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CRA EXPLORATION PTY LTD

EL 47/83 LYNCHFORD, WEST TASMANIA

REPORT ON EXPLORATION FOR 12 MONTHS

TO FEBRUARY 1987

OPEN FILE

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Tasmania

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MICROFILMED

REPORT NO: 14328

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1. SUMMARY

The first phase of exploration has been completed within the Lynchford EL 47/83. (plan TASH 2865). All stream sediment sample anomalies from reconnaissance sampling have been followed up and all Dighem-EM anomalies have been examined. The area of Specimen Creek has been highlighted by gold analyses and a fuchsitic pyritic tuff discovered outcropping in the creek suggests a potential may exist for base metal massive sulphide.

2. INTRODUCTION

EL 47/83 covers an area of approximately 32 square kilometres to the south of Queenstown (plan TASH 1457). The EL was granted to CRA Exploration in March 1985. This report describes work for the period February 1986 to February 1987, the second year of exploration in the EL by CRA Exploration.

3. CONCLUSIONS

The first phase of exploration of the EL by CRA Exploration has been completed. All Dighem anomalies have been examined (see CRA Report No 13722) and all stream sediment anomalies have been outlined and followed up. No new gold mineralisation has been found, however the area of Specimen Creek has been highlighted. Additional prospecting and improved geological information is now required to evaluate the potential for major gold mineralisation to be discovered in the vicinity of Specimen Creek and adjacent to known old workings. Work in the coming months will also assess the potential for blind massive sulphide bodies. UTEM surveying will be carried out should a major potential be recognised.

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4. RECOMMENDATIONS

1. The EL should be renewed for a further year in order to continue exploration.
2. The aim of exploration in the next 12 months should be to establish and test the first phase of drill targets.
3. Geological compilation should be completed with assistance from Mines Department personnel. Progress with the HEC tunnel should be monitored. An intimate knowledge of the rocks within the EL will be required to establish the potential for "blind" massive sulphide ores.
4. In order to test the potential for major Au discovery adjacent to known old workings, in particular Specimen Creek adit, IP surveying should be considered.
5. If a potential for a massive sulphide deposit can be established within the EL, then a UTEM survey should be undertaken.

5. PREVIOUS EXPLORATION

The area has a very long history of prospecting and exploration; the King River Gold Mine was discovered before any of the shows in the Mt. Lyell field. Because of the proximity to that mining field, the area has seen an immense amount of prospecting, particularly for gold. It is highly likely that all obvious surface indications of possible mineralisation have already been found and prospected. The area is littered with small pits, costeans and adits which have investigated quartz veins and blows, gossanous weathering zones, faults and interesting lithologies.

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The most recent exploration has been carried by Pickands Mather, Cyprus Mines and Renison Gold Fields (Mt. Lyell). Little modern exploration has been conducted south of the King River because of access problems.

5.1 Pickands Mather International (1965-1967)

To follow-up drainage anomalies a large grid was established over the Lynch Creek area. Soil geochemistry located Pb and Cu anomalies but follow-up ground magnetics and "In-Line electromagnetic" surveys provided no encouragement for further investigation. High base metal backgrounds in the underlying basic volcanics explained the soil geochemistry. (Smith 1967).

5.2 Cyprus Mining Corporation (1971-1972)

Prompted by the recognition of favourable lithologies in the Lynch Creek-King River Gold Mine area, C.M.C. established a grid and carried out detailed mapping, soil geochemistry, ground magnetics and IP. All responses were explained by the known geology and no drill targets were generated (C.M.C. 1972, Morris 1972).

5.3 Renison Goldfields Consolidated Ltd. (1980-1982)

Prior to the relinquishment of the area now covered by EL47/83, a drainage survey north of the King River was completed and parts of the area were covered by DIGHEM. No follow-up of these surveys was attempted. Two lines of IP over the King River Gold Mines failed to locate any anomalies (Komyshan & Bishop 1982).

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5.4 CRA Exploration Pty Limited (1985-1986)
(CRA Report No 13722)

The first year of exploration by CRA Exploration included compilation and evaluation of previous exploration, a re-interpretation of a DIGHEM survey, the initiation and virtual completion of a regional drainage survey for gold using new techniques and reconnaissance ground EM surveys.

A number of geophysical and geochemical anomalies north of the King River were followed-up with negative results.

