



# Atomic Resources Limited

ABN 65 124 408 751

31st December 2010

## **QUARTERLY REPORT - DECEMBER 2010**

Atomic Resources Limited (Atomic) is pleased to present its quarterly report for the period to 31st December 2010.

### **QUARTERLY REPORT HIGHLIGHTS**

#### **Corporate**

- \$5 million Capital Raising completed
- Appointment of new Chairman: Mr. Graeme Robertson

#### **Tanzania Ngaka Coal Field**

- Resource definition drilling program commenced
- Preparation for Mbalawala mine development
- Operations Manager employed to manage mine operations

#### **Western Australian Operations**

Interpretation of 2009 sampling results and project ranking completed. Annual reports filed.

### **KEY ACTIVITIES PLANNED FOR THE YEAR 2011**

- Stage One Mining at Mbalawala
- Strengthening of the management team in Tanzania
- Finalise domestic sales contract
- Evaluation of Ngaka drilling data, resource re-estimation and reporting
- Exploration of the Liweta and Mbamba Bay tenements

## **CORPORATE**

### **Capital Raising and Board Changes**

Atomic Resources issued 22,727,273 new, fully paid ordinary shares in the capital of Atomic at an issue price of \$0.22 per share, to raise \$5 million. The subscriber was Aspac Mining Limited, an entity owned and managed by Mr Graeme Robertson.

In recognition of his extensive coal industry experience, the board of Atomic Resources invited Mr. Robertson to accept an appointment as a non executive Chairman of the Company, with effect from the issue date.

Mr. Robertson has been a long-standing shareholder of Atomic Resources and a very strong supporter of the Company and its plans to develop a major thermal coal mining operation in the southwest region of Tanzania. He has been responsible for pioneering and managing world class mining, energy and transport infrastructure operations throughout Africa, Australia and the Asia-Pacific region. He was CEO and developer of the largest open cut coal mine in the Southern Hemisphere, PT Adaro Indonesia, and is a former Managing Director of New Hope Corporation Limited (1987 – 2005). In 2010, Mr Robertson was awarded the Coaltrans Lifetime Achievement Award for his contribution to the coal industry.

The funds raised through the placement will be used to fund a near-surface drilling and exploration program at the Mbuyura/Mkapa and Mbalawala coal fields in the Ngaka Coal Basin, commencing in December 2010 and will enable Atomic to commence small-scale coal mining before the end of this calendar year.

## **OPERATIONS**

### **Tanzania Ngaka Coal Field**

#### **Introduction**

Atomic operates its Tanzania coal business through joint venture company Pacific Corporation East Africa Limited (PCEA), 85% owned by Atomic. Tancoal Energy Limited (Tancoal) holds the Ngaka coal properties, 70% owned by PCEA and 30% by National Development Corporation (NDC) of Tanzania, a Tanzanian Government Organisation.

The Ngaka Coal Field is located approximately 1,200km southwest of Dar es Salaam (refer Figure 1). The coalfield was discovered in the 1930's. Colonial Development Corporation (CDC) conducted exploration work in the 1940's and 1950's consisting of drilling, augering, trenching, pitting and bulk sampling. The coalfield is characterised by the Mbuyura Mkapa Block in the north and the Mbalawala Block in the south (Figure 2).

Tancoal initiated exploration work at Ngaka in 2007 including mapping, drilling and bulk sampling. Resource modelling, estimation and reporting, and a Bankable Feasibility Study, have been completed for Mbalawala. . A 1,000-tone bulk sample of Mbalawala coal was excavated for industrial testing analysed and confirmed the coal is a suitable thermal product for power generation and industrial applications.

Exploration carried out in the Mbuyura Mkapa Blocks indicates additional good coal potential. Further drilling is being undertaken at Mbuyura Mkapa and Mbalawala to improve resource definition, upgrade known resources and for mine development.



Figure 1: Location Tancoal's current project site.

