COLLABORATIVE DRILLING REPORT – Round 2

EL’s 24841, 25710 & 26140

MURPHY PROJECT – NT

2010

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<td>29</td>
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<td>2</td>
<td>Core photography for MURD001, 002, 004, 006 and 007</td>
<td>29</td>
</tr>
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<td>RC / Diamond Drilling Gamma Logs – zip file attached</td>
<td>29</td>
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<td>4</td>
<td>Magnetic susceptibility readings</td>
<td>29</td>
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<tr>
<td>5</td>
<td>RC / Diamond Drilling Assay Results – zip file attached</td>
<td>29</td>
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<td>6</td>
<td>Invoice for Round 1 Collaborative Drilling – zip file attached</td>
<td>29</td>
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</tbody>
</table>
EXECUTIVE SUMMARY

This report describes the Murphy Project tenement history, exploration rationale, commodities sought, regional geology, exploration conducted, results and conclusions.

Global Discovery Pty Ltd originally applied for EL’s 24694 and 24841, and they were granted in February and August 2006. Both tenements were then acquired from them by Canon Investments Pty Ltd (a wholly owned subsidiary of the Canadian company, Buffalo Gold Limited). Canon Investments Pty Ltd originally applied for EL’s 25708, 25709 and 25710, and they were granted in August 2007. EL’s 24694, 24841, 25708, 25709 and 25710 were subsequently acquired by Murphy Uranium Pty Ltd, which is a 100% owned subsidiary of Bondi Mining Limited (Bondi). EL’s 26138, 26139 and 26140 were applied for by Canon Investments Pty Ltd and when they were granted in December 2007 they were transferred to Murphy Uranium Pty Ltd. This report is concerned with tenements EL 24841, 25710 and 26140.

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.

Bondi Mining’s objective is to explore for and discover unconformity hosted uranium mineralisation, (Jabiluka style) and sandstone hosted uranium mineralisation (Westmoreland style) under exploration, within the highly prospective and under-explored, Proterozoic age, Southern McArthur Basin, adjacent to the Murphy Inlier. The exploration rationale used by Bondi is to acquire high quality airborne magnetic and radiometric data (100m line spacing), complete a detailed interpretation, define and rank likely lithological and structural targets, and then test those targets with a combination of alpha track etch cups (which detect radon gas), surface soil geochemistry, reconnaissance RAB / aircore drilling and geochemical sampling, down hole gamma surveys and finally RC/ diamond drilling of the most favourable anomalies. While uranium is the focus of our exploration we realise there is good potential for other commodities on the Murphy project including Cu, Ni, Au and phosphate mineralisation, and analyse for them as well.

An RC / diamond drill program comprising four drill holes for a total of 1501.5m on targets defined from the detailed airborne magnetic and radiometric survey, was completed in September to October 2009. The drilling aimed to test the following:

- The depth of the Cainozoic and Cambrian cover sequences
- Whether the Murphy Inlier sediments are favourable for hosting uranium mineralisation
- If alteration or uranium mineralisation occurs at the four targets selected, CDP1 to 4.

**MURD011**, is a vertical hole drilled to 435.6m which intersected; 6m of black soil, massive to laminated Cambrian limestone to 203m, fine grained, laminated, hematitic, Westmoreland Conglomerate, sandstone to 401m, and then hematitic, fine grained, weakly metamorphosed, sandstone and siltstone of the Murphy Inlier to 435.6m.

**MURD012**, is a vertical hole drilled to 346.1m which intersected 2m of black soil, clay, sandstone and minor chert to 19m, massive to laminated Cambrian limestone with chert nodules to 124m, amygdaloidal basalt to 158.9m (Cambrian APB), fine grained, hematitic, Westmoreland Conglomerate, sandstone to 300.3m, strongly hematitic, partly silicified, mudstone, siltstone and sandstone to 312.4m and then weakly metamorphosed, grey to black, laminated to banded siltstone to shale with a band of silification and
strong carbonate veining to 346.1m. This rock type, within the Murphy Inlier is an excellent host for uranium mineralisation.

