

PROJECT NAME: Quartz Hill Project

TENMENT NUMBER: EL25674, EL26046, EL26047, EL26048, EL24838, EL25296

HELD BY: Newera Uranium Ltd

MANAGER & OPERATOR: Newera Uranium Ltd

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ABSTRACT:

Location: The project is located about 150 km ENE of Alice Springs and 46 km SE of the Harts Range settlement.

Geology: The Project lies within the eastern Arunta Region in the southern NT, towards the south western flank of the Entia Dome.

Work Done: Exploration activities carried out in the reporting period includes open file research, Landsat TM acquisition and processing, GIS review and target generation and rock chip sampling.

Results: The work done discounted some of the tenements' potential whilst more work is needed for other target areas which could not be accessed during this reporting period.

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## Summary

The Quartz Hill Project is located about 150 km ENE of Alice Springs and 46 km SE of the Harts Range settlement (Figure 1).

The Project lies within the eastern Arunta Region in the southern NT, towards the western flank of the Entia Dome.

Exploration activities carried out in the reporting period includes acquisition and processing of Landsat TM data, GIS and rock chip sampling, primarily for REE and uranium.

Rock chip sampling of the Spartacus REE prospect failed to locate any areas of uranium or REE mineralisation. Further GIS work is required to assess any further mineral potential within the project.

## 1.0 Introduction

Newera Uranium Ltd's Quartz Hill project is located about 150 km ENE of Alice Springs and 46 km SE of the Harts Range settlement (Figure 1).

Access is good with the major graded tourist route of the Ross Highway from Alice Springs to the Arltunga Tourist Camp (~105km), then after Arltunga there is a graded road north to the Claraville (~15km), there after are a number of station tracks which head east to the tenement.

The nearest medical clinics and RFDS-rated airstrips are located at Harts Range. Additional light aircraft-capable airstrips are located at Claraville.

## 2.0 Tenement Status

Exploration Licences for the Quartz Hill project were granted between April 2006 and February 2008 with Newera Uranium Ltd the manager and operator of EL 25674, EL26046, EL26047 and EL26048. Exploration Licences 24838 and 25296 are 35% held by Newera and 65% held by Cazaly Iron Pty Ltd.

The exploration licences are within the Arunta Region.

**Table 1: Tenement Details**

Tenement No.	Area	Holder	Manager	Granted	Commitment
EL26047	4 blocks	Newera Uranium Ltd	Newera Uranium Ltd	15/02/08	\$25,000
EL25674	3 blocks	Newera Uranium Ltd	Newera Uranium Ltd	24/08/07	\$5,000
EL26046	5 blocks	Newera Uranium Ltd	Newera Uranium Ltd	26/11/07	\$15,000
EL26048	10 blocks	Newera Uranium Ltd	Newera Uranium Ltd	26/11/07	\$30,000
EL24838	14 blocks	Newera Uranium Ltd (35%), Cazaly Iron Pty Ltd (65%)	Newera Uranium Ltd	6/04/06	\$40,000
EL25296	33 blocks	Newera Uranium Ltd (35%), Cazaly Iron Pty Ltd (65%)	Newera Uranium Ltd	2/11/06	\$30,000

