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1.0 SUMMARY

This report documents all exploration activities for the first year of tenure between August 2nd 2006 and August 1st 2007 on Exploration License EL 24809 by Hale Energy Limited (Thor Mining PLC).

The initial stages of exploration included modelling and interpretation of 200m spaced HoistEM survey over the Huckitta Basin, which identified a complex paleo-channel structure. The area has had limited previous coverage with wide spaced reconnaissance drilling which identified anomalous ‘roll front’ style mineralisation by Alcoa in 1980-81.

Interpretation of 1D layered earth inversion modelling of the HoistEM survey data and the locations of conductivity shells, revealed five drill targets within a south easterly striking paleo-channel and the connecting subsidiary channels. 3D Modelling of conductivity shells has been interpreted to indicate the presence of carbonaceous sediments within the paleo-channels providing a reducing trap for uranium bearing groundwater essential for the formation of “Roll Front” Uranium deposits.

Based on the interpreted drilling targets, 24 Air Core and 4 Mud Rotary holes were drilled totaling 1829m. The drilling program has confirmed the existence of the conductive shells of pyritic sand/clays, carbonaceous clays and lignite’s, all of which are potential hosts for secondary uranium mineralisation.

Samples from both the air-core drilling and mud-rotary drilling were sent to Genalysis in Adelaide for preparation. Pulps were then sent to Perth for Analysis.
2.0 INTRODUCTION

The Hale River Exploration License EL 24809 was granted on the 2\textsuperscript{nd} August 2006. The tenement has an area of 359.5km² and an expiry date of 1 August 2012 with an annual exploration commitment of $22,100.

Based on the target zones identified by the airborne EM (Hoist EM) survey (see figure 3), Air Core drilling and Mud Rotary drilling was commenced from the period of 15\textsuperscript{th} May to the 25\textsuperscript{th} of June. The Mud Rotary drilling method was used towards the end of the program due to problems with the Air Core technique reaching basement in the water filled unconsolidated sediments.
3.0 NATIVE TITLE AND CLEARANCE

The tenement covers part of “The Garden” Station pastoral lease.

A Native Title Deed for Exploration was signed in conjunction with the CLC (Central Land Council) and the Traditional Owners in September 2006.

An AAPA search indicated there were numerous significant sites along the Hale River drainage. The CLC organised a site clearance with traditional owners before drilling commenced based on proposed drill locations supplied by Hale Energy Limited.

The CLC advised that there were no issues identified with the proposed drill programme other than the exclusion area indicated below which is to become a traditional living area.
No drilling is permitted on targets within the excision bound by the corner coordinates:

**DATUM GDA94, ZONE 53K.**

<table>
<thead>
<tr>
<th>EASTING</th>
<th>NORTHING</th>
</tr>
</thead>
<tbody>
<tr>
<td>455982</td>
<td>7421940</td>
</tr>
<tr>
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<td>7421940</td>
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<tr>
<td>458973</td>
<td>7418441</td>
</tr>
<tr>
<td>455982</td>
<td>7418441</td>
</tr>
</tbody>
</table>

Traverse only is permitted in the exclusion zone bound by the corner coordinates:

**DATUM GDA94, ZONE 53K.**

<table>
<thead>
<tr>
<th>EASTING</th>
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</tr>
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<tbody>
<tr>
<td>448803</td>
<td>7417787</td>
</tr>
<tr>
<td>449103</td>
<td>7417787</td>
</tr>
<tr>
<td>449103</td>
<td>7417487</td>
</tr>
<tr>
<td>448803</td>
<td>7417487</td>
</tr>
</tbody>
</table>

Specifically there is to be no collection of firewood within the exclusion zone.

4.0 LOCATION

Hale Energy’s (Thor Mining PLC) Exploration License 24809 is situated on the Garden Station, approximately 130km by road north-east of Alice Springs in the Northern Territory (Figure 1). Access to the area is good with 50km of sealed road along the Stuart Hwy and then along the Arltunga Tourist Drive; a well maintained unsealed road for 80m to the Garden Station.

5.0 PHYSIOGRAPHY AND CLIMATE

The Hale River area consists of two physiographic divisions. The Hale plain is the central dominant feature, which is surrounded by a number of mountain ranges. The foothills of the Strangways and Harts Ranges lie to the west and north of the Hale Plain, with the Georgina Range bordering the southern edge. The plain is approximately 600m above sea level, 40km long and 10km wide, bisected by the sinuous course of the Hale River draining from west to east.

