EL 28527 WILORA

FINAL REPORT

For The Period

20 September 2011 to 19 September 2012

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Summary

Intercept Minerals Ltd was granted EL28527 on 20th September 2011. The tenement consists of 237 blocks and is located within the area previously covered by tenements EL25366, EL25367 and EL25993. Two of the tenements EL25366 and EL25367 had been held previously by associated companies, Elkedra Diamond NL and Uramet Minerals Limited. The two tenements were explored by Uramet for calcrete-hosted uranium mineralisation within the Wilora palaeo-channel, which is located approximately 180 km north of Alice Springs, NT. The currently reported tenement, EL28527 contains the core areas of the potential uranium bearing ground identified in the previous exploration work on the two earlier EL’s.

Extensive exploration was carried out by Uramet Minerals Limited within EL25366 and EL25367 between January 2007 and January 2011. This exploration work consisted of regional reconnaissance work; water bore sampling, vegetation sampling, aircore drilling, mineral chemistry and geochemical analysis, VTEM and gravity surveys.

As part of an extensive aircore drilling program 243 holes for 4,359m were drilled within the tenement in September and October 2007. The drilling revealed an extensive uranium anomaly with the best intersection of 200 ppm uranium measured with a handheld XRF.

Mineral chemistry (scanning electron microscope (SEM) work on 6 samples) revealed a better understanding of the timing and mechanism of the calcrete system. Geochemistry (XRF and ICP on 214 samples of 16 drill sites) identified main mineral phases and chemical composition of the palaeo-channel system.

EL28527 was selected to cover the calcreted Wilora drainage areas, where uranium mineralisation had been encountered in the previous drilling programs in several localities. Although grades were low to moderate only, the existence of elevated uranium values was viewed as positive and required further assessment.

During this first year of grant of EL28527, the area has been reassessed, with office based reviews of all the data. Much has changed with regard to Uranium and the forecast price, and the optimism of earlier years is now more subdued. Given that no economic grade uranium mineralisation of was located in the previous exploration of the Wilora palaeo-channel system, despite the drilling covering the majority of the entire drainage, the potential for an exploitable uranium resource to exist in the tenement is considered to be significantly downgraded.

Similarly, the potential to generate other targets in the area, which may contain potentially viable uranium accumulations is considered to have a very low probability.

Consequently, the tenement was surrendered in September 2012.

All the data which was reviewed is available and contained in the annual reports on tenements EL25366 & EL25367 in NT Mines Department files.
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1. **Introduction**

Exploration License EL28527 is located at Intercept Mineral Ltd’s Wilora palaeo-channel uranium Project Area located approximately 180 km north of Alice Springs, NT with good road access on the sealed Stuart Highway and a network of established station tracks.

The exploration evaluation work carried out by Intercept Minerals Ltd on EL28527 between 20 September 2011 and 19 September 2012 consisted entirely of office based reviews of all the past data derived in the exploration work on tenements EL25366 and EL25367 which were produced by Uramet Minerals Limited. Uramet changed its name in 2011 to Intercept Minerals Ltd.

2. **Location and Access**

The Mt Skinner Project area is located approximately 200km north of Alice Springs (Figure 1), with access to the area via the sealed Stuart Highway, and within the project area by station tracks of varying quality.

![Figure 1 Location Plan](image-url)
The tenements lie within the Stirling and Mt Skinner pastoral leases. The primary land use is cattle grazing.

A sacred site survey was undertaken in 2009 by the Aboriginal Areas Protection Authority (AAPA), with an Authority Certificate (C2009/352) being issued by the AAPA in December 2009. A number of sacred sites were located.

3. Tenure

EL 28527 was granted to Intercept Minerals Ltd on 20 September 2011. The original size of the tenement was 237 blocks, covering an area of 743 km² (Figure 2).

4. Geology

4.1. Regional Geology

The Project area falls with the Georgina Basin of the Northern Territory. Kruse et al have described the basin as “a 330 000 km² erosional remnant of a series of originally interconnected central Australian intracratonic basins that range in age from Neoproterozoic to Palaeozoic. In excess of 1.5 km of Neoproterozoic sedimentary rocks are preserved in downfaulted blocks and half-grabens on the southern margin of the Georgina Basin in the NT. Depocentres and synclines contain up to 2.2 km of Cambrian to Devonian section.

