



ENTERPRISE METALS LIMITED

(ACN 123 567 073)

27 January 2010

DECEMBER 2009 QUARTERLY ACTIVITIES REPORT

ASX Symbol: ENT

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BOARD OF DIRECTORS

Mr Paul Larsen
Chairman

Mr Dermot Ryan
Managing Director

Mr Bruce Hawley
Executive Director

Mr Jay Stephenson
CFO/Company Secretary

PROJECTS

Gold

Darlot (Yandal)
Revere (Doolgunna)
Wattagee (Cue)
Fraser Range (SW Yilgarn)

Uranium

Yalgoo (Murchison)
Byro (Murchison)
Maitland (Yandal)
Lake Mason (Gidgee)
Darlot (Yandal)
Sylvania (Pilbara)

Iron Ore

Sylvania
Earaheedy
Fraser Range
Eucla

ISSUED CAPITAL

Shares: 93,010,686

Listed Options: 15,285,300

Unlisted Options: 5,500,000

HIGHLIGHTS

- “Program of Work” approved by DMP for drilling Wattagee base metal/gold targets.
- Drilling of geochem/IP/VTEM targets along South Boundary Fault completed.
- Further VTEM surveys flown at Donald Well and West Ruby Bore.
- Discovery of 30km long “calcrete hosted” uranium anomaly west Yalgoo.
- Byro calcrete uranium project acquired.
- Cash in bank at 31 December 2009: \$1.07M.

OVERVIEW

The Department of Mines (“DMP”) has approved a drilling program at **Wattagee** to test base metal and gold targets. The drill program is awaiting a heritage clearance survey by Native Title claimants. Drilling is expected to start by end February.

At **Revere**, reverse circulation (“RC”) drill testing of various gold/copper and geophysical targets in the Yerrida Basin was completed between 19th September and 23 November 2009. 40 holes were completed for 8,831 metres. Low level gold and base metal mineralization was intersected, but there were no ore grade drill intersections.

Two additional VTEM surveys were flown, at **Donald Well** and **West Ruby Bore**. Targets from these surveys remain to be followed up.

At **Yalgoo**, 200 km east of Geraldton, a detailed magnetic and radiometric survey has defined a significant 30km long uranium channel anomaly within the Salt River, just west of Yalgoo township. The anomaly is within mapped calcrete and overlies a greenstone belt.

The Company has acquired a significant calcrete hosted uranium project associated within and adjacent to the Murchison River on the **Byro** mapsheet.

1. SUMMARY OF EXPLORATION ACTIVITIES

WATTAGEE PROJECT

The Wattagee area is located in the Murchison Province of the Yilgarn Craton some 30 km north of the town of Cue. During the Quarter, the Company gained approval from the DMP for RC drill testing of the gold and IP targets at the Placer and Stock Yard Creek Prospects, and for RC drill testing of the base metal and IP anomalies at the AM14 Prospect. The Company is awaiting the completion of heritage clearance surveys by the Native Title Claimants, and expects to be drilling by end February 2010. Approximately 7 holes for 1,600 metres have been planned for this first pass test.

During the previous Quarter, nine lines of 100m dipole-dipole IP were completed over the Placer Prospect, 5 lines over the Stockyard Prospect and 3 lines over the AM14 base metal Prospect. The location of these lines is shown in Figure 1. (refer ASX: ENT 30 October 2010)

The Company has also expanded its landholdings in the area, which now comprises one granted exploration licence and 3 exploration licence applications. The tenements are immediately NE along strike from the former Harmony Cuddingwarra pit, from which New Hampton mined approximately 5.7mt at 2.5 g/t Au for 460,000 ounces. Enterprise considers the geology of the project area to be prospective for economic gold and VMS style base metal deposits.

