Annual Report
EL 27076
Period: 23/07/2012 to 22/07/2013
Barkly Region, Northern Territory

Fertoz Ltd
40 Balgowlah St.
Wakerley
QLD 4154

Barkly Project
1:100 000 Mapsheets: 6157 Joildung, 6156 Prout
1:250 000 Mapsheets: SF5303 Frew River
Commodity: Phosphate

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Fertoz Ltd
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Abstract:

EL 27076 forms part of Fertoz Ltd’s Barkly Project which consists of 10 granted exploration licences covering an area of 773 graticular blocks (2,481 km²). A voluntary 65% reduction of the licence occurred at the end of the third year and the tenement area was reduced from 337 to 118 graticular blocks. A waiver was requested and granted to not undertake a mandatory 50% reduction at the end of the fourth year.

The area is considered to be prospective for phosphate mineralisation. Regional geological maps show Middle Cambrian sediments outcrop in the north of the tenement or occur under shallow Quaternary cover. This suggests that phosphatic horizons may be present at economic depths. Future exploration in 2014 will focus on drilling as rock chip and soil samples have not proved effective in detecting areas prospective for phosphate.

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Fertoz Ltd authorises the department to copy and distribute the report and associated data.
1. LOCATION
EL 27076 is located some 16km to the southwest of the Arruwurra phosphate deposit which is located 24km to the south of the Wonarah Phosphate deposit. It is located within the 1:250K Mapsheets SF5303 Frew River and SF5307 Elkedra and the 1:100K Mapsheets 6157 Joildung, 6156 Prout, 6056 Hanlon and 6055 George Creek. The tenement is located between 20° 19’S to 20° 32’S and 136° 05’E to 136° 15’E.
Figure 1. EL 27076 Location Map
2. **TITLE HISTORY**

**Mineral Tenure**
Exploration Licence 27076 was granted to FSL World Holdings on 23rd of July 2009 for a period of 6 years, expiring on 22nd July 2015. Fertoz Ltd purchased the licence in late October 2010. The exploration licence consisted of 337 graticular blocks (946km$^2$). At the end of the second year an application of waiver of reduction was granted by the Department of Resources and so the area remained at 337 blocks. A voluntary 65% reduction of the licence occurred at the end of the third year and the tenement area was reduced from 337 to 118 graticular blocks. A waiver was requested and granted to not undertake a mandatory 50% reduction at the end of the fourth year.

This technical report is the Fourth Annual Report and covers activities in the period 23/07/2012 to 22/07/2013, being the fourth year of tenure.
EL 27076 forms part of the Barkly Project which consists of 10 granted exploration licences covering an area of 773 graticular blocks (2,481 km$^2$).

**Real Property**
The licence is located within Vacant Crown land, (Parcel No 04246), in the Barkly district of the Northern Territory.

**Other Stakeholders**
Other stakeholders in the licence area consist of the Arruwrura and Anurrete peoples who have freehold land to the east and west of the licence.

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Figure 2. Real Property Tenure

3. **PHYSIOGRAPHY**
i. **Geomorphology**

The geology of the area consists of flat-lying Cambrian limestones and siltstones. The area is characterised by red siliceous sandy soils and some clayey loam to clay soils which are red or yellow earths.

ii. **Biogeography**

The area consists mainly of Trioda low hummock grassland with low isolated trees of Eucalyptus and Acacia tall sparse shrubland.

iii. **Hydrology**

The absence of hills in the area indicates that rainfall runoff during the wet season is via broad sheet wash and shallowly incised creeks. There is no permanent surface water in the exploration area. Average annual rainfall is 322 mm (Wonarah) with 27 days of rain typically per year.

4. **ACCESS**

This deposit is adjacent and to the south of the sealed Barkly Highway, the main road access from the Northern Territory to the east coast of Australia. The licence is located 290km east of Tennant Creek along the Barkly Highway, the closest roadhouse/accommodation/fuel depot is the Barkly Homestead, a substantial roadhouse located some 76km to the north of EL 27076.
Figure 3. EL 27076 Access
5. **GEOLOGICAL SETTING**

This exploration licence is located 24km to the southeast of the Aurruwurra phosphate deposit in limestones and shales of Cambrian age in the Georgina Basin of the Northern Territory. Its location is highly prospective for the discovery of further phosphate resources in this area as it is located on the southern end of the Wonarah basement high where it intersects the southern basin margin of the Georgina Basin.