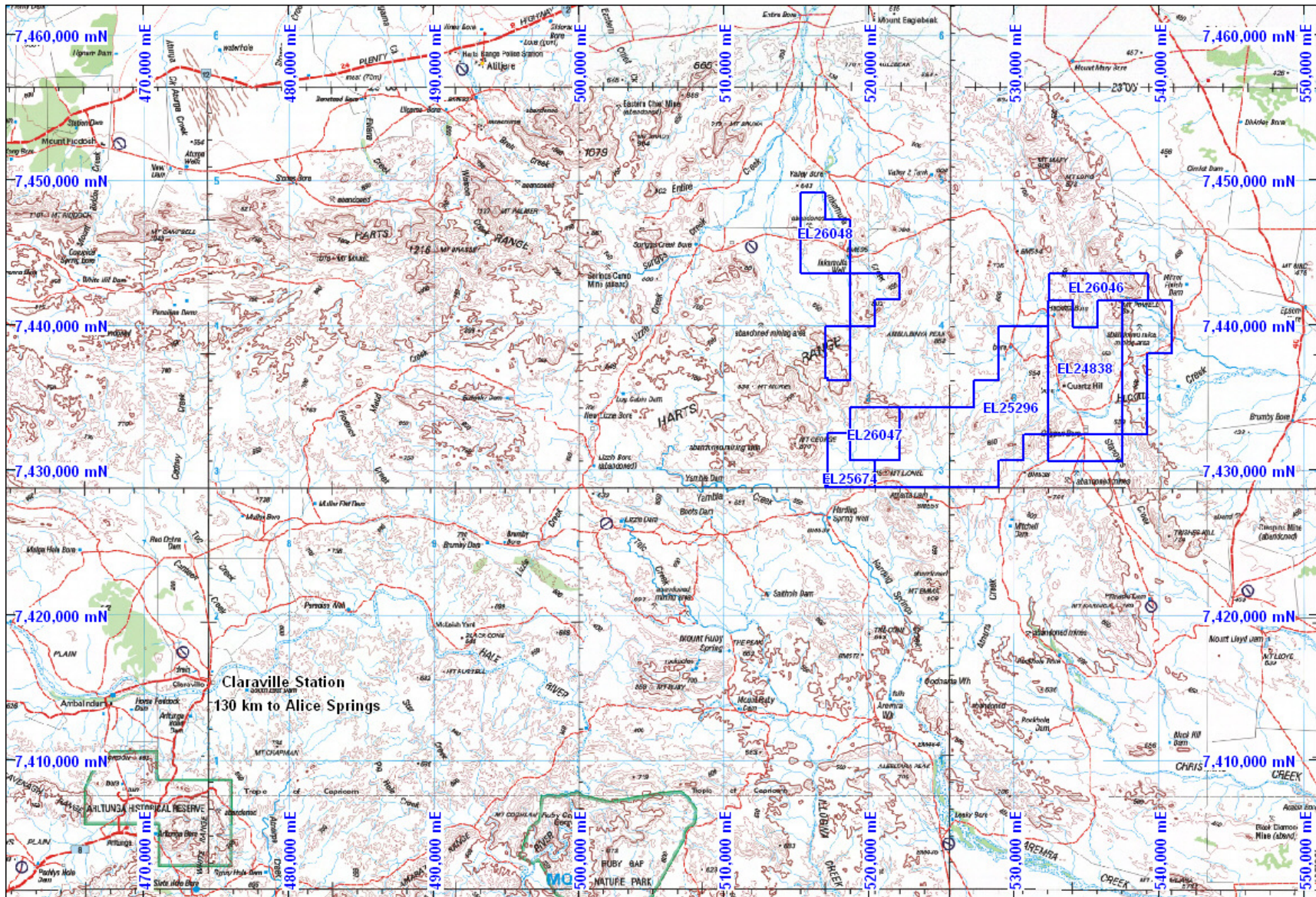


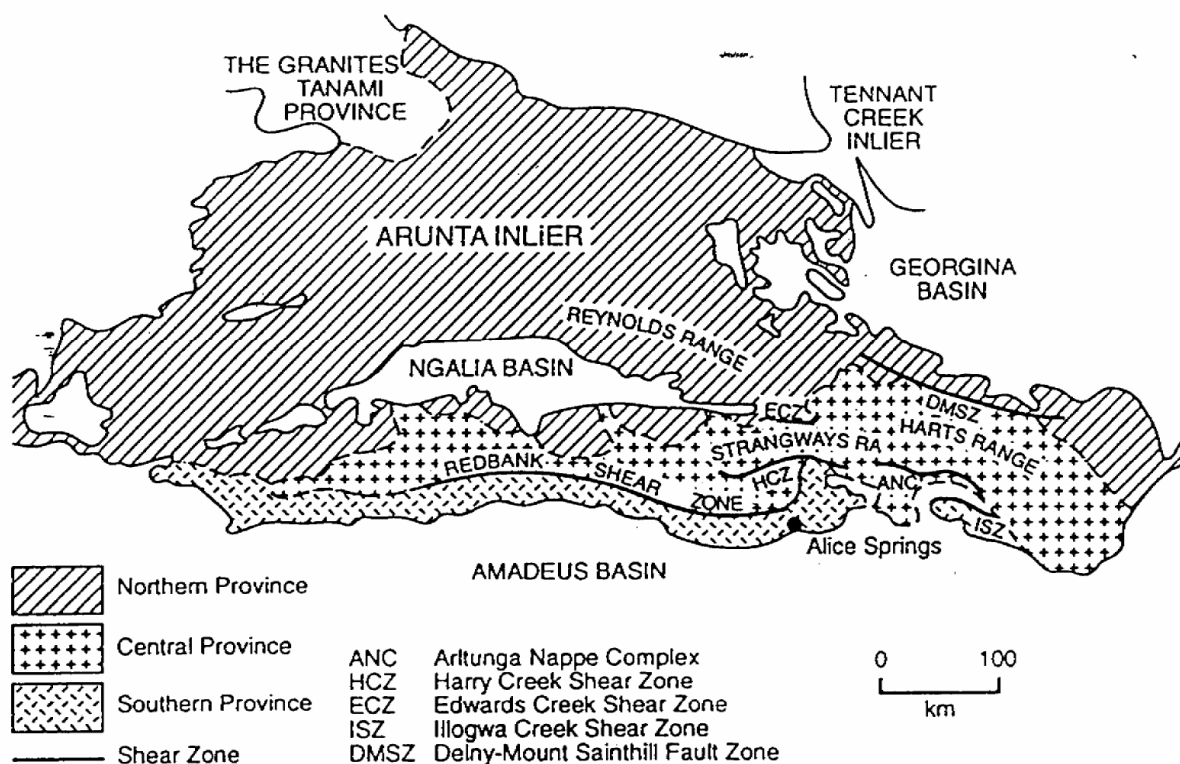
Figure 1: Location Map of the Quartz Hill project area.

### 3.0 Geology

#### 3.1 Regional Geology

The Quartz Hill Project area is situated towards the SE extent of the Arunta Inlier. 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 (Figure 2).

*J. Foden et al. / Precambrian Research 71 (1995) 207–227*



**Figure 2:** Regional Map of the Arunta Inlier.

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.

