EL 1881 MURRAY CREEK N.T.
ANNUAL REPORT
PERIOD ENDING 19TH OCTOBER, 1981

Submitted by: G.P. Jenke
Accepted by: W.H. Johnston

copy to: N.T. Department of Mines & Energy

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OPEN FILE

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APPENDIX I  Ground Magnetometer Survey Profiles
1. SUMMARY

During the third year of tenure of EL1881, reprocessing of data from an earlier aeromagnetic survey was completed and a ground magnetometer survey was carried out to enable the selection of drill targets on a high amplitude response.

2. CONCLUSIONS

From the ground magnetometer data, the source of the response is relatively shallow and dips to the west.

3. INTRODUCTION

Previous work by CRA Exploration Pty Limited on Murray Creek EL1881 included a detailed airborne magnetic and radiometric survey and the subsequent investigation of the radiometric responses detected (Snelling, 1979), and a drainage geochemistry survey (Fraser, 1980). No significant radiometric or geochemical responses were detected.

During the third year of tenure of the exploration licence, the aeromagnetic data was reprocessed and a ground magnetometer survey completed over a high amplitude response to define drill targets.
4. **TITLE**

EL1881 was renewed for an area of 30.75 square miles (79.64km²) on 19/10/80 for a further period of 12 months. (Plan No. NTd 1522).

5. **AEROMAGNETIC SURVEY**

The maps produced from the airborne geophysical survey of 1979 were included in an earlier report (Snelling, 1979). The standard of presentation of the magnetic contours, and the levelling of the data, were subsequently considered to be unacceptable, and the data has been recompiled by a different processing bureau at the airborne contractor's expense. The resultant maps were used to produce a composite reduction at a scale of 1:100 000 (Plan No. NTa 333).

6. **GROUND MAGNETOMETER SURVEY**

Following an earlier recommendation (Fraser, 1980) a ground magnetometer survey was carried out over a high amplitude magnetic response in an area devoid of outcrop. From a point accurately identified on the flight path recovery photographs of the earlier airborne survey, a baseline designated 5000mE was chained, pegged and permatagged at 50m intervals by backsighting on a bearing of 360° magnetic from 3200mN to 6200mN. 29.6km of traverse lines were established 200m apart by topofil distance measurement and compass with flagging every 50m and permatagged pegs at 200m intervals from 4200mE to 5800mE, where applicable.
Ground magnetometer measurements were taken at an interval of 10m and the data corrected for diurnal variations by repeated base station readings at regular intervals and reference to a tie line along 5000mE.

The approximate location of the grid with respect to the aeromagnetic contours is shown in Appendix 1 together with profiles of the corrected magnetic data which were used to compile a magnetic contour map (Plan No. NTd 1715). The response is variable in amplitude along its length, being most intense on 4000mN and 4800mN. A preliminary review of the results indicated that the depth to the source on those lines is of the order of 50m, and if induced magnetization only is assumed, dips are to the west, but a more thorough interpretation is needed to define drilling targets on the above lines.

7. ACCESS AND DRILL SITE PREPARATION

After the completion of the ground magnetometer survey and the selection of likely areas for drilling, access was graded from the track between Brown's Yards and Mud Hut Well, approximately 42km west of the Stuart Highway, to the south end of the 5000mE baseline and across the main magnetic response on 4000mN and 4800mN.
8. REFERENCES

Fraser, W.J. 1980  EL 1881 Murray Creek, NT
Annual Report
CRAE Report 10320
(unpublished), Nov. 1980

Snelling, A.A. 1979  EL 1881 Murray Creek, NT
Annual Report
CRAE Report 9791
(unpublished), Oct. 1979

9. KEYWORDS

Airborne, geophys-mag

10. LOCATION

Mt Peake SF53-5

11. LIST OF PLANS

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<th>Plan No.</th>
<th>Title</th>
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<tr>
<td>NTd 1522</td>
<td>Partial Relinquishment EL 1881 Murray Creek</td>
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<td>NTa 333</td>
<td>Contours of Magnetic Intensity EL 1881 Murray Creek</td>
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<td>NTd 1715</td>
<td>Contours of Total Magnetic Intensity, Murray Creek EL 1881</td>
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APPENDIX 1

GROUND MAGNETOMETER SURVEY PROFILES
MURRAY CREEK EL 1881 4400 mN 3800 mE - 6000 mE
MURRAY CREEK EL 1881  5200 mE  4200 mE - 5800 mE
C.R.A. EXPLORATION PTY. LIMITED

PARTIAL RELINQUISHMENT
EL 1881
MURRAY CK, N.T.

Reference: MT PEAKE SF 63-5
Geologist: G.C.S. Scale: 1:250,000
Report No. 18027 Date: Sept. 1980 Plan No: NTd 1522
AIRBORNE SURVEY SPECIFICATIONS

MAGNETOMETER = GEOMETRICS G-803 PROTON PROGRESSION
SENSITIVITY = 0.5 Nt
SAMPLING INTERVAL = 0.5 SEC
FLIGHT LINE DIRECTION = N-S
FLIGHT LINE SEPARATION = 300 METRES
MEAN TERRAIN CLEARANCE = 80 METRES
ALONG LINE SAMPLING = 80 METRES

PROCESSING SPECIFICATIONS

100X REPRODUCTED П CATUR 2000 x 1 ADD
GRID MESH = 150 m by 150 m
CONTOUR INTERVALS = 0.25, 50, 100, 500, 1000, x 1
HORIZONTAL SCALE = 1:30000
GRID ROTATION REFER TO AUSTRALIAN M 1:5M GRID

CRA EXPLORATION PTY. LTD.
MOUNT PEAKE SF-33-5
CONTOURS OF MAGNETIC INTENSITY
MURRAY CREEK EL 1881

DATE: APRIL 1981 | SCALE: 1:100000 | PLAN NO: CART-33SF1081
NOTES:
5000 w/e is opposite AMS 32000 w/e
5000 n/n 3007000 w/m
Leveling was by a top line 2 cm along 500 w/e
A constant of 52000 has been removed
from the contour values shown
Magnetometer sensor height was 3m and
the station spacing was 60m