 1). Refer to ASX announcement of 19 January 2016 for further information.

Table 1: Tick Hill Tailings Mineral Resource estimate

Category	Location	Au cut-off g/t	Material Volume '000 m <sup>3</sup>	Material Density	Material '000 t	Au g/t	Au kg	Au t oz
INDICATED	West Paddock	0.5	245	1.4	345	0.80	275	8,800
INDICATED	East Paddock	0.5	205	1.4	285	1.42	405	13,000
<b>INDICATED</b>	<b>TOTAL</b>	<b>0.5</b>	<b>450</b>	<b>1.4</b>	<b>630</b>	<b>1.08</b>	<b>680</b>	<b>21,800</b>

As a continuation of the previously reported Scoping Study (refer to ASX announcement of 9 March 2016), further metallurgical studies were completed during the quarter. The main objectives of the additional test work were to:

1. conduct additional leach tests at various grind sizes in order to confirm the relationship between grind size and gold extraction via cyanide leaching; and
2. conduct ultra-fine grinding test work to determine the likely energy required to achieve the optimal grind size.

The cyanide leach test work indicated that gold extraction increases with increasingly finer grind size and also that gold extraction of 90% or higher can be achieved at grind sizes of around P<sub>80</sub> 35µm and finer (based on previous test work reported in October 2015). Gold extraction after 12 hours was consistently high at all grind sizes assessed (10 – 20µm) and in most cases increases between 12 and 24 hour residency times.

Ultra-fine grinding test work using an IsaMill™ was conducted to determine the likely energy requirements for grinding the tailings to the optimum grind size. The results are summarised in Table 2. These results indicate slightly higher energy parameters than estimated in the Scoping Study.

Table 2: IsaMill™ summary of results

Sample ID	Media Type	Target grind size P <sub>80</sub> (µm)	Calculated specific energy (kWh/t)
Tick Hill Tailings Composite	3mm Cenotec	45	36.0
		35	48.2
		25	71.2



Further metallurgical test work will be required in order to complete detailed design of a process flowsheet, determination of detailed capital and operating costs, the development of a financial model and to conduct a feasibility study.

### ***Underground workings***

The Company continues to review and assess the original mining data to determine whether potential exists for the extraction of previously identified but not mined gold ore.

### ***Deeper exploration***

The Company has commenced a process of data review and planning for the preparation of a deep drilling program.

### ***Tick Hill Project goals – exploration and assessment targets***

Superior's focus on the THGP is two-fold:

- conduct exploration to identify a faulted extension to the earlier mined high grade mineralised zone, which averaged 22.6 grams per tonne; and
- Surface Gold Project: evaluate and if feasible, exploit "surface gold" surrounding the old mining operation, which will include potential alluvial gold, mine tailings and waste rock dumps.

Whilst the assessment of the mine tailings and the alluvial-colluvial gold are components of the Surface Gold Project, Superior is also commencing preparatory work to enable exploration for the main target, being a potential faulted extension to the earlier lode.

### ***Background: JVA with Diatreme Resources Limited***

Under the terms of an Exploration Farm-in and Joint Venture Agreement (**JVA**) with Diatreme Resources Limited (**DRX**), the tailings, alluvial-colluvial gold and all other surface sources of gold are being assessed jointly with DRX. The joint arrangement requires each party to contribute 50% of all costs associated with the operations.

All drilling operations associated with the surface gold assessment program have been conducted with a DRX-owned drill rig. These costs have been shared equally between the parties.

Under the JVA, Superior has the right to earn a 50% interest in the project by spending a minimum of \$750,000 on exploration, which will include substantial drilling over a two year earn-in period (which can be extended by agreement). All expenditure incurred by Superior on the Surface Gold Project will constitute earn-in expenditure and will be counted towards SPQ's \$750,000 minimum earn-in obligation.

During the earn-in period Superior will have the sole and exclusive right to access and conduct exploration on the project as well as to determine the nature of the exploration programs.

Upon a transfer of a 50% interest in the THGP to Superior, Superior will be required to pay DRX \$100,000 and an amount equal to 50% of the government security bond on the mining leases.

Mt Isa Mines Limited retains a royalty on gold produced from the mining leases, which is set at a variable rate depending on the annual grade of gold produced from mining. The royalty applies initially to gold produced above 5g/t Au and then, after payment of royalties totalling \$5M, to gold produced above 10g/t Au. A separate royalty rate applies to gold produced from tailings resulting from previous mining.

