EL23686

Baines Project

Annual Report

13 February 2004 to 12 February 2005

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Waterloo 1:250,000 Sheet

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(Source of Geophysical Images: NTGS Waterloo Survey)

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1 Summary

The Baines project (EL23686) is located 60km south of the Victoria Highway, about half way between Amanbidji and Humbert River, in the Gregory National Park in the Victoria River District. The area is considered to be prospective primarily for diamond deposits, though other target concepts are also of interest. The area is underlain by dominantly Neoproterozoic/Adelaidean sediments of the Wattie, Bullita and Auvergne Groups, capped by areas of lower Cambrian Antrim Plateau Volcanics and laterite.

During the initial phase of the EL23686, work consisted of:

- Literature research of previous exploration, geological survey and geophysical survey over the EL and surrounding district.
- Data compilation.
- Acquisition and interpretation of departmental geological and airborne geophysical data sets.
- Research on the geology and exploration signatures encountered in the district, including discussion with former Ashton Mining personnel.
- Planning for a field reconnaissance sampling program. This was curtailed because of the closure of the Gregory National Park for the wet season in November 2004.

The review of previous work revealed that the sampling density for diamonds in the area was lower than that in many surrounding districts, where some encouragement has been encountered, some draining ultimately from the highlands within the EL. There is little if any recorded sampling in the south eastern sector of the EL. This is probably because of the relative inaccessibility of the area, relatively poor drainage development on the Sturt Plateau area, and the presence of widespread scrubby vegetation cover on that laterite plateau.

During the next phase of exploration of EL23686, the following work will be completed:

- Field geological reconnaissance.
- Reconnaissance stream sediment sampling.
- Analysis by low level scans for 63 elements including precious metals and platinoids.
- Reconnaissance heavy mineral sampling, particularly for diamonds.
- Processing and examination of heavy mineral samples.
- Interpretation of results.
- Should the public listing of the company proceed, detailed magnetic and EM surveys of the target area will be completed, to be followed if warranted by drilling.
- Planning and budgeting.

In addition, liaison with other stakeholders in the area will continue.

The area mapped as laterite in the Sturt Plateau has a magnetic pattern similar to that attributed elsewhere in the district to Antrim Plateau Volcanics. This would seem to be a complex and extensive accumulation that may contain intrusive components, based on the results of Ashton drilling of similar patterns to the south of the EL. The area of the Sturt Plateau will be prospected in more detail than has previously been attempted. Future exploration will involve the use of geophysical and geochemical techniques to define drilling targets. Expenditure for the past term of the EL was $18,090. Proposed expenditure for next term is $30,000.
2 Introduction

2.1 Tenure
EL23686 (the tenement) was granted to ACN 099 478 074 Pty Ltd on the 13th of February 2004 for a six-year term. The tenement covers an area of 285 sub-blocks (940.1km$^2$). The corner points are listed below in Table 1. ACN 099 478 074 Pty Ltd is a wholly owned subsidiary of Paradigm North Pty Ltd.

<table>
<thead>
<tr>
<th>Point</th>
<th>Longitude East</th>
<th>Latitude South</th>
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<tr>
<td>1</td>
<td>130°18’</td>
<td>16°19’</td>
</tr>
<tr>
<td>2</td>
<td>130°18’</td>
<td>16°34’</td>
</tr>
<tr>
<td>3</td>
<td>129°59’</td>
<td>16°34’</td>
</tr>
<tr>
<td>4</td>
<td>129°59’</td>
<td>16°19’</td>
</tr>
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Table 1: List of corner points of the tenement

Since the target area was applied for, the status of the Gregory National Park in which the EL is located has become the subject of negotiation with Traditional Owners, and the park area is subject to a Mining Reserve until the ownership issues are finalised. The EL application pre-dated the creation of the Reserve, and the applicants proceeded with the Exploration Licence on the expectation that exploration and mining would be possible within the area on acceptable terms.

2.2 Location and general description
The Baines project is located 60km south of the Victoria Highway, and half way between Humbert River Station and Amanbidji. There are no roads in the area, and it is approximately equidistant from Amanbidji, Bullita, and Humbert River. Reconnaissance would be conducted with helicopters based from one of these locations depending on the wishes of stakeholders. The project covers plateau country covered in snappy gum-soft spinifex open savannah, surrounded by gently sloping plateau country and more dissected country in the south and east. This contains savannah and scrub land that was in the past used for beef cattle grazing. A tenement location map is included as Figure 1, and a digital terrain model based on NTGS Waterloo Airborne Survey is presented as Figure 2.

