OPEN FILE

EXPLORATION REPORT ON

REDUCTION OF

E.L.'S 3496 AND 3498,

NORTHERN TERRITORY

NORTHERN TERRITORY GEOLOGICAL SURVEY

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.

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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.

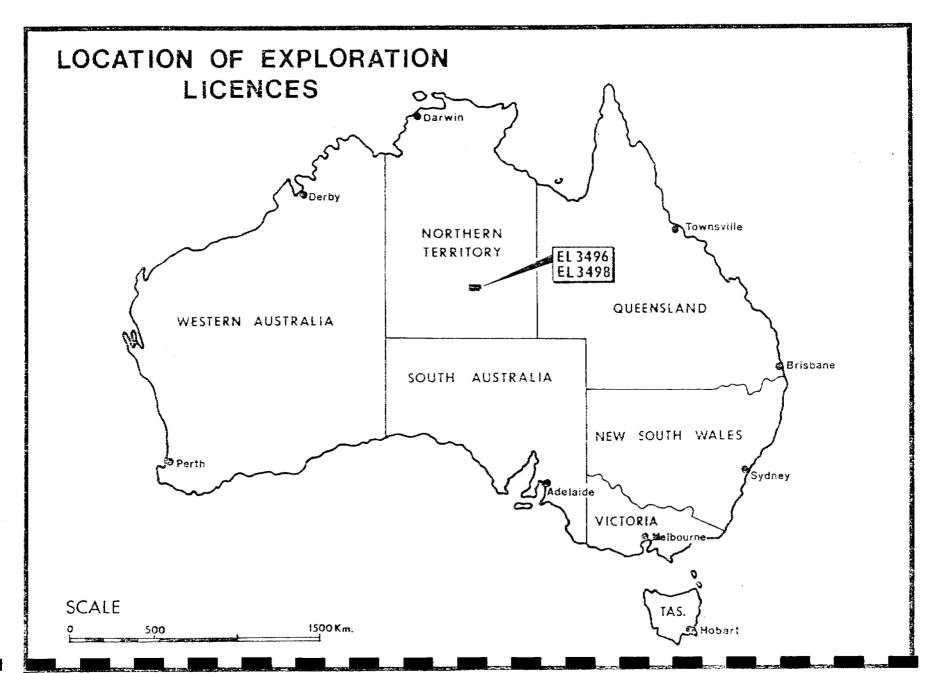


Figure 1.

