Report ARU-08/004

ANNUAL REPORT FOR YEAR ENDING 21/05/08, EL 9710 and EL 9745, NORTHERN TERRITORY, AUSTRALIA

by

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1:250,000 – Bonney Well SF 53-3
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INTRODUCTION

BACKGROUND

(Modified after Hussey 2006, Partially from Drummond, 2001-2003)

The West Davenport project area is situated in the southwest Davenport Province in the central part of Northern Territory, 150 kilometres south-southeast of Tennant Creek (Figures 1-2). Gold mineralisation was discovered in the nearby Kurinelli goldfield area over 100 years ago in 1898 by prospector/explorer Davidson (Davidson, 1905) but the region has been subjected to only limited, spasmodic attention since that time. Current activity by local prospectors in the area is directed towards recovery of gold nuggets from shallow alluvial and colluvial deposits using metal detectors. Several hundred to several thousand ounces of gold are estimated to have been recovered in this way over the past 10-20 years.

Historical exploration centred on gold mineralisation within quartz veins which characteristically occur within interbedded sandstone/siltstone (Rooneys Formation) and conformable gabbro/dolerite sills. The two main mines were the Kurinelli Mine (former MCC59) and the Dempsey’s Choice Mine (MCC191). Historical production was about 400 ounces of gold.

The units which host the gold mineralisation also occur elsewhere in the Davenport Province but no significant gold mineralisation has been discovered to date in these areas. Despite this, historic exploration activity has indicated traces of gold mineralisation in streams and rock chips from several other locations, including the West Davenport project area.

EL 9745 also hosts the Silver Valley Pb-Ag prospect, and includes trace Cu and Zn? mineralisation. The abandoned Wauchope Field Tungsten deposits are about 10 kilometres northwest of EL 9710.

Although many companies have held tenure in the Davenport Province in the past, most work has been superficial, and drilling is notable for its almost total absence away from the old mining centre at Hatches Creek, which is about 20-30 kilometres south of the Kurinelli field and about 30-35 kilometres northeast of Silver Valley.

LOCATION AND ACCESS

The West Davenport project area (ELs 9710 and 9745) are located southeast of the Devils Marbles on the southwest side of the Davenport Ranges, about 150 kilometres south-southeast of Tennant Creek in the Northern Territory (Figure 2).

Access to the West Davenport project area is via the unsealed Davenport Loop Road (DLR) which leaves the Stuart Highway about 36 kilometres south of the Wauchope Roadhouse. The southern DLR access road passes through Ali Curung and Murray Downs Station and provides access to the Silver Valley area in EL 9745. Access to EL 9710 is through Singleton Station, the turnoff to which is about 8 kilometres south of Wauchope on the Stuart Highway.

Bush tracks and graded fence lines provide access to the tenements. Cross-country 4WD vehicle passage is possible to many areas.
The West Davenport project area is generally inaccessible January to April each year as seasonal rainfall, scattered though it may be, typically makes different sections of the DLR and local access tracks impassable.

TOPOGRAPHY AND DRAINAGE

The West Davenport project area is located in the southwest Davenport Ranges in central Australia. The land surface of the project area gently slopes to the southwest and topographic relief is largely subdued with elevations of about 400-500 metres above sea level (Figure 2).

Northwest-southeast trending strike ridges are common in the project area as it flanks the main spine of the Davenport Ranges. These ridges are dissected by numerous ephemeral creeks that generally drain to the southwest of the Ranges. Numerous permanent and semi-permanent waterholes occur in the Amelia, Murray, Skinner and Wycliffe Creeks within the broader project area, but the watercourses only flow for short periods after heavy summer rain.

CLIMATE AND VEGETATION

The West Davenport area is relatively arid with an average annual rainfall of about 300 millimetres. Most of this falls in the period between December and March when the remnants of monsoonal tropical lows and cyclones can pass across the area and deposit several hundred millimetres of rain in a few days. Otherwise the area relies on intermittent summer storm rain. Peak average monthly rainfall is in February.

Maximum temperatures peak at over 40°C in summer and minima below 10°C are common in winter. Occasional frosts can occur.

