ANNUAL REPORT

EL 24841

MURPHY PROJECT – NT

August 2011


David Esser and Darryn Hedger

August 2011
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EXECUTIVE SUMMARY

This annual report describes the work carried out in EL 24841 up to the 31st July 2011. EL 24841 is located over the western end of the Murphy Inlier, NT and is held by Murphy Uranium Pty Ltd, which is a wholly owned subsidiary of Bondi Mining Limited (Bondi). EL 24841 has the potential to host unconformity style and sandstone hosted style uranium deposits, similar to those located in the Alligator Rivers Uranium Field at the northern end of the McArthur Basin and the Westmoreland deposit approximately 100km to the east of the project area, respectively.

Exploration during the 2010 to 2011 field season comprised an Airborne EM survey in September 2010 which covered the north west and south west corners of EL 24841. This data has been processed and preliminary modelling and interpretation of the data was completed. Further interpretation and modelling of the data was conducted during January and February 2011.
1 INTRODUCTION

Bondi Mining Limited, through its wholly owned subsidiary Murphy Uranium Pty Ltd, is the holder of EL 24841. The license is located west of the Westmoreland Uranium Field and forms part of Bondi’s Murphy Project targeting uranium deposits about the Murphy Inlier in the Northern Territory. The Murphy Project currently comprises EL’s 24694, 24841, 25708, 25709, 25710, 26138, 26139, 26140, 27379, 27728, 27729, and 27730. Refer to Figure 1 for the Murphy project tenement locations.

This annual report covers all the exploration work carried out within EL 24841 up to 31st of July 2011. Exploration during the 2010 to 2011 field season comprised an Airborne EM survey in September 2010 which covered the north west and south west corners of EL 24841. This data has been processed and preliminary modelling and interpretation of the data was completed. Further interpretation and modelling of the data was conducted during January and February 2011.
EL 24841 is located approximately 130km west of the NT - QLD border and 170km south east of the McArthur River mine in eastern NT (Figure 2). The license straddles two 1:250,000 map sheets; Walhallow and Calvert Hills. Access is via the Barkly Highway from Mt. Isa, to the Barkly Roadhouse, then via the Tablelands Highway to the Calvert Hills Road. Access around the project area is via graded station roads and tracks. An alternative access can be gained via Cape Crawford to the north via the Tablelands highway, or from the east by the Calvert Hills Rd which crosses the border near Wollogorang.

**Figure 2 - Project Location and Access Map**
Global Discovery Pty Ltd originally applied for EL 24841 and it was acquired from them by Canon Investments Pty Ltd (a wholly owned subsidiary of the Canadian company, Buffalo Gold Limited), and subsequently by Murphy Uranium Pty Ltd who are a 100% owned subsidiary of Bondi Mining Limited (Bondi). In December 2008 a Letter of Agreement was signed between Bondi and Japan Oil, Gas and Metals National Corporation (JOGMEC) wherein JOGMEC can earn a 51% undivided interest in the project by funding AUD $3 million in exploration over four years. Bondi is the operator of the exploration program. Tenement details are shown below in Table 1 and sub-block identification is shown in Figure 3. Exploration expenditure for this period totaled $124,383 (includes tenement costs). Refer to the Expenditure Report in Appendix 1 for details.

Table 1: Tenement details

<table>
<thead>
<tr>
<th>Exploration Licence No.</th>
<th>No. Blocks</th>
<th>Area (km²)</th>
<th>Grant Date</th>
<th>Expiry Date</th>
<th>Expenditure Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL 24841</td>
<td>216</td>
<td>706</td>
<td>01/08/2006</td>
<td>31/07/2012</td>
<td>$50,000</td>
</tr>
</tbody>
</table>

Figure 3 - EL 24841 Sub-Block identification Map
4 REGIONAL GEOLOGY

The Murphy Project tenements are situated within the Calvert Hills, Walhallow, 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 (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 1710Ma.
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.

Refer to Figure 5 for the regional stratigraphic sequence.
Figure 5 - Stratigraphy of Murphy Inlier Region
4.1 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 riftting. 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).
5 LOCAL GEOLOGY

Most of EL 24841 is covered by Cainozoic material consisting of recent alluvium, tertiary laterite, sandstone and siltstone, black soils and accreted carbonate outcrops of an undesignated formation (refer to Figure 6 - Detailed Geology). 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 occur of tenement to the south and small outcrop of Westmoreland Conglomerate, which is part of the McArthur Basin, occurs in the northern part of the tenement. Palaeoproterozoic Nicholson Granite and Murphy Metamorphics outcrop to the east but do not outcrop in the tenement.

Figure 6 - Detailed Geology
SUMMARY OF PREVIOUS WORK

A comprehensive review of previous mineral exploration was carried out and an outline is presented here. Important information gained from this review includes the following:

- 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 and exploration was targeted toward roll front 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.

