CRA Exploration Pty. Ltd.

EL 4541 WILLIAMS CREEK, N.T.  

FINAL REPORT  
PERIOD ENDING 26 MARCH, 1986

Submitted by : I. C. Colli vere  

Accepted by : W. H. Johnston  

Date : June, 1986  

Copies to : N.T. Department of Mines and Energy  
CRAE Library, Darwin  
CRAE Library, Canberra

Map Reference Report number
SE 53-3 Tanumbirini 130652

OPEN FILE

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NORTHERN TERRITORY GEOLOGICAL SURVEY

CR 86/168A
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1.0 SUMMARY

In the first year of tenure of Williams Creek EL 4541, reconnaissance drainage gravel sampling was completed in two passes over the area and samples processed for detection of kimberlitic indicator minerals. Results were uniformly negative.

Subsequently completed processing for detection of microdiamonds also gave only negative results.

2.0 ASSESSMENT

In the absence of any detected dispersion of kimberlitic indicators, there is no encouragement to undertake further exploration for kimberlite diatremes in the area of EL 4541.

3.0 INTRODUCTION

Williams Creek EL Application 4541 was lodged on 9 March 1984 for an area of 450 blocks (about 1479 square km) and was granted on 20 June 1984 (Plan NTd 3329). Recommended relinquishment of title was followed by surrender of EL 4541 with effect 26 March 1986.

The area was taken up for exploration for diamondiferous kimberlites by way of drainage gravel sampling for detection of kimberlitic indicator minerals.

EL 4541 covers a tract of scrubby woodland and speargrass country on the Barkly Tableland surface of Tertiary laterite-duricrusted Lower Cretaceous sandstone and pallid calcareous to porcellanous siltstone. The area has a poorly developed drainage by headwaters tributaries of the Arnold River.
4.0 DRAINAGE GRAVEL SAMPLING

Collection of drainage gravel samples was undertaken in two passes. All samples were forwarded to the CRAE Belmont laboratory for processing for kimberlitic indicator mineral observation. Sample locations are shown on plan NTd 4004. Sampling data and results are tabulated in Appendix 1 and discussed below.

4.1 First pass: Reconnaissance sampling

In a helicopter supported reconnaissance sampling program undertaken in field season 1984, 18 -2mm sieved drainage sediment samples (1082-series numbers) were collected in the EL 4541 area. Samples were taken from heavy mineral accumulation (trap) sites, where available in the poorly developed drainage pattern.

All samples reported negative for kimberlitic indicator minerals. Processing of samples for detection of microdiamonds (<0.4mm), deferred due to a laboratory backlog, was completed subsequently with negative results.

4.2 Second pass: Infill Sampling

A second program of helicopter supported drainage sampling was undertaken in field season 1985, to infill the unacceptably low density reconnaissance sampling coverage of the first pass. 13 -2mm sieved drainage trap site gravel samples (1084-series numbers) were collected, including several samples and resamples bulking more than 100kg of material from relatively better "trap" sites.

No kimberlitic indicator minerals or microdiamonds were detected.
5.0 REFERENCES

Paine, A.G.L. 1963: Tanumbirini, N.T.
BMR 1:250 000 Geosilical Series
Explanatory Notes

6.0 KEYWORDS

Diamonds, laterite, diamond indicators, airborne, sampling-drainage

7.0 LOCATION

SE 53-2 Tanumbirini (5765 Arnold River)

8.0 LIST OF PLANS

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Appendix 1

INDICATOR MINERAL SAMPLING DATA
A PROGRAM IN THE GASP SYSTEM TO PRINT A LISTING OF A DATA SET

VERSION 4.0 AUG 1983.

