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<tr>
<th>Titleholder</th>
<th>S.M. &amp; R.W. Krummel</th>
</tr>
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<td>As above</td>
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<td>Annual report for EL 27625 for the period 28 July 2013 to 27 July 2014</td>
</tr>
<tr>
<td>Personal author(s)</td>
<td>Krummel, R.W.</td>
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<tr>
<td>Corporate author(s)</td>
<td>Krummel, S.M.</td>
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<td>Corporate author(s)</td>
<td>n.a.</td>
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<td>Target Commodity or Commodities</td>
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<td>S.M. &amp; R.W. Krummel</td>
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# Maps

1. Google Map showing tenement boundaries and sample locations.
2. Map showing regional magnetic survey results.
Executive Summary

Application was made for the area following relinquishment by Sammy Resources in 2009. Tenure was granted to Robert and Shelagh Krummel on 27th July 2010. The title holder had worked in the area with Australian Geophysical in the 1960’s, and considered that further work would identify additional mineralisation. EL 27625, and the adjacent EL27663 are centred around the axis of the Limbla Syncline, a bedded sequence of Proterozoic sediments, of the Pertatartaka formation. It lies to the south and south west of the highly metamorphosed Harts Range complex, within the Arunta Block. We consider that the carbonate rocks, and the associated ultramafics of the Limbla Syncline have the potential to host copper-lead-zinc deposits at depth. We believe that the ultramafic may have been a factor in the mobilisation or deposition of mineralisation. Analysis of aerial photographs and google earth images has enabled definition of areas for follow up work in a region of limited outcrop and significant alluvial cover. Limited field work was undertaken in difficult terrain in 2013-14.
**Tenure**

Application was made for the area following relinquishment by Sammy Resources in 2009. Tenure was granted to Robert and Shelagh Krummel on 27<sup>th</sup> July 2010. The title holder had worked in the area with Australian Geophysical in the 1960’s. A number of other companies had subsequently held title, with very little work undertaken. The most recent title holder, Sammy Resources had relinquished part of the area, without undertaking any significant work.

Current tenure: EL 27625 12 blocks  
EL 27663 33 blocks

A waiver of tenement reduction has been approved until July 2016. Both Licence areas are being worked as a contiguous project.

**Aboriginal Land**

The titles are both located on the Love’s Creek Pastoral Lease, which on 19 July 2012 was transferred to Aboriginal Land.

**Geological Setting**

The exploration licence areas are centred around the axis of what has been mapped as the Limbla Syncline, a bedded sequence of Proterozoic sediments, of the Pertatartaka formation. It lies to the south and south west of the highly metamorphosed Harts Range complex, within the Arunta Block. We consider that the carbonate rocks, and the associated ultramafics of the Limbla Syncline have the potential to host copper-lead-zinc deposits at depth. We consider that the ultramafic may have been a factor in the mobilisation or deposition of mineralisation. Previous exploration drilling has not penetrated further than 100m below surface, and has not determined the depth of the syncline.

**Literature Review**

There has been a continued review of current literature to further understand the tectonic and structural setting of the Limbla Syncline, the occurrence of volcanics in the area, and the potential for the introduction or mobilisation of mineralisation.

Scrimgeour (2013) and Whelan et. al. (2013) consider that this region is underexplored and has potential to reveal significant deposits under Quaternary / Recent soil cover. Tectonically, the Limbla syncline abuts the Harts Range metamorphic complex to the north, but is relatively unaltered. A number of suggestions for this have been proposed (Nowland 2008, and Huston 2012) and it is considered that this area may be part of the Rodinian tectonic movement. There have also been a number of studies undertaken on the introduction of volcanics during the late Proterozoic (Hoatson et.al. 2005 and Claoue-Long et.al. 2005), but recent work by Nowland (2008) did not describe any mineralisation associated with the
volcanics examined from boreholes to the south of the Limbla syncline. Much of the published work makes little or no direct reference to this area, but rather concentrates on the surrounding metamorphic terrain.

**Work undertaken**

The soil cover in the licence area is thick and outcrop is sparse. However, as this area covers the core of the Limbla Syncline, it is critical to view the results in EL 27663 as relevant to the underlying stratigraphy in this area, and to extrapolate the structure from knowledge of the features on the western boundary of the syncline.

**Air Photo Interpretation and Google Earth Image Analysis**

Air photo interpretation and Google Earth Image Analysis of the central area of the syncline has revealed moderate variations in the topography, with the appearance of several dome-like structures which have influenced the direction of drainage channels. The edges of these features are marked by very subtle changes in soil cover and colour, and changes in the distribution and type of vegetation. Although fires have affected these areas in recent years, this by itself would not explain the noted differences. These may have been influenced by changes induced by the underlying magnetic feature (Map 2). A number of different interpretations may be suggested by these features.

**Regional Geochemistry**

Results from the NTGS Regional Stream Sediment Sampling project were reviewed briefly. There are very few reported sampling results for central area of the syncline sue to inaccessibility of the terrain.

**Regional Geophysics**

An overview of the available regional geophysical data reveals increased magnetic intensities, probably associated with the intrusives located on the western flank of the syncline. A magnetic high of similar intensity is located to the south of the axis of the syncline (Map 2). However the soil cover in the area is thick, and there are no outcrops. Further study of the magnetic data suggests that there may have been two phases of activity influencing the emplacement of intrusives, and that what has been previously interpreted as the southern limb of the syncline may be a later intrusive body or a structural influence.

**Field Mapping and Sampling**

The licence area has extensive soil and light vegetation cover and very few access roads. Reconnaissance of the area has not identified accessible outcrop for sampling. The target horizons for potential mineralisation are likely to occur at significant depth (between 200 and 400m.).
Future Exploration Strategy (2014-15 field season)

Further examination and sampling of the features identified from aerial photographs and Google Earth data will be undertaken where access permits.

R. W. and S. M. Krummel
September 2014
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