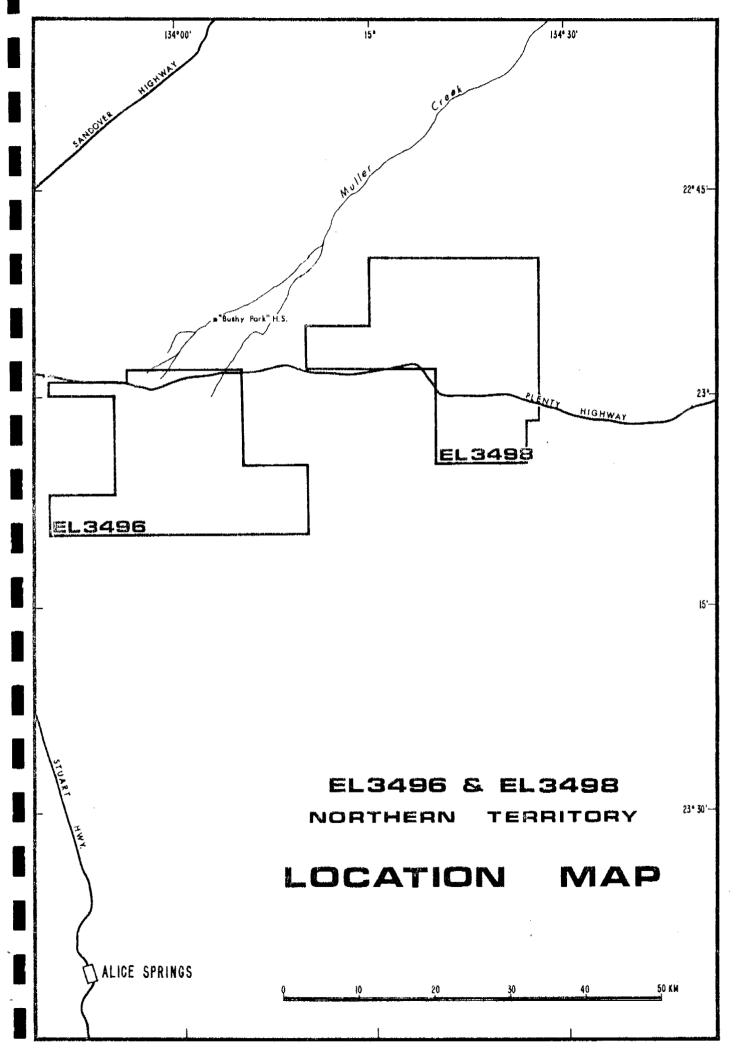


Figure 2.

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.

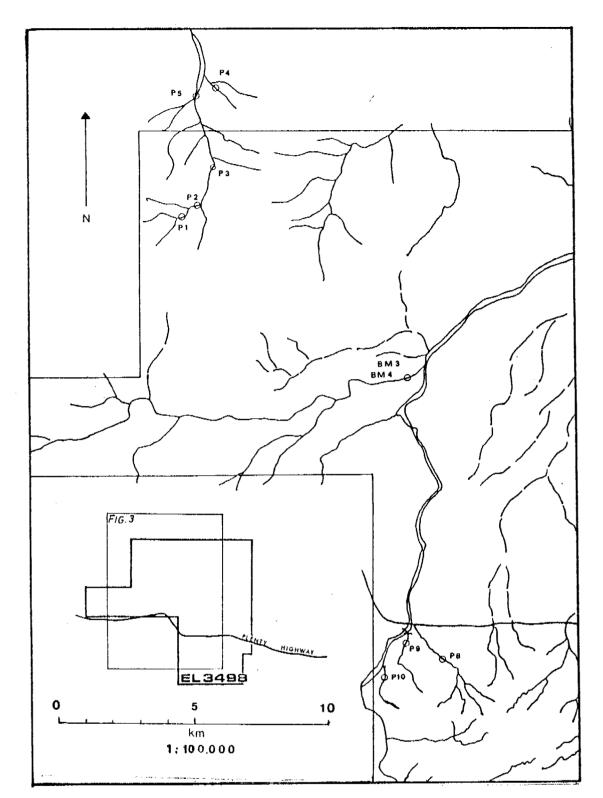


FIGURE 3

LOCATION OF SAMPLES

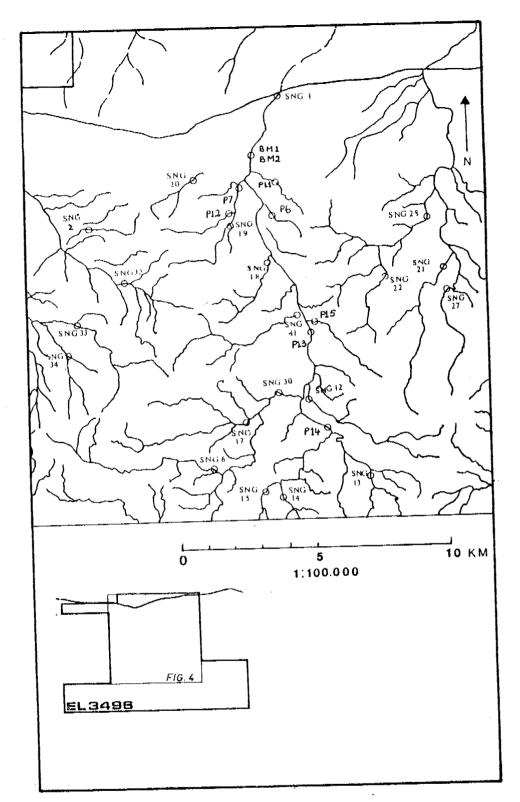


FIGURE 4

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 reduct half the area originally covered by E.L.'s 3496 and 3498. This became effective as of April 19, 1984.

