ARAFURA
RESOURCES LIMITED

ABN 22 080 933 455

Report ARU-13/016

ANNUAL REPORT FOR THE YEAR ENDING 5 NOVEMBER 2013, EL 29701 (JERVOIS) NT, AUSTRALIA.

By

Kelvin James Hussey
BSc Hons, MAIG

 20 December 2013

Perth Office: Level 4/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
Whyalla Office: Unit 18, 11 Darling Tce, Whyalla SA 5600 ■ PO Box 511, Whyalla SA 5600 ■ T: +618 8645 5509 ■ F: +618 8645 1856
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

COPYRIGHT STATEMENT

REPORTING DETAILS

Titleholder	Arafura Resources Limited
Operator (if different from above)	Rox Resources Limited
Titles/tenements	EL 29701
Tenement Manager	Arafura Resources Limited
Mine/Project Name	Bonya/Jervois project
Report Title	Annual report for the year ending 5 November 2013, EL 29701 (Jervois) NT, Australia.
Personal author(s)	Kelvin Hussey BSc(Hons) MAIG
Corporate author(s)	Arafura Resources Limited
Target commodities	Cu-Au, base-metals, Mo-W, Fe-Ti-V
Date of report	20th December 2013
Datum/zone	GDA94/Zone 53
250 000 K mapsheets	Huckitta (SF53-11)
100 000 K mapsheets	Jervois Range (6152); Jinka (6052)
Contact details	Kelvin Hussey kelvin.hussey@arafuraresources.com.au

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

TABLE OF CONTENTS

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

List of Figures

List of Tables

Appendices

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

SUMMARY

EL 29701 (Jervois) is a replacement tenement that combined and supersedes Arafura's EL10215 and EL 26812. EL 29701 was initially granted to Arafura Resources on 6 November 2012 for a period of two years.

The project area is located in the Jervois district and mostly within the eastern part of the Aileron Province in the Arunta Region. The geology of the project area predominantly consists of greenschist to amphibole facies metamorphosed Palaeoproterozoic sedimentary and igneous rocks. The metamorphosed basement rocks are unconformably overlain by weakly metamorphosed Neoproterozoic-Palaeozoic sedimentary units of the Georgina Basin. A prolonged sequence of Ordovician-Carboniferous deformation has resulted in block-faulting with minor open folds and localised subvertical to overturned bedding in the Georgina Basin units adjacent to the fault zones.

The basement rocks of the Aileron Province have potential to host numerous mineralisation styles akin to those found in the Jervois district, including metamorphosed polymetallic base-metal deposits, as well as W and Mo skarn and vein-style deposits, and the Fe-Ti-V oxide deposits.

Metamorphosed orthomagmatic Fe-Ti-V oxide deposits with localised(?) anomalous Au-Pt-Pd mineralisation occur in northeast EL 29701. A number of these oxide prospects were drilled and evaluated by Arafura while under EL 10215. Some interesting Fe-V prospects with good grades have been identified but additional drilling is required to better understand the potential of these resources. At this stage, the Cu-Au and base-metal opportunities are considered more important to evaluate and they received attention in 2012-13.

Rox Resources entered into a JV agreement with Arafura Resources on EL 29701 and has recently commenced exploration activities principally focussing on the Cu-Au and base-metal opportunities. Visible copper mineralisation is evident at a number of historic prospects and abandoned mines within the project area. Rox has begun to evaluate areas for further exploration which will include drilling of promising targets.

Rox conducted geological prospecting and soils and rock chip sampling across a number of targets in the last reporting period. An airborne EM survey was also acquired over parts of EL 29701 towards the end of the reporting period. The processing of the EM data is underway and will be reported next year. This EM survey was acquired to assist in targeting areas for base-metal exploration the coming years.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

INTRODUCTION

BACKGROUND

LOCATION AND ACCESS

Exploration licence 29701 is located approximately 260 kilometres east north-east of Alice Springs (Figure 1) in the Jervois district. The tenement area lies to the north of the Jervois Stock Route that passes through the Jervois pastoral property. EL 29701 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 about 68 kilometres north of Alice Springs. The road distance from Alice Springs to the Unca prospect is almost 400 kilometres. Following heavy rain, the Plenty Highway can be closed to all traffic or have weight provisions applied.

Well-formed dirt roads exist to Baikal and the nearby Bonya aboriginal community, and to Lucy Creek pastoral property, north of EL 29701, 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 29701 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.

CLIMATE

The climate in the licence area is best described as mainly dry all year round with hot summers and cool to cold winters. Official observations for the Bureau of Meteorology have been recorded at Jervois since 1966. Average annual rainfall is 296 millimetres, of which about two-thirds falls in the period December to March. January is the hottest month with average minimum and maximum temperatures of 22.7°C and 38.5°C degrees while July is the coldest at 5.2°C and 22.7°C, respectively. Overnight frosts are common some winters. Winds are predominantly from the southeast and monthly averages for the 9 am wind speed are 9-16 km/hr.

Average annual evaporation is approximately 2,900 millimetres.

