EL 24694,
2010 ANNUAL REPORT
MURPHY PROJECT, NT

David Esser
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1 EXECUTIVE SUMMARY

This annual report describes the work carried out in EL 24694 up to the 27/2/2010. EL 24694 is located over the western end of the Murphy Inlier, NT and is held by Murphy Uranium Pty Ltd; a wholly owned subsidiary of Bondi Mining Ltd. This exploration license was acquired because the area is believed to have accessible strike lengths of the unconformity between the early Proterozoic Murphy Inlier and the middle Proterozoic McArthur Basin, in particular the Westmoreland Conglomerate. Concealed southern extensions of the Emu Fault Zone are thought to transect the area. Consequently, EL 24694 is considered to have the potential to host unconformity type uranium deposits, similar to those located in the Alligator Rivers Uranium Field at the northern end of the McArthur Basin.

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 and regional RAB drilling targeting phosphate deposits in the covering Georgina Basin cover.

Exploration in the 2009-2010 reporting period involved the acquisition of detailed airborne magnetic and radiometric data (at 100m spaced lines), interpretation of these data and target generation, and the drilling of 3 RC holes for 174 m. Drilling in all 3 holes intersected Nicholson Granite under recent cover but failed to locate U (± Cu) mineralisation with all sampling returning values well below what would be considered anomalous or elevated in this region. It is recommended that future exploration be focused off the buried granite on recently defined targets further to the north.

2 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 deposits about the Murphy Inlier in the Northern Territory. The Murphy Project currently includes ELs 24694, 24841, 25708, 25709, 25710, 26138, 26139 and 26140. Refer to Figure 1 for the location map.

This annual report covers all the exploration work carried out within EL 24694 up to 27/2/2010. The work completed during this period was directed at determining whether the covered region has the potential to host economic uranium mineralisation and the selection of target areas. Exploration activities involved an extensive review of previous exploration, an airborne EM and magnetic survey and detailed mineral assessment aimed at selecting uranium targets. Results of this work highlighted several uranium and possible copper-nickel targets that will be followed-up with ground work in the next exploration period.
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 1. Tenement Location Map

4 TENURE DETAILS

EL 24694 was applied for by Global Discovery Pty Ltd and was acquired from them by Canon Investments Pty Ltd (a wholly owned subsidiary of the Canadian company, 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. Details of the current tenement are given in Table 1 and the remaining the 270 sub-blocks are shown in Figure 2.

### 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>
</tr>
</thead>
<tbody>
<tr>
<td>EL 24694</td>
<td>270</td>
<td>28/2/2006</td>
<td>27/2/2011</td>
<td>$130000</td>
</tr>
</tbody>
</table>

Exploration expenditure for this period totaled $320,416 and a breakdown is provided in the Expenditure Report in Appendix 1.

![Figure 2. Tenement Block/Sub-Block Details](image)

### 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 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.
Figure 4. 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 Figure 5). 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 Palaeoproterozoic Murphy Metamorphics are mapped in the southern eastern tenement block.

Figure 5. Detailed Geology.
7 PREVIOUS WORK

7.1 Historic Exploration

A comprehensive review of previous mineral exploration was completed and an outline an appendix in previous annual report. 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:

- a 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>
</tr>
</thead>
<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>
</tr>
<tr>
<td>EL1234</td>
<td>Mines Administration/ESSO Australia JV</td>
</tr>
<tr>
<td>EL 2232</td>
<td>Amoco Minerals</td>
</tr>
<tr>
<td>EL 4392 &amp; 4438</td>
<td>Stockdale</td>
</tr>
<tr>
<td>EL 4352</td>
<td>Ashton Mining</td>
</tr>
<tr>
<td>EL 6836</td>
<td>Carpentaria Exploration Company</td>
</tr>
<tr>
<td>EL 7222 &amp; 7223</td>
<td>MIM</td>
</tr>
<tr>
<td>EL 8997, 8998, 9163 &amp; 9660</td>
<td>BHP</td>
</tr>
</tbody>
</table>

7.2 Previous Exploration by Bondi

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. Although no further work is planned, this program is not considered to be 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).

