

NEGRI RIVER CORPORATION LIMITED

OPEN FILE

EXPLORATION REPORT ON

REDUCTION OF

E.L.'S 3496 AND 3498,

NORTHERN TERRITORY

NORTHERN TERRITORY
GEOLOGICAL SURVEY

BP-7

A. J. LOHAN
MAY 1984

CR84/169

ABSTRACT

Exploration Licences 3496 and 3498 cover 1065 square kilometres north-northeast of Alice Springs in the Northern Territory. A fifty per cent reduction of the total original area due on April 19, 1984 has been effected.

Twenty-two supplementary, heavy mineral tributary samples taken in late 1983 produced negative results.

LIST OF CONTENTS

	Page
1. INTRODUCTION	4
2. PREVIOUS WORK	7
3. 1983 SUPPLEMENTARY TRIBUTARY SAMPLES	7
4. RESULTS	10
5. SUMMARY	11

APPENDICES

I REDUCTION OF AREA	
II RESULTS OF SUPPLEMENTARY SAMPLES	
III LIST OF REPORTS	

1. INTRODUCTION

Exploration Licences 3496 and 3498 cover an area of 1065 square kilometres near Strangways Range and Mount Riddock centred north-northwest of Alice Springs (Figure 1).

The licences were granted to Negri River Corporation Limited on 19th April, 1982 and a reduction of fifty per cent of the original area fell due in April, 1984. A letter communicating the intended reduction was sent to the Northern Territory Department of Mines and Energy (Appendix I). The new boundaries of the licences are shown in Figure Two.

This report outlines exploration activities undertaken in E.L.'S 3496 and 3498 prior to partial relinquishment of the ground held by Negri River Corporation Limited.

