



Uranium Exploration Australia Limited

ABN 65 112 714 397

ASX ANNOUNCEMENT

Friday, 29 January 2010

Quarterly Activities Report – December 2009

- **DRILLING AT CRYSTAL CREEK URANIUM PROSPECT IN THE NORTHERN TERRITORY RETURNS INTERCEPTS UP TO 3M @ 364 PPM U3O8 SHOWING MINERALISATION EXTENDS TO DEPTH**
- **AGREEMENT SIGNED TO PURCHASE HIGH-TECH PFN BOREHOLE LOGGING TOOL WILL STRENGTHEN UXA'S BOREHOLE LOGGING BUSINESS**
- **GAA BOREHOLE LOGGING SUBSIDIARY COMPLETED ITS FIRST SUCCESSFUL QUARTER OF OPERATIONS**

SUMMARY

Uranium Exploration Australia Limited (ASX: UXA) has completed an RC percussion drilling program at the Company's 100% owned Crystal Creek Project in the Northern Territory. Drill results show that the mineralisation extends to depth, particularly in the western 1,000m of the outcropping structure. Best drill intercept is 3m @ 346 ppm U3O8 from 64m depth.

Subsequent to the end of the Quarter UXA signed an agreement with GeoInstruments Inc in the USA to purchase 100% of the assets and intellectual property of the Prompt Fission Neutron (PFN) borehole logging tool manufacturing and service business worldwide. The purchase further strengthens UXA's fully-owned borehole logging business, Geoscience Associated Australia Pty Ltd (GAA), which is already the sole Australian licensed distributor and servicer of PFN technology.

UXA's borehole logging subsidiary Geoscience Associates Australian (GAA) performed well during its first quarter of ownership by UXA, with revenues slightly above budget expectations at \$1.28 million.

EXPLORATION

UXA continued its exploration programme across its tenements in South Australia and Northern Territory (Figure 1). Focus has been on field work at Ngalia Thrust (Crystal Creek discovery) in the Northern Territory and technical review work in South Australia.

