ANNUAL REPORT
EL 28397
PERIOD: 12/7/2011 TO 11/7/2012
PLENTY RIVER REGION, NORTHERN TERRITORY

FAR RESOURCES Pty Ltd
PO Box 96
Palmerston
NT 0831

Plenty Rivers Project
1:100 000 Mapsheets: 5953 Macdonald Downs
1:250 000 Mapsheet: SF5311 Huckitta
Commodities: Cu, Pb, Zn, Mo, Au, Ag

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Minesite Services Australia
August 2012
Abstract:
EL 28397 forms part of FAR Resources Plenty Rivers Project which consists of 11 granted exploration licences covering 3,720km² in the Harts Range/Plenty River area of the Northern Territory, (see figure 2). The area is considered to be prospective for base metals, precious metals and industrial minerals. Work conducted in the first year consisted of a comprehensive literature survey of the whole of the areas that form the Plenty Rivers Project. This licence covers part of the Jinka Domain, north of the Delny Fault Zone. Preliminary field exploration has proven encouraging with the interpretation of existing datasets and further work recommended for the upcoming year.

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1. LOCATION

EL 28397 is located some 185km to the northeast of Alice Springs in the Northern Territory. The licence has an irregular shape having a north-south length of 4km with an maximum east-west width of 12km and lies between 22° 28’S to 22° 30’S and 135° 4’E to 135° 11’E. The licence is located upon the Old Macdonald Downs and Macdonald Downs pastoral leases to the north of the Harts Range Police Station and Atitjre Community. The Plenty Highway passes to the south of the licence and the Derry Downs access road is to the east of the licence.
2. TITLE HISTORY

Mineral Tenure
EL 28397 was granted on 12/07/2011 and this report is the First Annual Technical Report which covers activities in the period 12/07/2011 to 11/07/2012, being the first year of tenure. The licence has an area of 14 graticular blocks (45 km²). The licence was transferred from Acacia Minerals Pty Ltd to FAR Resources Pty Ltd on 23/8/2012.

EL 28397 forms part of the Plenty Rivers Project which consists of 11 granted exploration licences covering a total area of 1,179 graticular blocks (3,720km²)

The regional area has a mineral exploration history going back to the 1880s when the Harts Range garnet and mica fields were found and exploited by small scale miners. This style of mining has continued on and off to the present day with the Mud Tank Mine still operating in the eastern Arunta Region today.
Real Property
EL 28397 is located on the following real property parcels:

NT PPL 1098 (NTP 717) “Old Macdonald Downs Station” which is owned by Old Macdonald Pastoral Pty Ltd, (c/ Delmore Downs Station via Alice Springs NT).

NT PPL 1116 (NTP 3120) “Macdonald Downs Station” which is owned by Mr CM Chalmers, (PMB 81 Alice Springs NT).
3. PHYSIOGRAPHY

The landforms and geology of the Plenty River Project Area of which EL 28397 forms an integral part, consists of 3 geological domains, the northern Jinka Domain, the central Kanandra Domain and the southern Harts Range Domain. EL 28397 occurs within the Jinka Domain but for completions sake all three domains are described here.

i. Geomorphology

Jinka Domain
The geomorphology of the Jinka Domain consists of low rounded hills that are desiccated by drainage systems heading north into the Georgina Basin. The number and frequency of these hills are much less than that found in the Kanandra Domain to the south. This licence mainly is located on the fan-like anastomosing drainage systems due to its irregular shape.

Kanandra Domain
The Kanandra Domain primarily consists of low angular and rounded hills that are incised by numerous drainage lines forming a fenestral pattern. Erosion along these drainage lines can give rise to quite steep slopes on occasion.

Harts Range Domain
The Harts Range Domain contains wide open sandy plains in the areas to the south of the licence along the Plenty Highway. To the north of this area east-west trending rocky hills consisting of Harts Range Group rocks occur. Areas of low ridges with incised drainage lines are formed upon rocks of the Tertiary Waite Formation.

ii. Biogeography

Jinka Domain
In this domain three vegetation types occur in the licence area, they are: low open woodlands consisting of Coolibah low-open woodland with an open-grassland understorey in the main drainage systems, a mixed species low-open woodland consisting of Ironwood and Whitewood low open woodland with a open grassland understorey, and thirdly a tall open scrubland containing a Mulga tall open scrubland with a Woolybutt open grassland understorey.