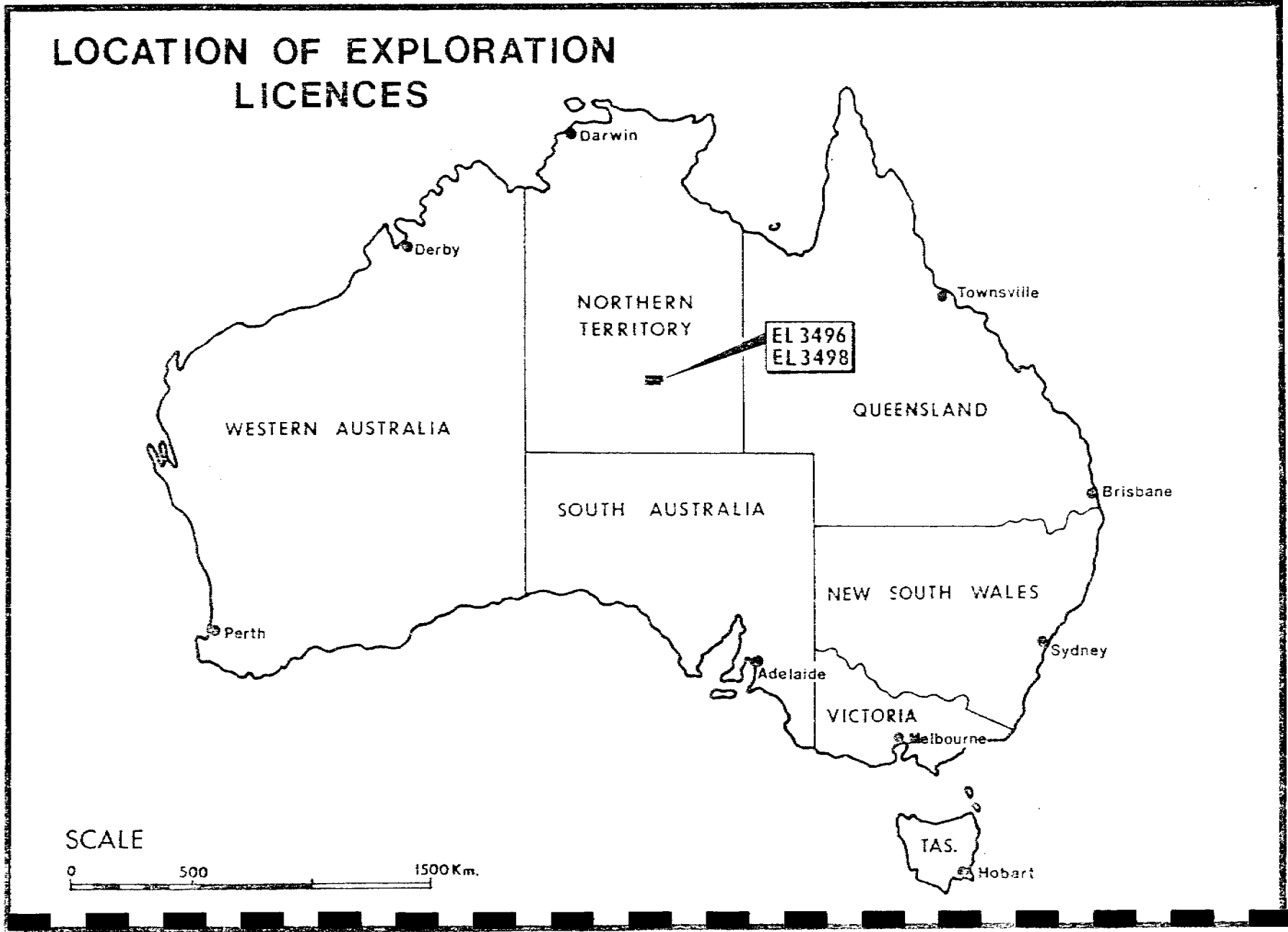


Figure 1.

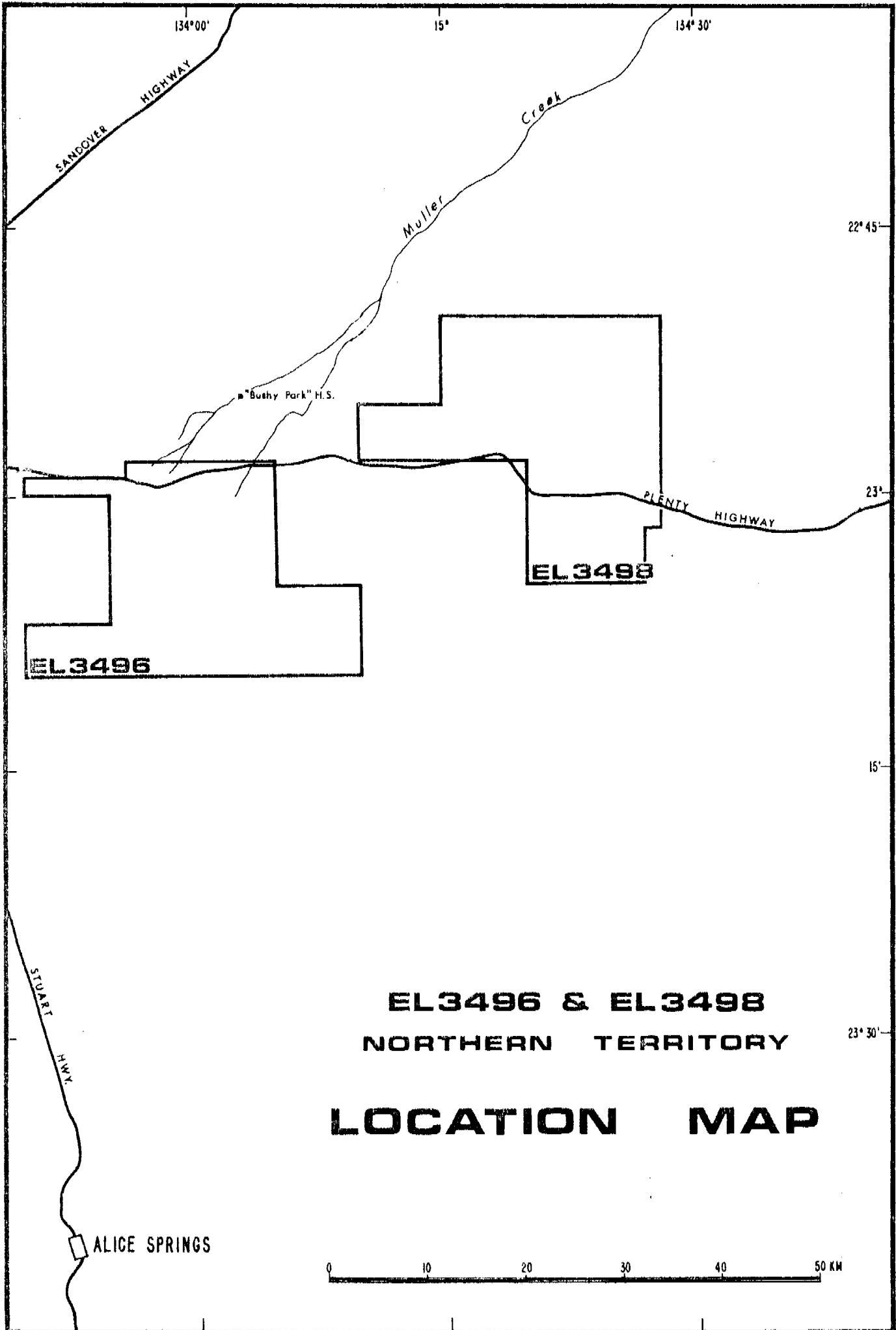


Figure 2.

