



# Southern Cross Exploration N.L.

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31 January 2012

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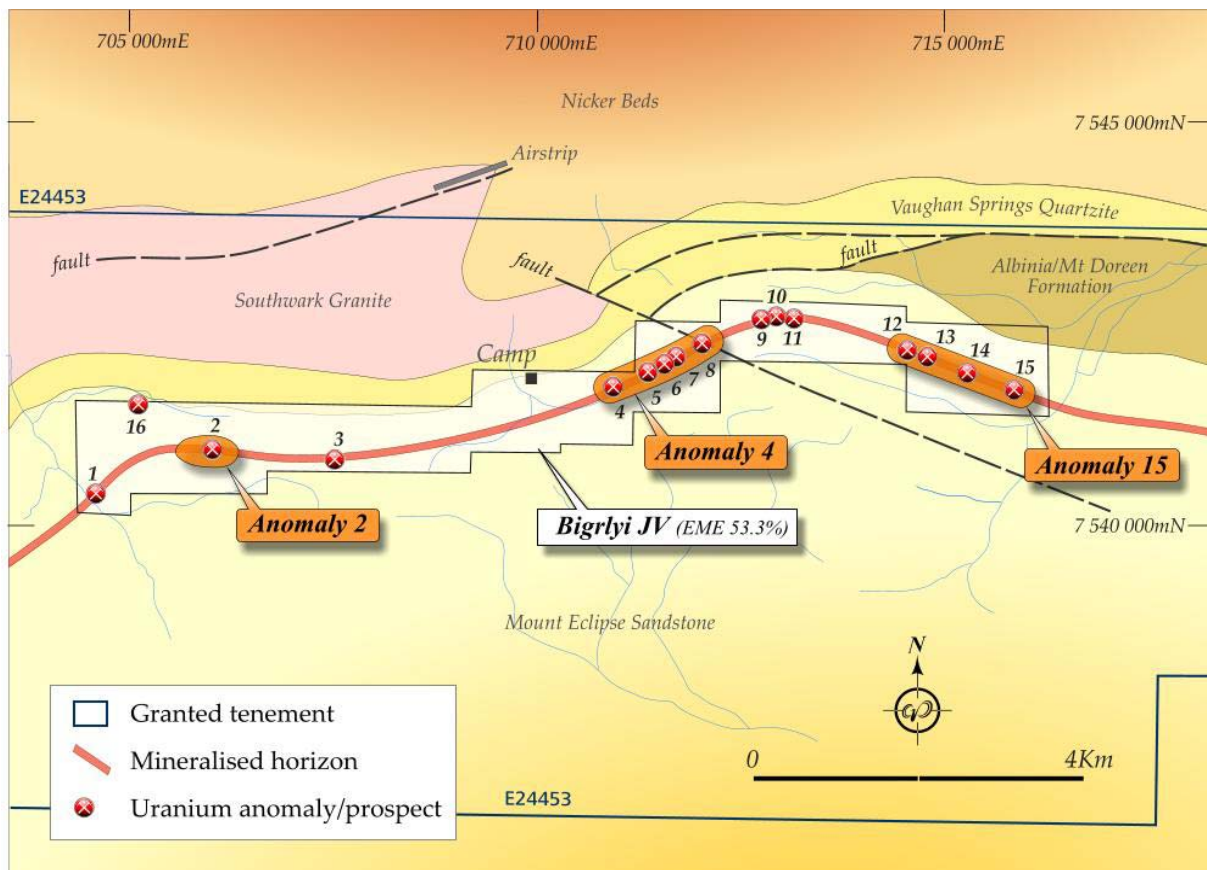
Dear Madam

**QUARTERLY ACTIVITIES REPORT  
FOR THE QUARTER ENDED 31 DECEMBER 2011  
(ASX code - SXX)**

**URANIUM - BIGRLYI URANIUM JOINT VENTURE (5%) - NORTHERN TERRITORY, AUSTRALIA**

The Bigrlyi Uranium Joint Venture Project comprises 10 granted exploration retention licenses and several applications within the Ngalia Basin, located approximately 350 km northwest of Alice Springs. The project has been subject to significant exploration activity since discovery in 1973, including over 850 drillholes, metallurgical testwork and mining studies, and is characterised by relatively high uranium and vanadium grades and excellent metallurgical recoveries.

Southern Cross (5.0% interest) has participated in the Bigrlyi Uranium Joint Venture (BUJV) for many years. The other joint venture parties are Energy Metals Ltd (Operator) with 53.3% and the Paladin Energy Ltd subsidiary, Northern Territory Uranium Pty Ltd (41.7%). Energy Metals Ltd is 70% owned by China Uranium Development Company Ltd (CUDC), a wholly-owned subsidiary of the state-owned China Guangdong Nuclear Power Holding Co Ltd (CGNPH).