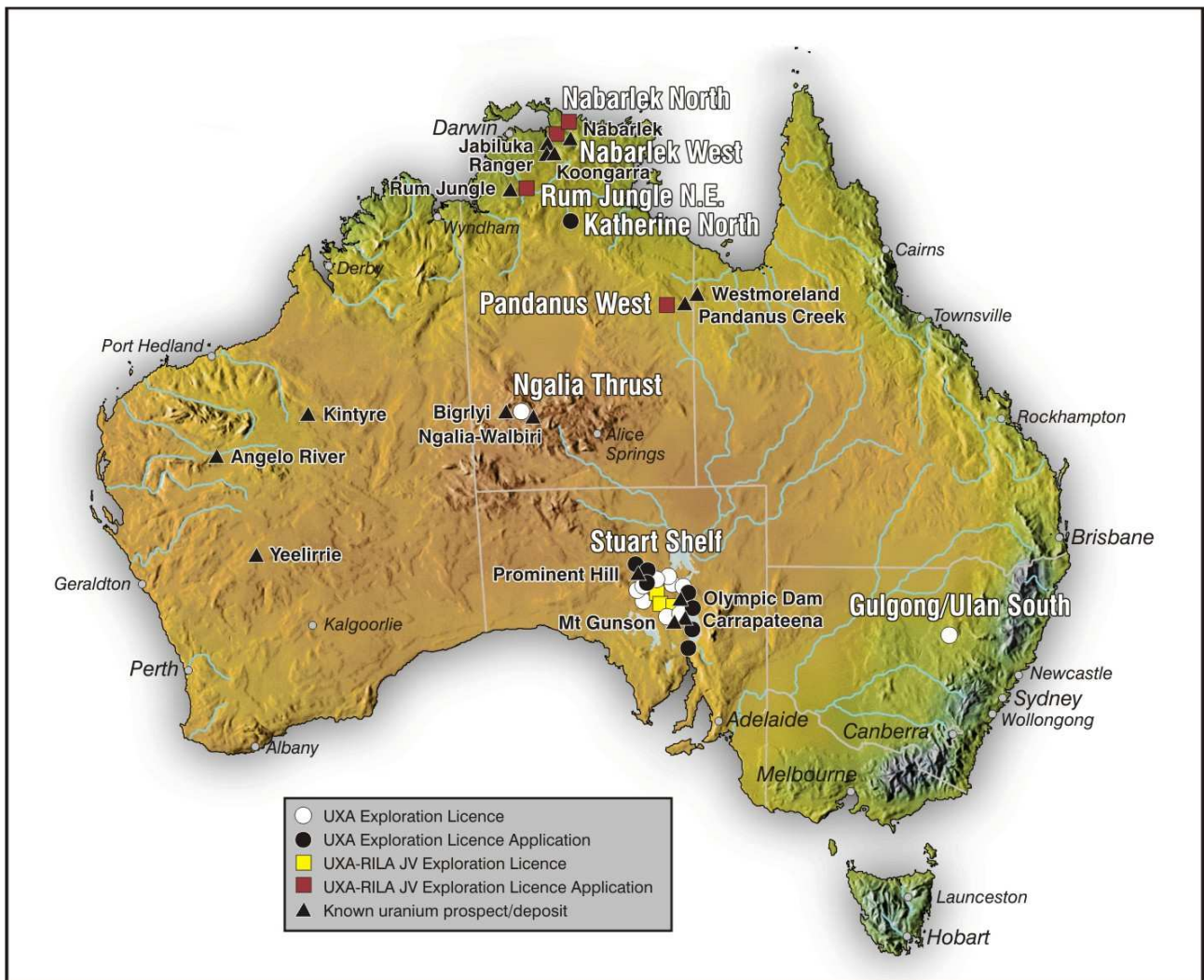


Figure 1. UXA Tenement Location Map

Northern Territory

Ngalia Thrust (EL 24566)

This licence is 100% owned by UXA, and is located approximately 320km northwest of Alice Springs and near to Energy Metals' Bigrlyi uranium prospect.

Crystal Creek

In July 2009, the Company announced the discovery of a zone of uranium mineralisation which crops out intermittently over a strike distance in excess of 3,000m (radiometric Anomaly B). Rock chip and field XRF determinations indicated excellent U_3O_8 concentrations of up to 4,120 ppm (ASX announcement 27th August 2009). A high resolution airborne geophysical survey flown at Crystal Creek by UTS Geophysics shows a very clear radiometric anomaly along the 3,000m long structure at Anomaly B and over adjacent outcrops and provided targets for an RC percussion drilling program completed in late November.