2. PREVIOUS WORK

Exploration activities over E.L.'S 3496 and 3498 have entailed a literature review, remote sensing, and heavy mineral/geochemical sampling. A previous report (BP-5) contains a comprehensive description of these activities. A recommendation of the report (BP-5) was further tributary gravel sampling.

3. 1983 SUPPLEMENTARY TRIBUTARY SAMPLES

A total of 22 supplementary, heavy mineral tributary samples were collected in late 1983. The locations of the samples are in Figures Three and Four.

Each sample was treated by Diamond Laboratory Services (D.L.S.) to produce a heavy mineral concentrate. All processing was carried out in Sydney. Screening, washing and heavy media separation produced the following size fractions:

- +16 mesh : coarse fraction
- +25 mesh : medium fraction
- +44 mesh : fine fraction
- 44 mesh : extra fine fraction

Visual inspection of the three coarsest fractions isolated grains of 'kimberlitic' morphology. Such grains underwent further analysis by D.L.S. The extra fine fraction was not inspected.

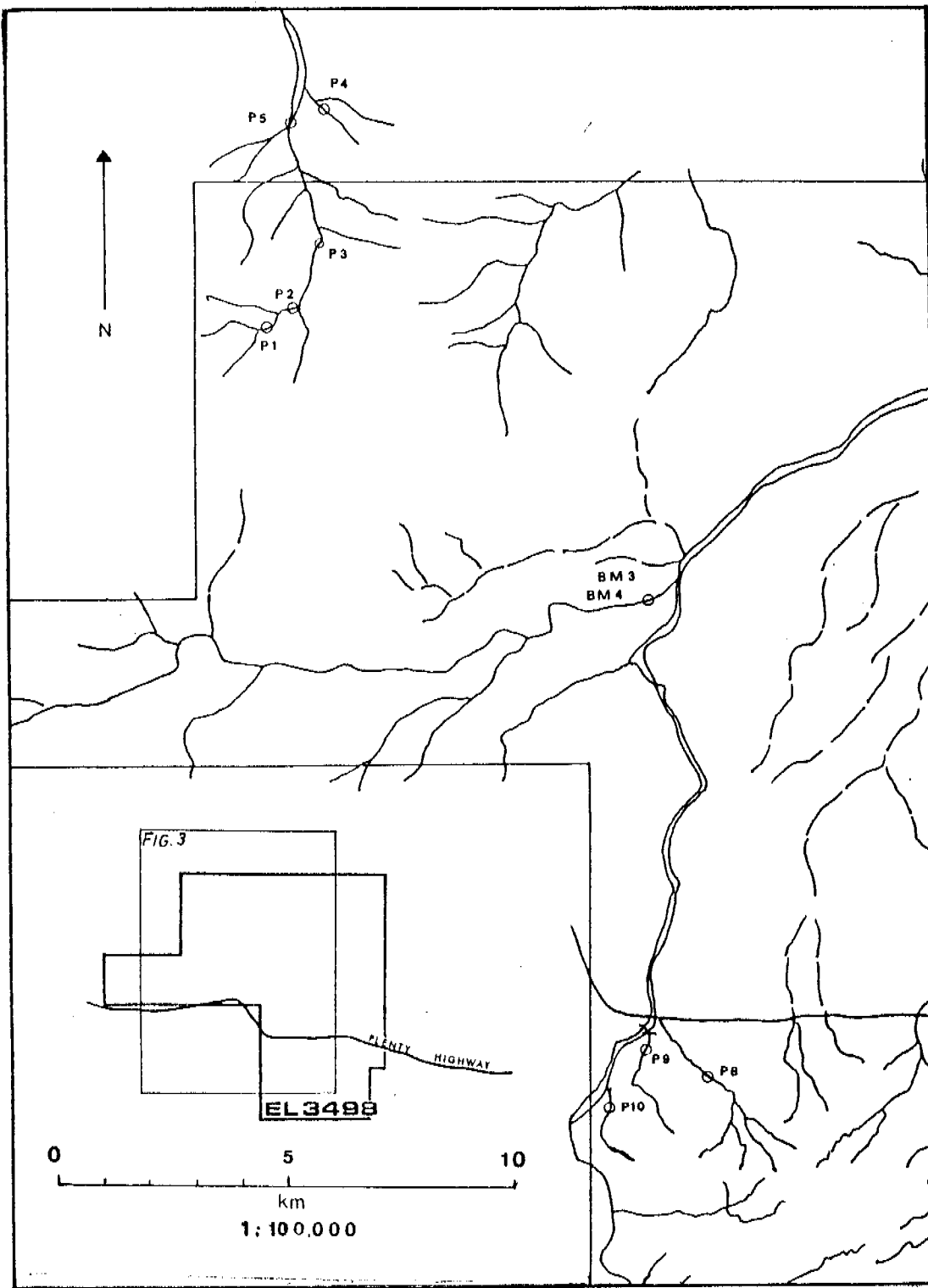


FIGURE 3

LOCATION OF SAMPLES

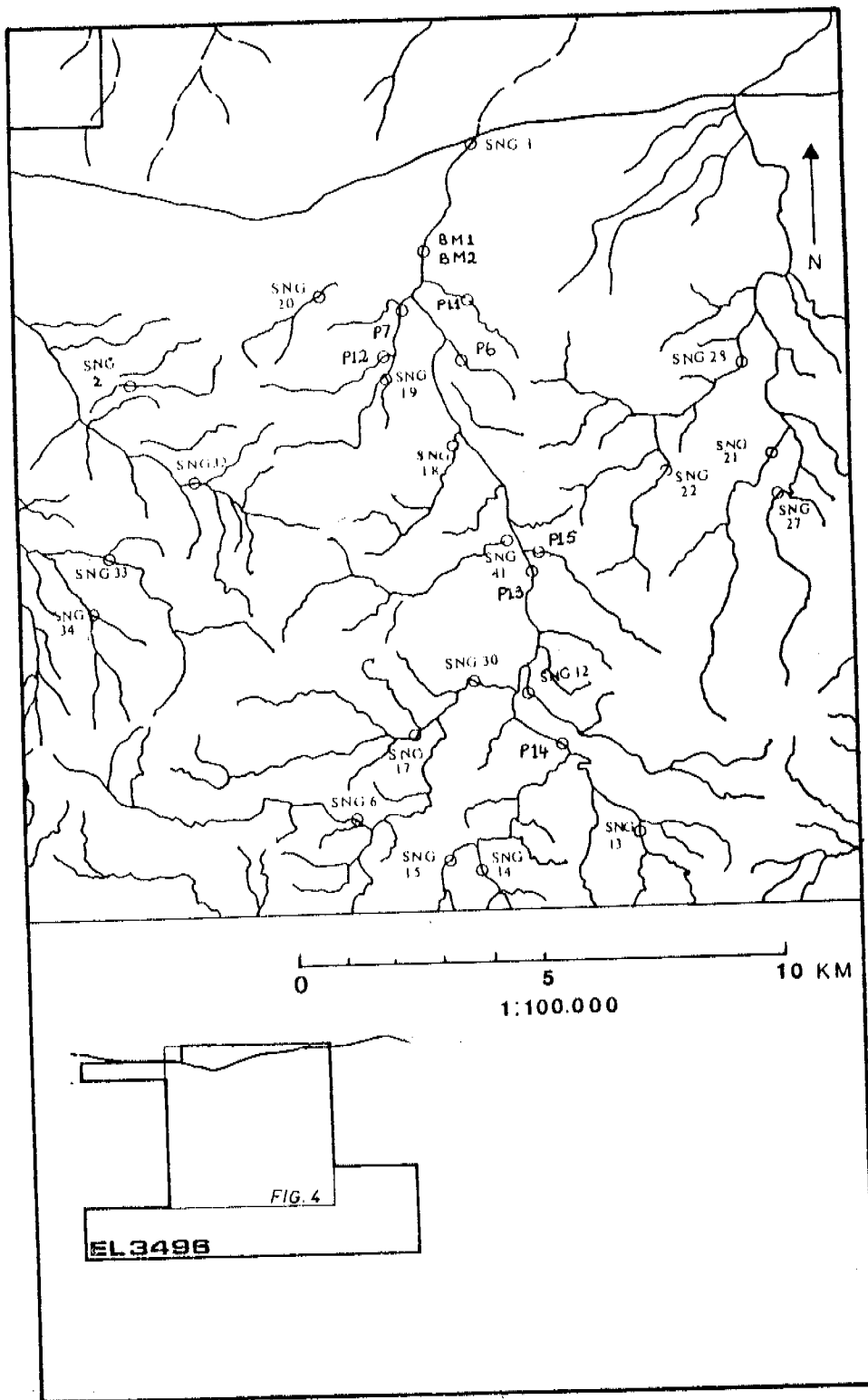


FIGURE 4

LOCATION OF SAMPLES

4. RESULTS

None of the samples examined contained any grains whose morphological characteristics suggest possible kimberlitic origin. A full account of results is contained in Appendix II.