TOPOGRAPHY

The Jervois Range runs northeast-southwest through the general area of EL 29701 creating a significant 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.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

- 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.

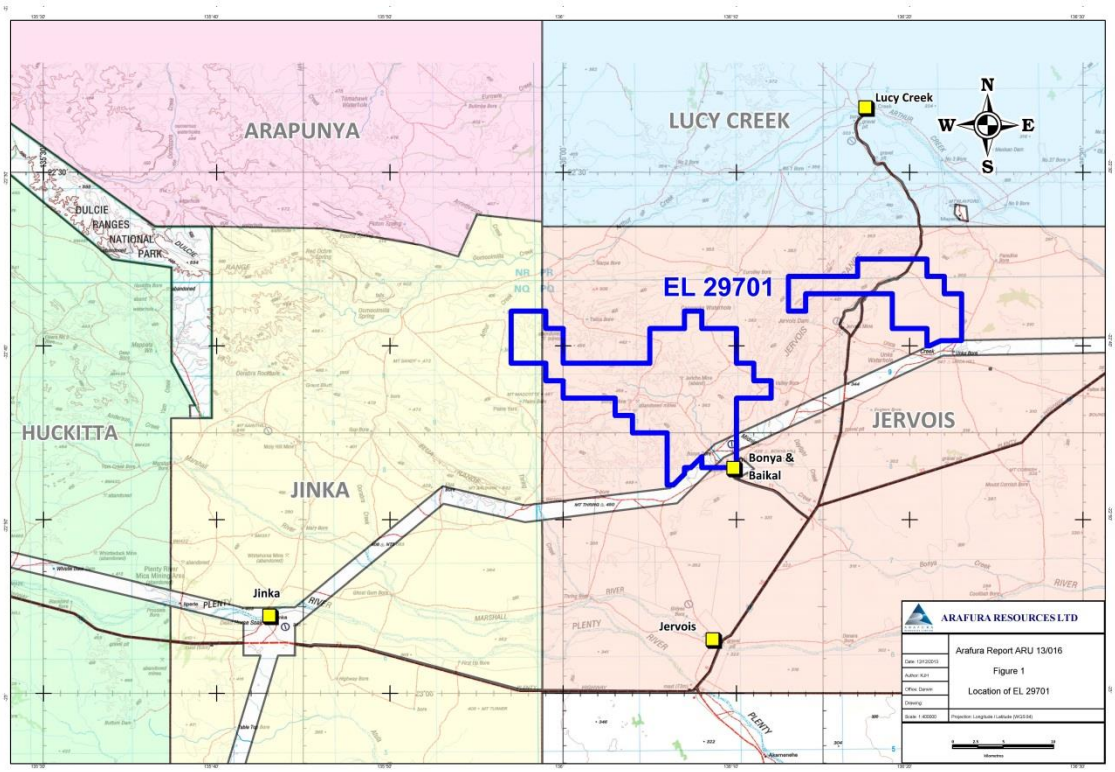

Figure 1: Location of Jervois/Bonya project area outlining the area of EL 29701 in blue.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

TENURE

Exploration Licence 29701 (Jervois) was granted 100% to Arafura Resources Limited (ACN 080 933 455) as 89 blocks (279.03 km^2) on 6 November 2012 for a period of two years, expiring 5 November 2014. EL 29701 is a replacement tenement that combines and supersedes EL 10215 and EL 26812.

The tenement covers parts of two perpetual pastoral leases (PPL). These are:

- PPL 962 Jervois Pastoral Company
  Jervois Pastoral Company PMB 36, Alice Springs NT 0871

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

The tenement also covers a small part of the Jervois Stock Route near Baikal and Bonya (Figure 1).

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 Jervois Stock Route 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 while under EL 10215.

No exploration was conducted in the vicinity of the sites identified in the register.

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.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

GEOLOGY

REGIONAL SETTING

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).

