



Rio Tinto Exploration Pty. Limited

ABN 76 000 057 125 / ACN 000 057 125

A member of the Rio Tinto Group

**EL 27966 Pedirka 1 First and Final Report
For the Period 28 October 2010 to 17 October 2011**

**SG5306 Finke; SG5307 McDills,
Northern Territory**

Exploration Report No. 29191

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PCo11-013	Interpreted depth to top of Purni Formation	1:500 000

1. SUMMARY

Rio Tinto Exploration Pty Limited (RTX) applied for Exploration Licence (EL) 27966 Pedirka 1 in 2010. The tenement is located approximately 230km southeast of Alice Springs which is the closest infrastructure hub.

The target concept was the potential for high rank coal in the Permian age Purni Formation.

No physical exploration was completed during the reporting period. A detailed literature review and data compilation from public domain sources indicated that the likely depth to the top of the coal-bearing sequence to be around 400 metres. Limited regional data on thermal maturity of the sequence indicates the rank of any coal if present is likely to be low.

It was concluded that, although there is some chance of some coal being present, the coal would be too deep and too low rank in this very remote location to constitute a viable target under present economic conditions. The EL has therefore been relinquished.

2. CONCLUSIONS AND RECOMMENDATIONS

The literature research and interpretation documented in this report led to the conclusion that, although there is some chance of some coal being present, the coal would be too deep and too low rank in this very remote location to constitute a viable target that could yield a return in the foreseeable future. The EL was therefore recommended to be relinquished prior to the end of the first year of tenure.

3. INTRODUCTION

Pedirka 1 EL 27966 was applied for in February 2011 following announcements by an oil company, Central Petroleum (CTP), who reported the discovery of thick coal-bearing intervals to the south east of the area at depths greater than 500 metres in the Permian Purni Group in late 2009 and early 2010. To date, CTP have reported coal intercepts in several regional holes with aggregate thicknesses of up to 144m of coal from a sedimentary section approximately 400m thick. Although CTP did not quote coal analyses, they reported individual seam intersections of 4m, 8.1m, 10.6m, 13.5m and 18m thick. Top of the coal-bearing section is reported to be at ~545m in hole CBM93-001. This is the closest hole to EL27966 and is located just to the east of the north-eastern end of the tenement (plan pCo11-013). The hole is 9km up dip from a another reported CTP hole, CBM93-001, that was drilled by CTP in 2008 and intersected a similar thickness of coal (top of Permian at 720m), and a further 46km up-dip from another 2008 CTP hole which intersected a similar amount of coal in the Permian section from 1500m depth. At the time of application by RTX CTP had not reported any information on coal rank. However, the reported intervals were felt to be of sufficient interest to warrant taking out mineral title over a gap in the mineral title coverage that existed to the north west of the CTP mineral tenement holdings. The gap was covered by EL27966 Pedirka 1 and EL27967 Pedirka 2. The objective was to compile available data to make a more informed assessment of any potential for a higher rank deep coal resource and, if warranted, some reconnaissance exploratory work such as scout drilling.

A further factor influencing the decision to take title was that at the time of tenement application the status of coal seam gas under NT mining law was being reviewed. Hetherington title

services subsequently provided advice that mineral titles would not confer any rights to gas resources and that gas rights under NT law will be held by separate petroleum titles.

The tenement location is shown on plan pCo11-012 and a summary of tenement details is given in Table 1. The tenement was relinquished in full effective 17 October 2011.

Table 1: Tenement Details

Tenement No.	Tenement Name	Ownership	Application Date	Grant Date	Blocks Applied	Blocks Granted
EL27966	Pedirka 1	Rio Tinto Exploration Pty Limited	26/2/2010	28/10/2010	414	414

4. GEOGRAPHY AND LAND ACCESS

Pedirka 1 EL 27966 is situated in a remote location on the southwestern edge of the Simpson Desert (Plan pCo11-012). The majority of the area is low relief sandy desert punctuated by numerous northerly trending sand ridges up to 10 metres high. There are very few roads apart from some station tracks in the northern portion of the area (Plan pCo11-012).

