CAZALY RESOURCES LIMITED
ACN 101 049 334

Surrender Report

QUARTZ HILL PROJECT
EL29137

For the Period
9 July 2012 to 9 September 2013

East Arunta
Northern Territory

Exploration Activities on Tenement:	EL29137
Sheet 1:250 000:	Illogwa Creek SF53-15
Sheet 1:100 000:	Quartz 5951
Project Operator:	Cazaly Resources Limited
Author:	D Horn
Date:	October 2013
Distribution:	1. Department of Mines and Petroleum 2. Cazaly Resources Limited

ABSTRACT:

Location:
The Quartz Hill project is located approximately 220km ENE of Alice Springs and 46km SE of the Harts Range Settlement

Geology:
Quartz Hill lies within the Eastern Arunta Region towards the southern extent of the Northern Territory, and towards the south eastern flank of the Etina Dome.

Work Done:
Epic Resources, operator and manager of the Quartz Hill Project including EL29137, EL29143 & EL29144, handed back all tenements to Cazaly Iron in late 2013.
No Exploration activities were conducted during the reporting period and the tenements were surrendered.

LOCATION AND TENURE:

The Quartz Hill Project is located in the eastern Harts Ranges in the Northern Territory approximately 220km east-northeast of Alice Springs, on the Illogwa Creek 1:250,000 Geological Map Sheet SF/53-15.

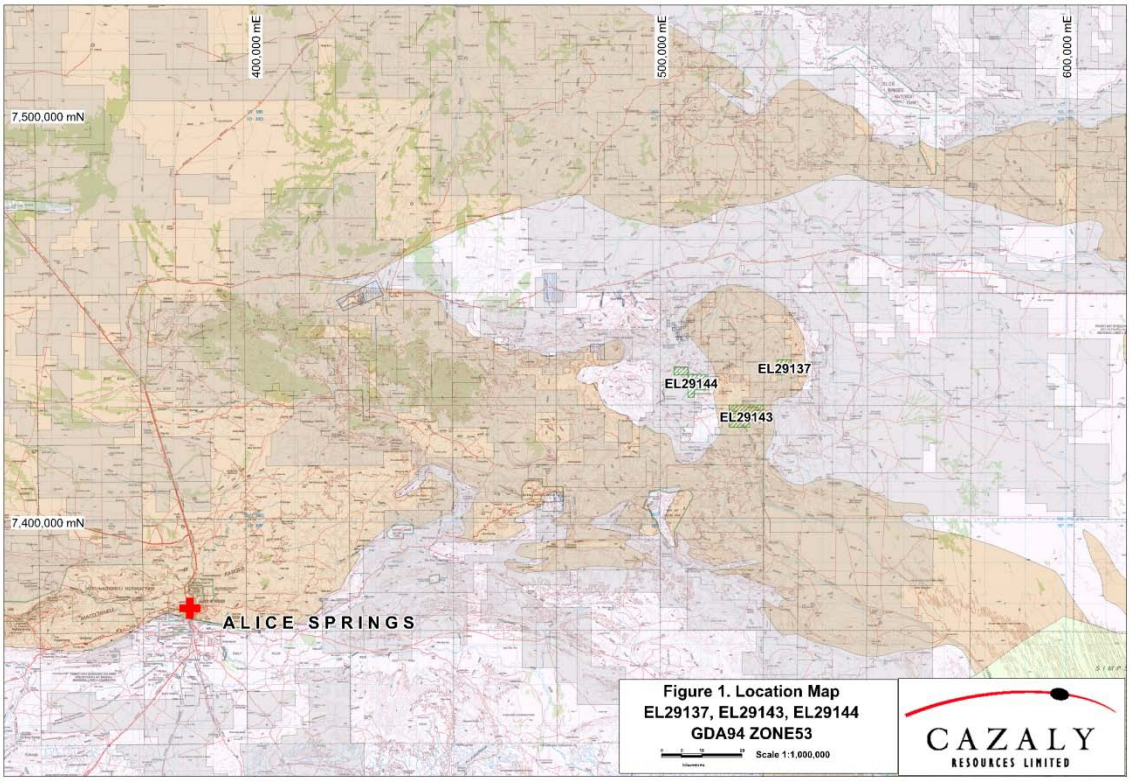

FIGURE 1: LOCATION MAP OF QUARTZ HILL PROJECT

Access to the Quartz Hill Project area is possible via two routes from Alice Springs:

1. Heading east, along the sealed Ross Highway through to the historic gold workings of Arltunga, then northwards on grade tracks to Claraville station and from there on station tracks heading east to the project area. The journey takes just under four hours and is bitumen until the turnoff to Arltunga from the highway. This track is narrow in places and crosses a number of creeks and as such is only suitable for 4WD light vehicles.

