EL 24837 - Calvert Hills
Project Report
NTGS Geophysics and Drilling Collaboration 2009

Recipient: Southern Uranium Ltd
Applicable Tenement: EL24837
Authors: Meraaj Chand and Barry Willott
Contacts: mchand@southernuranium.com.au, bwillott@southernuranium.com.au
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1. Summary

The following report details drilling carried out by Southern Uranium Ltd (SNU) during August 2009 on the Calvert Hills Project, EL24837 under the Northern Territory Geological Survey (NTGS) Geophysics and Drilling Collaboration 2009 funded program. EL 24837 currently forms part of a Farm-in and Joint Venture Agreement between Uranium West Pty. Ltd (UWest), a 100% owned subsidiary of Crescent Gold Ltd (Crescent) and SNU to explore for minerals. SNU assumed management of exploration at Calvert Hills during Year 2 of the current term of the tenement.

The current drilling program was the initial phase of drilling by SNU and comprised four RC precollared diamond drill holes (CHRCD001-004) totalling 1,218 metres. The drilling was carried out on the newly named Big Foot prospect, located in the southeastern portion of EL 24837. The objective of the program was to confirm the presence of covered, highly prospective upper Westmoreland Conglomerate and lower Seigal Volcanics stratigraphy, mostly inferred from geophysical data to test for similar styles of uranium mineralisation as found at the Westmoreland uranium deposits (Redtree, Junnagunna and Huarabagoo), which are associated with the demagnetised portions of the northeast trending Red Tree dyke system. The Westmoreland region is also recognised for numerous other variant styles of uranium mineralisation located in differing stratigraphic and structural positions which SNU also considered in their target generation for this program.

The entire program was contracted to Tom Browne Drilling Services from Dubbo, New South Wales who provided drilling services and the temporary camp infrastructure. As the main target element was uranium, radiation safety protocols were strictly adhered to including the use of personal monitoring (TLD badges). Three of the holes were able to be gamma logged (CHRCD001-003) using a downhole gamma logging tool (27mm A088-Ultra Slimline Gamma Ray Tool), hired from Auslog Pty Ltd. Due to significant water inflows from a confined aquifer intersected in the last hole (CHRCD004), this hole did not reach target depth and was not able to be surveyed. Slight peaks were observed during the survey in CHRCD001 and CHRCD002 that coincided with weak uranium anomalism. A further fourteen (14) core samples were cut and analysed for twenty seven (27) elements including uranium, precious metals, base metals and REE's – (four (4) acid ICPAES, Pt, Pd, and Au 50g FA ICP-MS). Following this work it was planned to transport all of the drillcore from the program to the NTGS Darwin Core Facility for further hyperspectral logging. Unfortunately, the core could not be delivered as it was effectively destroyed by an early November 2009 bushfire that went through the temporary camp site where the cored was stored, adjacent to the Big Foot Track. This was discovered at the time of rehabilitation work carried out by SNU in mid November and the situation immediately notified to the SNU Managing Director and the Director of the NTGS.

Nevertheless, the stratigraphic detail obtained from the drilling has confirmed the presence of prospective Seigal Volcanics and the upper Westmoreland Conglomerate sequence under shallow cover. A number of structural features were intersected in the Westmoreland Conglomerate associated with minor faulting and fracture systems, but did not contain any significant uranium mineralisation. It is now evident that greater emphasis should be placed on interpretation of previously less highlighted regional structures delineated from the aeromagnetic data to allow more precise lithological and structural interpretation to aid in better targeting for

future exploration. In addition, further ground truthing will be required to investigate areas of outcrop that have been delineated from remote sensing, some of which were inspected in the lead-up to, and subsequent to the most recent drilling phase. As the sole angled drillhole (CHRCD004), targeting prospective northeast structures potentially localising reactive dykes either hosting or providing a conduit to uranium mineralisation failed to reach target depth, this target remains inconclusive and largely untested.