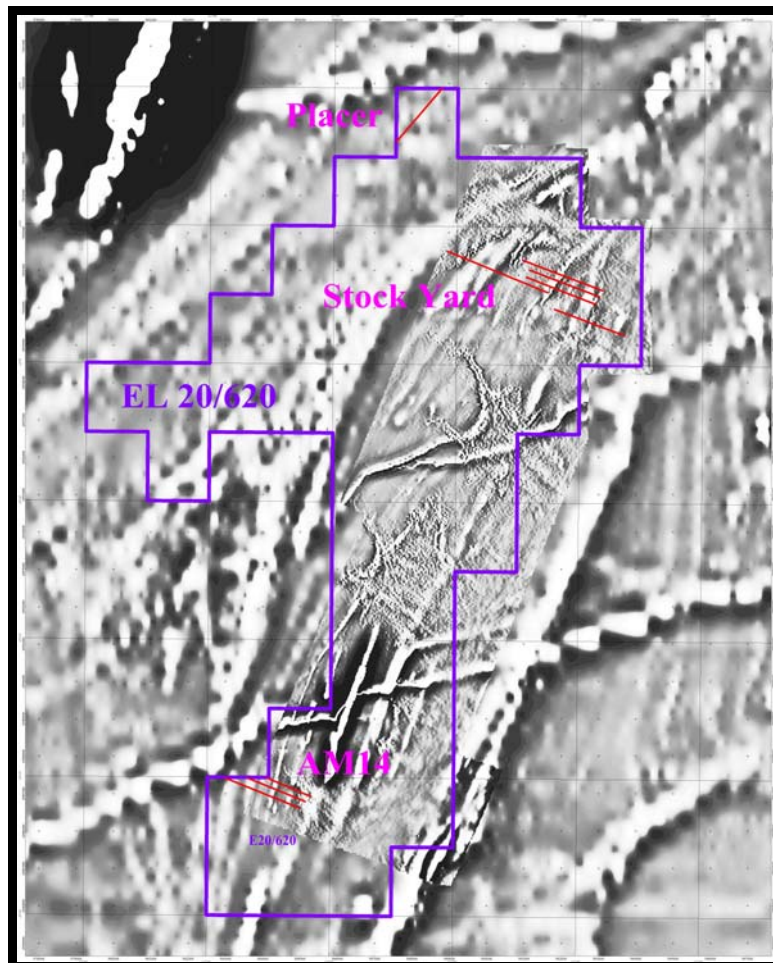


Figure 1. Wattagee Project, 1sr VD Magnetic Image with Location of Prospects and IP Lines

REVERE PROJECT

The majority of the 2009 exploration and drilling program focussed on the granted tenements covering the Doolgunna Formation sediments of the Yerrida Basin. This was the first deep test of the Company’s alluvial gold and base metal targets along the 50km long magnetic trend termed the Southern Boundary Fault (“SBF”). Reverse circulation (“RC”) drill testing of various gold/copper and geophysical targets was completed between 19th September and 23 November 2009. A total of 40 holes were completed for 8,831 metres. No ore grade intersections were obtained.

The results point to the Yerrida Basin sediments along the SBF containing large quantities of disseminated and massive sulphides, mostly pyrite, but also containing some base metals and gold bearing quartz veins (which have produced patches of alluvial gold). Conceptually the area remains prospective for SEDEX style gold and base metal deposits, and the Company will review all of its existing data in this area before undertaking any further geophysics or drilling. The RC drilling results from this program have been reported in in detail in various ASX announcements between October-December 2009.

The focus in 2010 will move NW into the Narracoota Formation volcanics. The best 2010 drilling results came from a small program drill testing geochemical targets within the Narracoota volcanics, adjacent to the Goodin Fault, approx. 6-9km NE of Doolgunna homestead. At No. 2 Bore, a fence of holes testing a weak linear NW striking VTEM anomaly and a historical geochemical anomaly intersected narrow veins of chalcopyrite, pyrite and carbonate from 107m-115m, and included 1m @ 0.4g/t Au and 0.9% Cu from 114m.

The Company’s portfolio of **tenement applications** at Doolgunna includes a significant strike length of the Goodin Fault, which separates the Narracoota Formation volcanics from the Doolgunna Formation sediments. The Company has a number of excellent soil and Maglag copper anomalies within the Narracoota Formation volcanics, and along the Goodin Fault, which remain to be drill tested, when these tenement applications are granted in the first half of 2010. (Refer Figures 2 & 3)