- More detailed radiometric surveys have been carried out. 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.

- 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 Creswell prospect outside the licence and the area is currently under an ERL.

- An airborne GEOTHEM 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 area about EL 24841 is provided in Table 2.
Table 2: Previous tenements over EL 24841

<table>
<thead>
<tr>
<th>Licence</th>
<th>Company</th>
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<tbody>
<tr>
<td>ATP 444</td>
<td>MIM</td>
</tr>
<tr>
<td>ATP 983</td>
<td>Carpentaria Exploration Company</td>
</tr>
<tr>
<td>ATP 3401</td>
<td>ESSO Australia</td>
</tr>
<tr>
<td>EL 122</td>
<td>Noranda Australia</td>
</tr>
<tr>
<td>EL 886 &amp; EL 887</td>
<td>T.W. Cawley and R.A. Weston</td>
</tr>
<tr>
<td>EL 1339</td>
<td>AAR Ltd/Otter Exploration “Coolibah” JV</td>
</tr>
<tr>
<td>EL1427</td>
<td>Mines Administration/Otter Exploration “Bowgan Creek” JV</td>
</tr>
<tr>
<td>EL 1253</td>
<td>Mines Administration/Union Oil JV</td>
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<td>EL1234</td>
<td>Mines Administration/ESSO Australia JV</td>
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<td>EL 2232</td>
<td>Amoco Minerals</td>
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<td>EL 4392 &amp; 4438</td>
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<td>EL 4352</td>
<td>Ashton Mining</td>
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<td>EL 6836</td>
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<tr>
<td>EL 8997, 8998, 9163 &amp; 9660</td>
<td>BHP</td>
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6 PREVIOUS EXPLORATION BY BONDI

6.1 Summary of Work Completed to July 2007

In summary, the work completed up to 31 July 2007 consisted of;

- A comprehensive review and assessment of previous mineral and diamond exploration work.
- A detailed airborne EM and magnetic survey over the eastern side of tenement.
- A mineral assessment and target selection by Douglas Haynes Discovery Pty Ltd comprising:
  - Compilation of public domain geological, geochemical and geophysical data;
  - An interpretation of the geological and structural data for the region;
  - A geophysical and geochemical interpretation of available data, incorporating the airborne EM survey.
  - Selection of potential target areas.

A detailed account and assessment of the 2007 work has been presented in the 2007 Annual Report by D. Hedger. This will not be repeated in this report.

6.2 Summary of Work Completed to July 2008

In the 2008 period, Bondi carried out programmes designed to test some of the targets defined by the assessment of all the previous work to July 2007. Work comprised the following.

- Detailed airborne magnetic and radiometric survey over the entire tenement.
- Geological interpretation of the airborne geophysical results to select targets for follow up exploration.
- Alpha (radon) track etch surveys.
- RAB drilling.
- Downhole radiometrics.
- Hychip survey report

6.3 Summary of Work Completed to July 2009

- An orientation Radon X cup survey was conducted over UC19 and UC24. The anomalous results at UC19 were coincident with the alpha track cup anomaly.
- An orientation Ionic Leach survey, which is a low detection partial digest technique, had strong uranium anomalies 6 to 30 times the threshold. The highest values were 113 and 192 ppb U which are coincident with anomalous gamma log and RAB geochemistry.
- An analysis of the Ionic leach results showed a positive correlation between Uranium, Thorium and all Rare Earth elements.
• Ionic Leach soil sampling on targets UC24 and UC25 did not define any anomalies on EL 24841.

• Four drainages had a BLEG (5kg unseived) and a -40# / 500g sample collected. The BLEG assays showed three samples were anomalous for gold and one of those samples was also anomalous for palladium (BOM04275 assayed 5.8 ppb Au and 0.5 ppm Pd).

• Four RAB holes were drilled to a depth of approx 20 to 60m to test for phosphate mineralisation. The limestone thins to the east and did not contain significant P2O5 values. Holes MPRB002 and 004 both intersected quartz sandstone (probably Westmoreland) and little or no limestone.

• RC / diamond drill hole MURD002 at target UC19, intersected two gabbroic intrusives with highly silicified Westmoreland Conglomerate quartz sandstones between them. The lower gabbro has zones of carbonate veining, and minor brecciation with associated strong, ‘brick red’ hematite alteration. The alteration is also associated with uranium and copper mineralisation and is magnetite destructive.

• MURD002 intersected significant uranium and copper mineralisation in the lower gabbro. The mineralised interval comprised 99m at 1260 ppm Cu and 14.2ppm U between 405 to 504m, including 2m at 1% Cu and 85ppm U from 447 to 449 m.