2. Introduction

EL 24837 is located within the Calvert Hills area of the Northern Territory, about 100km west of the Northern Territory-Queensland border. The project is located 300km north west of Mt. Isa and 100km south of the Gulf of Carpentaria (Figure 1).

Mt. Isa is the largest regional centre in the area with a population of over 20,000 people, and is also a major mining centre. It is serviced by daily flights to Brisbane and is connected to surrounding areas by major sealed roads, minor unsealed access routes and a rail link. Access to the project area is via the sealed Barkly Highway and Tablelands Highway and then the unsealed Calvert Road which traverses the Exploration Licence area. Most of these areas are impassable during times of heavy rainfall, common in the northern Australian wet season between the months of approximately November to March.

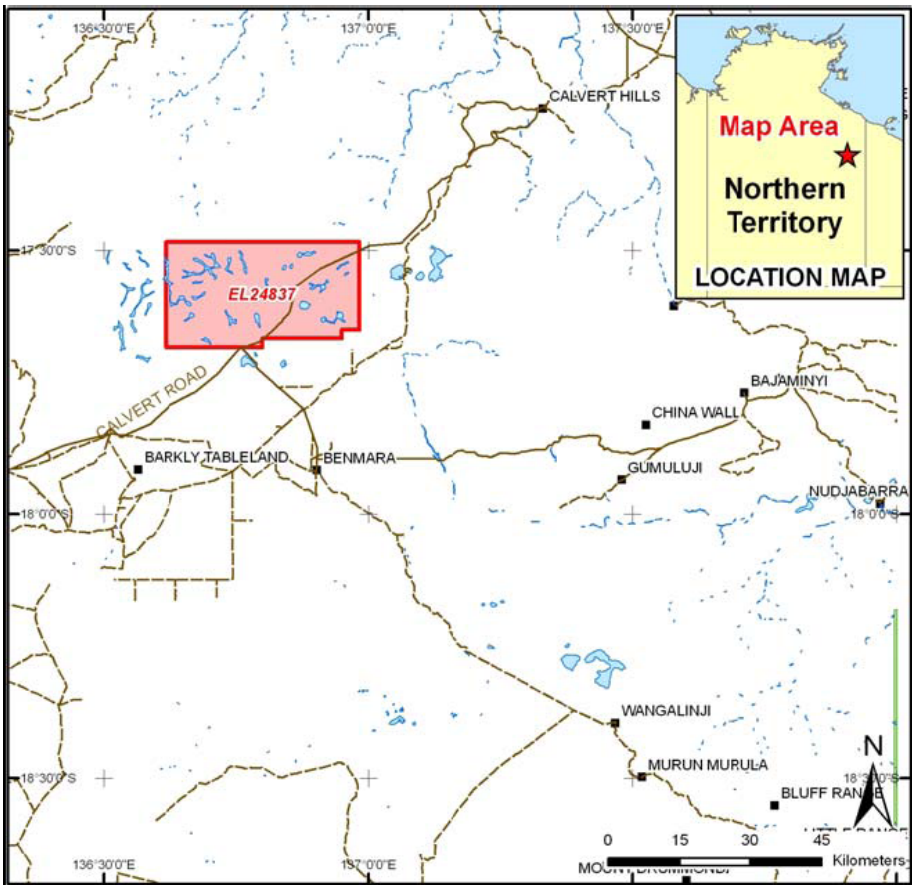

Figure 1 Location of EL 24837- Calvert Hills

The Calvert Hills NTGS Geophysics and Drilling Collaboration 2009 funded drilling program was conducted during August 2009. The program was completed following approvals given by the Department of Regional Development, Primary Industry, Fisheries and Resources (DRDPIFR) and NT Worksafe for a Mining Management Plan (MMP) and Risk Management Plan (RMP) respectively. The drillholes were located over the northern section of the Benmara pastoral lease on the Big Foot prospect (see Appendix 1). The station owners conducted all the site preparation earthworks for the program including the temporary camp site area. The camp consisted of three trailers carrying dongas containing the kitchen, toilets and accommodation

units that were supplied and serviced by the drilling contractors, Tom Browne Drilling Services (TBDS).