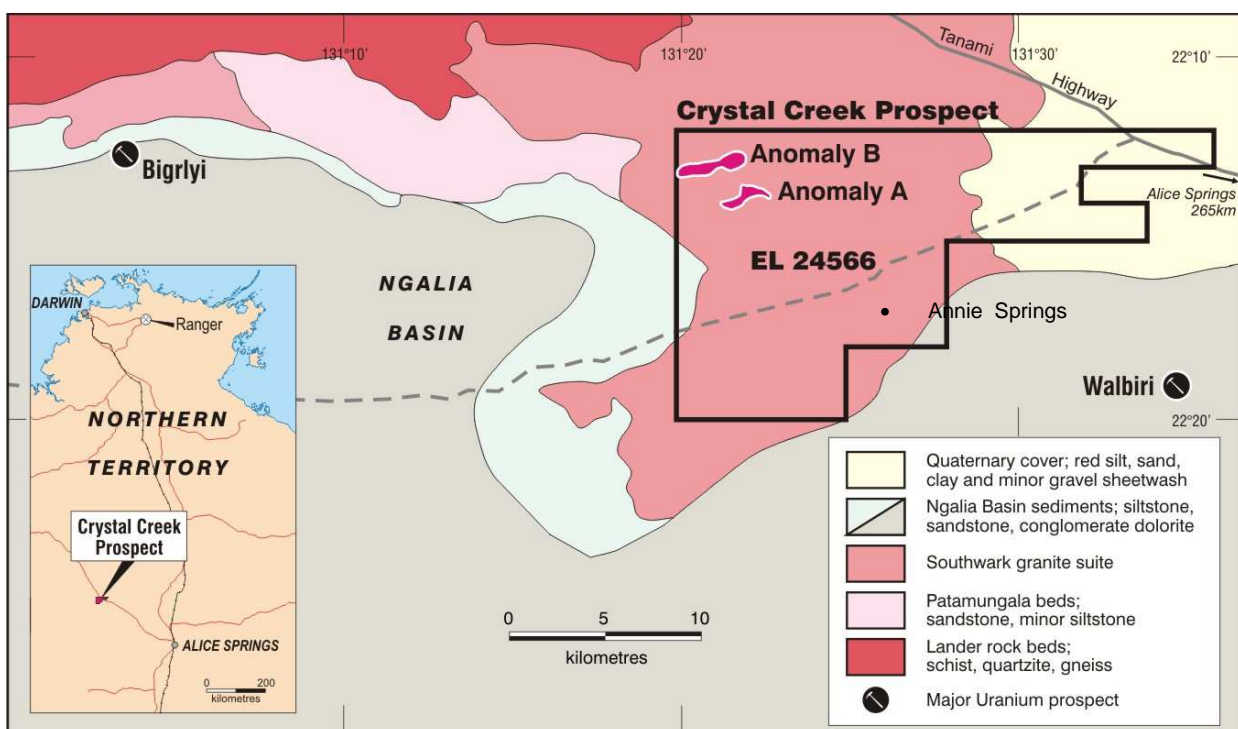


Figure 2. Crystal Creek Uranium Prospect location map

Results of drilling program

All assay results for 2572 samples generated during the November 2009 RC drill program have been returned. Over half of the holes drilled at anomaly B returned anomalous uranium values >100 ppm U_3O_8 (Table 1), the best drill intercept being 3m @ 346ppm U_3O_8 . The drill intercepts quoted are the down-hole intervals. There is insufficient information to yet determine the true width of mineralised intercepts, which may be narrower than the down-hole interval.

These results confirm structurally controlled uranium mineralisation to continue at depth with more significant values occurring at the western third of the 3 kilometre long ironstone structure (Figure 3). Uranium mineralisation occurs in a number of parallel structures and remains open down dip. The Company will undertake structural studies at Anomaly B to help identify controls on mineralisation prior to embarking on further drilling.

UXA believes potential may exist to identify other mineralised structural features within the tenement in close proximity to Anomaly B. As such, the company will expand its exploration focus within the tenement in the year ahead.