**MURD013**, is a vertical hole drilled to 400m, which intersected 3m of black soil, massive to laminated Cambrian limestone to 40m, amygdaloidal basalt to 93m (Cambrian APB), fine grained, hematitic, sandstone and partially silicified and sericite altered cobble conglomerate, of the Westmoreland Conglomerate unit, to 293m, and then chloritic dolerite with variable hematite chlorite alteration to 400m. The mafic intrusive could represent a feeder dyke to the Cambrian Mafic Volcanics, or a sill at the base of the Westmoreland Conglomerate sequence.

**MURD014**, is a vertical hole drilled to 323.8m, which intersected 2m of black soil, clay, coarse sandstone and cobble conglomerate to 16m, massive to laminated, vuggy Cambrian limestone to 114m brecciated to vuggy, crystalline limestone with large cavities to 163m, massive to laminated mudstone to 173.15m, pebble breccia with clasts of limestone, mudstone and basalt to 181.24m, and then amygadaloidal Antrim Plateau basalt to 323.8m. This hole was terminated when the rod string sheared off at approximately 236m, leaving 81m of NQ rods and a 6m core barrel down the hole.

Drill holes MURD011 and MURD013 were gamma logged to the bottom of hole. MURD012 was gamma logged to 120m (blockage) and MURD014 was not gamma logged as it did not reach the target depth.

A total of 234 RC samples and half NQ core samples were submitted in two batches for analysis by four acid digest / ICPAES finish for 33 elements at ALS Brisbane in October and November 2009. The samples were also analysed for gold by aqua regia digest. The best results included:

<table>
<thead>
<tr>
<th>HOLE NUMBER</th>
<th>FROM (m)</th>
<th>TO (m)</th>
<th>U ppm</th>
<th>U₃O₈ ppm</th>
<th>CU ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>MURD012</td>
<td>301</td>
<td>302</td>
<td>37.5</td>
<td>44.3</td>
<td>10</td>
</tr>
<tr>
<td>MURD011</td>
<td>319</td>
<td>320</td>
<td>19.1</td>
<td>22.5</td>
<td>1</td>
</tr>
<tr>
<td>MURD013</td>
<td>48</td>
<td>50</td>
<td>1.5</td>
<td>1.8</td>
<td>209</td>
</tr>
<tr>
<td>MURD012</td>
<td>330</td>
<td>331</td>
<td>4.5</td>
<td>5.3</td>
<td>169</td>
</tr>
</tbody>
</table>
1 INTRODUCTION

Bondi Mining Limited, through its wholly owned subsidiary Murphy Uranium Pty Ltd, is the holder of EL’s 24841, 25710 and 26140. The licence’s are 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 ELs 24694, 24841, 25708, 25709, 25710, 26138, 26139 and 26140 and EL 27379. Refer to Figure 1 for the location map.

Figure 1- Location Map showing Murphy Project

This report describes the drilling program conducted on four regional targets defined by interpretations of the 2009 airborne magnetic and radiometric survey, partially funded by a $100,000 grant from the NTGS, as part of the ‘Bringing Forward Discovery’ initiative.
The Murphy Project is located approximately 130km west of the NT-QLD border and 170km south east of the McArthur River mine in eastern NT, see Figure 2 - Tenement Location Map for the location map. 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, 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.
3 TENURE

Tenement details for the eastern EL’s, where the Round 1 Collaborative Drilling program was conducted are shown below in Table 1: Tenement details. Refer to Figure 1- Location Map showing Murphy Project for the EL location.