The geology of the licence area consists of the Wonarah Formation draped over the underlying Hatches Creek Group.

   i. **Regional Geology**

The South Nicholson Group is the oldest exposed unit in the region and constitutes the regional basement for the Georgina Basin. It is correlated with the Roper Group of the MacArthur Basin. Rawlins, *et al* subdivided this group into the Wild Cow and overlying Accident sub-groups. The Accident subgroup consists of the Mittiebah Sandstone and can be either conformable or disconformable with the Wild Cow subgroup and has an uncertain but probably lateral relationship with the Constance Sandstone and is possibly conformably overlain by the Mullera Formation, these latter two units are also constituents of the Accident subgroup.

On the Alexandria-Wonarah basement high the basement is represented by the Helen springs Volcanics, an extrusive volcanic of basaltic affinity. In this location the absence of the Thorntonia Limestone and overlying Arthur Creek Formation has the basal unit of the Wonarah Formation, (which contains the phosphorite) resting directly on the volcanic basement, (Helen Springs Volcanics).

To the west into the Barkly sub-basin the Wonarah Formation laterally correlates with the Anthony Lagoon Beds. From the basement high to the west the Gum Ridge Formation may well correlate with the basal Wonarah Formation. To the east of the basement high the Wonarah Formation is overlain by the Camooweal Dolostone as it dives below the surface in the Undilla sub-basin.
<table>
<thead>
<tr>
<th>Formation</th>
<th>Description</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arraboeochee Formation (Cnam) 975 m</td>
<td>Dolostone, limestone; minor quartz sandstone, siltstone, shale</td>
<td>Peritidal, restricted shallow subtidal marine</td>
</tr>
<tr>
<td>Cansooeal Dolostone (Cmd) 167+ m, 5300 m</td>
<td>Dolostone; minor marl and quartz sandstone, basal intraclasts, cold and oncoid dolostone and quartz sandstone</td>
<td>Basal high-energy peritidal to shallow subtidal barrier, passing upward into restricted to epicic back-barrier</td>
</tr>
<tr>
<td>Rankeen Limestone (Cm) 754+ m</td>
<td>Bioclastic, bioclastic-ooid and bioclastic-intraclast rudstone, bioclastic wacke/floatstone, minor calcite/mudstone</td>
<td>Marine ramp seaward of high-energy shallow subtidal barrier</td>
</tr>
<tr>
<td>Woolsrah Formation (Cms) 191+ m</td>
<td>Siltstone, dolostone, calc/dolomudstone and siliciclastic mudstone</td>
<td>Subtidal marine</td>
</tr>
<tr>
<td>Arthur Creek Formation (Cms) 457 m</td>
<td>Upper: dolostone, limestone; lower: foetid pyritic-carbonaceous black shale, laminated dolostone</td>
<td>Upper: open to restricted subtidal marine; lower: deeper anoxic marine</td>
</tr>
<tr>
<td>Thorntina Limestone (Ces) 121 m</td>
<td>Dolomudstone, minor bioclastic and oncoid dolomudstone and intraclast dolowacke/dolostone</td>
<td>Subtidal marine</td>
</tr>
<tr>
<td>Helen Springs Volcanics (Csh) 34 m</td>
<td>Basalt, trachyte, microdolerite; minor dacite; basal pebbly mudstone, sandstone and conglomerate</td>
<td>Extrusive volcanic</td>
</tr>
<tr>
<td>Mitticah Sandstone (Ps) 2209+ m</td>
<td>Quartz to sublithic sandstone; minor siltstone and conglomerate</td>
<td>Marine</td>
</tr>
</tbody>
</table>

