

REWARD MINERALS LTD

**ANNUAL
TECHNICAL REPORT**

EL 25481 "ALLAMBI"

Northern Territory

**Annual Report for the year ending
14 MARCH 2009**

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KEY WORDS

RODINGA
BITTER SPRINGS FORMATION
PROTEROZOIC
CHANDLER FORMATION
MAGELLAN PETROLEUM
BLUEBUSH FORMATION
AMADEUS FORMATION
GILLEN MEMBER
DIAPIR
ISOPACH

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REWARD MINERALS LTD
EL 25481 "ALLAMBI"
NORTHERN TERRITORY
Annual Report for the
Year Ending 14 March 2009

SUMMARY

AIM

To explore and evaluate the potential for economic potash mineralisation.

OBJECT of REPORT

To document exploration activities and results achieved on Exploration Licence 25481 "Allambi" and to report these to the Department of Mines and Energy, Northern Territory.

LOCATION

EL 25481 is located 120 kilometres south east of Alice Springs on the Rodinga 1: 250 000 map sheet (SG53-2).

TENURE

EL 25481 was granted to Reward Minerals Ltd on 15 March 2007 for a period of six years. It is bounded by Longitudes 134.55⁰ and 134.9⁰ and Latitudes 24.3⁰ and 24.38⁰S.

PRECIS

This report details all exploration activity carried out during its second year from 15 March 2008 to 14 March 2009. During this period, investigations were completed with a view to selecting targets for potash exploration, based largely on petroleum data.

1. INTRODUCTION

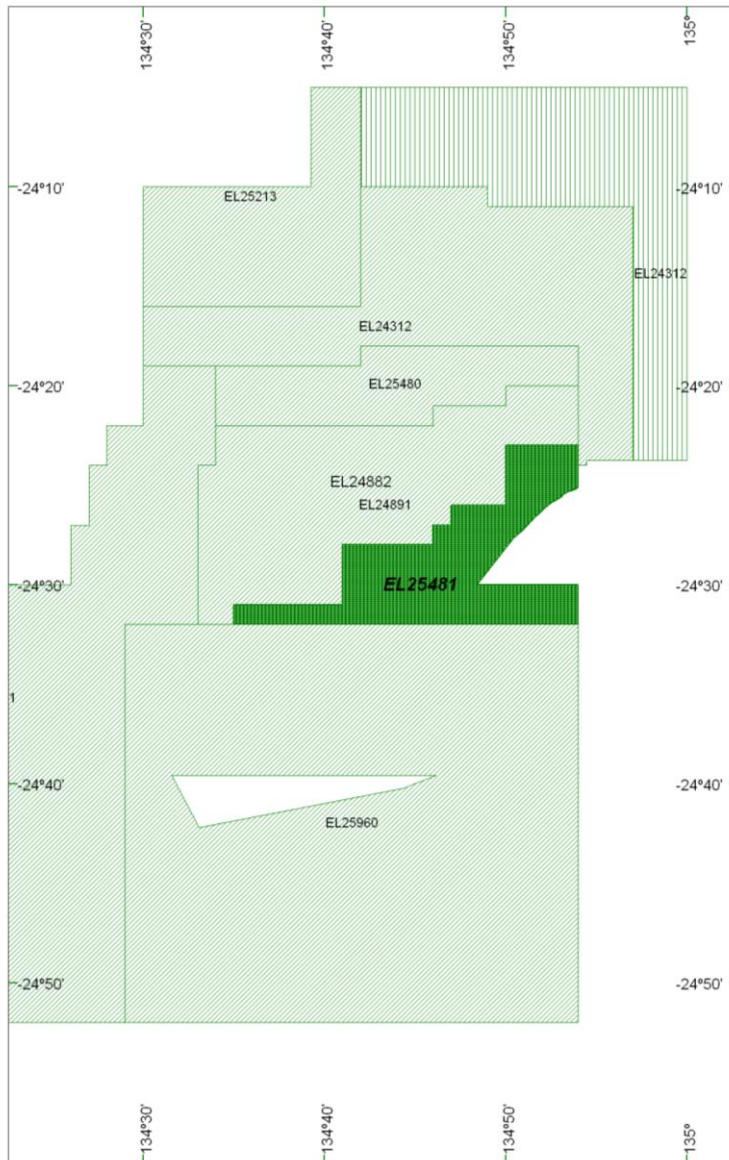
Exploration Licence 25481 is located in the southeastern sector of the Amadeus Basin in the Northern Territory (Figure 1). The Amadeus Basin covers approximately 150,000km² and is located in the southwestern part of the Northern Territory extending into Western Australia. It is comprised of a Neoproterozoic to mid-Palaeozoic succession of shallow marine sediments and attains a thickness of up to 14,000m.