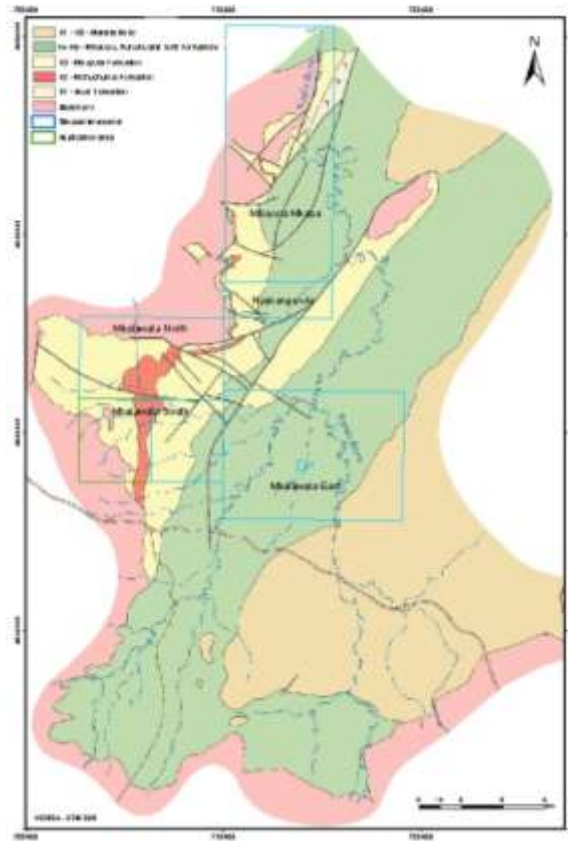


Figure 2: Plan showing concession areas in the Ngaka Coalfield.

## Project Overview

Tancoal has ownership over six coal bearing tenements in the Ngaka coalfield. Extensive exploration has taken place over the last two years, augmented by geological surveying over several decades.

In April 2010, Tancoal commenced the first stage of a feasibility study for proposed coal mining and beneficiation from three of these tenements in the Mbalawala Block (Figure 3).



Figure 3: Mbalawala Block location.

Feasibility work concentrated on Mbalawala because it was the most advanced of Tancoal's projects in the Ngaka area, has the best quality, is strategically located near transportation infrastructure and is in proximity to abundant water sources.

A Bankable Feasibility Study (BFS) was completed for Tancoal under contract. This study considered an aggregate accuracy weighting by study element, resulting in overall confidence levels of  $\pm 20\%$  for operating costs and  $\pm 35\%$  for capital expenditure. The BFS indicated that a mining operation at Mbalawala is commercially viable. The Company plans to commence detailed mine and infrastructure design and, subject to regulatory approvals and contractual agreements, mining is targeted to commence within the first semester of 2010. Mining will be owner operated and managed. Coal is to be delivered initially to local industrial users and later sold to a mine-mouth power station.

Export will be considered as a later stage option should it also prove feasible. The viability potential for export relies predominantly on the construction of the Mtwara rail corridor. This is envisaged to pass within close proximity to the site in the next 4 to 5 years. As such, power generation was selected as the Base Case.

### **Tanzania Thermal Coal Market**

The need to alleviate the power shortage in Tanzania is described explicitly in a strategy document issued by the Tanzania Electricity Supply Company Ltd (Tanesco) on 13th January 2010 and the proposed Mbalawala Power Station at Ngaka was identified as the next coal fired power station to contribute to the national grid capacity.

The Tanzanian Power Systems Master Plan (PSMP) was compiled on behalf of Tanesco by SNC Lavalin, which further describes the country's need for base load generation. It includes the Mbalawala Power Station as a future contributor.

There is significant opportunity in Tanzania for domestic coal produces to play an important role in supplying fuel for power generation. Currently, most coal is imported and lands in Tanzania at a relatively high cost. Companies that have strategically located, good quality thermal coal resources that can overcome the limited infrastructure hurdles and obtain long term stable off-take agreements, will have a competitive edge.

## Tancoal Coal Sales Contracts

Due to the ongoing discussions between Tancoal and its future development partners, certain specific study parameters are deemed as “commercial in confidence” and cannot be disclosed at this point, other than to comment that they are market related and supports the stated yields. These inputs will be made available as far as commercial agreements allow, subsequent to concluding negotiations for a fuel contract with the power station developer.

## Mbuyura Mkapa Resources

CDC performed historic exploration activities during the late 1940's and early 1950's. 13 holes were drilled, accompanied by detailed mapping, trenching, pitting and auger drilling. Tancoal drilled an additional 27 holes throughout the area in 2009, including the previously under-explored northern portion of the Ngaka Coalfield.

A review of historical and recent Tancoal drilling data has resulted in an Exploration Target<sup>1</sup> range of 160 to 320Mt to a depth of 500m. Table 5 presents the lower and upper ranges that take cognisance of reasonable assumptions with regard to seam variability, continuity and thickness (Figure 5).