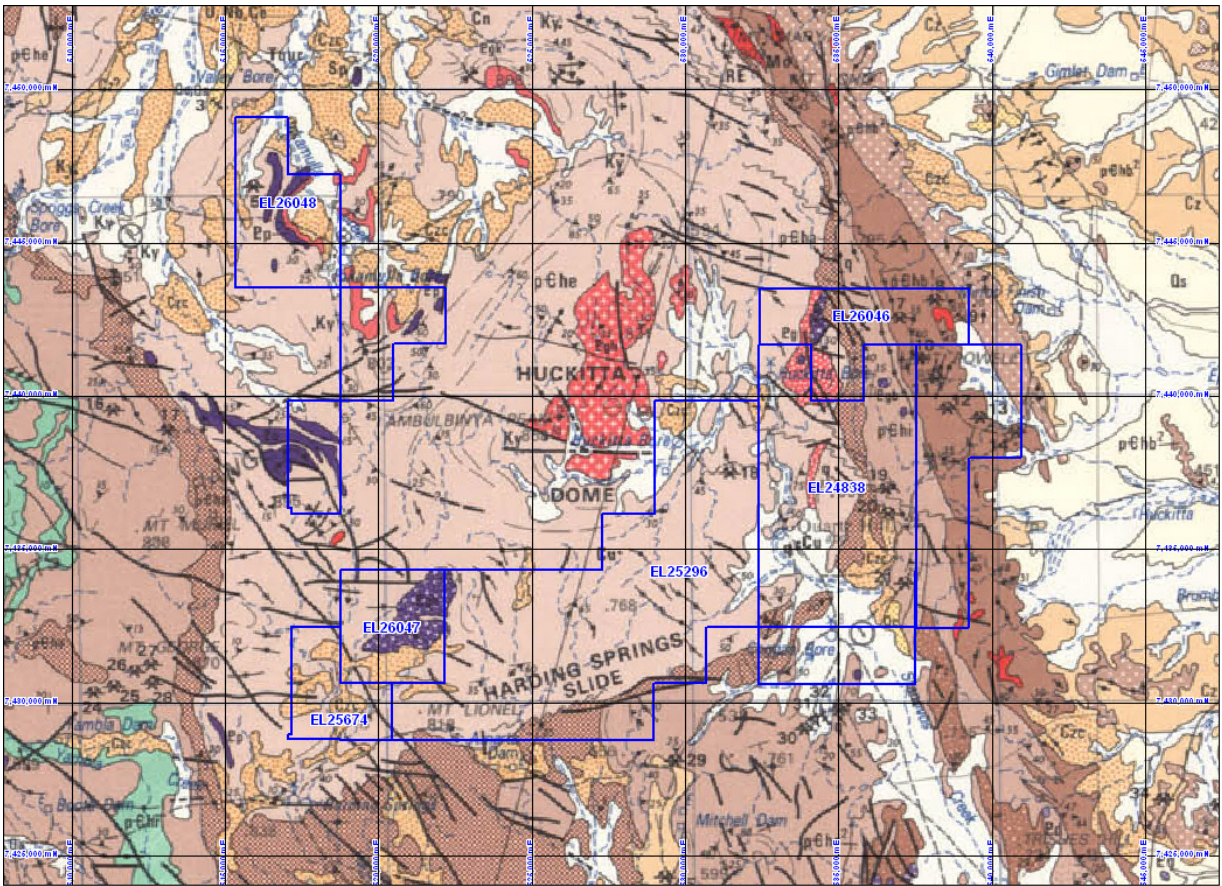


Figure 3: BMR (1985) Illogwa 1:250,000 Geology of the Quartz Hill Project

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. 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 Dome (Figures 3 & 4). 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.

Post-orogenic platform cover sediments are sporadically distributed throughout the Arunta Inlier. At least three age groups were named but the Hatches Creek Group (1830-1800Ma) 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 covered.

The youngest sediments are the neo-proterozoic Amadeus Basin to the south and the Ngalia Basin in the centre (Figure 2), which cover substantial portions of the Inlier.

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 Yaranguyi 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 (1635Ma), Mordor Igneous Complex (1200Ma), Stuart (mafic) Dyke Swarm (1050Ma), Gum Tree Granite (990Ma), Mud Tank Carbonatite (730Ma) and the Harts Range Pegmatites (520,400Ma).



## 4.0 Exploration History

PNC began their exploration of the Quartz Hill area (then known as EL 8036) in 1992. Prior work to that had been poorly recorded mica mining from the depression era, with re-opening of the mica mines allegedly using POW labour during the war. Many of the Italians who had worked here during the war may have returned in the post-war era, as the anecdotal evidence from prospectors and station managers in the area is that much of the post-war work in what would have been very isolated, primitive and remote camps was carried out by the newly immigrated Italian community.

Some geological work had been done on the mica mines however, as PNC report that one of the mica mines on the Quartz Hill project was known to contain uraniferous minerals. This was probably related to the burst of exploration for uranium that occurred shortly after the war in the 1950's, but the relevant research paper has not been located to date by Newera.

PNC initially flew airborne radiometrics, by both Kevron and Geoterrex, and followed up the data in 1993-4. Their 1996 surrender report (Drake-Brockman et al) copies directly from their 1994 Annual report (Drake-Brockman, 1995). In general their work consisted of large-scale airborne magnetic and radiometric surveys followed by ground mapping and rock chip sampling.