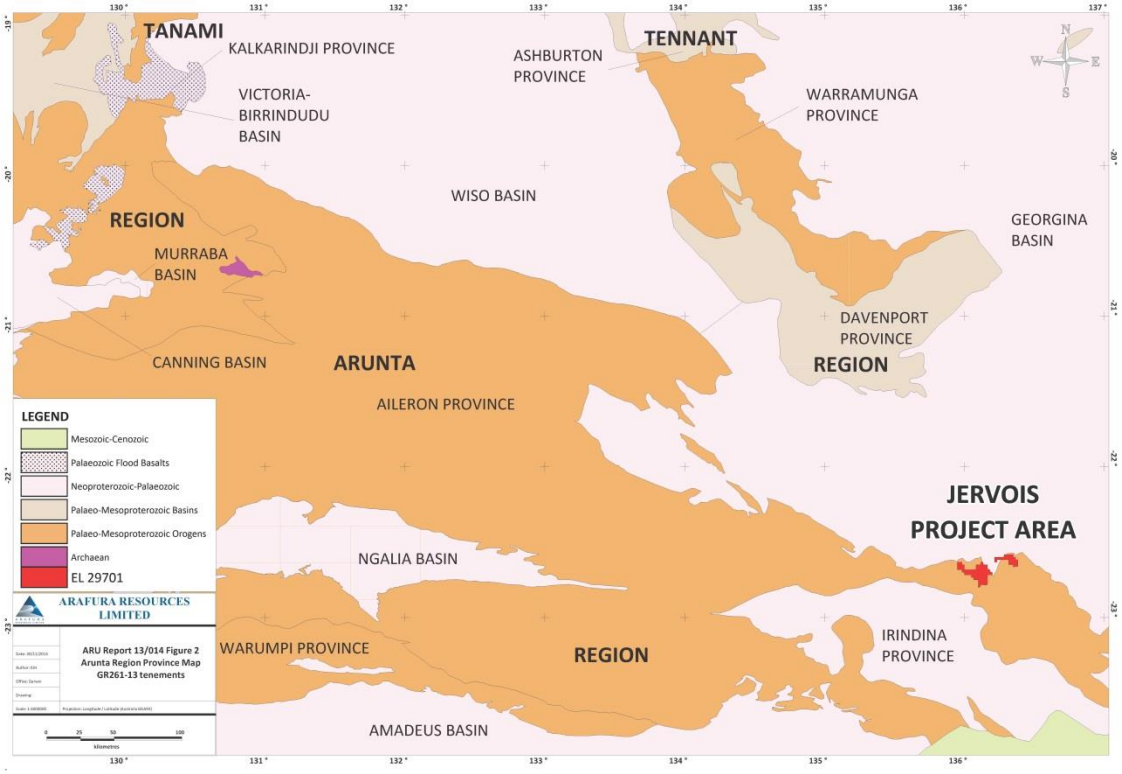

Figure 2: Gelogical provinces of the central-southern Northern Territory showing the location EL 29701 in red.

The Aileron Province predominantly consists of Proterozoic (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* 2008a, 2008b). This event appears to have affected the entire Aileron Province to some degree, as opposed to the 1590-1570 Ma Chewings Event which 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 but this is not known in the eastern Aileron Province.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

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 (*eg.* Hussey *et al* 2005; Hoatson *et al* 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. Bimodal igneous activity is also evident in the Jervois district during the Yambah Event.

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.

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 the Arunta Region and unconformably overly the Aileron and Warumpi Province. 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 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, 1999b; 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 localised Ordovician-Carboniferous (450-300 Ma) deformation. 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.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

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 mineral deposits of the Arunta region in 2000-2004 and has drawn on previous mapping experience and unpublished data.

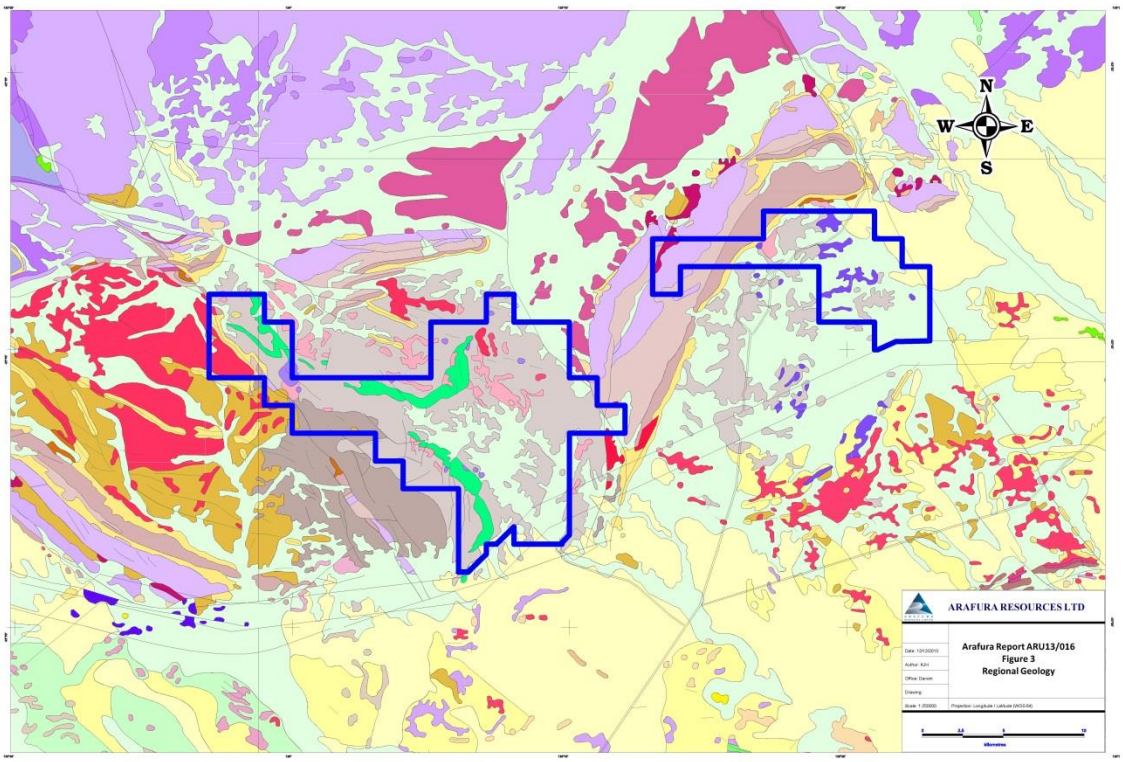

Figure 3 Regional geology of EL 29701. The geology is based on the digital edition of the HUCKITTA 1:250 000 Geological Map Sheet (Freeman 1986) from Geoscience Australia and covers an area slightly larger than the Jervois 1:100 000 Map Sheet.

