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EL 10215
JERVOIS PROJECT, NORTHERN TERRITORY, AUSTRALIA

by

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1:100,000 – Jervois Range 6152
1:250,000 - Huckitta SF53-11

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INTRODUCTION

Background

Previous investigations have identified a range of mineral commodities throughout the Jervois region. The most notable being a group of abandoned base metal deposits in the Jervois Mining District (*e.g*. Green Parrot, Reward, Attutra, Skyes, Cox's, and Bellbird) hosted by the Palaeoproterozoic Bonya Schist. These deposits lie outside of Arafura's tenements. Occurrences of base metals and tungsten hosted by the Bonya Schist and associated units, also occur in the Bonya Hills region and elsewhere within EL 10215. Recent airborne geophysical data acquired by the Northern Territory Geological Services (NTGS) in 2004 indicates that Bonya Schist is also present under shallow cover in parts of EL 10215.

Ti-V-rich magnetite occurrences, some with anomalous Cu-Pt-Pd-Au are known within the Attutra Metagabbro in northeastern parts of EL 10215. Past exploration efforts have not fully evaluated the extents of these occurrences. Hoatson *et al.,* (2005) also points out that in comparison to most mafic-ultramafic intrusions in the Arunta Region, the Attutra Metagabbro is relatively S-poor and has a greater potential for stratabound PGE-sulfide associations.

The recent 2004 NTGS airborne radiometric data also highlighted a series of uranium anomalies within the licence areas. This survey identified a large radiometric anomaly in the western Jervois Range, the Lucy Creek Prospect which extends into adjacent EL 24516 (Lucy Creek) also held by Arafura. Previous investigations in this area had focussed on testing the lateral undercover extensions of the Mount Baldwin/Arthur Creek Formations for uranium and phosphate (Menzies and Palmer, 1994). Outcrops in the immediate vicinity of the airborne radiometric anomalies received limited attention.

Interest in these tenements stems from the potential of the area to host:

- Orthomagmatic Fe-Ti-V, Ni-Cu and Pt-Pd-Au and other types of mineralisation associated with mafic intrusions in the Arunta Region;
- Tungsten, molybdenum, and base metal and Au mineralisation in the Bonya Schist and equivalent rocks of Arunta Region;
- Various styles of uranium mineralisation including sandstone and unconformity related styles in the Georgina Basin, and Mary Kathleen style or iron-oxide copper gold related mineralisation in the Arunta Region;
- sediment-hosted MVT, base metal or phosphate mineralisation in the Georgina Basin, and
- a range of other commodities associated with intrusives such as carbonatites, kimberlites and pegmatites.

This project area was originally part of a larger land-holding in the Jervois area and included EL 10214. Most of EL 10214 was surrendered before the results of the Unca prospect drilling were available. After consideration of the Unca prospect drilling program results, EL 26318 was reacquired by Arafura as it contains magnetic features similar to those found at the Unca prospect. In addition, EL 26231 was acquired as it covers the stock route between these two tenements.

Location and Access
(Modified after Lindsay-Park, 2004)

Exploration licence 10215 is located approximately 260 kilometres east north-east of Alice Springs (Figure 1) in the Jervois district. The remaining tenement area lies to the north of the Jervois Stock Route that passes through the Jervois pastoral property. EL 10215 is largely within the Arunta Province, but also includes parts of the Georgina Basin.

Access to the general area is via the well formed but mostly unsealed Plenty Highway that intersects the Stuart Highway 68 kilometres north of Alice Springs. The road distance from Alice Springs is about 360 kilometres. The Unca prospect camp is almost 400 kilometres by road from Alice Springs. Following heavy rain, the Plenty Highway can be closed to all traffic or have weight provisions applied.

Well form dirt roads exist to Baikal and the nearby Bonya aboriginal community, and to Lucy Creek pastoral property, north of EL10215, via the abandoned Jervois mine site. Vehicular access within the licence is generally restricted to a few station tracks servicing bores and fence lines. Vehicular movement away from these tracks is difficult in the western half of EL 10215 due to the hilly and rocky nature of the land but relatively easy in the eastern part where shallow aeolian sand blankets reasonably flat ground.

Active dirt airstrips are located near the Jervois and Lucy Creek homesteads and near Baikal. An infrequently used airstrip is also located at the abandoned Jervois mine site.

Topography and Drainage
(Modified after Lindsay-Park, 2004)

The Jervois Range runs northeast-southwest through EL 10215 creating a drainage divide (Figure 1). Numerous ephemeral gullies and deeply incised creeks drain the hilly parts. South of the Jervois Range most drainages contribute to the Bonya Creek and the Plenty and Marshall Rivers that flow (intermittently) to the east and southeast, and ultimately to the Simpson Desert. North and west of the Jervois Range the main drainage is provided by Arthur Creek which also drains ultimately to the Simpson Desert in the southeast. There are no permanent rivers and only a few significant water holes in the region.

The topography within the licence area falls into two main categories that generally correspond to the geology.

- Extensive flat or gently sloping sandy areas dissected by river systems and associated with the flood plains. These contain small isolated low-relief hills in parts and dominate the east of the tenement.

- Steep-sided incised ranges that rise up to 250 metres above the surrounding plains. These are related to metamorphic and igneous rocks of the Arunta Region in the Bonya Hills in the western parts of EL 10215, and to sedimentary rocks of the Georgina Basin in the Jervois Range.

Climate
(Modified after Lindsay-Park, 2004)

The climate prevalent in the licence area is best described as mainly dry all year round with hot summers and cool to cold winters. Average annual rainfall (1967–1983) is 330 millimetres of which about two-thirds falls in the period December to March. Average annual evaporation is approximately 2900 millimetres. Average minimum and maximum temperatures in summer are 22°C and 38°C degrees while corresponding winter average temperatures range at 4.7°C and 21.7°C. Overnight frosts are common some winters.

SUMMARY

Arafura Resources completed 4,840 metres of RC drilling in 45 holes in the northeast parts of EL 10215 in the first half of 2008. This exploration drilling program was designed to explore the Fe-Ti-V potential of various magnetic targets within the Attutra Metagabbro. The exploration program was cut short because of slow drill penetration rates, breakdown issues and a significant rain event.

No assay results had been received at the time of writing this report. Hence in the absence of assay and DTR data, no geologically meaningful statements can be made as to the amount of vanadium or its recoverability based on the 2008 drill program.

TENURE

Exploration Licences

Exploration licence (EL) 10215 was applied for by Arafura Resources NL on the 29th October 1998 and title was initially granted on the 6th December 2001 for a period of six years.

EL 10215 was granted as 355 blocks (1074 sq km) and then reduced to 177 blocks on 6 December 2003, and to 88 blocks on 6 December 2004. A waiver of reduction was requested at the end of 2005 and retention of the current 88 blocks until 6 December 2006 was approved by the Mining Registrar on 16 December 2005. A waiver of reduction was again sort at the end of 2006 and retention of the current 88 blocks until 5 December 2007 and was approved by the Mining Registrar 14 March 2007.

A two-year extension to the standard 6 year term was sort and approval was granted by the Mining Registrar. All 88 blocks in EL 10215 were retained (Figure 1).

Land Tenure

The original exploration licence covered parts of three perpetual pastoral leases (PPL). These are:

PPL 1007 Lucy Creek Station
Fogarty, E.D and K.M, Lucy Creek Station Via Alice Springs NT 0870

PPL 962 Jervois Pastoral Company
Jervois Pastoral Company PMB 36, Alices Springs NT 0871

PPL 1119 Jinka Station
Broad, M.J PMB 36, Alice Springs NT 0871

Native Title

There are no registered native title claims over the land which is the subject of the licences.

In the absence of instructions to the Central land Council from potential native title claimants in the area, the licences are not subject to an existing Native Title Exploration Agreement between the Arafura Resources and the CLC in respect of exploration titles in other areas of the Northern Territory.

In the absence of an Exploration Agreement, Native Title issues are addressed in accordance with Item 18 of the Schedule 2 Conditions which attach to the grant documents for both licences. This requires that Arafura convene a meeting with registered native title claimants before commencing exploration activities other than reconnaissance. As there are no registered native title claimants at present there is no compulsion to convene such a meeting.

The licences are separated by the Jervois Stock Route which is the subject of Aboriginal Land Claim 82.

Aboriginal Sacred Sites

The Sacred Site register of the Aboriginal Areas Protection Authority was queried by Capricorn Mapping and Mining Title Services Pty Ltd on 15 May, 2005, for the area of all of Arafura's titles and applications on the Jervois 100,000 sheet. This was prior to the Company undertaking reconnaissance activities in the area in 2005.

No exploration was conducted in the vicinity of the sites identified in the register. No sites are identified in either of the two areas over which airborne geophysical surveys were conducted in 2005.

In May 2006, Arafura Resources commissioned the Aboriginal Areas Protection Authority to conduct a clearance of an area of interest surrounding the Lucy Creek and Unca Prospects that was likely to be affected by drilling and earth moving operations and to provide Arafura Resources with a Work Authority Certificate covering all activities in these areas. Arafura was granted Authority Certificate C2006/080 in August 2006.

GEOLOGICAL SETTING

The regional and local geological discussion in this report largely comes from the author's extensive experience in the Arunta Region with the Northern Territory Geological Survey (NTGS) and collaborative programs with Geoscience Australia (GA). References include Freeman (1986), Freeman *et al.* (1989), Sun Shensu *et al.*, (1995), Collins and Shaw (1995), Zhao and Bennett (1995), Zhao and McCulloch (1995), Hand *et al.* (1999), Donnellan (2003), Maidment (2004), Hoatson *et al.* (2005), Claoué-Long and Hoatson (2005), Dunster *et al.* (in prep), other published NTGS and Australian Geological Survey Organisation (AGSO; now GA, formerly Bureau of Mineral Resources, BMR) maps and explanatory notes of the region, NTGS Annual Geological Exploration Seminar Abstracts, and unpublished co-authored papers and abstracts.

Regional Geology

The Arunta Region contains more than 200 000 km^2 of metamorphic rocks in the southern parts of the NT and has been subdivided into three distinct geological regions by the NTGS, the Ailerion, Warumpi and Irindina Provinces (Figure 2).