Tributaries to the Hale River have incised dendritic drainage patterns into the plain to form low rolling hills. Small mesa-type hills up to 20m high occur sporadically through the area and along the southern margins of the plain.
The annual rainfall ranges from 240mm to 300mm, falling intermittently between November and March, however the area received rainfall out of season during the course of the drill program. The vegetation in the area is sparse consisting of Mitchell grass on the plain a spinifex in the surrounding mountains. Larger Eucalyptus trees are generally restricted to watercourses, with Mulga and other various Acacia shrub species found through out the plain.

6.0 PREVIOUS EXPLORATION

Exploration for sedimentary uranium deposits hosted by Fluviatile sand units within Tertiary sequences commenced in the Huckitta basin during 1980 by Alcoa of Australia Limited. Field work including photo geological mapping, ground resistively surveying and rotary-mud drilling outlined a large basin containing over 200m of clay, sandy clay, carbonaceous clay and sand units. Four palaeochannels filled with unconsolidated sands were intersected by drilling and they appear to enter the basin from the margins and disperse the sand load into the basin centre. Mineralised oxidizing solutions present in the Tertiary sequence are thought to have moved down the palaeochannels oxidizing the permeable sand units and mineralizing the adjacent reducing carbonaceous clay units.

A follow up exploration program was undertaken to look for reduced paleochannel sands in the prospective sand horizons and consequently to find a mineralised contact zone with the oxidizing solutions. Four rotary-mud drill holes totalling 674m failed to intersect any trace of reduced sands and it is assumed that excessive volumes of weak mineralised oxidizing solutions have flushed through the permeable units of the Huckitta Basin leaving only relict pockets of reduced sands.

7.0 REGIONAL GEOLOGY

The regional tectonic setting of central Australia consists of three Proterozoic cratons the Arunta, Tennant Creek and Musgrave Blocks forming the basement for later Proterozoic and Phanerozoic sedimentary basins including the Amadeus, Ngalia, Georgina and Wiso Basins. Fluviatile and Lacustrine Tertiary sediments have formed in Precambrian basement depressions and the sand horizons within these deposits constitute the stratigraphic target of tertiary basin Uranium Project.

The Hale river basin is a small Tertiary intracratonic and intermontane basin lying in the south-eastern portion of the Arunta Block. West of the basin lay the oldest rocks within the Arunta Block. These form the Strangways Metamorphic Complex consisting of a basement of hypersthene-quartz-plagioclase granulite overlain by a well layered metasedimentary sequence of partly-retrogressed pelitic and felsic gneisses. These rocks are overlain by a unit of sillimanite gneiss; this is succeeded by a thick sequence of calc-silicate rock, metapelite and minor amounts of quartzite and marble.
To the north and east of the basin are younger, intensely folded Precambrian metamorphic rocks of mica-quartz-feldspar schist and gneiss, garnet-mica-feldspar gneiss, quartzo-feldspathic gneiss, amphibolite and metabasic rocks.

South of the basin the drainage divide is formed by the Heavitree Quartzite and Bitter Springs Formation (dolomite, limestone, siltstone, sandstone basic volcanics and evaporates). These Proterozoic rocks form the Winnecke Nappe; a thrust nappe with a displacement of at least 10km northwards.

Figure 3: Regional tectonic setting

8.0 LOCAL GEOLOGY (Hale River Basin)

The Hale River basin is an elongated depression in the Arunta Block filled with up to 100m of Tertiary sediments. The basin is 40km long and has an average width of about 8km (figure 3). A basement high towards the eastern end divides the basin into two sub-basins, the Claraville sub-basin to the east and the larger Garden sub-basin to the west (figure 4). Within the sub-basin the thickness of the sediments is further controlled by irregularities in the underlying basement topography.
The basin may have formed during the late Mesozoic and early Tertiary by subsidence along the lineament at its western boundary and the concealed lineaments along its southern and eastern boundaries (Clark 1975). Sediments were deposited in these depressions by streams draining the nearby metamorphic rocks of the Arunta Block.

Figure 2 shows the present-day drainage area for the basin is relatively small; it may have been even smaller during the Tertiary.

Minor uplift in Quaternary times is thought to have initiated the present dissection of late Tertiary land surfaces, and to have partly exhumed basement highs. The uplift, as reflected in the present-day land surface, also appears to be associated with the lineament forming the south-western boundary of the area. Remnants of the original Tertiary surface form silcrete and ferricrete-capped, mesa-type hills, which are generally restricted to the edges of the basin. Erosion has removed up to 10-20m of sediments around the edges and western end of the basin. Quaternary gravels of siliceous basement pebbles and cobbles overlie parts of the tertiary sequence. The gravel units are generally less than 2m thick and are covered by aeolian and alluvial sand.