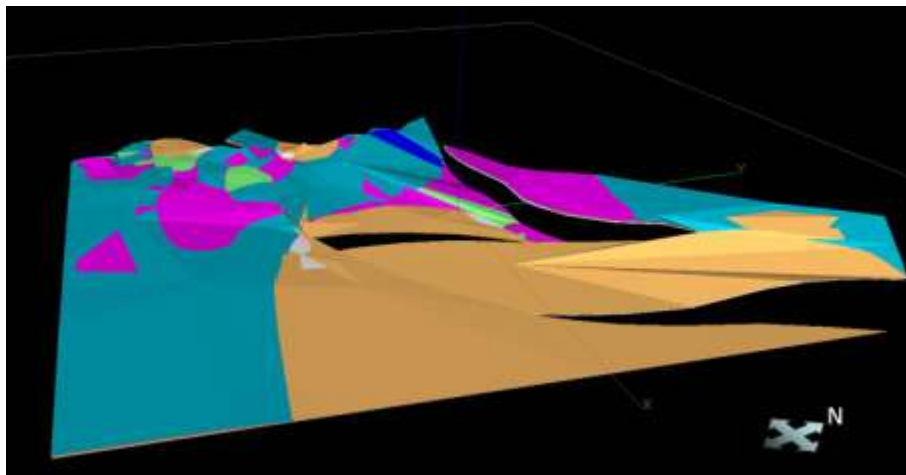


Figure 5: Wireframe model for Mbuyura Mkapa Blocks illustrating various seams.

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<sup>1</sup> The potential quantity of coal presented is conceptual in nature and there is insufficient exploration data currently available to define a Mineral Resource in this area under the JORC (2004) Code. The nature of an Exploration Target is such that it is uncertain if further exploration will result in the determination of a Mineral Resource.

Table 5: Exploration Target<sup>1</sup> ranges for Mbuyura/Mkapa.

Seam	Surface to 50m depth (Mt)	50m to 500m depth (Mt)	> 500m depth (Mt)
Seam 4 (a, b, c)	8 - 17	35 - 70	5 - 10
Seam 3 (a, b)	12 - 23	105 - 210	65 - 130
<b>Total</b>	<b>20 - 40</b>	<b>140 - 280</b>	<b>70 - 140</b>

### Mbalawala Resources

A total of 55 boreholes have been drilled in the tenement area, 26 by the CDC and an additional 29 by Tancoal.

Five continuous coal seams are identified in Mbalawala. Seams 1, 3 and 4 show the most potential at average thicknesses of 1.36m, 2.59m and 1.71m respectively.

Atomic has reported coal resources in the Atomic Annual Year Report 2010 and the results are summarised in the table below.

Table 6: Summary of coal qualities per defined resources in Mbalawala (Radley, 2010).

Resource Category	Measured	Indicated	Inferred	Totals
<b>Tonnes (million)</b>	<b>139</b>	<b>66</b>	<b>46</b>	<b>251</b>
Inherent Moisture (%)	2.9	2.77	2.62	2.8
Ash (%)	18.9	19.03	23.81	19.9
Fixed Carbon (%)	52.0	51.41	46.26	50.8
Volatile Matter (%)	26.3	26.87	27.32	26.6
Calorific Value (MJ/kg)	26.5	26.59	24.86	26.2
Total Sulphur (%)	1.4	1.27	0.78	1.3
RD (g/cm <sup>3</sup> )	1.5	1.49	1.55	1.5

Notes:

- 1) Coal Resources have been rounded to appropriate levels of accuracy in accordance with The JORC Code (2004)
- 2) The estimates of Coal Resources in this table have been carried out by Ravensgate geological consultants in accordance with The JORC Code (2004)
- 3) Coal quality data reported is based on weighted averages for all seams
- 4) The Inherent Moisture is reported at an as received basis; all other analysis are reported air dried "air dried basis"

## **Mbalawala Mine Development**

A Feasibility Study has been completed for the Mbalawala project, the results of which are reported in the Atomic Annual Report 2010. Tancoal is now focusing the majority of its efforts on achieving necessary approvals and agreements to commence mine development and infrastructure construction, whilst advancing coal sales contracts including supply to new power station developers with the aid of its partner, the Tanzanian NDC.

In summary:

- A viable business case is achieved for the coal supply to a power station located adjacent to the coal mine.
- The Company is working on necessary licensing to allow mining to commence as soon as practicable.
- An Operations Manager has been employed and will manage mine development.
- A new drilling program commenced in the quarter to gain pre-development resource information as well as to work towards increasing and upgrading the Company's resources.
- Domestic industrial sales contracts will be secured to support early stage mining and later, long term fuel supply to power utilities. Bulk sampling has been carried out to market the coal.