2. LOCATION and ACCESS

EL 25481 is located 120 kilometres south east of Alice Springs on the Rodinga 1:250 000 map sheet (SG53-2). (See Figure 1).

Access is via a graded gravel road to Allambi Station. Historical exploration and mine tracks, as well as station tracks provide local access throughout the tenement which is located over a portion of the Rodinga Pastoral Lease.

Fig 1
Location Diagram



3. TENURE

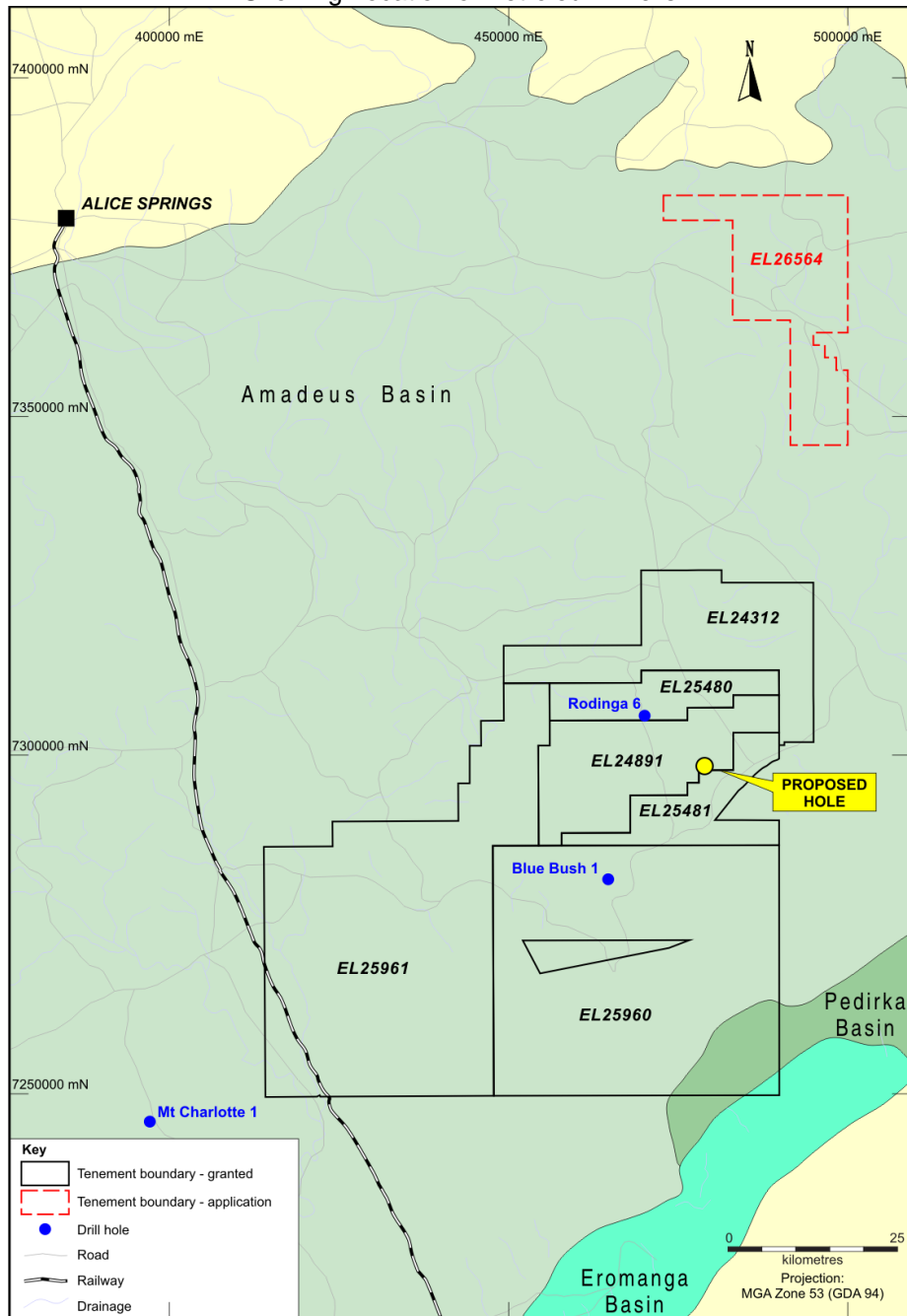
EL 25481 was granted to Reward Minerals Ltd on 15 March 2007 for a period of six years. It comprises 75 blocks encompassing a total area of 234 sq km and is located on Allambi Station.