Kanandra Domain
The vegetation in this domain may be classified as a mixed species low open woodlands containing Ironwood and Whitewood with a low open grassland understorey in areas on soils derived from the Tertiary Waite Formation. In other areas along drainage lines the Melaleuca and Eucalypt species increase in numbers to a woodland regime.
Harts Range Domain
The vegetation in this domain may be classified as a mixed species low open woodland containing Ironwood and Whitewood with a low open grassland understorey in areas on soils derived from the Tertiary Waite Formation. In other more sandy areas an Acacia dominated very open woodland with an open grass understorey is present.

iii. Hydrology
The surface hydrology is very limited in this arid area of central Australia. Seasonal rains fall during the northern wet season, (depending on the year), and quickly run off. The licence area is held under real property tenure as cattle stations whose main pursuit is open range cattle grazing. For the majority of the year water is supplied by bores, either to earth dams (turkey nests) or to sealed tanks and dispensed to the cattle via regulated cattle troughs. The groundwater regimes of the three domains are described here:

Jinka Domain
The groundwater of the Jinka Domain consists of locally fractured rocks based around the known shear zones. Bores drilled in this area generally give the best flows of the three domains. Flow rates are greater than 0.5 l/s.

Kanandra Domain
The groundwater of the Kanandra Domain consists of locally fractured rocks based around shear zones and faults. They have flow rates of between 0.05 and 0.5 l/s and generally higher salinities.

Harts Range Domain
The groundwater of the Harts Range Domain is again based on localised fracturing associated with structural elements and have low flow rates (0.05 - 0.5 l/s) and high salinities (>1500 mg/l).
4. ACCESS

Access to the exploration licence from Alice Springs is northwards along the Stuart Highway for 68km to the intersection of the Plenty Highway, then 167 km along the Plenty Highway to the Derry Downs Access road, then another 30km north along this road. Access is then 35km along the Macdonald Downs Station access road past the Mt Swan Homestead, This road then traverses the licence for 4km. Access throughout the remainder of the licence is via station roads and fence lines. Access is considered to be poor to fair due to vegetation density.
5. GEOLOGICAL SETTING

The Plenty River Project is located in a north-south traverse across the Aileron Province from the Georgina Basin in the north to the Irindina Province in the south.

**Georgina Basin**

The Georgina Basin is a Paleoproterozoic sedimentary basin that contains dolostone, limestone, sandstone, siltstone and shale. It is a widespread intracratonic basin that was initiated as part of the Centralian Superbasin and extends east into Queensland. It unconformably overlies the Aileron Province, Tennant Region, Murphy Inlier, McArthur and south Nicholson Basins and Lawn Hill Platforms. It is interpreted to be contiguous at depth with the Wiso and Daly Basins and conformably overlies the Kalkarinji Province.

**Aileron Province**

The Aileron Province is a Palaeoproterozoic metamorphic and igneous terrain containing variably metamorphosed sediments, meta-volcanic rock, calc-silicate rocks, dolerite, mafic rocks and granites. It forms part of the Arunta Region and is a poly-deformed and metamorphosed basement terrain along the southern margin of the North Australian Craton. It is unconformably overlain by the Ngalia, Amadeus, Murraba, Georgina and Eromanga Basins and has largely faulted relationships with the Wurumpi and Irindina Provinces.

**Irindina Province**

The Irindina Province is characterised by a Neoproterozoic metamorphic terrain that contains metasedimentary gneiss, quartzite, mafic amphibolite and felsic migmatites. It forms part of the Arunta Region and is a fault bounded metasedimentary and igneous province that formed a deep depocentre within the Centralian Superbasin and was metamorphosed in the Ordovician. It is fault contacted with the Aileron Province to the north and unconformably overlain by the Eromanga Basin to the south.

![Figure 5. Geological Setting Plenty Rivers Project](image_url)

i. Regional Geology

The regional geology can be divided into 3 main tectonic elements, separated by east-west trending shear systems. The southernmost of these elements, the Harts Range Domain, comprises upper amphibolite to granulite facies metasediments belonging to the Harts Range Group. Dominant lithologies include migmatite, metapelite, metabasite, garnet-biotite gneiss and subordinate calc-silicate rock marble and quartzite. The Harts Range Group underwent peak metamorphism during the Larapinta Event at 480-460 Ma.

To the north of the Harts Range Domain is the Kanandra Domain, this contains the Kanandra Granulite which belongs to the palaeoproterozoic Strangways Metamorphic Complex. The Kanandra Granulite forms part of a 150-200km long, west trending belt of intermittently outcropping belt of pelitic and mafic granulites that includes the Bleechmore Granulite to the west. This domain comprises felsic and mafic granulites with garnet-bearing pelitic and semi-pelitic migmatite and rare calc-silicate rock, intruded by deformed granite.