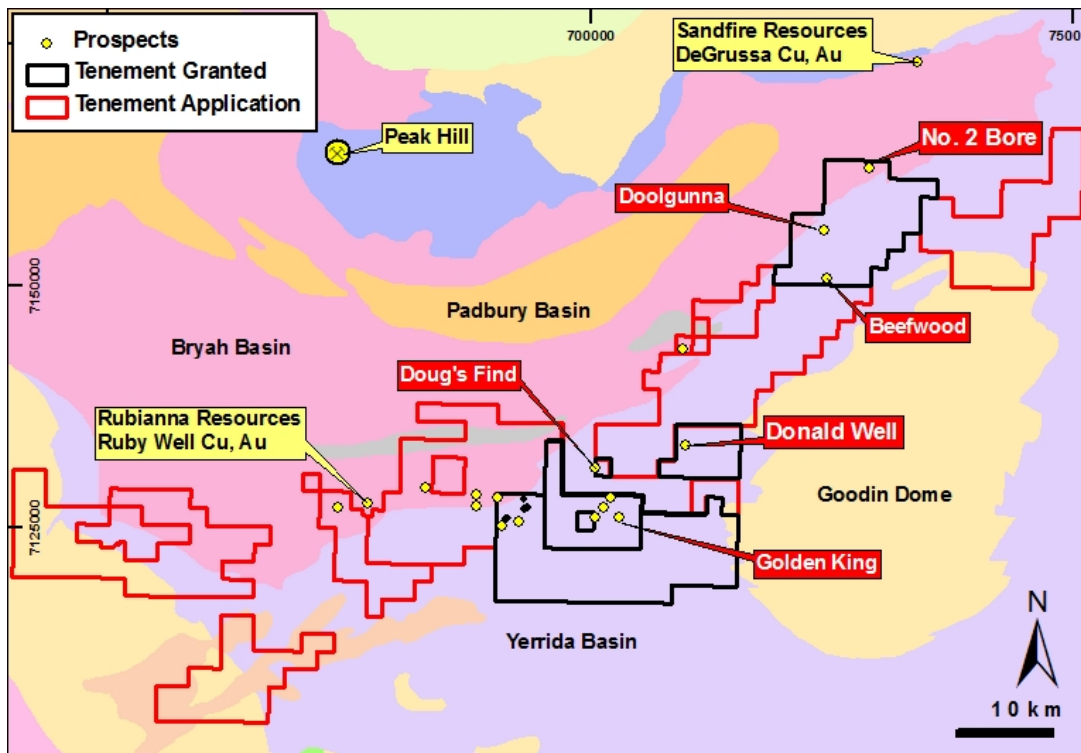


Figure 2. Revere Project - Regional Geology Showing Major Prospects at 31 December 2009