Arafura's original titles in the Jervois Region (EL 10214 and 10215) encompassed parts of the Aileron and Irindina Provinces and the Georgina Basin. EL 29701 supersedes EL 10215 and only includes elements of the Aileron Province and the Georgina Basin (Figure 2 and 3).

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 area, 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

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

Ordovician Larapinta Event (Hand *et al* 1999a, 1999b; 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. Larapinta-aged thermal effects have also been observed in xenotime from the Molyhil Mo-W skarn deposit (David Huston, *pers comm,* 2007) which occurs just to the north of the Delny-Mount Sainthill Fault Zone.

The Bonya Schist (-pCo) is the dominant outcropping Palaeoproterozoic unit within the tenement area. 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.

Unpublished NTGS mapping (by the author and Max Frater) 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 whilst others are extrusive units. Large intrusive 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 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) 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).

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.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

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 sample by the author in the Bonya Hills is about 1785 Ma (Jon Claoué-Long, *pers comm*, 2004).

The author studied the nearby Molyhil Mo-W skarn deposit as part of a joint NTGS/GA mineral deposit analysis. This project included a small geochronology component which yielded more or less consistent 1720 Ma ages for amphibole (Ar-Ar) and molybdenite (Re-Os) in mineralised skarn assemblages and for zircon (U-Pb) in the nearby granite (David Huston, *pers comm,* 2007). This result is consistent with high-level granite emplacement and skarn mineralisation during the Strangways Event. However it should be noted xenotime from the skarn assemblage yielded a Larapinta Event age. The regional Mo-W mineralisation therefore appears to be related to more fractionated granites and the associated pegmatites during the Strangways Orogeny. Scheelite±fluorite veins truncate early fabrics and folds, and also appear to be related to these mineralising systems. Furthermore the boron metasomatism (tourmaline alteration) which is observed in some parts of the Jervois project area clearly overprint fabrics and replace pre-existing metamorphic assemblages and seems to also be related to this event. Cartwright *et al* (1997) however documented evidence for a meteoric fluid component in calcsilicate rocks from the Bonya Hills during the Strangways Event. A better understanding of the igneous and meteoric fluid interaction is clearly important to understanding the mineral deposit potential.

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.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

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).

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

PREVIOUS INVESTIGATIONS

REGIONAL

Other Parties

A detailed investigation of the previously completed exploration in the Jervois project area on ELs 10214 and 10215 was 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.

Central Pacific Minerals N L (1970-1972) ATP 2283 & 3156. CR1972-013, CR1978-104

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.

Dampier Mining Co Ltd (1976-1977) EL1118. CR1977-064

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.

Otter Exploration N L (1977-1980) EL1583. CR1980-174, CR1978-116

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.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

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.

Otter Exploration N L (1977 - 1980) EL1584. CR1978-117, CR1980-121

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.

Otter Exploration N L (1977 - 1980) EL1585. CR1980-252

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.

Hunter Resources Ltd (1987 - 1989) EL5171. CR1989-630

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.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

Rosequartz Mining N L and Zapopan N L (to 1991) EL6260. CR1989-816

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.

Johannsen (1988 - 1989) EL6326. CR1990-221

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.

Normandy Exploration Ltd (1990 - 1996) ELs 6993, 7287 and 7505. CR1992-367, CR1993-169, CR1994-111, CR1995-108, CR1995-253, CR1995-313, CR1996-283

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.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

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.

Aztec/Normandy (to 1993) Various Mineral Leases and Claims. CR93-234, CR1994-160, CR1994-161, CR1994-203

***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*

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

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. CR1994-588

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.

Solbec Pharmaceuticals (previously Britannia Gold NL)/MIM Exploration Pty Ltd. Jervois Mines Leases, EL9518 and ELa10419. 2000-2003.

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.*

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

- *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.*

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

ARAFURA RESOURCES, EL 10215.

Arafura's previous work on EL 10215 is detailed in Hussey (2013) and references therein. A summary is of Arafura's previous work is presented below.

