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28th October 1980.

The Director,
Department of Mines and Energy,
Government of the Northern
Territory,
P.O. Box 2901,
DARWIN. N.T. 5794

Dear Sir,

EL 1873 - Doctors Creek, N.T.
Final Report

Please find enclosed report 10223 by A.A. Snelling entitled "EL 1873 - Doctors Creek, N.T. - Final Report Period Ending July 1980", dated September 1980.

Final expenditure amounted to $42,587 comprising:

Salaries and Wages	7,984
General Supplies	3,633
Vehicles	1,836
Travel and Accommodation	2,222
Contractors	17,404
Assaying	1,363
General Overheads	8,145
	$42,587

Yours faithfully,

for J. Collier
General Manager

enc.
SAF:smb

CRA EXPLORATION PTY LIMITED

EL 1873 DOCTORS CREEK, N.T.

FINAL REPORT

PERIOD ENDING JULY, 1980

Author: A.A. Snelling .....

Date: September, 1980

Submitted to: W.H. Johnston .....

copy to: Dept of Mines & Energy, N.T.

CONTENTS

1. SUMMARY

A review of an earlier BMR geochimical drainage survey highlighted one sample weakly anomalous in tungsten. The BMR were requested to reassay the sample. Their results were poor, failing to reproduce the anomalous value and further downgrading the area.

2. INTRODUCTION

EL 1873 Doctors Creek, N.T. of 89 sq. miles (228.55 sq. km) was originally applied for on 22nd June, 1978. The area covered ground previously held by Kratos Uranium N.L. CRAE applied for the EL with the intention to prospect the Westmoreland Conglomerate - Seigal Volcanics contract for uranium and copper mineralisation under cover of the Seigal Volcanics. The EL was granted by the N.T. Government for a period of twelve months from 20th October, 1978.

Exploration activities during the first year of tenure have been described by Fraser (1980). Geoterrex Pty Limited carried out a detailed airborne gamma ray spectrometer and magnetometer survey which resulted in the discovery of a number of weak to moderately intense uranium gamma ray anomalies. These were investigated by a helicopter-borne spectrometer system and on the ground by portable spectrometers where warranted. No significant uranium was found at the gamma ray anomalies.

On 20th October, 1979 title to the EL was renewed for a second year. This report describes exploration activities during this second year of tenure.

3. CONCLUSIONS

The BMR geochemical drainage survey was very detailed at one sample per 1.88 sq. km. The BMR's failure to reproduce the weakly anomalous tungsten value when reassaying the single anomalous sample confirmed suspicions that contamination during sample preparation produced the "anomaly". Therefore the thorough BMR coverage of the area without producing any significant anomalies, including uranium, indicated that no major near surface

mineralisation is present or has been missed in the area. All possibilities for the presence of economic uranium mineralisation with surface uranium gamma ray expression have been eliminated by our previous year's exploration activity.

4. BMR GEOCHEMICAL DRAINAGE SURVEY

In 1975 the BMR carried out a stream sediment geochemical survey of the Seigal, N.T. 1:100 000 sheet area. 1534 samples were collected of which 69 were located in EL 1873. However, the survey only covered the portion of the EL south of latitude 17°30', an area of approximately 130 sq.km. This gives a density of one sample per 1.88 sq.km. (one sample per 0.73 sq.miles).

The samples were sieved with an 85 mesh BSS (180μ) sieve and assayed for 26 elements (Rossiter, 1976). The results were reported in Rossiter and Scott (1979) as raw data on microfiche and six 1:100 000 scale plots of W, Be, Nb; U, Ce, Th; U, Cu, Sn; Ni, Cu, Zn; U, As, Bi; and Pb, As, Zn. No statistical data is available on these samples, nor any BMR comments made on anomalism.