Follow-up of two airborne anomalies resulted in the discovery of the Quartz and Felspar pegmatite prospects (Figure 4). The Feldspar pegmatite prospect coincides with Newera's Spartacus prospect (Figure 3).

Felspar was a strong anomaly caused by float of a uranium rich mineral associated with a large E-W pegmatite. The mineral was massive, black, glassy, had a conchoidal fracture and didn't show weathering. It was identified as a Y-Nb>U mineral of the fergusonite series plus alteration products. They found only one anomaly roughly 30 X 30 m in extent and claimed it was caused by a small mineral occurrence spread by movement of float downhill, though they did mention other hot-spots. The mineral assayed 6.8% U. Further prospecting was limited.

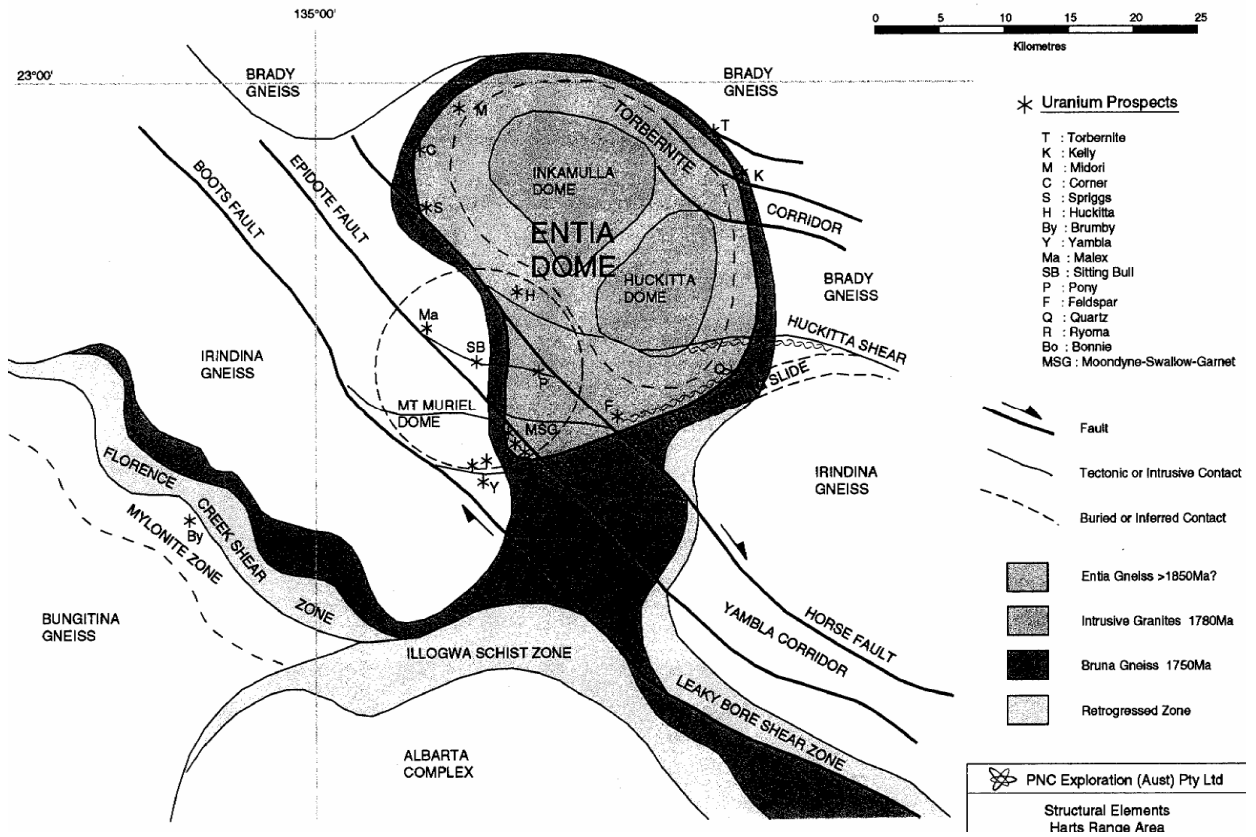


Figure 4: PNC map of the Harts Range and Entia Dome complex (Drake Brockman et al 1996)