2. Heading north on the sealed Stuart Highway, then east onto the well-maintained partial sealed Plenty Highway, turning south onto Abulindum Station tracks located east of the Harts Ranges township. This route takes approximately four and a half hours and is sealed for the first 170 km from Alice Springs but covers many more kilometres. This is the main route into Abulindum Station and is regularly maintained. Recent upgrading and widening of station tracks to accommodate exploration activates by *Mithril Resources Ltd* means that this is the most suitable route for heavy vehicles and drill rigs.

Epic Resources Limited ("Epic") were the title holders, operator and manager of the Quartz Hill Project. Epic withdrew from the project and management reverted to Cazaly Iron Pty Ltd ("Cazaly")

TABLE 1: QUARTZ HILL TENEMENT SCHEDULE

TID	PROJECT	HOLDER1	CURAREA	GRTDATE	APPDATE	SURDATE	EXPCOM	RENT	PERIODTO
EL 29137	QUARTZ HILL	EPIC	3 blocks	09-Jul-12	26-Oct-11	13-Sep-13	$12,000.00	$366.00	08-Jul-13
EL 29143	QUARTZ HILL	EPIC	13 blocks	09-Jul-12	26-Oct-11	13-Sep-13	$26,000.00	$696.00	08-Jul-13
EL 29144	QUARTZ HILL	EPIC	9 blocks	09-Jul-12	26-Oct-11	13-Sep-13	$31,000.00	$564.00	08-Jul-13

REGIONAL GEOLOGY

STRUCTURE:

The Quartz Hill Project area is situated at the SE corner of the Arunta Inlier. Of Proterozoic age, this inlier is a complex of high grade metamorphic sedimentary and igneous rocks, located at the southern margin of the North Australian Craton. The contact with the Central Australian Craton is overlain by the Neoproterozoic Amadeus Basin. The Arunta Inlier merges with the Palaeoproterozoic Granites-Tanami Block to the NW and is bounded on all other sides by Palaeozoic Basins i.e. the Canning, Wiso, Georgina and Eromanga Basins.

The Arunta complex is transected by a series of regional and local scale east-west and northwest-southeast trending faults, which have been the loci of multiple phases of north-over-south thrusting during the Proterozoic and later the Carboniferous Alice Springs Orogeny. This orogeny was responsible for retrograde metamorphism along the east-west structures, more widespread in the Harts Ranges than in the Central Province where it is intensely focussed on these structures. Metamorphic grades range from greenschist to granulite in the Northern Province and from amphibolite to granulite in the Central and Southern Provinces, with greenschist grades being associated with the retrogression in the south and central provinces.

STRATIGRAPHY:

Stratigraphy is largely overprinted by the structural thrusting and the division of the Inlier into structural provinces, but there are divisions of groups based on age dating and relationships. The older basement rocks have been considered to be the Strangways Metamorphic Complex, but age dating by AGSO suggests the Weldon and Aileron Metamorphics in the Napperby area to the west may be older.

The Harts Range Group in the south eastern Arunta is essentially a pelitic and calcareous metasedimentary assemblage metamorphosed predominantly to amphibolite facies. The basal unit, the Entia Gneiss, has attained granulite facies but has been retrogressed to amphibolite facies and affected by the Palaeozoic Alice Springs Orogeny. PNC believed the Entia Gneiss was possibly older than the Strangways Metamorphics. The bulk of the Harts Range Group, the Irindina Gneiss and the younger Brady Gneiss, show little evidence of having exceeded amphibolite facies and are clearly younger than the Entia. The Bruna Gneiss, a felsic intrusive, or less likely a part-extrusive porphyroblastic rock, has been dated at 1750Ma but this date only puts a minimum age to the sequence. Studies at Adelaide University suggest the dominant metamorphism within the Harts Range Group is related to the Alice Springs Orogeny.

Post-orogenic platform cover sediments are sporadically distributed throughout the Arunta Inlier. At least three age groups were named but the Hatches Creek Group (1 830-l800Ma) and the Reynolds Range Group

(1820-1780Ma) are now both considered SMC equivalents. The Simpsons Gap Metasediments of the Iwupataka Metamorphic Complex (1660Ma) are truly cover.

The youngest sediments are the neo-Proterozoic Amadeus Basin to the south and the Ngalia Basin in the centre, which cover substantial portions of the Inlier and have little enough deformation to be significant oil and gas reservoirs.

IGNEOUS INTRUSIVES:

The Arunta Inlier has a complex and virtually continuous history of igneous activity. There are at least six major recorded felsic igneous intrusive episodes. Of these the Ngadarunga Granite (1880Ma), the Napperby-Huckitta-Jervois Granites (1780-1760Ma) and the Yarangunyi Granite (1600-1570Ma) are the most extensive and geologically most important. Other recorded igneous events, of relatively small areal extent, are the Andrew Youngs Igneous Complex (l635Ma), Mordor Igneous Complex (1200Ma), Stuart (mafic) Dyke Swarm (1050Ma), Gum Tree Granite (990Ma), Mud Tank Carbonatite (730Ma) and the Harts Range Pegmatites (520,400Ma).