### **Teck Australia Earn-in and Joint Venture – Nicholson Zinc-Lead-Silver Project**

Teck Australia Pty Ltd (**Teck**), a wholly-owned subsidiary of Canada's largest diversified resource company, Teck Resources Limited, commenced exploration work on Superior's Nicholson Project (**Project**) during the previous quarter. Teck is conducting the work under a Farm-in and Joint Venture Agreement (**Agreement**) with Superior that was entered into during October 2015.

The Nicholson Project, located near the Walford Creek lead-zinc-silver-copper deposit, is considered to have the potential to contain a sediment-hosted lead-zinc-silver massive sulphide deposit (**SHMS**), similar to Mount Isa and McArthur River (refer to Figures 2 and 3).



Previous drilling by Superior of the Walford South Prospect confirmed the presence of substantial amounts of pyritic shale containing elevated zinc, which can be associated with SHMS deposits. An airborne VTEM survey conducted by Superior over the Project identified moderately deep conductivity anomalies at the Nicholson West and Kingfisher East prospects in a sequence similar to that hosting the Walford Creek deposit. This, together with outcropping rocks containing vein-lead mineralisation, supports the potential for the Project to host SHMS zinc-lead-silver mineralisation.

### ***Work completed during the quarter***

In summary, the exploration work that was completed by Teck during the quarter consisted of:

- compilation of a 3-D geological model for the Nicholson Target Corridor;
- planning of an audio-magneto-telluric (**AMT**) survey;
- planning of an Aboriginal cultural heritage survey; and
- preparation for a July start to field geophysics and geological mapping programs.

### ***3-D geological modelling***

2-D data compilation was completed during the previous quarter, the results of which were integrated into a 3-D platform. Interpretations of the data in 3-D allowed for the generation of a revised fault architecture and the identification of prospective target areas.

### ***AMT survey***

An AMT survey has been planned to confirm the presence of key interpreted growth faults which provide conduits for mineralised fluids and to better determine the nature of interpreted sub-basin locations within EPM 15670 and EPM 18203, including the presence and extent of conductive pyritic carbonaceous shale host units. A field inspection of the area was also completed to determine the access requirements for the planned AMT survey.

An Aboriginal heritage clearance survey is expected to commence during July followed by the AMT survey program commencing in August.

### ***Next quarter activities***

The exploration activities planned for the December quarter include:

- completion of geological mapping;
- completion of Aboriginal cultural heritage surveys;
- completion of the AMT survey; and
- interpretation of the AMT survey data and drill target development.

### ***Earn-in and Joint Venture Agreement – Teck***

The Earn-in and Joint Venture Agreement (**Agreement**) was entered into with Teck on 9 October 2015 (refer ASX announcement 3 November 2015).

Under the terms of the Agreement, Teck has an exclusive right to earn a 70% interest in the Nicholson Project by spending \$2,500,000 in accordance with the following structure:

- incurring \$250,000 Minimum Expenditure: to be spent on exploration by 30 September 2016; and
- incurring \$2,250,000 in optional expenditures on or before the 31 December 2018.