6. GEOLOGY

6.1 Cambrian (Mt. Read Volcanics)

North of the King River the Mt. Read Volcanics present belong to the Western Volcano sedimentary sequence of Corbett (1979). They comprise greywackes, shales, vitric tuffs, quartz-phyric tuffs, agglomerates and basic lavas. Major quartz feldspar porphyry bodies within the sequence may be intrusive.

Structurally the succession is anticlinal about a NNE-SSW axis. The most significant volcanic components in this Western Sequence are the basic lavas and tuffs within the core of the anticline and those on its western limb in the Lynch Creek area. In that area the basics are overlain by tuffs and agglomerates, the uppermost Cambrian units within the EL, which are in turn unconformably overlain by the Ordovician Pioneer Beds.

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The Western Sequence strikes south of the King River where it is flanked to the east by units of the Central Volcanics (Corbett 1979). These are dominantly feldspar porphyries, feldspar phytic tuffs and some shales and sandstones. The contact between Western Sequence and Central Volcanics may be represented by a schistose zone recently exposed in the new Mt. Jukes-Lynchford road.

6.2 Ordovician

A 10-20m sequence of sandstones conglomerate and calcareous siltstones, correlates of the uppermost Owen Conglomerate or Pioneer Beds, unconformably overlies the volcanics in the west of the EL. It is succeeded conformably by the Gordon Limestone then Silurian sandstones and shales. The absence of Owen Conglomerate in this western part appears to be a primary depositional feature reflecting control of sedimentation by major faults east of the EL.

In the south of the EL moderate thicknesses of Owen Conglomerate are present overlying the Mt. Read Volcanics. The nature of the change between minimal deposition of Ordovician clastics (Pioneer Beds) in the north to the deposition of a significant thickness of Owen Conglomerate to the south is not known but a major fault controlling primary deposition is suspected.

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7. GEOCHEMISTRY

(Plans TASH 2869, 3102)

Work completed by CRA Exploration during 1986 included the follow-up of anomalous gold values in catchments sampled during the 1985 programme. Detailed stream sediment sampling (-80# and -4# for cyanide leach analysis) was carried out in Specimen Creek and in the vicinity of Harris' Reward gold working (plan TASH 2867). Reconnaissance prospecting and rock sampling was undertaken in conjunction with this stream sampling. Results from bedrock and float samples for gold were disappointing, however a sericitised and fuchsitic pyritic tuff outcrop with 40 ppm As and 10 ppb Au was discovered in Specimen Creek.

Sampling in the vicinity of Harris' Reward workings produced disappointing results. All anomalous values could be related to old gold workings. Peak gold values from cyanide leach sampling of Specimen Creek were 3700 ppt and 3400 ppt both directly downstream of the Specimen adit. Upstream of the adit a peak value of 800 ppt was obtained. It would seem most likely therefore that the anomalous gold relates to the Specimen adit mineralisation. A second source of Au within the creek, however, is not as yet ruled out. A group of anomalous values in the 1200 ppt to 2200 ppt range can be isolated downstream of and adjacent to the altered pyritic tuff with fuchsite.

A value of 840 ppb Au was obtained from dumps at the Specimen Creek adit however detailed examination and sampling of the adit is still required.

8. LOCATION

Queenstown 1:250 000 Sheet SK55-5

008

9. KEYWORDS

Cambrian, acid volcanics, andesite, basic volcanics, shales
Ordovician, silurian sediments
Geochemistry, rocks, drainage

10. LIST OF PLANS

<u>Plan No</u>	<u>Title</u>	<u>Scale</u>
TASH 1457	Application for Exploration Licence, Lynchford	1:100 000
TASH 2865	Lynchford EL 47/83 Location Plan	1:1 000 000
TASH 2867	Lynchford EL 47/83 Geological Interpretation	1:10 000
TASH 2869	Lynchford EL 47/83 CRAE Geochemical sampling and Gold Drainage Geochemistry	1:10 000
TASH 3102	Lynchford EL 47/83 CRAE Rock & Stream Sediment Geochemistry	1:10 000

11. LIST OF APPENDICES

- Appendix 1 Stream Sediment Geochemical Data Sheets
- Appendix 2 Rock Sample Geochemical Data Sheets