PROJECT GEOLOGY:

The Harts Range region at has undergone repeated and substantial crustal reworking between Proterozoic and Palaeozoic times, and is now thought to represent an ancient and strongly altered/metamorphosed version of a continental collision zone. Much work was done in the 1990's on the Harts Range region by Arnold and Fogly et al and Mawby (1996) of the University of Adelaide, with the assistance of PNC.

The two key findings by the Adelaide workers in the Harts Range region are as follows:

• Crust south of the Illogwa Shear Zone dates from between 1500-1250Ma compared to 450- 300Ma in the Harts Range area; ie: the Illogwa Schist Zone is a major crustal scale tectonic feature.

• The Harts Range Group amphibolite facies metamorphism is Alice Springs Orogeny age and, unlike the Entia Dome sequence, there is no evidence for an earlier metamorphic event.

The key features of the Harts Range in order of interpreted age, are:

• The Entia Dome, a pre-1850Ma feature which forms basement to the Irindina Supracrustal sequence.

• The emplacement of the younger granites (1780Ma) which form the exposed Inkamulla and Huckitta Domes. The position of the (inferred/buried) Mt. Muriel Dome is uncertain but is assumed to be post Entia as it has apparently indented the SW margin of the Entia Dome.

Recently presented Magneto-Telluric data from a team consisting of Adelaide University and NTGS geologists (Selway et al, 2007) suggests the Entia dome system is a deep-crustal feature that can be shown extending to the mantle. One of the two traverses crossed the Arunta from north to south and skirted around the dome to the east, and showed a major subduction zone to the north of the dome which extends to the mantle. Oxidation of the rocks around the dome extends some 20km, with the area of greatest oxidation in the Quartz Hill vicinity.

The Hardings Springs Slide is a NNE-SSW defined shear system along the SE margin of the Entia Dome. The development of the Florence Creek Shear (mylonite) Zone may have been coeval with emplacement of the Bruna Gneiss (Ding et.al.) but probably pre-dates that event. The Florence Creek structure represents a zone of south directed thrusting and granulation-recrystallisation with an apparent absence (less H_2O?) of the widespread retrogression typical of the younger transgressive Illogwa Schist Zone.