The Aileron Province largely consists of Palaeoproterozoic (1865-1500 Ma) sedimentary and igneous rocks that have undergone greenschist to granulite facies metamorphism. The majority of the preserved metasedimentary and igneous rock units in this region were deposited or emplaced prior to the 1740-1690 Ma Strangways Orogeny (*e.g*. Scrimgeour 2003, Hussey *et al.*, 2005, Claoué-Long *et al.*, in prep a, b). This event appears to have affected the entire Aileron Province to some degree, as opposed to the 1590-1570 Ma Chewings Event that appears to be localised within the central and southern(?) parts of Aileron Province (*e.g.* Hand and Buick, 2001, Fraser, 2004). The 1810-1800 Ma Stafford and 1790-1770 Ma Yambah Events also appear to be present throughout the Aileron Province, with extensive bimodal igneous activity, associated sedimentation and localised Low Pressure-High Temperature metamorphism.

Most of the eastern parts of the Aileron Province, including the Jervois district, were metamorphosed at upper greenschist or lower amphibolite facies conditions during the Strangways Orogeny, with an apparent abundance of 1810-1700 Ma igneous activity and deformation. Regions of the Aileron Province have also been subject to younger (1640-1500 Ma) periods of magmatism.

Current views on the depositional and tectonic setting of the Aileron Province are based on recent geochemical, isotopic and igneous studies and the contained mineral systems. These favour a rifted continental crust or evolving backarc setting in the early parts of the depositional history [*e.g.* Hussey *et al.*, 2005, Hoatson *et al.*, 2005 Matthew Cobb (PhD student, Curtin University) *pers. comm.*, 2005], with a prolonged tectonothermal convergent event in the Strangways Orogeny. Hussey *et al.* (2005) and Hoatson *et al.* (2005) argue for contiguous sedimentation and bimodal igneous activity during Stafford Event. This Event is thought to be responsible for the development of localised(?) deep-marine basins in the Arunta Region, as opposed to contemporaneous subaerial to shallow-water volcanism and sedimentation in the adjacent Davenport Province.

The Aileron Province contains contemporary equivalents of the gold-bearing Granites-Tanami and Tennant Creek Regions and regional aeromagnetic data indicate lateral continuity between these Regions. The Aileron Province is therefore regarded as part of the North Australian Craton, however, localised facies variations and differences in sedimentary environments are evident (*e.g.* Hussey *et al.*, 2005).

The Warumpi Province in the south and southeast of the Arunta Region (Figure 2) contains a younger package of metasedimentary and volcanic rock types with protoliths in the range 1690-1600 Ma (Scrimgeour *et al.*, 2003). The Province was variably metamorphosed in the 1640 Ma Leibig Orogeny, 1570 Ma Chewings and the 1150 Ma Teapot Events.

Unmetamorphosed Neoproterozoic to Palaeozoic marine and terrestrial sedimentary rocks of the Georgina, Ngalia and Amadeus Basins surround and unconformably overly the Arunta Region. Contemporaneous Neoproterozic to Cambrian strata of the Harts Range Group (Buick *et al.,* 2001, Maidment *et al.*, 2004, Buick *et al.,* 2005) are also caught up within the eastern parts of the Arunta Region in the newly defined Irindina Province (Scrimgeour, 2003). This revision and reinterpretation of the Arunta Region has significant geological implications and has come about largely as a result of several extensive chronological, metamorphic and metallogenic studies in the eastern Arunta Region (eg Miller *et al.,* 1998, Mawby *et al.,* 1998, 1999, Hand *et al.*, 1999a, b, Buick *et al.,* 2001, Scrimgeour and Raith, 2001, Hussey 2003, Maidment *et al.,* 2004, Buick *et al.*, 2005, Claoué-Long and Hoatson, 2005, Close *et al.,* 2005, Hussey *et al.,* 2005).

Geochronological and metamorphic studies have shown that the rocks of the Harts Range Group in the Irindina Province are variably metamorphosed to transitional granulite facies in the (480-450 Ma) Ordovician Larapinta Event. This high-grade event is followed by lower-grade Devonian to Carboniferous deformation and granite and pegmatite intrusion. Interestingly, the high-grade Larapinta Event appears to have had little influence on the thermal history of the surrounding rocks of the Aileron Province, and apart from rare exceptions appears to be largely restricted to the Irindina Province (Maidment 2004, Close *et al.,* 2005, Hussey *et al*., 2005, Claoué-Long and Hoatson, 2005).

Many of the fault bounded contacts between the various units within the Arunta and surrounding regions are attributed to the (390-300 Ma) Devonian-Carboniferous Alice Springs Orogeny. Most of the fault movements within the Georgina Basin also appear to be related to the Ordovician Larapinta Event and Devonian-Carboniferous Alice Springs Orogeny.

Local Geology

The reader is referred to Freeman (1986), Freeman *et al.* (1989), Zhao and Bennet (1995), Maidment (2004), Hoatson *et al.* (2005), Claoué-Long and Hoatson (2005), Dunster *et al.* (2006) for details on the geology and geochronology of the region. In the absence of more detailed recent publications which describe the geology of the Jervois region, Freeman (1986) and Freeman *et al.,* (1989) will be relied on to provide an insight to the local geology and nomenclature. The author was part of an NTGS team working on revisions to the Jervois Range 1:100 000 and HUCKITTA 1:250 000 map sheets and has drawn on previous mapping experience and unpublished data.

Arafura's original Jervois titles (EL 10214 and 10215) encompassed parts of the Aileron and Irindina Provinces and the Georgina Basin. EL 10215 only includes elements of the Aileron Province and the Georgina Basin. EL 10214 was surrendered 5 December 2007 Hussey (2008b).

Figure 3 details the surface geology in the vicinity of the EL 10215. The geological map is from a geo-located scanned copy the HUCKITTA 1:250 000 Geological Map Sheet (Freeman 1986) and covers an area slightly larger than the Jervois 1:100 000 Map Sheet.

Previously, the Arunta Province (domain/inlier/block) was divided into three major subdivisions based on coarse structural and stratigraphic considerations (Stewart *et al.,* 1984, Shaw *et al.,* 1984). The three structural provinces were divided into the Northern, Central and Southern Domains, separated by major east-west tectonic zones. In the eastern parts of HUCKITTA near the licence areas, the Delny-Mount Sainthill Fault Zone was used to separate the Northern from the Central Tectonic Domain (Freeman 1986). The Delny-Mount Sainthill Fault Zone is now used in part to separate the Aileron Province in the north from the Irindina Province in the south (Figure 2). The rocks of the Harts Range Group in the south have been metamorphosed to transitional granulite facies in the Ordovician Larapinta Event (Hand *et al.,* 1999a, b, Buick *et al.,* 2001, 2005, Maidment 2004) while the contemporaneous units in the Georgina Basin that unconformably overlie greenschist to amphibolite facies

rock units of the Aileron Province immediately north of this fault zone are essentially unmetamorphosed. Claoué-Long and Hoatson (2005) found localised thermal affects coeval with the Larapinta Event in the Attura Metagabbro region.

The Bonya Schist (-pCo) is the dominant outcropping Palaeoproterozoic unit within the licence areas. It is a polydeformed composite unit that is predominantly composed of pelitic, psammopelitic and calcareous metasedimentary rocks, with subordinate psammitic and quartzite units, and felsic and mafic igneous rocks, all metamorphosed at upper greenschist to lower amphibolite facies conditions. Rare preserved sedimentary structures in the psammitic and quartzite units in the Bonya Hills indicate that at least parts of the Bonya Schist were deposited in high-energy shallow-water environments. Sedimentary structures have been obliterated in the pelitic units that host the base metal occurrences in the Jervois Mining District.

Recent unpublished NTGS mapping (by the author and Max Frater) has found that some of the mafic and felsic igneous units within the Bonya Schist, as it is currently mapped (Freeman 1986 and Freeman *et al.*, 1989), are clearly discordant intrusive units. Other igneous bodies are extrusive units. Large bodies of granite-granodiorite are also present throughout the region. Many of these have been differentiated and named based on their localised distribution. The granite-granodiorite bodies clearly intrude the Bonya Schist as plutons or as high-level sills/laccoliths. Field and petrological evidence indicates that most if not all have been deformed and metamorphosed, probably in the Strangways Event. The granitic units are poorly exposed in the eastern and southern parts of the licence area with isolated hills protruding above the plain, but geophysical data indicates they dominate the region. Unnamed metamorphic units, currently mapped as unit pCd, are also present in these areas; these are thought to be similar to parts of the Bonya Schist, based on their geophysical expression. However, differences are evident.

The Bonya Schist has a variable magnetic character depending on the rock types. Most of the mafic igneous rocks in the Bonya Schist have a low magnetic response in comparison to the distinct highly magnetic package that hosts the deposits of Jervois Mining District. This essentially corresponds to a package of magnetite-bearing andalusite and muscovite-biotite schists, with subordinate calc-silicate rocks and localised magnetite bodies. The psammitic and calc-silicate-rich parts of the Bonya Schist in the Bonya Hill have a different geophysical expression to the others mentioned above. A similar geophysical expression is seen elsewhere within the licence areas.

The Attutra Metagabbro (-Pda) occurs in outcrops to the east of the Jervois Mining District as a series of low hills. The unit is described as altered gabbro, dolerite, norite and magnetite rock. The mineral potential of this igneous body was highlighted by Hoatson *et al.* (2005) and is part of ongoing NTGS studies.

The named granites in the vicinity of the licence areas include the Jervois (-Pge), Unca (-Pgu) and Xanten (-Pgx) Granites. These range from biotite granodiorite to highly fractionated leucogranite. Outcrops of unnamed or undifferentiated granitoids also occur throughout the Jervois region; these units are thought to be more or less coeval with the named granites noted above. The Samarkand Pegmatite (Pps) has also been differentiated within the Bonya Hills.