Figure 2 Tenement Location
Previous estimates of as much as 9 km total thickness, based on magnetic depth modelling, did not recognise granites of low magnetic intensity and hence, have overestimated the thickness of the sedimentary basin. Seismic basement south of 21ºS can be divided into the western Dulcie and eastern Altjawarra domains. The former is dominated by folded and faulted Palaeoproterozoic felsic gneiss, intruded by syn- to posttectonic granitoids. The Altjawarra domain is relatively undeformed and consists of late Palaeoproterozoic (and possibly older) mafic–intermediate intrusive bodies and younger non-magnetic granitoids”.

The Wilora palaeo-channel consists of Quaternary to Tertiary silicified calcrete that is part of the Ti-Tree Basin sedimentary succession. The Ti-Tree Basin sediments cover Cambrian and Neoproterozoic sedimentary rocks, which comprise sandstone, siltstone, shale, conglomerate and carbonate units. These units crop out along NNE- and W- trending ridges and low hills. The basement is composed primarily of granitoids, with several granite exposures to the southwest and southeast of the Wilora palaeo-channel.

4.2. Tenement Geology

The Wilora palaeo-channel is over 50 km long and trends to the NW. Multiple generation calcrete and dolocrete lithologies have accumulated since the Tertiary. In the middle portion of the tenement, two saline lakes belonging to the Tertiary aged Ti-Tree Basin are known to overlie lignite and organic rich sedimentary units. The youngest sedimentary and morphological feature in the area is the northeast-trending ephemeral Hanson River drainage system (Figure 3).

The Wilora palaeo-channel drains towards the northwest and has a catchment area that extends to the Anmatjira Ranges to the southwest; and the Mt Skinner and Strangways Ranges to the southeast.

Figure 3 Simplified Geological Map of the Area
5. **Previous Exploration Work**

5.1. **Exploration by Other companies**

Relatively little exploration work had previously been carried out within the Wilora palaeo-channel. Uranium exploration south of the tenement was undertaken by CRA in the 1970’s (CR19740032) but only low uranium levels were reported.

Many explorers have previously investigated the area for base metals. Exploration within the tenement was initiated by Kennecott Exploration in 1966. The main targets were the malachite-bearing grey-green siltstone units that crop out throughout the area.

The NT Department of Mines and Water Resources drilled 4 holes for a total of 662 m in 1968 to investigate copper mineralisation at Mt Skinner (GR19680016). Alcoa of Australia Ltd continued exploration for copper and drilled 4 holes at Mt Skinner in 1981 (CR19820183).

In 1970, Centamin N.L. followed up on the holes drilled by Department of Mines and Water Resources and selected intervals of core which were assayed for Cu, Pb and Zn but without any significant results (CR19830125).

In 1983, Alcoa Australia Ltd flew an airborne magnetic survey at 500 m line spacing and drilled 4 holes close to previous holes. Operations ceased after re-evaluation of the data led to a down-grading in prospectivity of the area for base metals (CR19830125).

In 1995, CRA Exploration Ltd re-logged and assayed the Mt Skinner core drilled in 1968 but did not make any concluding remarks (CR19950562).

No significant drilling has been carried out since 1995.

In 2002 NTGS undertook remapping of the 100,000 Woodgreen sheet area that encompasses the Mt Skinner project area. The NTGS re-evaluated the area as part of the Southern Georgina Basin Geology and Resource Potential Report in 2007 and concluded that Mt Skinner remains prospective for Cu and Pb. (Dunster et al., 2007).

5.2. **Previous Exploration Conducted by Uramet Minerals/ Intercept Minerals**

Exploration work by Uramet was largely targeting uranium mineralisation, and comprised a review of all available data, bore water sampling, vegetation geochemistry, a VTEM survey, a gravity survey, and aircore drilling.