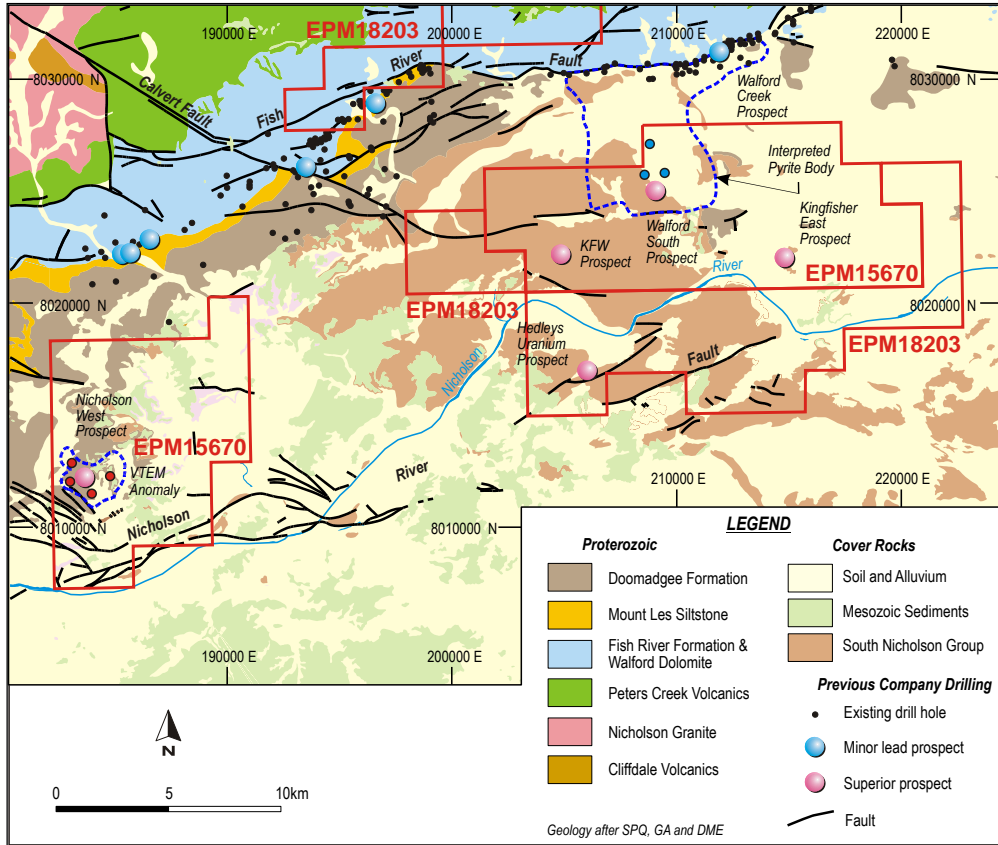


Figure 2. Nicholson Project tenements and prospect locations overlaid on background regional geology.

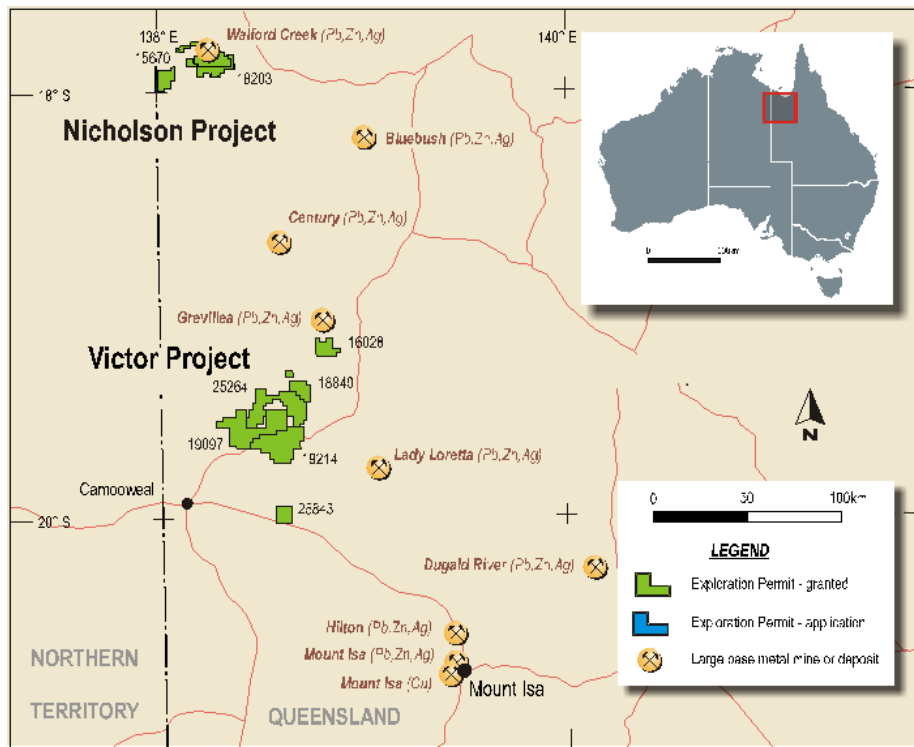


Figure 3. Location of the Nicholson Project tenements, also showing the location of Superior's 100% Victor Project.

## New EPM application over Steam Engine gold deposit

The Queensland Department of Natural Resources and Mines provided Superior with priority in respect of a competitive application for an Exploration Permit for Minerals (EPMA) (EPMA26165 “Cockie South”) in north east Queensland (Figure 4).

The EPM application covers the Steam Engine Gold Deposit and the Galah Dam Gold-Zinc-Copper prospect. Superior’s application was in competition with another party’s application in respect of substantially the same area.

Subject to satisfying regulatory requirements (none of which are considered onerous or unusual), Superior expects to be granted EPMA26165 in due course.