Table 1: Tenement details

<table>
<thead>
<tr>
<th>Tenement No.</th>
<th>Tenement Name</th>
<th>Area sub blocks</th>
<th>Area Sq km</th>
<th>Grant Date</th>
<th>Expiry Date</th>
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<tr>
<td>24694</td>
<td>Coanjula</td>
<td>270</td>
<td>883</td>
<td>28/02/2006</td>
<td>27/02/2011</td>
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<tr>
<td>24841</td>
<td>Puzzle</td>
<td>276</td>
<td>903</td>
<td>1/08/2006</td>
<td>31/07/2011</td>
</tr>
<tr>
<td>25708</td>
<td>Spear Ck</td>
<td>72</td>
<td>235</td>
<td>29/08/2007</td>
<td>28/09/2012</td>
</tr>
<tr>
<td>25709</td>
<td>Ballyaira Ck</td>
<td>190</td>
<td>621</td>
<td>29/08/2007</td>
<td>28/09/2012</td>
</tr>
<tr>
<td>26138</td>
<td>Bullock Ck</td>
<td>436</td>
<td>1426</td>
<td>20/12/2007</td>
<td>19/12/2012</td>
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<td>26139</td>
<td>Buffalo Ck</td>
<td>425</td>
<td>1390</td>
<td>20/12/2007</td>
<td>19/12/2012</td>
</tr>
<tr>
<td>26140</td>
<td>Blue bush bore</td>
<td>407</td>
<td>1331</td>
<td>20/12/2007</td>
<td>19/12/2012</td>
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<tr>
<td>27379</td>
<td>Cresswell Homestead</td>
<td>168</td>
<td>549</td>
<td>13/01/2010</td>
<td>12/01/2010</td>
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</table>
4 REGIONAL GEOLOGY

The Murphy Project area is located on the western end of the Murphy Inlier. The inlier is referred to as the Murphy Tectonic Ridge and represents a belt of lower Proterozoic basement that separates the middle Proterozoic McArthur Basin to the north and the middle Proterozoic Lawn Hill Platform - South Nicholson Basin to the south. Refer to Figure 3. The oldest rocks in the region are the lower Proterozoic Murphy Metamorphics, which form the basal unit of the Murphy Inlier, and consist of isoclinally folded greenschist facies metasediments; typically quartz-feldspar-mica schists and gneiss with minor graphitic units. The Murphy Metamorphics form the core of the Murphy Tectonic Ridge and only outcrop in the NT portion of the inlier. The Cliffdale volcanics unconformably overlay the Murphy Metamorphics and are made up of a series of felsic volcanic and volcaniclastic rocks. The Cliffdale volcanics are only found at the eastern end of the inlier. Both the metamorphics and volcanics are intruded by granites and adamellites of the Nicholson Granite Complex which constitutes the majority of the rocks found in the inlier.

The northern margin of the Murphy Inlier is unconformably overlain by the Westmoreland Conglomerate, which is the oldest unit in the middle Proterozoic Tawallah Group, and marks the base of the southern portion of the McArthur Basin. The Westmoreland Conglomerate is made up of four sub-units;

(i) A basal volcanic derived (sourced from the underlying Cliffdale volcanics) conglomerate-breccia that grades up into a pebbly quartz sandstone;

(ii) An upward fining, coarse to medium grained ferruginous sandstone;

(iii) A coarse polymictic conglomerate and minor pebbly sandstone, which can be reverse faulted directly on the Cliffdale Volcanics; and

(iv) A porous, crossbedded, coarse grained quartz sandstone, with minor conglomerate bands and laminated tuffaceous siltstone in the lower part.

The Seigal Volcanics lie conformably on top of the Westmoreland Conglomerate and consist of massive and amygdaloidal tholeiitic basaltic lavas with minor interbedded siltstones and sandstones. A thin shale bed is commonly found at the base of the Seigal Volcanics and marks the hiatus between deposition of the Westmoreland Conglomerate and the start of volcanism. The middle to upper Tawallah Group consists of interbedded sediments and volcanics. Sediments and volcanics of the McArthur Group lie unconformably over the Tawallah Group.

The southern margin of the Murphy Inlier is unconformably overlain by several belts of Lawn Hill Platform in addition to sediments of the south Nicholson Basin, which unconformably covers the Lawn Hill Platform successions. A thin unit of coarse sandstone and conglomerate, the Wire Creek Sandstone, marks the base of the Lawn Hill Platform in places and is conformably overlain by the Peters Creek Volcanics; a massive sequence of alternating basalt, rhyolite and rhyodacites with
minor sediments. Both units can be found lying unconformably on the Murphy Inlier and are considered equivalents to the Tawallah Group in the McArthur basin. The Peters Creek Volcanics are unconformably covered by the Fickling Group, a sequence of conglomerates, sandstones, siltstones and dolomites. The Fickling Group belongs to the Lawn Hill Platform and in the area of the Murphy Inlier is unconformably covered by shallow marine sediments of the South Nicholson Basin referred to as the South Nicholson Group. This group is also found lying unconformably over the western end of the Murphy Inlier or over the Benmara Beds, which can lie unconformably between the South Nicholson Group and the Murphy Metamorphics. The Benmara Beds are also a middle Proterozoic Tawallah Group equivalent and consist of a mixed rhyolite, trachyte, sandstone and conglomerate package.