Until recently, there was little in the way of precise geochronological constraints in this region. A pelitic unit from a non-magnetic part of the Bonya Schist several kilometres northeast of the Jervois Mining District has a maximum SHRIMP U-Pb age of 1807 Ma (Claoué-Long and Hoatson, 2005). This unit was sampled near the margin of the 1786 Ma Attutra Metagabbro which also contains 1775 Ma intrusive tonalite bodies (Claoué-Long and Hoatson, 2005). Similarly aged felsic magmas are present elsewhere; for example, Zhao and Bennett (1995) found that the Jervois Granite was about 1770 Ma and a rhyolitic intrusive unit in the Bonya Hills has also been recently dated at 1785 Ma (Jon Claoué-Long, *pers comm*., 2004).

The Neoproterozoic Mopunga Group unconformably overlies the metamorphic rocks of the Arunta Region throughout most of the Jervois region, forming the spine of the Jervois Range (Figures 1 and 3). The Mopunga

Group consists of the Elyuah Formation (-Pae, shale and silty sandstone), the Grant Bluff Formation (-Pag, quartz arenite and quartz-wacke), and the Elkera Formation (-Pak, siltstone, sandstone and dolostone). Freeman (1986) indicates that the Neoproterozic Mopunga Group was deposited as relatively even-thickness sheet-like units following localised tectonic movements. The Oorabra Arkose (-Pao) also unconformably overlies the Arunta basement rocks in the Jervois region, and is preserved in localised half grabens beneath the Mopunga Group (Freeman 1986).

Dunster *et al*., (2006) indicates the Mopunga Group is disconformably overlain by the early Cambrian Shadow Group (Mount Baldwin Formation and Red Heart Dolomite) which is in turn disconformably overlain by the middle Cambrian Narpa Group (Thorntonia Limestone, Arthur Creek Formation and Steamboat Sandstone).

The distribution of the Red Heart Dolomite, Thorntonia Limestone and Steamboat Sandstone are not indicated on existing published geological maps of this region (*i.e.,* Freeman, 1986 or Freeman *et al.*, 1989). However in a recent revision of the Georgina Basin stratigraphy, Dunster *et al.,* (2006) recognised these units in a nearby cored drill hole (Huc 1). In contrast to the intense surface weathering in the Jervois Range outcrops, Huc 1 intersected fresh unweathered units. As such these new units are most probably exposed in the Jervois Range and elsewhere nearby, although their boundaries and distribution are yet to be fully delineated.

Based on limited reconnaissance mapping in EL 10215 during 2006, the deeply weathered and silicified interval that contains phosphate-rich units (predominantly wavellite but also including minor turquoise) occurs above a red-brown mudstone/siltstone package is Red Heart Dolomite. Apart from one possible archaeocyathid, no other fossils were identified within this unit. These units occur at the top of a fining upwards cycle above the Baldwin Formation. These units were mapped as Errarra Formation by Freeman (1986) and Freeman *et al.,* (1989) but have since been assigned to the Red Heart Dolomite (Dunster *et al.,* 2006). Some of the silicified laminated chert/mudstone/siltstone units that overlie this unit could be Thorntonia Limestone?, as defined by Dunster *et al.,* (2006) in Huc 1, rather than Arthur Creek Formation (Freeman, 1986; Freeman *et al.,* 1989).

A series of northeast trending monoclines are present throughout the Jervois Range in the Lucy Creek prospect area. A subvertical north trending faultzone is also present in the southern part of the Lucy Creek prospect. As indicated on existing geological maps, this fault appears to curve into a north-northwest trend in the central part of the Lucy Creek prospect near the western edge of the Range. The relative movement on this fault is west side up (*ie.* reverse).

PREVIOUS INVESTIGATIONS

Other Parties

A detailed investigation of the previously completed exploration in ELs 10214 and 10215 has been compiled by Andrew Drummond and Associates as part of the Independent Geologist's Report included in the prospectus for Arafura Resources NL's initial public offering of shares in 2003. The relevant part of Drummond's original detailed report is reproduced here as in Lindsay-Park (2005). An abbreviated version appeared in the final prospectus document.

Drummond reported as follows (edited):

> *Exploration programmes and results relevant to an appraisal of Arafura's Jervois area are as follows.*
>
> ***(a) Central Pacific Minerals N L (1970-1972) ATP 2283 & 3156. CR72-013, 78-104***
>
> *Tenements overlaid the north-western part of the Jinka Granite and generally west of EL10215. Work was concentrated at the Nabarloo North fluorite prospect, which lies about 15 km west of EL10215, where a resource (pre JORC) of 360 000 short tons (326 000t) at 40% fluorite to a depth of 30 metres was estimated - and apparently open under cover to the east. A later estimate of 123 000t @ 44.5% CaF_2 is presented in the NTGS Huckitta Mineral Deposit Data Series (Prospect 54). They indicate the potential for the hosting of bodies in the eastern Jinka Granite within EL10215, where it is generally concealed under alluvial cover. A separate report on the Bonya Bore area gives a good description of the geology of the various deposits in the Bonya field in EL10215 - including notes on the mineralisation, alteration, structure and a genetic model. However size, grade and resource data are too limited to obtain an impression of potential for a discovery of sufficient size to be economic for Arafura.*
>
> ***(b) Dampier Mining Co Ltd (1976-1977) EL1118. CR77-064***
>
> *The tenement covered the north-eastern part of EL10215 - the latter consisting of reasonably well outcropping Neoproterozoic and Cambrian sediments of the Georgina Basin. The target was lead-zinc mineralisation in the Cambrian units. Cores and cuttings from previous BMR and oil exploration drilling were examined and some Pb and Zn mineralisation was noted. Surface reconnaissance defined favourable sediments and structures. However there is no available record of any follow-up work.*
>
> ***(c) Otter Exploration N L (1977-1980) EL1583. CR80-174, 78-116***
>
> *That tenement covered the western halves of Arafura's tenements including the Bonya Tungsten Field. The licence area was originally considered to be prospective for W and Mo mineralisation. Copper and scheelite shows are located to the north of the licence area, and the Molyhil W-Mo deposit was being mined to the west of the licence area at that time.*
>
> *Subsequently it was realised that the licence area was also prospective for U mineralisation. Traces of uraninite mineralisation were discovered at Molyhil in 1977, and a number of strong anomalies were recorded in the course of a reconnaissance radiometric survey, including one recorded near Thring Bore in the south-west part of the licence area.*
>
> *Work carried out included additional airborne reconnaissance radiometric surveys, ground reconnaissance mapping and scintillometer surveys, and detailed mapping and sampling. Results were discouraging and the tenement was relinquished.*

(d) Otter Exploration N L (1977 - 1980) EL1584. CR78-117, 80-121

The tenement covered the eastern half of EL10114, except for its north-eastern corner: it is an area mapped as underlain by granites and Georgina Basin sediments. As for EL1583, Otter's exploration began for Molyhil style tungsten and molybdenum, but was expanded to uranium. A detailed radiometric survey delineated anomalism near Mt Cornish. Ground follow-up revealed that they were associated with ferruginous and silicified zones in weathered granite near the unconformity with the Neoproterozoic Georgina Basin sediments. The zones may represent a regolith, or fossil soil profile, associated with a pre-Georgina weathering event. The radiometric anomalies were found to be due to Th minerals in the basement granites.

(e) Otter Exploration N L (1977 - 1980) EL1585. CR80-252

The tenement covered the north-eastern section of EL10214 and the eastern half of EL10215. It included the Jervois Mine area, exclusive of the claims pegged over the actual deposits.

Systematic airborne spectrometer surveying revealed 24 anomalies. A follow-up field work programme included evaluation of 22 of them, scintillometer traversing of the Arunta Basement/Georgina Basin unconformity, orientation work in the Jervois Mines area, reconnaissance mapping and sampling for U and scheelite mineralisation, and evaluation of selected scheelite prospects. Two of the anomalies proved to be due to concentrations of uranium.

Orientation work in the Jervois Mines area resulted in the discovery of some coffinite U mineralisation in a core sample obtained from the Marshall deposit. Scintillometer work in the Mines area and creek sediment sampling throughout the north-west of the licence area failed to disclose any additional U mineralisation. Several scheelite shows situated outside the main mineralised zone at Jervois (the 'J' structure), were evaluated by means of sampling and magnetometer surveys but results were considered disappointing. Samples (rock and creek sediment) were also analysed for Cu and Zn. An area of apparently fault controlled Zn, W and Cu anomalism was located north of the Jervois Mines. The anomaly lies within the area around the mines excluded from Arafura's tenements, but indicates the applicability of the method.

(e) Hunter Resources Ltd (1987 - 1989) EL5171. CR89-630

The tenement was taken out to cover the Attutra Metagabbro, a mafic intrusive which outcrops irregularly over a 20x10km area east of the Jervois Mine in both Arafura leases. Work included mapping, an orientation geochemical survey, stream and rock chip sampling and ground magnetics. Sampling was biased towards magnetite-rich rocks and metapyroxenite lenses, as they were considered to have had the best potential to have accumulated PGEs.

Although much of the target area is overlain by younger alluvials, Hunter considered that the cumulate phases which could host PGEs seemed to be only size-restricted lenses unlikely to hold large bodies of ore grade platiniferous rock. Drummond notes that although maximum Pt assay was only 28 ppb, palladium assayed to 215 ppb and so is considerably more encouraging, especially considering its current strong price. Follow-up of magnetic anomalies generated by the NTGS airborne survey may be a worthwhile avenue for Arafura.

(f) Rosequartz Mining N L and Zapopan N L (to 1991) EL6260. CR89-816

The tenement essentially covered the Bonya Schists west of the Jervois Mine and hence much of the western half of EL10215. It was acquired because the area had not previously been explored for Au

despite it having been noted at the Jervois Mine and the Bonya workings, and because it was considered to have potential for Broken Hill-style Pb-Zn mineralisation. It covers the Bonya Tungsten Field.

The main exploration technique was stream sediment sampling for BLEG Au and for base metals, together with rock chips and geological traverses. Zapopan's mapping indicated that mineralisation in the licence area was evident at two stratigraphic levels: Cu-mineralisation was located lower in the sequence associated with garnet quartzites, calc-silicates and quartz flooding; W-mineralisation was located higher in the sequence associated with amphibolites and calc-silicates. Neither seems likely to host an economic deposit. Lead-zinc values were uniformly low. The drainage values highlighted three principal areas of anomalous Au. The two strongest anomalies also have coincident drainage Cu anomalies and elevated Zn.