Radiation safety protocols were followed closely during the entire program. Personal monitoring badges (Special TLD badge) were issued to all workers on site following a radiation safety induction applicable to exploration. The TLD badges record background radiation dose measurements for all personnel engaged on all drill sites.

3. Drilling Methodology

Two drilling methods were conducted to suit the ground conditions and the program budget. Each drill hole was drilled with a RC precollar and completed with a diamond core tail (see Table.1).

Hole Id	Proposed Id	Em GDA94	Nm GDA94	Drilling method	From (m)	To (m)
CHRCD001	A	707112	8051800	RC	0	103
				Diamond HQ	103	314.5
				Diamond NQ	314.5	416.40 E.O.H
CHRCD002	E	696013	8056329	RC	0	101.7
				Diamond HQ	101.7	342.30 E.O.H
CHRCD003	D	702561	8054307	RC	0	92.2
				Diamond HQ	92.2	149.6
				Diamond NQ	149.6	213.00 E.O.H
CHRCD004	B	706058	8051084	RC	0	101.8
				Diamond HQ	101.8	246.30 E.O.H

Table 1 Drilling Methods- Drilling methods at exact depths.

4. Drilling Results

4.1 Proposed Program

The initial program proposed consisted of approximately 1160 meters of drilling (RC precollars with HQ3 diamond core tails).

- Six drill holes were planned to test for vertical and horizontal mineralisation styles associated with interpreted mafic dyke systems close to the Westmoreland Conglomerate in three target areas.
- All prospective core and rock chip samples were to be multi-element analysed for twenty seven (27) elements including uranium, precious metals, base metals and REE's - four (4)

acid ICPAES, Pt, Pd, and Au 50g FA ICP-MS. The aim was to investigate the presence and distribution of pathfinder elements as well as the target uranium.

- Drill holes were to be routinely downhole surveyed, oriented and gamma logged depending on ground conditions and the angle of the hole.

Hole ID	Em_GDA94	Nm_GDA94	Azi (TN)	Dip	Precollar (m)	HQ3 Tail (m)	Depth (m)	Comments
A	707112	8051800	0	90	100	120	220	Target Area 14. Moderate to high U/Th response associated with a resistive feature trending NNE; possibly a demagnetised dyke or an intrusive structure with a very weak magnetic response. Testing horizontal and vertical mineralisation below Seigal Volcanics in Ptw4.
B	705976	8051161	135	60	100	120	220	Target Area 14. Targeting horizontal and hybrid mineralisation in Ptw4.
C	702721	8054631	135	60	100	80	180	Target Area 17. Prominent NE oriented fault, with weak magnetic response close to a possible intersection zone with NW trending structure. Testing horizontal and vertical mineralisation in Ptw4.
D	702561	8054307	0	90	100	80	180	Target Area 17. Testing horizontal and vertical mineralisation in Ptw4
E	696012	8056329	0	90	100	80	180	Target Area 8. Scattered uranium response along NE oriented fault with moderate magnetic response; possible dilation/ intersection zone with NW trending regional Calvert Fault splay. Approx 400m E of creek running parallel to target area. Testing for Westmoreland Conglomerate and uranium mineralisation in Ptw4, and Ptw3.
F	695653	8056130	135	60	100	80	180	Target Area 8. Testing vertical mineralisation in Ptw4, and Ptw3.

Table 2 Proposed Drill Holes - EL24837 Calvert Hills

4.2 Completed Program

The drilling program was completed in August 2009, with four holes CHRCD001-004 totalling 1,218 metres. The number of holes had to be reduced due to the greater than planned drilling completed in hole CHRCD001. This hole was extended to investigate further into the targeted upper Westmoreland Conglomerate sequence intersected beneath over 100m of Seigal Volcanics that was intersected in this the first hole.