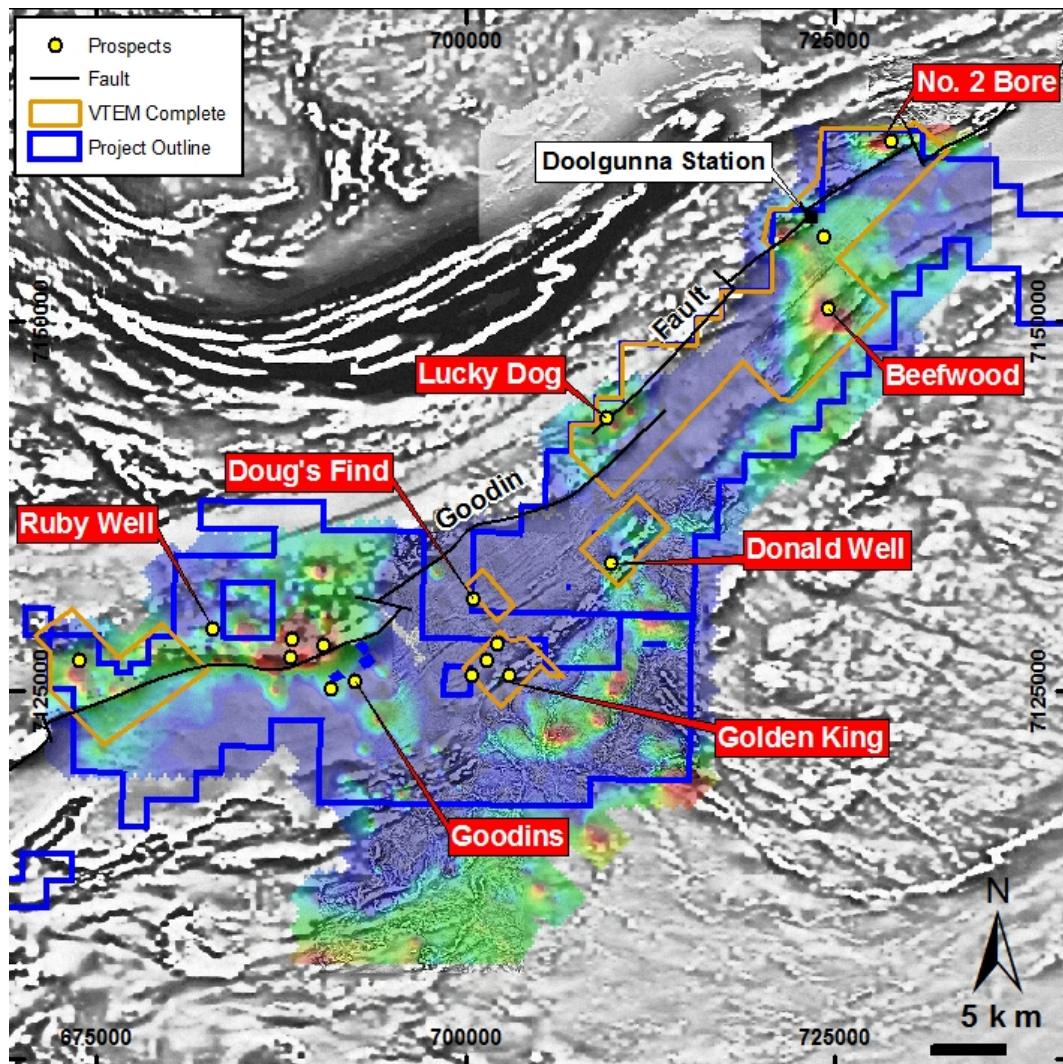


Figure 3. Revere Project – Location of VTEM Surveys and Copper Geochemistry over Magnetics

Ruby Well E51/1301, E51/1303

Enterprise's tenement applications in the **Ruby Well** area will progressively be granted by the DMP in 2010, with the granting of **E51/1301** expected in the first week of February. Regional maglag sampling was previously carried out over the Ruby Well project area by Murchison Exploration Pty Ltd ("MEPL") on an approximate 1km x 1km grid. Discrete copper anomalism was identified within the Narracoota Formation volcanics and along the Goodin Fault within **E51/1301** immediately west of Rubianna Resources Ltd's Ruby Well copper-gold prospect. (Refer Figure 4 overleaf)

Further copper anomalism was also identified by MEPL's work within the Narracoota Fm volcanics and along the Goodin Fault within **E51/1303**, immediately east of Rubianna's Curleys gold prospect. Infill soil sampling at 400m x 400m spacing is planned for E51/1301 and E51/1303 in early 2010.

In anticipation of the grant of E51/1301, the Company undertook a helicopter borne 100m line spaced VTEM survey in December 2009. The preliminary VTEM data shows a number of electromagnetic responses that persist with depth, and are associated with the Narracoota Formation and/or the Goodin Fault. (Refer Figure 5 overleaf)