**Bigrlyi Joint Venture Simplified Geology**

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**URANIUM - BIGRLYI URANIUM JOINT VENTURE (5%) - NORTHERN TERRITORY (cont'd)****Activities for December 2011 Quarter**

Activities and results as reported by the Joint Venture Manager, Energy Metals Ltd (EME):

“Exploration activities within the Bigrlyi Joint Venture (BJV) during the quarter included infill and extensional RC and Diamond drilling. All work has been designed to increase the resource base by targeting extensions of the mineralisation along with obtaining core for further Metallurgical testing and Geotechnical evaluation.

As outlined in the September Quarterly Report the geological controls on the higher grade and thicker portions of the mineralisation have been reinterpreted resulting in a slightly different geological model.

Recent drilling has included testing of up dip and down dip extensions of the mineralisation predicted by the new model (especially in close proximity to the potential open pit and underground development locations identified in the pre-feasibility study completed during 2011), as well as infill drilling to increase the confidence in the Resource Estimate.

Drilling during the quarter included 48 holes for a total of 6,540m. A total of 20 RC holes for 2,371m were targeting resource extensions; 15 Metallurgical holes (total 1,455m), mainly Diamond with short RC pre-collars (430m RC and 1,025m Diamond) were designed to collect material for future Metallurgy studies and 13 Geotechnical holes for 2,714m (1,349m RC and 1,365m Diamond), were designed to test the geotechnical conditions within the location of possible underground workings.

This drilling has resulted in several extensions of the mineralisation at depth and in close proximity to the current optimised pit shells, which is expected to have a positive impact on the economics of the project. An update of the Resource Estimate is planned to be completed in the March Quarter.

Late in the December quarter significant (>100ppm eU<sub>3</sub>O<sub>8</sub>) gamma probe intersections were received (detailed in the 28<sup>th</sup> December 2011 ASX release); some of the better intersections include:

- **BRC11138:** 16.95m @ 0.87% eU<sub>3</sub>O<sub>8</sub> from 72.4m
  - *inc* 15.45m @ 0.96% eU<sub>3</sub>O<sub>8</sub> from 73.55m, and
  - 24.15m @ 0.23% eU<sub>3</sub>O<sub>8</sub> from 39.3m
  - *inc* 20.40m @ 0.27% eU<sub>3</sub>O<sub>8</sub> from 42.85m
- **BDD11115:** 19.70m @ 0.50% eU<sub>3</sub>O<sub>8</sub> from 1m
  - *inc* 10.25m @ 0.93% eU<sub>3</sub>O<sub>8</sub> from 1.85m
- **BDD11088:** 9.05m @ 0.59% eU<sub>3</sub>O<sub>8</sub> from 27.7m
  - *inc* 7.40m @ 0.71% eU<sub>3</sub>O<sub>8</sub> from 27.9m
- **BDD11133:** 13.90m @ 0.33% eU<sub>3</sub>O<sub>8</sub> from 21.4m
- **BRC11114:** 50.4m @ 0.09% eU<sub>3</sub>O<sub>8</sub> from 74.3m
  - *inc* 7.95m @ 0.27% eU<sub>3</sub>O<sub>8</sub> from 87.6m

**URANIUM - BIGRLYI URANIUM JOINT VENTURE (5%) - NORTHERN TERRITORY (cont'd)**

Where available, samples from the anomalous intervals were dispatched for chemical analysis to confirm the Uranium grades from the gamma probe and to determine the Vanadium grades. The significant intersections from chemical samples received to date are detailed in Table 1, with the better intersections including:

- **BRC11077:** **17m @ 0.5% U<sub>3</sub>O<sub>8</sub> and 0.37% V<sub>2</sub>O<sub>5</sub> from 49m**  
○ *inc* **8m @ 1.0% U<sub>3</sub>O<sub>8</sub> and 0.73% V<sub>2</sub>O<sub>5</sub> from 55m**
- **BRC11114:** **49m @ 0.1% U<sub>3</sub>O<sub>8</sub> and 0.05% V<sub>2</sub>O<sub>5</sub> from 80m**  
○ *inc* **8m @ 0.28% U<sub>3</sub>O<sub>8</sub> and 0.26% V<sub>2</sub>O<sub>5</sub> from 89m**
- **BRC11099:** **13m @ 0.27% U<sub>3</sub>O<sub>8</sub> and 0.56% V<sub>2</sub>O<sub>5</sub> from 133m**  
○ *inc* **5m @ 0.67% U<sub>3</sub>O<sub>8</sub> and 1.4% V<sub>2</sub>O<sub>5</sub> from 140m**
- **BRC11049:** **12m @ 0.30% U<sub>3</sub>O<sub>8</sub> and 0.04% V<sub>2</sub>O<sub>5</sub> from 80m**
- **BRC11045:** **19m @ 0.33% U<sub>3</sub>O<sub>8</sub> and 0.12% V<sub>2</sub>O<sub>5</sub> from 48m**
- **BRC11047:** **18m @ 0.41% U<sub>3</sub>O<sub>8</sub> and 0.10% V<sub>2</sub>O<sub>5</sub> from 121m**  
○ *inc* **7m @ 0.98% U<sub>3</sub>O<sub>8</sub> and 0.15% V<sub>2</sub>O<sub>5</sub> from 128m**
- **BRD11051:** **4m @ 1.27% U<sub>3</sub>O<sub>8</sub> and 0.28% V<sub>2</sub>O<sub>5</sub> from 521.5m**

Several holes have not been chemically analysed as they are to be used for metallurgical testing or geotechnical evaluation and therefore cannot be sampled. Overall there is a good correlation between the Gamma probe results and the chemical (XRF) analysis however in intervals of high grades, usually above 1% U<sub>3</sub>O<sub>8</sub>, the Gamma probe often under represents the contained Uranium when compared to the chemical analysis.

During the March quarter the main activities, other than a planned resource update, will include re-evaluation of the HYCHIPS data obtained from the CSIRO study completed in 2011, re-logging several of the diamond and RC holes and geophysical evaluation of several down hole and surface tools to assist in Drill targeting. Drilling is currently planned to commence early in the second quarter.”

Further information on the Bigrlyi Uranium Joint Venture Project, including metallurgical testwork, resource estimates and economic studies, may be obtained from the website of the Operator, Energy Metals Ltd (EME) - [www.energymetals.net](http://www.energymetals.net).

**URANIUM - MKUJU RIVER - TANZANIA**

During the previous quarter, Southern Cross gave notice under the acquisition agreement that it would increase its interest in five uranium exploration licences in Tanzania from 7% to 25% by the issue of 3 million shares.

The uranium tenements (total area approximately 2,160 km<sup>2</sup>) are situated in the highly prospective Mkuju River region of south-western Tanzania. They are underlain by Karoo Group sedimentary rocks in which uranium deposits of the sandstone-hosted tabular and roll front type have been discovered in South Africa, Malawi and Tanzania.

The tenements are located immediately north of Mantra Resources' Mkuju River Uranium Project. with Mineral Resources reported by Mantra of 101.4 million pounds of @ 422 ppm of U<sub>3</sub>O<sub>8</sub>. Last year, ARMZ, a wholly owned subsidiary of the Russian State Atomic Energy Corp., acquired all of the issued shares in Mantra for A\$7.00 cash. This transaction imputed a value of A\$9.00 per pound for U<sub>3</sub>O<sub>8</sub> for the Mkuju River uranium resources.

Uranex Limited, an ASX-listed company is exploring for uranium in the same district. Some 300km to the west, in neighbouring Malawi, the Kayelekera Uranium Mine of Paladin Energy is also hosted by Karoo Group sandstones. The Kayelekera Mine has reported Mineral Resources of 26.2 Mt @780 ppm U<sub>3</sub>O<sub>8</sub> containing 46.4M pounds @ 8.02 ppm of U<sub>3</sub>O<sub>8</sub>.

**URANIUM - BURKINA FASO, WEST AFRICA**

As previously reported, the government of Burkina Faso increased annual rentals for uranium exploration licences to extraordinarily high levels. This action increased the costs and risks of grassroots uranium exploration and the Operator withdrew from the project.

Southern Cross retains a 70% interest in the licences and is reviewing future possibilities.

**COAL - DUBBO EAST PROJECT, NEW SOUTH WALES**

In October 2011, Southern Cross announced that it had agreed to acquire a sixty five percent (65%) interest in Coal Exploration Licence EL 7115 located near Dubbo in central New South Wales.

Following that announcement, a private company, Phoenix Vision Coal Pty Ltd, claimed a prior interest in EL 7115 and commenced proceedings in the Supreme Court of New South Wales. SXX at present has an equitable interest in this Licence and it is anticipated that the Company will obtain either a direct or indirect legal interest in this coal project in due course.