5. PREVIOUS EXPLORATION

The only previous EL in the area with relevance to coal exploration was held by Tri Star Energy Company (Devencorn, 2009). They reviewed regional data but did not conduct any drilling activities.

6. EXPLORATION COMPLETED DURING REPORTING PERIOD

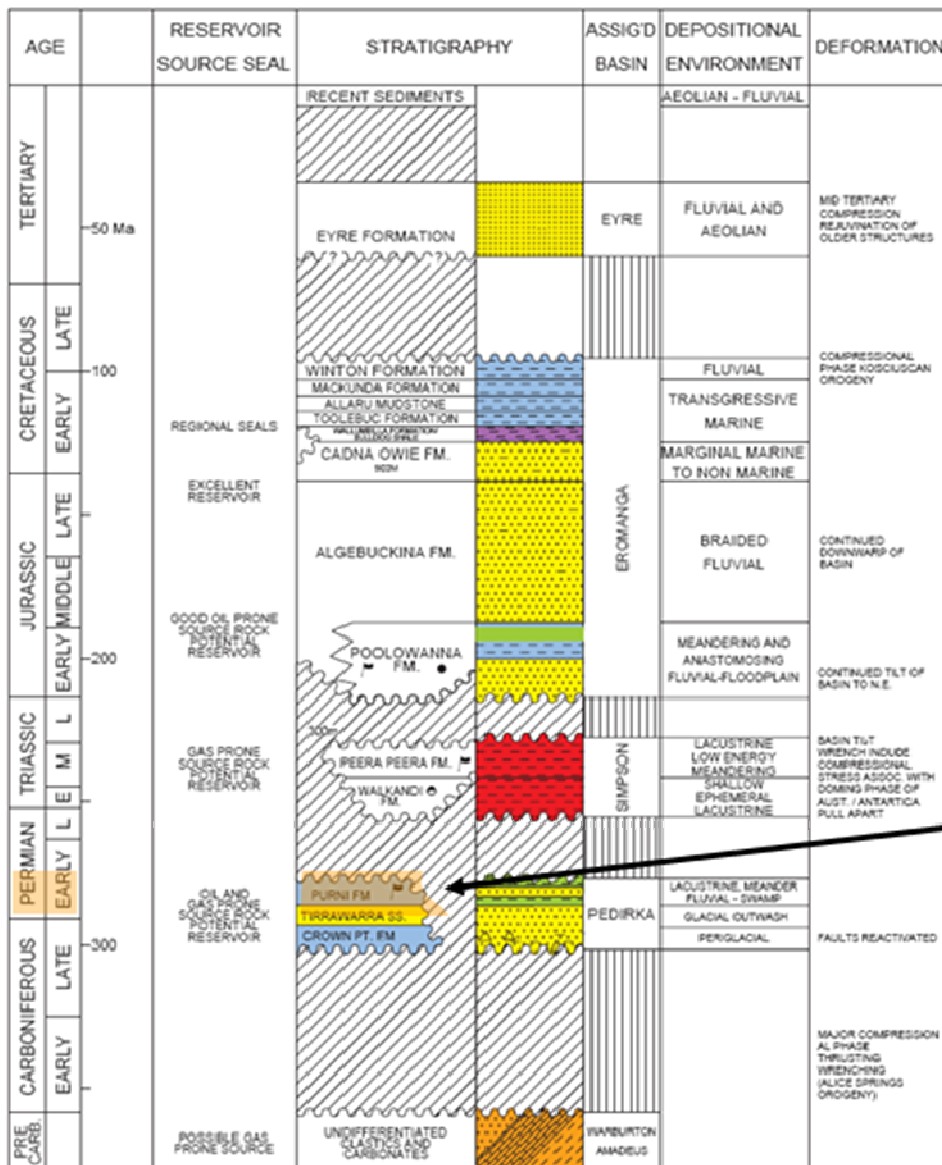
No physical exploration was conducted. The only work that was completed was a review of available published literature and public domain information from ASX releases and open file reports.

Results of this review are summarised in the following section.

7. GEOLOGY

The tenements overlie a segment of the north-western margin of the concealed Pedirka Basin.