4. GEOLOGICAL SETTING

EL 25481 lies on the Rodinga 1: 250 000 map sheet (SG53-2), for which geological notes are available.

The Amadeus Basin contains two sequences prospective for potash mineralisation; the Neoproterozoic Bitter Springs Formation and the Early Cambrian Chandler Formation. Both of these formations occur within the basin at exploitable depths.

Figure 2
Showing Location of Petroleum Wells



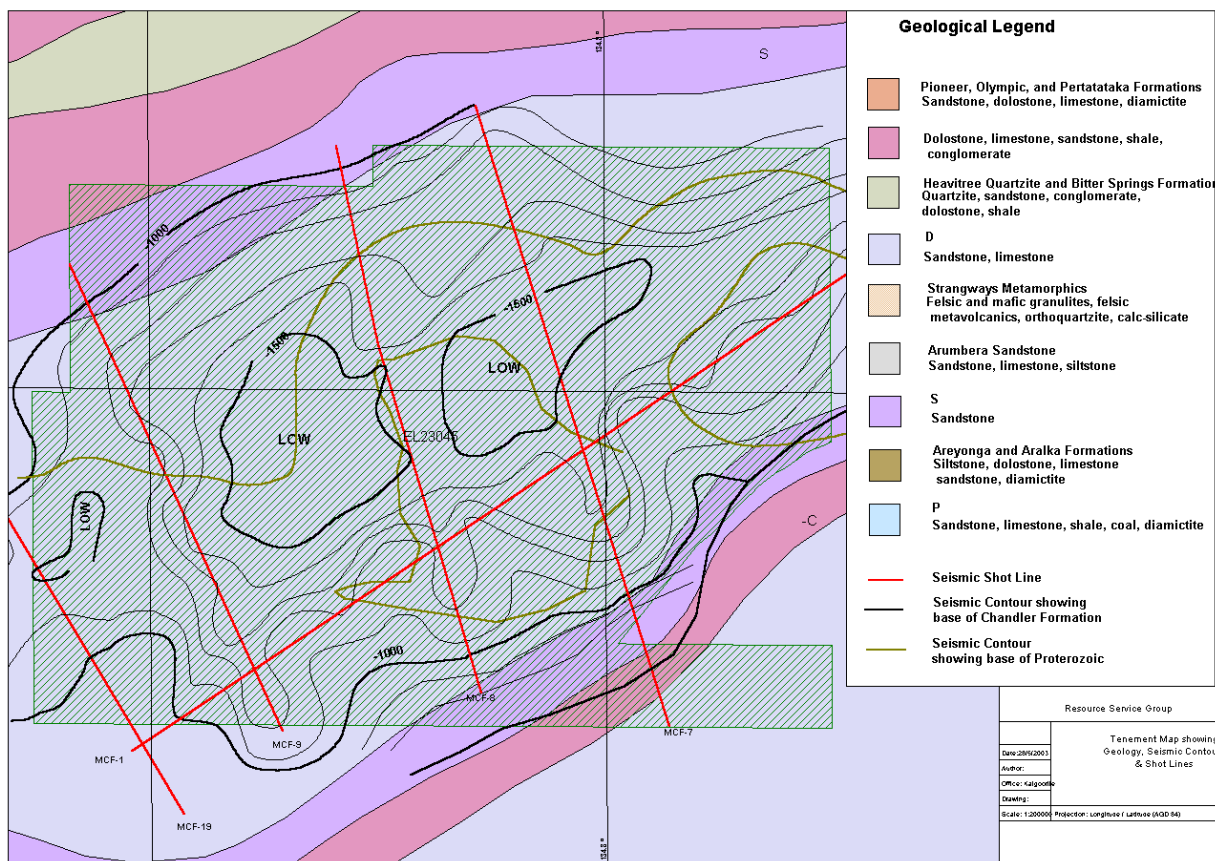
4. PREVIOUS EXPLORATION

In 1982, Magellan Petroleum carried out a seismic survey on an area called Camel Flat, part of which is covered by the tenement. A total of six seismic lines (MCF 1,7,8,9, and 10) were shot, the positions of which are shown in Figure 5. The area has been geologically mapped as the Camel Flat Nappe. From the seismic interpretation a series of isopach maps were produced displaying the following:

Depth to bottom of the Chandler Formation
 Depth to the bottom of the Proterozoic
 Combined Chandler-Arumbera Isopach

These interpretations were combined to produce a map indicating areas where the Chandler Formation was at its lowest, providing a target zone for end stage bitterns to collect, including potash. The tenement was sited to cover this target zone. (Fig 3)

Fig 3
 Isopach Map of Chandler Formation



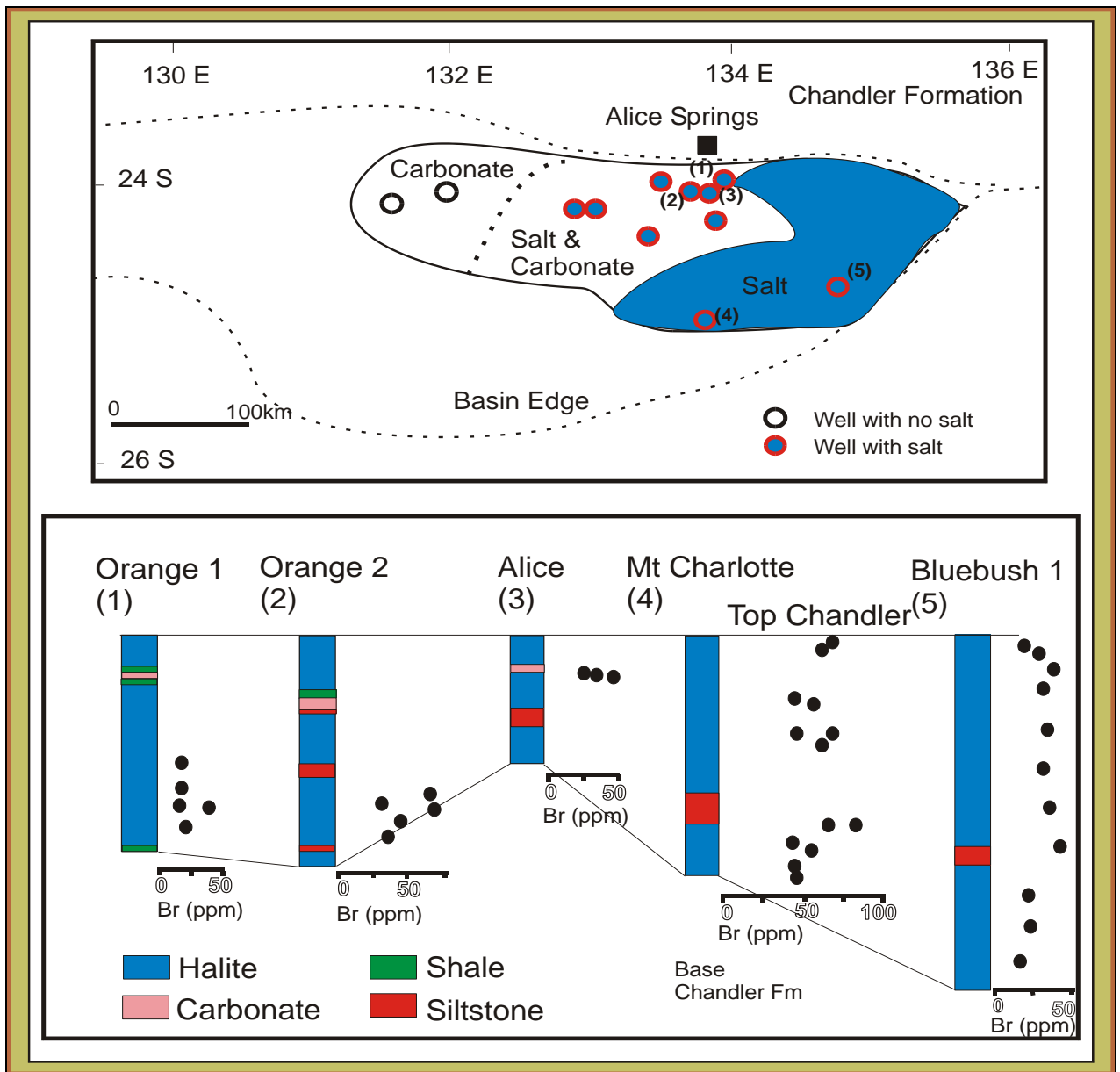
5. DISCUSSION AND RECOMMENDATIONS

The Chandler Formation is the primary target for potash mineralisation. In the eastern part of the Amadeus Basin, the Chandler Formation contains thick sequences of evaporitic rocks. Halite beds range in thickness from less than 50m to over 1,000m and average 470m thick in the Rodinga area. These thickness variations are accentuated in areas of structural thickening due to salt tectonics. Within the Rodinga project area the Mt Charlotte No1 well intersected a 225m thick section of Chandler Formation halite from 710 metres depth to the bottom of the hole and the Bluebush No1 well intersected 690m of halite from 786 metres depth (Fig 2,4). These

intersections occurred between depths of 700 and 1,500m, within the depth range of economic exploitation. The Chandler salt has high bromine levels that suggest precipitation from late stage brines which is a positive indicator for the presence of potash salts.