5. SUMMARY

The results of exploration carried out in 1982 and 1983 enable Negri River Corporation Limited to reduce half the area originally covered by E.L.'s 3496 and 3498. This became effective as of April 19, 1984.

APPENDIX

I

APPENDIX

II

Diamond Laboratory Services Pty. Ltd.

HEAVY MINERAL DIVISION

Australian Representative for:

DIAMOND GRADING LABORATORIES



3rd Floor
89 York Street
Sydney, N.S.W. 2000
Telephone (02) 290 1022

HEAVY MINERAL CONCENTRATE ANALYSIS


EXAMINATION FOR KIMBERLITIC MINERAL INDICATOR GRAINS

CONSIGNMENT (Lab.Ref.No.): AA15635
CLIENT: DR. B. MARSHALL/INSEARCH LTD.
SAMPLE NUMBER (Client's Ref.): 1A, 1B, 2, 3A, 3B, 4, 5, 6,
7A, 7B, 8A, 8B, 9, 10A, 10B,
11, 12, 13A, 13B, 14A, 14B, 15
TOTAL NUMBER OF SAMPLES: TWENTY TWO
DATE SAMPLES RECEIVED: 20.3.84
DATE SAMPLES COMPLETED: 16.4.84

The above consignment has been sorted and checked and the results tabulated on the accompanying sheets.

Key to symbols used in the report:

□	Etched
l.abr.	Lightly abraded
abr.	Abraded
R.O.S.	Remnant of original surface
R.O.K.	Remnant of kelyphitic surface
◇	Diamond
N.K.	Non-kimberlitic
△	Angular


..... 26.4.84
Laboratory Supervisor Date

METHOD OF EXAMINATION

Twenty two samples numbered P1A, 1B, 2, 3A, 3B, 4, 5, 6, 7A, 7B, 8A, 8B, 9, 10A, 10B, 11, 12, 13A, 13B, 14A, 14B, 15 were received for inspection.

Package no. 3 was found to contain two bags numbered 3A and 3B. This had suffered some damage in transit and the bags had split, mixing the soil from each bag. This was therefore treated as a double sample marked 3A and B. Sample 14 was also treated in the same manner as it also had been damaged in transit.

The processing and visual inspection of all samples was carried out at the Sydney premises of Diamond Laboratory Services Pty. Ltd.

Each of the samples was screened and processed using all steps required to produce a heavy mineral concentrate for observation.

As none of the samples had not undergone any preparation, the steps required after the initial weight was recorded involved washing and screening and heavy media separation using bromoform as the flotation medium. The heavy mineral fraction of each sample was sieved into the following size fractions:

+16 mesh	:	coarse fraction
+25 mesh	:	medium fraction
+44 mesh	:	fine fraction
-44 mesh	:	extra fine fraction

No further work was performed on the light float which was discarded, nor was the extra fine fraction inspected at this stage.

Visual inspection of the concentrates was carried out by qualified sorters using stereomicroscopes. Each sample was examined grain by grain for traces of kimberlitic indicator minerals.

Grains considered to have morphological characteristics consistent with kimberlitic indicator minerals were isolated and sent for further confirmatory analysis.

Other grains of interest recognised by our sorters are listed in the 'Other Grains' column and may include the following: moissanite, fluorite,

pyroxene, olivine, zircon, tourmaline, kyanite, corundum, rutile, haematite, cassiterite, mica, pyrites, gold, bronzite, etc.

Representative samples of all grains listed in the following pages as present in these samples are available for further inspection if needed.

RESULTS

None of the samples examined contained any grains whose morphological characteristics suggest possible kimberlitic origin.

All of the samples were found to be abundant in different coloured grains of corundum and zircon.

Other grains noticed in these samples include pyroxene, mica, tourmaline, rutile, kyanite and non-kimberlitic garnets.

Representative grains of all of the above are available for inspection if required.

A full tabulation of results follows.

Diamond Laboratory Services Pty. Ltd.