6.4 Summary of Work Completed to July 2010

• A ground magnetics survey, comprising 225 line kilometres at 25m and 50m line spacing was completed at UC19.

• A re-interpretation of the regional geology was then carried out by Dr Douglas Haynes and new interpretation was conducted by Dr John Coggon. This work also included 3D inversion modeling of the UC19 and Camp target areas.

• Re-interpretation by Dr Haynes defined 2 new unconformity uranium target areas (UC25 and UC26), in addition to locating 7 base-metal target areas, and also redefined the position and shape of older targets area.

• An interpretation of the magnetic character of the covered rocks was carried by Dr John Coggon of Mines Geophysical Services.

• Two inversion models were made for UC19 area; a regional model, with 180m cells covering a 18.7km EW x 15.1km NS block around the main target area and detailed model with 50m cells covering a 6.6km EW x 3.2km NS block over the main target.

• Modeling of the detailed airborne magnetics at the Camp target area was carried out using two approaches; a slab modeling and 3D smooth susceptibility isosurafces.

• A regional RC / diamond drill hole (MURD013) was completed in September 2009 to a depth of 400.4m.

• An RC / diamond drill program comprising two drill holes for a total of 662.3m at target UC19 was completed in December 2009.
7.1 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 surveys. A portion of the Murphy West survey area (130 sq km out of 600 sq km) covered the southern portion of EL 24841 and UC19 AEM survey area was completely within EL 24841 (Figure 7). The data from the Murphy West Aerial EM survey was included as Appendix 2 in the 2010 annual statutory exploration activity report for EL’s 26138, 26139 & 26140, the data from the UC19 AEM survey is presented in Appendix 2.

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. The conductivity map and a quasi-section of the conductivity in the Murphy West area are illustrated in Figure 8 and Figure 9 respectively.

The UC19 area has a strongly resistive zone in the central – east part, which corresponds to silicified Westmoreland sandstone, and like UC17 and Murphy West has a strong near surface conductor in the south and west, corresponding to Cambrian basalt. Some subtle conductors near the main NW trending fault were located, which require more modelling (Figure 10).

The interpretation of the GEOTEM data for the complete AEM survey area was completed by Dr JH Coggon in October 2010 and a final version for the Murphy West area was completed in March 2011 both these reports are attached as Appendix 3. Significant anomalies identified will be followed-up using ground electro-magnetics (EM). The follow-up by ground EM was deferred until late 2011 due to delays in the completion of the AEM survey and interpretation.
Figure 7 - Location of Aerial EM Survey

Figure 8 - Image of conductivity from 0 - 100m as defined by the AEM
Figure 9 - GeoTEM survey quasi-section showing conductivity at 605,250mE
Figure 10 - Three dimensional image of the UC19 target with conductivity from the AEM survey
8 CONCLUSIONS

Exploration in during the reporting period comprised an Airborne Electo-Magnetic survey (AEM) comprising a total of 2,355 line kilometres covering the Murphy West target area (1,478 line km), the UC19 area (624 line km) and the UC 17 survey (253 line km).

The interpretation of the AEM data by Coggon concluded;
- There is a strong, near surface conductor over the Murphy West area, attributed to the black soil and weathered limestone. This conductive layer reduced survey penetration to approximately 300m.
- The Murphy inlier basement in the Murphy West area, is resistive with no strong conductors being identified.
- A weakly conductive layer within the Cambrian limestone and Westmoreland sandstone was identified in the Murphy West area.

New NW trending faults with conductive zones were identified at Murphy West from the AEM. These zones have the potential to host uranium mineralisation.

9 RECOMMENDATIONS

It is recommended that ground EM surveys are carried out over subtle conductors to help define targets for drill testing, and zones of possible alteration on the UC19 target be modelled and drill tested. The ground EM survey was originally planned for October 2010, however, due to the delay in the data processing this was deferred. It is also recommended that part of the tenement be relinquished, especially along the south-western edge where the magnetics indicate, and/or drilling has confirmed, the presents of Nicholson Granite.

10 FUTURE WORK

Future work will involve;
- Design ground EM survey over conductive targets near prospective faults
- Assuming the AEM interpretation is favourable, conduct ground EM survey
- Re-evaluation of the geological models and targeting strategy for the Murphy project
- Soil sampling over untested target areas defined by aeromagnetic and airborne EM survey interpretations
- Follow-up RC / diamond drilling of significant EM conductors defined by ground EM survey and soil geochemical anomalies, if warranted.
11 REFERENCES


**Wall, V.J., 2006:** ‘Unconformity-related uranium systems: Downunder and over the top’ ,Taylor Wall & Associates, AESC2006 conference, Melbourne, Australia 2006
Appendix 1: Expenditure Statement (Presented under separate cover)
Appendix 2: Airborne EM Survey Data (Supplied as separate CD)