The EL is drained by streams which ultimately flow to the Victoria River. The western and north western boundaries of the area are drained by numerous tributaries of the West Baines River, the north east by the East Baines River and Flying Fox Creek, the east and south east boundary by the Humbert River and its tributary, Horse Creek, and the southern boundary by the Wickham River and its tributaries. The East Baines and Wickham Rivers are perennial streams, spring fed from their sources in the Sturt Plateau.

2.3 Exploration Rationale and Work Completed
The area has been selected as a target based on confidential Intellectual Property of Paradigm Geoscience Pty Ltd. The target area has properties similar to those displayed by major mineral deposits elsewhere. The EL was applied for to enable reconnaissance evaluation of the target area, and then further follow up as justified by the reconnaissance results. The pattern that this will follow is similar to that which has been employed in successfully upgrading other Paradigm Targets.
Since the targeting approach is not specifically commodity-related, the initial reconnaissance requires a broad sampling which should give responses to most outcropping deposit types. Thus heavy mineral bulk sampling for diamonds (and other heavy minerals) are complemented by stream sediment geochemistry and multi-element scans. Exploration work conducted during the reporting period consisted of:

- Literature research of previous exploration, geological and geophysical surveys over the EL and surrounding district
- Data compilation
- Acquisition and interpretation of departmental geological and airborne geophysical data sets
- Research on the geology and exploration signatures encountered in the district, including discussion with former Ashton Mining personnel.
- Planning for a field reconnaissance sampling program in November 2004, at the conclusion of an extensive field program across northern Australia.

2.4 Results of Literature Search

The search of past exploration literature available on the area is expedited by facilities provided by the Geoscience Information Section of the NTGS, including the STRIKE on-line facility, which is used to identify open file reports for copying. This permitted compilation of a private GIS based on the publicly available data, supplemented by downloaded geological and topographic materials from Geoscience Australia. From this compilation it is possible to construct an exploration history of the EL area, which is outlined below.

There is no record of detailed exploration of the EL area for commodities other than diamonds. The region was subjected to intensive diamond exploration by both the ADE Joint Venture (Ashton) and Stockdale Prospecting (De Beers), in the 1980s and 1990s. Both groups returned repeatedly to the region throughout that period, in search of the sources of several micro diamonds and kimberlitic chromites discovered in heavy mineral sampling. Both companies had some sporadic successes which fuelled quite intensive exploration efforts. No sources have ever been found for these, and it appears unlikely that these indications have a common source of commercial size. Nonetheless the prospectivity of the area for diamond pipes has not been eliminated, and in fact there still remains a significant portion of the EL23686 for which there is no evidence of heavy mineral sampling in the open file records.

ADE’s ELs 2294 and 2305 (particularly the former) covered the north and west of the area, at a low sampling density. Less than 30 samples relate to the area. ADE did obtain some positive results from their work, but removed some distance to the north and north west from the present EL. Nonetheless, their drainage source would be in the direction of the EL in both cases. ADE returned to the area in 1991 (ELs 6613-6616) to follow up on the results of geophysical surveys conducted in the early 1980s on the earlier ELs. Some shallow RAB drilling was completed on magnetic anomalies on Waterloo Sheet, but about 40km to the south of EL 23686. Some of the results suggested that the magnetic responses were due to basalt intrusives (plugs) associated with the Antrim Plateau flood basalts which dominate the surface of some of the region, particularly to the west. The ADE results suggest that the basalts were once more widespread. While none of the magnetic features in the area of EL23686 were investigated, they have a similar pattern to those to the south, which suggests that they too may be due to generally unmapped Antrim Plateau Volcanics, particularly
beneath areas mapped as laterite. There was no additional heavy mineral sampling on ELs 6613-6616.

Stockdale Prospecting Limited held EL5933 in 1988-89, which covered the northern two thirds of the area of EL23686. About 20 samples are relevant to the area of the EL, and none gave positive results.