“Spinifex with low trees and shrubs is the most abundant vegetation. Small patches of turpentine bush on rocky ridges and mulga and gidgea in depressions are common locally. Eucalypts line some of the larger watercourses, especially near waterholes. A variety of grasses grow on plains and valley floors”. (Blake et al., 1986)
SUMMARY

No samples were collected from within exclusion zones around Aboriginal sacred sites advised by the Central Land Council. No samples were collected from within granted mineral claims, and priority applications for mineral claims, held by unrelated parties without their permission.

A total of 76 paired stream sediment samples, including three duplicates, were collected from EL 9745. A 50g -80# sample was collected for base metals while a 1.5-2 kg -3.3 millimetres sample was collected for low-level Au and Ag by BLEG. The highest values were:

- 8.6 ppb Ag
- 1.9 ppb Au
- 19.1 ppm Co
- 20 ppm Cu
- 16.2 ppm Ni
- 20.4 ppm Pb
- 99.5 ppm Zn

The results were generally low however several potential low order Au/Ag anomalies do exist. These have more than 1 ppb Au and should be evaluated further.
TENURE

MINING/MINERAL RIGHTS

EL 9710 comprising 119 blocks (382.2 square kilometres) was originally granted to McCleary Investments PL on 31 May 2004, for a period of six years according to the NT Mining Act. Tenure was transferred to Arafura Resources NL (now Arafura resources Ltd.) on 11 June 2004 which was approved by the Mining Registrar 28 June 2004.

EL9710 was reduced to 56 blocks for the third year of grant. Arafura applied and received permission for a partial reduction for the fourth year of grant, reducing EL 9710 to 42 blocks.

EL 9745 comprising 193 blocks (619 square kilometres) was originally granted to McCleary Investments PL on 31 May 2004, for a period of six years according to the NT Mining Act. Tenure was transferred to Arafura Resources NL (now Arafura resources Ltd.) on 11 June 2004 which was approved by the Mining Registrar 28 June 2004.

EL9745 was reduced to 96 blocks for the third year of grant. Arafura applied and received permission for a partial reduction for the fourth year of grant, reducing EL 9745 to 72 blocks.

LAND TENURE

Background land tenure under EL 9710, as originally granted, is part of:

- Singleton, Perpetual Pastoral Lease 1022 - NT portion 653.
- Murray Downs, Perpetual Pastoral Lease 1139, NT Por 2286.

Background land tenure under EL 9745, as originally granted, is part of:

- Singleton Station, Perpetual Pastoral Lease 1022 - NT portion 653.
- Murray Downs, Perpetual Pastoral Lease 1139, NT Por 2286.
- Elkedra, Perpetual Pastoral lease 1000, NT Por 3431.

NATIVE TITLE

Arafura Resources has negotiated and executed an Exploration Agreement with the Central Land Council (on behalf of registered Native Title Claimant Groups). ELs 9710 and 9745 are subject to this agreement. As a result, there are no Native Title impediments to continued exploration on these titles other than holding appropriate consultations, avoiding sacred sites and, in due course, paying agreed amounts of financial compensation.

Should mining eventuate within the project area, a mining compensation agreement will have to be negotiated both with the holder of the pastoral lease in accordance with the Mining Act, and also with the registered Native Title Claimants in accordance with the Right To Negotiate provisions of...
the Native Title Act. A mining tenement can only be granted where an appropriate Native Title agreement is emplaced. The terms of the Exploration Agreement provide for continuation of exploration on the area of the proposed mining tenement while the mining agreement is being negotiated with the registered Native Title Claimants.

**ABORIGINAL SACRED SITE CLEARANCES**

According to Arafura’s Exploration Agreement, an Aboriginal Sacred Sites survey was conducted over the area of intended activity in EL 9745 by the CLC and members of the relevant Native Title Group. The CLC subsequently advised Arafura of the location of exclusion zones around identified sacred sites and areas to be avoided during the sampling programmes other than where they overlapped with existing roads and tracks. The exclusion zones also encompassed all sites listed on the Sacred Sites Register of the Aboriginal Areas Protection Authority (AAPA).