APPENDIX

I

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SEC.
ACCOGNIL
W/PAPETE
TAX

CORRECTIONS

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5th April, 1984 CH:LJ:541

Mr. M. J. Coleman Title Registration Branch Minerals House Esplanade DARWIN, N.T. 5790

Dear Mr. Coleman,

EXPLORATION LICENCES 3496 & 3498 - SECOND ANNIVERSARY

We enclose our cheque for \$3,360 being payment for retained blocks of the above Exploration Licenses for the ensuing twelve months.

E.L. 3496 164 E.L. 3498 172

336 blocks @ \$10 per block • \$3,360

The reduction of the licence area in terms of Section 26 is detailed on the attached maps

Yours faithfully,

For and on behalf of NEGRI RIVER CORPORATION LIMITED

Secretary

APPENDIX

II

HEAVY MINERAL DIVISION

Australian Representative for:





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

DR. B. MARSHALL/INSEARCH LTD. CLIENT:

PlA, 1B, 2, 3A, 3B, 4, 5, 6, SAMPLE NUMBER (Client's Ref.):

7A, 7B, 8A, 8B, 9, 10A, 10B, 11, 12, 13A, 13B, 14A, 14B, 15

TWENTY TWO TOTAL NUMBER OF SAMPLES:

DATE SAMPLES RECEIVED: 20.3.84

16.4.84 DATE SAMPLES COMPLETED:

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

Key to symbols used in the report:

Etched D

Lightly abraded l.abr.

Abraded abr.

Remnant of original surface R.O.S.

Remnant of kelyphitic surface R.O.K.

Diamond Ø

N.K. Non-kimberlitic

Angular Δ

26.4.84 Laboratory Supervisor Date

METHOD OF EXAMINATION

Twenty two samples numbered PlA, 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 sufferred 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.

HEAVY MINERALS DIVISION

+60



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

			2.5	+17F		Telephone	(02) 290 1022
CONSIGNMENT	r44 .	<i>/563.</i> S	AMPLE No's.	P-1A: P-1 P-3A+A: P	B P-2	5.÷. f: f DA	TE .4.4.94
Sample No.	Mesh Size	Garnet	Ilmenite	Chrome Diopside	Spinel	Other Grains	Remarks
	+16	ABYMDANT NILL					
	+25	ABUNDANT AIR.				ABUNDANT PYROXENE AB. Z.RCONS: AB. SAPPI	1
	+44	ABUMDANT N.K.	5 N.K.	4	<u>-</u>	AB. PUROXETE. AB. ZIRCOMSI AB. SAPP	
P-1A	+60						
	+16	ABUNDANT N.K.					
	+25		1 N.K.			20 PHROXENE: 30 ZILCOMS: 30 SAIPH	
	+44	ABUNDANY N.K.		,		AB. PURDKENE: AB ZKLONS: AB JAPPH	
P- 1B	+60	ABHNDANT N.K.	# N. W.				225.
, 75	+16						
<u> </u>	+25	ABUNDANT N.K.				20 PHEOLONE	
	+44	ABUNDANT N.K.	J N.K.			AB IIRCONS! AB SAPE AB PURDYENA	
P3	+60	ABUMDAMY N.K.	S N. K.			AB. ZIKLOUS · AB. SAPI	1.65
P- 3	+16					·	
1	+25	ABUNDANT N.K.				AB. PYROXENE	
	+44	ABUNDANT N.K.	3 N.K.			AB. ZIRCONS: AB. SAPPHIRE AB. PUROXENE	
	+60	ABUNDANT NK.	5 N. K.			AB ZIRCONS: AB, SAPPHIL	<u>r</u>
P-3 AVB	+16						
	+25	ABUNDANT NIK.				20 PUROXENE	
		BUNDANT NE.	5 N.K.			30 ZIKKONS: AB. SAPPI 30 PYROKENE:	VRES.
	+44	ASUMBANT MIL.	7.N.K.			30 Zikcons: AB. SAPPI	raes.
P- 4+	+60						
	+16	ABUNDANT N.K.				JO Pyrovene: 2 Mica:	
	+25	ABUNDANT MK	4 N.Z.			20 Zircoms : As. SAPPHI	1
1	+44		ĺ	1		30 PURDKENE: I MICA:	

SAMPLES	RECEIVED	IN	LAB	% 0.2 . g.h	SAMPLES	SEPARATED	ું
SAMPLES	UNPACKED	AND	CHECKED	20:3:84	SLIDES	CHECKED	4.4.84

HEAVY MINERALS DIVISION



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

P-1A: P-1B: P-2:

CONSIGNMENT AA. (\$4.35... SAMPLE NO'S. P-3A. B. P-4: P-5: P-6... DATE .4:4.84.....