**Water Bore Sampling**

Water bore sampling was carried out throughout July 2007 for the purpose to identify uranium enrichment within the palaeo-channel and Ti-Tree Basin. Four samples were analysed at Genalysis Laboratory Services (Perth, W.A.). The results show anomalous uranium up to 54 ppb.
Vegetation Sampling

The Wilora Project area was visited in July 2007 to undertake an orientation uranium biogeochemical survey utilizing the deep-rooted Mulga tree (*Acacia aneura*). The purpose of this type of survey was to locate buried uranium concentrations utilizing the ability of deep rooted plants to transport groundwater and any associated trace elements such as uranium to the surface. Over 70 samples were collected from sample sites located about 500 m apart that both traverse and parallel the Wilora palaeo-channel. A handful of young twigs and phyllodes were cut from each tree and bagged to dry prior to chemical analysis. Sixty-nine phyllodes samples were analysed for a suite of elements at Genalysis Laboratory Services (Perth, W.A.) using MS and OES. The results show that uranium levels reach up to 100 ppb around the Wilora swamp area. Base metal concentrations are anomalous in parts of the surveyed area.

Aircore Drilling

Aircore drilling was carried out throughout September and October 2007 drilling a total of 4359 m in 243 holes. The aim was to target calcrite-hosted Uranium in the upper 15 m of the palaeo-channel and lignite occurrences within the Ti-Tree Basin at depths less than 50 m. Drill locations were along tracks or fence lines and also along cleared lines perpendicular to the palaeo-flow direction with spacing of 400 m between the lines and 200 m or 100 m spacing between drill locations along a line.

The uranium is mainly concentrated in the lower part of the calcrite/dolocrete/silcrete succession. The succession occurs as elongated ribbons trending NW, which can be up to 19 m thickness in the centre but thinning towards the edges. Vertically, these ribbons consist of weathered calcite on the surface, soft and occasionally clay rich calcite, mixed calcite, dolocrete and silicified dolocrete. The groundwater table sits mainly just below the opalised dolocrete. The aquifer contains mottled calcite and brownish sands. Groundwater quality tends to be good but gets saline towards the Wilora swamp.

Lignite and/or organic rich seams around the Wilora swamp area were identified in 2 holes out of 7 at depth of more than 50 m. Two holes intersected a thick succession of kaolinitic clay around 55-57 m, which becomes more carbonaceous with depth. Aircore drilling penetrated 11 m of the clay and had to be abandoned at 69 m with the highest organic content in the last meter.

Selected core intervals of three historical drill holes from the Mt Skinner area (Mt Skinner 1, 2, 3) and one drill hole from the Wilora Palaeochannel (railway technical hole RA194/920RH1) were inspected at the NTGS Alice Springs Core Library and analysed with a portable Niton XRF. The results for the Mt Skinner holes confirm previously reported geochemical data. Maximum spot assays of 2.3% Cu and 402 ppm Zn were recorded from Mt Skinner 1. The results indicate an absence of lead-zinc mineralisation in the Central Mount Stuart Formation. None of these holes intersected the prospective Elyuah Sandstone...
Formation. Spot analyses up to 64 ppm uranium were returned from calcrete in the railway technical hole.

Nine malachite bearing siltstone float sample were tested with a Niton portable XRF analyser, and revealed values up to 600 ppm U, 635 ppm Pb, 1048 ppm Zn and 46% Cu.

Four shallow reconnaissance aircore holes were also drilled to for base metals, and were analysed on site with the Niton XRF. The results confirmed anomalous copper at the surface and elevated lead values up to 128 ppm were recorded at the end of hole WAC0175 at 18 m depth.

Mineral Chemistry

Mineral chemistry analytical work and grain identification on 6 samples was carried out in December using a Philips XL 40 analytical SEM equipped with a ThermoNoran EDS system for quantitative measurements of elements at the Geological Survey of Denmark & Greenland, Denmark.

Results confirmed that the calcrete/dolocrete system was silicified after deposition, filling pore space and occluding and dissolving mainly dolomite. Silica contains up to 12% magnesium. Other minerals identified are calcite, dolomite, barite, heavy minerals, weathered K-feldspars and clays in places. The detection limit of the EDS system was not sufficient to find the finely dispersed uranium.

Drill Hole Geochemistry

Geochemical analysis was undertaken on 214 samples collected from 13 drill site of which 12 are within the tenement. Samples were analysed at UltraTrace Laboratory in Perth, W.A., for Al₂O₃, CaO, Cu, Fe₂O₃, K₂O, MgO, Pb, SiO₂, SO₃, SrO, V₂O₅, Zn, ZrO₂, U, Th. Assays have been determined by X-Ray Fluorescence Spectrometry. Au has been determined by Inductively Coupled Plasma (ICP) Mass Spectrometry. Results do not show economic levels of uranium mineralisation.