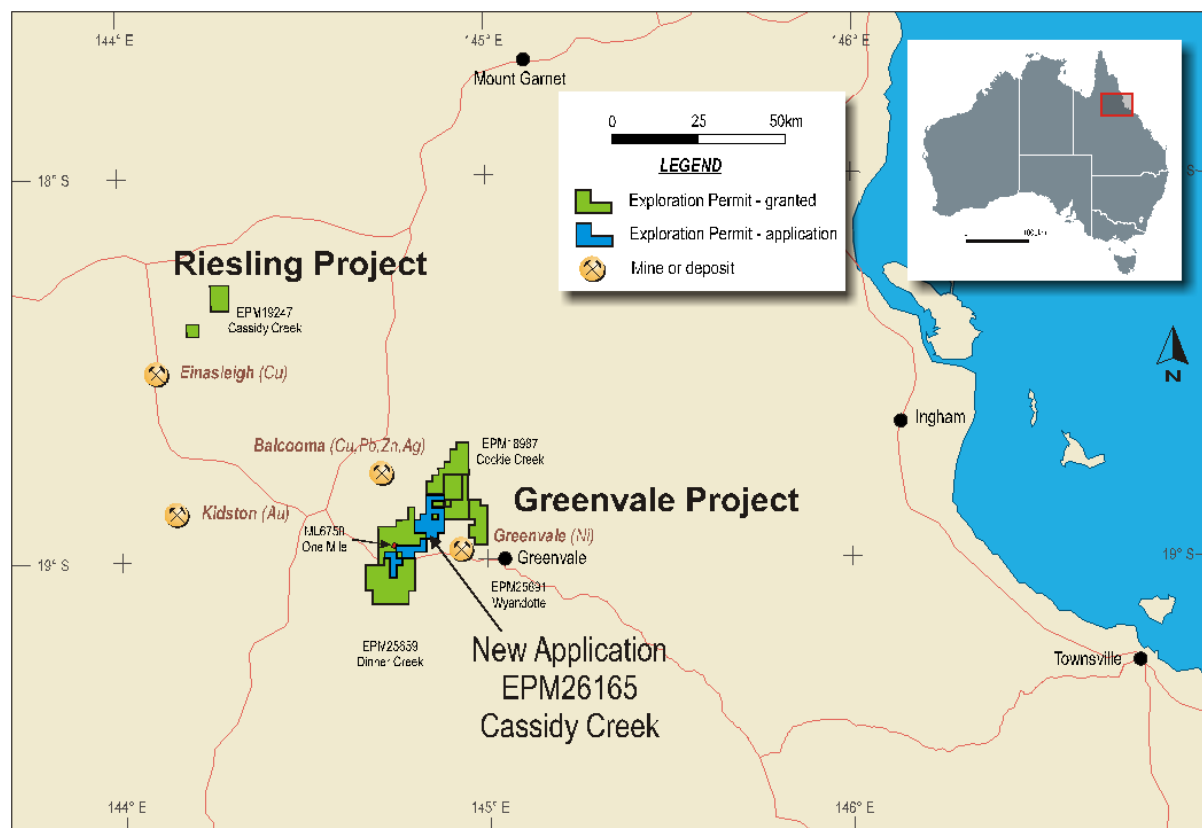


Figure 4. Location of the new EPM application, Cockie South (blue infilled area).

## CORPORATE and COMMERCIAL ACTIVITIES

### Capital Raising – Placement to sophisticated Investors

The Company completed a placement to sophisticated investors on 15 July 2016 to raise \$299,000.00 through an issue of fully paid ordinary shares to sophisticated investors at \$0.008 per new share, with a free attaching option (exercise price \$0.03 expiring 30 June 2019) for every new share subscribed (**Placement**). Some of the Directors participated in the placement for a total of \$64,000. Shareholder approval will be sought for the Directors’ subscriptions and the attaching options to the placement shares.

A total of 29,375,000 shares were issued under the Placement, with the balance of the Placement to be issued following shareholder approval. The Placement was made using the Company’s existing 15% capacity and shareholder approval was not required.

Funds raised under the Placement will be used for working capital.





### ***Sale process to acquire gold project***

On 7 July 2016 Superior announced that it was participating as a shortlisted bidder in a formal sale process for the acquisition of an advanced stage gold project. The project was the Lake Carey Gold Project held by Fortitude Gold Pty Ltd (In Liquidation) and located in the Eastern Goldfields of Western Australia.

Unfortunately, the Company was not successful in acquiring the project. However, the Company is currently considering another gold project for a potential acquisition, also located in Western Australia.

Superior considers that the current economic and minerals cycles present an opportunity to substantially upgrade its project portfolio and deliver significantly improved value to its shareholders.