## **Coal Marketing and Bulk Sampling**

As part of a marketing campaign aimed at domestic industrial uses, a bulk sample was delivered to Tanga Cement in September 2010. An additional bulk sample will be delivered Mbeya Cement during the first quarter 2011.

The excavation of the initial bulk sample of 1000 tonnes was taken from Seam 3 at Mbalawala (Figure 6). Testing results from the sample confirms an attractive, acceptable quality thermal coal, provides confidence to Tancoal to proceed to mine development in 2011.





Figure 6: Seam 3 bulk sampling site.

### **Drilling Program**

Drilling was initiated in the Ngaka Coalfield to obtain further geological information prior to mine development and to increase and upgrade the Company's coal resources in Tanzania.

Shango Solutions, the geological consultant who has been providing services to Tancoal for a period of time, designed the drilling program, which covers the Ngaka Coalfield including the new tenement (PL6285/2009). A total of 31 boreholes have been planned (Figure 7). Twenty-seven boreholes have been planned in Mbalawala and 4 in Mbuyura Mkapa. The planned boreholes range in depth between 32 and 550m.

In summary, the drilling programme aims to achieve the following objectives:

#### *Mbalawala Block*

- Pre-development work in the area targeted for initial mining.
- Allow for the potential extension of the planned open pit to the south to be evaluated. In addition, an increase in the open pit reserve may be established where feasible.

- Increase the confidence level of the shallow (< 180m below surface) coal resource to a measured category.
- Potential extension of the existing Mbalawala resources to the south.

*Mbuyura Mkapa Block*

- Define a resource for Mbuyura Mkapa.
- Potential extension of the Mbuyura Mkapa resource to the south to an inferred resource category in the Nyakangunda tenement.

The drilling programme commenced in December 2010. The first borehole was drilled in Mbalawala. Two coal seams were intersected with thicknesses of 0.85m and 1.8m. This borehole confirms the extension of coal seams to the south of the previous drilling. Additional drilling down dip and along strike will help in defining the continuity extent of the seams.

Results will be provided in the next quarterly report.

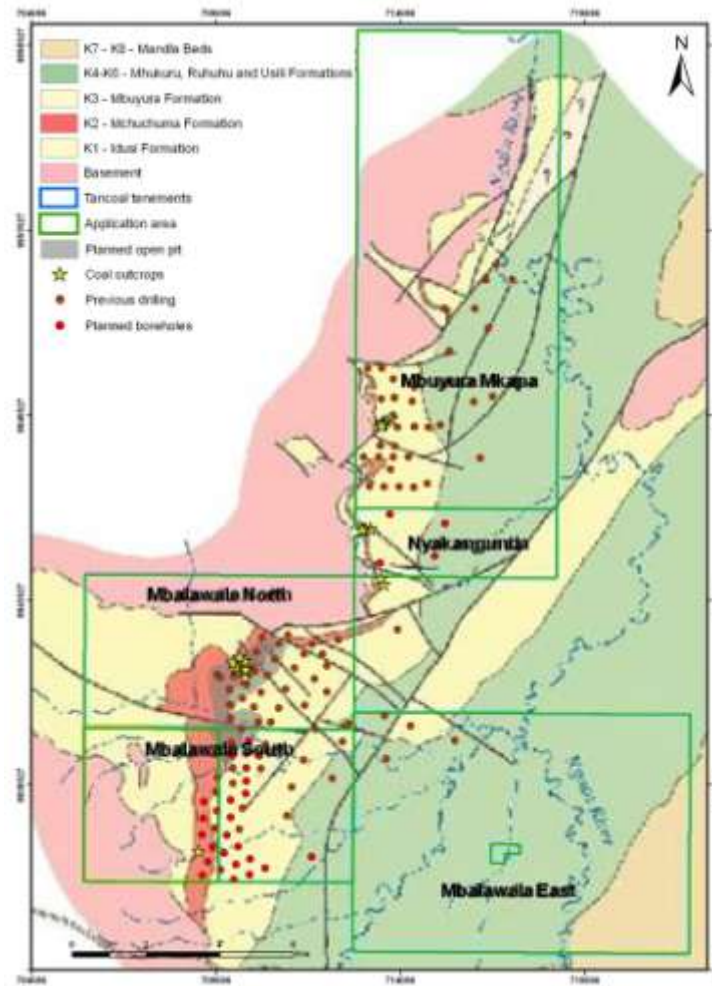


Figure 7: Drillhole plan, Ngaka Coalfield indicating location planned boreholes in relation to coal outcrops and planned open pit.