Phanerozoic cover consists of mostly early to middle Cambrian sediments and basalts, and Cainozoic sediments. Outcropping of Proterozoic rocks in the project area suggests that within EL’s 25708, 25709 and 25710 the Phanerozoic cover is not thick, although the airborne magnetics suggest that the Cambrian Georgina Basin limestone and Antrim Plateau basalt become thicker to the west.

Structurally, the region is cut by a dominantly NW trending series of faults and joints paralleling the Calvert fault. Possible NNW trending extensions of the Emu Fault also pass through the west side of the region under the Phanerozoic cover. A second set of NE trending faults can also be seen paralleling the structural trend of the Murphy Tectonic Ridge. Both sets of faults commonly
consist of high angle normal and reverse faults whose intersection appears to form structural blocks displaying horizontal movement and/or tilting. Lateral movement is also common in the NW trending structures. Numerous mafic, commonly doleritic, dykes parallel the faulting and are thought to be cogenetic with the mid Proterozoic volcanics of the Tawallah Group.

Small stratabound disseminated lead – zinc ± copper occurrences, associated with carbonaceous units are found within both the McArthur and Lawn Hill Platform – South Nicholson Basins. Copper mineralisation occurs as unconformity related and breccia pipe occurrences in the region. The latter deposit type forms sub-economic deposits in the Redbank area (Refer to Figure 3) which were mined on a small scale in the post war era. Minor tin occurrences have also been found around the Nicholson Granite Complex.

The region is best known for the uranium deposits at Westmoreland (Refer to Figure 3); notably the Redtree deposit (12,600t U3O8), the Junnagunna deposit (5,300t U3O8) and the Huarabagoo deposit (3,000t U3O8). Mineralisation in these deposits occurs as sandstone hosted uranium within the upper sandstone unit of the Westmoreland Conglomerate, directly below the contact with the Seigal Volcanics, and shows a strong association with fault hosted mafic dykes and sills. Minor mineralisation is also found within other units of the Westmoreland Conglomerate and in shear zones at the unconformity between the Cliffdale Volcanics and Westmoreland Conglomerate. Clusters of minor uranium occurrences area can be found to the west and east of the Westmoreland area, along the northern margin of the Westmoreland Conglomerate. To date only minor unconformity type uranium mineralisation has been found at the unconformity between the Murphy Metamorphics and the Westmoreland Conglomerate.
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 a 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 historic ATPs and ELs covering part of the Murphy project is provided in Table 2.
<table>
<thead>
<tr>
<th>Licence</th>
<th>Company</th>
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<tbody>
<tr>
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<tr>
<td>ATP 983</td>
<td>Carpentaria Exploration Company</td>
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<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>
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<td>EL1427</td>
<td>Mines Administration/Otter Exploration “Bowgan Creek” JV</td>
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<tr>
<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>
<td>EL 2232</td>
<td>Amoco Minerals</td>
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<tr>
<td>EL 4392 &amp; 4438</td>
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<td>Ashton Mining</td>
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<tr>
<td>EL 6836</td>
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<tr>
<td>EL 7222 &amp; 7223</td>
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<tr>
<td>EL 8997, 8998, 9163 &amp; 9660</td>
<td>BHP</td>
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6 \hspace{1cm} \textbf{PREVIOUS EXPLORATION BY BONDI AND BUFFALO GOLD:}

6.1 \hspace{1cm} \textbf{Summary of Work Completed to December 2007}

Buffalo Gold Ltd acquired the Murphy tenements in 2006 and conducted the following exploration:

- A comprehensive review and assessment of previous mineral and diamond exploration work
- An airborne EM and magnetic survey
- 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

After Bondi Mining Ltd acquired the Murphy Project from Buffalo Gold in 2007 the following exploration was conducted:

- Ground and helicopter reconnaissance
- Alpha track etch surveys (UC6, 7, 8, 14, 16, 19, 22)
- Airborne magnetic and radiometric survey covering EL 24841, 25709 and part of EL 25710 (October 2007)

A detailed account and assessment of the 2007 work has been presented in the 2007 Annual Report by D. Hedger.