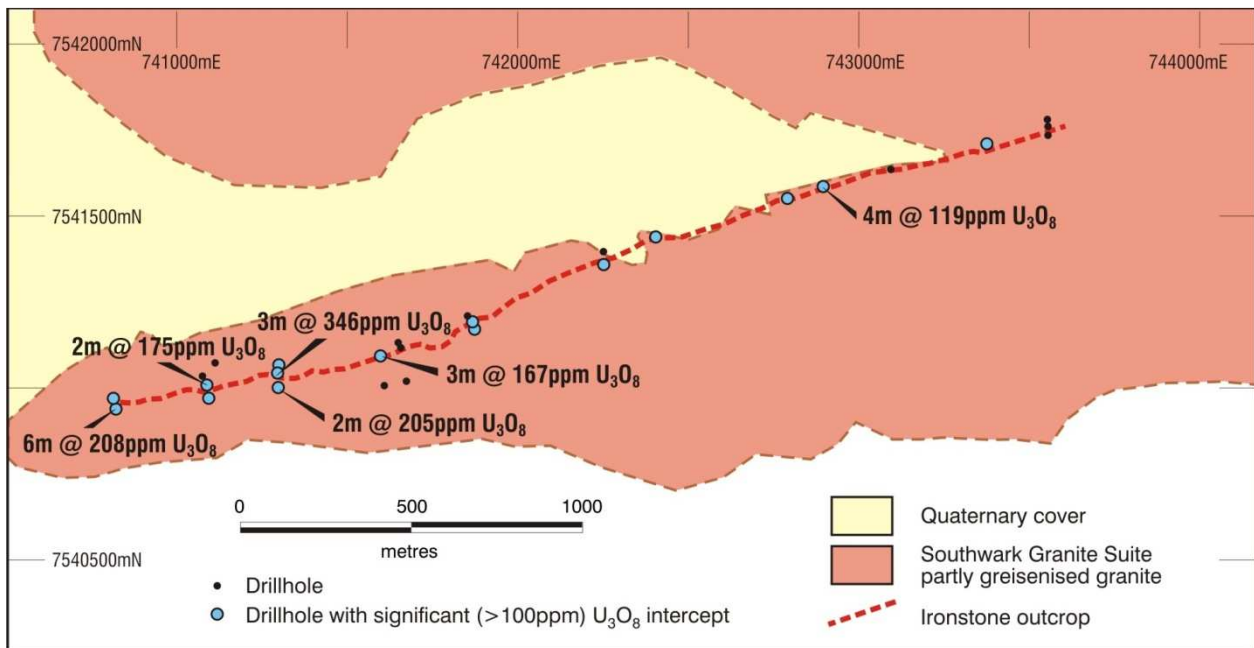


Figure 3. Results of drilling program at Crystal Creek

Annie Springs

A 503 station gravity survey over the Annie Springs magnetic anomaly was completed by Daishat in December. The survey comprised 400m centres closing to 100m centres directly above the magnetic anomaly. Preliminary data has been received by UXA and is currently being evaluated and final data is expected to be received by end Q3.

Annie Springs is a large magnetic anomaly in the South of the Ngalia Thrust tenement. In the late 1990's Rio Tinto drilled one diamond hole into the anomaly and intersected a (magnetite) banded iron formation at 112m depth.

Nabarlek North (ELA 24868) and Nabarlek West (ELA 24564)

These tenements are part of UXA's joint venture with RIL Australia Pty Ltd, subsidiary of Reliance Industries Limited, a major Indian corporation. Agreement has been reached with the Northern Land Council on behalf of the Traditional Owners and it is anticipated that this will lead to the granting of the tenements in February 2010. The tenements lie in the vicinity of the old Nabarlek uranium mine and have similar geology to that which hosts the operating high grade Ranger uranium mine.

Table 1. Significant and anomalous uranium values – Anomaly B Crystal Creek

drill hole number	easting amg94 mE	northing amg94 mN	drill hole Azimuth (mag ^o)	drill hole Dip (°)	down hole depth (m)	from (m)	to (m)	down hole interval (m)	U ₃ O ₈ * ppm	Cu** %
09NT04	741871	7541180	332	-60	36	18	19	1	145	
09NT05	741861	7541203	140	-70	84	55	56	1	115	
09NT09	741295	7541043	169	-70	78	13	14	1	135	
<i>and</i>						27	30	3	203	
<i>and</i>						50	51	1	105	0.1
<i>and</i>						52	53	1	110	0.3
<i>and</i>						55	57	2	310	0.3
<i>and</i>						63	66	3	346	0.6
<i>including</i>						63	64	1	380	1.1
<i>including</i>						64	65	1	490	0.1
09NT10	741294	7541051	169	-60	108	35	36	1	165	0.1
09NT12	742250	7541364	164	-60	36	16	17	1	115	
09NT14	743376	7541715	177	-60	84	56	57	1	215	
09NT16	740819	7540966	150	-60	132	39	40	1	140	
<i>and</i>						49	51	2	163	
<i>and</i>						108	109	1	100	
<i>and</i>						122	123	1	130	
09NT18	742406	7541440	164	-60	48	29	30	1	135	
09NT19	742895	7541592	164	-60	42	11	12	1	130	
<i>and</i>						14	15	1	135	
<i>and</i>						16	20	4	119	
<i>and</i>						26	27	1	215	
09NT21	741089	7541011	169	-60	96	11	12	1	145	
<i>and</i>						27	29	2	175	
<i>and</i>						34	35	1	100	
<i>and</i>						37	38	1	235	
<i>and</i>						41	42	1	240	
<i>and</i>						43	44	1	100	
<i>and</i>						79	80	1	135	
09NT23	741598	7541095	157	-60	54	25	26	1	135	0.1
<i>and</i>						29	32	3	167	0.1
<i>and</i>						38	39	1	135	0.2
<i>and</i>						42	43	1	185	
09NT24	742791	7541556	157	-60	36	15	16	1	110	
09NT25	741298	7541002	349	-60	84	37	39	2	205	
<i>and</i>						50	53	3	130	
09NT26	741096	7540969	349	-60	66	26	27	1	110	
09NT27	740822	754938	349	-60	54	11	17	6	208	0.1
<i>and</i>						41	43	2	148	

* Uranium assay by press powder XRF (detection limit 4ppm)

** Copper assay by ICP OES (detection limit 2ppm)

South Australia

The Company is continuing a major technical review of all of its tenements on the Stuart Shelf. This includes re-modelling of geophysical targets. It is expected that this review will come to a conclusion in the next quarter.