Unfortunately the CLC advised that they did have the staff or time to complete a clearance survey over EL 9710. Arafura therefore restricted reconnaissance activities to EL 9745.
GEological SETTING

REGional GEOLOGY

Prospective basement rocks in the Kurinelli Project Area are part of the Palaeoproterozoic Ooradidgee Group within the Davenport Province of the Tennant Creek Region in central Northern Territory. The geology of the Davenport Province was first described in detail by Blake et al. (1987) but their description and maps have been modified since that time, most recently by Donnellan (2004) and Donnellan and Johnstone (2002, 2004) after close-spaced low level airborne geophysical surveys were completed over the region. The following summary is written mainly with reference with the 1:500 000 scale Tennant Creek Region maps of Donnellan (2002) and Donnellan and Johnstone, (2004) and to a lesser extent with the 1:250 000 scale Davenport Province map of Blake et al. (1988).

“The Tennant Creek Region is a composite term used for the pre-Barramundi basement (Warramunga Province) and the unconformably overlying Palaeo- to Mesoproterozoic North Australian Platform Cover successions of the Davenport and Ashburton provinces to the south and north respectively. To the east and west the Palaeozoic Georgina and Wiso basins overlie the Tennant Creek Region.” (NTGS website, February, 2005)

In the central Tennant Creek Region, volcaniclastic/volcanic rocks and flysch sediments of the Warramunga Province were intruded by granites and deformed by the Tennant Orogeny at ~1850 Ma. These units and intrusives are unconformably overlain by relatively undeformed and predominantly sedimentary successions of the Ashburton Province to the north and mildly deformed and metamorphosed sedimentary and volcanic successions of the Davenport Province to the south. (after NTGS website, February, 2005)

The basal unit in the Davenport Province, the Ooradidgee Group, crops out predominantly in a discrete inlier (here termed the “Kurinelli Block”) some 85 x 50 kilometres in extent centered on the Kurinelli area. The Kurinelli Block, which is evident as a discrete magnetic/gravity domain in geophysical images (Donnellan, 2004; Donnellan and Johnstone, 2004), is bounded to the south by the overlying sequences of the Hatches Creek Group and to the north and east by Cambrian, Cainozoic and Recent sediments. An intrusive plug of “Devil’s Suite” granite (1710 Ma, Donnellan and Johnstone, 2002; here termed the “Hanlon Creek Granite”), some 10-15 x 25 kilometres in extent (obscured for the most part by a veneer of the younger sediment listed above), largely defines the eastern limit of the lower Oorididgee Group units in the Kurinelli Block but upper Oorididgee Group rocks have been mapped to the east of the granite. The presence of the Hanlon Creek Granite is clearly demonstrated on aeromagnetic images of the region by a domain of uniformly even magnetic character with coincident low Bougeur gravity response (Donnellan, 2004; Donnellan and Johnstone, 2004).

Lesser exposures of the Ooradidgee Group occur in major anticlinal domes near Kurundi and Wauchope in the Murchison and Davenport Ranges, 50-80 kilometres west of Kurinelli; at Hatches Creek, Skinner Pound and Murray Downs in the Davenport Range, 30-50 kilometres south of Kurinelli; and at Newlands Creek, 100 kilometres to the southeast of Kurinelli. However, it is only in the Kurinelli Block and at Newlands Creek that oldest sediments of the Ooradidgee Group, the Rooneys Formation, are exposed and, in the Kurinelli area, it is this unit, and dolerites which intrude this unit, that hosts the known gold mineralisation.

In the Kurinelli Block, the lowest exposed units of Ooradidgee Group are the Epenarra Volcanics and the Rooneys Formation. According to Blake et al. (1987), the Rooneys Formation is conformable on and interfingers with the Epenarra Volcanics but the relationship between these
units is not clear on published maps of the area where they are shown to be separated by, and overlain by the Kurinelli Sandstone. Elsewhere in the Kurinelli Block the Epenarra Volcanics are separated from the Kurinelli Sandstone by the Edmirringee Volcanics, and the Kurinelli Sandstone is overlain by the Taragan Sandstone and the Treasure Volcanics. Map codes, thicknesses (Blake et al., 1987) and descriptions of rock components of these units are listed in Table 1.