8.1 The Garden Sub-Basin

The Garden Sub-basin contains interbedded blanket sands, carbonaceous horizons and widespread clay and sandy clay units. Carbonaceous horizons are restricted to the eastern portion of the sub-basin while the sand, sandy clay and clay units display a regional facies change from west to east. The unconsolidated sand units that occur mainly in the western half of the sub-basin become more predominant toward the centre and rapidly grade into sandy clay and clay towards the eastern edge of the sub-basin.

The Tertiary sediments reach a maximum thickness of greater than 100m; however this varies considerably due to the irregular basement surface. The sediments thicken rapidly from the southern margin of the sub-basin indicating a possible relationship to subsidence along the associated lineament.

9.0 DRILLING

Orbit Drilling was contracted to complete the Hale River air-core and mud rotary drilling program. The following equipment was used:

- Hydco rig mounted on a Isuzu 4x4 truck
- 1 small Isuzu 4x4 support truck, carrying additional rods, 1500lt of water and 1000lts of fuel.
- 1 flat top Hino truck carrying a 6000lt water tanker and fire fighter pump.

One Driller and 2 offsiders were present throughout the period of the air core and mud rotary drill program.
9.1 Drilling collar data:

Air-core drilling commenced on Tuesday 15\textsuperscript{th} of May and was finished on Thursday 31\textsuperscript{st} of May, with a total of 16 days of air core drilling.

The mud rotary drilling commenced on Saturday 16\textsuperscript{th} of June and finished on Monday 25\textsuperscript{th} of June, with a total of 9 days drilling.

![Figure 4: Hale River Drilling, May-June 2007](image)

Table 1: Drilling data summary

<table>
<thead>
<tr>
<th>Drilling type</th>
<th>Metres</th>
<th>Holes</th>
<th>Holes reached basement</th>
<th>Days</th>
<th>Samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air-Core</td>
<td>1548</td>
<td>24</td>
<td>9</td>
<td>16</td>
<td>545</td>
</tr>
<tr>
<td>Mud-Rotary</td>
<td>280</td>
<td>4</td>
<td>3</td>
<td>9</td>
<td>109</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1828</td>
<td>28</td>
<td>12</td>
<td>25</td>
<td>654</td>
</tr>
</tbody>
</table>
9.2 Air-core drilling

The drilling was conducted in unconsolidated sediments with varying levels of water which equated to difficult drilling conditions for inexperienced air core rig operators. Most holes drilled had a free standing water level from 30m to 60m vertical depth from surface. Drilling conditions were difficult and required injecting a large amount of water into the hole producing very wet samples. Samples were retained by digging holes and using plastic bags to contain the sample. A large number of air-core holes drilled did not reach basement (Table1). A total of 9 holes out of the 24 air core drilled reached basement. Failure to reach basement was a combination of unfavorable ground conditions, unconsolidated sand/clays, influx of ground water and poor rig setup.

9.3 Mud-rotary drilling

The mud-rotary drilling technique was commenced later in the programme after air core drilling consistently failed to reach basement. Three holes out of a total of four were drilled to basement. The fourth hole was drilled to 78m depth and used as a water bore for Andy Hayes (The Garden Station owner).

10.0 SAMPLING (Air-core drilling)

The sampling technique employed for the air-core drilling program included 3 metre composite sampling, with 1 metre individual sampling being taken in zones of above average/background gamma count readings.

The drill sampling method included the driller’s offsiders collecting each 1 metres sample in buckets as they drop from the cyclone, and then placing the sample in order in 20 metre rows. The samples were placed on plastic bags in holes to reduce contamination.

Samples from both the air core drilling and mud rotary drilling were sent to Genalysis in Adelaide for preparation; pulps were then sent to Perth for Analysis.

10.1 Sampling (Mud-rotary drilling)

The sampling technique for the mud-rotary drilling also included 3 metre composite sampling, with 1 metre individual sampling being taken in zones of above average/background gamma counts.

The sampling method for the mud-rotary drilling included the offsiders collecting 1 metre samples using a shovel on the bottom of the mud tank. To reduce the contamination of the samples the offsiders cleaned the tank after each rod (3 metres), by shoveling out all the sediment that has settled on the bottom of the tank.
The samples were also placed on plastic bags in small holes dug with a shovel to protect them and reduce contamination.