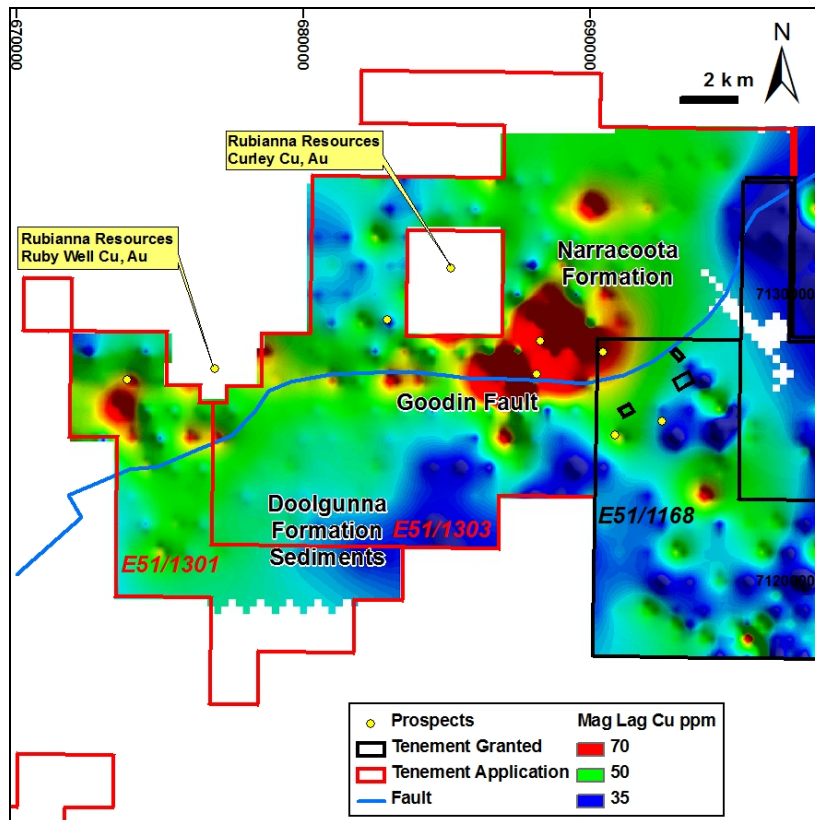


Figure 4. Revere Project - Ruby Well – Gridded Maglag Geochemistry – Copper

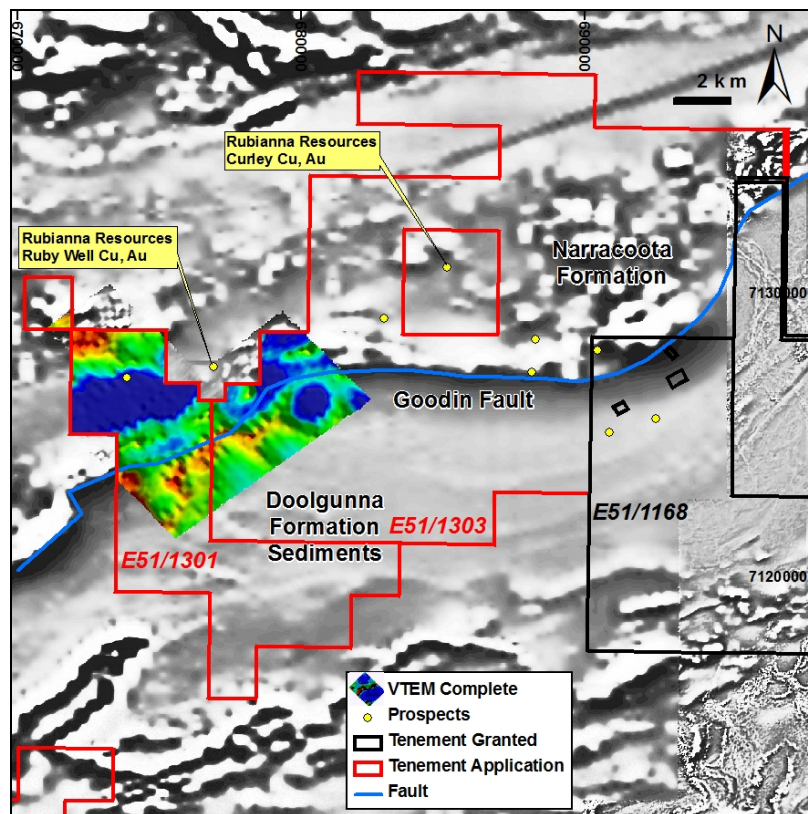


Figure 5. Revere Project - Ruby Well Prospect – 1st VD Magnetic Image with Channel 30 VTEM Survey Image (colour) Superimposed

Donald Well E51/941

In December 2009 a helicopter borne VTEM survey was flown over the remainder of the Donald Well geochemical /magnetic target. The VTEM data shows electromagnetic responses from the previous limited test VTEM survey continuing to the NE.

The three RC holes drilled on the SW tip of the Donald Well geochemical/VTEM anomaly are not a definitive test of this +3km long NE-SW striking feature, and all data from this prospect needs to be reviewed.

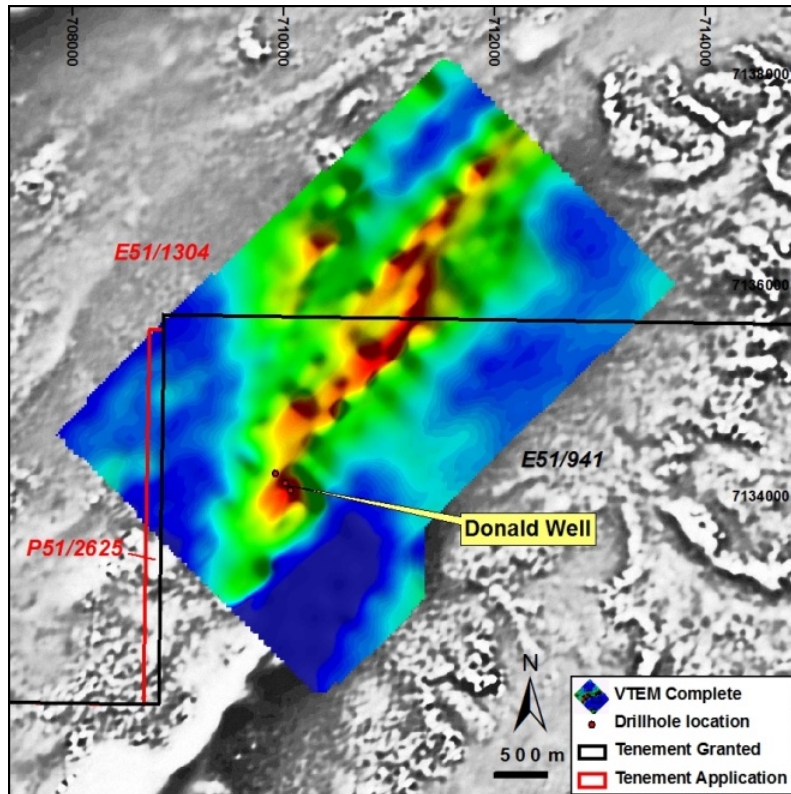


Figure 6. Revere Project - Donald Well Prospect - 1st VD Magnetic Image with Channel 30 VTEM image (colour) Superimposed