Drummond considers that the BLEG results are moderately encouraging in that the anomalous values are explicable and average sample spacing is very wide. However the absolute level of anomalism is low as the maximum result from 60 samples was only 0.51 ppb Au. The sampled area has a high degree of outcrop and relatively high topographic relief contrast. It is considered that a major outcropping Au deposit should exhibit a greater BLEG response.

(g) Johannsen (1988 - 1989) EL6326. CR90-221

The tenement was located in the south-western Bonya Hills and hence in the south-western part of EL10215. Johannsen aimed to find apatite-hosted REE mineralisation. Two occurrences of apatite were located by traversing, but the REE assays are too low to be of interest. Nonetheless, Drummond considers the results do indicate potential in that district. Arafura's intended study of the recently flown NTGS airborne radiometrics seems well justified.

(h) Normandy Exploration Ltd (1990 - 1996) ELs 6993, 7287 and 7505. CR92-367, 93-169, 94-111, 95-108 95-253, 95-313, 96-283

The northern sector of EL6993 essentially covered those parts of ELs 10214 and 10215 which lie east of the Jervois Mine. The southern sector covered interpreted Arunta Block metamorphics under widespread alluvial cover in south-eastern EL10214. The western part of EL7287 covered the eastern-most salient of EL10214. EL7505 covered Bonya Schist around the Bonya Tungsten Field.

Normandy applied for the tenements to target sediment-hosted Broken Hill style mineralisation within Division 2 of the Proterozoic Arunta Group.

The exploration highlighted the Hamburger Hill area where Cu, Pb, Zn and Ag mineralisation was intersected. It lies 3-4km east of the Jervois workings, but outside EL10215. Normandy spent $1.4 million on its project, of which it seems about half was expended on ground now the subject of Arafura's applications. A massive data base has been created, and Drummond considers that a rigorous appraisal of it by Arafura, in combination with other data available to it, should indicate anomalous areas worthy of follow-up. The Normandy programmes and results away from Hamburger Hill are summarised below, with comments where appropriate on apparent avenues for Arafura.

During 1990, a reconnaissance trip was made to assess the area and determine the most appropriate sampling methods. A series of soil and rock traverses were conducted over areas of shallow sand/soil cover and outcrop. These traverses were located over magnetically high areas or geologically interesting or complex areas. Soil sample traverses were conducted along roads and tracks to assess the suitability of this method in areas of transported cover.

In 1991, a bedrock auger drilling programme was conducted along a series of traverses over similar areas to the initial reconnaissance. The three areas targeted for auger drilling were: east of Jervois Mines in south-east EL10215; south of the Plenty Highway in eastern EL10214; and north of Jervois Homestead in EL10214. The aim of the programme was to test the bedrock beneath variable thicknesses of sand/soil cover. In addition to the auger traverses, rock chip samples were collected during general reconnaissance of the area. Stream development was sufficient for representative stream samples to be collected in south-western EL10215, the Bonya Bore area.

Two areas were targeted for lag sampling; east of the Jervois Mine Leases, over outcropping and sub-cropping Bonya Schist rocks; and between Bonya Creek and Marshall River over outcropping and sub-cropping gneiss. The lag sampling was confined to the hills and ridges and areas of isolated outcrop. East of Jervois Mine the sample grid extended approximately 20 km north-south and averaged 4-5 km east-west: the length of individual lines depended on the landform. Evaluation of the lag sample results highlighted a coincident Cu, Pb, Zn, Ag, Cd, Co, As and Mo anomaly which defined Hamburger Hill. Drummond notes that although follow-up was concentrated upon this major anomaly, other anomalous areas were also indicated: they have received less intense follow-up.

In western EL10215, there are numerous Cu and W mineral occurrences and old mines. The majority of the mineralisation is hosted within or near the Kings Legend Amphibolite Member of the Bonya Schist and in the pegmatites. The aim of Normandy's programme there was to detect mineralisation outside the known prospects. The target area was the contact zone between the Mascotte Gneiss and Bonya Schist. Normandy's tenement was sampled with a total of 250 samples collected from second and third order streams. Assessment of the data did highlight any anomalous areas requiring follow-up.

An airborne EM survey was flown over selected areas. Anomalies were ground checked and soil sampled, with one area returning a Cu anomaly. A vacuum drilling programme was taken over two prospects 6 km south-east of the Jervois Mine, and within eastern EL10215.

In 1994, regional RAB drilling was completed in the Mt Cornish area of EL10214. The holes were drilled on a 1x1 km grid. The aim of the programme was to provide information on bedrock and to delineate prospective rock types, namely schists or mafic gneisses. The holes intersected granite, quartzo-feldspathic gneiss, amphibolite and unmetamorphosed Mt Cornish Formation sediments. A major NNW-SSE trending magnetic feature also runs through the area and was tested by a line of close spaced holes. RAB drilling was also carried out over anomalies defined by earlier investigations.

A further EM and magnetic survey was flown in 1994 covering Bonya Schist east of the Jervois Mine area and around the Bonya Tungsten Field. Anomalies were interpreted at the former and tested by vacuum drilling. Earlier airborne EM anomalies were followed up by a ground SIROTEM survey and then by RAB drilling in 1995. That drilling programme also tested anomalies which Normandy considered had not been assessed previously.

Drummond re-iterates that Arafura has yet to process and re-interpret the wealth of Normandy's data submitted to the NTDME, and it is beyond a reasonable scope for this Report to do so. However, given the geological setting; the extent of known mineralisation and of cover; the areal limits of several aspects of Normandy's exploration; and Normandy's justified concentration upon its Hamburger Hill discovery, Drummond would be reasonably confident of Arafura's ability to sift out some areas worthy of follow-up from the data it now has at hand.

(i) Aztec/Normandy (to 1993) Various Mineral Leases and Claims. CR93-234, 94-160, 94-161, 94-203

Mineral Lease S71 (1973 - 1993) *It covered a small molybdenum and tungsten show, of the Bonya Hills skarn type, located about 6 km east of the Jervois Mine. Although no substantial work was done on it, Aztec considered it had no potential. Drummond considers its significance is as a further indicator of mineralisation beyond the main J curve of old workings.*

Mineral Lease S14 (1947 - 1993) *The lease covered the old Bonya Mine workings. It was considered that the general host, a calc-silicate unit, is the same as that which hosts the Jervois workings. It was estimated for Aztec that there was a potential for 10 000t of secondary Cu ores and chalcopyrite in a quartz reef structure. Grade was not indicated. Apparently no confirmatory work was undertaken, and Drummond stresses that this tonnage figure cannot be regarded as a JORC resource estimate.*

Mineral Claims S1-5 (1983-1993) *They covered some of the old Bonya Hills Cu-tungsten workings. Work seems to have been confined to inspection of the old workings contained therein.*

(j) CRA Exploration Pty Ltd (1993 - 1994) EL8116. CR94-588

The tenement covered the Georgina Basin sediments in the central and north-eastern part of EL10215. CRA considered it prospective for unconformity hosted Cu-U-phosphate mineralisation. During the period of tenure the following exploration programmes were undertaken :

- *Airborne radiometric and TM Imagery data acquisition, processing and interpretation.*
- *Collection and multi-element analysis of 42 reconnaissance rock chip samples.*
- *Geological mapping and air photo interpretation.*
- *Drilling of six scout percussion holes (aggregate metreage of 530 metres) 500 metres apart.*
- *Multi-element analysis of percussion drill samples.*

CRA concluded that:

- *Airborne radiometric and TM anomalies delineate the phosphatic, organic-rich Arthur Creek Formation/Mount Baldwin Formation Middle Cambrian disconformity.*
- *Reconnaissance rock chip sampling of that disconformity surface reported assay values of up to 2.08% Cu, 100 ppm U and 11.4% P along a 4 km strike length of turquoise mineralisation.*
- *Wide spaced scout drill testing of the gently dipping disconformity surface returned no significant assay values.*
- *A 10-15 metre thick calcareous unit, weakly anomalous in Zn (up to 520 ppm), delineates the base of Arthur Creek Formation.*
- *The Mount Baldwin Formation is characterised by low order base metal values and has limited potential for stratabound Cu mineralisation.*

Drill testing of the disconformity (six percussion holes for a total of 530 metres, drilled 500 metres apart) failed to suggest the presence of substantive zones of Cu-U phosphate mineralisation.
Drummond views the work as being essentially first pass, localised and reasonably encouraging.

(k) Solbec Pharmaceuticals (previously Britannia Gold NL)/MIM Exploration Pty Ltd. Jervois Mines Leases, EL9518 and ELa10419. 2000-Present.

This joint venture has been exploring the tenements which host the known Jervois mining field and its principal known trend of mineralisation - the J structure. Its public reports via Solbec/Britannia indicates the following results of relevance to Arafura.

- *While there has previously been an exploration model based on an association between magnetite and base metal mineralisation, Mobile Metal Ian geochemical surveys has indicated potential for deeper mineralisation not associated with magnetite.*

- *A proprietary MIM Induced Polarity geophysical technique generated new drill targets away from known areas of mineralisation.*

- *Drilling adjacent to and below old mining areas has returned encouraging results and Britannia noted that at the Marshall-Reward lode that mineralisation was increasing at depth. The mineralisation is apparently more extensive along strike and at depth than had previously been known. This enhances the possibility of the eventual discovery of a large deposit.*

- *Drilling of the new geophysical targets which had no surface expression has generated success, e.g. hole J3 was reported as intersecting the following copper mineralisation:*

4m @ 2.32%	*from*	*202m downhole*
2m @ 1.49%	*from*	*252m downhole*
9m @ 0.46%	*from*	*261m to bottom of the hole*

- *While Cu is presumed to be the main target, the drilling has returned interesting levels of Au, Pb, Zn and Ag which may lead to eventually more favourable economics.*

EXPLORATION BY ARAFURA RESOURCES

In the 2004 exploration year, Arafura completed a review of all of the past exploration data available for the Jervois project area covered by ELs 10214 and 10215. The review included compilation of the airborne magnetic and radiometric data and the various forms of stream, soil and rock chip geochemistry. Several areas of interest emerged and work programs for these areas were proposed.