The third major geological element in the licence area is located to the north of the Kanandra Granulite, and is termed the Jinka Domain.

This comprises a narrow (5-25km wide) belt of low-pressure amphibolite to granulite facies metasediments intruded by extensive granites. It extends from the Perenti Metamorphics in the west to the Jervois Range in the east, a total distance of more than 100km.

Two major shear zones separate the three tectonic elements in this region: the Entire Point Shear Zone which separates the Harts Range Domain from the Kanandra Domain and the Delny Shear Zone which separates the Kanandra Domain from the Jinka Domain to the north. The Entire Point Shear Zone trends east-northeast, dips steeply south and merges with the east-southeast striking Delny Shear Zone in the Plenty Rivers Project area.

The Delny Shear Zone is a major east-southeast striking structure more than 150km in length and is locally up to 3km wide. A substantial gravity gradient is evident across the shear zone, implying it is a major crustal feature.
ii. Licence Geology

Locally the basement rocks of interest are covered by a thin veneer of Tertiary to Recent sediments. The Tertiary Waite Formation forms a significant impediment to exploration of underlying bedrock.

The Jinka Domain occurs in the licence and comprises metasedimentary rocks intruded by granites. Metamorphism occurred at amphibolite to granulite facies and low pressures during the Strangways Event. The rocks of the Jinka Domain in the licence area include the following:

- Elkera Formation, (Pak); siltstone to sandstone, micaceous. Laminated to thinly bedded, dolostone horizons, some stromatolitic.
- Grant Bluff Formation, (Pag); quartz arenite to quartz-wacke, lesser coarse grained, cross-bedded quartz arenite.
- Dneiper Granite, (Pgd); Grey biotite granite, grading into orthogneiss locally hornblende bearing or quartz deficient.

The Jinka Domain is separated from the Kanandra Domain by the Delny Shear zone. The Delny Shear Zone is a steeply south-dipping shear zone locally up to 3km wide.
FAR Resources Pty Ltd
Exploration Licence 28397
First Annual Report

Minesite Services Australia
2012
6. EXPLORATION AND MINING HISTORY

Exploration

Table 1. Historical Exploration Licences and Open File Reports

<table>
<thead>
<tr>
<th>Licence No</th>
<th>Licence Holder</th>
<th>Tenure Period From</th>
<th>To</th>
<th>Open File Reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL 32</td>
<td>Neptide Exploration</td>
<td>21/03/1972</td>
<td>20/03/1973</td>
<td>CR1973-0208</td>
</tr>
<tr>
<td>EL 5902</td>
<td>Track Minerals</td>
<td>26/06/1988</td>
<td>02/06/1989</td>
<td>CR1989-0705</td>
</tr>
</tbody>
</table>

Exploration activities have been conducted in the licence area by a number of exploration companies, a brief summary of each is presented here:

AP 2162
This Authority to Prospect was explored by Central Pacific Minerals who drilled 3 diamond drill holes in the Perenti Prospect in late 1969. Little information is remaining in these progress reports (the paper copies have been lost) but the diamond core is retained in the Alice Springs core library. These holes are located to the west of EL 28397.

EL 32
In 1973 Neptide completed limited reconnaissance rockchip sampling on EL32 and assayed for a range of elements including base metals. Sample MC1 assayed 1000ppm Cu and 2000ppm Pb. Samples MC24 and MTS5 assayed 1000ppm Cr. Samples JV1 assayed 100ppm Cu, 2500ppm Pb, 1500ppm Cr and 2000ppm Ni, and JV2 assayed 0.2% Cu, 1000ppm Pb and 1000ppm Zn. The exact location of the MC, MTS and JV series samples are not specified in the reports with the maps showing only the numbers.

EL 5902
In 1989 Track held EL5902, and completed stream sediment sampling, geological traverses and rockchip sampling, which failed to locate any signs of gold or base metal mineralisation.

Mining

Table 2. Historical Mines and Prospects

<table>
<thead>
<tr>
<th>Mine/Prospect Name</th>
<th>Modat Site Id</th>
<th>Mineral Field</th>
<th>Commodity</th>
<th>Orebody Type</th>
</tr>
</thead>
</table>

There are no mineral occurrences are listed in the MODAT Database within the licence area.
7. EXPLORATION RATIONALE

EL 28397 forms an integral part of the Plenty Rivers Project which consists of 11 exploration licences having an aggregate area of 3,720km$^2$. This licence occurs in the Jinka geological domain in the northern part of the project area.