8 EXPLORATION PROGRAM

8.1 Airborne Magnetic and Radiometric Survey

A detailed airborne magnetic and radiometric survey, comprising approximately 69,000 line kilometres, was flown over the entire area of EL 26138, 26139 and 26140 at 100m line spacing and a 50m flying height. The survey was flown on north - south lines, with tie lines every 1 km. The airborne survey also covered EL 25708 to the north and the eastern portion of EL 24694 to the east. Refer to Figure 6 and Appendix 2 for a map of the airborne survey coverage on EL 24694 and the survey specification report by UTS respectively. The aim of the airborne survey was to obtain high quality, detailed magnetic data which can be used to interpret the stratigraphy, structure and alteration of the Proterozoic stratigraphy which have the potential to host uranium mineralisation. The interpretation will be used to generate targets and the most highly ranked will be drill tested. Refer to Figure 7 and Figure 8 for maps showing the magnetic image (Reduced to the pole, first vertical derivative with colour TMI drape) and the radiometric image (uranium counts per second) respectively, covering EL 24694.

Figure 6. Outline of Bondi’s 2009 magnetic survey.
Figure 7. Airborne magnetics.

Figure 8. Airborne radiometric, uranium channel.
8.2 Geophysical Interpretation by John Coggon

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). Refer to Appendix 3 for Coggon’s full report, which covers the whole Murphy project area.

The interpretation attempted to define stratigraphic units with different magnetic susceptibility, major and minor faults, and the unconformity between the mid Proterozoic Westmoreland Conglomerate and the Palaeo Proterozoic Murphy inlier meta-sediments. The Cambrian Antrim Plateau basalts, which cover most of EL’s 26138, 26139 and 26140, are strongly magnetic and make interpretation of the Proterozoic basement difficult, particularly further west as the volcanic pile and Cambrian limestone sequence becomes thicker. Coggon noted linear features in the basalt which he interpreted to be lava channels, as well as steeply dipping intrusive feeder dykes.
Coggon also outlined three targets with potential for uranium - copper mineralisation, and one nickel target. His targeting methodology was based on a paper by *Taylor Wall Associates* (Wall, 2006). The target positions described by the above paper includes; the base of the mafic Seigal Volcanics, within the oxidised sandstones of the Westmoreland conglomerate, in the vicinity of major faults; and also at the unconformity between the Westmoreland Conglomerate and the underlying reduced meta-sediments of the Murphy inlier. Refer to Figure 9 for the interpretive map with targets by Coggon and Appendix 3 for target area descriptions.

![Image of geological map with target areas](image)

**Figure 9.** John Coggon’s interpretive geological map with target areas.

### 8.3 Geophysical Interpretation by Douglas Haynes

Douglas Haynes also completed an interpretation on 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. Refer to Figure 10 for a map of Haynes’ interpretation and Table 3 for EL24694 target descriptions. The Haynes’ interpretation report, covers the whole Murphy and is attached in Appendix 4 and his report respectively.
Figure 10. Doug Haynes’ interpretive geological map with target areas.
Table 3. Douglas Haynes’ EL24694 target area descriptions.

