Project Name: Mosquito Creek
Tenement Numbers: EL 29004
Tenement Operator: Tungsten Mining NL
Tenement Holder: Tungsten Mining NL
Report Type: Annual Report
Report Period: 10th April 2012 to 9th April 2013
Author: M Curtis
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1:250 000 map sheet: BONNEY WELL (SF5302)
1:100 000 map sheet: OORADIDGEE (5857)
Target Commodity: Tungsten
Keywords: Tennant Creek, Tungsten, Warramunga Group, Hatches Creek Group.

ABSTRACT:
Location: Kurundi Station, 100km SE of Tennant Creek, NT.
Geology: Tungsten mineralisation associated with greisen and veins in granite of the Palaeoproterozoic Hatches Creek Group.
Work done Reassembly and GIS analysis of historical work, open file report acquisition, desk studies.
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1. Location and Access

The Mosquito Creek Project is located on Kurundi Station, 100km southeast of Tennant Creek in the Northern Territory.

Access to Tennant Creek is best via the Stuart Highway by way of a 6 hour drive north from Alice Springs. The turnoff onto Kurundi station is approximately 80km south of Tennant Creek. From here, the project area is 70km east along station tracks.

Figure 1: Map showing the location of the Mosquito Creek Project.
2. **Tenement Details**

The Mosquito Creek Project consists of two adjacent exploration licences (Figure 2):

<table>
<thead>
<tr>
<th>Licence</th>
<th>Area (km$^2$)</th>
<th>Grant Date</th>
<th>Holder</th>
<th>Operator</th>
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<td>EL29616</td>
<td>188</td>
<td>29/11/2012</td>
<td>Northern Minerals Ltd</td>
<td>Tungsten Mining NL</td>
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<td>EL29004</td>
<td>89</td>
<td>10/04/2012</td>
<td>Tungsten Mining NL</td>
<td>Tungsten Mining NL</td>
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</tbody>
</table>

**Figure 2: Tenement Map for the Mosquito Creek Project.**
3. Geology

The Project is centred on the Mosquito Creek Tungsten Field (Figure 3). Local geology is dominated by the Hill of Leaders Granite which is the host for the tungsten mineralisation. It occurs in the same geological environment as the Wauchope Tungsten Field, some 48km to the southwest.

The project area is located along the eastern margin of the Tennant Creek Inlier. This is an intensely folded, early Proterozoic intra-cratonic basin succession of mainly sedimentary rocks, intruded by younger granitoids. The Tennant Creek Inlier forms a north-northwesterly belt some 700km in length, centred on the town of Tennant Creek and comprises Palaeoproterozoic sediments of the Warramunga Group, the Hatches Creek Group, and the Tomkinson Creek Beds.

The Warramunga group, which contains all the economically viable deposits currently mined in the Tennant Creek region, consists of a sequence of argillaceous sedimentary rock including siliceous greywacke, siltstone and shale. Quartz-feldspar porphyry lenses occur as cross cutting and conformable units within the sedimentary sequences. The Warramunga Group has been the subject of at least three deformational episodes.

Apart from the south-western part of the Project, which is centred on the Kurundi Anticline, the bedrock geology is largely masked by quaternary soil cover. Based on Regional mapping, regional aeromagnetic data, and limited outcrop, the Northern Territory Geological Survey has interpreted the presence of a south east extension of the Tennant Creek Warramunga Group into the Bonney Well and Frew River areas. This rock sequence presents a primary exploration target.

Tungsten mineralisation, as both wolframite and scheelite, occurs at several locations regionally. At the Mosquito Creek deposits the tungsten mineralisation is associated with poorly exposed greisen and quartz veins in the topographic “shadows” of outcrops of unaltered granite. From NTGS regional mapping and airborne geophysical surveys, there are extensive areas of granitic bedrock masked by comparatively thin Quaternary deposits.
Figure 3: Geological Map of the Mosquito Creek Project (HCG denotes Hatches Creek Group).
4. **Historical Exploration**

The Mosquito Creek Tungsten field was discovered in 1951 and abandoned in 1956 after producing 2.5t of WO₃ concentrate from 150t of ore. The mine workings comprise shallow trenches and costeans, usually less than 2m deep. The deepest shaft reached 28m in the main vein.

In 1952 it was estimated that a resource of 137t of proven tungsten ore, 762t of probable tungsten ore, and 1,340t of possible tungsten ore existed in the vicinity of the workings. The majority of proven ore has been extracted from the field.

4.1 **Normandy Gold Ltd**

In 1993, Normandy Gold Limited acquired EL8346, which covered the south-western portion of Tungsten Mining’s EL23937. Normandy completed a program of aeromagnetic structural interpretation, lineament interpretation on 1:80,000 scale aerial photography, and regional reconnaissance rockchip sampling. Gold mineralised quartz veins were reported.

4.2 **Eden Creek Pty Ltd**

At the same time, Eden Creek Pty Ltd carried out an extensive program of gridding, ground magnetic surveys, soil and vacuum bedrock geochemical surveys, rock sampling and geological mapping. It was concluded that the licence covered areas of Proterozoic-aged Warramunga Group or its lateral equivalents. These units are considered prospective for gold-copper-bismuth and/or base metals mineralisation.

4.3 **North Star Resources NL**

In 1994 to 1995, North Star Resources NL explored EL8388, located in the north-western corner of the Frew River 1:250,000 (SF53-3) sheet, covering part of EL23937. North Star reports that their exploration comprised preliminary identification and ground follow up of magnetic targets based on Tennant Creek gold and copper deposits.

At Tennant Creek, gold occurs with iron and copper sulphides in magnetite or hematite rich lodes with or without quartz. The mineralised zones are hosted with chlorite alteration envelopes in shears within the Warramunga Group sedimentary rocks. This distribution suggests an association with major regional scale structures. North Star’s exploration generated 10 target areas, of which five warranted more detailed investigation and RAB drilling.

4.4 **Washington Resources Ltd**

Evaluation of the tungsten mineralisation by Washington Resources Limited (WRL) in 2004-2008 was focussed on gaining a better understanding of the tungsten mineralisation associated with the Hill of Leaders Granite. In the 2007 reporting period, exploration consisted of aircore drilling (171 holes for 1,736m), rock chip and termite mound sampling, airborne geophysics and geological mapping.

The air core drill program in the Hill of Leaders area intersected significant W grades beneath alluvium up to several hundred metres from the historic mines. Elsewhere
within the licence anomalous W grades in weathered bedrock were located up to 4.5km northwesterly and 17km southeasterly, respectively from the Hill of Leaders.

Termite mound and rock chip sampling were shown to have potential for pathfinder geochemistry. Ultraviolet night lamping located evidence of scheelite mineralisation away from the historic mines in the Hill of Leaders area.

Aircore drilling has shown that anomalous tungsten values extend for several hundred meters southeast of the main Hill of Leaders workings. These results are encouraging in view of the limited coverage of the aircore program and the fact that holes were drilled to blade refusal and did not penetrate primary mineralisation.

5. Current Exploration

During the reporting period, Tungsten Mining NL has completed a thorough desktop review of EL29004 and the Mosquito Creek Project as a whole. All available open file reports have been retrieved and historical data has been collected and analysed.

6. Future Work

RC drilling, initially on a broad spaced grid over anomalous areas delineated by the aircore drilling is warranted. The objective should be to identify primary sources of tungsten mineralisation whilst endeavouring to quantify the extent of shallow alluvial mineralisation shed form the main workings and amenable to low cost recovery.

Termite mound geochemistry has proven to be a valid exploration tool and coupled with pathfinder geochemistry should be extended to cover any untested areas of the host granite.