The northern part of the Plenty River Project area comprising the Metamorphic-Granite Complex (Jinka Belt) is prospective for volcanic hosted Cu-Pb-Zn-Ag-Au deposits and Cu-W-Au-Mo skarns and other replacement deposits, stockwork vein gold occurrences, and granite hosted Sn-Ta-W deposits. The southern and western areas of the tenements cover an uplifted block of Strangways Metamorphics (the Kanandra Granulite), which contains rocks that elsewhere are known to consist of acid and basic volcanogenic rocks and immature sediments which host iron formations, Cu-Pb-Zn-Au mineralization, and are usually metamorphosed to granulite facies. Basement rocks exposed are quartz-feldspar granulites, basic granulites, magnetite bearing amphibolites and other calc-silicates. Float shows massive magnetite and hematite and suggests iron formation occurs beneath cover. Basement is also intruded by ultramafic dunite-serpentinite and granite bosses which are fracture related. Fracturing, volcanism and igneous intrusion began in Lower Proterozoic time and extended to the Carboniferous (Alice Springs Orogeny). Isolated patches of Ledan Schist are present northeast of Mount Swan. The Ledan Schist is considered to be prospective for quartz-vein-hosted Au-only mineralisation, as it has a low metamorphic grade and is situated close to the NW-SE trending Delny Shear Zone structure.

Specific mineralisation models are:

1. Nickel-copper-cobalt in serpentinitised ultramafics interpreted to be intrusive gabbro-peridotite-dunite bodies. Maximum nickel value is 1.2% Ni, 240ppm Cu and 300ppm Co in a lateritised serpentinite dunite south of No. 4 Dam. Another serpentinitised ultrabasic body is at the Hammer Prospect near No. 1 Dam (also called Middle Dam) with 4700ppm Ni and 750ppm Cu. Several other ultrabasic bodies have been reported. The ultramafic bodies occur both in the central Kanandra Granulite and the Metamorphic-Granite Complex to the north. Those within the Kanandra Granite have been compared with Alpine-type (ophiolitic) serpentinites. However, the No. 4 Dam occurrence is in the Metamorphic-Granite Complex Belt. This sequence is located to the north of the major east-west orientated retrograde shear zone, the Delny Fault Zone. This shear transects the tenement, separating granites to the north from (previously Irindina Metamorphics) to the south. It flanks the southern margin of a west-northwest trending deep crustal fracture which has been the locus for series of granite intrusions. Rocks within the fault zone appear to be lower units of the Strangways Metamorphic Complex and/or younger felsic volcanics up-domed by granitic intrusion. Deep crustal fracturing is supported by extensive barite-fluorite veining in the vicinity of the fault and deep sourced ultramafic intrusions.
2. **Orogenic shear zone hosted gold mineralisation.** Gold has been discovered in gossanous sulphidic quartz vein breccias along the Delny Shear Zone 4km east of the licences at Bruces Copper Prospect with maximum values up to 53g/t Au. The breccias are either copper-rich or copper-poor:

- Gossanous sulphidic copper poor breccia veins associated with Type 2 quartz veins, possibly focused on straights rather than jogs.
- Gossanous copper rich veins in Type 2 shears. Pyritic veins that may be related to reverse movement on the Type 3 faults.

Geochemical sampling along the Delny Fault Zone in the eastern part of the Plenty River project area in the Halfway Dam area has reported some anomalous gold in stream sediments and silicified ridges and quartz veins that require systematic sampling.

3. **Base metal mineralisation.** Within the Arunta Province, significant Zn-Cu-Pb (Ag-Au) mineralisation is restricted to the SE Aileron Province (1810-1800 Ma and 1765 Ma) and the Warumpi Province (1620-1610Ma) (Hussey, Huston and Claoué-Long, 2005; Huston, Hussey and Frater, 2006). The Perenti Copper Prospect is the most advanced copper prospect in the Plenty River project area. Copper mineralisation occurs in a quartz-filled shears which cut across the Mount Swan Granite. Chalcopyrite varies from 2 to 4% in the host rock, but one hole drilled by Central Pacific in 1970 intersected 11.9m at 0.6% Cu (with Pb and Zn >50ppm, and Au and Ag <0.5 dwt/ton). The target was 18km shear zone along which quartz veins with disseminated boxworks and weak copper had been recorded.

4. **Tungsten-molybdenum mineralisation.** At the Delmore Downs wolfram prospect (Delny 1 and 2), wolframite occurs in pegmatite veins close to a granite contact. Eluvial wolframite occurs in this area (1.32t WO3 concentrate, 0.6t WO3 concentrate). Small quantities of tantaltite have been produced from the Bundey River prospect and from the Utopia prospect; in both situations, the tantaltite occurs within pegmatite. Scheelite has been discovered at Anomaly C38 and a location 3.5km to the north; Anomaly C38 assayed 2.65% W in calc-silicate rock near a pegmatite dyke.