6.2 \hspace{1cm} \textbf{Summary of Work Completed to December 2008}

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

- Alpha Track Etch surveys (regional surveys, UC15, 17, 23 and extensions)
- RAB Drilling for uranium (163 holes for 8446m)
- RAB Drilling for phosphate (26 holes for 1214m)
- Down hole gamma log surveys
- ‘Hychip’ Pima Survey report
- Ionic leach soil sampling (UC17, 19, 24, 25, 26)

6.3 \hspace{1cm} \textbf{Summary of Work Completed to September 2009}

In the 2009 period, Bondi conducted the following exploration to test anomalies and geological targets defined during 2008:

- Ionic leach soil sampling (UC17, 24, 25 infill & extensions)
- Airborne magnetic and radiometric survey comprising 69,000 line kilometres covering EL’s 26138, 26139, 26140, 25708, the western part of EL 25710 and the eastern part of EL 24694 (April - May 2009)
- Geophysical interpretations by John Coggon (Geophysicist) and Douglas Haynes (geologist). This included target areas for uranium, copper and nickel mineralisation.
- Ground reconnaissance of airborne targets defined by Coggon and Haynes and modified by the Murphy Joint Venture (Bondi Mining Ltd and JOGMEC)
7 COLLABORATIVE DRILLING PROGRAM

7.1 Round 1 Collaborative Drilling Grant:

An RC / diamond drill program comprising four drill holes for a total of 1160.5m at target UC19 was completed in June – July 2009. The drilling was designed to test strong geochemical soil anomalies (ionic leach soils), geophysical anomalies (alpha track etch counts), gamma log and geochemical anomalies from the RAB / Air core drilling and also conceptual geology. Refer to Figure 4 for the drill hole locations and report by Esser (2009) for more details.

Figure 4 - Location of UC 19 drill holes
7.2 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). For the full report, refer to Appendix 3 within Annual Report for EL’s 26138, 26139 and 26140, Esser (2010).

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 5 for the interpretive map with targets by Coggon.

Coggon also conducted UBC magnetic modelling and ‘slab’ magnetic modelling on target CDP5, on EL 26138 and target CDP1, on the interpreted unconformity within EL 26140. This modelling (depth to top of magnetic source) suggested that the top of CDP5 was over 200m deep and that the CDP1 was shallower at approximately 150m deep.
7.3 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 6 for a map of Haynes’ interpretation. For the full report refer to Appendix 4, within Annual Report for EL’s 26138, 26139 and 26140, refer to Esser (2010).

Both Coggon and Haynes selected target CDP5 on the NW trending fault, and 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 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.
7.4 Ground Reconnaissance of Airborne Targets

A ground reconnaissance survey was conducted in May – June 2009 to ‘ground check’ 20 target areas for the presence of Proterozoic outcrop and determine whether access tracks needed to be cut for drill testing in September. Only ten targets occur on the western tenements. None of the target areas had any Proterozoic outcrop and all but three targets were located on black soil plain. The other three targets to the SW were over lateritic ridges with low scrub cover. Refer to Appendix 5 within Annual Report for EL’s 26138, 26139 and 26140, Esser (2010) for the report on the ground reconnaissance of airborne survey targets.