Sample No.	Mesh	Garnet	Ilmenite	Chrome Diopside	Spinel		Remarks
	+16	ABUNDANT MIC.					
	+25	ABUNDANT N.K.				10 TOURMANNE: 20 ZIRCONS: 30 SAPPHI	
	+44	ABUNDANT NE	2 N.E.			AB. TOURMALINE SMIC AB. ZIRCONS : AB. SAPAH	
P- 6	+60						
	+16						
	+25						
	+44						
	+60						
	+16						
	+25						
	+44						
	+60						
	+16						
	+25						
	+44						
	+60						
	+16						
	+25						
	+44						
	+60						
	+16						
	+25						
	+44						
	+60						

SAMPLES	RECEIVED	IN I	AB	30:3.84.	SAMPLES	SEPARATE	D 30.3.84
SAMPLES	UNPACKED	AND	CHECKED	Jo.3.84	SLIDES	CHECKED .	

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P-7A: 76: 8A: 86: 9: 10A: 10B:

CONSIGNMENT . AA. 15635. SAMPLE NO'S. P-11: 12:134:136:14A.V.B. DATE . 16: 4-84......

CONSIGNMENT	·		AMPLE No's.		4	1	re . 19 37
Sample No.	Mesh Size	Garnet	Ilmenite	Chrome Diopside	Spinel	Other Grains	Remarks
	+16	ABUNDANT NE				S SAPPHIRES	
	+25	ABUNDANT N.K.				AB. SAPPHIRES: 10 Tournaume: 25 Z	K46~5
	+44	ABUNDANT NIK.				AL SAPPHIRES. 30 III 30 TOURNALINE: S PYROX	Corusi
P- 7A.	+60						
	+16	ABUNGANT AK.		,		2 SAPPHICES.	
	+25	Abundant M.K.				Jo SAPPHIKES: 10 ZIRCO	√ \$.
	+44	KELMBANT M'K.				30 SAPPHILLS! 30 IKCOM : S PUROXO	ıc
P- 7B.	+60					e boud in diese in the contribution	
	+16	ABUMBANZ N.K.	e			S JAPPHILES.	
	+25	AGUNDANY N.E.				20 SAPPHIRES: 1 RUTH.	
	+44	ABUNDANT N.K.				30 SAPPHIRES: 10 RUTILE: 1 MICA: 10 TOURNALME: JOZIK	ays
P- 8A	+60						
	+16	ABUNDANT NIK.				2 SAPPHIKES	
	+25	ABUMBANT N.E.				10 JAPPHIRES: I RUTHE I MICA: 10 INCOME: 2 Pyroxent: 3 TOURNAUM	٤.
	+44	ABLINDAMY M.K.		<u></u>		30 SAPPHIRES : 30 KUTILE: 20 ZIRCONS : 10 PYROXENI 2 Mica : 4 TOURMALING.	4
P-8B.	+60						
	+16	AGUNDANT ME.				1 SAPPHIKE: I RUTILE:	
	+25	ABUNDANT NIC.	<u>.</u>			I PHROMENE : 3 TOURMAL I MICA: 10 ZIKCOMS.	/VE.:
·	+44	ABLUMBANT NIK.				30 JAPPHRES: 30 RUTILD 30 INCOMS: 10 PYROKEN 3 MICH: 4 TOURNIQUE	1:
P- 9	+60						
	+16	ABUNDANT MIC.				1 SAPPHICE.	
	+25	ABUNDANT N.K.				12 SAPPHILES : STIACE 3 TOUR MANUAL : 1840	¥~č.
	+44	ABUNDANT N.IL.	4444-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4			AN SAPPHIRES 10 ZIKE & TOURMANNED PUR	5
P-10 A.	+60						

SAMPLES	RECEIVED	IN I	LAB	20:3.84	SAMPLES	SEPARATED	20.5.84
SAMPLES	UNPACKED	AND	CHECKED	20:3.84	SLIDES	CHECKED	16:4-54.