The Attutra Metagabbro was identified as a region of interest with Fe-V potential. Limited previous work by Hunter Resources also indicated the presence of anomalous gold and platinum group elements in these rock types.

A short reconnaissance trip was made to the area in 2004

- to meet with the local pastoralists and Aboriginal representatives;
- to gain an impression of the land forms, access and logistics prior to commencing substantial work; and
- to collect a suite of rock samples suitable for providing background information.

A petrographic report by Charter Mathison (University of Western Australia) on suite of nine samples collected in the vicinity of the Attutra Metagabbro was presented in Lindsay-Park (2005).

EXPLORATION ACTIVITIES COMPLETED IN YEAR 4

In 2005, Arafura commenced a targeted reconnaissance work program on the Lucy Creek and Unca Prospects, both within EL 10215.

The aims of the geological reconnaissance visit were:

- to locate and collect samples responsible for the airborne uranium-channel anomalies that were highlighted by airborne geophysical surveys over large regions within the outcropping parts of Georgina Basin. The largest of these uranium anomalies, the Lucy Creek Prospect, was targeted to collect representative material for assay.

- to relocate and access the mineral potential of the two vanadium occurrences mapped by the NTGS in the southeastern parts of the Attutra Metagabbro in HUCKITTA.

Results and activities of the 2005 exploration year are detailed in Hussey (2006).

Mr Bill Peters of Southern Geoscience Consultants was commissioned to assess and report on the uranium radiometric anomalies identified by the 2004 NTGS airborne geophysical survey of the Jervois Range 1:100 000 map sheet. Peters' memorandum is included in Hussey (2006).

UTS Geophysics was commissioned to undertake a high resolution airborne magnetic and radiometric survey of the Lucy Creek and Unca Prospects. These surveys were completed in December 2005 and a preliminary report on this survey and the specifications and details of these surveys was included in Hussey (2006). These reports and all gridded and line data as well as an image atlas are presented in Hussey (2006). Both surveys were flown along 50 metres spaced northeast trending (Lucy Creek) or northwest trending (Unca) lines at 25 metres terrain clearance with orthogonal tie-lines every 500 metres.

EXPLORATION ACTIVITIES COMPLETED IN YEAR 5

RC DRILLING LUCY CREEK

Arafura completed an RC drilling program at the Lucy Creek prospect in November, 2006. A total of 1713 metres was drilled in 60 vertical holes to depths between 4-55 metres to explore the uranium potential of the Lucy Creek prospect. Only the southern parts of the Lucy Creek prospect airborne radiometric anomaly are within EL 10215 (Figure 3). The majority of the Lucy Creek prospect airborne radiometric anomaly occurs in the adjacent EL 24716, also held by Arafura Resources, but transferred to NuPower Resources following the demerger of our uranium assets in 2007.

A total of 241 metres were completed in 15 vertical holes (LCRC044-LCRC059 inclusive) in EL 10215. Hole depths were between 4 and 43 metres.

All site preparation and field/sampling procedures as well as hole location/orientation data and geological logs are detailed in Hussey (2007). No assay data was available at the time.

RC DRILLING UNCA

In November, 2006, a total of 934 metres of RC drilling was completed in 15 vertical holes to depths between 25-82 metres to explore the Unca prospect for Fe-V. The location of these holes is shown in Figure 4.

All site preparation and field/sampling procedures as well as collar location/orientation data and geological logs are detailed in Hussey (2007). No assay data was available at the time.

ARAFURA'S EXPORATION ACTIVITIES COMPLETED IN YEAR 6

Arafura's exploration activities in EL10215 in 2007 (year 6) are detailed in Hussey (2008). Activities included:

- Literature research into similar deposits/mineralisation to better understand geological characteristics and to determine the appropriate assay techniques and reporting requirements necessary to fully assess and evaluate the prospect.
- Arafura and NuPower undertook a brief geological review and helicopter reconnaissance of the Lucy Creek prospect in January, 2007.
- Arafura undertook a brief geological review and helicopter reconnaissance of the Unca prospect in March, 2007.
- ALS Chemex conducted preliminary test work on 4 composite assay samples from the Unca RC drill program to determine the appropriate grinding technique and size fraction for preparation of routine DTR and meaningful analysis.
- Brian Povey of ProMet Engineers reviewed ALS Chemex's initial grind tests and XRF analytical results and recommended the appropriate preparation and treatment/ grinding methodology for analysis of all Unca RC samples. Povey recommended an initial 120 seconds grind with the subsequent grind times dependant on the amount of oversized material and in-house DTR grinding table times. Repeated grinds of the oversized fraction continued until there was less than 5 grams of oversized material from the original 150 gram sample.

- ALS Chemex (Perth) completed Davis Tube Recovery (DTR) and assays of the 2006 RC cuttings as per ProMet recommendations.
- ProMet Engineers reviewed and provided a written assessment of the final Unca DTR results and assay data.
- Arafura provided field and logistical support and funding for the acquisition of ground based magnetic and gravity data and petrological and petrophysical sampling of the Unca prospect (Jodi Fox Honours Project area).
- Arafura undertook detailed prospect-scale geological mapping and sampling over parts of the Unca Prospect. This was completed by KJH while assisting/supervising Jodi Fox.
- BBS accurately surveyed 2006 RC drill collars and set up survey base stations for future surveys. BBS also accurately located Jodi Fox's gravity base station so that the survey data could be tied to the national database.
- Arafura designed a 7500 metre RC drill program to test the size potential of the Unca vanadium prospect. With this program in mind, Arafura entered negotiations with several drilling contractors. Despite assurances, early attempts to secure a drill rig were unsuccessful. Johannsen Drilling Pty Ltd agreed to undertake the proposed program in October 2007, but indicated they could not start until early 2008.
- Mathew Cooper of Resources Potentials was engaged to model and interpret proposed RC drill targets and other magnetic anomalies in the Unca prospect area.

The reader is referred to Hussey (2008) for further details however a summary of the results of the 2006 RC drill program at the Unca prospect is given below.

Geological logging and magnetic susceptibility measurements revealed intervals to 44 metres of magnetite-rich rocks at the Unca prospect. RC collar locations and their magnetite-rich intervals are given in Table 1 below.

Table 1: Surveyed collar positions and mineralised interval summary for the 2006 RC drill program. Note all holes are vertical.

Hole_ID	MGA94 E	MGA94 N	RL	EOH DEPTH	MINERALISED INTERVALS
UNRC001	640344.61	7494899.44	303.32	60	0-44
UNRC002	640474.71	7494996.41	298.71	66	28-63
UNRC003	640861.74	7494951.21	297.01	82	66-78
UNRC004	640178.77	7496122.41	310.34	50	0-13
UNRC005	640500.88	7496199.71	300.16	67	0-23; 42-57
UNRC006	640538.31	7496348.74	299.54	70	21-23
UNRC007	640538.44	7496651.73	298.86	74	53-60; 69-74
UNRC008	640240.95	7496947.31	299.66	73	4-8; 29-73
UNRC009	637298.65	7496702.46	329.75	25	0-19; 24-25
UNRC010	637314.57	7496618.65	329.20	65	0-8; 12-13; 39-54; 60-61
UNRC011	635590.03	7496500.95	326.54	55	0-1; 4-5; 17-20
UNRC012	635640.12	7496300.78	331.45	40	
UNRC013	640950.19	7495648.95	296.67	70	(26-32)??; 49-58
UNRC014	641199.69	7494200.85	297.01	70	45-48; 64-68
UNRC015	637750.52	7499498.93	306.96	70	21; 30-33; 47-65

The magnetite-rich rocks/mineralised intervals highlighted in Table 1 were selected for assay. All assay samples were prepared for DTR as per recommendations by Mr Brian Povey of ProMet Engineers with approximately 20

grams of accurately weighed material run through the DTR apparatus. Both head feed and DTR concentrate were analysed to determine recovery. A summary of assay results are in given in Tables 2 and 3, below.

Table 2: Summary of assay and DTR results for the magnetite-rich intervals intersected at the Unca prospect in the 2006 RC drill program.

SAMPLE INTERVAL				HEAD SAMPLE ASSAYS			DTR (100p 75µm)	CONCENTRATE ASSAYS			METAL RECOVERY IN DTR CONC		
Hole ID	From m	To m	Intvl m	Fe %	V_2O_5 %	TiO_2 %	Rec %	Fe %	V_2O_5 %	TiO_2 %	Fe Rec %	V_2O_5 Rec %	TiO_2 Rec %
UNRC001	0	44	44	31.5	0.76	8.30	33.1	61.6	1.98	8.55	62.9	82.6	32.8
UNRC001	50	52	2	22.5	0.42	5.27	21.2	65.3	1.39	4.76	61.5	70.8	19.2
UNRC002	28	50	22	32.4	0.77	8.13	36.2	63.4	1.89	6.66	69.4	87.2	29.4
UNRC002	58	63	5	34.2	0.83	9.04	39.2	63.6	1.90	6.92	72.9	89.7	30.0
UNRC003	67	73	6	20.5	0.38	4.77	17.0	61.5	1.58	8.95	51.0	71.5	31.9
UNRC003	76	79	3	21.9	0.40	5.23	17.0	61.5	1.65	9.22	47.7	70.7	30.0
UNRC004	3	13	10	31.0	0.52	8.45	20.2	66.9	1.41	3.58	42.7	53.4	8.6
UNRC005	0	21	21	29.7	0.62	7.56	23.0	65.3	1.61	4.61	50.3	63.5	14.4
UNRC005	39	59	20	14.3	0.27	3.28	13.7	66.6	1.53	1.54	63.7	76.4	6.7
UNRC006	21	23	2	24.0	0.46	6.02	24.2	61.3	1.41	9.56	61.8	73.7	38.5
UNRC007	53	59	6	21.3	0.26	4.12	19.4	61.9	0.85	6.47	56.3	63.4	30.4
UNRC007	69	72	3	25.6	0.37	6.02	22.9	61.0	0.93	7.99	54.5	57.9	30.3
UNRC008	3	9	6	23.7	0.30	5.46	11.8	65.9	1.33	3.90	30.9	49.9	8.4
UNRC008	26	73	47	29.2	0.37	7.52	29.4	63.2	1.03	6.93	61.0	80.8	27.0
UNRC009	0	15	15	36.6	0.25	4.65	41.9	66.4	0.51	3.42	75.1	84.0	30.5
UNRC009	24	25	1	31.8	0.30	3.79	33.0	65.0	0.71	3.77	67.5	77.8	32.8
UNRC010	0	5	5	42.3	0.39	6.17	49.0	65.9	0.39	3.28	76.3	49.7	26.0
UNRC010	32	37	5	35.2	0.28	5.15	15.2	65.8	0.70	2.00	49.4	60.2	10.3
UNRC010	39	54	15	45.0	0.41	7.26	42.2	67.4	0.64	2.33	79.0	95.5	19.3
UNRC010	59	61	2	24.8	0.17	5.15	22.2	66.4	0.61	3.24	59.5	80.3	14.0
UNRC011	3	6	3	33.7	0.13	2.43	4.8	67.3	1.12	2.05	20.7	37.6	4.3
UNRC011	15	20	5	45.9	0.12	2.53	39.9	67.9	0.56	1.14	64.9	73.2	9.8
UNRC013	27	31	4	16.9	0.21	3.56	18.6	63.4	0.98	6.64	69.8	85.1	34.7
UNRC013	49	54	5	26.4	0.48	5.63	33.1	65.6	1.50	4.55	82.2	103.0	26.8
UNRC014	45	48	3	18.2	0.37	4.30	19.0	65.6	1.60	2.68	68.3	82.6	11.8
UNRC014	64	68	4	18.9	0.42	4.18	17.9	65.6	1.60	2.89	62.3	69.2	12.4
UNRC015	30	33	3	22.5	0.32	4.90	17.8	66.9	1.15	1.34	52.8	64.5	4.9
UNRC015	47	65	18	23.4	0.38	5.46	20.0	67.7	1.34	2.03	57.4	71.3	7.4
	WT AVG		**285**	**29.2**	**0.47**	**6.48**	**27.9**	**64.5**	**1.34**	**5.22**	**61.5**	**76.4**	**22.2**

