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1. Expenditure Statement
1 EXECUTIVE SUMMARY

This annual report describes the work carried out on EL 24694 to 27th February 2012. EL 24694, which is located in the Southern McArthur Basin, on the northern edge of the Murphy Inlier, Northern Territory, is held by Murphy Uranium Pty Ltd; a wholly owned subsidiary of Bondi Mining Ltd. This exploration license was acquired because it is considered to have good potential for hosting unconformity type uranium deposits, similar to those located in the Alligator Rivers Uranium Field at the northern end of the McArthur Basin and sandstone hosted uranium mineralisation, similar to the Westmoreland deposit located to the east in Queensland. Concealed southern extensions of the highly prospective Emu Fault Zone are also interpreted to transect the area.

Bondi Mining has been carrying exploration on this tenement since acquiring the licence from Buffalo Gold in 2007. This work has included geological and geophysical interpretations with targeting, alpha track sampling over major faults zones, ionic leach soil sampling, close spaced RAB drilling over alpha track anomalies and wide spaced RAB drilling targeting phosphate deposits in the Georgina Basin limestone. In 2009 several three RC holes were drilled on anomalous uranium in soils targets. In 2010 part of a GEOTEM survey designed to locate conductive hosts for uranium mineralisation in the Proterozoic basement, was flown over part of the EL. Exploration activity during the 2011 field season included an environmental audit and drill hole rehabilitation.

No significant uranium mineralisation was located on EL 24694 during the period of tenure and the geophysical and geochemical techniques used are not considered effective in locating uranium mineralisation under cover in the Proterozoic basement. However, much of this lease, particularly to the south-east appears to be ‘floored’ by the Nicholson Granite and therefore is not an attractive target. Due to the low prospectivity of the granite and the high cost of exploration under cover the decision was taken to let the EL lapse. There are a number of geological targets defined by Haynes that have not been tested (Esser, 2010).
INTRODUCTION

Bondi Mining Ltd, through its wholly owned Australian subsidiary Murphy Uranium Pty Ltd (ABN 14 126 180 818), is the holder of EL 24694. The licence is located west of the Westmoreland Uranium Field and forms part of Bondi Mining Ltd’s Murphy Project targeting uranium mineralisation within the Murphy Inlier in the Northern Territory. The Murphy Project currently includes ELs 24694, 24841, 25708, 25709, 25710, 26138, 26139, 26140. Refer to Figure 1.

This final and annual report covers all the exploration work carried out within EL 24694 up to 27th February 2012. The work completed during this period was aimed at defining a uranium mineralisation within the Murphy inlier meta-sediments and defining conductors in favourable structural sites which could be further explored with ground electro-magnetics and then drill tested. Exploration activities included an environmental audit and drill hole rehabilitation.
3 LOCATION & ACCESS

EL 24694 is located approximately 130km west of the NT - QLD border and 170km southeast of the McArthur River mine in eastern NT, see Figure 1. The licence covers four 1:250,000 map sheets; Wallhallow, Burnette Downs, Calvert Hills and Mount Drummond. Access is via the Barkly Highway from Mt Isa or Tennant Creek, to the Barkly Roadhouse and then via the Tablelands Highway. Access within the tenement is by the graded Calvert Hills Road and station tracks.

Figure 2. Tenement Location Map
4 TENURE DETAILS

EL 24694 was granted to Global Discovery Pty Ltd and was acquired from them by Canon Investments Pty Ltd (a wholly owned subsidiary of, Buffalo Gold Limited). In 2007 Murphy Uranium Pty Ltd, a wholly owned subsidiary of Bondi Mining Ltd who are the current operator of the licence, acquired the Murphy project.

EL 24694 originally comprised 446 sub-blocks. In compliance with mines department regulations, 176 sub-blocks were relinquished in February 2007 with a waiver on 47 sub-blocks; the full 50% reduction would have been 223 sub-blocks. In February 2011 a further 138 sub-blocks were nominated for relinquishment, with 132 sub-blocks retained.

Details of the current tenement are outlined in Table 1 and the remaining the 132 sub-blocks are illustrated in Figure 2. The exploration expenditure report for the current period is outlined in Appendix 1.

Table 1. Tenement details.