## **5.0 2008 Exploration Programme**

Exploration activity undertaken at the Quartz Hill Project during the reporting period includes:

- Database compilation
- Aboriginal Areas Authority Certificate
- Landsat TM acquisition, processing and review
- Reconnaissance Rock Chip Sampling

### **5.1 Database compilation**

Surface geochemistry data from the historical reports has been compiled and entered into Newera's access database.

### **5.2 Aboriginal Areas Authority Certificate**

An Authority Certificate has been received covering Newera's Quartz Hill project.

### **5.3 Landsat TM acquisition and GIS Review**

Two Landsat TM scenes were acquired by EarthScan Pty Ltd, merged and processed to produce 14 Mapinfo images mapping the various channels and useful ratios that reflect potential mineral alteration and bedrock lithology changes.

These were systematically reviewed in conjunction with the magnetics and radiometric images to assess zones of interest worthy of field reconnaissance. A number of areas of interest were identified and where possible the areas were rock chip sampled during a number of field visits in late 2008.

### **5.4 Reconnaissance Rock Chip Sampling**

Following the identification of the areas of interest a number of field trips were organised in late 2008 to assess various targets.

Unfortunately, due to bad weather, the second field trip was cut short and not all areas were sampled. The primary area of interest within the project was for the REE and uranium potential of the numerous pegmatitic (syenite) dykes that cross cut the area. The most prospective area was the Spartacus Prospect located within EL25296 (Figure 5). Results were disappointing with no significant mineralisation present within the Feldspar-quartz syenites (Table 2).

The samples were submitted to Ultratrace for analysis using a mixed acid digest and ICPOES, ICPMS finish for the following elements: Cu, Zn, Co, Ni, As, B, Ag, Cr, Ba, Be, Bi, Cd, Ga, Ge, Li, Mn, Mo, P, Pb, Sb, Sc, Sn, Sr, V, W, Ta, Y, Hf, Zr, Nb, La, Ce, Pr, Nd, Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Th, U, Se, Rb, In, Te, Cs, Re, Tl, Si, Fe, Al, Ca, Mg, Ti, Na, K, S.