<table>
<thead>
<tr>
<th>Target Area</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>UC 15</td>
<td>Unconformity U</td>
<td>Good structural setting, moderate redox and unconformity setting, nearby apparent mt-depln in mafic sills in the Westmoreland, and with EM anomaly near S end of Emu Fault system. SE contact of mafic sills of interest.</td>
</tr>
<tr>
<td>UC 25</td>
<td>Nabarlek style</td>
<td>Nabarlek style if Westmoreland (or older oxidised c.g. siliciclastic cover) exists above the mafic sill complex here. Best part over apparent mt-depleted zones in the sill complex. U/Th anomaly here.</td>
</tr>
<tr>
<td>UC 24</td>
<td>Vein array U</td>
<td>Vein-style U in Nicholson granite, but interpretation is very equivocal. This play is empirical, because of encouraging surface U anomaly and nearby Hoistem EM anomaly.</td>
</tr>
<tr>
<td>UC 36</td>
<td>Unconformity U</td>
<td>Of great interest if Westmoreland on Murphy Metamorphics near here. Unconformity position uncertain, but very encouraging redox setting. Encouraging U/Th anomaly, and alteration indications.</td>
</tr>
<tr>
<td>UC 37</td>
<td>Unconformity U</td>
<td>Of great interest if Westmoreland on Murphy Metamorphics near here. Unconformity position close but uncertain, and very encouraging redox setting. Encouraging U/Th anomaly, and alteration indications.</td>
</tr>
<tr>
<td>UC 38</td>
<td>Unconformity U</td>
<td>Of great interest if Westmoreland on Murphy Metamorphics near here. Unconformity position close but uncertain, and very encouraging redox setting. Encouraging U/Th anomaly, and alteration indications.</td>
</tr>
<tr>
<td>UC 39</td>
<td>Unconformity U</td>
<td>Of great interest if Westmoreland on Murphy Metamorphics near here. On unconformity, with excellent gravity signature, and very encouraging redox setting. Discrete U/Th anomaly, and alteration indications.</td>
</tr>
<tr>
<td>UC 40</td>
<td>Unconformity U</td>
<td>Of interest if Westmoreland originally on Murphy Metamorphics near here. Encouraging encouraging redox setting. Discrete U/Th anomaly, and mt-depleted alteration indications in NW-trending faults or joint sets.</td>
</tr>
<tr>
<td>UC 37</td>
<td>Vein array U</td>
<td>Of interest for vein-style U in Nicholson granite, but interpretation is very equivocal. This play is empirical, because of encouraging surface U anomaly, apparent mt-depletion, and large granite body nearby</td>
</tr>
</tbody>
</table>

Both Coggon and Haynes selected the northern target (CDP5) on the NW trending fault, and eastern target (CDP1) in their interpretations. Coggon selected CDP1 as a good uranium target due to the interpreted unconformity and favourable stratigraphy and the northern target as a nickel target as it looks like a mafic feeder dyke with similarities to the Norilsk deposit in NW Russia. Haynes selected the NW trending target (CDP5) as a uranium – copper target hosted by a folded mafic sill on the edge of a buried granite and CDP01 as a on the Westmoreland – Murphy inlier unconformity beside a large N- S fault and edge of a large granite intrusion.
8.4 RC and Diamond Drilling program

In August three relatively shallow RC holes, MURD008 to MURD010 were drilled for a total of 174m to test the target UC25. 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. Refer to Table 4 for the drilling statistics, Figure 11 for a map of the drill collars and Figures 2 to 4 for drill sections of MURD008 to MURD010. Detailed lithology logs and assay results are attached in Appendix 5 and Appendix 6, respectively.

Table 4. Drilling statistics for August 2009

<table>
<thead>
<tr>
<th>DRILL HOLE</th>
<th>TARGET</th>
<th>EASTING</th>
<th>NORTHING</th>
<th>DIP</th>
<th>AZIMUTH (t)</th>
<th>DEPTH (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MURD008</td>
<td>UC25</td>
<td>667834mE</td>
<td>8022136mN</td>
<td>-60</td>
<td>255</td>
<td>72</td>
</tr>
<tr>
<td>MURD009</td>
<td>UC25</td>
<td>668701mE</td>
<td>8020274mN</td>
<td>-60</td>
<td>230</td>
<td>48</td>
</tr>
<tr>
<td>MURD010</td>
<td>UC25</td>
<td>668797mE</td>
<td>8020447mN</td>
<td>-60</td>
<td>230</td>
<td>54</td>
</tr>
<tr>
<td>TOTAL:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>174</td>
</tr>
</tbody>
</table>
8.4.1 UC 25 HOLE SUMMARIES