Nonetheless, Stockdale embarked on a major regional search in the early 1990s and part of their EL7659 clipped the northern edge of the area of EL23686. Only about 10 samples cover the area drained from the current EL. One microdiamond was returned from samples in each of EL7656 and EL7659, within 20km of the boundaries of 23686. These results were sufficient to trigger follow up barrage and loam sampling in several areas in the streams draining from the east into the West Baines River, from the general direction of EL23686. These in some cases produced even further positive results with microdiamonds and kimberlitic chromites. Stockdale believed they were sourced from kimberlites which were too small to be economic, but never located the kimberlite sources. However, there is negative sampling upstream of these intensively sampled areas well before the boundary of the present EL in all cases.

ELs 8259 and 8260 were granted to Stockdale later than ELs 7656 to 7659, but were part of the same regional project area. The extreme south of EL8260 clipped the north east corner of the area of EL23686. Two microdiamonds and two separate chromites occurrences of interest were discovered within EL8260. Follow up of the chromites produced no further positive results, and the titles were relinquished in April 1995. None of the positive results could have originated from the area of EL23686, though they are close enough to justify further and more detailed sampling within the area of the Paradigm Target.

### 3 Geological Data

EL23686 lies totally within the Waterloo 1:250000 geological sheet, which was mapped by the then BMR (Sweet, 1973). A geological map, based on this is shown in Figure 3.

Limey sediments of the Limbunya Group outcrop just to the south of the southern boundary of EL23686. These are the oldest rocks mapped in the area. They are overlain unconformably by sandstones and siltstones of the Wattie Group and dolomitic siltstones of the Timber Creek Formation (Bullita Group), which dominate outcrop in the north eastern quadrant of EL23686. Unconformably over these is thin fairly flat-lying cover of the Jasper Gorge Sandstone of the Auvergne Group, which dominates outcrop through the middle of the area. Overlying this package are early Cambrian Antrim Plateau Volcanics, which outcrop near the centre of the area, and Tertiary laterites, which may in part be developed upon weathered basalts.

A north west- south east trending fault line which cuts through near the middle of the area forms the southern edge of the distribution of the Timber Creek Formation. South west of this, the Jasper Gorge Sandstone is deposited directly on the Wattie Group sediments.
4 Geophysical Data

Geophysical data covering the Tenement was acquired from the NTGS, flown in 2001 in their Waterloo Survey. A map showing the first vertical derivative magnetic data for EL23686 is included as Figure 4, and superimposed on the geology in Figure 5, which also shows the locations of past diamond samples in the vicinity of EL23686. The magnetic response of the sediment package which underlies most of the area is quite subdued, while patches of irregular magnetic character correspond with areas mapped as Antrim Plateau Volcanics and ?Tertiary Laterite. The response appears to be too regular to be due to laterite alone, and it is suggested that the Antrim Plateau Volcanics may be present throughout much of the area mapped as Laterite. The radiometrics, shown in RGB (KThU) format in Figure 6, would not be at odds with that interpretation.

5 Field Programme and Recommendations

Planning was completed for a reconnaissance stream sediment and heavy mineral/diamond sampling program which was to be completed with Helicopter assistance in late November, 2004. Prior to that, the writer and other available field personnel were engaged in an intensive field program on other Paradigm North titles in other parts of the NT and in the Kimberley. By the time this work was completed, it was learned that access to Gregory National Park had been closed for the wet season, so that it was necessary to re-schedule the field work for the 2005 dry season. This will consist of the collection initially of a combination of -80mesh stream sediment samples, and -1.2mm heavy mineral samples from suitable sites, as well as geological reconnaissance. Approximately 50 sample sites are planned, particularly in the central and southern sectors of the EL where the sampling to date is non existent or low density. All of the program would be helicopter supported, and would be completed in an intensive burst of field activity in less than one week. If the results of this work were reasonably encouraging, more detailed airborne geophysics would be completed, probably involving more detailed magnetics in the central and southern sectors, perhaps with an airborne EM evaluation in the same area.

While the main thrust of the exploration would on face value be for diamonds, the possibility of other commodities will be checked more thoroughly than has been done in past programs. This will include low level multi element scans with multiple extraction methods including partial extractions. Planning of the work will be in conjunction with other stakeholders, including NT Parks and Wildlife. Further target development will depend on the results of the program, as well as any constraints which may be placed on ground activities. The minimum expenditure for the next term of the licence would be at least $30,000.

6 Expenditure Statement

During the reporting period, expenditure has been as follows:

Geological Services: $11,025
Analytical Services: 
Travel and accommodation: $525
Consumables: $125
Vehicle Expenses: $430
Communications: $235
Office Expenses: $5,750

TOTAL $18,090
7 References