UXA has been offered and accepted 4 new tenements on the Stuart Shelf including Three Hills EL4396, Mount Barry EL4406, Lake Torrens EL4397 and Nantilla EL4398, totalling 1,765 km². A review of geology and previous exploration is being undertaken to determine their uranium prospectivity.

BOREHOLE LOGGING BUSINESS

Geoscience Associates Australia (GAA)

The wholly owned subsidiary completed its first successful quarter of business under UXA's ownership with revenues at \$1.28 million (un-audited), cash flow positive and slightly above budget expectations. The bore-hole logging business was strong, particularly in Queensland, South Australia and Western Australia with clients in the coal, coal seam gas and uranium industries. GAA also provided technical services and support to a number of companies operating Prompt Fission Neutron (PFN) logging tools. Two new logging tools have been commissioned, a motorised calliper scanner tool and a new Mag-Sus-Induction tool to better serve iron ore clients. A new Isuzu logging truck has also been commissioned, complete with roll-over protection and other safety features designed for work on mine sites.

GAA's operating base in Brisbane was closed and will be moved to Rockhampton, closer to clients operating in the coal and coal-seam gas industries in Southern Queensland. The continuing strong outlook in the coal industry is encouraging for GAA's diversified industry exposure.

Purchase of Prompt Fission Neutron Business

Subsequent to the end of the Quarter the Company completed the purchase of 100% of the assets and intellectual property of the Prompt Fission Neutron (PFN) borehole logging tool manufacturing and service business from GeoInstruments Inc (GII) situated in Texas, USA.

The purchase further strengthens UXA's fully-owned borehole logging business, Geoscience Associated Australia Pty Ltd (GAA), which is the sole Australian licensed distributor and servicer of PFN technology.

PFN technology is becoming increasingly utilised within the uranium mining and exploration industries, and played a significant role in the discoveries of two of Australia's largest uranium deposits, the Beverley mine and Four Mile deposits in South Australia.

The purchase of the PFN business represents a significant growth step for GAA enabling it to expand its PFN logging and service business beyond Australia. UXA's understanding of the PFN technology is second to none, and our cornerstone position within this exciting exploration technology sector provides us with a foundation for substantial growth for years to come.

With GAA and the PFN technology UXA is now the owner of two profitable cash-flow businesses.

Under the terms of the agreement signed with GII's President Jim Turner, GeoInstruments International Pty Ltd (a wholly owned subsidiary of UXA) will pay the total cash price of US\$1,271,380 for the intellectual property, a number of completed and partially completed PFN tools and a fully equipped borehole logging truck. The payment will be made in two tranches, the first payment of US\$953,535 within 7 days of signing the agreement (now completed) and the balance after a 90 day technology transfer period. UXA will retain the services of Jim Turner on an ongoing basis, to provide technical consultancy and service to US clients of the PFN logging tools.

UXA will fund the purchase partly in cash and partly through a private loan from Geomech Pty Ltd.

UXA will re-establish the former USA based PFN manufacturing and servicing at GAA's workshops in Mount Barker, South Australia. As both businesses have a close synergy, Dennis Stevens will take on the role of management of the PFN business for UXA in addition to his current role as manager of GAA.

The PFN borehole logging tool is unique in that it directly measures the content of uranium in boreholes, overcoming the problem of dis-equilibrium which limits the interpretation of uranium concentrations using gamma logging tools. PFN tools are being extensively used in Australia and the USA to establish uranium grades at a number of uranium mines and exploration projects. The technology was originally developed in the USA and has been extensively improved and streamlined for day to day borehole logging application by Jim Turner and GeolInstruments Inc in the USA.

CORPORATE

During the quarter there were 6.65 million ordinary shares issued. 5 million shares were issued to the vendor of the Geoscience Associates business and a further 1.65 million shares were issued as part of the successful capital raising conducted during the first quarter.