Most of the samples that contain calcrete, dolocrete and/or silcrete were analysed on site with a portable Niton XRF analyser. Average uranium content is 46 ppm in a total of 550 samples, another 1037 measurements had no detectable uranium (detection limit is around 20 ppm). 1587 measurements were taken with the highest value of 203 ppm.

Helicopter-borne Electromagnetic Survey

A helicopter-borne EM (VTEM = versatile time domain electromagnetic) survey amounting to 252 line-kilometres over the tenement was flown by Geotech Airborne Ltd (www.geotechairborne.com.au) in October 2007.

While flying the VTEM a magnetic sensor was also positioned 65 metres above ground level and provided a continuous record of the total magnetic field.

The VTEM survey flown by Geotech at the Wilora project area identified in more detail a 46 nT discrete magnetic anomaly previously identified from NTGS data, the anomaly being
This anomaly is one of two similar anomalies which are evident on the NTGS data. The second anomaly has similar amplitude and dimensions.

Very similar values were determined for the second magnetic anomaly Wilora 2 although it may be slightly deeper.

The source is at a depth well beneath the detection capabilities of the VTEM EM system and so there is no indication as to whether the source is conductive or not.

**Gravity Survey**

In conjunction with a regional helicopter assisted ground gravity survey conducted by Geoscience Australia (GA) and the Northern Territory Geological Service (NTGS), Uramet commissioned an extra 500m spaced infill survey. A total of 125 stations nominally spaced 500m apart were collected, over an area of approximately 30 km².

The contractor used was Atlas Geophysics of Perth, utilising a Scintrex CG5, facilitated by a Robinson R44 Raven II helicopter. No significant gravity anomalies are associated with the magnetic anomalies.

### 6. Work Conducted During 2012

At the start of the first year of grant of EL28527, office based reviews of all the data were conducted. The aim was to determine all the opportunities for mineral occurrences within the tenement, and then to consider the merits of pursuing exploration programs for these.

Initially there is an obvious separation of base metals and uranium. While there have been some elevated assays from grab samples reported in the region, mainly copper and zinc, there has been nothing of substance to support further exploration. Accordingly, the search for base metals was rejected at this time.

The previous exploration programs in the area conducted by Intercept/Uramet had been successful in locating elevated uranium mineralisation in the Wilora palaeo-channel. Therefore uranium demonstrably remained as a potentially viable target within this tenement area. There were three conceptual and potential uranium target models which could be applied to the area.

- The first is the demonstrated uranium mineralisation which is present in the palaeo-channel. However the grades encountered in the aircore drilling program in traverses across the system at regular intervals did not produce any grades which would be classed as that required for mining project viability, let alone high grades over a substantial area.
- The second model is at greater depth below the palaeo-channel, possibly within the more deeply weathered profile of the drainage system, and mineralisation constrained at redox interfaces as for roll-front uranium models. Some of the aircore drilling did test further below the main palaeo-channel, and there has been no supportive data to indicate any areas with elevated deeper uranium mineralisation below calcreted palaeo-channel levels.
• The third model possibility is related to the presence of lignitic material at depth (+50m) in the northwest of the drainage system. It is possible that uranium which has travelled along the calcined palaeo-channel could have been trapped and absorbed into the carbonaceous lignites. While an assay value of 46ppm uranium was obtained from core material from drilling for the railway line engineering, there is no further support, and the increased depth to target with quite difficult drilling conditions make this a high risk target.

Much has changed with regard to Uranium and the forecast price, and the optimism of earlier years is now more subdued. Given that no economic grade uranium mineralisation of was located in the previous exploration of the Wilora palaeo-channel system, despite the drilling covering the majority of the entire drainage, the potential for an exploitable uranium resource to exist in the tenement is considered to be significantly downgraded.

Similarly, the potential to generate other targets in the area, which may contain potentially viable uranium accumulations, is considered to have a very low probability.

7. Conclusions

The Wilora Calcrete palaeo-channel exploration program revealed an extensive but quite low grade uranium anomaly within the palaeo-channel system, which is currently not of economic value. The uranium potential of the palaeo drainage system has been well documented through the aircore drilling program, no further work is warranted on the basis of these results.

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