<table>
<thead>
<tr>
<th>Exploration Licence No.</th>
<th>No. Blocks (Area km²)</th>
<th>Grant Date</th>
<th>Expiry Date</th>
<th>Expenditure Commitment</th>
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<tr>
<td>EL 24694</td>
<td>132</td>
<td>28/2/2006</td>
<td>27/2/2011</td>
<td>$120000</td>
</tr>
</tbody>
</table>

Figure 3. Tenement Block and Sub-Block details
5 REGIONAL GEOLOGY

The Murphy Project tenements are situated within the Calvert Hills, Wallhallow, Mount Drummond and Brunette Downs (Northern Territory) 1:250,000 geological sheets. The first geological observations in the area were reported by explorer Gregory in 1861. The Redbank copper deposit was discovered in 1916 by prospectors, however little geological work was done until the late 1930s when the federal government funded the Aerial Geological and Geophysical Survey of Northern Australia (“AGGSNA”). The discovery of uranium in 1955 at Pandanus Creek led to increased interest from mining companies.

The oldest rocks exposed in the area are early Proterozoic sediments, volcanics and intrusives of the Murphy Metamorphics which were deformed and regionally metamorphosed prior to 1875 Ma (refer to Figure 3 and Figure 4). The Murphy Metamorphics are represented mainly by phyllitic to schistose metasediments and quartzite and are overlain by two Proterozoic cover sequences; the Cliffdale Volcanics and the Westmoreland Conglomerate. The cover sequences were laid down after the early deformation and metamorphism of the basement and before a period of major tectonism, which began at about 1620 Ma. The oldest cover sequence is the Cliffdale Volcanics unit, which unconformably overlies the Murphy Metamorphics. The Cliffdale Volcanics contain over 4000 m thickness of volcanics of probably sub-aerial origin, more than half of which consist of crystal-rich ignimbrites with phenocrysts of quartz and feldspar. The remainder are rhyolite lavas, some of which are flow banded. The ignimbrites are more common in the lower part of the sequence, with the Billicumidjii Rhyolite Member occurring towards the top.

The Cliffdale Volcanics are comagmatic with the Nicholson Granite and together they comprise the Nicholson Suite. SHRIMP dating of both the Nicholson Granite and the Cliffdale Volcanics gave an age of 1850 Ma (Scott et al, 2000). The Nicholson Granite is predominantly an I-type granodiorite. The Nicholson Suite shows little evidence of fractional crystallisation and on this basis the potential for forming large tonnage deposits is considered to be minor, although small tonnages of high grade are possible. In the vicinity of the granites there are no significant potential host rocks documented. Potential exists for small Sn and W deposits within the granite and for smaller Cu and Au deposits outside the granite.

Unconformably overlying the Nicholson Suite is the Tawallah Group. This is the oldest segment of the southern McArthur Basin. The base is a sequence of conglomerates and sandstones comprising the Westmoreland Conglomerate. The conglomerates thin out to the southeast and are in turn conformably overlain by the Seigal Volcanics; an andesitic to basic sequence containing interbedded agglomerates, tuffs and sandstones. Together these units comprise about two-thirds of the total thickness of the Tawallah Group. The Seigal Volcanics are overlain (in ascending order) by the McDermott Formation, the Sly Creek Sandstone, the Aquarium Formation and the Settlement Creek Volcanics. Age dating of volcanics within the Tawallah Group indicates a depositional age of between 1780 and 1710 Ma.
To the south and south-west of the Murphy Tectonic Ridge, the Tawallah Group is unconformably overlain by shallow marine and fluvial sandstone and siltstone of the mid Proterozoic (1570 -1590 Ma) South Nicholson Group. To the southwest of the Murphy Tectonic Ridge, the South Nicholson Group appears to have been deposited directly onto lithologies of the Murphy Metamorphics.

To the west of the exposed parts of the Murphy Tectonic Ridge and the area in which the Murphy Project tenements are located, Proterozoic Rocks are concealed by Quaternary colluvium and black soil plain and Cambrian shallow marine sediments of the Barkly Group. Sporadic outcrop of Westmoreland Conglomerate and Murphy Metamorphics indicates that the depth to potentially prospective lithologies is minimal in the eastern half of the tenement holding. Interpretations of Proterozoic geology presented with the BMR Calvert Hills 1:250 000 geological map publication indicate that the Murphy Tectonic Ridge continues to the west under younger cover rocks and the Murphy Project tenement block.
Figure 5. Stratigraphy of Murphy Inlier Region.
5.1 STRUCTURE AND TECTONICS