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APPENDIX 1

STREAM SEDIMENT GEOCHEMICAL DATA SHEETS

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Sample Number	LOCATION		SAMPLE DESC.							SITE DESCRIPTION										ROCK TYPE										METAL CONTENT ppm / %										Geological Observations
	AMG Co-ordinates		Si Type	Mesh	% Gravel	% Sand	% Silt	Organic	Width	Flow	Bank	Catchment	Vegetation	Staining	Contam.	Sit. Rating	Outcrop	Maj. Float	Min. Float	LOOK	Cu ppm	Pb ppm	Zn ppm	Ag ppm	As. ppm	Fe %	Mn ppm	Au ppb.	Au mg/kg	Ba										
	East	North																																						
990667	379430	5335510	SS	-80	5	40	40	15	0.5m	M						G	-	Volc	-		25	40	45	1	13	1.95	100	<3												
668	"	"	CN	-4																	41	55	41	<1		1.88	185		650	460										
669	379465	5335560	SS	-80	25	40	35	-	0.5m	M						G	-				95	40	110	2	14	6.65	370	<3												
670	"	"	CN	-4																	135	80	130	<1		6.96	590		800	630										
671	379335	5335965	SS	-80	30	40	30	-	1.0m	F						VG	-				70	80	115	2	16	5.30	560	5												
672	"	"	CN	-4																	96	155	135	<1		5.62	1400		3400	480										
			SS	-80	60	30	10		2.0m	M						VG	Open	Volc. Open's grain			2	35	20	<1	3	0.50	90	20												
			CN	-4																									250											
			SS	-80	70	30	-		2.0m	F						G	Volc.	Volc.			2	25	50	<1	3	0.64	240	<3												
			CN	-4																	10		66	<1		1.28	810		100											
			CN	-4	50	30	20		4.0m	M						VG	Volc	Open			6	10	23	<1		1.55	160		50	110										
			SS	-80																	5	10	45	<1	2	1.02	60	<3												

GEOCHEMICAL STREAM SEDIMENT SAMPLING LEDGER

DETECTION LIMIT	2	5	2	1	1	0.01	5	3	50
ANALYTICAL METHOD	IC 570	XRF	←	←	←	IC 580	→	A3	XRF

Tenement Name: Lynchford	Project: Queenstown-Zeehan AMG Zone:	Sheet No.: TASH 3102, 2867
Area / Prospect: EL 47/83	DPO's: 32000, 32052	Laboratory: AMDEL / A.L.S
Map / Photo Ref:	Sample No's:	Collected By: Date:

950011

D11 SS

TASMANIA CRA EXPLORATION PTY. LTD.

Sample Number	LOCATION		SAMPLE DESC.					SITE DESCRIPTION										ROCK TYPE										METAL CONTENT ppm / %										Geological Observations
	AMG Co-ordinates		S. Type	Mesh	% Gravel	% Sand	% Silt	Organic	Width	Flow	Bank	Catchment	Vegetation	Staining	Contam.	Silt Rating	Outcrop	Maj. Float	Min. Float	LOOK	Cu	Pb	Zn	Ag	As.	Fe	Mn	Au ppb	Ba	Leach Au PPT								
	East	North																																				
990721	379 140	5 331 670	SS	-80	10	50	40	0.5m	S			Forest	-	-	VG	Seri. Porph.	Volc	-		10	30	30	1	4	1.28%	95	<3											
990722	"	"	CN	-4	10	50	40	0.5m	S			Forest	-	-	VG			-		12	12	25	<1	13	1.18%	130	<0.01 ppb	240	<50	hole heavies noted (barite?)								
990723	379 100	5 331 620	SS	-80	10	50	40	0.5m	S			forest	-	-	VG			-		10	40	50	<1	3	1.55%	270	<3			minor hole heavies								
990725	379 040	5 331 590	SS	-80	20	40	40	1.0m	S			Forest	-	-	VG			-		5	25	25	<1	<1	0.85%	70	<3			hole heavies noted.								
990726	"	"	CN	-4																14	22	26	<1	12	1.18%	160	<0.01 ppb	240	<50									

GEOCHEMICAL STREAM SEDIMENT SAMPLING LEDGER			DETECTION LIMIT		2	5	2	1	1	0.01	5	3	50	
			ANALYTICAL METHOD		← 10 580 →		→ PM 205 XRF A3							
Tenement Name: LYNCHFORD			Project: Oveston Zeehan AMG Zone:						Sheet No.: TASL 2869, 3102					
Area / Prospect: HARRIS'S			DPO's: 31984, 31985						Laboratory: Amdel / A.L.S.					
Map / Photo Ref.: TASL 2869, 3102			Sample No's:						Collected By: _____ Date: _____					

950012

012 SS

TASMANIA

CRA EXPLORATION PTY. LTD.