The units of the Oorididgee Group are intruded by dolerite (Pdl) and dioritic to rhyolitic granophyre (Pgy). According to Blake et al. (1987) the mafic intrusions consist of fine grained dolerite ranging to coarse gabbro, they are generally altered, and they are not present any higher in the sequence that the lower part of the Wauchope Sub-Group (lower Hatches Creek Group) which unconformably overlies the Oorididgee Group. Outcrop and magnetic patterns suggest that some of the dolerites consist of folded stratiform sheets (Donnellan and Johnstone, 2002) and this is especially the case where the dolerite (?sills) intrude the Rooney Formation in the middle of the Kurinelli Block. It would seem from this that intrusion of dolerite sills in the Kurinelli Block preceded regional deformation and metamorphism of the Oorididgee Group and some may have been associated with “Treasure Suite” volcanism in late Oorididgee times (1820 Ma, Donnellan and Johnstone, 2002).

**TABLE 1: Description of Oorididgee Group units in the Kurinelli Block.**

<table>
<thead>
<tr>
<th>OORIDIDGEE GROUP UNITS</th>
<th>THICKNESS (m)</th>
<th>CODE</th>
<th>DESCRIPTION</th>
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<tr>
<td>Treasure Volcanics</td>
<td>0-&gt;1800</td>
<td>Pot</td>
<td>rhyolitic to dacitic lava and pyroclastics including ignimbrite, felsic intrusives, feldspatic/lithic arenite, quartz arenite, minor basaltic lava</td>
</tr>
<tr>
<td>Taragan Sandstone</td>
<td>0-&gt;1000</td>
<td>Poa</td>
<td>feldspatic/sublithic arenite, quartz arenite and conglomerate, minor siltstone, mudstone and altered felsic lava</td>
</tr>
<tr>
<td>Edmirringee Volcanics</td>
<td>0-2500</td>
<td>Pog</td>
<td>basaltic lava, minor volcaniclastic arenite and felsic lava</td>
</tr>
<tr>
<td>Kurinelli Sandstone</td>
<td>0-2600</td>
<td>Pok</td>
<td>subarkosic/lithic arenite, quartz arenite, siltstone and minor felsic and mafic lava and tuff</td>
</tr>
<tr>
<td>Epenarra Volcanics</td>
<td>0-&gt;3000</td>
<td>Por</td>
<td>felsic lava and pyroclastic rocks including ignimbrite and lapilli tuff, volcaniclastic arenite and conglomerate, minor mafic lava</td>
</tr>
<tr>
<td>Rooney Formation</td>
<td>0-&gt;1200</td>
<td>Pon</td>
<td>greywacke, siltstone, subarkosic/sublithic/lithic arenite, minor felsic porphyry; locally schistose</td>
</tr>
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LOCAL GEOLOGY

ELs 9710 and 9745 flank the southwest side of the Davenport Ranges and include parts of a large anticlinal structure that links the Murray Downs Dome and the Ridgewall Anticline.

The Palaeoproterozoic basement rocks in this area are dominated by Ooradidgee Group, and lesser amounts Wauchope Sub Group, sedimentary and volcanic rocks. The Kaidwalla Granite (a 1710 Ma Devils Suite granite) intrudes Ooradidgee Group rocks to the northwest of the Murray Down Dome.

Arenites and siltstones of the Kurinelli Sandstone (and Warnes Sandstone Member) dominate the core of the anticlise in project area. These units host Au deposits about 20 kilometres north of the Murray Downs Dome, for example, the Great Davenport and Aztec Au mines/workings. Sandstone and conglomerate of the Taragan Sandstone are also locally dominant in the Murray Downs Dome.

Basalts of the Edmirringee Volcanics are the oldest units in the project area and occur in the centre of the Murray Downs Dome. This unit is largely recessive and hosts the Silver Valley Pb-Ag prospect. In addition subordinate sills of dolerite and granophyre intrude the younger Kurinelli and Taragan Sandstones. Minor felsic volcanics are also present in this area.