Cratonisation of the northern Australian orogenic domains during the Barramundi Orogeny was accompanied by the establishment of a fundamental framework of deep-seated NW, NNW to NNE and NE-trending crustal structures (Etheridge et al., 1987). It is widely speculated that these structures were reactivated and became the major controlling influence on the depositional geometry of succeeding basin phases and the localisation of subsequent deformation (e.g., Plumb, 1979; Etheridge and Wall, 1994; Rogers, 1996). The majority of models for the evolution of the McArthur Basin promote extensional tectonics, in which specific fault orientations acted as normal or ‘growth’ structures and others acted as accommodation or transfer structures during various stages of basin formation. The most influential aspect of McArthur Basin geology that has driven extensional models is the presence of significant volcanic and coarse grained clastic rocks at the base of the basin succession (Rogers, 1996).

The igneous rocks of the Westmoreland region are markedly bimodal with respect to silica content, a typical feature of intracratonic rifting. No rocks older than the Murphy Metamorphics are known east of the Westmoreland area, implying that the detrital sediments of the Tawallah Group were derived from either within or west of the Murphy Tectonic Ridge. The Tawallah Group is dominated by shallow-water marine sediments deposited on a regionally extensive platform.

Subsequent contractional reactivation of earlier ‘extensional fault systems’ is thought to have occurred at least three times during and after basin development (Plumb, 1994; Rogers, 1996).
6  LOCAL GEOLOGY

Most of EL 24694 is covered (approximately 85%) by Cainozoic material consisting of recent alluvium, tertiary laterite, sandstone and siltstone, black soils and accreted carbonate outcrops of an undesignated formation (refer to 6). Small exposures of Cambrian sediments, belonging to the Georgina Basin, are scattered through the tenement and consist of conglomerates, dolomitic limestone (fossiliferous in parts), ferruginous grey and white quartz sandstone and mudstone. Neoproterozoic sediments belonging to the South Nicholson Group also occur in and around the southern parts of the tenement and Palaeoproteroic Murphy Metamorphics are mapped in the southern eastern tenement block.

Figure 6. Detailed Geology.
7 PREVIOUS WORK

7.1 HISTORIC EXPLORATION

A comprehensive review of previous mineral exploration was completed and is outlined in Section 6 Summary of Previous Exploration (Tahan, 2008). Important information gained from this review includes:

- First recorded work in the area was by Mount Isa Mines in 1956 and consisted of crude airborne radiometric surveys. The results of this work located the Westmoreland deposits and most likely all of the significant outcropping occurrences.

- There was a distinct hiatus in exploration between 1963-1970, reflecting a slump in the global demand for uranium; the post war proliferation of nuclear weapons had slowed and the nuclear power industry was still in its infancy.

- A second wave of exploration commenced in the 1970’s as the demand for uranium for use in nuclear power stations increased. Many of the companies were also operating in the Alligator Rivers region, at the northern end of the Pine Creek fold belt, and much of their focus was on this area after the discovery of significant deposits at Jabiluka, Ranger, Nabarlek and Koongarra. The similarity between the two areas was known, however at this time the nature of the Alligator Rivers deposits was poorly understood, exploration was targeting roll front style mineralisation and sandstone hosted uranium deposits in both areas. By the time unconformity type uranium deposits were understood, uranium exploration restrictions were in place and work did not resume in the area until recently.

- Detailed radiometric surveys have been conducted. This work has revealed many outcropping anomalies related to brecciation, quartz veining (silicification) and iron-metasomatism (ferruginisation) associated with faulting in the Nicholson Granite and Murphy Metamorphics. None of these anomalies appear to warrant follow-up work, however they indicate that processes associated with the formation of unconformity type uranium deposits have been active in the early Proterozoic basement.

- During the process of these investigations, some stratigraphic data regarding the Phanerozoic rocks was recorded in government and company reports. These drew attention to the possibility that Phosphate mineralisation may be associated with some of the formations. It was not until the late 1960’s and early 1970’s that IMC and ICI carried out some exploration to evaluate the potential for Phosphate mineralisation in the Northern Territory part of the Georgina Basin. Their results led to the identification of a number of deposits at or close to surface, which at the time proved uneconomic due to grade and size constrains when compared to the Duchess Phosphate Hill deposit of NW Queensland. These discoveries are now attracting interest; because of the increased price of Phosphate. Some of them have are now held under Exploration title by various companies in an effort to bring them to JORC reserve status.