The main Chandler Formation target interpreted from seismic surveys in the Rodinga Project is a basinal depression target at Camel Flats, just north of Bluebush No1 (see Fig 2,4). Other targets are areas of thickening of the Formation in diapirs and basinal depressions adjacent to salt diapirs and salt walls derived from the underlying Bitter Springs Formation. Potential exists for large flat-lying Canadian-type potash deposits as well as diapir related European-style potash deposits.

Figure 4
Showing Wells with Salt Intersections



Within the Bitter Springs Formation, the evaporitic Gillen Member is the target horizon for potash mineralisation. It was deposited in the Neoproterozoic and comprises interbedded carbonates, sulphates and halite beds typical of

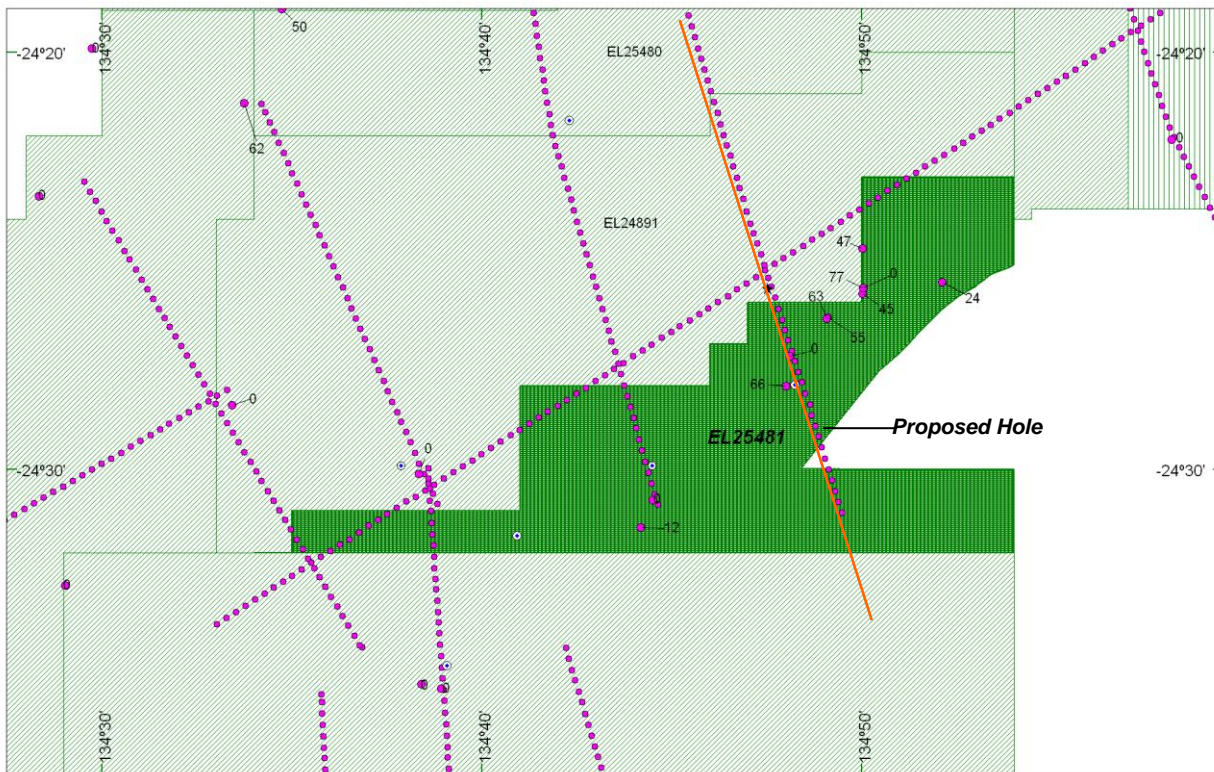
a marine evaporitic sequence. It is widely distributed throughout the Amadeus Basin covering an area significantly greater than the Chandler Salt. The thickness of the Gillen member averages 800m but varies from 100m to more than 2,000m with the thickening of the beds mainly due to salt tectonism. Halite units are common within the Gillen Member but have been poorly tested by drilling, with a number of holes terminating in halite units at considerable depths.