5. **Fluorite-barite mineralisation** is recorded to the east of the Plenty River project area along major crustal fractures mentioned above within the northern Metamorphic-Granite Complex. Examples of fluorite/barite occurrences within the easternmost Plenty River EL include:

1. NTGS Site 1531 - fluorite/barite, breccia fill
2. NTGS Site 1532 - fluorite/barite, breccia fill
3. NTGS Site 2003 - barite
4. NTGS Site 2004 – barite/fluorite
5. NTGS Site 2005 - barite
8. EXPLORATION INDEX MAP
There has been no exploration index map constructed at this time.

9. GEOLOGICAL ACTIVITIES

Office Studies.
During the year a broad scale literature survey was conducted on the whole of the Plenty Rivers Project area (11 ELs), which consisted of examining previous explorers data as submitted to the DoR as well as current thinking on mineralising systems in the eastern Arunta Region. This study was presented in the Information Memorandum to present to interested parties. EL 28397 is an integral part of this project area and is included in this ongoing study. Data as presented in these reports is in the process of being collated into a GIS database.

Field Studies
Field work on the licence during the year consisted of 1 site visit by Mr A Jettner of Minesite Services and Mr P Harris of Stratus Resources and field crews for a general site familiarisation and examination of sites of interest with the intention of planning future on-ground exploration strategies. Field work has been conducted on this licence as part of our overall exploration strategy in the Plenty River area.
10. REMOTE SENSING

There were no remote sensing surveys done during the year. Included below is an image taken from the DoR Strike dataset, LANDSAT 7. The tiles are: Landsat 7 Run W2, Path 102, Row 75, and Path 101, Row 75. Acquisition dates 1999 and 2000.
11. GEOPHYSICAL ACTIVITIES

Radiometrics
There have been no radiometric surveys conducted during the year.
As can be seen from the following image obtained from the DoR STRIKE dataset, the radiometrics closely follow the modern drainage systems and the underlying geology. The Jinka domain has elevated levels of potassium.

(After DoR Strike dataset)
Magnetics
As can be seen from the image below (taken from the DoR STRIKE dataset) the area encompassed by the Kanandra Granulite exhibits a generally higher magnetic signature than the two surrounding terrains to the north and south of this region. The bounding shear zones (Delny Shear Zone to the north and Entire Point Shear Zone to the south) can also be picked quite clearly along with a number of other shear zones that can be inferred by the disruption to the overall magnetic signature.
12. SURFACE GEOCHEMISTRY
There were no surface geochemical samples taken by the titleholders during the year. The following are recorded in the DoR Strike dataset for the licence area.

- 3 rock chip samples
- 0 soil samples
- 5 whole rock samples
- 0 stream sediment samples
- 0 diamond indicator mineral samples

These sample results are not recorded in this technical report’s dataset.

13. DRILLING
There were no drilling activities undertaken during the year. There are no drill holes recorded on the DoR drill database for the licence area.

14. GEOTECHNICAL STUDIES
Geotechnical studies conducted during the year consisted of an extensive literature survey and data collection study covering the whole of the Plenty Rivers Project area. This data is in the process of being collated for input into a GIS system.

15. RESOURCES AND RESERVE ESTIMATION
There were no resource or reserve estimations done during the year.
16. CONCLUSIONS AND RECOMMENDATIONS

From the limited field exploration conducted during the first licence year the author feels that further exploration is definitely warranted with base metal commodities and IOCG mineralisation models being targeted.

Initial exploration has indicated a problem relying on the stream sediment sampling and soil sampling of past workers. With the streams being flooded with sands derived from the abundant granites in the area the reliability of using this method without some form of calibration must be questioned. The same goes for soil sampling when done in areas that are not residual soils as the wind transported sands and soils render this exploration method ineffective where it is tried without understanding the nature of the regolith.

Further exploration is recommended; concentrating on geological mapping, rock chip sampling of available outcrop and soil sampling in areas of residual soils. Ground magnetometer and radiometric surveys will also be conducted over suitable areas of interest.
17. REFERENCES

OPEN FILE COMPANY REPORTS


PUBLISHED REPORTS


Whelan et al, (2009), Magmatism in the eastern Arunta Region, Implications for Ni, Cu and Au mineralisation, AGES 2009, NTGS Record 2009-002.