Arafura's exploration efforts largely focussed on assessing the Fe-Ti-V resources of the Unca prospects within the Palaeoproterozoic Attutra Metagabbro. The Unca magnetite-hosted Fe-Ti-V prospects occur as a number of discrete magnetic bodies and are regarded as metamorphosed orthomagmatic deposits. Outcropping magnetite mineralisation occurs as cm-dm layers or as larger massive coarse grained bodies. Exploration activities included reconnaissance mapping and surface sampling, the acquisition of a detailed airborne geophysical survey to guide undercover exploration and two RC drilling campaigns with associated assaying and DTR test work. Arafura also sponsored a BSc Hons project which involved potential field modelling of detailed gravity and a ground magnetic survey data collected over a number of magnetic targets concentrating on the Casper magnetic anomaly. A total of 5,774 metres of RC drilling was completed in 60 vertical or inclined holes with hole depths varying from 25-120 metres. One of these shallow holes was drilled to supply water for the 2008 base camp. All other holes were drilled to test the near surface Fe-V mineralisation potential of various magnetic anomalies. A number of named magnetic anomalies have been more extensively drilled; these include the Casper, Coco, and Misty anomalies. The results are summarised in Table 1 below.

Exploration RC drilling demonstrated significant Fe-V grades with moderate to good Fe-V recovery in processed magnetite concentrates from mineralised drill intercepts that are up to at least 77 metres thick in the more massive magnetite-rich zones. At Casper, a number of composited RC assay samples approach a maximum of 1.1% V_2O_5 but more commonly assay samples contain 0.3-0.8% V_2O_5. Laboratory testing using 100% passing 75µm typically shows DTR concentrate grades of 61-69% Fe and 1-2% V_2O_5. The most strongly mineralised assay samples are from Casper and yield DTR concentrates containing up to 2.5% V_2O_5. As shown in the table below, drilling results from the Coco and Misty magnetic anomalies yield slightly lower V_2O_5 and higher Fe grades than Casper. A number of the 2006 RC drilling program magnetic targets yielded lower grade DTR concentrates with <1% V_2O_5 and have not been evaluated further.

Table 1: Summary of results for the Unca Fe-V prospects.

Magnetic target	Total assayed mineralisation interval (m)	Whole rock assay (Head)			DTR Magnetic Concentrate				Metal recovery in concentrate		
		Fe%	TiO_2%	V_2O_5%	Rec%	Fe%	TiO_2%	V_2O_5%	Fe%	TiO_2%	V_2O_5%
CASPER	741	22.7	5.1	0.51	21	64.1	5.0	1.7	55	19	68
COCO	301	21.9	5.0	0.44	21	65.1	4.2	1.5	60	18	69
MISTY	95	21.5	4.4	0.34	17	69.1	1.2	1.3	53	4	63
ALL	1295	23.5	5.2	0.47	22	64.8	4.5	1.6	57	19	69

It is suspected that the Unca Fe-V prospects may eventually be considered for economic development. This is because the Fe-V grades of the magnetite-rich mineralisation at Unca and its DTR concentrates are globally significant results with moderate to good recoveries for a relatively coarse grind. Higher grade concentrates and better recoveries might be possible at finer grind sizes but this would need to be optimised through further drilling and test work. While the geometry and size of the Fe-V magnetite resources are yet to be fully

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

evaluated, the remoteness of these prospects and lack of infrastructure in the Jervois area are limiting factors.

The Au-Pt-Pd potential of selected mineralised intervals from the 2008 drill program at Casper, Coco and Misty were evaluated because orthomagmatic oxide-type deposits such as these are may host substantial Au-Pt-Pd mineralisation. The best assayed interval was from Casper with 47 metres @ 0.57 ppm Au+Pt+Pd. This included 4 metres at 1.37 ppm Au+Pt+Pd. While this and other anomalous Au-Pt-Pd intervals were identified, the results are considered too low-grade and are typical of results from known orthomagmatic Fe-V deposits within Australia. Hence the Au-Pt-Pd economic potential of the magnetite-rich Unca prospects is low. However hydrothermal and/or vein deposits associated with these intrusions can not be discounted.

Arafura focussed some of its early exploration efforts on assessing the uranium potential of the Lucy Creek prospect. A large radiometric anomaly was found to be coincident with strongly weathered and oxidised Fe-enriched units that coincide with the phosphatic Cambrian Red Heart Dolomite of the Georgina Basin and adjacent units. Historic exploration by CRAE demonstrated some potential for low-grade uranium mineralisation within this phosphatic unit and hence targeted shallow exploration drilling was conducted to evaluate the outcropping and near surface units. Most of Arafura's exploration activity occurred on the adjoining EL 24716. EL 24716 was transferred to Arafura's uranium spin-off company, NuPower Resources who concentrated their efforts on the adjoining EL 24716 exploring the P and U resources. Exploration drilling at the Lucy Creek prospect on EL 10215 found anomalous uranium mineralisation in this interval but the grades were localised and disappointing. The maximum assay was 133.5 ppm U and the average 23.5 ppm U.

Both of the above exploration prospects were previously known to a limited extent based on regional mapping and historic exploration. The areal size of the Unca prospects has been greatly expanded from a few small outcropping prospects. Arafura was the first company to report drilling results from the Unca prospect and more targets remain to be tested.

CURRENT REPORTING PERIOD.