In the Rodinga project area, two drill holes ended in the Gillen Member, Mt Charlotte No1 after intersecting 556m and Bluebush No1 after intersecting 85m of this formation. Halite beds up to 60m thick were intersected in the Gillen Member in the Mt Charlotte hole.

Bromine levels in the Gillen Member vary from 130-190ppm indicating precipitation of salts occurred from late stage brines. Potential exists for both large, flat-lying, Canadian style as well as diapir related potash mineralisation within the Bitter Springs Formation. Further work is required to establish the best target areas for potash mineralisation.

Bore hole location and analytical data was purchased from the Conservation and Natural Resources Group to cover the whole of the Rodinga 1:250,000 sheet. Figure 6 displays the location of the wells and potassium values:

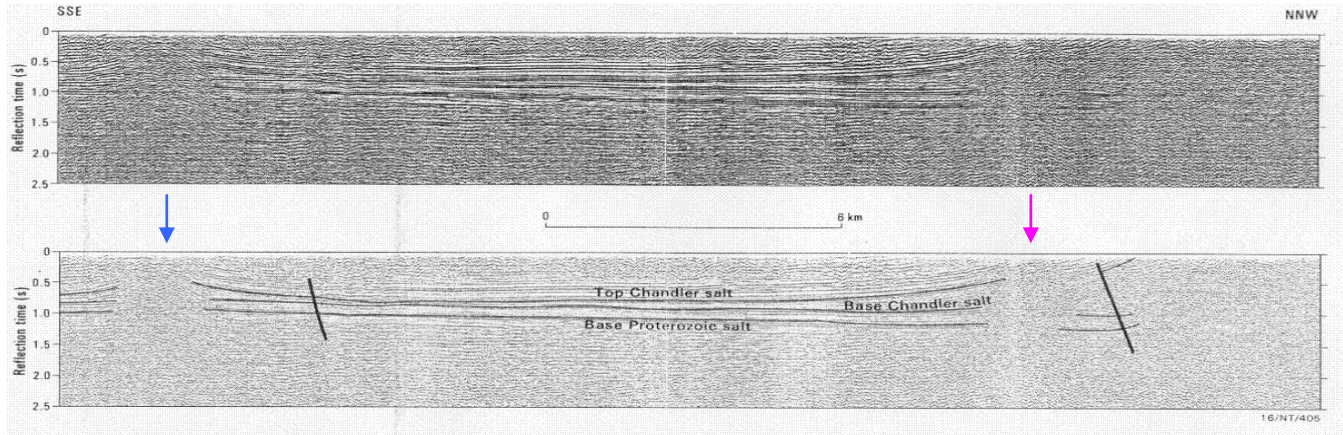
Figure 5
Salt Bore Locations



The value adjacent to the bore hole is potassium (in ppm) with 0 implying no reading. As can be observed the higher values are concentrated around the north eastern part of the tenement. Seismic Line MCF-7 (red line) is reproduced below.

Figure 6

Seismic Profiles MCF-7



A suitable potash target as shown in Figure 5 is delineated by the blue arrow in Figure 6. This area is associated with diapiric activity, with the salt flowing into the “expanded” Chandler beds along with possible potassium rich sediments.

6. WORK COMPLETED

During the year site visits were made to determine access, logistics for supply of drilling materials and excavation of sumps. A potential camp site was also chosen.

REFERENCES

- Bell R., 1983 Bluebush No 1 O.P. 189 Northern Territory Final Well Report. August 1983
- Gibson G., 1982 Camel Flat Seismic Survey OP189. Magellan Petroleum Australia Ltd. October 1982