### Commencement of Operations Manager

An Operations Manager has been placed and commenced employment with Tancoal in early January. He is a well-qualified and experienced coal mining manager with the ability to take the project to its next level.

### Future Activities

#### *Stage One Mining*

With the completion of the bulk sampling and raising of \$5 million in capital, Mbalawala Stage One Mining is anticipated to commence in the first semester of 2011. The mine management team of the Company will be expanded and strengthened for mine development and infrastructure construction. Transportation studies will be undertaken to determine the most efficient and cost effective method for the product coal to reach final market points. Initial product coal will be supplied to local industries. Letters of intent have been received from potential clients and these potential customers are being progressed. Market research indicates that a demand of a minimum of 10,000 tonnes of coal per month sourced from the Ngaka Coalfield is readily achievable, and has the capacity to double that within 3 years. Countries neighbouring Tanzania are also being considered in the marketing plan.

#### *Evaluation of Ngaka drilling data, resource re-estimation and reporting*

The Ngaka drilling program will be completed and the results evaluated, with expectations the Company's resources will be increased and upgraded.

#### *Target Generation Mhukuru Formation*

Interpretation of historic drillhole data indicates that additional coal resources may exist in the Mhukuru Formation, Ngaka Coalfield. Previous worker CDC was of the view that the seams were not continuous and therefore considered coal in this formation to have minimal potential for viable coal resources. However, reinterpretation of historic drillhole data indicates that two potential coal seams occur within the Mhukuru Formation (Figure 8).