**MURD008** was planned to target a uranium surface geochemical anomaly, defined by soils, coincident with an EM conductor and an interpreted mafic dyke intruded into either Westmoreland Conglomerate, or graphitic schists of the Murphy Inlier. The hole intersected ferruginous (ferricrete) and partly silicified (silcrete) regolith to a depth of 19m, then highly weathered granite to 33m, then oxidised, hematitic granite to a total depth of 72m. It is likely that the ferricrete to silcrete is derived from weathered granite. Note: The magnetic anomaly, assumed to mafic dyke, was intersected in MURD008 and the magnetic anomaly has not been explained by the drilling.

**MURD009** and **MURD010** were planned along a NE – SW traverse, to target a uranium surface geochemical anomaly (**Ionic Leach** soils) coincident with a NW trending fault, NW to east-west trending mafic dykes, hosted within either Westmoreland Conglomerate sandstones, or graphitic schists of the Murphy Inlier. MURD009 intersected highly weathered granite to 35m, then red to
white hematitic granite to a total depth of 48m. MURD010 intersected weathered granite to 12m, then red, to white oxidised granite to 54m.

Figure 12. Drill section of MURD008 with Cu, U and gamma log values (eU308).
Figure 13. Drill section of MURD009 with Cu, U and gamma log values (eU308).
Figure 14. Drill section of MURD010 with Cu, U and gamma log values (eU308).
8.4.2 SAMPLING AND ASSAYING

Two metre composite samples (spear) were collected every 10m in the RC. The samples were dispatched to ALS laboratories to be analysed by four acid digest / ICPAES finish for 33 elements including uranium and gold by aqua regia digest. Uranium was also analysed by ICPMS which has a lower detection limit.

A total of 269 samples from all the Phase 1 drilling on UC19, UC17 and UC25 targets, including duplicates, standards and blanks were submitted to ALS in Mt Isa, then road freighted to Townville where they were dried, crushed and pulverised (80% less than 75 micron). The pulps were then air freighted to Brisbane where they are being analysed by ‘total’ or four acid digest with an ICP AES finish (method ME - ICP61) for a suite of 33 elements. Using the same digest uranium will be analysed by ICP MS (method ME - MS62) with a detection limit of 10 ppb U. Preliminary results were elevated in Cu so it was decided to also analyse the samples for gold by 30g fire assay, method Au-AA25 with a 0.01 ppm detection limit.

No significant uranium mineralisation was detected in drill holes MURD008 to MURD010, see Appendix 6 for assay results.

8.4.3 GAMMA PROBE SURVEY

Gamma probe surveys were completed inside the rods for holes MURD009 and MURD010. A open hole gamma probe survey on MURD008 failed due to a an in-hole blockage near the surface. Gamma logs are attached in Appendix 7.

9 CONCLUSIONS

Exploration in 2009 comprised the drilling of 3 RC holes into an ionic leach anomaly located in one of the early generated geological and geophysical target areas; UC25. The drilling intersected, and was terminated, in Nicholson Granite under recent cover. Assay results and gamma logs failed to indentify U (±Cu) mineralisation and values were considered below elevated and anomalous levels intersected elsewhere in the Murphy project.

Exploration also included a 69,000 line kilometre airborne magnetic and radiometric survey which covering part of EL 24694. The survey was flown at 100m spaced north - south lines at a height of 50m. Interpretation of this data highlighted some interesting targets areas, along north north east trending structures in the northern part of the tenement. These areas are yet to be follow-up.
10 RECOMMENDATIONS

It is recommended that exploration move away for the interpreted buried Nicholson Granite and focus on the new geophysical targets areas along the northern edge of the tenement.

11 FUTURE WORK

Future work will involve partial leach soil sampling over structures within the newly defined target area and off the inferred buried Nicholson Granite. Depending on the soil results, follow-up will involve RC drilling with possible diamond tails.

12 REFERENCES