All work in the current period was conducted by Rox Resources as part of a JV Agreement. Rox's report is attached as Appendix 1.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

REFERENCES

Ahmad M and Scrimgeour IR, 2004. Geological map of the Northern Territory, 1:2 500 000 geological map series. Northern Territory Geological Survey.

Andrew Drummond and Associates, Independent Consulting Geologists Report for Arafura Resources NL.

Bewen BK, Henstridge DA, Paine GG, 1978. A note on the geology of scheelite mineralization, Bonya Bore Area, NT. *Northern Territory Geological Survey Company Report* CR1978-0104.

Buick IS, Miller JA, Williams IS and Cartwright I, 2001. Ordovician high-grade metamorphism of a newly recognised late Neoproterozoic terrane in the northern Harts Range, central Australia. *Journal of Metamorphic Geology* 19, 373-394.

Buick IS, Hand M, Williams IS, Mawby J, Miller JA and Nicoll RS, 2005. Detrital zircon provenance constraints on the evolution of the Harts Range Metamorphic Complex (central Australia): links to the Centralian Superbasin. *Journal of the Geological Society, London* 162, 777-787.

Butler IK, 1993. Final Report MLS0043 Bonya Bore Area 17 March 1971 to December 1991. Petrocarb Exploration. *Northern Territory Geological Survey Company Report* CR1993-0234.

Butler IK, 1994. Final Report MCS1-5 & 9-11 Bonya Bore & Jervois Mine Area, NT MCS1-5 17-11-83-16-11-93, MCS9-11 16-11-83- 15-11-93. Nicron Resources. *Northern Territory Geological Survey Company Report* CR1994-0203.

Butler IK, 1994. Final Report MLS14, Bonya Bore Area, NT, 3-11-47- 31-12-93. Nicron Resources. *Northern Territory Geological Survey Company Report* CR1994-0161.

Butler IK, 1994. Final Report MLS71, Jervois Mine Area, NT, 23-5-73- 31-12-93. Nicron Resources. *Northern Territory Geological Survey Company Report* CR1994-0160.

Cartwright I, Buick IS and Maas R, 1997. Fluid flow in marbles at Jervois, central Australia: oxygen isotope disequilibrium and zoning produced by decoupling of mineralogical and isotopic resetting. Contributions to Mineralogy and Petrology 128, 335-351.

Claoué-Long JC and Hoatson DM, 2005. Proterozoic mafic-ultramafic intrusions in the Arunta Region, central Australia. Part 2: Event chronology and regional correlations. *Precambrian Research* 142, 134-158.

Close D, Scrimgeour I, Duffett M, Worden K and Goscombe B, 2005. East Arunta project – preliminary results and future directions. *In* Munson TJ (Editor), Annual Geological Exploration Seminar (AGES) 2005, Record of Abstracts. *Northern Territory Geological Survey Record* 2005-001.

Collins WJ and Shaw RD, 1995. Geochronological constraints on orogenic events in the Arunta Inlier: a review. *Precambrian Research* 71, 315-346.

Cozens GJ, 1992. Report on Eastern Arunta Project. *Northern Territory Geological Survey Company Report* CR1992-0367.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

Cozens GJ, 1994. Report on Exploration Licences 6993 (Bonya Creek), 6994 (Hat River), 7287 (Mt Cornish), 7505 (Twins Bore) in the Eastern Arunta Block 9-11-92-8-11-93. Poseidon Gold. *Northern Territory Geological Survey Company Report* CR1994-0111.

Cozens GJ, 1995. Annual Report on EL6993 (Bonya Creek), 6994 (Hay River), 7505 (Twin Bores) in the Eastern Arunta Block 9-11-93 to 8-11-94. Normandy Exploration. *Northern Territory Geological Survey Company Report* CR1995-0108.

Cozens GJ, 1995. Partial relinquishment report on EL7505 (Twins Bore) Eastern Arunta project. Normandy Exploration. *Northern Territory Geological Survey Company Report* CR1995-0253.

Dampier Mining, 1977, Lucy Creek, N.T. Report for year ending 1-3-77. *Northern Territory Geological Survey Company Report* CR1977-0064.

Donnellan N and Johnstone A, 2003. Expanding the Tennant Region: mapped and interpreted geology of the Mount Peake and Lander River 1:250 000 sheets. *In* TJ Munson and I Scrimgeour (Editors), Annual Geological Exploration Seminar (AGES) 2003, Record of Abstracts. *Northern Territory Geological Survey Record* 2003-0001.

Dunster JD, Kruse PD, Duffett ML and Ambrose GJ, in prep. Geology and resource potential of the southern Georgina Basin – A GIS package. *Northern Territory Geological Survey Report* 19.

Fortowski D and Kojan CJ, 1980. 1979 report, Northern Territory EL 1581 EL 1582 EL 1583 EL 1584 EL 1585 EL 1444 EL 1445 EL 1450 EL 1451 EL 1702 EL 2200, Otter Exploration; C E G B Exploration Australia. *Northern Territory Geological Survey Company Report* CR1980-0252.