The Palaeoproterozoic rocks are locally obscured by superficial deposits of Cambrian, Cainozoic and Holocene ages. Approximately 40-50% of the area is obscured by Quaternary deposits. Some of these areas may be underlain by a thin veneer of flat lying Cambrian sediments and probably also by Tertiary silcrete and ferricrete. Most of the exposed Palaeoproterozoic rocks are relatively fresh, as they are currently being striped by active weathering processes.
PREVIOUS INVESTIGATIONS

PRIOR TO 1996

The following summary of exploration activity in the area prior to Arafura’s involvement and is largely from Drummond (2001-2003). This summary also includes exploration activities in the West Davenport project area not detailed by Drummond. Drummond’s synthesis mainly concentrates on Kurinelli goldfield exploration activities and is retained because the West Davenport project area has analogous geologic and exploration models/correlatives.

Kurinelli is an historical Au mining region, with the first activity undertaken in the 1890’s. In subsequent times a number of small shafts were sunk and a small stamp mill was operational in the 1950’s. The field has received scant attention by scientific exploration - possibly because its importance has only recently been emphasised by the significant Au production, from a large area, by prospectors using metal detectors. Discussion with them leads to the conclusion that about 150 kg have been recovered in the last few years.

Review of Historic Exploration

Gold & Mineral Exploration N L (1972 - 74) EL633. CR75-123

This tenement was in the Kurinelli area. Work done was essentially of a prospecting nature, with bulldozer costeaning. In that time of low Au price and no effective geochemical or geophysical techniques available, their effort was unsuccessful. Evaluation of a small Cu show (locality uncertain) did not provide encouragement.


Uranium exploration was undertaken in the Murray Downs area by Western Nuclear (Australia) PL to evaluate a radiometric anomaly identified in the 1956 BMR airborne survey of the Davenport Ranges. They constructed a grid, completed a ground-based scintillometer survey and tested the anomaly with three drill holes. Western Nuclear identified trace uranium (to 14 ppm $U_3O_8$) in laterite, but failed to identify any significant uranium mineralisation at depth. Western Nuclear found that the upper 6 inches (15 centimetres) had the highest counts in the holes.


Geopeko completed reconnaissance mapping and scintillometer surveys over the Murray Downs area.

CRA Exploration PL (1978-1979) EL 1851, CR 79/195

CRA Exploration completed ground reconnaissance mapping and rock chip sampling, and acquired an airborne radiometric survey over parts of the Murray Downs area. Interest in this area was again largely due to the radiometric anomaly identified in the 1956-57 BMR airborne survey of the Davenport Ranges. CRA Exploration report that follow up
investigations of uranium anomalies and base metal prospects did not indicate any mineralisation of economic significance.


The original tenement covered some 1300 sq km, being the central part of the Davenport Ranges, including much of Arafura's ELs 9710 and 9711. The first year's work consisted predominantly of prospecting and visiting known Au occurrences. Analogies to Telfer were drawn. In the second year reconnaissance surface sampling of various prospects and an introductory stream sampling programme was carried out - neither of which advanced matters much. By the third year, effort was being concentrated around Arafura's Kurinelli Project area in consequence of the returns from prospectors' metal detecting. Mapping programmes, rock chip sampling and costeaning were initiated which emphasised that Au seemed to be preferentially associated with sediment and dolerite/gabbro contacts especially where brecciation is evident. There was additional work to the south of the field and out of the Kurinelli Zone around the Aztec and Great Davenport prospects.

Poorly ground-located rock chip sampling over basal Treasure Volcanics in the south west of EL9711 is viewed as most encouraging by Drummond. Twenty-metre composite rock chips returned values of 1.04 g/t and 0.41 g/t Au: an indication for potential for higher bulk Au deposits, rather than confinement to narrow quartz veins.


Parts of EL 9710 were explored mainly for tin mineralisation by evaluating tails in pan concentrates. There was limited success in EL 9710.


This small tenement (4 blocks) was centered around an Au show which is situated about 4 km south of the old Kurinelli battery. Sampling around it produced disappointing results, with only one of 10 samples returning better than 1.0 g/t. Trenching and bulk sampling were undertaken, but the latter was not processed. Interestingly, this is the first report which mentions carbonate cementation in the weathered zone and the observation of calcrete. Soil sampling was undertaken over a small prospect 7 km south of the battery with no real encouragement, but the sampling was over a small area, and utilised a technique possibly not sufficiently sensitive, in Drummond's opinion.

