

Superior Resources Limited

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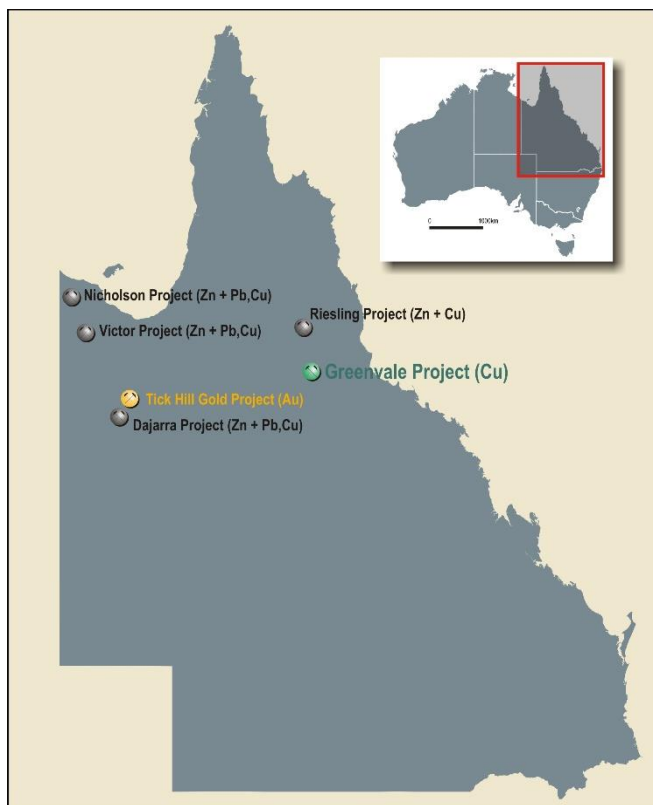
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QUARTERLY ACTIVITIES REPORT Period ending 30 September 2016

HIGHLIGHTS

- Tick Hill Surface Gold Project – Gravity concentration studies completed.
- Nicholson Project – Teck Australia Pty Ltd – Earn-in and JV – completion of preparations for an AMT geophysical survey.
- Placement completed to sophisticated investors to raise \$299,000.00.

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 – 279,137,372
Top 20 holders: 64.02% issued capital

Summary

Superior Resources Limited is a Brisbane based ASX-listed mineral explorer whose principle aim is the discovery of large base metal deposits in northern Queensland. Superior holds several 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

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SUMMARY

The main operational activities of Superior Resources Limited (**Superior** or **Company**) comprised the following:

- commencement and completion of gravity concentration studies for the Tick Hill Gold Tailings Project;
- completion of preparations for an AMT geophysical survey at the Nicholson Project (Zn-Pb-Cu) by Teck Australia Pty Ltd under an Earn-in and Joint Venture Agreement;
- capital raising by a placement with sophisticated investors; and
- evaluation of new project opportunities.

PROJECT ACTIVITIES

Tick Hill Gold Project (THGP)

Tick Hill Tailings Project

Further metallurgical studies were undertaken during the quarter to assess the efficiency of gravity separation (via a Knelson concentrator) on a single 50kg sample of Tick Hill tailings taken from one of the two tailings paddocks (the eastern paddock). Although a gravity concentrate with free gold was produced, the overall gold recovery to concentrate was too low for gravity separation to be considered as an alternate or complementary processing method for the Tick Hill tailings.

Additional testwork is now planned to enable detailed design of a process flowsheet and the determination of a financial model. Discussions with third parties are also being conducted to investigate arrangements to minimise the potential capital and operating costs.

A 50kg sample was processed through a Knelson concentrator during the quarter to assess the efficiency of gravity separation on the Tick Hill tailings material.

Additional metallurgical testwork is required to allow detailed design of a process flowsheet, determination of capital and operating costs, and development of a financial model to further assess the economic potential for mining and processing of the tailings material.

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 is continuing 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.

The Tick Hill Gold Project comprises three granted Mining Lease No's 7094, 7096 and 7097 (totalling 390ha). The Tick Hill Gold Deposit was mined between 1991 and 1995 by Carpentaria Gold Pty Ltd (a subsidiary of MIM Holdings Limited) for the production of 513,333 ounces of gold from 705,000 tonnes of ore at a recovered grade of 22.6 g/t gold (source: MIM – Annual Reports). This makes it one of the highest grade gold deposits in Australia's recent gold producing history.

Exploration and assessment of the surface material within the leases (including alluvials, tailings and waste dumps) is to be conducted as a joint operation and effectively, a under separate joint venture, with each party contributing 50% of the costs.