HEAVY MINERALS DIVISION



3rd Floor
89 York Street
Sydney, N.S.W. 2000
Telephone (02) 290 1022

CONSIGNMENT .. AA 15635 SAMPLE No's. P-1A: P-1B: P-2:
P-3A+B: P-4: P-5: P-6 DATE 4.4.84

Sample No.	Mesh Size	Garnet	Ilmenite	Chrome Diopside	Spinel	Other Grains	Remarks
P-1A	+16	ABUNDANT N.K.	---	---	---	---	
	+25	ABUNDANT N.K.	---	---	---	ABUNDANT PYROXENE	
	+44	ABUNDANT N.K.	5 N.K.	---	---	AB. PYROXENE:	AB. ZIRCONS: AB. SAPPHIRES.
	+60	---	---	---	---	AB. ZIRCONS: AB. SAPPHIRES.	
P-1B	+16	ABUNDANT N.K.	---	---	---	---	
	+25	ABUNDANT N.K.	1 N.K.	---	---	20 PYROXENE:	50 ZIRCONS: 30 SAPPHIRES.
	+44	ABUNDANT N.K.	4 N.K.	---	---	AB. PYROXENE:	AB. ZIRCONS: AB. SAPPHIRES.
	+60	---	---	---	---	---	
P-2	+16	ABUNDANT N.K.	---	---	---	---	
	+25	ABUNDANT N.K.	2 N.K.	---	---	20 PYROXENE	AB. ZIRCONS: AB. SAPPHIRES.
	+44	ABUNDANT N.K.	5 N.K.	---	---	AB. PYROXENE	AB. ZIRCONS: AB. SAPPHIRES.
	+60	---	---	---	---	---	
P-3A+B	+16	ABUNDANT N.K.	---	---	---	---	
	+25	ABUNDANT N.K.	3 N.K.	---	---	AB. PYROXENE	AB. ZIRCONS: AB. SAPPHIRE. CONTAMINATED
	+44	ABUNDANT N.K.	5 N.K.	---	---	AB. PYROXENE	AB. ZIRCONS: AB. SAPPHIRES
	+60	---	---	---	---	---	
P-4	+16	ABUNDANT N.K.	---	---	---	---	
	+25	ABUNDANT N.K.	5 N.K.	---	---	20 PYROXENE:	20 ZIRCONS: AB. SAPPHIRES.
	+44	ABUNDANT N.K.	7 N.K.	---	---	30 PYROXENE:	30 ZIRCONS: AB. SAPPHIRES.
	+60	---	---	---	---	---	
P-5	+16	ABUNDANT N.K.	---	---	---	---	
	+25	ABUNDANT N.K.	4 N.K.	---	---	20 PYROXENE: 2 MICA:	20 ZIRCONS: AB. SAPPHIRES.
	+44	ABUNDANT N.K.	5 N.K.	---	---	30 PYROXENE: 1 MICA:	AB. ZIRCONS: AB. SAPPHIRES.
	+60	---	---	---	---	---	

SAMPLES RECEIVED IN LAB 20.3.84 SAMPLES SEPARATED 20.3.84
 SAMPLES UNPACKED AND CHECKED 20.3.84 SLIDES CHECKED 4.4.84

Diamond Laboratory Services Pty. Ltd.

HEAVY MINERALS DIVISION



3rd Floor
89 York Street
Sydney, N.S.W. 2000
Telephone (02) 290 1022

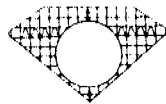
CONSIGNMENT *AA. 15635* ... SAMPLE No's. *P-1A: P-1B: P-2: P-3A & B: P-4: P-5: P-6* ... DATE *4.4.84*

Sample No.	Mesh Size	Garnet	Ilmenite	Chrome Diopside	Spinel	Other Grains	Remarks
<i>P-6</i>	+16	<i>ABUNDANT N.E.</i>	—	—		—	
	+25	<i>ABUNDANT N.E.</i>	—	—		<i>10 TOURMALINE: 20 ZIRCONS: 30 SAPPHIRES.</i>	
	+44	<i>ABUNDANT N.E.</i>	<i>Z.N.E.</i>	—	—	<i>AB. TOURMALINE: SMICA AB. ZIRCONS: AB. SAPPHIRES.</i>	
	+60	—	—	—	—	—	
	+16						
	+25						
	+44						
	+60						
	+16						
	+25						
	+44						
	+60						
	+16						
	+25						
	+44						
	+60						
	+16						
	+25						
	+44						
	+60						

SAMPLES RECEIVED IN LAB *20.3.84* SAMPLES SEPARATED *20.3.84*
 SAMPLES UNPACKED AND CHECKED *20.3.84* SLIDES CHECKED *4.4.84*

Diamond Laboratory Services Pty. Ltd.

HEAVY MINERALS DIVISION



3rd Floor
89 York Street
Sydney, N.S.W. 2000
Telephone (02) 290 1022

CONSIGNMENT ..AA..15635.. SAMPLE No's. P-7A:7B:8A:8B:9:10A:10B: P-11:12:13A:13B:14A:15: DATE 16.4.84.....