Sample Number	LOCATION		SAMPLE DESC.				SITE DESCRIPTION										METAL CONTENT ppm / %								Geological Observations										
	AMG Co-ordinates		S. Type	Mesh	% Gravel	% Sand	% Silt	Organic	Width	Flow	Bank	Catchment	Vegetation	Staining	Contam.	Sit. Rating	Outcrop	Maj. Float	Min. Float	LOOK	Cu	Pb	Zn	Ag		As	Fe %	Mn	Au ppb						
	East	North																																	
990718	378 580	5335 995	CL-4	70	20	10		15	M			F		N	P	1																			
719	378 580	5335 995	SS-80																		85	70	185	1	14	5.55	1400	25							
720			CL-4	70	30							RF		P	P																			on old track.	
990952	378 880	5335 860	CL-4	50	40	10		2	F			RF		N	G																			Below water fall	
53	"	"	SS-80																		90	80	220	1	15	5.70	1150	75							
54	379 000	5335 850	L-10	40	30	20	10	1	S			O		P	P																				
55	"	"	SS-80																		120	90	190	1	18	5.35	1150	25							
58	378 880	5335 860	SS-80	"	"	"	"	"	"			"		"	"						95	80	195	1	7	7.50	1000	420							
59	379 070	5335 830	SS-80	20	40	30	10	5	S			O		P	P						125	55	140	2	7	5.15	780	10							
70	379 215	5336 000	CL-4	60	30	10		1	S			O		P	P																				
71	"	"	SS-80																		95	80	115	1	9	8.80	600	15							

GEOCHEMICAL STREAM SEDIMENT SAMPLING LEDGER

DETECTION LIMIT

2 5 2 1 1 0.01 5 3

ANALYTICAL METHOD

← 1c 580 → pm 205

Tenement Name: Lynelford

Project: Queenstown-Zeehan AMG Zone:

Sheet No.: TASH 2869, 3102

Area / Prospect:

DPO's: 31990, 31991

Laboratory: Amdel / A.L.S.

Map / Photo Ref.: TASH 2869/3102

Sample No's:

Collected By:

Date:

950013

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950016

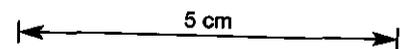
APPENDIX 2

ROCK SAMPLE GEOCHEMICAL DATA SHEETS

CRA EXPLORATION PTY. LTD.

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SAMPLE NUMBER	LOCATION		Sample Type	ANALYSES										Geological Observations
	Easting	Northing		Cu	Pb	Zn	Ag	As	Fe %	Mn	Ba	Au ppb		
1198935	379330	5331540	float grab	5	20	55	1	<1	2.31	85	940	210	grey sericitic crystal tuff with strong cleavage	
36	379320	5331510	float grab	5	15	30	1	<1	1.94	140	710	<3	green chloritic-sericitic crystal tuff, strong cleavage	
37	379290	5331480	%? grab	5	15	50	1	<1	1.47	40	980	<3	uggy vein Qtz with chlorite + feldspar	
38	379180	5331450	float grab	30	135	40	2	25	4.81	50	140	<3	weathered Fe-stained sericitic sandy tuff.	
39	378845	5331580	%? chip	5	20	90	1	19	1.73	55	60	10	horous sandy lithology - marble?	
40	378860	5331490	float grab	<5	40	140	1	<1	0.57	20	30	400	milky massive Qtz with fuchsite?	
41	379330	5331040	float grab	15	25	15	1	49	2.46	10	510	55	half green hyalitic + Qtz veined breccia? - Owen Cong??	
42	379250	5331010	float grab	10	145	170	1	30	1.10	50	170	<3	fuchsite marble?? derived from same source as 1198935.	
DETECTION LIMIT				5	5	5	1	1	0.01	5	10	3		
ANALYTICAL METHOD				← IC 580				→ XRF PM205						



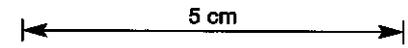
Project : Stream Propecting Lynchford	1: 250 000 Sheet : SK 55-5 AMG Zone :	Sheet No. : TASK 2869, 3102
Tenement : Lynchford (47/83)	DPO's : 31982	Laboratory : A.L.S
Area / Prospect : Lynchford		Collected By : CAS Date :

950018

CRA EXPLORATION PTY. LTD.