Fraser G, 2004. Defining the “footprint” of tectonothermal events in the North Australian Craton: recent 40Ar/39Ar results from the Davenport Ranges and Barrow Creek Regions. *In* TJ Munson and I Scrimgeour (Editors), Annual Geological Exploration Seminar (AGES) 2004, Record of Abstracts. *Northern Territory Geological Survey Record* 2004-001.

Freeman MJ, 1986. HUCKITTA 1:250,000 Geological map series and explanatory notes, SF53-11. Northern Territory Geological Survey.

Freeman MJ, Shaw RD and Warren RG, 1989. Jervois Range, 1:100 000 geological map sheet, 6152, preliminary edition. Bureau of Mineral Resources, Canberra.

Hand M, Mawby J and Miller J, 1999a. U-Pb ages from the Harts Range, central Australia; evidence for early Ordovician extension and constraints on Carboniferous metamorphism. *Journal of the Geological Society, London* 156, 715-730.

Hand M, Mawby J, Miller JA, Ballèvre M, Hensen B, Möller A and Buick IS, 1999b. The tectonothermal evolution of the Harts and Strangways Range Region. Field Guide 4. Geological Society of Australia, Specialist Group in Geochemistry, Mineralogy and Petrology.

Hand M and Buick IS, 2001.Tectonic evolution of the Reynolds-Anmatjira Ranges: a case study in terrain reworking from the Arunta Inlier, central Australia. *In*. JA Miller, RE Holdsworth IS Buick and M Hand (Editors). *Continental Reactivation and Reworking*.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

Geological Society, London, Special Publications 184, 237-260.

Hill JH, 1972. Progress report on AP2283 and AP3156. Central Pacific Minerals. *Northern Territory Geological Survey Company Report* CR1972-0013.

Hoatson DM, Sun Shensu and Claoué-Long JC, 2005. Proterozoic mafic-ultramafic intrusions in the Arunta Region, central Australia. Part 1: Geological setting and mineral potential. *Precambrian Research* 142, 93-133.

Hunter Resources, 1989. Final Report EL 5171. *Northern Territory Geological Survey Company Report* CR1989-0630.

Hussey KJ, 2003. Rare earth element mineralisation in the eastern Arunta Region. *Northern Territory Geological Survey Record* 2003-004.

Hussey KJ, 2006. Annual report for ELs 10214 and 10215 for year ended 5/12/05. Jervois project, Northern Territory. *Arafura Resources unpublished* Report ARU 06/003.

Hussey KJ, 2007. Annual report for ELs 10214 and 10215 for year ended 5/12/06. Jervois project, Northern Territory. *Arafura Resources unpublished* Report ARU 07/008.

Hussey KJ, 2008. Annual report for ELs 10214 and 10215 for year ended 5/12/07. Jervois project, Northern Territory. *Arafura Resources unpublished* Report ARU 08/003.

Hussey KJ, 2008b. Final report for EL 10214. Jervois project, Northern Territory. *Arafura Resources unpublished* Report ARU 08/006.

Hussey KJ, 2009. Annual report for EL 10215 for year ended 5/12/08. Jervois project, Northern Territory. *Arafura Resources unpublished* Report ARU 09/001.

Hussey KJ, 2011. Annual report for EL 10215 for year ended 5/12/11. Jervois project, Northern Territory. *Arafura Resources unpublished* Report ARU 11/007.

Hussey KJ, 2013. Final report for EL 10215, Jervois project, Northern Territory. *Arafura Resources unpublished* Report ARU 13/009.

Hussey KJ, Huston DL and Frater M, 2004. Metallogeny in the eastern Arunta Region and the potential of its Palaeoproterozoic rocks. *In* TJ Munson and I Scrimgeour (Editors), Annual Geological Exploration Seminar (AGES) 2004, Record of Abstracts. *Northern Territory Geological Survey Record* 2004-001.

Hussey KJ, Huston DL and Claoué-Long JC, 2005. Geology and origin of some Cu-Pb-Zn (-Au-Ag) deposits in the Strangways Metamorphic Complex, Arunta Region, Northern Territory. *Northern Territory Geological Survey Report* 17.

Green M, 2012. Annual report for EL 10215 for year ended 5/12/11. Jervois project, Northern Territory. *Arafura Resources unpublished* Report ARU 12/001.

Johannsen LA, 1990. EL6326 First Annual and Final Report. *Northern Territory Geological Survey Company Report* CR1990-0221.

Kojan CJ, 1980. Annual report EL 1584. *Northern Territory Geological Survey Company Report* CR1980-0121.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

Kojan CJ, 1980. Final report EL 1583. *Northern Territory Geological Survey Company Report* CR1980-0174.

Lindsay-Park K, 2005. Annual report for EL10214 and EL10215, Jervois project, Northern Territory. *Exploremin Pty Ltd unpublished* Report EPL-05/171.

