M.Ls 77-86

2002 ANNUAL REPORT

JINKA PLAIN FLUORITE PROSPECT

NORTHERN TERRITORY

CENTRAL PACIFIC MINERALS N.L.

REPORT NO. R 2781

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JULY 2002

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INTRODUCTION

Mining Leases 77-86 are held by Central Pacific Minerals N.L. on behalf of a Joint Venture consisting of itself (93.75%) and Magellan Petroleum Australia Ltd (6.25%). The Leases are located in the Jinka Plains vicinity, about 340kms by road, northeast of Alice Springs, Northern Territory (Figure 1). Drilling and mapping were largely carried out during the period 1970-73 and have been reported previously. In the period since then, the leases have been retained, pending the development of a suitable marketing opportunity.

This report is a summary of both the past work and the 2001 programme.

INVESTIGATIONS UNDERTAKEN 1970-73

Central Pacific Minerals N.L. undertook a range of investigations during the period including:

- Regional geological mapping on the Huckitta 1:250,000 sheet area which led to the discovery of the fluorite mineralisation.
- 1:250 scale mapping of eight reefs (labelled A to H).
- Channel sampling of the three largest reefs (A, C and E).
- Core drilling of reefs A, C and E.
- Percussion drilling of reef E.
- Diamond drilling of reef E.

This work has been previously reported to the Department of Mines by Ransom (1970), Hill (1972) and Pietsch (1972). Details of the fluorite deposits were given in a paper by Ivanac and Pietsch (1975). Hill (1972) gave the inferred resources contained in Reefs A, C and E, to a depth of 30 metres, as 250,000 short tons of 37% calcium fluoride (CaF₂). The estimate is regarded as conservative since Hill based his calculations on 853 metres aggregate length of reef while a further 600 metres of fluorite reef remained to be tested on Reefs A, C and E from which comparable grades and tonnages could be expected.
Markets for fluorite in Australia were felt to occur in the following areas:

1. As a flux in the steel-making process.
2. For the manufacture of artificial cryolite used in aluminium production.
3. As a source of fluorine for uranium hexafluoride.
4. In the dental industry and as a component of toothpaste.
5. As a component in welding fluxes.

Preliminary studies were made of the price and source of fluorite used in the steel-making process in Australia and preliminary negotiations were commenced with a previous South Australian Government with respect to the third option but these lapsed.

The price of fluorite in the 1970s was found to be insufficient to support economic mining, due principally to the component of transportation costs, given the location of the resource and the distance from markets.

3. **INVESTIGATIONS UNDERTAKEN 1985-2000**

During 1985 Claude Lupis & Associates Pty Ltd, mining and metallurgical consultants, prepared an assessment of the Jinka Plains fluorite prospect. This was forwarded as an addendum to the 1985 Annual Report for MLs 77-86.

During 1986 the mineral lease corner posts and nameplates were renewed to the then current Mining Act specifications. The prospect area was visited in 1994 and the lease datum and corner pegs were located and maintenance undertaken where required. GPS readings were recorded at the datum post sites for most of the leases.

The feasibility of establishing a mine at the prospect was periodically reviewed and not found to be economically feasible at the prevailing market prices for fluorite products.

Following an application to the NTDME for renewal of MLs 77-86 in September 1994, notification was received in October 1995 granting renewal for a period ending 30 December 2004 subject to a registered survey of the leases being completed before the end of 1996.
Brian Blakeman & Associates were engaged to survey the leases at Jinka. The survey was undertaken in November 1996 and the survey plan was lodged by the surveyor with the NT Department of Lands on the 3rd January 1997.

The survey plan of the leases was approved and endorsed by the Department of Lands on 14 April 1998.

4. **2001 PROGRAMME**

4.1 **Geological Review**

The deposit geology was reviewed briefly during the year. No new aspects were found to warrant a wider review or reworking of the geological interpretation at this time. The deposit is similar in style to the Speewah Fluorite Deposit in the Kimberley region of Western Australia. The steeply dipping veins of this deposit have been estimated to contain 4.5Mt at 22.6% CaF₂ to a depth of about 80 metres. Despite its significant tonnage advantage over the Jinka Deposit, Speewah is yet to be developed.

4.2 **Market Review**

The primary single largest market that drives fluorspar demand continues to be fluorocarbon production. Movement to higher use of hydrofluorocarbons (HFCs) and replacement of hydrochlorofluorocarbons (HCFCs) used as refrigerants in large cooling chillers may accelerate due to the increase in electricity prices in the US (new HCFC chillers are 40% more efficient). The aluminium industry consumption of fluorspar has decreased in recent years as with improvements in filtering technology in smelters. This is trend is expected to reverse with the increase in aluminium production growth in the less technologically advanced China and the C.I.S.

Production for 2001 was estimated to remain static at about 4.5Mt (USGS, 2002b). Fluorspar prices for both acid grade and metallurgical grade have remained essentially flat during 2001. Acid grade c.i.f. US Gulf port remained at levels seen in the second half of 2000 with a slight rise to US$142/t in the third quarter, prices not seen since mid 1996 (Figure 2). By the fourth quarter, however prices had returned to levels earlier in the year. At the end of the first quarter in 2002 the USGS reported a price of US$133/t for c.i.f US port acidspar (USGS, 2002a). These prices are similar to those of 2001.

Based on a study in 1985, the prices necessary to support a mining operation at Jinka Plains were then estimated at A$300/tonne (US$168/t at the current
exchange rate). The current world prices remain below the 1985 threshold without considering cost escalation factors in establishing a plant at Jinka, or the inclusion of insurance freight rates ex Australian ports.

The rise in fluorspar prices in during the third quarter did elicit inquiries from a third party on the status of the Jinka Fluorite. After initial discussions, however the party lost interest.

5. CONCLUSIONS

The development of fluorite mining and/or processing operation at Jinka Plains is not feasible given the present prices available for the potential fluorite products. A major price increase or a local market is required before this will change.

Both the resource and its potential for development will continue to be kept under review.

![Graph](image)

Figure 2: Fluorspar US Import Prices by Quarter.
6. REFERENCES