YALGOO PROJECT

The Yalgoo Uranium Project is located approximately 600kms north of Perth and is 23kms west of the township of Yalgoo. The Project is comprised of one granted tenement (Exploration Licence 59/1437) covering 210 km² and 3 exploration licence applications (E59/1632, 1633, 1645 and 1651) covering 450 km².

The focus of this Project is to discover a substantial calcrete hosted uranium deposit within or adjacent to the major major drainage systems. On the 18th January 2010, the Company announced that it has received preliminary 100 metre line spaced magnetic and radiometric data from the Company’s recent airborne survey over granted Exploration Licence 59/1437. The imaged data clearly shows a 30km long north-south uranium channel anomaly coincident with the Salt River drainage valley.

The Salt River drainage system contains mapped calcrete deposits and overlies a north-south trending greenstone belt. The Company believes that the Yalgoo Project uranium targets satisfy

many of the criteria for the development of calcrete hosted uranium deposits such as Yeelirrie. Along with the Salt River prospect, the Company has identified two other anomalies, at Muggaburna and Bunnawarra.

The Company has commenced processing of the final magnetic and radiometric data, and will generate specific targets for ground follow up in the first Quarter of 2010. Follow up will consist of ground spectrometer traversing, soil sampling and ultimately aircore drilling once the focii of mineralisation have been located. Drill testing will be dependent upon an approval by the DMP of a proposed "Program of Work" ("PoW"), and site avoidance surveys by Native Claimant holders.