Regional stratigraphy of the Pedirka Basin is shown on Figure 1 (Ambrose, 2006). Coal was historically reported in some old oil wells from the Permian age Purni Formation to the south and east of EL 27966 but because of low rank, relatively small seam thicknesses, depths below several hundred metres and the remote location, was not previously considered a major target for exploration. In the tenement area the Permian section is almost completely covered by younger Paleozoics including Cretaceous sediments that probably host significant aquifers. These aquifers could potentially pose a significant risk to any future mining operation.



Coal in Permian Purni Fm

Figure 1. Regional stratigraphy of the Pedirka Basin (after Ambrose, 2011).

Seismic sections published by CTP together with poor quality regional seismic in the public domain show prominent reflectors in the coal-bearing portions of the upper Purni Formation. An interpreted contour map of depth to top of Purni Formation in the area of EL 27966 is shown on plan pCo11-013. It can be seen from this interpretation that the likely average depth to the coal-bearing sequence in the EL area is in excess of 400 metres.

Quality of coal is poorly reported, with unknown amounts of internal ash or stone bands in the reported seams. Indicative data published by CTP is as follows:

- Specific Energy 20-25 Mj/kg.
- Ash 8-19% (average 11%).
- Moisture (air dried) 8-19% (av 14%)

Limited regional data on thermal maturity of the sequence indicates the rank of any coal if present is likely to be low. Peak vitrinite reflectances of 0.52 to 0.58 are reported by CTP from Blamore 1 at depths greater than 1100m; these data are similar in tenor to limited data obtained in other regional wells (Ambrose, 2006). There is no evidence for significant local perturbations in regional rank trends from the sparse regional vitrinite reflectance data. At the depths to potential coal indicated in the tenement area vitrinite reflectances would probably be around 0.4-0.5, indicating potential for poor quality thermal coal at best. CTP reported late in May 2011 that gas yields from their test work were extremely low, offering supporting data for the conclusion that coal rank is likely to be low.

Overall, the conclusion reached from the literature research and interpretation documented in this report is that, although there is some chance of some coal being present, the coal would be too deep and too low rank in this very remote location to constitute a viable target that could yield an economic return in the foreseeable future.

8. ENVIRONMENT

No field work was conducted during the period after data review indicated the likely potential for an economic target to be too low to justify ground activities. As the decision was made to relinquish the tenement, no negotiations with Native Title claimant groups were undertaken.

9. EXPLORATION EXPENDITURE

Exploration expenditures for the term of the EL have been reported separately from the technical report.

10. PROPOSED EXPLORATION

No further exploration is proposed and the EL has been relinquished effective October 17 2011.

REFERENCES

Ambrose, G J, 2006. Onshore hydrocarbon potential of the Northern Territory – Pedirka, Simpson Desert and Eromanga Basins. NTGS Record 2006-003.

Central Petroleum Limited (1). ASX Release 18 May 2011. Exploration update.

Central Petroleum Limited (2). ASX Release 29 April 2011. Quarterly Activities and Cash Flow Reports.

Devencorn, B, Tri-Star Energy Company. Final report for EL 24918 for the period ending 7 September 2009. NTGS Open File report CR2009-0869.