7.5 RC and Diamond Drilling program

A four hole RC / diamond drilling program for a total of approximately 1501.5m was completed in September – October 2009 to determine the following:

- Whether the Murphy Inlier basement lithologies were a suitable host for uranium mineralisation.
- The depth of the Cainozoic and Cambrian cover sequence.
- Whether an alteration or uranium mineralisation occurred at any of the targets

Refer to Table 3 for drilling statistics and Figure 7 for the location of the drill holes.
Table 3: Round 2 Collaborative Drilling Program Statistics

<table>
<thead>
<tr>
<th>TARGET</th>
<th>HOLE No.</th>
<th>Easting</th>
<th>Northing</th>
<th>Dip  (mag)</th>
<th>(True)</th>
<th>RC (m)</th>
<th>NQ (m)</th>
<th>TOTAL (m)</th>
<th>Gamma log</th>
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</thead>
<tbody>
<tr>
<td>CDP1</td>
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<td>103.6</td>
<td>108.7</td>
<td>156</td>
<td>279.6</td>
<td>435.6</td>
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<td>CDP2</td>
<td>MURD012</td>
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<td>0</td>
<td>0</td>
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<td>CDP3</td>
<td>MURD013</td>
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<td>-87.6</td>
<td>221</td>
<td>226.1</td>
<td>194</td>
<td>206</td>
<td>400</td>
</tr>
<tr>
<td>CDP4</td>
<td>MURD014</td>
<td>616824</td>
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<td>0</td>
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<td>209.8</td>
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<td>TOTALS</td>
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<td></td>
<td></td>
<td></td>
<td>601</td>
<td>900.5</td>
<td>1501.5</td>
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Figure 7 – Round 2 Collaborative Drilling program Drill hole locations

7.6 Drilling Results

7.6.1 Geology

MURD011 was planned to test lithologies in Palaeo-Proterozoic Murphy Inlier metasediments, below the Mid-Proterozoic Westmoreland Conglomerate unconformity. The target is located on the ENE trending unconformity and adjacent to a granite contact and a N-S gravity ‘worm’, which suggests a deep structure. This hole was drilled to a depth of 435.6m, comprising a 156 m RC precollar, and a 279.6 m NQ diamond tail. Lithologies intersected in MURD011 include: 6m of black soil, massive to laminated Cambrian limestone to 203m, of fine grained, laminated, hematitic, Westmoreland Conglomerate, sandstone to 401m (198m) and then hematitic, fine
grained, weakly metamorphosed, sandstone and siltstone of the Murphy Inlier to the end of hole at 436.5m. RC drilling was terminated due to surface ‘blow-outs’ of return air and high water flow in the Cambrian limestone.

**MURD012** was planned to test lithologies in Palaeo-Proterozoic Murphy Inlier metasediments, below the Mid-Proterozoic Westmoreland Conglomerate unconformity. The target is located on the ENE trending unconformity and adjacent to a granite contact to the north and ENE trending fault. This hole was drilled to a depth of 342.1m, comprising a 137 m RC precollar, and a 205.1 m NQ diamond tail. Lithologies intersected in MURD012 include: 2m of black soil, white clay, fine to coarse sandstone and minor chert to 19m, massive to laminated Cambrian limestone with chert nodules to 124m (coarse pyrite at base), amygdaloidal basalt to 158.9m (Cambrian Antrim Plateau Basalt), fine grained, laminated, hematitic, Westmoreland Conglomerate, sandstone to 300.3m, approx 11m of strongly hematitic, partly silicified, mudstone, siltstone and sandstone to 312.4m and then weakly metamorphosed, grey to black, laminated to banded siltstone to shale with a band of silicification and strong carbonate veining to the end of the hole. This rock type, within the Murphy Inlier, is an excellent host for mineralisation.

**MURD013** was planned to test a target area along a major NW trending fault adjacent to a Proterozoic mafic intrusive, and also determine the depth of the Cambrian cover sequence at this location. This hole was drilled to a vertical depth of 400m and intersected; 3m of black soil, massive to laminated Cambrian limestone to 40m, amygdaloidal basalt to 93m (Cambrian Antrim Plateau Basalt), fine grained, laminated, hematitic, Westmoreland Conglomerate, sandstone to 218m, coarse grained sandstone, to pebble conglomerate, partly silicified and sericite altered, to 293m (Base of Westmoreland Conglomerate), and then dark green, chloritic dolerite with variable hematite chlorite alteration to 400m. The mafic intrusive is >100m thick and could represent a feeder dyke to the Cambrian Mafic Volcanics, or a sill at the base of the Westmoreland Conglomerate.