However, a scan of the data relevant to EL 1873 suggested that only one sample could be considered anomalous. This sample (see Plan NTd 1058) is weakly anomalous in tungsten:-

Reg'd No. 75761054	Cu: 14	Sn: 0	U: 1	Mn: 170
Samp Type: SC	Zn: 10	W: 32	As: 4	Co: 5
Mesh size: 180	Pb: 9	Mo: 0	F: 0	Ni: 7
Sheet: Seigal	S:282	Bi: 0	Th: 8	Cr: 40
Air photo: SL/1/3351	Ag: 0	Nb: 9	Ce: 60	Fe:22000
Latitude: 17 30.025		Li: 12	Y: 19	Ti: 5500
Longitude: 137 43.123		Be: 1	Ba:192	
		Rb: 24		

This sample is located at the headwaters of Piccaninny Creek, immediately below the junction of two small creeks (see Plan NTd 1058). The catchment area above the sample site is less than one sq.km. in size. The rock type is Sly Creek Sandstone capped by mesas of Cretaceous sediments.

No ground investigations were carried out in this area but assuming the anomalous value was not derived from local accumulations in the Cretaceous sediments or Tertiary laterites, then it is possible that the Sly Creek Sandstone is intruded by late stage pegmatites.

The BMR were requested to reassay this sample along with other samples from neighbouring EL's. Since the anomaly is a single element anomaly it was suspected that it has been caused by contamination during sample preparation in the analytical laboratory.

The results of the BMR reassaying are included as an Appendix. The tungsten anomaly of sample 75761054 could not be reproduced, values of only 7 ppm and 13 ppm being recorded during reassaying. It was therefore concluded that suspicion of contamination during sample preparation had been confirmed.

No uranium stream sediment anomalies were evident in the BMR survey. This coincides with the lack of any uranium in the gamma ray anomalies reported by Fraser (1980), who concluded that detailed airborne gamma ray spectrometer survey and ground investigations had eliminated all possibilities for the presence of economic uranium mineralisation with surface uranium gamma ray expression.

Furthermore the thorough BMR drainage survey coverage of the southern portion of the area (one sample per 1.88 sq.km.) without producing any significant anomalies indicates that no major near surface mineralisation, whether uranium or base metals, is present or has been missed in that area.

A.A. SNELLING

5. REFERENCES

Fraser, W.J.	1980	EL 1873 Doctors Creek, N.T. Report for Year Ending 20.10.79. CRAE Report 9922
Rossiter, A.G.	1976	Stream-sediment geochemistry as an exploration technique in the Westmoreland area, Northern Australia. BMR J. Aust.Geol. and Geophys., I, pp 153-170.
Rossiter, A.G. & Scott, P.A.	1979	Stream-sediment geochemical data, Seigal 1:100 000 Sheet area, Northern Territory. Bur.Miner. Resour. Geol. and Geophys. Aust., Record 1979/37.

6. KEYWORDS

Tungsten, uranium, Calverts Hill SE/53-8 1:250 000, geochem-drainage, assays-geochem, Proterozoic-Md, sandstone.

7. LOCATION

Calvert Hills	SE/53-8	1:250 000 map sheet

8. LIST OF PLANS

Plan No.	Title	Scale
NTd 1058	Doctors Creek EL 1873 Geology, BMR Geochemical Drainage Anomaly, Uranium Gamma Ray Anomalies	1:50 000

9. APPENDIX

Results of BMR Reassaying of Stream Sediment Samples, Seigal, N.T. 1:100 000 sheet.

APPENDIX 1

Results of BMR Reassaying of

Stream Sediment Samples,

Seigal, N.T. 1:100 000 sheet

STREAM-SEDIMENT GEOCHEMICAL DATA
SEIGAL 1:100 000 SHEET AREA (BMR SURUEY 1975)