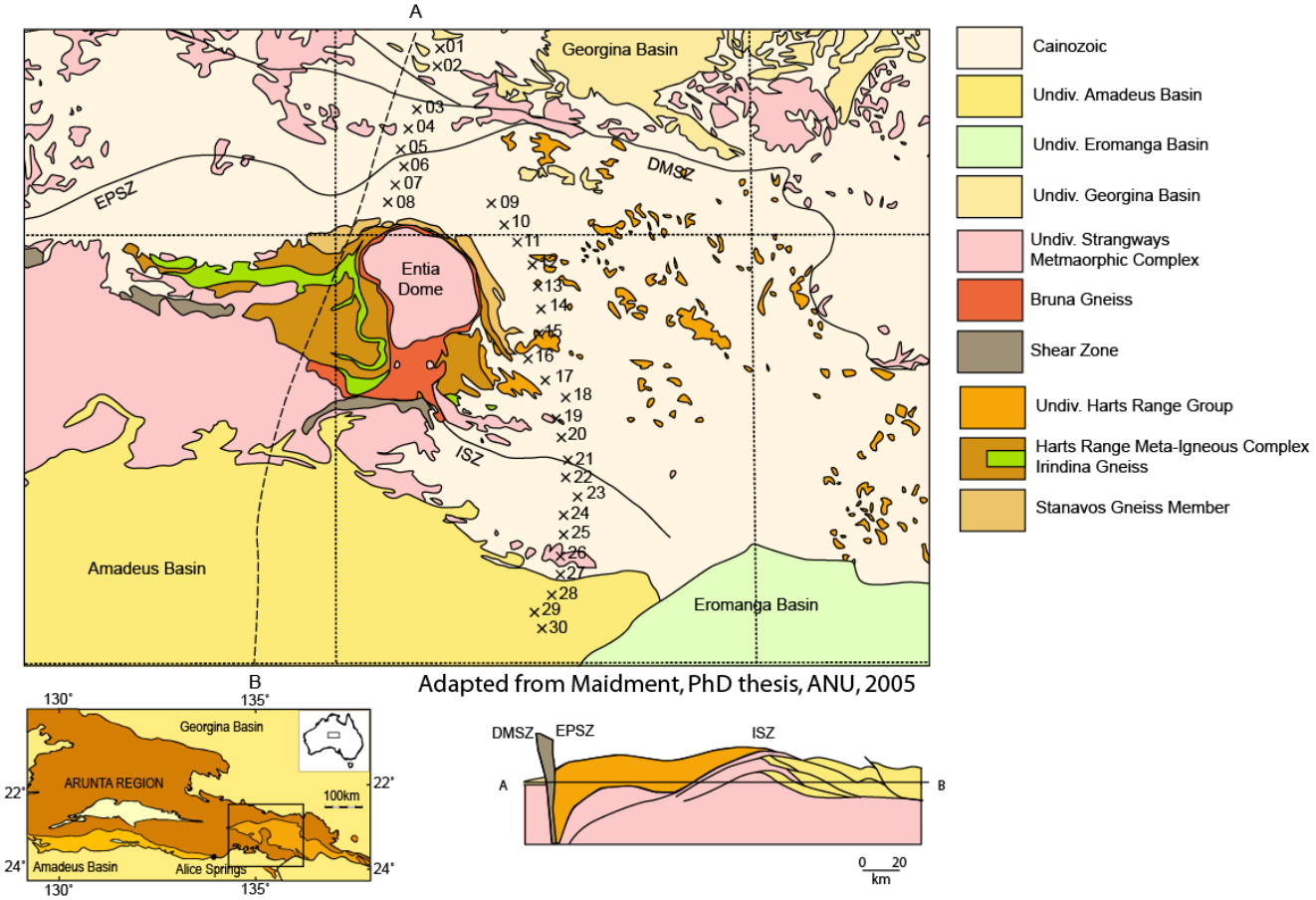

FIGURE 2: MAGNETOTELLURIC TRAVERSE POINTS; SUBDUCTION ZONES ARE INDICATED AS SOLID BLACK LINES

The Bruna Gneiss (1750Ma) is sill-like and is apparently strongly controlled by pre-existing structures. It follows the major shear zones, part of the Horse Fault and rims the margin of the Entia Dome. Interestingly the outcrop area of the Bruna Gneiss is broadest where it encounters the Yambla Corridor.

All the major structures, their conjugate structures and the shear zones show evidence of reactivation and retrogression to varying degrees. Many of the uranium prospects PNC were working on can be shown to be related to this late stage retrogressive overprint.

A very important point to note is that the presence of mixed igneous mantle types, the deep seated subduction structures, significant amounts of fluid alteration and veining (particularly in mafic material), the presence of Cu in carbonates and shear zones in the area and magnetite in pegmatites in the project area all indicate that the Harts Range is highly likely to be prospective for IOCG deposits. The age and types of the source fluids and magmas suggest that if present, these IOCG deposits are likely to be uraniferous.

REFERENCES

Cameron, E. N. and Desborough, G. A. (1964). "Origin of certain magnetite-bearing pegmatites in the eastern part of the Bushveld complex, South Africa." Economic Geology **59**(2): 197-225.

Cerny, P. (1991). "Rare-element granitic pegmatites. Part 1: anatomy and internal evolution of pegmatite deposits." Geoscience Canada **18**(2): 49-67. Drake-Brockman (1995). "Harts Range project annual report 1994. PNC Exploration (Australia) Pty Ltd. ." Northern Territory Geological Survey, Open File Company Report **CR1995-0298**.

Drake-Brockman J, G. G., Thevissen J and Vieru C (1996). "Harts Range project, Final surrender report for ELs 7990, 7991, 7992, 7994, 8036, 8148, 8220, 8675, 9031, 9032 and 50% surrender of EL 7967. PNC Exploration (Australia) Pty Ltd." Northern Territory Geological Survey, Open File Company Report **CR1996-0285**.

Drake-Brockman J, G. G., Thevissen J and Vieru C (1996). "Harts Range project, Annual Company Report 1995 field season - ELs 7967, 7990, 7991, 7992, 7994, 8036, 8148, 8220, 8675, 8906, 9031, 9032, 9149, 7993, 8901 and 8906. PNC Exploration (Australia) Pty Ltd. ." Northern Territory Geological Survey, Open File Company Report **CR1996-0286**.

Ercit, T. S. (2005). REE-enriched granitic pegmatites. Rare-earth Geochemistry and Mineral Deposits. R. L. Linnen, and Samson, I.M., Geological Association of Canada. **GAC Short Course Notes 17:** 175-199.

Hussey, K. J. (2003). "Rare earth element mineralisation in the eastern Arunta Region." Northern Territory Geological Survey **Record 2003-004**.

Joklik, G. F. (1955). "The mica-bearing pegmatites of the Harts range, central Australia."Econ Geol **50**(6): 625-649.

Simmons, W. B. and Heinrich, E. W., Eds. (1980). Rare-earth pegmatites of the South Platte District, Colorado. Resource Series - Colorado Geological Survey, Department of Natural Resources, State of Colorado, Colorado Geological Survey, Denver, CO, United States.