**Table 2: Rock chip sample locations and selected elements.**

SAMPLE ID	EASTING	NORTHING	CU	BA	U	CE	EU	LA	YB	PR	SM
3000736	522656	7431327	14	720	2.6	6.7	0.25	2.5	0.3	0.68	0.65
3000737	522837	7431730	4	970	0.7	1.7	0.2	0.7	0.1	0.16	0.15
3000738	522838	7431405	38	1160	0.5	2.8	0.25	1.1	0.85	0.22	0.2
3000739	522837	7431448	2	110	1.7	1.3	0.1	0.6	0.25	0.14	0.15
3000740	522908	7431404	-2	540	0.5	2	0.2	0.9	0.3	0.2	0.2
3000741	522914	7431444	4	750	0.7	1.1	0.2	0.4	0.7	0.1	0.1
3000742	522905	7431482	2	1300	0.2	1.1	0.15	0.9	0.1	0.14	0.05
3000743	523080	7431397	6	530	0.6	1.1	0.15	0.4	0.3	0.1	0.1
3000744	523093	7431428	2	900	0.6	2.9	0.25	1.8	0.15	0.34	0.25
3000745	523091	7431475	-2	510	0.7	1.9	0.2	0.7	0.1	0.12	0.1
3000746	523115	7431462	16	1550	1	7.1	0.8	6.3	0.1	1.14	0.7
3000747	523118	7431485	-2	400	0.4	0.4	0.15	0.2	0.05	0.06	-0.05
3000748	523276	7431447	8	440	2	0.5	0.2	0.3	0.2	0.06	0.1
3000749	523444	7431527	-2	290	7.4	0.7	0.15	0.3	0.05	0.06	-0.05
3000750	523457	7431500	4	740	0.3	0.8	0.15	0.4	1.5	0.1	0.05
3000758	522487	7431370	4	1610	0.2	2.5	0.2	1	0.05	0.2	0.2
3000759	467373	7417640	78	2300	1.5	37.1	1.1	17.7	5.25	4.44	4.35
3000760	467373	7417640	90	1830	1.7	33.7	1	15.1	4.85	3.68	4.15
3000761	467344	7418179	100	1010	2.3	23.1	0.75	8.7	1.8	3.4	3.45
3000762	467344	7418179	72	470	2.9	23.2	0.7	8	2	3.1	3.2
3000763	521978	7431195	4	400	5.6	0.9	0.15	0.9	0.1	0.16	0.15
3000764	522115	7431262	4	1460	0.2	1.6	0.15	1	0.3	0.18	0.15
3000765	522181	7431275	4	1460	0.2	0.4	0.15	0.2	0.1	0.04	0.05
3000766	522377	7431330	2	1160	-0.1	0.6	0.2	0.4	-0.05	0.08	0.05
3000767	523450	7431466	4	1420	0.4	0.6	0.2	0.6	0.15	0.12	0.1
3000768	523669	7431642	2	490	0.3	0.5	0.2	0.2	-0.05	0.04	-0.05
3000769	523719	7431686	10	300	0.9	0.5	0.2	0.3	0.1	0.04	-0.05
3000770	522533	7431423	6	400	0.2	0.6	0.15	0.3	0.1	0.06	0.05
3000771	531640	7437480	-2	350	4.8	0.4	0.15	0.2	0.8	0.06	0.1
3000772	531648	7437585	2	2760	2.4	0.4	0.15	0.3	0.6	0.06	0.1
3000774	531600	7437480	-2	3500	0.3	0.8	0.15	0.3	0.1	0.08	0.05
3000775	531466	743580	-2	30	1.6	0.5	0.15	0.3	0.35	0.06	0.05
3000776	531660	743575	4	10	0.4	-0.1	-0.05	-0.1	0.1	-0.02	-0.05
3000777	531617	7437705	2	1840	1	0.3	0.15	0.1	0.2	0.04	-0.05
3000778	531466	7435800	4	110	2.4	0.9	0.15	0.7	0.35	0.1	0.1
NR094	518211	7429446	31	334	-1	5.2	0.23	1.3	0.86	0.39	0.56
NR095	518100	7429600	3	163	-1	1.1	0.15	0.5	3.35	0.12	0.12
NR096	518038	7429673	17	105	-1	1.4	0.09	0.7	4.66	0.17	0.11
NR099	535065	7443414	18	196	2	12.3	0.39	5.3	0.92	1.45	1.25
NR125	518083	7429460	6	90	3	2.7	0.11	1.7	1.17	0.40	0.29
NR126	518165	7429388	1	111	-1	0.5	0.10	0.2	0.11	0.04	0.02