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

CONSIGNMENT AA 15635 SAMPLE NO'S P-11 12 BA 138 14A 18 15 DATE 16.484

Sample No.	Mesh Size	Garnet	Ilmenite	Chrome Diopside	Spinel	Other Grains	Remarks
	+16	ABUNDANT HIL.				10 SAPPHIRES.	
	+25	ABCHDANT NIC.				15 SAPPHIRES: BRUTHLE 4 ZIRCONS. 10 PYRE	
	+44	ABUNDANY M.IL.			-	SO SAPPHIRES: GRUTHS 4-ZIRCONS: 15 TOURMOUNE: 20 PURC	;
P- 10 B.	+60	4-14		i			
	+16	Abundant NK.				4 SAPPHIRES: 3 TOURS	
	+25	ABHMARMY MIKE				20 SAPPHIRES: 15 TOUR 20 ZIRCONS: 5 PYROSEN	5.
	+44	ABUNDANT N.K.			***********	40 SAPPHIRES: 30 TOWER 2 KYMWITE: 25 ZIKCONS: 10 PYROKE,	PANE:
P- 11	+60		<u> </u>			uldern	
	+16	ABUNDANT NIK:				S SAPPHIRES. DO SAPPHIRES IS TOUR!	
	+25	ABUNDANT MIK.	<u></u>			30 ZIEGONS: 10 PUKOKEO 30 SAPPHIKES: 20 TOURT	4
	+44	ASUNDANT NIK.				30 ZIRCONS: IS PHROXEN	
P- 12	+60				***************************************		
	+16	ABUNDANT NIK.				2 SAPPHIKES. IS SAPPHIKES: IS TOURN 2 KHANITE!	PLME:
	+25	ABONDANY N.K.	**************************************			12 IRCOMS: 5 PUROXENE	
	+44	ABLUDANT N.K.				S KURNITE: 3 RUTILE: 20 ZICCOMS: 10 PURDXEN	
P- 13A	+60						
	+16	ABUMDANT MILL				5 SAPPHIRES: I TOURNA ID SAPPHIRE: IS TOURNA	
,	+44	ABLEMSONT MIK.				S LIECONS: S PYROXENE:	
_	+60	ABUNDANT M.K.				DOSAPPHIKES: DO TOURM D KLYANITE : Z KLYTLE! VO ZIRCOMS: 10 PUROXEM	
P-136.	+16						
	+25	ABUNDANT N.K.				1 SAPPHIRE 10 SAPPHIRES: IS TOUCH	ALME:
	+44	ABLINDANT N.K.				2 ZIRCOMS: 10 PURDED	
	+60	ABUNDANT HR.				6 IRCOMS: 15 PUROXE	£.
P-14A + B	+60						

SAMPLES	RECEIVED	IN I	AB	20:3:84	SAMPLES	SEPARATE	D 50. 3.84
SAMPLES	UNPACKED	AND	CHECKED	20.3.84	SLIDES	CHECKED .	16.4.84

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

7-7A: 76: 8A: 8B: 9:10A: 10B:

CONSIGNMENT . AA. 15645. SAMPLE NO'S. P.11:14:134.138.: 14A.B.: 15.... DATE . 6.4.84.....

Sample No.	Mesh Size	Garnet	Ilmenite	Chrome Diopside	Spinel	Other Grains	Remarks
	+16	ABUMBANT N.K.				З ЅАРРНИСЕS	
	+25	ABLEMANT N.K.				DESAPPHIRES: 15 TOURN	
	+44					30 SAPPHRES: DO TOURN 15 TIKLOWS: 25 PUTUR	reme i
P- 15.	+60	ABUNDANT N.K.			******	———	
	+16						
	+25		· • · · · ·				
	+44						<u></u>
	+60						
	+16						
	+25						
	+44			•			,444
	+60						
	+16						
	+25						
	+44						
	+60						
	+16						
	+25						
,	+44						
	+60						
	+16						
	+25						
	+44						
	+60						

SAMPLES	RECEIVED	IN I	LAB	29:3.84	SAMPLES	S SEPARATED	2•384
SAMPLES	UNPACKED	AND	CHECKED	79:3-84	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.