Table 3: Summary of assay results for the DTR concentrates (100p/-75µm). Intervals are grouped according to their Fe, TiO_2 and V_2O_5 contents.

HoleID	Depth m		Int. m	DTR Rec %	Fe Rec %	V_2O_5 Rec %	TiO_2 Rec %	Fe %	V_2O_5 %	TiO_2 %	Al_2O_3 %	SiO_2 %	CaO %	MnO %	P %	S %
GROUP 1 Fe<62% TiO2 >6% V2O5 >1.4%																
UNRC001	**0**	**44**	**44**	**33.1**	**62.9**	**82.6**	**32.8**	**61.6**	**1.98**	**8.5**	1.43	1.46	0.24	0.12	0.00	0.01
UNRC002	**28**	**50**	**22**	**36.2**	**69.4**	**87.2**	**29.4**	**63.4**	**1.89**	**6.7**	0.89	1.64	0.31	0.01	0.00	0.01
UNRC002	**58**	**63**	**5**	**39.2**	**72.9**	**89.7**	**30.0**	**63.6**	**1.90**	**6.9**	0.69	1.20	0.19	0.02	0.00	0.00
UNRC003	**67**	**73**	**6**	**17.0**	**51.0**	**71.5**	**31.9**	**61.5**	**1.58**	**9.0**	0.76	2.30	0.4 5	0.12	0.00	0.01
UNRC003	**76**	**79**	**3**	**17.0**	**47.7**	**70.7**	**30.0**	**61.5**	**1.65**	**9.2**	0.74	1.88	0.42	0.14	0.00	0.01
UNRC006	**21**	**23**	**2**	**24.2**	**61.8**	**73.7**	**38.5**	**61.3**	**1.41**	**9.6**	0.81	1.95	0.35	0.05	0.00	0.01
	Wt Avg		**82**	**32.3**	**63.8**	**82.8**	**31.7**	**62.2**	**1.89**	**8.0**	**1.15**	**1.58**	**0.28**	**0.08**	**0.00**	**0.01**
GROUP 2 Fe <62% TiO2 >6.0% V2O5 <1.4%																
UNRC007	**53**	**59**	**6**	**19.4**	**56.3**	**63.4**	**30.4**	**61.9**	**0.85**	**6.5**	1.22	3.20	0.89	0.04	0.00	0.01
UNRC007	**69**	**72**	**3**	**22.9**	**54.5**	**57.9**	**30.3**	**61.0**	**0.93**	**8.0**	0.89	3.12	0.73	0.09	0.00	0.01
UNRC008	**26**	**73**	**47**	**29.4**	**61.0**	**80.8**	**27.0**	**63.2**	**1.03**	**6.9**	0.82	1.88	0.41	0.13	0.00	0.02
UNRC013	**27**	**31**	**4**	**18.6**	**69.8**	**85.1**	**34.7**	**63.4**	**0.98**	**6.6**	0.82	2.29	0.52	0.10	0.00	0.02
	Wt Avg		**60**	**27.3**	**60.8**	**78.2**	**28.1**	**63.0**	**1.00**	**6.9**	**0.87**	**2.10**	**0.48**	**0.12**	**0.00**	**0.02**
GROUP 3 Fe >63% TiO2 <5% V205 >1%																
UNRC001	**50**	**52**	**2**	**21.2**	**61.5**	**70.8**	**19.2**	**65.3**	**1.39**	**4.8**	0.51	1.87	0.21	0.16	0.00	0.01
UNRC004	**3**	**13**	**10**	**20.2**	**42.7**	**53.4**	**8.6**	**66.9**	**1.41**	**3.6**	0.40	1.14	0.06	0.02	0.00	0.01
UNRC005	**0**	**21**	**21**	**23.0**	**50.3**	**63.5**	**14.4**	**65.3**	**1.61**	**4.6**	0.83	1.58	0.28	0.05	0.00	0.00
UNRC005	**39**	**59**	**20**	**13.7**	**63.7**	**76.4**	**6.7**	**66.6**	**1.53**	**1.5**	1.13	1.97	0.38	0.01	0.00	0.00
UNRC008	**3**	**9**	**6**	**11.8**	**30.9**	**49.9**	**8.4**	**65.9**	**1.33**	**3.9**	0.63	1.76	0.26	0.01	0.00	0.01
UNRC011	**3**	**6**	**3**	**4.8**	**20.7**	**37.6**	**4.3**	**67.3**	**1.12**	**2.1**	1.13	1.30	0.18	0.02	0.00	0.02
UNRC013	**49**	**54**	**5**	**33.1**	**82.2**	**103.0**	**26.8**	**65.6**	**1.50**	**4.6**	0.47	1.20	0.21	0.05	0.00	0.02
UNRC014	**45**	**48**	**3**	**19.0**	**68.3**	**82.6**	**11.8**	**65.6**	**1.60**	**2.7**	1.14	2.35	0.34	<0.008	0.00	0.01
UNRC014	**64**	**68**	**4**	**17.9**	**62.3**	**69.2**	**12.4**	**65.6**	**1.60**	**2.9**	1.03	2.18	0.43	<0.008	0.00	0.01
UNRC015	**30**	**33**	**3**	**17.8**	**52.8**	**64.5**	**4.9**	**66.9**	**1.15**	**1.3**	1.50	1.94	0.19	<0.008	0.00	0.01
UNRC015	**47**	**65**	**18**	**20.0**	**57.4**	**71.3**	**7.4**	**67.7**	**1.34**	**2.0**	0.65	1.16	0.12	0.01	0.00	0.04
	Wt Avg		**95**	**18.9**	**54.6**	**68.0**	**10.4**	**66.4**	**1.46**	**3.0**	**0.83**	**1.58**	**0.24**	**0.02**	**0.00**	**0.01**
GROUP 4 Fe >63% TiO2 <5% V205 <1%																
UNRC009	**0**	**15**	**15**	**41.9**	**75.1**	**84.0**	**30.5**	**66.4**	**0.51**	**3.4**	2.17	0.63	0.10	0.00	0.00	0.01
UNRC009	**24**	**25**	**1**	**33.0**	**67.5**	**77.8**	**32.8**	**65.0**	**0.71**	**3.8**	1.85	1.23	0.27	0.72	<0.001	0.06
UNRC010	**0**	**5**	**5**	**49.0**	**76.3**	**49.7**	**26.0**	**65.9**	**0.39**	**3.3**	2.36	0.86	0.12	<0.008	0.00	0.01
UNRC010	**32**	**37**	**5**	**15.2**	**49.4**	**60.2**	**10.3**	**65.8**	**0.70**	**2.0**	1.88	2.62	0.45	<0.008	0.00	0.01
UNRC010	**39**	**54**	**15**	**42.2**	**79.0**	**95.5**	**19.3**	**67.4**	**0.64**	**2.3**	1.44	1.09	0.09	0.00	0.00	0.01
UNRC010	**59**	**61**	**2**	**22.2**	**59.5**	**80.3**	**14.0**	**66.4**	**0.61**	**3.2**	0.95	1.62	0.27	<0.008	0.00	0.03
UNRC011	**15**	**20**	**5**	**39.9**	**64.9**	**73.2**	**9.8**	**67.9**	**0.56**	**1.1**	1.58	0.95	0.14	0.01	0.00	0.01
	Wt Avg		**48**	**38.8**	**71.9**	**80.1**	**21.6**	**66.7**	**0.57**	**2.7**	**1.81**	**1.09**	**0.15**	**0.02**	**0.00**	**0.01**

EXPORATION ACTIVITIES COMPLETED IN PREVIOUS TERM (YEAR 7)

UNCA VANADIUM PROSPECT

The 2008 exploration drilling program was designed to further test and explore/evaluate magnetic anomalies within the Attutra Metagabbro for Fe-Ti-V mineralisation. The proposed program budgeted for 7000-7500 metres of RC drilling in 60-70 holes, with the possibility of a 500 plus metres core drilling program to follow. The original objectives of the 2008 exploration drilling program were:

1. to drill test the Casper, Coco and Misty magnetic anomalies
    a. to determine continuity of these magnetite bodies
    b. to determine the location of the causative magnetic bodies
    c. to confirm vanadium recoverability and variability of these magnetite bodies.
    d. to assess the overall size potential and geometry of magnetite bodies that demonstrated a potential for significant V recovery, based on the 2006 results.
    e. to determine the potential of these anomalies to host economic mineralisation.