The next two holes CHRCD002 and CHRCD003 tested the two target areas in the upper Westmoreland Conglomerate further down the stratigraphic sequence to the west. The holes successfully established the presence of Westmoreland Conglomerate unconformably underlying thin, young cover (see Appendix 2).

CHRCD004 was drilled 1.2km southwest of CHRCD001. The aim was to seek local changes in cover thickness and evidence of a dolerite dyke interpreted from the geophysical data. The Westmoreland Conglomerate was intersected at 78m and encountered significant water flow that

required the hole to be abandoned short of the predicted depth of the target dyke (see Appendix 3).

Drill holes CHRCD001-003 were surveyed with the down hole gamma logging tool (27mm A088-Ultra Slimline Gamma Ray Tool), hired from Auslog Pty Ltd. The downhole logging was conducted at the end of each hole while the rods were still in the ground; see Appendix 6 for full survey data.

Fourteen (14) core samples were cut and analysed for twenty seven (27) elements including uranium, precious metals, base metals and REE's - four (4) acid ICPAES, Pt, Pd, and Au 50g FA ICP-MS. All assay results with sample descriptions have been appended in Appendix 5. No significant uranium mineralisation was intersected.

Unfortunately, the drill core from the program could not be transported to the NTGS core facility in Darwin, as the entire core sample collection from the drilling program was destroyed during an early November 2009 bushfire, which affected a wide area in the vicinity of the drilling. Other than a few selected samples that are being investigated by petrologist, Dr Paul Ashley in Armidale, NSW, it was impossible to restack or properly relocate any of the core lengths. A report detailing the circumstances of the bushfire incident is appended (Appendix 7).

4.3 Rehabilitation

All drill sites and accompanying locations were rehabilitated during November 2009 at the time of discovery of the bushfire (see Plates 1 to 4). A private grader operator, Mr. John Moora from Katherine, NT was used to back fill all sumps and a rubbish dump. Rubbish and plastic bags containing drill chips were emptied in the sumps before the plastic bags and all other refuse was removed from the site. The tracks leading to the drill sites were not rehabilitated at the request of the Benmara station owner, Mr. Ernest Holt as they are intended for future access on the station. The remaining areas were left for natural revegetation as shown in Plates 1-4.

Plate 1 Drill site CHRCD001-Piped bore hole

Plate 2 Drill site CHRCD002-Grader completing rehabilitation

Plate 3 Drill site CHRCD003- Rehabilitated

Plate 4 Drill site CHRCD004-Flowing bore tapped by Benmara

Radiation monitoring on site was included in the rehabilitation work as part of the process of securing the drillsites. Final radiation dose measurements were also recorded over the rehabilitated sites, where readings were averaged for before and after the program. In addition, all machinery and vehicles were hosed down of visible mud and dirt before departing the project area.

Table 3 illustrates the dose readings taken using a hand held scintillometer (RadEye PRD) from before the site was cleared for drilling and after the rehabilitation was completed. The site dose is shown (µSv/hr) assigned from an average of three location readings from each drill site.

Date	**Drill site ID**	**Dose rate (µSv/hr) Before Drilling**	**Rehab Date**	**Dose rate (µSv/hr) After Rehab**
08/08/09	CHRCD001	0.03	17/11/09	0.025
13/08/09	CHRCD002	0.035	18/11/09	0.043
17/08/09	CHRCD003	0.05	18/11/09	0.05
20/08/09	CHRCD004	0.03	17/11/09	0.036

Table 3 Drill Site Radiation Dose Measurements

Personal radiation monitoring badges used over the program showed below detection limits (10 µSv) of radiation exposure to all workers.

5. Discussion

The 2009 drilling program has been the initial phase of drilling by Southern Uranium in an attempt to discover a Westmoreland style sandstone-conglomerate hosted uranium deposit at Calvert Hills. Initial results are encouraging and valuable geological information gathered from this program will contribute greatly towards the ongoing exploration effort in the area. The four holes drilled are discussed in more detail in this section of the report.