Table 1. Lithostratigraphy of the Georgina Basin
ii. Licence Geology

The licence area covers the Alexandria-Wonarah Basement High, which separates the Undilla Sub-basin which extends to the east into Queensland from the Barkly Sub-basin to the west. The presence of this basement high is extremely important as it represents a basal edge where the prospective Wonarah Formation outcrops. The licence is located some 24km to the southwest of the
Wonarah and Arruwurra phosphate deposits near where the basement high should intersect the southern Georgina basin margin. 
Prospective lithologies are the Cambrian limestones of the basal Wonarah Formation. 
The early Cambrian extrusion of continental basalt and associated volcanic rocks of the Helen Springs Volcanics along an existing or newly forming Alexandria-Wonarah Basement High generated the oldest Georgina-Basin related rocks. In an initial regional marine transgression followed cessation of volcanism. A second marine transgression overtopped the high and deposited an extensive blanket of carbonate and siliciclastic sediments across the Undilla sub-basin during the remainder of the middle Cambrian. Phosphatic sediments were deposited on the basement high during the initial transgression, (Kruse & Radke). 
The underlying Proterozoic sequence to the west is the Hatches Creek Group of the Davenport Province.

Through exploration, it has been confirmed that the northern section of EL 27076 contains outcrops of the Wonarah Formation. South of these outcrops an anticlinal palaeoproterzoic high exists, this divides what is believed to be further Wonarah Formation south of this structure. There is a northwest trending anticlinal structure of quartzites of the Hatches Creek Formation near the centre of the licence that separates the two areas of Wonarah Limestones. 
The southern end is covered by aeolian sands, indicated by yellow on figure 6, however it is believe the prospective formation is still relatively shallow in this vicinity.
6. **EXPLORATION AND MINING HISTORY**

**Exploration**

Historical exploration in this area has been sparse. In recent years this area, has seen a number of exploration phases for diamonds and phosphate. In the mid 1980s CRA Exploration methodically worked their way through this area as part of their Territory, (and Australia)-wide search for diamonds. Their search methodology was a standard one with aeromagnetics, (and frequently radiometrics) acquired over large areas to define pipe-like magnetic signatures that may represent kimberlitic diatremes. On site investigations of these structures is done by ground magnetic surveying and loam sampling over the intrusion.

The licence area is located to the southwest of the Wonarah deposit against the Proterozoic rocks of the Davenport Ranges which act as the basin margin for the Georgina Basin.

The area was also investigated by Rio Tinto in 2002 looking for continuations and extensions of the Wonarah deposit in this direction. Minor phosphate occurrences were found but exploration ceased at the same time as Rio pulled out of their Wonarah investigation.

The Wonarah Phosphate deposit was found by IMC Development Corporation in the late 1960s. CRA flew a low level (80m) aeromagnetic survey over the area in 1983-84 aimed at defining the volcanic basement to the Wonarah phosphorite, this survey highlighted the potential of the then identified deposit.

A RioTinto - AKD Limited joint venture explored for large tonnage phosphorite in the Wonarah area between 1999 and 2003, employing photo interpretation, geological mapping, rock chip sampling ground gravity surveys and also drilled 136 holes.

Rio Tinto withdrew from the joint venture in late 2002, following a negative internal economic evaluation.
Minemakers Ltd acquired title to the Wonarah deposit in 2006. This deposit is currently in preproduction and is planned to commence full production in 2011. (Kruse PD and Radke BM)

Table 2. Historical Exploration Licences and Open File Reports

<table>
<thead>
<tr>
<th>Licence No</th>
<th>Tenure Period</th>
<th>Open File Company Reports</th>
<th>Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>EL 4589</td>
<td>3/9/84 – 16/8/85</td>
<td>CR1985-0271</td>
<td>CRA Exploration Pty Ltd</td>
</tr>
<tr>
<td>EL 22597</td>
<td>11/02/02 – 30/11/02</td>
<td>CR2002-0243</td>
<td>Rio Tinto Exploration Pty</td>
</tr>
<tr>
<td>EL 23058</td>
<td>25/01/02 – 17/04/02</td>
<td>No Reports</td>
<td></td>
</tr>
</tbody>
</table>

Figure 8. Historical Exploration Licences

Mining

Table 3. Historical Mines and Prospects

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

There are no Department of Resources recorded historic area.