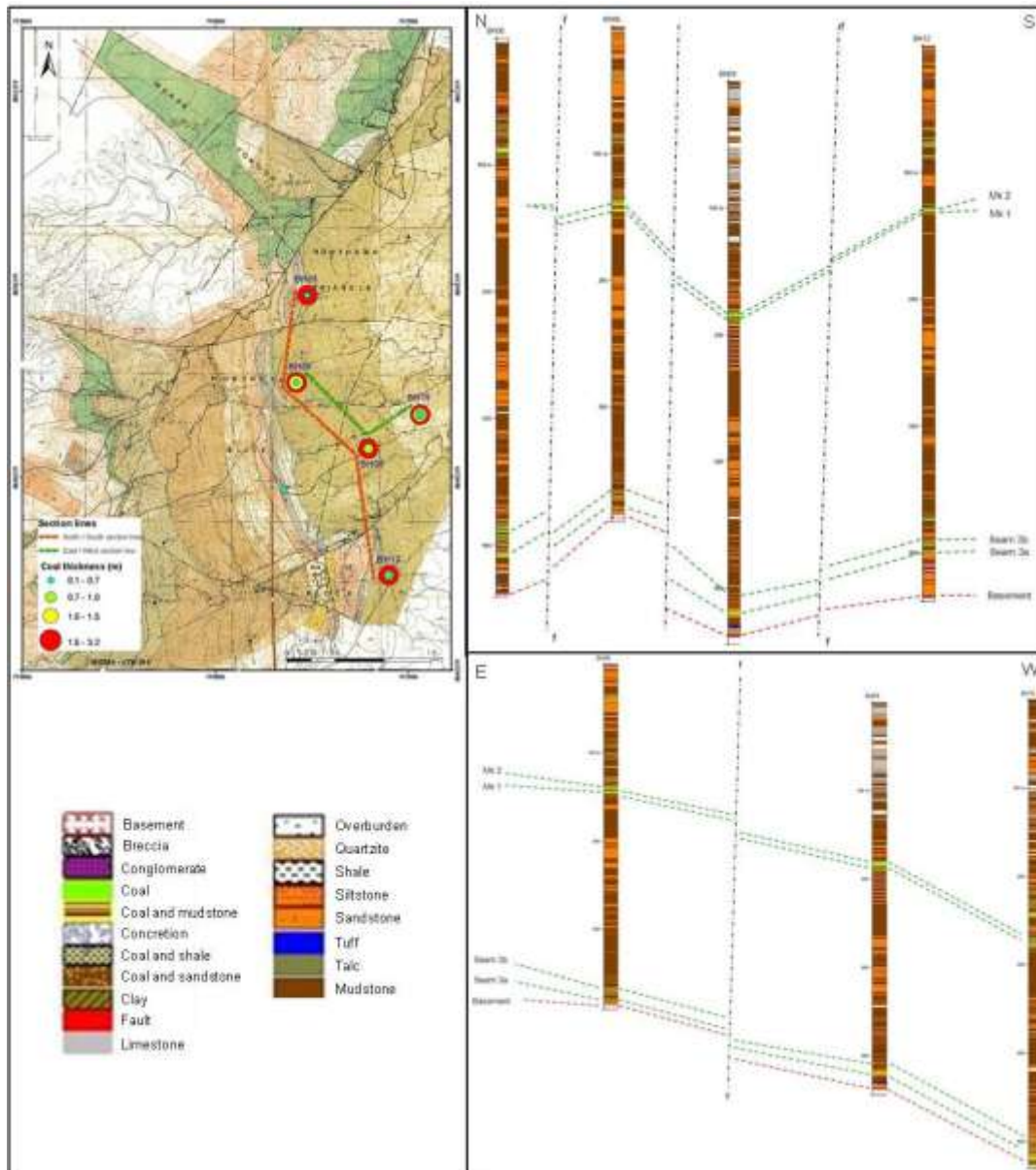


Figure 8: Mhukuru Formation coal seams, Ngaka Coalfield.

The data suggests that the two seams are more continuous than previously indicated by CDC. Surface mapping, in conjunction with additional drilling, will aid in verifying the continuity of these seams. The average thicknesses of the coal seams are 1.0m (Seam Mk1) and 2.1m (Seam Mk2). Seam Mk2 has been found to have a thickness of up to 3.2m.



### *Mbamba Bay and Liweta*

Mbamba Bay Coalfield is located approximately 5km southeast of the Mbamba Bay port. The coal bearing Mchuchuma Formation extends under the alluvial plane of the Luhekey River. Coal observations have been made in the Luhekey River and its tributaries. Two coal outcrops have been observed in the coalfield, one of which shows a seam thickness of approximately 1.75m.

The Liweta concession is north of the Mbamba Bay Coalfield. Coal has been observed in the Mchuchuma and Mhukuru Formations. Coal outcrops have been observed in rivers, with 6 coal seams reported in the area varying in thickness from 0.1m to 2.5m. Two potentially workable coal seams of greater than 0.7m have been reported. Recent reconnaissance work identified a coal seam with a thickness of 2.5m (Figure 9).

Additional coal bearing areas have been identified in Liweta and Mbamba Bay (Figure 10). Tancoal is working closely with its partner NDC to improve the level of knowledge all tenements. Further exploration work will aim to better define the nature of the seams and their potential properties.



Figure 9: Main coal outcrop at Liweta.

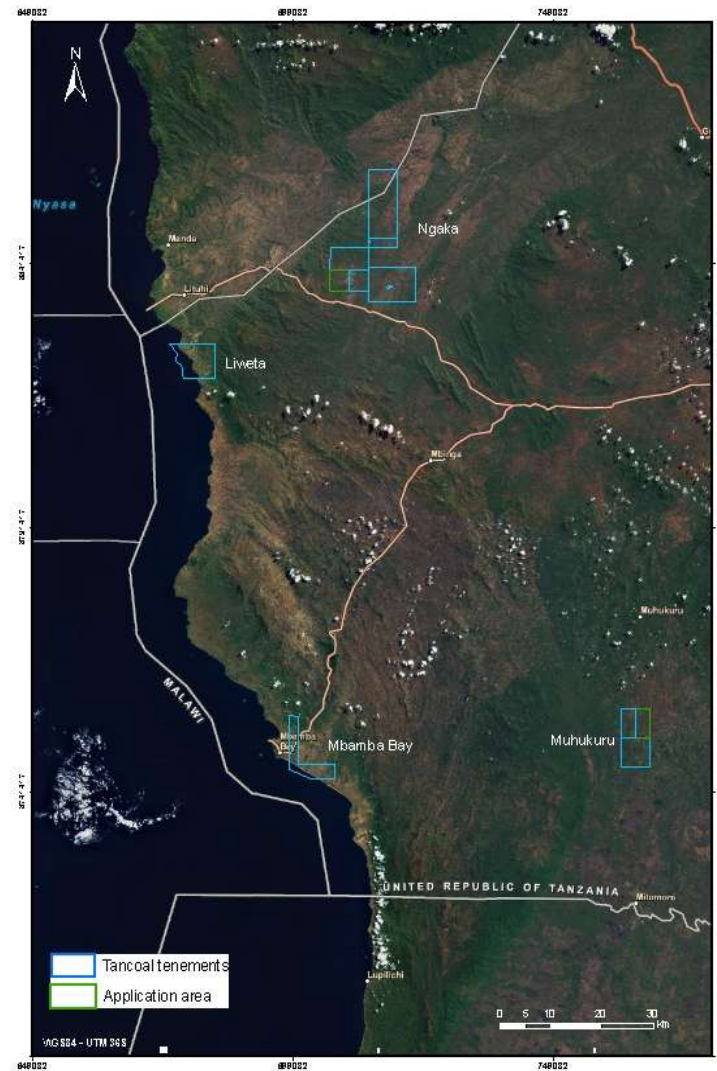


Figure 10: Tancoal's tenements indicating location of Mbamba Bay and Liweta.