Annual General Meeting

The Annual General Meeting was held in Sydney on 18 November 2009. All 11 resolutions were passed including approval for the issue of 9.5 million, 20 cent options to directors.

	Resolution	Outcome of Resolution
1	Approve Remuneration Report	Approved by the meeting
2	Re-election – N Arthur	Approved by the meeting
3	Re- election – D Hawley	Approved by the meeting
4	Grant of Options to N Arthur	Approved by the meeting
5	Grant of Options to B Dawes	Approved by the meeting
6	Grant of Options to S Gemell	Approved by the meeting
7	Grant of Options to D Hawley	Approved by the meeting
8	Grant of Options to R Penney	Approved by the meeting
9	Grant of Options to I Mutton	Approved by the meeting
10	Ratification of Terms of Employment Agreement – Dr Russell Penney	Approved by the meeting
11	Section 195 Approval	Approved by the meeting

For further information contact:



Russell Penney
Managing Director
URANIUM EXPLORATION AUSTRALIA LIMITED

JORC Compliance Statement

Technical Information in this report is based on information compiled by Mr Simon Powell who is employed by Uranium Exploration Australia Limited and who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Powell has sufficient exploration experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' ("JORC 2004"). Mr Powell consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.

Appendix 5B

Mining exploration entity quarterly report

Introduced 1/7/96. Origin: Appendix 8. Amended 1/7/97, 1/7/98, 30/9/2001.

Name of entity

URANIUM EXPLORATION AUSTRALIA LIMITED

ABN

65 112 714 397

Quarter ended ("current quarter")

DECEMBER 2009

Consolidated statement of cash flows

Cash flows related to operating activities	Current quarter \$A'000	Year to date (6 months to Dec 09) \$A'000
1.1 Receipts from product sales and related debtors	-	-
1.2 Payments for		
(a) exploration and evaluation	(501)	(744)
(b) development	-	-
(c) production	-	-
(d) administration	(929)	(1,164)
1.3 Dividends received	-	-
1.4 Interest and other items of a similar nature received	54	81
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Other	(531)	(531)
	(1,907)	(2,358)
Net Operating Cash Flows		
Cash flows related to investing activities		
1.8 Payment for purchases of:		
(a) prospects	-	-
(b) equity investments	-	-
(c) other fixed assets	(87)	(90)
1.9 Proceeds from sale of:		
(a) prospects (UXA-RILA JV)	-	-
(b) equity investments	-	-
(c) other fixed assets	-	-
1.10 Loans to other entities	-	-
1.11 Loans repaid by other entities	-	-
1.12 Other (Acquisition of Geoscience Assoc.)	(5,295)	(5,295)
	(5,382)	(5,385)
Net investing cash flows		
1.13 Total operating and investing cash flows (carried forward)	(7,289)	(7,743)

+ See chapter 19 for defined terms.

Appendix 5B
Mining exploration entity quarterly report

1.13	Total operating and investing cash flows (brought forward)	(7,289)	(7,743)
Cash flows related to financing activities			
1.14	Proceeds from issues of shares, options, etc.	(78)	8,025
1.15	Proceeds from sale of forfeited shares	-	-
1.16	Proceeds from borrowings	2,700	2,700
1.17	Repayment of borrowings	-	-
1.18	Dividends paid	-	-
1.19	Other (share proceeds paid in advance)	-	-
	Net financing cash flows	2,622	10,725
	Net increase (decrease) in cash held	(4,667)	2,982
1.20	Cash at beginning of quarter/year to date	10,476	2,827
1.21	Exchange rate adjustments to item 1.20	-	-
1.22	Cash at end of quarter	5,809	5,809

Payments to directors of the entity and associates of the directors
Payments to related entities of the entity and associates of the related entities

		Current quarter \$A'000
1.23	Aggregate amount of payments to the parties included in item 1.2	132
1.24	Aggregate amount of loans to the parties included in item 1.10	-

1.25 Explanation necessary for an understanding of the transactions

Non Executive Directors' Fees & Managing Director's remuneration

Non-cash financing and investing activities

2.1 Details of financing and investing transactions which have had a material effect on consolidated assets and liabilities but did not involve cash flows

N/A

2.2 Details of outlays made by other entities to establish or increase their share in projects in which the reporting entity has an interest

N/A

+ See chapter 19 for defined terms.