The Company will provide further information to the market if the potential acquisition progresses further.

### ***Heads of Agreement - Gold Mining Alliance with Dysart Mining Group***

On 27 May 2016, Superior entered into a Heads of Agreement (**HOA**) for a strategic gold mining alliance with Caesar Gold Mines Pty Ltd. Caesar Gold Mines is a part of Dysart Mining Group (**DMG**), a group of interrelated private companies comprising well-resourced mine management, development and operational businesses.

Under the HOA, Superior will identify and acquire advanced stage gold projects, including delivering regulatory approvals to enable project development and DMG will undertake mine design together with providing fully financed modular plant design, procurement and construction.

Upon the acquisition of each project, a 50:50 joint venture will be formed and definitive joint venture agreements will subsequently be entered into by the parties.

The HOA does not automatically apply all projects that Superior owns or acquires. A project will only be developed under the HOA if both Parties elect to do so.

### ***Cash conservation***

SPQ continues to maintain cash conservation measures with respect to its operations and administration.

## **INVESTMENTS**

Superior maintains an exposure in relation to ASX listed uranium focused company, Deep Yellow Limited (ASX:DYL). As at 30 June 2016, the company holds 7,000,000 DYL shares with a closing value of \$28,000.

### **ASX Listing Rule 5.3.3**

Appendix 2 sets out information that is required under ASX Listing Rule 5.3.3 (for exploration entities) in relation to the Riesling Project.

A handwritten signature in black ink, appearing to read 'Peter Hwang'.

**Peter Hwang**  
**Managing Director**

**Contact:**

**Mr Peter Hwang**  
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**Further Information:**

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Information in this report, that relates to Exploration Results and Mineral Resources associated with the Tick Hill Project is based on information compiled by Mr Ian Reudavey, who is a full time employee of Diatreme Resources Limited and a Member of the Australian Institute of Geoscientists. Mr Reudavey has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he has undertaken to qualify as a Competent Person as defined in the 2012 Edition of ‘The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’. Mr Reudavey consents to the inclusion in the report of the matters based on the information in the form and context in which it appears.





## Appendix 1

### DISCLOSURES REQUIRED UNDER ASX LISTING RULE 5.3.3

- Mining tenements held at the end of the quarter and their location**

State	Tenement Name	Tenement ID	Location	Interest	Holder	Comments
QLD	Hedleys 2	EPM15670	Nicholson	100%	SPQ	Granted
QLD	Hedleys South	EPM18203	Nicholson	100%	SPQ	Granted
QLD	Victor Creek	EPM16028	Victor	100%	SPQ	Granted
QLD	Harris Creek	EPM18840	Victor	100%	SPQ	Granted
QLD	Tots Creek	EPM19097	Victor	100%	SPQ	Granted
QLD	Scrubby Creek	EPM19214	Victor	100%	SPQ	Granted
QLD	Cockie Creek	EPM18987	Greenvale	100%	SPQ	Granted
QLD	Cassidy Creek	EPM19247	Greenvale	100%	SPQ	Granted
QLD	Dinner Creek	EPM25659	Greenvale	100%	SPQ	Granted
QLD	Wyandotte	EPM25691	Greenvale	100%	SPQ	Granted
QLD	One Mile	ML6750	Greenvale	100%	SPQ	Granted
QLD	Tomahawk Creek	EPM25264	Victor	100%	SPQ	Granted
QLD	W Creek	EPM25843	Victor	100%	SPQ	Granted
QLD	Cockie South	EPM(A)26165	Greenvale	100%	SPQ	Application

- Mining tenements acquired and disposed of during the quarter and their location**

State	Tenement Name	Tenement ID	Location	Interest	Holder	Comments
-	-	-	-	-	-	-

- Beneficial percentage interests held in farm-in or farm-out agreements at end of the quarter**

State	Project Name	Agreement Type	Parties	Interest held at end of quarter by exploration entity or child entity	Comments
QLD	Tick Hill Gold Project	Farm-in Agreement	SPQ and DRX	0%	ML7094, ML7096 and ML7097
QLD	Nicholson Project	Farm-out JVA	SPQ and Teck Australia Pty Ltd	100%	EPM15670 and EPM18203 ASX announcement 3/11/15

Abbreviations:

EPM	Queensland	Exploration Permit for Minerals
EPM(A)	Queensland	Exploration Permit for Minerals (Application)
ML	Queensland	Mining Lease
SPQ		Superior Resources Limited
DRX		Diatreme Resources Limited
JVA		Joint Venture Agreement