## Western Australian Operations

Atomic, through its wholly-owned subsidiary, Resource Search Pty Ltd. (Resource Search), is actively engaged in exploration for uranium and base metals in Western Australia. Atomic currently holds 11 live exploration licences grouped into 3 areas, namely Earahedy (E69/2101/1/2/3, E69/2214/4/5/6/8), Larranganni (E80/3792) and Mountain Creek (E08/1660). All of the tenements are now in their fourth year of existence and the work that has been done to date includes desktop studies and partial grid sampling with interpretation of the analytical results.

## **Earaheedy**

These tenements are located in and around the Palaeoproterozoic Earaheedy basin on the northern margin of the Archaean Yilgarn Craton, 80 to 150 km north of Wiluna. Surficial cover in the area comprises Quaternary sheetwash and lacustrine units, Cainozoic sediments, silt, sand and calcrete. The tenements are subdivided into four project areas: Karri Karri (E69/2101, E69/2102), Granite Peak/Granite (E69/2216, E69/2217, E69/2218, E69/2103), Mt Deverell (E69/2183), Rock of Ages (E69/2214) and Earaheedy (E69/2215).

Other than sampling by the Geological Survey of Western Australia (GSWA), the only known work has been by Resource Search for most of these tenements. At Rock of Ages, uranium exploration by Uranerz in 1980 comprised geological mapping and in-field scintillometry from the tenement area to the Nabberu Lake system, looking for suitable calcrete horizons. An elongate zone of weakly anomalous uranium was recorded along the present day drainage system. In addition 29 aircore holes were completed but did not reveal any consistent uranium mineralisation.

At Earaheedy, a regional radiometric survey by Esso, following the announcement on the discovery of Yeelirrie by WMC Western Mining in 1972, highlighted an anomaly in an area of the playa lakes and calcrete to the north of Lake Teague, within the current tenement area. Surface sampling of calcrete and soil was undertaken with uranium values ranging from 56 to 225 ppm uranium. Esso followed the reconnaissance work with a total of 185 shallow drillholes, 36 reporting anomalous uranium with the best value being 7.6m at 0.28kg/t uranium.

In 2008 desktop studies were completed to determine the uranium potential of each project area. This was followed by a grid sampling programme in 2009, followed by the analysis of over 3736 soil samples (-80 mesh) and 198 rock chip samples by Genalysis Laboratories for gold, arsenic, copper, potassium, molybdenum, lead, thorium, uranium, vanadium, tungsten and zinc assay. In several of the project areas, the sampling programme only covered a portion of the overall tenement holdings.

## **Larranganni**

The project comprises one exploration license (E80/3792) of 24km<sup>2</sup> located approximately 200km southeast of Halls Creek in the Kimberley Mineral Field. The project area covers the



unconformable contact between sediments of the lower Proterozoic Killi Killi Beds and the Middle Proterozoic Gardiner Range Sandstone.

The surrounding areas of the Larrangani Project have been subject to several periods of uranium and base metal exploration, including drill testing to the south by Alcoa in 1977. Shallow vacuum drilling returned values of up to 30ppm U308. At Don's Show (or 'The Don') held by Tanami Gold Limited, surface rock chip assays up to 4.65 % U308 and 2 g/t Au have been reported, with follow-up drilling over a 200m strike identifying generally low grade mineralisation (best: 1.73% U308 over 0.44m) in a broad alteration envelope in Killi Killi Beds, in a setting believed to be structurally controlled.

Within the project area, the unconformity between the Killi Killi Beds and the Gardiner Range Sandstone is considered prospective for unconformity-related uranium mineralisation, but is significantly under-explored with no uranium-focused exploration having been conducted in the area since the 1980's. There is no record of ground-based uranium exploration having been carried out on the current project area, the western part of which carries extensive soil cover.

Resource Search has completed a site inspection. Thirty-five rock chips were collected for analysis. Samples are currently with Genalysis laboratories awaiting analytical determination for uranium, as well as base metals, precious metals and other pathfinder elements.