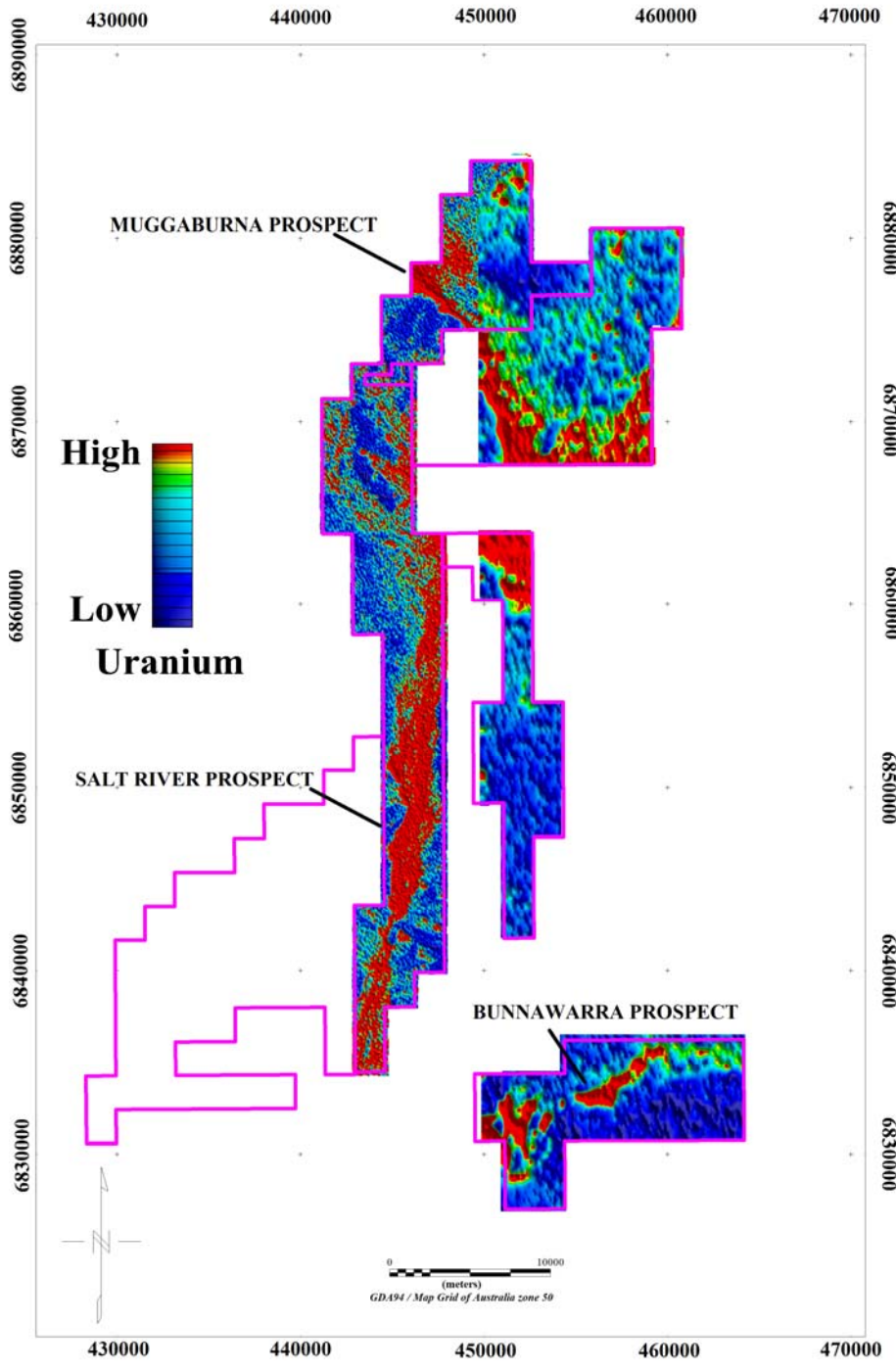


Figure 7. Uranium Channel Image of Airborne Radiometric Survey Yalgoo.

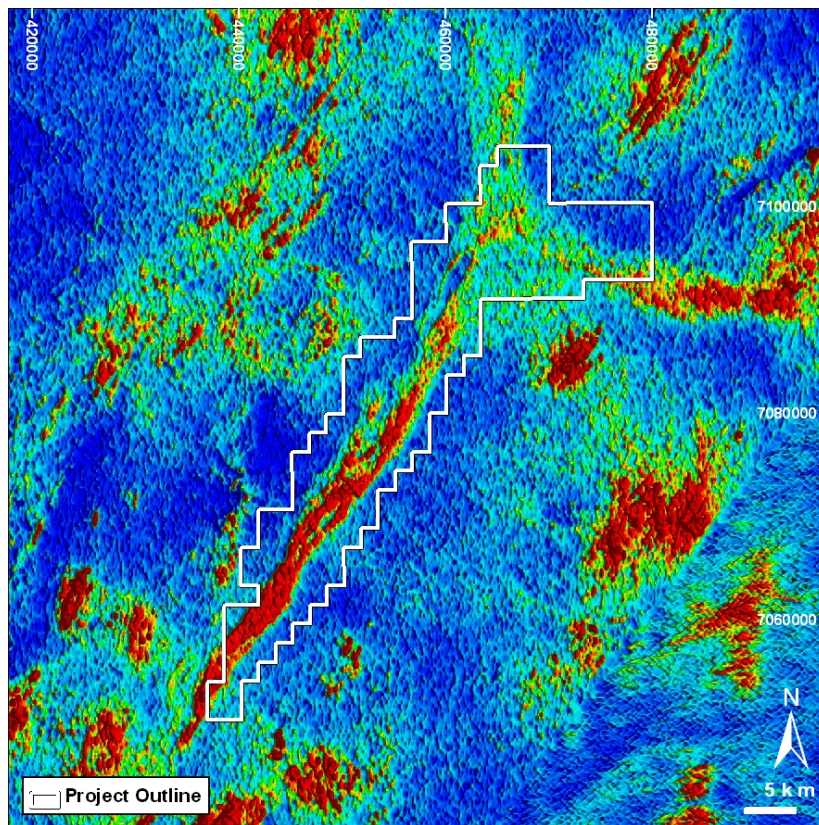
BYRO PROJECT

The Byro Uranium Project is located approximately 300 km NNE of Geraldton in Western Australia, and contains gneiss and migmatite, greenstone belt volcanic, sediments and typical Yilgarn granitoids of the Murchison Province. The project consists of two exploration licence applications, E20/723 and E59/1617, covering an area of approximately 1,100 km².

On the 20th January 2010 the Company announced that it had signed an agreement, subject to completion of satisfactory due diligence, to acquire Amiable Holdings Pty Ltd, (“Amiable”) the registered holder of the two exploration licence applications. The consideration for the acquisition of the project is \$50,000 cash, 1.5 million fully paid shares in Enterprise and a gross royalty of 1.5%.