2. to determine the amount of intrusive granite and/or pegmatite within the magnetite bodies.

3. to better understand the geological relationships and controls on mineralisation.

4. to test and evaluate new magnetic targets in the Unca project area.

5. to drill test Dusty, a large magnetic anomaly to the south of Casper.

Exploration objectives 4 and 5, above, were not completed due to slow RC drill penetration rates in the Attutra Metagabbro and magnetite mineralisation, mechanical breakdowns and a perceived blow-out in drilling costs if the original program was to be completed. As a result, numerous drill holes were aborted. A significant rain-event in early June ended the program. Consequently, the northern extents of the Misty magnetic anomaly and the Dusty magnetic anomaly were not evaluated. The possibility of core drilling was abandoned in early stages of the program once it was realised that the RC program would take longer than expected to complete.

A total of 4,840 metres of reverse-circulation (RC) percussion drilling was completed in 45 vertical and inclined holes.

The orientation and inclination of the 2008 drill holes and their target depths were developed after considering previous exploration results, local geological controls based on reconnaissance mapping and geophysical modeling by Matthew Cooper of Resource Potentials (see Appendix 5 in Hussey 2007). The collar locations and relevant details of the completed holes are provided in Table 4 below. The spatial position of these holes is shown in Figures 4-6.

Geological logs for the 2008 drill program are included as Appendix 1 and other selected data is also provided electronically in Appendix 2.

Table 4: 2008 RC drill hole details.

Hole ID	WGS84 Easting	WGS84 Northing	RL metres ASL	Collar az (true)	Collar Inclin	EOH metres	Mag anomaly	Date commenced	Date completed	Rig	Chips logged by	Comment
UNRC016	638974	7498294	300	270	-90	40	unnamed	22/02/2008	23/02/2008	Gemco	PW	estimated RL
UNRC017	639200	7497900	300	270	-90	91	unnamed	23/02/2008	24/02/2008	Gemco	PW	estimated RL
UNRC018	640350	7494900	302.94	270	-60	72	Casper	25/02/2008	26/02/2008	Gemco	PW	Laser leveled
UNRC019	640400	7494900	300.80	270	-60	75	Casper	27/02/2008	28/02/2008	Gemco	PW	Laser leveled
UNRC020	640450	7494900	299.57	270	-60	120	Casper	6/03/2008	7/03/2008	Gemco	RH	Laser leveled
UNRC021	640500	7494900	298.74	270	-60	114	Casper	7/03/2008	8/03/2008	Gemco	RH	Laser leveled
UNRC022	640400	7495000	299.62	270	-90	100	Casper	8/03/2008	9/03/2008	Gemco	RH	Laser leveled
UNRC023	640450	7495000	299.26	270	-60	114	Casper	9/03/2008	10/03/2008	Gemco	RH	Laser leveled
UNRC024	640500	7495000	298.39	270	-60	114	Casper	10/03/2008	13/03/2008	Gemco	RH	Laser leveled
UNRC025	640550	7495000	298.10	270	-60	114	Casper	13/03/2008	13/03/2008	Gemco	PW	Laser leveled
UNRC026	640600	7495000	297.72	270	-60	114	Casper	14/03/2008	18/03/2008	Gemco	PW	Laser leveled
UNRC027	640450	7495100	299.05	270	-60	114	Casper	19/03/2008	19/03/2008	Gemco	PW	Laser leveled
UNRC028	640500	7495100	298.74	270	-60	114	Casper	20/03/2008	21/03/2008	Gemco	PW	Laser leveled
UNRC029	640550	7495100	299.14	270	-60	118	Casper	21/03/2008	21/03/2008	Gemco	PW	Laser leveled
UNRC030	640450	7495200	299.02	270	-90	100	Casper	22/03/2008	22/03/2008	Gemco	PW	Laser leveled
UNRC031	640500	7495200	298.72	270	-60	114	Casper	23/03/2008	24/03/2008	Gemco	PW	Laser leveled
UNRC032	640550	7495200	298.46	270	-60	114	Casper	25/03/2008	25/03/2008	Gemco	PW	Laser leveled
UNRC033	640600	7495200	298.08	270	-60	114	Casper	26/03/2008	26/03/2008	Gemco	PW	Laser leveled
UNRC034	640650	7495200	297.91	270	-60	114	Casper	27/03/2008	28/03/2008	Gemco	PW	Laser leveled
UNRC035	640700	7495200	297.61	270	-60	114	Casper	28/03/2008	29/03/2008	Gemco	PW	Laser leveled
UNRC036	640400	7496200	301.15	270	-90	100	Coco	30/03/2008	30/03/2008	Gemco	KJH	Laser leveled
UNRC037	640450	7496200	301.09	270	-60	114	Coco	1/04/2008	2/04/2008	Gemco	SD	Laser leveled
UNRC038	640500	7496200	300.14	270	-60	114	Coco	2/04/2008	3/04/2008	Gemco	SD	Laser leveled
UNRC039	640550	7496200	299.27	270	-60	114	Coco	3/04/2008	4/04/2008	Gemco	SD	Laser leveled
UNRC040	640600	7496200	298.98	270	-60	114	Coco	4/04/2008	15/05/2008	Gemco	SD/KJH	Laser leveled
UNRC041	640550	7496300	298.25	270	-60	115	Coco	23/04/2008	24/04/2008	Edson 2000	PW	Laser leveled

Hole ID	WGS84 Easting	WGS84 Northing	RL metres ASL	Collar az (true)	Collar Inclin	EOH metres	Mag anomaly	Date commenced	Date completed	Rig	Chips logged by	Comment
UNRC042	640600	7496300	299.47	270	-60	114	Coco	24/04/2008	25/04/2008	Edson 2000	PW	Laser leveled
UNRC043	640550	7496400	299.59	270	-60	114	Coco	26/04/2008	6/05/2008	Edson 2000	PW/KJH	Laser leveled
UNRC044	640600	7496400	299.15	270	-60	120	Coco	6/05/2008	7/05/2008	Edson 2000	KJH	Laser leveled
UNRC045	640500	7496400	299.74	270	-90	100	Coco	7/05/2008	8/05/2008	Edson 2000	KJH	Laser leveled
UNRC046	640250	7496850	300	270	-90	100	unnamed	8/05/2008	9/05/2008	Edson 2000	KJH	estimated RL
UNRC047	640300	7496850	300	270	-60	97	unnamed	9/05/2008	13/05/2008	Edson 2000	KJH	estimated RL
UNRC048	637650	7499500	307.00	270	-90	100	Misty	16/05/2008	17/05/2008	Edson 2000	PW	Laser leveled
UNRC049	637700	7499500	307.00	270	-60	114	Misty	17/05/2008	18/05/2008	Edson 2000	PW	Laser leveled
UNRC050	637750	7499500	306.98	270	-60	114	Misty	19/05/2008	19/05/2008	Edson 2000	PW	Laser leveled
UNRC051	637800	7499500	306.98	270	-60	114	Misty	20/05/2008	20/05/2008	Edson 2000	PW	Laser leveled
UNRC052	637850	7499500	306.72	270	-60	114	Misty	21/05/2008	25/05/2008	Edson 2000	PW	Laser leveled
UNRC053	637800	7499400	306.72	90	-90	100	Misty	25/05/2008	26/05/2008	Edson 2000	PW	Laser leveled
UNRC054	637750	7499400	306.95	90	-60	115	Misty	27/05/2008	28/05/2008	Edson 2000	PW	Laser leveled
UNRC055	637700	7499400	306.98	90	-60	115	Misty	28/05/2006	29/05/2008	Edson 2000	PW	Laser leveled
UNRC056	637700	7499300	306.67	270	-60	114	Misty	2/06/2008	3/06/2008	Edson 2000	SD	Laser leveled
UNRC057	637750	7499300	306.43	270	-60	114	Misty	30/05/2008	1/06/2008	Edson 2000	SD	Laser leveled
UNRC058	637800	7499300	306.24	270	-60	114	Misty	3/06/2008	5/06/2008	Edson 2000	SD	Laser leveled
UNRC059	637702	7499298	306.67	90	-60	96	Misty	3/06/2008	5/06/2008	Edson 2000	SD	Laser leveled
UNRC060	637700	7499600	307.29	90	-60	112	Misty	6/06/2008	8/06/2008	Edson 2000	SD	Laser leveled

Site Preparation

The exploration camp operated from 8 February to 25 June 2008. It involved the construction of a base camp with air-conditioned sleeping quarters, kitchen, office and ablution/septic facilities by Alice Bush Haulage and Mining Supplies (Gully Rice) to support drill program. All drinking and camp water was collected from Jervois homestead bore and transported to site by tanker. Diesel was trucked in from Alice Springs and stored in a site tank with bund walls. The camp construction and location had the consent of Michael Broad (Jervois).

Proposed collars were sited (KJH) using a Garmin GPS 60 instrument. Collars were marked with labelled and flagged steel droppers. All collars were located at systematic grid coordinates based on the proposed/modeled targets and drill sections.

Each drill site/section was cleared of excess vegetation in accordance with safe working guidelines, as advised by Johannsen Drilling Pty Ltd. All drill sites/sections and access tracks linking were cleared using a 950 Front-end Loader operating blade-up [Alice Bush Haulage and Mining Supplies (operator: Gully Rice)] and supervised by KJH. This clearing technique minimized the amount of ground disturbance. All mature trees were left standing.

After clearing the drill sites/sections, all collar locations were re-checked by GPS and finally moved if necessary into alignment using the two endpoints on each drill section as controls (located by averaging over 100 points). Experience has shown that 90-95% of the hand-held GPS measurements are generally accurate to within about 3-5 metres. This is considered acceptable given the 50 x 100 metres drill patterns. The acquisition of accurately surveyed final collar locations is planned.

The RL of pegged collar locations were Laser-leveled over Casper, Coco and Misty. Each new RL was determined relative to previously surveyed RLs for the 2006 RC drill collars. Laser leveling errors are considered to be less than 1-2 centimetres, based on routine leveling control ties.