Sample No.	Mesh Size	Garnet	Ilmenite	Chrome Diopside	Spinel	Other Grains	Remarks
P-7A.	+16	ABUNDANT N.K.	---	---	---	5 SAPPHIRES.	
	+25	ABUNDANT N.K.	---	---	---	AB. SAPPHIRES: 10 TOURMALINE: 25 ZIRCONS	
	+44	ABUNDANT N.K.	---	---	---	AB. SAPPHIRES: 30 ZIRCONS: 30 TOURMALINE: 5 PYROXENE.	
	+60	---	---	---	---	---	
P-7B.	+16	ABUNDANT N.K.	---	---	---	2 SAPPHIRES.	
	+25	ABUNDANT N.K.	---	---	---	20 SAPPHIRES: 10 ZIRCONS.	
	+44	ABUNDANT N.K.	---	---	---	30 SAPPHIRES: 30 ZIRCONS: 5 PYROXENE.	
	+60	---	---	---	---	---	
P-8A	+16	ABUNDANT N.K.	---	---	---	5 SAPPHIRES.	
	+25	ABUNDANT N.K.	---	---	---	20 SAPPHIRES: 1 RUTILE:	
	+44	ABUNDANT N.K.	---	---	---	20 ZIRCONS: 10 PYROXENE: 30 SAPPHIRES: 10 RUTILE: 1 MICA:	
	+60	---	---	---	---	10 TOURMALINE: 20 ZIRCONS.	
P-8B.	+16	ABUNDANT N.K.	---	---	---	2 SAPPHIRES.	
	+25	ABUNDANT N.K.	---	---	---	10 SAPPHIRES: 1 RUTILE: 1 MICA: 10 ZIRCONS: 2 PYROXENE: 3 TOURMALINE.	
	+44	ABUNDANT N.K.	---	---	---	30 SAPPHIRES: 30 RUTILE: 20 ZIRCONS: 10 PYROXENE: 2 MICA: 4 TOURMALINE.	
	+60	---	---	---	---	---	
P-9	+16	ABUNDANT N.K.	---	---	---	1 SAPPHIRE.	
	+25	ABUNDANT N.K.	---	---	---	10 SAPPHIRE: 1 RUTILE: 2 PYROXENE: 3 TOURMALINE: 1 MICA: 10 ZIRCONS.	
	+44	ABUNDANT N.K.	---	---	---	30 SAPPHIRES: 30 RUTILE: 20 ZIRCONS: 10 PYROXENE: 2 MICA: 4 TOURMALINE.	
	+60	---	---	---	---	---	
P-10 A.	+16	ABUNDANT N.K.	---	---	---	1 SAPPHIRE.	
	+25	ABUNDANT N.K.	---	---	---	12 SAPPHIRES: 5 ZIRCONS: 3 TOURMALINE: 1 PYROXENE.	
	+44	ABUNDANT N.K.	---	---	---	24 SAPPHIRES: 10 ZIRCONS: 6 TOURMALINE: 10 PYROXENE.	
	+60	---	---	---	---	---	

SAMPLES RECEIVED IN LAB 20.3.84 SAMPLES SEPARATED 20.5.84
 SAMPLES UNPACKED AND CHECKED 20.3.84 SLIDES CHECKED 16.4.84

Diamond Laboratory Services Pty. Ltd.

HEAVY MINERALS DIVISION



3rd Floor
89 York Street
Sydney, N.S.W. 2000
Telephone (02) 290 1022

P-7A: 7B: 8A: 8B: 9: 10A: 10B:

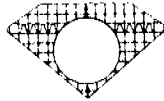
CONSIGNMENT .AA. 15635... SAMPLE No's. P-11: 12: 13A: 13B: 14A+B: 15. DATE ..16.4.84.....