LOCALITY

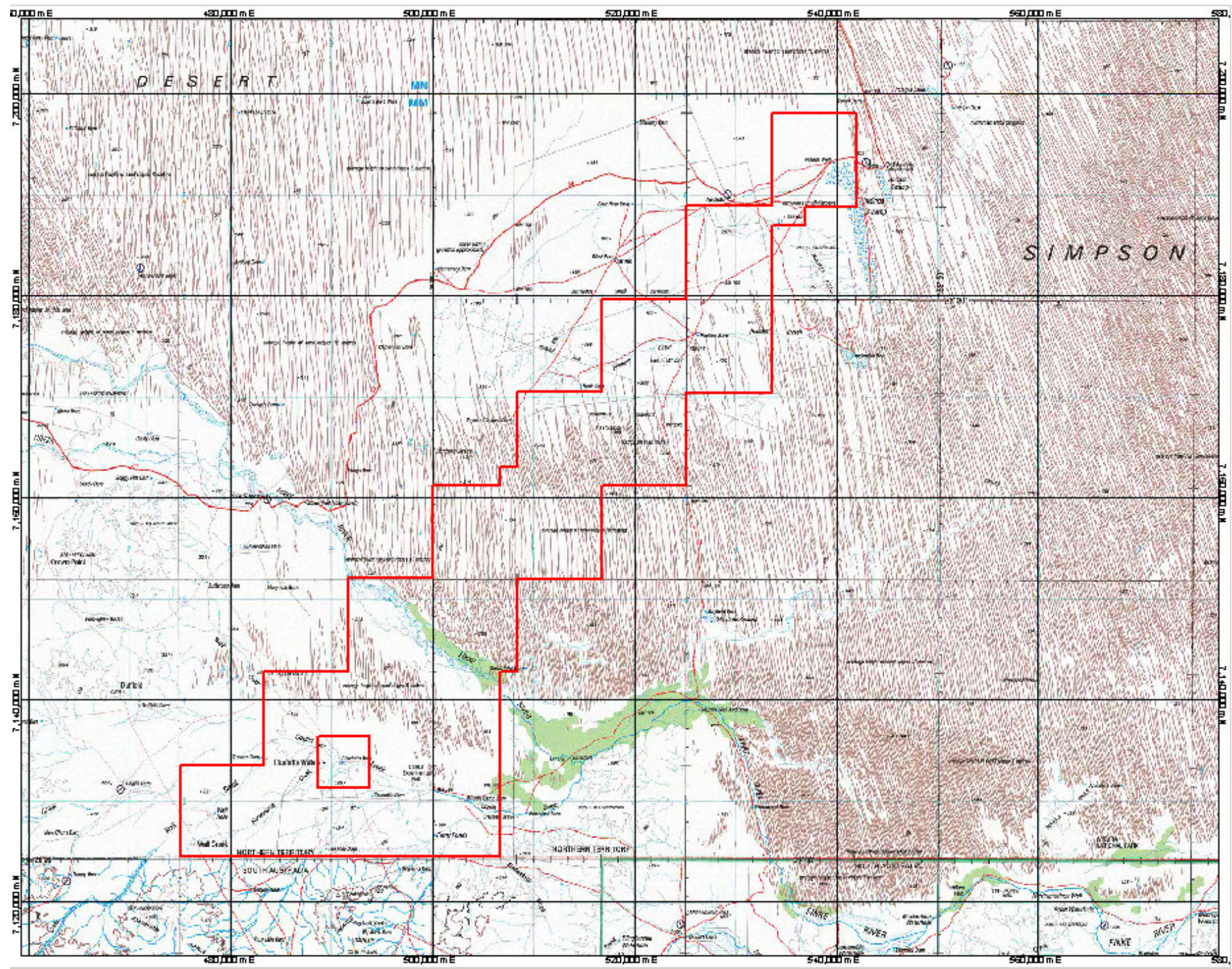
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McDills	SG5307	1:250 000
Hale River	SG5303	1:250 000


DESCRIPTOR

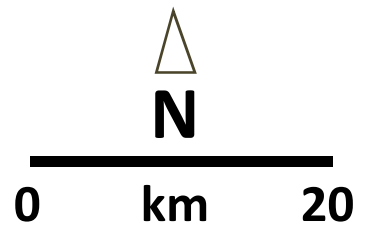
EL 27966 Pedirka 1 First and Final Report For the Period 28 October 2010 to 17 October 2011. Exploration activities were restricted to compilation of data from public domain sources to assess potential for higher-rank coal in the Permian age Purni Formation within the confines of EL 27966 Pedirka 1. It was concluded that, although there is some chance of some coal being present, the coal would be too deep and too low rank in this very remote location to constitute a viable target that could yield a return in the foreseeable future. The EL has therefore been relinquished.