7. **EXPLORATION RATIONALE**

Exploration models target organic-rich carbonate rocks on depositional basin margins and areas of onlap onto basement highs where upwelling and favourable palaeogeography would have bought
cold phosphate-rich waters onto the shelf. Francolite formation takes place close to the sediment-water interface during times of low overall sedimentation and is intimately connected with the dynamics of diagenetic redox fronts, (Dunster, Kruse et al 2007).

The southern portion of the Georgina Basin contains several loci prospective for phosphorite deposition. Historical exploration work indicates that there is potential for the generation of exploration targets within this licence. The accurate location of the basin margins and the margin of the Wonarah basement high are the first priorities. They will be followed by the acquisition of publicly available geophysics, primarily aeromagnetic and radiometric to establish the margins and any subtle radiometric features in the basinal sediments that may be prospective for the location of deposits of phosphorite.

The contact between the limestone and the underlying quartzites may well represent a basement high in this area and needs to be investigated by drilling.

8. **EXPLORATION INDEX MAP**

No exploration index map has been constructed for EL27076.

9. **GEOLOGICAL ACTIVITIES**

**Office Studies**

No office work was done in the fourth year of tenure.

**Field Studies**

No field work was done during the year. Fertoz focussed its efforts on listing the company on the ASX. This was achieved on 2 September 2013. The company raised $4 million.

10. **REMOTE SENSING**

There were no remote sensing surveys done during the year. Included below is an image taken from the Department of Resources Strike dataset, LANDSAT 741.
11. GEOPHYSICAL ACTIVITIES

There were no geophysical activities conducted on EL 27076 during the year.
Radiometrics
There have been no radiometric surveys conducted during the year.
Included below is an image taken from the Department of Resources Strike dataset, Ternary Radiometrics.

Figure 10. Radiometrics
Magnetics

There were no Magnetic surveys done during the year. Included below is an image taken from the Department of Resources Strike dataset, Magnetics TMI.

Figure 11. Magnetics
12. SURFACE GEOCHEMISTRY

Field exploration of EL 27076 in 2011 consisted of a two day helicopter supported exploration and rock chip sampling expedition based at the nearby Barkly Roadhouse, 76km to the north of the EL. The helicopter was a North Australian Helicopters Robinson R44 sourced from Mt Isa. The licence was firstly located and then flown in a number of sweeps with substantial low rubbly outcrops of Wonarah Formation Limestone being recognised from the air. Rock Chip samples were collected from a number of these where landing nearby was possible. In the centre of the licence there is a north-westerly trending quartzite anticline that is mapped as Hatches Creek Group sediments. To the north of these quartzites are recognisable limestones of the Wonarah Formation and to the south there has been a few outcrops of limestone found but most of this area is covered by aeolian sands. In Figure 12 below the sample locations are noted and in Figure 13 are the results for phosphate. The results were disappointing with no values above 500 ppm P$_2$O$_5$. 
Figure 12. Sample locations
Figure 13. Phosphate Values
13. **DRILLING**

No drilling was undertaken in 2013.

14. **GEOTECHNICAL STUDIES**

No Geotechnical studies were conducted during the year.

15. **RESOURCE AND RESERVE ESTIMATION**

There were no resource or reserve estimations done during the year.

16. **CONCLUSIONS AND RECOMMENDATIONS**

The exploration work done to date has not successfully explored EL 27076 for the presence of phosphate mineralisation. What limited work that has been done has proved that the transported soils effectively are geochemically blanketing the underlying rocks.

The only effective way to examine the underlying strata is by drilling, firstly using either Aircore (recommended) or Reverse Circulation methods.

Fertoz plans to carry out drilling in the next twelve months. It will target the northern end of EL27076.
17. REFERENCES

Open File Company Reports


Published Reports


Khan M, Ferenczi PA, et al, (2007), Phosphate testing of waterbores and diamond drillcore in the Georgina, Wiso and Daly Basins, Northern Territory


Company Reports


Szonyi L, (2012), First Relinquishment Report EL 27076, Period 23/07/09 to 22/7/12, Fertoz Ltd Technical Report