		DILUTION FACTOR	W	REPORTED W		U	REPORTED U		Sn	REPORTED Sn		Pb	REPORTED Pb				
7576 1042 (ORIGINAL)	SIDE 'A'		3	21													
	SIDE 'B'		29														
7576 1054 (ORIGINAL)	SIDE 'A'		5	32													
	SIDE 'B'		41														
7576 1054 (NEW)	SIDE 'A'		7														
	SIDE 'B'		13														
7576 1088 (ORIGINAL)	SIDE 'A'		22	19													
	SIDE 'B'		11														
7576 1088 (NEW)	SIDE 'A'		8														
	SIDE 'B'		11														
7576 1092 (ORIGINAL)	SIDE 'A'		7	93													
	SIDE 'B'		103														
7576 1092 (NEW)	SIDE 'A'		5														
	SIDE 'B'		9														
7576 1095 (ORIGINAL)	SIDE 'A'								55	64							
	SIDE 'B'								49								
7576 1095 (NEW)	SIDE 'A'								50								
	SIDE 'B'								58								
7576 1098 (ORIGINAL)	SIDE 'A'	4										179	178				
	SIDE 'B'											144					
7576 1100 (ORIGINAL)	SIDE 'A'	2	100	90			13	13									
	SIDE 'B'		37				12										
7576 1130 (ORIGINAL)	SIDE 'A'						11	12									
	SIDE 'B'						11										
7576 1130 (NEW)	SIDE 'A'						11										
	SIDE 'B'						11										
7576 1131 (ORIGINAL)	SIDE 'A'	4					13	14									
	SIDE 'B'						12										

STREAM-SEDIMENT GEOCHEMICAL DATA
SEIGAL 1:100 000 SHEET AREA (BMR SURVEY 1975)

			DILUTION FACTOR	W	REPORTED W		U	REPORTED U		Sn	REPORTED Sn		Pb	REPORTED Pb				
7576 (ORIGINAL)	1244	SIDE 'A' SIDE 'B'	3							34 34	37							
7576 (ORIGINAL)	1245	SIDE 'A' SIDE 'B'								29 30	34							
7576 (NEW)	1245	SIDE 'A' SIDE 'B'								27 28								
7576 (ORIGINAL)	1278	SIDE 'A' SIDE 'B'		7 18	11					75 78	91							
7576 (NEW)	1278	SIDE 'A' SIDE 'B'		6 13						70 76								
7576 (ORIGINAL)	1357	SIDE 'A' SIDE 'B'		19 64	54		14 15	15										
7576 (NEW)	1357	SIDE 'A' SIDE 'B'		15 20			17 15											

137° 40'
137° 46'
17° 25'
17° 37'
137° 40'
137° 44'
137° 46'
17° 36'

Ptl
Ptd
Ptq
K
Ptd$_1$
Pts
Ptsc

DC 32
DC 26
DC 4
DC 38
DC 48
DC 36
DC 37
DC 39
DC 47
DC 43
DC 31
DC 41
DC 40
DC 52

Cu

PECCANINNY CREEK
CATERPILLAR SPRING
CALVERT CREEK
DOCTORS FAULT ZONE
DEBBIL CREEK

Area not covered by BMR Geochemical Drainage Survey

BMR Sample 75761054
32 ppm W

thin K on Ptd./Ptl

LEGEND

CRETACEOUS

K — fine-medium sandstone siltstone, porcellanite

CARPENTARIAN

TAWALLAH GROUP

Ptg — AQUARIUM FORMATION sandstone, siltstone

Ptl — SLY CREEK SANDSTONE quartz sandstone

Ptd — Mc DERMOTT FORMATION dolomite, minor sandstone

Ptd$_1$ — medium sandstone

Pts — SEIGAL CREEK VOLCANICS basalt, basaltic agglomerate

Ptsc — CAROLINA SANDSTONE MEMBER medium-fine feldsp. sandstone

geological boundary

linear, fault zone

geology from anomaly investigation and rapid airphoto interpretation

75761054 — BMR Geochemical drainage anomaly

DC 40 — uranium gamma-ray anomaly

DOCTORS CREEK EL 1873
GEOLOGY
BMR GEOCHEMICAL DRAINAGE ANOMALY
URANIUM GAMMA-RAY ANOMALIES

SE 53 - 8		
W.J.F.	1:50,000	10223
S.P.S.	JULY 1979	NTd 1058