DATA TITLE: McARTHUR BASIN SAMPLING/I.M.RESULTS

LISTING OF ARCHIVAL INFORMATION FOR THE INPUT DATA

BROADMERE CAMP 2/1984 (June-August, September, November)
RECONNAISSANCE EXTENSION, INFILL AND FOLLOW-UP SAMPLING

SAMPLE NOs. 1082279 - 1082600 DPO's 21912, 21911, 21927
1082922 - 1083100 21913, 21927
1083101 - 136 21927
1083146 - 153 21927
1083161 - 166 21927
1083180 - 186 21926
641751 - 641778 [Tanumirini Sn investigation]
641779 - 791 DPO's 21927, (20930 geochem)
681600 - 681607 21927
681608 - 609 21928, (20931 geochem)
681612 - 613 (20932 geochem)
881378 - 881382 21938

PERSONNEL: I.C.Colliver, S.L.Allnutt, D.A.Simms,
R.G.Henderson, B.E.Harvey

Extension of reconnaissance drainage sampling coverage
(at 1:12km2 sample density) over the Mantungula and Cox
100 000-sheet areas, closing with sampling coverage from
Hodgson River Camp 3/1984, infill drainage sampling
in peripheral areas of previous reconnaissance sampling,
follow-up of positive results of previous sampling and
ground investigation and sampling of magnetic anomalies
selected from 1983 airborne surveys.
Drainage trap site selection, aeromagnetic anomaly and
photocircular feature recovery, ground surveys and sample
collection all helicopter supported.
Drainage samples sieved -2mm (generally 1x20kg bag per site)
Kraft packet -80mesh geochemical sample sieved on site from
active drainage sediment
Loam samples comprise 3-5 bags per site of (-2mm) deflated
surficial soil, shallowly scraped over areas of several m2.

HODGSON RIVER CAMP 3/1984 (June-July)
RECONNAISSANCE SAMPLING

SAMPLE NOS. 1082601 - 1082921
DPO NOS. 21914, 21915
Reconnaissance drainage gravel sampling (at ~1 : 12km2
sample density) of the "Nutwood block" EL areas,
closing with sampling coverage from Broadmere Camp 2/1984.
Trap site selection and sample collection helicopter supported
Drainage samples sieved -2mm (generally 1 x 20kg bag per site)
Kraft packet -80mesh geochemical sample sieved on site from
active drainage sediment.

TANUMBIRINI CAMP 2/1985 INFILL AND FOLLOW-UP SAMPLING (June)

SAMPLE NOS. 1084500 - 1084564
DPO NO. 21947
PERSONNEL: I.C. Colliver, J.T. Howard, J.H. Lew
Infilling areas of low density reconnaissance sampling and
follow-up of positive reconnaissance sampling results in areas
of retained "Nutwood Block" EL's 4541, 4542, 4543 and 4548.
Trap site selection and sample collection helicopter supported
Drainage samples sieved -2mm (1-5 x 20 kg bags per site)
Kraft packet -80mesh geochemical sample sieved on site from
active drainage sediment.
LABELS LEGEND

EAST | A.M.G. coordinates (km) including zone
NORTH |

SAMTYPE SAMPLE TYPE
coded
1 = drainage
2 = loam
3 = rock
3.1 = outcrop
3.2 = float
3.3 = auger cuttings
3.4 = RD/PD
3.5 = DD core

SAMKG SAMPLE WEIGHT (kg)

IND1 KIMBERLITIC INDICATOR MINERAL GRAINS OBSERVED

MICROD NUMBER OF MICRODIAMONDS RECOVERED

*************** INFORMATION ADDED BY CRUNCH ***************

** COORDINATE TRANSFORMATION
THE LOCAL GRID VARIABLES EAST AND NORTH WERE TRANSFORMED TO
AMG COORDINATE VARIABLES EASTAMG AND NORTHAMG IN ZONE 53

THE FOLLOWING SELECTION CRITERIA WILL BE SATISFIED IN THIS RUN.

SAMPLES WITH
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AND
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END

NUMBERS THAT ARE CODED REPRESENT "SPECIAL VALUES".
THESE VALUES WILL BE EXCLUDED FROM ALL CALCULATIONS IN THE GASP SYSTEM.
AREA: 450 BLOCKS
1478.7 sq. km.

CRA EXPLORATION PTY LIMITED

EL 4541
WILLIAMS CREEK
LOCATION PLAN

REFERENCE SE53-2 TANUNBIRINI
SCALE 1:250,000 DATE JANUARY 1984
AUTHOR ICC REPORT 130652
DRAWN SRJ PLAN No NTD 3329