- The region has been explored for gold, basemetal (sedex type deposits) and kimberlite hosted diamonds by several major companies. No significant gold or basemetal discoveries were made. A large number of diamonds were recovered from Ashton’s Cresswell prospect outside the licence and the area is currently under an ERL.
• An airborne GEOTEM survey carried out by BHP targeting unconformity U-Au-PGE deposits indicated the usefulness of input EM surveys in targeting unconformity uranium deposits under cover. In particular, the ability to locate basement conductors related to graphite in fault zones or clay alteration. Part of the BHP survey covers the current EL.

• The western covered region of the Murphy Inlier has the potential to host an unconformity type uranium deposit at depth

A list of the ATPs and ELs previously covering EL 24694 is provided in Table 2

Exploration conducted by Buffalo Gold Ltd in 2006 included:

• comprehensive review of public domain geological, geochemical and geophysical data.
• a review of previous exploration

The aim of this work was to:

(i) map the lower Proterozoic and mid Proterozoic rocks, under the Phanerozoic cover;
(ii) identify possible uranium source rocks,
(iii) locate regional/local structures that display alteration indicating the passage of oxidised fluids; and
(iv) map conductive graphitic units or clay alteration in the basement rocks. These geological features were then used in conjunction with radiometric and geophysical data to select target areas for uranium mineralisation.

The results of the exploration included:

• Defining two target areas in the northern corner of the licence, which extend on to an adjacent EL held by Bondi Mining Limited
• Defined highly conductive mafic dyke and sill like complexes, which are thought to be feeder pathways for some of the flood basalts, found in the southern part of the McArthur Basin.
• Five "high risk" Cu-Ni target areas associated with these mafic complexes were also selected.
Table 2. Previous tenements over EL 24694

<table>
<thead>
<tr>
<th>Licence</th>
<th>Company</th>
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</thead>
<tbody>
<tr>
<td>ATP 444</td>
<td>MIM</td>
</tr>
<tr>
<td>ATP 983</td>
<td>Carpentaria Exploration Company</td>
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<tr>
<td>ATP 3401</td>
<td>ESSO Australia</td>
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<tr>
<td>EL 122</td>
<td>Noranda Australia</td>
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<tr>
<td>EL 886 &amp; EL 887</td>
<td>T.W. Cawley and R.A. Weston</td>
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<td>EL 1339</td>
<td>AAR Ltd/Otter Exploration “Coolibah” JV</td>
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<tr>
<td>EL1427</td>
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<td>EL 1253</td>
<td>Mines Administration/Union Oil JV</td>
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<tr>
<td>EL1234</td>
<td>Mines Administration/ESSO Australia JV</td>
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<tr>
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<td>Amoco Minerals</td>
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<tr>
<td>EL 4392 &amp; 4438</td>
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<td>EL 4352</td>
<td>Ashton Mining</td>
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<tr>
<td>EL 6836</td>
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<td>MIM</td>
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<tr>
<td>EL 8997, 8998, 9163 &amp; 9660</td>
<td>BHP</td>
</tr>
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7.2 PREVIOUS EXPLORATION BY BONDI

RAB Drilling

In 2008 a reconnaissance RAB drilling program comprising a total of 26, wide spaced holes for 1244m, was conducted to determine if there is any potential for economic phosphate mineralization within the Cambrian limestones of the Georgina Basin sediments. The phosphate holes were all planned as vertical holes to intersect the top sections of the Cambrian to a limit depth of 60m. As this was the initial program to test the concept, it was decided to place the holes at wide spacing on a regional scale, and because the drilling program encompassed the entire Murphy project area, only four of these holes (MPRB 005, 006, 007 & 008) were drilled on EL 24694.

All samples were tested for the presence of phosphorous on site using the field test otherwise referred to as the Shapiro Chemical Test. Almost all limestone intervals were composited over 2m and the samples submitted to ALS for analysis. Relatively low phosphorous was detected in all the holes with values range from a background of 10 to 350ppm P. There were also second order anomalies ranging from 350 to in excess of 1000 ppm P. These are too low to warrant further investigation.

The wide spaced RAB drilling program at the Murphy tenements identified the presence of Cambrian Georgina Basin sediments. Some of the drill holes also revealed the presence of weak anomalous Phosphorous mineralisation. This program is not considered a thorough test of the potential of the Georgina Basin sediments for hosting phosphate mineralisation. For further information on the exploration rationale and sampling refer to Tahan (2008).