KEYWORDS

Coal, Pedirka Basin, Permian



 RTX tenement outline

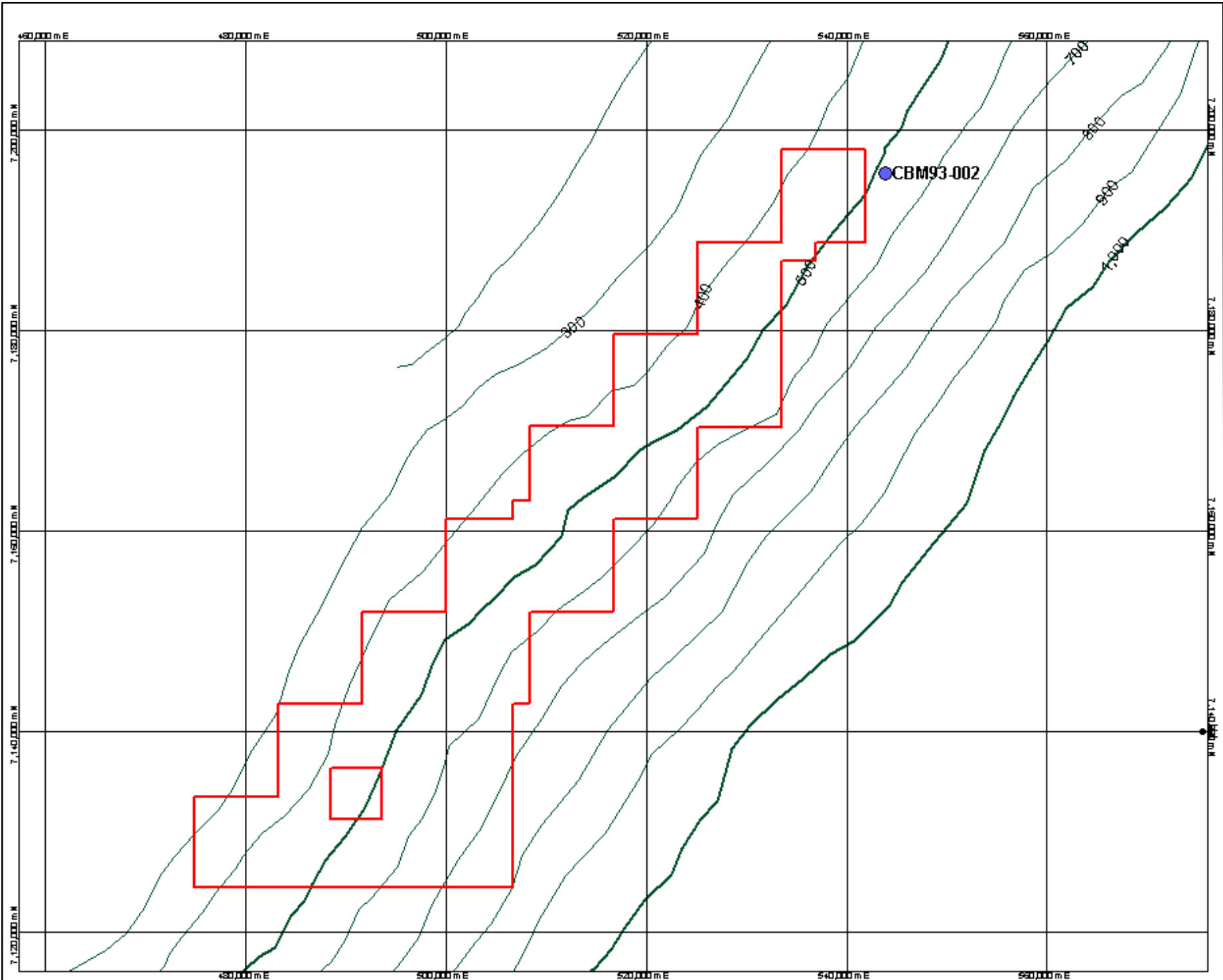





Pedirka 1 EL27966. Location Plan

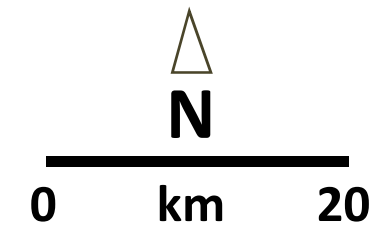
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Author : G. Broadbent
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-  RTX tenement outline
-  Regional Drillholes
-  Interpreted depth to top Purni Formation, metres.



Pedirka 1 EL27966. Depth to top of Purni Formation

Coal Generative

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