**MURD014** was planned to test a ‘Westmoreland style’, sandstone hosted target situated along a major NW trending fault and to determine the depth of the cover sequence. MURD014 was drilled to a vertical depth of 323.8m and intersected 2m of black soil, clay, coarse sandstone and cobble conglomerate to 16m, massive to laminated, vuggy Cambrian limestone to 114m (end of precollar), brecciated to vuggy, crystalline limestone with large cavities (7m core loss 148 – 163m) to 163m, massive to laminated mudstone to 173.15m, pebble breccia with clasts of limestone, mudstone and basalt to 181.24m, and then amygdaloidal Antrim Plateau basalt to 323.8m. MURD014 was terminated when the rod string sheared off at approximately 236m, caused by the ‘broken’ limestone between 114 – 163m, leaving 81m of NQ rods and a 6m core barrel down the hole. Consequently the target Westmoreland Conglomerate unit was not intersected. However, considering the Cambrian sequence of limestone and basalt is in excess of 324m deep it is unlikely further drilling will be conducted on this target. Refer to **Appendix 1** for the RC / diamond drill hole lithology logs and **Appendix 2** for core photography and **Figures 8, 9, 10 and 11** for drill sections for MURD011 to MURD014 inclusive. For a long section including MURD011, MURD012 and MURD013, with vertical exaggeration refer to **Figure 12**.
Figure 8 - MURD011 Drill section
Figure 9 - MURD012 Drill section
Figure 10 - MURD013 Drill section
Figure 11 - MURD014 Drill section
Figure 12 - Long section with MURD011 to MURD013 and interpreted geology
7.6.2 Down hole Radiometrics

A down-hole 27mm gamma probe, winch and accessories were hired from AUSLOG to probe all the drill holes. Full logs and profiles showing gamma response, total count and SP were prepared and are attached as in Appendix 3. Holes MURD011 and MURD013 were surveyed to the end of each hole. MURD012 was blocked at approx 120m and MURD014 was not surveyed as the target was not intersected.

7.6.3 Magnetic Susceptibility

Magnetic susceptibility readings were taken at 2m intervals on all drill holes to determine which rock types have appreciable magnetite. The Cambrian Antrim Plateau basalts, intersected in MURD012 to MURD014, as well as a mafic intrusive, or dolerite, intersected in MURD013 were the only lithologies with significant magnetite content. Refer to Appendix 4 for magnetic susceptibility reading for MURD011.

7.6.4 Sampling and Assaying

Sampling:

Two metre composite samples (spear) were collected every 10m in the precollar of each hole, then 1m intervals of half core samples were collected every 20m, and also across the unconformity between the Westmoreland Conglomerate and the Murphy Inlier sediments, where intersected. 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.

Duplicate samples of the RC were collected every 20th sample. No duplicate samples of the core were collected as that would mean all the core from that interval would be consumed during the analysis. Blanks were inserted into the batch every 50th sample, adjacent to the standards. The blanks and standards used were prepared by Ore Research and Exploration Pty. Ltd.

Analysis:

Two batches comprising a total of 234 samples were submitted to ALS in Mt Isa (TV09112836 and TV09131827), 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 were analysed by ‘total’ or four acid digest with an ICP AES finish (method ME - ICP61) for a suite of 30 elements. Using the same digest uranium was analysed by ICP MS (method ME - MS62) with a detection limit of 10 ppb U. The samples were also analysed for gold by aqua regia digest method Au-TL43 and Au-TL44.
7.6.5 Assay Results

Sample batches TV09112836 and TV09131827 were received in October and November 2009. These include sampling from holes MURD011 to 013, which were drilled on tenements EL 24841, 25710 and 26140. Refer to Appendix 5 for assays results and Table 4 for the best assays for uranium and copper.

The highest uranium values included:
44.3 ppm U3O8 from MURD012; 301 to 302m in the Murphy Inlier metasediments and
22.5 ppm U3O8 from MURD011; 319 to 320m in the Westmoreland Conglomerate sandstones.
The highest copper values included:
209ppm Cu from MURD013; 48 to 50m in the Antrim Plateau basalt
169ppm Cu from MURD012; 330 to 331m in the Murphy Inlier metasediments.