The Tick Hill Gold Mine operated from August 1991 through to March 1995, with commissioning of the site processing plant in December 1991. The plant comprised crushing and milling circuits delivering a product with a p80 of 70µm to a CIL circuit. Tailings were discharged into a tailings dam comprising two paddocks of a "turkeys nest" construction in which a perimeter embankment with a clay core retains tailings. Wall heights range from 6m to 10.5m. Since decommissioning, the surface has been capped and both the surface and batters seeded, with good vegetation cover now present.

The total reported production for the Tick Hill Gold Mine was 705,000t at 22.6 g/t Au for 15,900kg Au at 97% gold recovery. Some high grade open pit ore was mined and transported to the Carpentaria Gold operations at Ravenswood to provide early cash flow to the project, this has been estimated at 20,000t based on the reported 19,000oz produced at Ravenswood in the 1991/1992 financial year (with head grades for that year of 30.2 g/t Au). This suggests that approximately 685,000t of tailings remain on site, with an estimated grade of around 0.7 g/t Au.

In January 2016 the joint venture partners announced a maiden Mineral Resource estimate for tailings material located within the rehabilitated tailings dam at Tick Hill (refer to ASX announcement of 19 January 2016 for further information). The Indicated Resource is estimated at 630kt at 1.08 g/t Au (at 0.5 g/t Au cut-off) containing 680kg (22,000 troy ounces) of gold.

In March 2016, the joint venture partners announced that a scoping study completed by an independent external consultant (Metcor) confirmed the viability of a standalone operation processing the identified tailings resource. Tick Hill has the potential for a 20-month operation processing the tailings via re-grinding and a standard CIP/CIL circuit.

Metallurgical studies were undertaken to help determine the optimal grain size required to balance leach extraction rates with energy requirements for re-grinding of the tailings. The cyanide leach test work showed that gold extraction increases with increasingly finer grind size, but gold extraction of ~90% or higher can be achieved at grind sizes of around P80 35 µm and finer.

Ultra-fine grinding test work utilising an Isamill™ was conducted to determine the likely energy requirements, with results reported slightly higher than parameters used in the Scoping Study, but further work is required to generate data suitable for use in feasibility studies.



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 March quarter of this year. Teck is conducting the work under an Earn-in and Joint Venture Agreement (**Agreement**) with Superior that was entered into during October 2015.

The Nicholson Project (EPM15670 and EPM18203), located near the Walford Creek lead-zinc-silver-copper deposit, is considered to have the potential to contain sediment-hosted lead-zinc-silver massive sulphide deposits (**SHMS**), similar to Mount Isa and McArthur River (refer to Figures 1 and 2).

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.

Extension of Initial Term of Earn-in and Joint Venture Agreement

Superior advises that the Company has agreed with Teck Australia Pty Ltd (**Teck**) to extend the "Initial Period" of Teck's earn-in right under the Nicholson Project Earn-In and Joint Venture Agreement (JVA).

Under the original terms of the JVA, Superior granted Teck with the right to earn a 70% interest in the Nicholson Project by:

- (Initial Period) – spending \$250,000 by 30 September 2016, with a mechanism to extend the period depending on the date of renewal of EPM15670; and
- (Earn-In Period) – spending a further \$2,250,000 by 31 December 2018.

Superior agreed to extend the Initial Period of the earn-in right to 31 December 2016. All other terms remain the unchanged as set out in ASX announcement dated 3 November 2015.

At the end of the Quarter, Teck had spent an approximate total of \$275,000 on the project.

Work completed during the quarter

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

- completion of an Aboriginal cultural heritage survey for the AMT survey;
- AMT contract finalisation and completion of survey planning.

AMT survey

Consultant contract procurement and planning for an Audio-frequency Magnetotellurics (**AMT**) survey were completed during the Quarter.

A field reconnaissance trip was completed in August primarily focusing on surface exposures of prospective Paleoproterozoic stratigraphy and confirming access for the upcoming AMT survey planned to commence during the next Quarter. The AMT program will comprise 23 stations over 19 kilometres. The survey will target potential sub-basins identified through the integration of magnetics, seismic and gravity data and will focus on the south-western portions of the two tenements proximal to the Nicholson River Fault (Figure 1). The survey will commence during the first two weeks of October and is expected to be completed within seven days.

The results of the AMT survey will determine if a conductive body is developed within prospective stratigraphy defined by seismic interpretations.

The AMT survey is being undertaken 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.

AMT electro-magnetic survey and imaging techniques use naturally-occurring ionospheric current sheets and lightning storms to map geologic structures to depths of 500 meters or more. AMT surveys



provide the ability to determine the characteristics of base metal (and other) deposits and anomalies as well as investigate deep geological structures in greater clarity at depth than other geophysical methods.