The focus of this Project is to discover a substantial calcrete hosted uranium deposit within or adjacent to the Murchison River on E20/723. GSWA radiometric data shows a prominent NE trending linear uranium anomaly, some 45km long and 4 - 5 km wide, flanking the Murchison River. Mapping by the GSWA also shows the radiometric anomaly to be largely coincident with extensive areas of mapped calcrete. The Company will commission the flying of a detailed airborne radiometric survey to better define the higher grade portions of the extensive channel in the first quarter of 2010. Processing of radiometric data will generate specific targets for ground follow up once the tenements are granted.

The southern tenement E59/1617 (Meeberrie) contains the geomorphically unusual confluence between the south flowing Murchison River and the north flowing Roderick River, which has created Lake Meeberrie, a low energy environment where damming or ponding has occurred. However, as the bulk of this tenement lies on the Murgoo map sheet, for which there is no regional radiometric data available, Lake Meeberrie remains a “conceptual” uranium target.



**Figure 8. Byro Project – “Murchison” Uranium Target - E20/723
Airborne Uranium Channel Image - GSWA 400m Line Spaced Airborne Survey.**

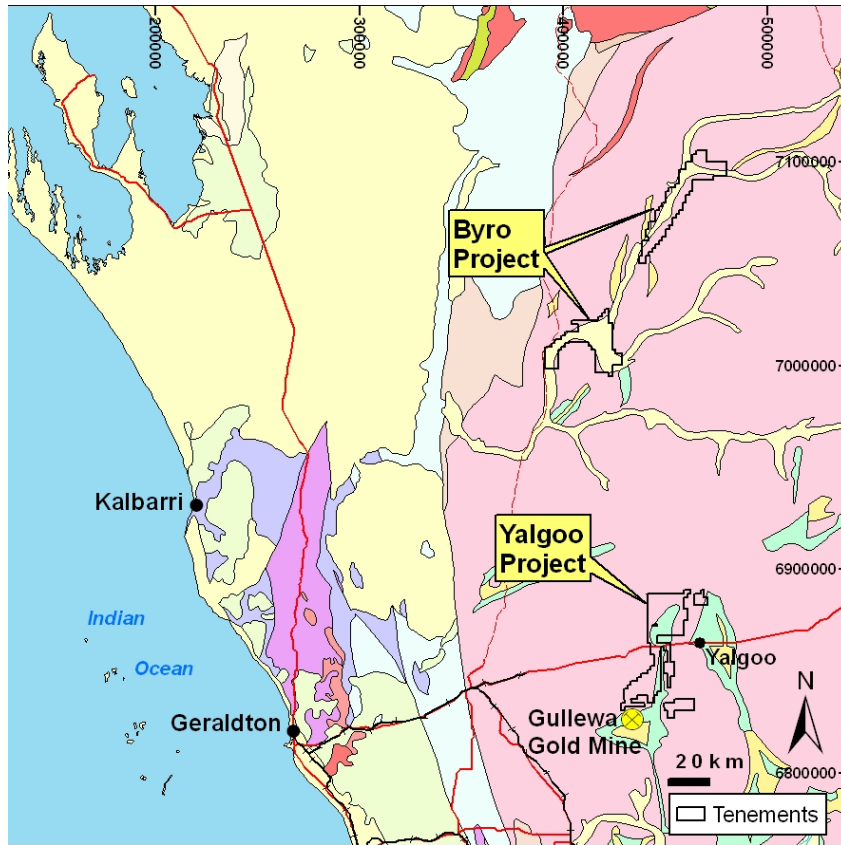


Figure 9. Location Plan - Byron and Yalgoo Uranium Projects

3. CORPORATE

During the quarter, 1,924,443 Options were exercised at a price of 25 cents to raise approximately \$482,000. In addition, 1,000,000 options expired.

The current share capital of the Company is:

	Shares	Options
Total Issued	93,010,686	20,785,300
Total ASX Quoted	93,010,686	15,285,300
Total un-quoted	-	5,500,000

Dermot Ryan
Managing Director

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The information in this announcement that relates to Exploration Results has been reviewed by Mr Dermot Ryan, who is a Fellow of the Australian Institute of Geoscientists, a Fellow of the Australasian Institute of Mining and Metallurgy, a Chartered Professional and a full time employee of geological consultancy XServ Pty Ltd. Mr Ryan has sufficient relevant experience in the styles of mineralisation and types of deposit under consideration, and in the activity he is undertaking, to qualify as a Competent Person as defined in the 2004 Edition of the "Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (the JORC Code), and consents to the inclusion of the information in the form and context in which it appears.

PROJECT LOCATIONS – 31 December 2009