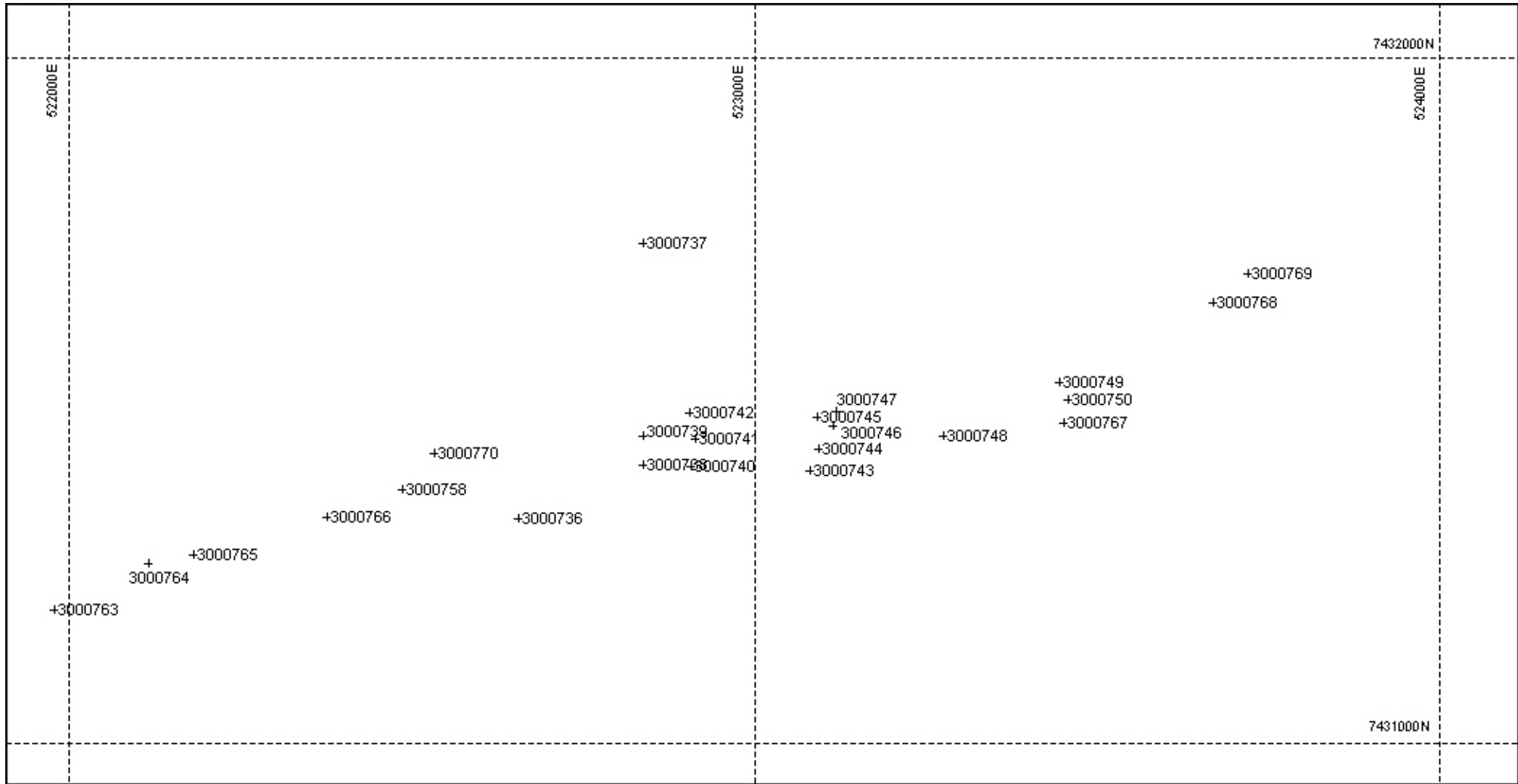


Figure 5: Rock Chip samples over the Spartacus Prospect.

Newera's Spartacus prospect coincides with the location of PNC's Feldspar Pegmatite prospect. The prospect consists of a 2km long ENE trending low ridge line with abundant coarse grained pegmatitic feldspar and quartz float. The origin of the float was a series of ENE striking, moderately south dipping dykes of predominantly syenite with lesser feldspar-quartz-muscovite pegmatite. The syenite shows the distinct graphic intergrowth of the quartz within the potassic feldspar. Similar syenite dykes were noted within EL25674, which were hoped to contain elevated rare earth elements. The bulk of the prospect lies within EL25296, with only 200 metres at the western extent of the structure occurring within EL26047.

## **6.0 Conclusions**

The disappointing results received from the rock chip sampling over the Spartacus REE prospect and other surrounding syenite dykes, suggests the feldspar pegmatite's in this area do not contain elevated REE or uranium mineralization.

A full analysis of the Newera and historical geochemical and geophysical datasets may provide further priority targets for the 2009 exploration year.

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## **Appendix 1**

Digital Data – Rock Chip Results