Poor sample quality using mud rotary drilling was evident in the samples produced, which is a combination of the sample being fed into a mud tank and then collected off the bottom combined with the sample mixing between the wall of the hole and the outside of the rod (open hole mixing). Mud rotary drilling is not recommended for this kind of exploration in future drilling programs.

11.0 GEOLOGICAL LOGGING

Drill logging was completed using an Itronix Gobook 3, using Ocris 2.0 field logger with a company standard lithological code system.

Gamma readings were collected for every metre drilled by placing the Exploranium Scintillometer against the sample. Anomalous gamma readings were used as a basis for individual sampling.

12.0 DISCUSSION

The Hoist EM Survey was flown by GPX Airborne in late 2006 and was later interpreted by David McInnes of Montana GIS in April 2007. Drilling to date has indicated the EM survey was a technical success. The depth modelling was reasonably accurate indicating the thickness of the Paleo-channel sediments to range between 50-and 100m. The survey also highlighted a number of zones of conductive shells, which have been shown through the latest drilling to be pyritic sands/clays, carbonaceous clays and lignite, all of which are ideal reducing environments for roll front style uranium mineralisation.

Exploration drilling to date in the Hale River Basin has shown that the Hale Basin contains a number of depressions filled with unconsolidated blanket sands, sandy clay, clay, carbonaceous clays and lignite units, with a maximum thickness of 100m. The presence of economic secondary uranium mineralisation in this type of environment is known to occur only at the boundary of oxidized and unoxidised sands, the presence of both types of sand in the Hale River basin revealed by past and recent drilling is very encouraging. A number of potential zones for secondary uranium mineralisation have been identified including carbonaceous horizons and oxidised altered sand units, which are outlined in detail below.
12.1 Oxidised and unoxidised sands

Secondary alteration (oxidation) of the concealed permeable sands produce a light grey to light yellow colouration, with limonite staining of quartz grains and in some cases complete staining of the matrix. Pyrite is absent or occurs as nodules with limonite/hematite crusts. The unoxidised versions of these sands are grey in colour with occasional carbonaceous plant remains and abundant fresh pyrite. Both oxidised and unoxidised sand were abundant in the central western sections of the drill program (holes 07HLAC006-012) (see Figure 5). A previously drilled hole from Alcoa in the same zone where there is abundant oxidised and unoxidised sands produced one of their highest assay uranium results of 46ppm, showing the potential for uranium mineralisation in this area. The overburden zone is thick with unconsolidated blanket sands relatively deep up to 100m to basement. This area had a large amount of ground water present and was chosen for the water bore location for hole 07HLMR004.

12.2 Carbonaceous clays

The carbonaceous horizons consist predominantly of brown/black carbonaceous clays and lignite. Alcoa’s open file data indicates these are restricted to the eastern half of the broader sub-basin. Hale Energy’s drilling program further identified that the concentration of shallow (20-30m) carbonaceous clays and lignite is restricted to the north; north-eastern and eastern drill holes (figure 5). Alcoa identified two carbonaceous horizons, with one being shallow at 20-24m, and the other much deeper at 78m. The deeper carbonaceous layer was not observed in the northern and eastern drill holes as this area has a shallow depth to basement (50m). The deeper carbonaceous horizon was observed in drill hole 07HLAC009, which is in the central western zone of thick oxidised and unoxidised sands.

12.3 Gamma counts correlation

Gamma count readings were collected from every 1 metre sample. A correlation has been made between elevated gamma levels and known potential zones of secondary mineralisation (see Table 2). The shallow carbonaceous clays and lignite’s that were logged in the north and eastern drill holes proved to have elevated gamma counts, before, in and after the carbonaceous clay/lignite. Although the elevated gamma readings in these zones are marginal, the relatively young (Tertiary) age of the paleo-channel material and the secondary uranium mineralisation would not produce a high level of gamma radiation. Thus a low level response from the gamma readings may not accurately indicate the potential for uranium mineralisation.
Table 2: Max gamma readings in associated potential redox zones