Table 4: Best uranium and copper assays from the Round 2 Collaborative Drilling

<table>
<thead>
<tr>
<th>HOLE NUMBER</th>
<th>FROM (m)</th>
<th>TO (m)</th>
<th>U ppm</th>
<th>U3O8 ppm</th>
<th>Cu ppm</th>
</tr>
</thead>
<tbody>
<tr>
<td>MURD012</td>
<td>301</td>
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<td>37.5</td>
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</tr>
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<td>MURD012</td>
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<td>315</td>
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<td>162</td>
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8 CONCLUSIONS

Regional Drilling program:
An RC / diamond drill program, comprising four drill holes for a total of 1501.5m testing regional targets, interpreted from airborne radiometrics, was completed in September to October 2009, to test:

- The depth of the Cainozoic and Cambrian cover sequence over western targets
- Whether the Murphy Inlier lithologies are a suitable host for unconformity style uranium mineralisation, similar to the east Alligator Rivers area.
- For alteration and uranium mineralisation at targets CDP1, CDP2, CDP3 and CDP4.

MURD011, is a vertical hole, which was drilled to a depth of 435.6m and intersected 6m of black soil, massive to laminated Cambrian limestone to 203m, fine grained, laminated, hematitic, sandstone (Westmoreland Conglomerate) to 401m, and then hematitic, fine grained, weakly metamorphosed, sandstone and siltstone of the Murphy Inlier to 435.6m.

MURD012, is a vertical hole, which was drilled to a depth of 346.1m and intersected 2m of black soil, white clay, fine to coarse sandstone and minor chert to 19m, massive to laminated Cambrian limestone with
chert nodules to 124m (coarse pyrite at base), amygdaloidal basalt to 158.9m (Cambrian Antrim Plateau Basalt), fine grained, laminated, hematitic, Westmoreland Conglomerate, sandstone to 300.3m, approx 11m of strongly hematitic, partly silicified, mudstone, siltstone and sandstone to 312.4m and then weakly metamorphosed, grey to black, laminated to banded siltstone to shale with a band of silicification and strong carbonate veining to the end of the hole. This rock type, within the Murphy Inlier, is an excellent host for mineralisation.

**MURD013**, is a vertical hole drilled to a depth of 400m and intersecting 3m of black soil, massive to laminated Cambrian limestone to 40m, amygdaloidal basalt to 93m (Cambrian Antrim Plateau Basalt), fine grained, laminated, hematitic, Westmoreland Conglomerate, sandstone to 218m, coarse grained sandstone, to pebble conglomerate, partly silicified and sericite altered, to 293m (Base of Westmoreland Conglomerate), and then dark green, chloritic dolerite with variable hematite chlorite alteration to 400m. The mafic intrusive is >100m thick and could represent a feeder dyke to the Cambrian Mafic Volcanics, or a sill at the base of the Westmoreland Conglomerate.

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Drill holes MURD011 and MURD013 were gamma logged to the bottom of hole. MURD012 was gamma logged to 120m (blockage) and MURD014 was not gamma logged as it did not reach the target depth.

A total of 234 RC samples and half NQ core samples were submitted in two batches for analysis by four acid digest / ICPAES finish for 33 elements at ALS Brisbane in October and November 2009. The samples were also analysed for gold by aqua regia digest. The best results included:

<table>
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<td>1</td>
</tr>
<tr>
<td>MURD013</td>
<td>48</td>
<td>50</td>
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<td>209</td>
</tr>
<tr>
<td>MURD012</td>
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<td>331</td>
<td>4.5</td>
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</table>

9 REFERENCES


Appendix 1:   RC / Diamond Drill Hole Lithology logs

Appendix 2:   Core Photography for MURD011, 012, 013 and 014
              (provided on DVD)

Appendix 3:   RC / Diamond Drilling Gamma Logs – zip file attached

Appendix 4:   Magnetic Susceptibility Readings

Appendix 5:   RC / Diamond Drilling Assay Results – zip file attached

Appendix 6:   Invoice for Round 2 Collaborative Drilling – zip file attached