**GOLD - BATANGAS PROJECT - PHILIPPINES (10%)**

In June 2011, Southern Cross announced it had exercised an option to acquire an initial 5% in the Batangas Gold Project, located in the Province of Batangas, some 110 km south of Manila, Island of Luzon, in the Philippines. On 1 September 2011, Southern Cross acquired a further 5% of the project upon the issue of 6 million shares. The Company has the right increase its interest to 100% over the three year period from May 2011.

The Company's wholly-owned subsidiary Northern Star Investments (Qld) Pty Ltd is the holding company for the group's interest in the Batangas Gold Project. The Philippines Mines & Geoscience Bureau (PMGB) has been notified that Southern Cross will be the Project Operator.

The Batangas Gold Project consists of an MPSA and an EP Application covering an area of approximately 3,300 ha (*see figure attached*). The Company has recently been advised that the Director of PMGB is about to direct the Regional Director (Batangas) to complete the final documentation required for approval of EPA 115, and also that PMGB evaluation of the MPSA Application is being prioritised.

The Batangas Gold property has been the site of sporadic gold mining activity since the 19<sup>th</sup> century. In the 1980's, there was a gold rush to the area by artisanal miners. It has however, never been drilled. A total of eleven veins are reported in five vein systems within altered andesitic host rocks. The veins appear to exhibit good continuity with consistent widths over 1,000m and more of strike length. The American Vein averages 5m in width, others range 0.30m to 1.0m and reported grades are between 3g/t and 10g/t Au. The Ulanin breccia stock-work in the eastern part is approximately 125m wide with a strike length exceeding 1,000m. Trench samples reportedly range up to 6g/t Au over 8 metres.

Nearby projects include the Taysan porphyry copper-gold deposit (just 6 km northeast of the Batangas tenements) acquired in 2010 by Crazy Horse Resources Inc, a Vancouver-based company, which has reported a favourable scoping study and increased mineral resources. Also, Mindoro Resources Ltd (listed on TSX-V) controls an area of some 29,000 ha which is located between 10 and 20 km to southeast of Batangas and which has similar geology, where a high grade mineral resource (66,920 oz of gold grading ~6 g/t Au) has been defined.

The geology of the Batangas property is considered a highly prospective, major gold exploration opportunity. Subject to confirmatory mapping and sampling, it is likely that the Ulanin breccia stock-work and the American Vein area could provide early drilling targets with potential for developing open pit mining resources.

**GOLD - GOLD CROSS PROJECT - PHILIPPINES**

Southern Cross continues to hold a 20% interest in the Gold Cross Gold Project in the Philippines. This project is located in the Province of Bulacan about 100 kms north-east of Manila, on the main island of Luzon.

The vendor has advised that steps have been taken to progress the applications by removing areas of overlap and conflict with other agencies, as recommended by the PMGB.

Based on information available, the area is considered to have potential for large gold resources. At least two underground gold mines are recorded as operating in the area up to the 1940s. Although the geology of the area is very favourable for epithermal quartz vein gold-silver deposits, there has been no significant modern exploration or drilling.

Southern Cross can acquire an additional interest in the Gold Cross Gold Project by exercising its rights to purchase the balance of 80% in several tranches.

**MAGNESITE - IRAN**

The company maintains its 10% interest in two companies based in Iran. They hold several exploration tenements with identified outcropping dolomite/magnesite deposits. Cheap power is available, which is vital for commercially successful magnesite and magnesium production. This project is being kept under review.

**OIL & GAS & ENERGY**

Oil and gas exploration opportunities in Australia and overseas have continued to be evaluated, with a view to direct participation.

Southern Cross retains an indirect interest in Oil and Gas exploration through its substantial shareholding in Longreach Oil Ltd (LGO), an ASX-listed company. LGO has a direct 50% interest in Petroleum Lease 280 in the Surat Basin, Queensland and also holds an 11% interest in three exploration permits in Western Australia. LGO holds a 20% shareholding in unlisted Brisbane Petroleum Ltd LGO, which has two Petroleum Leases - 18 and 40 - in the Surat Basin, with small oil production.

Southern Cross is participating in the promotion of an Oil and Gas Exploration and Investment company, Offshore Oil Ltd, which proposes to acquire equity interests in Australian and overseas oil companies and to participate in Oil and Gas and Energy joint ventures.

**GENERAL**

Southern Cross continues to seek prospective exploration and/or mining projects in Australia and overseas, which could be joint ventured with larger entities.

**EXPENDITURE**

Expenditure for the quarter amounted to \$79,000.

For and on behalf of

Southern Cross Exploration N L

E Goh  
Secretary