<table>
<thead>
<tr>
<th>Hole Id</th>
<th>Max (peak)</th>
<th>Background</th>
<th>Depth From.</th>
<th>Depth to.</th>
<th>Lithology</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>cps</td>
<td>cps</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>07HLAC018</td>
<td>185</td>
<td>155</td>
<td>20</td>
<td>28</td>
<td>Carbonaceous clays/lignite</td>
</tr>
<tr>
<td>07HLAC019</td>
<td>180</td>
<td>155</td>
<td>20</td>
<td>23</td>
<td>Carbonaceous clays/lignite</td>
</tr>
<tr>
<td>07HLAC020</td>
<td>190</td>
<td>170</td>
<td>18</td>
<td>24</td>
<td>Carbonaceous clays/lignite</td>
</tr>
<tr>
<td>07HLAC024</td>
<td>205</td>
<td>185</td>
<td>15</td>
<td>24</td>
<td>Carbonaceous clays/lignite</td>
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<td>07HLAC023</td>
<td>175</td>
<td>160</td>
<td>22</td>
<td>28</td>
<td>Carbonaceous clays/lignite</td>
</tr>
</tbody>
</table>

12.4 Drilling Results

The program has been a technical success. The HoistEM survey has defined conductive horizons and drilling has confirmed the defined prospective units and their depths. Anomalous uranium values were obtained in five holes (07HLMR001, 07HLAC004, 07HLAC018, 07HLAC019 and 07HLAC020) with the highest assay result of 30ppm. The significant intercepts are set out in the table below.

Table 3: Significant Intercepts

<table>
<thead>
<tr>
<th>Hole ID</th>
<th>Depth From (m)</th>
<th>Depth To (m)</th>
<th>Thickness (m)</th>
<th>Grade Average (ppm)</th>
<th>Grade Peak (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>07HLMR001</td>
<td>55</td>
<td>75</td>
<td>20</td>
<td>15.69</td>
<td>30.76</td>
</tr>
<tr>
<td>07HLAC004</td>
<td>36</td>
<td>78</td>
<td>42</td>
<td>13.58</td>
<td>22.09</td>
</tr>
<tr>
<td>07HLAC018</td>
<td>20</td>
<td>26</td>
<td>6</td>
<td>13.72</td>
<td>25.72</td>
</tr>
<tr>
<td>07HLAC019</td>
<td>19</td>
<td>24</td>
<td>5</td>
<td>12.16</td>
<td>20.19</td>
</tr>
<tr>
<td>07HLAC020</td>
<td>20</td>
<td>27</td>
<td>7</td>
<td>13.09</td>
<td>24.42</td>
</tr>
</tbody>
</table>

Elevated uranium values in hole 07HLMR001 appear to be related to a clay/sand horizon approximately 20m in thickness which occurs towards the base of the hole. The hole was drilled using the mud rotary technique so there is less confidence in the assay results because of the potential smearing and contamination.

Anomalous assay results for hole 07HLAC004 range from 36m to the base of hole and appear to have a strong association to saprolitic basement clays with oxidized pyrite.

Holes 07HLAC018, 07HLAC019 and 07HLAC020 were drilled on a wide spacing to the east of the main drill area. These drill holes exhibit uranium concentrated in organic sediments which variably contain lignite and are approximately 6m in thickness.
13.0 REHABILITATION

All holes for the drilling program have been pegged, labeled and plugged using plastic hole plugs. Drilling refuse was cleaned up after the completion of each hole, ensuring that the area was left in the same condition as before drilling commenced. Further rehabilitation to remove sampled soil and plastic bags will be conducted at a later date.

14.0 CONCLUSIONS

It is recommended that the use of mud-rotary for exploration drilling on the Hale River tenement not be used in future. The technique requires a large amount of water, and time for setup is excessive. The water supply is limited and time consuming, further adding to the slow progress of the technique. The biggest problem associated with the mud-rotary drilling was the poor sample quality.

The air-core drilling technique was limited in the Hale River drilling program, however still proved to be the best technique for recovering sample in difficult drilling within a palaeo-channel. The sample quality was far better than mud-rotary, and although not all holes drilled reached basement it was by far the most efficient and cost effective technique.

The HoistEM Survey has been a success, and has shown that there are conductive shells of pyritic sand/clays, carbonaceous clays and lignite, all favorable hosts for “roll front style” uranium mineralisation. Further interpretation and drilling of selected zones based on the HoistEM survey would help to understand the sporadic structure of the redox front.

Detailed studies and drilling programs have been undertaken in the Hale River Basin in the Past by Alcoa of Australia Limited in 1980-1981, who concluded that no significant concentrations of uranium mineralisation are likely to be present in the Tertiary sequences. The results from the latest drilling program have intersected anomalous uranium values (up to 30ppm) which are not economic but are regarded to be highly anomalous.

More drilling is recommended in the eastern area around holes 07HLAC018, 07HLAC019 and 07HLAC020 to test any extension of anomalism in the Gidyea Bore tributary.
15.0 APPENDIX