The first drill hole, CHRCD001 targeted potential tabular or flat-lying uranium mineralisation adjacent to an interpreted north east trending dolerite dyke feature and also to test for mineralisation below and above the Seigal Volcanics and Westmoreland Conglomerate contact zone.

This 416.40m vertical hole confirmed the presence of the prospective Westmoreland Conglomerate at 355.15m underlying the Seigal Volcanics. A reddish brown clay-siltstone horizon (1.10m thick) was also present on top of the Westmoreland Conglomerate unit. The presence of the reddish brown clay- siltstone marker horizon analogous to the sequence at the Westmoreland deposit was very encouraging and the following Westmoreland Conglomerate, sequence intersected supported our earlier interpretations. The marker horizon seen in Plate 5 has also been mentioned by M. Ahmad and has been observed in the El Hussen area and is an important marker in a number of drill holes in the NE Westmoreland area.

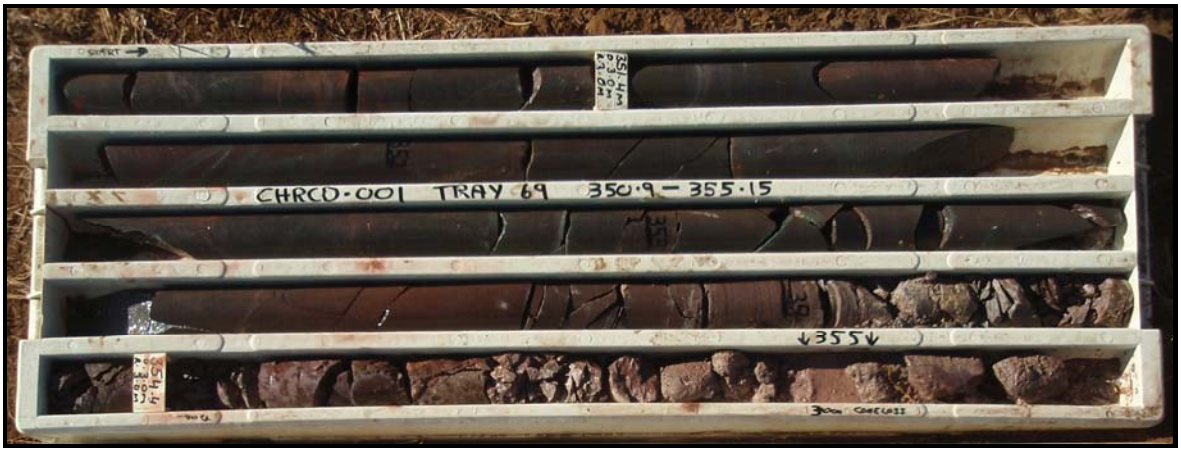

Plate 5 CHRCD001-Core samples from 350.90- 355.15m, the broken reddish brown clay / siltstone zone can be seen in the bottom 2 rows

The contact zone and the area below it did not contain any significant uranium mineralisation but there were relatively anomalous readings observed in the downhole gamma survey (355-356.50m). The assay values were however less than10ppm U. The hole continued through the contact zone, into the Westmoreland Conglomerate which contained areas with strong stockwork hematite veining and accompanying silicification, and brecciation (see Plate 6 &7). Although these zones had interesting alteration suggestive of possible gold mineralisation, the assay results did not show it.

The second and third drill holes, CHRCD002 and CHRCD003 were drilled further to the west to test mineralisation adjacent to prospective northeast trending structures delineated from geophysical (AEM and aeromagnetics) data sets. CHRCD002 was located over an interpreted dilation zone at the intersection of northeast and northwest trending structures. Both the holes confirmed the presence of the Westmoreland Conglomerate at shallow depths. The Westmoreland Conglomerate illustrated below in Plates 8 & 9 shows characteristics of the elsewhere mineralised, upper Westmoreland Conglomerate sequence (Ptw4), consisting of an interbedded, medium–coarse grained quartz sandstone conglomerate with a clay matrix infill and sub-rounded quartz pebbles.