**Wellington Resources Pty Ltd (1987 - 1988) EL5354. CR89-33**

This small tenement (12 blocks) occurred in the southern part of the Kurinelli zone. Most of the tenement has an alluvial cover and Wellington undertook no exploration designed to test the cover, or through it. It examined outcropping reef mineralisation elsewhere in the field and decided that the quartz reefs were narrow and lacked the structural setting and alteration associated with significant mineralisation.

**Meekathara Minerals (1988-1991) EL 5505, CR89-147, 90-177, 91-250.**
Meekathara Minerals explored the southwest side of the Davenport Ranges for Au and base metals. They report a composite rock chip sample with 0.1 g/T Au and 61.7 g/T Ag from the Silver Valley prospect. They also report a rock chip assay of 0.24 ppm Au and 35 ppm Ag from a sulfidic quartz vein (sample E04) and galena bearing quartz veins with trace Au and significant Ag (E01 and E03) in the northern part of the Murray Downs Dome.

**Rosequartz Mining NL (1988- 1989) EL5867, CR 89-350.**

Rosequartz Mining completed a reconnaissance rock chip and a -2mm, 5kg stream sediment BLEG sampling program to evaluate the parts of the project area for gold mineralisation. Their survey covered parts of the Ridgewall Anticline within EL 9710. Gold values were all low with the highest BLEG Au being 0.7 ppb.

**Newmont Australia Ltd (1989- 1990) EL 6324, CR 90/237**

Newmont evaluated the Singleton area using geochemistry on soils and chip chips and by evaluating chip samples retained by Power and Water. The BLEG results on soils were generally disappointing although anomalous areas were recognised. Interestingly they found a rock chip with 0.1 ppm Au from quartz and malachite vein in the Wauchope tungsten field.

**Mr A J Shields (1993 - 1995) ELs 7158, 7925 and 7978. CR92-381, 93-260, 93-344, 94-224, 95-199, 95-208.**

The tenements occupied the northern 60% of Arafura's AC74. The target was to discover new quartz veins in the poorly outcropping district by using ground magnetics and refraction seismic and mapping. Broadly spaced soil BLEG was undertaken and it indicated significant anomalism. Shields' BLEG predominantly covered areas in the south-west corner of AC74, and to the north-east of it centred around 20°33'S, 135°08E: these areas did not return anomalous (i.e. >1.0 ppb Au BLEG) assays. However traverses which generally lie in the east of RE1345 were consistently anomalous. The more southerly traverse returned six consecutive anomalous values - averaging 5.5 ppb - over a traverse of almost 4 km. The traverse to the north-east returned six anomalous readings from eight sites over almost 6 km: the eight samples averaged 3.8 ppb. An outlying sample at 20°34'S, 135°05E returned 107 ppb. Drummond considers that this highlights the extent of mineralisation in the Kurinelli Zone beyond areas of known surface gold accumulation. It also demonstrates the usefulness of the soil BLEG survey technique in the area. The areas which did not return anomalous Au in Shields' programme may simply require sample collection below transported alluvium. Shields also noted that it may only be sub-sections of a quartz reef system that might be mineralised, citing examples such as Woods Point and Walhalla in Victoria.

**Hall and Hallett (1991 - 1992) EL7471. CR92-629**

This small EL was centred around an old Au show mapped 6 km south-east of the Great Davenport mine. Of 35 stream sediment samples panned or tested in a Au wheel some 16 returned either a trace or a colour. This indicates the general Au anomaly at the southern wedge-out of the Kurinelli zone.
BHP Gold Ltd/Newcrest Operations Ltd 1991. Various EL Applications

In 1991, during a corporate and operational transitional change between Newcrest and BHP Gold, the former applied for Exploration Licences which covered almost all of the Davenport Ranges, and extended south-easterly sufficiently to cover Arafura's Supplejack Project. Before the tenements were granted BHP Gold undertook an extensive stream sediment sampling programme and samples were assayed by BLEG techniques for precious metals, and by conventional techniques for base metals. Although BHP Gold defined anomalous areas for follow-up, the project was terminated before any of the Exploration Licences was granted and there were no reporting requirements to NTDME.