RC Drilling

RC drilling was completed by Pine Creek-based Johannsen Drilling Pty Ltd using firstly their Gemco rig and finally their Edson 2000HD rig, both mounted on small 4x4 trucks. Drilling commenced 22 February 2008. Unfortunately the support truck-mounted booster suffered a major mechanical breakdown on 4 April 2008 and did not return to site. Johannsen Drilling subsequently mobilised their Edson rig and after locating an similar hire booster to complete the drill program. Drilling recommenced 23 April 2008 and was halted 8 June 2008 after a significant rain event.

Despite ensuring more than double the air capacity of their previous RC drilling program at Unca in 2006, both Johannsen rig/booster configurations struggled to achieve acceptable penetration rates in the Attura Metagabbro and magnetite mineralisation. Johannsen's best drilling performance was 120 metres in a shift/day which included a site move. A number of the 114 metre deep holes and moves were completed in a single shift/day. This was considerable acceptable given the rig set up however the overall program only averaged 64.5 metres per day for 75 active drilling days (not including 33 inactive/breakdown days).

The rig was lined up at each collar by paralleling the 4x4 truck wheels to a line made using accurate tape measurements and visual alignment between steel droppers at each collar. Care was taken to align the rig wheels as close as possible to grid east-west coordinates based on reference GPS locations at least 200 metres apart, with sight droppers at every 50 metres spaced collar. The intense magnetic nature of magnetite mineralisation strongly influences local compass bearings at the Unca prospects with compass readings significantly deviating from expected values.

Collars were typically drilled within 10 centimetres of the pegged location. Several holes were collared up to 3 metres along section from the desired location; broken rocky ground was a particular issue at UNRC037 and nearby mature trees were also safety issues on a number of occasions.

Drilling was performed with a 137 millimetre face sampling hammer. Both drill rigs used 3 metre rods. After completion of each hole, the drill collar was cut just above ground level and fitted with labelled PVC caps on which are marked hole details.

Field Sampling - RC Drill program

The rig was supported with a cyclone/sampler mounted on a pivoting arm fixed to the drill rig. Samples were discharged from the cyclone through a 3-stage Jones riffle that could split samples 87.5/12.5. Despite a change in rig, the same drill type, setup and splitter was used throughout.

A one metre sampling interval was used. All laboratory assay samples were collected in numbered calico bags and bulk RC residues in correspondingly numbered UV-resistant 150 micron green plastic bags.

After drilling progress had been halted at the end of each 1-metre sample interval and the hole cleared of cuttings, samples were removed by the drill crew, on the instruction of the driller, and laid out systematically beside the drill rig. Assay samples were placed beside the corresponding bulk residue. While sampling was in progress the rig was at all times attended by the rig geologist (KH/RH/SD/PW) and/or the field technician (TL) who constantly monitored the operation to ensure that sampling practices were satisfactory and that numbers on plastic bags corresponded with those on the calico bags and logging sheets, and corresponded with hole depths on the log sheets and sample chip trays. Estimated sample recovery and sample condition (dry/moist/wet) were recorded in the drill logs.

Most holes were dry and ground water was rarely an issue. The volumes of ground water encountered during this drill program did not cause any significant rig sample splitting/clogging issues. To keep the sample dry, holes were cleared of ground water, where present, after adding a new drill rod. Care was taken to ensure the sampling equipment and bull-hoses were blown clean and dry if water was encountered. The occasional moist sample was returned but no wet samples were encountered.

Individual RC assay samples average about 5 kg. Samples from the more massive magnetite-rich intervals can approach about 7 kg for the same sample volume. Samples from the first 4 metres in each hole are often only 0.5-3 kg.

Field duplicate samples were selected by the Principal Geologist. Selection was on the basis of about 1 in 20 composite samples using the composite list as reference. Care was taken to ensure that a range of mineralisation and barren material was selected. The assignment of field duplicates were also based on the geological log and the recovery log (>70-80%). A 4-5 kilogram field duplicate sample was prepared by Arafura's field technician by splitting the remaining bulk RC residue through a two-stage (50-50) Jones riffle splitter until the desired quantity was achieved. Field duplicates have a different number series to that of the primary samples.

In addition to the field duplicates for assay, large 5-7 kg splits were collected from representative mineralised intervals for future metallurgical test work (483 from Casper; 258 from Coco and 84 from Misty). These samples were only collected after the field duplicate samples were split (if required) and are stored with the primary sample number clearly marked for later use. The metallurgical samples are stored inside a shipping container for safe short-term storage.

Geological Logging – RC Drill Holes

All holes were geologically logged by the rig geologist (KH/RH/PW/SD) in 1 metre intervals on pre-designed log sheets. Emphasis was placed on colour, texture/fabric, grainsize and mineralogy (Appendix 1).

Samples were wet-sieved prior to logging and representative cuttings from each interval were retained in pre-labelled plastic chip trays. These chip trays are stored in Arafura's Darwin shed at the date of this report.

Assay samples were placed on top of their corresponding bulk sample by the rig geologist/field technician after measuring the magnetic susceptibility and confirming the sample numbers correspond to each other and the log sheets and depth.

Magnetic Susceptibility Logging – RC Drill Holes

All bulk residue samples were logged at the time of sampling using a hand-held KT-9 magnetic susceptibility meter. Each RC bulk residue was systematically measured in three separate spots on the outside of the plastic bag by the rig geologist/field technician. The median result of these three measurements in milli-SI units (ie 10^{-3} SI units) was recorded on the drill log sheets. The KT-9 instrument has a working range of 0.01-999 x 10^{-3} SI units. Readings that exceed 999 x 10^{-3} SI result in an E6 error (above limit error) and are duly noted as E6 on the log sheets. The median value was used however the rig geologists/field technician often noted significant (>20%) variability in the low-medium grade magnetic-rich mineralisation. Where encountered, E6 errors were noted on the log sheet even if they were not the median value.

Results of all samples were later entered into a spreadsheet/database, The samples which gave the above limit (E6) readings on the KT-9 instrument are recorded as 1000 in the spreadsheet/database.

RC Drill Sample Selection & Compositing

Of the 4,840 metres that were drilled, 1913 individual 1-metre RC assay samples (1478 primary samples in Batch 1 & 435 primary samples in Batch 2) and 106 individual field duplicates were collected for compositing and assay.

Individual assay samples were selected by the Principal Geologist in consultation with the rig Geologist on the basis of drill logs and magnetic susceptibility measurements and composite requirements. Selected assay intervals typically exceed 10% of visually logged magnetite in RC chips. However the measured magnetic susceptibility of each assay sample was used as the more reliable guide to overall magnetite content, particularly in the fine-grained rock types. The presence of mafic minerals and fine-grained dark chips makes the visual estimation of fine-grained magnetite difficult in many cases. Each individual mineralised assay sample generally exceeded 0.25-0.3 SI units however the occasional low magnetic susceptibility sample was included in the composite assay interval. Weakly mineralised or low magnetitic susceptibilities samples were included to 'close-off' magnetite mineralisation. These unmineralised background composite samples sometimes included a variety a rock types as it would be deemed as uneconomic waste rock (eg granite plus schist). Care was taken during composite selection to make match like recoveries with like and mineralised samples adjoining mineralisation.

Individual assay samples were transported to camp at the end of each shift. Individuals assay samples were then placed in groups of 4 in sealed 150 micron thick large green plastic bags with sample number, laboratory and client details clearly marked on the bag. Assay samples were placed in 200 litre steel drums that were sealed and secured to pallets for ease of handling and safe transport. Batch1

Sample Preparation & Compositing

2,019 x 1 metre RC samples (1913 primary and 106 duplicate) were delivered in two batches to ALS Chemex in Alice Springs in June/July 2008 for sample preparation. Preparation of Batch 1 (1478 primary samples in 23 drums from Casper and Coco) and DTR is in progress at the time of writing this report. Batch 1 compositing instructions were issued to the laboratory with the sample submission. Assay results have not been received for Batch 1.

Batch 2 (435 primary samples in 10 drums, mostly from from Misty) is on hold until Batch 1 results have been received.

After drying, the entire RC assay sample for each individual metre was coarse crushed to -2 millimetres and composited in such that assay samples generally represented 3- to 5-metres composite material. Individual samples were thoroughly mat mixed to homogenise the sample prior to compositing. An equal, accurately weighed amount of each individual sample was then combined to make up approximately 150 grams of material that forms the composite assay sample. Composite samples are then forward to ALS Chemex in Perth for Davis Tube Recovery (DTR) and geochemical analysis by XRF.

At ALS Chemex in Perth, composite samples are prepared and ground to meet grind specifications for DTR as recommended by Brian Povey of Promet Engineers as per the 2006 test work and RC samples (see Hussey 2008). Composite assay samples are prepared in accordance with standard in-house laboratory procedures for the recovery of the magnetic fraction by DTR but follow Povey's specifications for grind time and bowl type.

About 20 grams of the recommended grind (100p/-75μm) is accurately weighed and submitted for DTR at ALS Chemex in Perth.

Chemical Analyses

Composite assay samples are to be analysed by ALS Chemex in Perth using XRF-fusion and standard Fe-ore analytical methods/scans. Geochemical analyses will be performed on both the head feed and the recovered magnetite concentrate from the DTR. Dual analyses enable the calculation of recoverable products for Fe, V, Ti etc.

External Control Analyses

Representative coarse composite residues were selected from the 2006 RC samples to serve as reference standards for this work. The five selected composites span a range of mineralisation with differing Fe-Ti-V ratios based on previous results. ALS Chemex indicated that this material would be run through a number of different laboratories so that the results could be certified.

RESULTS AND DISCUSSION

Unca Prospect

No assay results have been received for the 2008 RC drill program. They will be reported in full in the next report.

The 2006 RC drill program indicated significant variability in the amount of vanadium and its recoverability from magnetic concentrate throughout the Unca prospect area (Tables 2 and 3). Hence despite the confirmation of magnetite-rich rocks in the area, no meaningful geological comment can be made as to the amount of vanadium or its recoverability based on the 2008 RC drill logs (Appendix 1) alone.

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5 January 2009

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