Plate 6 Silicified Westmoreland Conglomerate- Stockwork hematite veining with jasperite textures (CHRCD001)

Plate 7 Silicified Westmoreland Conglomerate-Quartz, hematite veining in a crackle breccia setting (CHRCD001)

Plate 8 Westmoreland Conglomerate unit (half core) - interbedded coarse sandstone conglomerate, with rounded quartz pebbles and clay infilled matrix (CHRCD003)

Plate 9 Westmoreland Conglomerate unit (full core) - Sample from CHRCD003

Structures intersected in the Westmoreland Conglomerate included minor faulting and fracture systems that did not contain any significant mineralisation in CHRCD002 and CHRCD003. However, slight peaks were observed in the down hole gamma survey at 334m in CHRCD002 in a broken, clay altered zone as shown below (Plate 10); assay values returned 10ppm U.

The final drill hole, CHRCD004, angled at sixty degrees was drilled 1.2 km southwest of CHRCD001. The hole was targeting a resistive feature, trending northeast with an accompanying anomalous radiometric response. The Westmoreland Conglomerate was intersected at almost similar depths as in CHRCD003, with no evidence of the Seigal Volcanics unit, suggesting a significant fault dislocation relative to CHRCD001. The faulted and broken ground intersected in CHRCD004 was frequently hematite altered with some fractures infilled with coarse grained pyrite and white clay.

Plate 10 Westmoreland Conglomerate unit- Broken zone at 334m with slightly anomalous gamma readings observed in CHRCD002

Unfortunately the drilling conditions rapidly deteriorated in CHRCD004 due to very large water inflows, probably associated with the fault zone. The drilling had to be abandoned short of the target depth as unmanageable amounts of water flowed (30,000L/hr) out from the hole from an intersected confined aquifer (Plate 11) that increasingly caused the rods to bog as the hole progressed.

Plate 11 Flowing bore at CHRCD004 (app. 30,000L/hr)

6. Conclusions and Recommendations

The drilling results from the 2009 NTGS Collaborative Drilling program have been encouraging and support earlier geological interpretations prior to the drilling program being undertaken, relating to the existence of the prospective Westmoreland Conglomerate unit. Despite that no uranium mineralised zones were intersected during the program, the presence of the previously undocumented in the area Seigal Volcanics and the prospective Westmoreland Conglomerate under shallow cover is confirmed, along with a better understanding of the stratigraphy of the project area. Angled drilling to target prospective northeast structures with potential reactive dykes however remains inconclusive and largely untested due to the drilling difficulties in the final hole (CHRCD004).

The structural complexity of the area now needs to be further considered in planning future exploration, including drilling. The absence of the Seigal Volcanics in CHRCD002-004 is currently interpreted as a major displacement caused by a prominent northwest trending regional fault. The uplifted block to the west contains drillholes CHRCD002-004, while the eastern down thrown block contains CHRCD001. Similar geophysical responses elsewhere allow for the inference of a similar structural and lithological interpretation for areas further north in the tenement as shown in the geological interpretation in Appendix 4 and therefore potential for more drilling in similar stratigraphy.

The following recommendations are made in consideration of future exploration on EL 24837, Calvert Hills:

- Greater initial emphasis to be now placed on delineating regional structures and likely prospective stratigraphy from the aeromagnetic data. Initially, SNU focused on interpreted northeast structural features from the detail inherent in the AEM data.

- Further ground truthing and drilling should be conducted along strike on the northwest trending fault that separates CHRCD004 and CHRCD001, particularly where it is offset by potential dyke hosted northeast trending structures.

- Further drill testing of areas of likely shallower thicknesses of Seigal Volcanics for potential uranium mineralisation below the Westmoreland Conglomerate contact zone, analogous to the main economic deposits at Westmoreland.

- Further drill testing of northeast trending structures in numerous untested areas where aeromagnetic and AEM interpretation suggests potential for demagnetised dykes to host or nearby associate with uranium mineralisation as per the Westmoreland model.