Sample No.	Mesh Size	Garnet	Ilmenite	Chrome Diopside	Spinel	Other Grains	Remarks
P-10B	+16	ABUNDANT N.K.	---	---	---	10 SAPPHIRES.	
	+25	ABUNDANT N.K.	---	---	---	15 SAPPHIRES: 3 RUTILE 4 ZIRCONS. 10 TOURMALINE: 10 PYROXENE.	
	+44	ABUNDANT N.K.	---	---	---	20 SAPPHIRES: 6 RUTILE: 4 ZIRCONS: 15 TOURMALINE: 20 PYROXENE.	
	+60	---	---	---	---	---	
P-11	+16	ABUNDANT N.K.	---	---	---	4 SAPPHIRES: 2 TOURMALINE.	
	+25	ABUNDANT N.K.	---	---	---	20 SAPPHIRES: 15 TOURMALINE: 20 ZIRCONS: 5 PYROXENE.	
	+44	ABUNDANT N.K.	---	---	---	40 SAPPHIRES: 30 TOURMALINE: 2 KUNZITE: 25 ZIRCONS: 10 PYROXENE.	
	+60	---	---	---	---	---	
P-12	+16	ABUNDANT N.K.	---	---	---	5 SAPPHIRES.	
	+25	ABUNDANT N.K.	---	---	---	20 SAPPHIRES: 15 TOURMALINE: 20 ZIRCONS: 10 PYROXENE.	
	+44	ABUNDANT N.K.	---	---	---	30 SAPPHIRES: 20 TOURMALINE: 30 ZIRCONS: 15 PYROXENE.	
	+60	---	---	---	---	---	
P-13A	+16	ABUNDANT N.K.	---	---	---	2 SAPPHIRES.	
	+25	ABUNDANT N.K.	---	---	---	15 SAPPHIRES: 15 TOURMALINE: 2 KUNZITE: 12 ZIRCONS: 5 PYROXENE.	
	+44	ABUNDANT N.K.	---	---	---	20 SAPPHIRES: 20 TOURMALINE: 5 KUNZITE: 3 RUTILE: 20 ZIRCONS: 10 PYROXENE.	
	+60	---	---	---	---	---	
P-13B	+16	ABUNDANT N.K.	---	---	---	5 SAPPHIRES: 1 TOURMALINE.	
	+25	ABUNDANT N.K.	---	---	---	10 SAPPHIRE: 15 TOURMALINE: 5 ZIRCONS: 5 PYROXENE.	
	+44	ABUNDANT N.K.	---	---	---	20 SAPPHIRES: 20 TOURMALINE: 2 KUNZITE: 3 RUTILE: 10 ZIRCONS: 10 PYROXENE.	
	+60	---	---	---	---	---	
P-14A+B	+16	ABUNDANT N.K.	---	---	---	1 SAPPHIRE.	
	+25	ABUNDANT N.K.	---	---	---	10 SAPPHIRES: 15 TOURMALINE: 2 ZIRCONS: 10 PYROXENE.	
	+44	ABUNDANT N.K.	---	---	---	20 SAPPHIRES: 20 TOURMALINE 6 ZIRCONS: 15 PYROXENE.	
	+60	---	---	---	---	---	

SAMPLES RECEIVED IN LAB 20.3.84 SAMPLES SEPARATED 20.3.84
 SAMPLES UNPACKED AND CHECKED 20.3.84 SLIDES CHECKED 16.4.84

Diamond Laboratory Services Pty. Ltd.

HEAVY MINERALS DIVISION



3rd Floor
89 York Street
Sydney, N.S.W. 2000
Telephone (02) 290 1022

P-7A: 7B: 8A: 8B: 9: 10A: 10B:

CONSIGNMENT ..AA..15635.. SAMPLE No's. P-11:12:13A:13B:14A+B:15..... DATE ..16.4.84.....

Sample No.	Mesh Size	Garnet	Ilmenite	Chrome Diopside	Spinel	Other Grains	Remarks
P-15	+16	ABUNDANT N.K.	---	---	---	3 SAPPHIRES	
	+25	ABUNDANT N.K.	---	---	---	20 SAPPHIRES: 15 TOURMALINE:	
	+44	ABUNDANT N.K.	---	---	---	5 ZIRCONS: 10 RUTILE:	
	+60	---	---	---	---	30 SAPPHIRES: 20 TOURMALINE:	
	+16						
	+25						
	+44						
	+60						
	+16						
	+25						
	+44						
	+60						
	+16						
	+25						
	+44						
	+60						
	+16						
	+25						
	+44						
	+60						

SAMPLES RECEIVED IN LAB 20.3.84..... SAMPLES SEPARATED 20.3.84.....
 SAMPLES UNPACKED AND CHECKED 20.3.84..... SLIDES CHECKED 16.4.84.....

APPENDIX

III

LIST OF REPORTS

- BP-1 Exploration Licences 3496 and 3498 near Alice Springs,
Northern Territory. Interim Report on 1982
exploration.

(Orridge and Associates,
January, 1983)
- BP-2 Progress report on exploration work Bushy Park and
Nathan River districts.

(Marshall, March 1983)
- BP-3 Examination for kimberlitic indicator grains.

(Sechos, July 1983, Diamond
Laboratory Services)
- BP-4 Heavy mineral concentrate analysis.

(Sechos, August 1983, D.L.S.)
- BP-5 Exploration Licences 3496 and 3498 near Alice Springs,
Northern Territory. Final report on 1982 exploration.

(Orridge and Associates,
October 1983)
- BP-6 Microprobe analysis of mineral grains.

(Hollis, November 1983)
- BP-7 The present report.