Financing facilities available

Add notes as necessary for an understanding of the position.

	Amount available \$A'000	Amount used \$A'000
3.1 Loan facilities	2,700	2,700
3.2 Credit standby arrangements	-	-

Estimated cash outflows for next quarter

	\$A'000
4.1 Exploration and evaluation	300
4.2 Development	-
Total	300

Reconciliation of cash

Reconciliation of cash at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts is as follows.

	Current quarter \$A'000	Previous quarter \$A'000
5.1 Cash on hand and at bank	294	10
5.2 Deposits at call	5,515	10,466
5.3 Bank overdraft	-	-
5.4 Other	-	-
Total: cash at end of quarter (item 1.22)	5,809	10,476

Changes in interests in mining tenements

	Tenement reference	Nature of interest (note (2))	Interest at beginning of quarter	Interest at end of quarter
6.1 Interests in mining tenements relinquished, reduced or lapsed	E36/546	Relinquished	100%	0%
6.2 Interests in mining tenements acquired or increased	EL4396	Granted	100%	100%
	EL4397	Granted	100%	100%
	EL4398	Granted	100%	100%
	EL4406	Granted	100%	100%

+ See chapter 19 for defined terms.

Appendix 5B
Mining exploration entity quarterly report

Issued and quoted securities at end of current quarter

Description includes rate of interest and any redemption or conversion rights together with prices and dates.

	Total number	Number quoted	Issue price per security (see note 3) (cents)	Amount paid up per security (see note 3) (cents)
7.1 Preference securities <i>(description)</i>	-	-	-	-
7.2 Changes during quarter	-	-	-	-
(a) Increases through issues				
(b) Decreases through returns of capital, buy-backs, redemptions	-	-	-	-
7.3 *Ordinary securities	182,203,337	182,203,337	-	-
7.4 Changes during quarter	6,650,000	6,650,000	10 cents	10 cents
(a) Increases through issues				
(b) Decreases through returns of capital, buy-backs				
7.5 *Convertible debt securities <i>(description)</i>	-	-	-	-
7.6 Changes during quarter				
(a) Increases through issues	-	-	-	-
(b) Decreases through securities matured, converted	-	-	-	-
7.7 Options <i>(description and conversion factor)</i>	505,000 9,500,000		Exercise price 17 cents 20 cents	Expiry date 30 June 2011 3 December 2014
7.8 Issued during quarter	9,500,000		20 cents	3 December 2014
7.9 Exercised during quarter	-	-	-	-
7.10 Expired during quarter	-			
7.11 Debentures <i>(totals only)</i>	-	-		
7.12 Unsecured notes <i>(totals only)</i>	-	-		

+ See chapter 19 for defined terms.

Compliance statement

- 1 This statement has been prepared under accounting policies, which comply with accounting standards as defined in the Corporations Act or other standards acceptable to ASX (see note 4).
- 2 This statement does ~~/does not*~~ (*delete one*) give a true and fair view of the matters disclosed.

Sign here:  Date: 29 January 2010
(Director/Company Secretary)

Print name: **Graham Seppelt**

Notes

- 1 The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity wanting to disclose additional information is encouraged to do so, in a note or notes attached to this report.
- 2 The "Nature of interest" (items 6.1 and 6.2) includes options in respect of interests in mining tenements acquired, exercised or lapsed during the reporting period. If the entity is involved in a joint venture agreement and there are conditions precedent which will change its percentage interest in a mining tenement, it should disclose the change of percentage interest and conditions precedent in the list required for items 6.1 and 6.2.
- 3 **Issued and quoted securities.** The issue price and amount paid up is not required in items 7.1 and 7.3 for fully paid securities.
- 4 The definitions in, and provisions of, *AASB 1022: Accounting for Extractive Industries* and *AASB 1026: Statement of Cash Flows* apply to this report.
- 5 **Accounting Standards** ASX will accept, for example, the use of International Accounting Standards for foreign entities. If the standards used do not address a topic, the Australian standard on that topic (if any) must be complied with.

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+ See chapter 19 for defined terms.