Airborne Magnetic and Radiometric Survey

A detailed airborne magnetic and radiometric survey, comprising approximately 69,000 line kilometres, was flown over the eastern tenements of the Murphy project area, this survey encompassed the western portion of EL 24694. An interpretation was conducted by geophysicist John Coggon based on a compilation of datasets: the detailed airborne surveys flown for Bondi by Fugro Airborne Surveys in 2007, by UTS Geophysics in 2009 and regional magnetic surveys flown for the Northern Territory Geological Survey (NTGS). Gridded total magnetic intensity data for the area 528000 - 718000 E, 7960000 - 8150000 N (MGA zone 53) were merged to prepare a grid with 50 m cell size (MN in ER Mapper format). Coggon’s full report was presented in Appendix 3 of the 2010 annual statutory exploration activity report.

Detailed Geological Interpretation and Target Generation

Douglas Haynes completed an interpretation of the airborne magnetic and radiometric survey flown by UTS in March to May 2009, incorporating the Fugro airborne magnetic and radiometric survey flown in October 2007. Douglas used a variety of magnetic images, and magnetic ‘worms’ to interpret the stratigraphy, structure, alteration and also to define target areas with potential for hosting uranium, copper and nickel mineralisation. The report by Haynes covers the whole Murphy project area and was presented in Appendix 4 of the 2010 annual statutory exploration activity report for EL 24694.
**RC Drilling**

In August 2010 three relatively shallow RC holes, MURD008 to MURD010 were drilled for a total of 174m to test the UC25 target. The drilling was designed to test uranium anomalies defined by Ionic Leach soils, intersecting a NW trending fault (Haynes, 2009) and a N-S trending magnetic high and EM conductor.

MURD008, which was planned to test a ‘bullseye’ uranium anomaly, coincident with a strong EM conductor, was drilled to 72m. MURD009 and MURD010 were planned to test a NW trending uranium anomalies, parallel to a NW trending fault and adjacent to a granitic intrusive. MURD009 was drilled to 48m and MURD010 to 54m. All three holes intersected granite. The data for these drill holes is presented in Appendix 5 and 6 in the 2010 annual statutory exploration activity report for EL 24694.

**Airborne EM Survey**

On 6th October 2010 Fugro Airborne Services completed an Airborne Electo-Magnetic survey (AEM) comprising a total of 2,355 line kilometres covering the Murphy West target area (1,478 line km at 500m spacing), the UC19 area (624 line km at 300m spacing) and the UC 17 survey (253 line km). Refer to Figure 7 for location of the AEM survey. A small portion of the Murphy West survey area (52 sq km out of 600 sq km) covered the western limb of EL 24694 (Figure 7). The data from this survey was included as Appendix 2 in the 2010 annual statutory exploration activity report for EL’s 26138, 26139 & 26140.

An interpretation of the data from the AEM survey was completed in November (J. Coggon, 2010). The interpretation identified a thick, weakly conductive sequence which corresponds with the Cambrian limestone and Proterozoic Westmoreland sandstone in the Murphy West area. The Proterozoic, basement rocks appear to be resistive, however, the penetration of the AEM is limited to 300m due to the masking effect of a shallow near surface conductor, which is black soil or weathered limestone. Previously un-identified NW trending faults and folds were defined by the AEM survey and these areas have potential for hosting uranium mineralisation.

![Figure 7: Location of Aerial EM Survey](image-url)
8 2011 EXPLORATION ACTIVITIES

8.1 ENVIRONMENTAL AUDIT & REHABILITATION

The only exploration completed in 2011 was a five day environmental audit of all previous drilling and track building by two field assistants. In particularly the field personnel located all previous drilling which included locating each RAB and RC hole and checking that:

- All rubbish was removed from the site (including PVC collar and plastic bags)
- The collar was removed and the hole plugged below surface.
- Any sump or excavation was backfilled and plastic liner removed.
9 CONCLUSIONS

No further work is recommended on the tenement due to difficulty in targeting basement hosted uranium mineralisation under cover, except by drilling, and that much of EL 24694 appears to be underlain by Proterozoic granite. The tenement was totally surrendered in March 2012.

Not all geological targets have been adequately tested and if a cheaper and more successful geochemical or geophysical method were available then exploration might have been more successful. Drilling appears to be the only successful method to test for uranium mineralisation of this deposit style.

10 FUTURE WORK

No future work is recommended.
11 REFERENCES