Aboriginal cultural heritage

An Aboriginal cultural heritage survey was completed with the Waanyi native title holders. All but four AMT sites were successfully cleared with approval to undertake the AMT survey with the use of Waanyi heritage monitors.

Next quarter activities

The exploration activities planned for the December Quarter include:

- execution of AMT survey and interpretation of results; and
- program planning and budgeting for 2017.

Background: Earn-in and Joint Venture Agreement – Teck

The Earn-in and Joint Venture 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:

- (Initial Period) – incurring \$250,000 Minimum Expenditure: to be spent on exploration by 30 September 2016; and
- (Earn-In Period) – incurring \$2,250,000 in further expenditures on or before the 31 December 2018.

As indicated above, Superior agreed with Teck to extend the Initial Period to 31 December 2016.

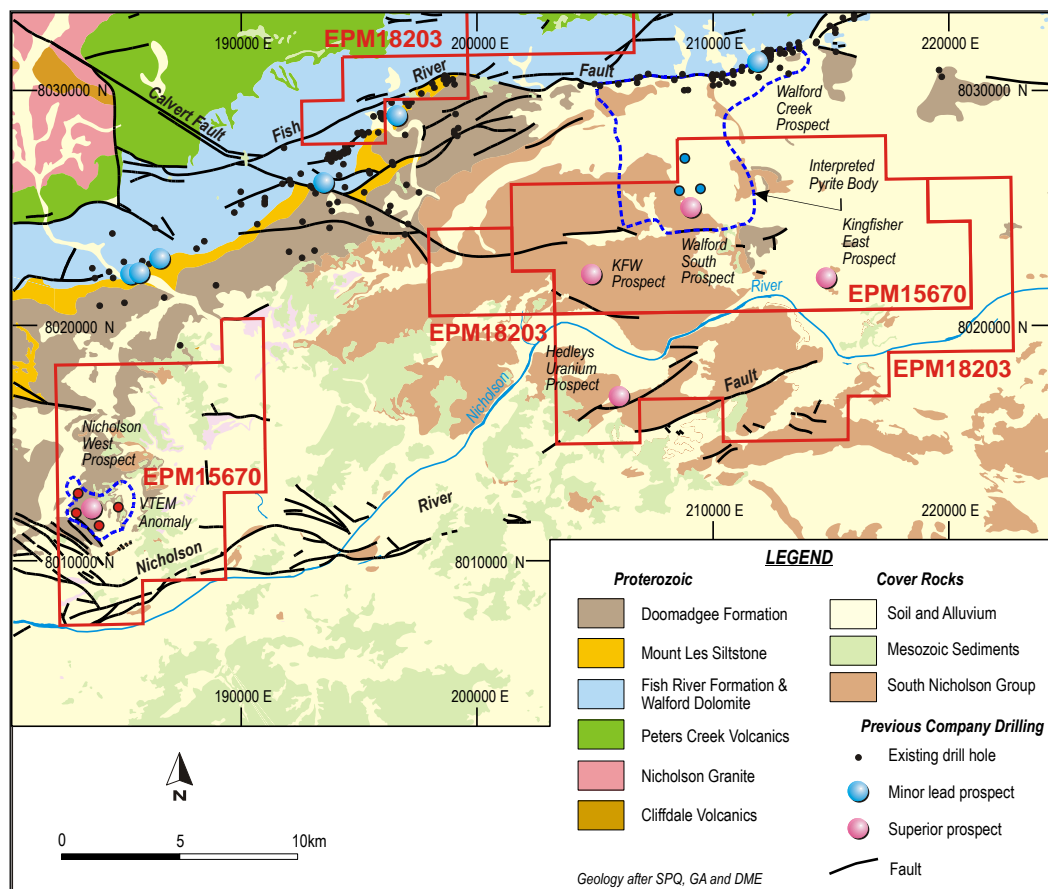


Figure 1. Nicholson Project tenements and prospect locations overlaid on background regional geology.