### **Mountain Creek**

The project comprises one exploration license (E08/1660) of 10km<sup>2</sup> located approximately 610km north of Geraldton. The geology essentially comprises rocks of the Palaeoproterozoic Gascoyne Complex, unconformably overlain by various sediments of the Bangemall Supergroup.

The gneissic granite contains vein-related concentrations of U, Cu, Bi and Pb. Earlier work reported disseminated torbernite and autunite in quartz veins from the area. A tectonised pegmatite with associated shear zones is ferruginised and show anomalous U. U is also reported in the sedimentary rocks of the Bangemall Supergroup, directly north of the tenement.

Analytical results of 41 grab samples collected from the eastern-most extension of the tenement, along a tectonised pegmatite, suggest that the anomalous U observed is a function of primary concentration in "gneiss", augmented by secondary enrichment associated with ferruginisation. Although the results reported to date do not report significant uranium

mineralisation, the project area covers a wide variety of rocks and contact situations which warrant further investigation. Among these are the possibilities for roll-front and unconformity-related uranium mineralisation.

### **Work completed in 2010**

During 2010, the main work involved a detailed analysis of the analytical results from the sampling programmes. Although several uranium anomalies were identified, the analytical results obtained until date do not reveal outstanding exploration targets. However, the grid sampling campaigns to date represent first-round encounters in relatively unexplored terrains. In most of the tenements some degree of clustering of element values is evident; suggesting some underlying factors that are not yet understood. The following can be summarised from the analysis of results:

Several tenements carry gold values slightly enriched relative to crustal abundances. Gold follows distinct linear patterns which might be indicative of channelization in the sheetwash environment, although some of the linear patterns are somewhat oblique to the general surface drainage directions.

Copper shows some anomalous clustering in several of the tenements, but only in Granite (E69/2103) the values are above crustal average. In general, the elevated copper values are predominantly associated with sheetwash deposits.

Elevated uranium values are largely associated with calcareous rock and in places (Mt Deverell (E69/2183) and Eraheedy (E69/2215) associated with lacustrine calcareous sediments. At Mountain Creek (E08/1660), the uranium is contained in granite gneiss (primary) as well as in ferruginous coatings and impregnations in schist and gneiss. Uranium-bearing minerals have been reported for Mountain Creek and Eraheedy.

Subsequent to the interpretation of analytical results, an initial project ranking has been developed to prioritise those areas warranting further exploration and an exploration plan is being developed. In particular, it is evident that several areas of potential interest were not covered or only partially covered by the 2009 sampling campaign.

David Mason

Executive Director, Atomic Resources

*Clinton Cain, former Managing Director of Atomic Resources prepared the basis for this report.*

## **COMPETENT PERSON STATEMENT**

*The Coal Reserves quoted in this report based on the Mbalawala Coal Mine Bankable Feasibility Study as at 13 August 2010, compiled by Mr Robert Gracey, who is a Member of the Australian Institute of Mining and Metallurgy (AusIMM) and an employee of Coffey Mining, independent consultants to Atomic Resources Limited. Mr Gracey has sufficient experience as to qualify as a Competent Person as defined in the 2004 edition of the "Australian Code for Reporting of Mineral Resources and Ore Reserves". Mr Gracey consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

*The Coal Resources quoted in this report are based on the Resource Model Assessment and Review, Ngaka Project Area as at 20 July 2010, compiled by Mr Edward Radley, B.Sc. Geology, who is a Member of the Australian Institute of Mining and Metallurgy (AusIMM) and a Senior Resource Consultant for Ravensgate, independent geological consultants to Atomic Resources Limited. Mr Radley is a registered professional geologist with sufficient experience as to qualify as a Competent Person as defined in the 2004 edition of the "Australian Code for Reporting of Mineral Resources and Ore Reserves". Mr Radley consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

*The information in this report as relates to the Bankable Feasibility Study are based on the Mbalawala Mine Bankable Feasibility Study with related infrastructure feasibility options as at 30 September 2010, compiled by Mr Terry Brits, who is a Member of the Australian Institute of Mining and Metallurgy (AusIMM) and an employee of Wave Engineering Solutions, independent engineering consultants to Atomic Resources Limited. Mr Brits consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*

*The information in this report as relates to Exploration Results and Exploration Targets was compiled by Mr Gökhan Güler, M.Sc., FSAIMM, MAusIMM, Pr. Eng., also a director of Shango Solutions geological consultancy. He has over 15 years experience in the mining industry. Mr Güler has sufficient experience as to qualify as a Competent Person as defined in the 2004 edition of the "Australian Code for Reporting of Mineral Resources and Ore Reserves". Mr Güler consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.*