Newcrest kindly provided access to its report which does not include the raw assay data. Rather it mainly consists of plots, on a per element basis, of the assay results which BHP Gold considered to be anomalous. Accordingly Drummond has accepted, and considers it reasonable to do so, BHP Gold's definitions of anomalism without being able to undertake any independent checking of the data or the statistical analysis.

General conclusions which can be drawn from a study of BHP Gold's results are as follows,

1. Gold

The Kurinelli Sandstone, to the south-east of the Great Davenport mine, and beyond the Kurinelli Zone, is anomalous over about 20 sq km. Despite its evident Au mineralisation, the Kurinelli Zone generally did not provide much anomalism. But this is presumably due to the fact that its north-eastern part, i.e. beyond 1 km north-east from the old battery site, was not sampled. Additionally the south-western part is known to be covered by thicker alluvium.
INVESTIGATIONS BY ARAFURA RESOURCES

Phase 1 (October 2007)

No samples were collected from within exclusion zones around Aboriginal sacred sites advised by the Central Land Council or from within granted mineral claims, and priority applications for mineral claims, held by unrelated parties.

Arafura Resources engaged Dr Michael Green of Remote Area GeoScience to complete a reconnaissance stream sediment sampling program within EL 9745 to test and develop a methodology to explore the project area for Au, Ag and base metals.

Paired stream sediment size fractions were collected at 73 reconnaissance sample sites in the hills southwest of the Silver Valley prospect within EL 9745.

- about 50g of -80# fraction was collected for Cu, Pb, Zn, Co and Ni; and
- about 1.5-2kg of -3.3 millimetres fraction was collected for low level Au and Ag.

Three field duplicate samples were also collected, making a total of 76 sample pairs.

Site descriptions and locations are detailed in Appendix 1 and Figure 3.

Reconnaissance sampling follows procedures adopted by Arafura Resources in the Mount Porter area, Pine Creek Region, and was designed to test a typical area in EL 9745.

The -80# samples were submitted to Northern Territory Environmental Laboratories in Darwin, while the coarser fraction was submitted to North Australian Laboratories in Pine Creek. Both were submitted in October 2007.

Additional follow-up sampling was anticipated in early 2008 however significant laboratory delays prevented such work.
GEOCHEMICAL RESULTS

Chemical Analyses

The -80# samples were submitted Northern Territory Environmental Laboratories in Darwin in October 2007 and analysed using their G300M scheme (HCl/HNO₃/HClO₄ digest with ICPMS elemental determinations). Results were reported to Arafura 16 November 2007.

The 1.5-2 kg, coarser grained BLEG samples were analysed by North Australian Laboratories in Pine Creek. Unfortunately due to a significant laboratory delay, results were not reported to Arafura until 25 April 2008.

All results are presented in Appendix 2. The spatial distribution of gold results are also shown in Figure 4.

Maximum Co, Cu, Ni, Pb and Zn values are 19.1, 20, 16.2, 20.4 and 99.5, respectively. Maximum Au and Ag BLEG values are 1.9 ppb and 8.6 ppb, respectively.

Values above about 15.7 ppm Co, 12.5 ppm Cu, 9.6 ppm Ni, 11.6 ppm Pb, 63 ppm Zn, 1 ppb Au and 6.2 ppb Ag are considered statistically anomalous, representing the highest 5-7% of their respective populations.

External Control Analyses

At this stage, no samples have been despatched to an external laboratory.

Duplicate samples.

Assay results indicate a good agreement in the reproducibility of sampling methodology with Cu, Pb, Zn, Co, Ni and Ag duplicate results typically reproducible within about 5-10%. Au is more variable with results differing by up to 50%.

DISCUSSION

Given the expected dilution by mass weathering of the Kurinelli Sandstone, the low order anomalous gold values (those greater than about 1 ppb Au) found during this sampling program are considered worthy of follow up sampling. Interestingly, these sites also had elevated silver contents. The base metals are within expected ranges for these rock types.

Additional sampling following using the above protocols is recommended.

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3 July 2008
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