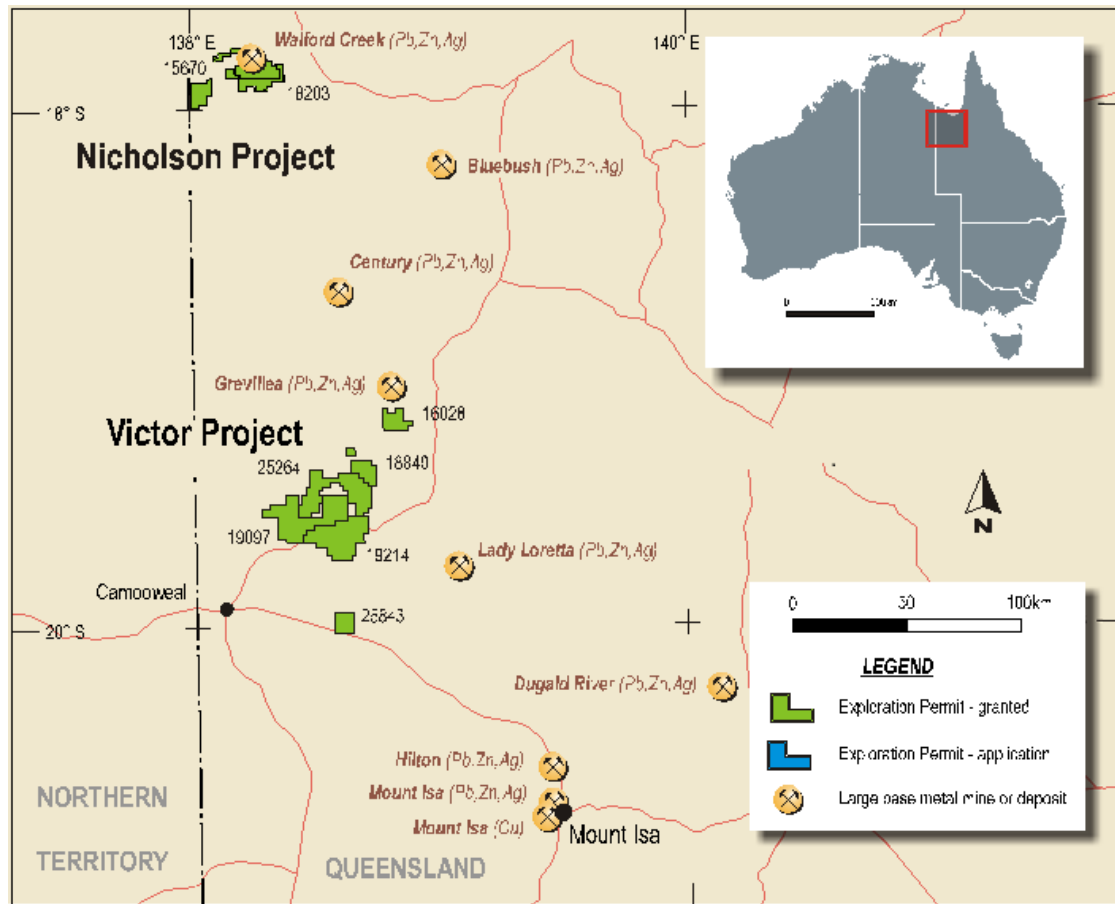


Figure 3. Location of the Nicholson Project tenements, also showing the location of Superior's 100% Victor Project.

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 at the Company's 2016 AGM 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.

Superior is currently evaluating and considering several other project opportunities that range from strategically significant exploration portfolios through to near development projects.

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 an acquisition transaction results from the current evaluation activities.

Cash conservation

The Company's Board continues to maintain the current cash conservation measures with respect to the Company's operations and administration.

INVESTMENTS

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

ASX Listing Rule 5.3.3

Appendix 1 sets out information that is required under ASX Listing Rule 5.3.3 (for exploration entities).

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Managing Director

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Forward looking statements: This document may contain forward looking statements. Forward looking statements are often, but not always, identified by the use of words such as "seek", "indicate", "target", "anticipate", "forecast", "believe", "plan", "estimate", "expect" and "intend" and statements that an event or result "may", "will", "should", "could" or "might" occur or be achieved and other similar expressions. Indications of, and interpretations on, future expected exploration results or technical outcomes, production, earnings, financial position and performance are also forward looking statements. The forward looking statements in this presentation are based on current interpretations, expectations, estimates, assumptions, forecasts and projections about Superior, Superior's projects and assets and the industry in which it operates as well as other factors that management believes to be relevant and reasonable in the circumstances at the date that such statements are made. The forward looking statements are subject to technical, business, economic, competitive, political and social uncertainties and contingencies and may involve known and unknown risks and uncertainties. The forward looking statements may prove to be incorrect. Many known and unknown factors could cause actual events or results to differ materially from the estimated or anticipated events or results expressed or implied by any forward looking statements. All forward-looking statements made in this presentation are qualified by the foregoing cautionary statements.

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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	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
QLD	Victor Creek	EPM16028	Victor	0%	SPQ	Surrendered

• **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% 50% Surface Gold	ML7094, ML7096 and ML7097 Surface Gold includes all gold in the Tick Hill tailings storage facility, waste rock dumps, alluvial and colluvial gold and all other surface gold.
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