Maidment DW, Williams IS and Hand M, 2004. The Harts Range Metamorphic Complex – a Neoproterozoic to Cambrian rift sequence in the eastern Arunta Region. *In* TJ Munson and I Scrimgeour (Editors), Annual Geoscience Exploration Seminar (AGES) 2004. Record of Abstracts. *Northern Territory Geological Survey Record* 2004-001.

Mawby J, Hand M, Foden J and Kinny P, 1998. Ordovician granulites in the eastern Arunta Inlier: a new twist in the Palaeozoic history of central Australia. *Geological Society of Australia, Abstracts* 49, 296.

Mawby J, Hand M and Foden J, 1999. Sm-Nd evidence for Ordovician granulite facies metamorphism in an intraplate setting in the Arunta Inlier, central Australia. Journal of Metamorphic Geology 17, 653-668.

Menzies DC and Palmer DC, 1994. First and final report for period ending 10-05-1994, EL 8116. CRA Exploration. *Northern Territory Geological Survey Company Report* CR1994-0588.

Miller JA, Buick IS, Williams IS and Cartwright I, 1998. Re-evaluating the metamorphic and tectonic history of the eastern Arunta Block, central Australia. *Geological Society of Australia, Abstracts* 49, 316.

Naldrett AJ, 2004. Magmatic Sulfide Deposits: Geology, Geochemistry and Exploration. Springer.

Price LA, 1993. Partial relinquishment report on exploration activities EL6993 Bonya Creek; EL6994 Hay River and EL7287 Mount Cornish Eastern Arunta project 8 November 1990 to 16 January 1992. Poseidon Exploration. *Northern Territory Geological Survey Company Report* CR1993-0169.

Price LA, 1995. Partial relinquishment report on EL7287 (Mount Cornish) for the period 22-01-1991 to 21-01-1995, Eastern Arunta project. Normandy Exploration. *Northern Territory Geological Survey Company Report* CR1995-0313.

Price LA, 1996. Final report on exploration activities for ELs 6993 Bonya Creek, 7827 Mount Cornish and 7505 Twins Bore for the period 09-11-1990 to 02-01-1996 Eastern Arunta project. Normandy Exploration. *Northern Territory Geological Survey Company Report* CR1996-0283.

Scrimgeour I, 2003. Developing a revised framework for the Arunta Region. *In* TJ Munson and I Scrimgeour (Editors), Annual Geological Exploration Seminar (AGES) 2003, Record of Abstracts. *Northern Territory Geological Survey Record* 2003-001.

Scrimgeour I and Raith JG, 2001. High-grade reworking of Proterozoic granulites during Ordovician intraplate transpression, eastern Arunta Inlier, central Australia. *In*. JA Miller, RE Holdsworth IS Buick and M Hand (Editors). *Continental Reactivation and Reworking*. Geological Society, London, Special Publications 184, 261-287.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au

Shaw RD, Stewart AJ and Black LP, 1984. The Arunta Inlier: a complex ensailic mobile belt in central Australia. Part 2: tectonic history. *Australian Journal of Earth Sciences*, 31, 457-484.

Stewart AJ, Shaw RD and Black LP, 1984. The Arunta Inlier: a complex ensailic mobile belt in central Australia. Part 1: stratigraphy, correlations and origin. *Australian Journal of Earth Sciences*, 31, 445-455.

Stidolph PA, Bagas L, Donnellan N, Walley AM, Morris DG and Simons B, 1988. ELKEDRA 1:250,000 Geological map series and explanatory notes, SF53-7. Northern Territory Geological Survey.

Sun Shensu, Warren RG and Shaw RD, 1995. Nd isotope study of granites from the Arunta Inlier, central Australia: constraints on geological models and limitation of the method. *Precambrian Research* 71, 301-314.

Turner GR, 1978. Annual report EL1584 August 1977 to August 1978. Otter Exploration. *Northern Territory Geological Survey Company Report* CR1978-0117.

Turner GR, 1978. Annual report on EL1583. Otter Exploration. *Northern Territory Geological Survey Company Report* CR1978-0116.

Zapopan, 1989. Jervois Range EL6260. *Northern Territory Geological Survey Company Report* CR1989-0816.

Zhao Jianxin and Bennett VC, 1995. SHRIMP U-Pb zircon geochronology of granites in the Arunta Inlier, central Australia: implications for Proterozoic crustal evolution. *Precambrian Research* 71, 17-43.

Zhao Jianxin and McCulloch MT, 1995. Geochemical and Nd isotopic systematics of granites from the Arunta Inlier, central Australia: implications for Proterozoic crustal evolution. *Precambrian Research* 71, 265-299.

Perth Office: Level 5/16 St Georges Tce, Perth WA 6000 ■ PO Box 3047, Adelaide Terrace, Perth WA 6832 ■ T: +618 6210 7666 ■ F: +618 9221 7966
Darwin Office: 18 Menmuir St, Winnellie NT 0820 ■ PO Box 37220, Winnellie NT 0821 ■ T: +618 8947 5588 ■ F: +618 8947 5599
■ E: arafura@arafuraresources.com.au ■ W: www.arafuraresources.com.au