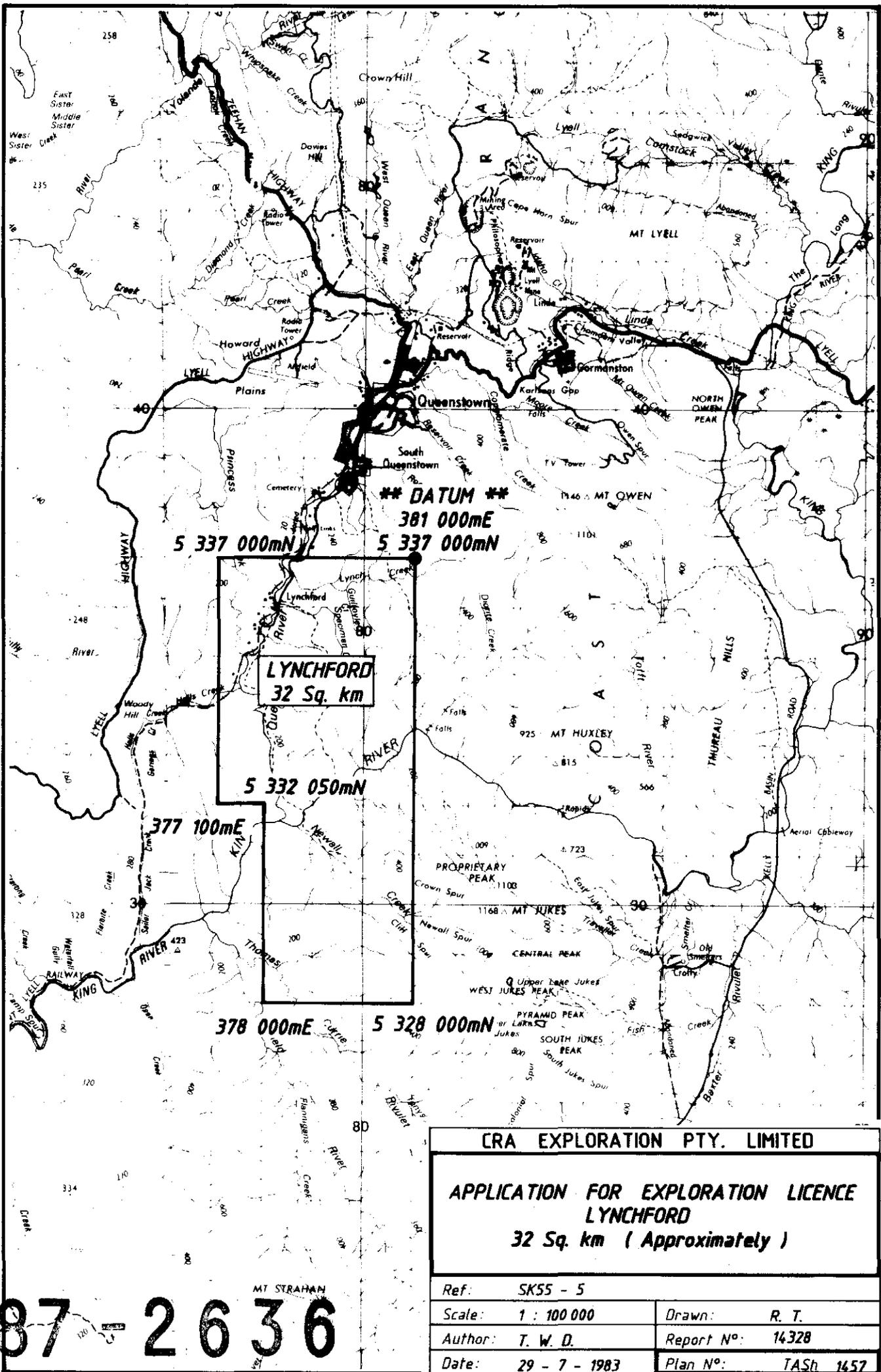
018

SAMPLE NUMBER	LOCATION		Sample Type	ANALYSES										Geological Observations	
	Easting	Northing		Cu	Pb	Zn	Ag	As.	Fe %	Mn	Pb	Ba	Au ppb.		
1198935	379330	5331560	5loot grab	5	20	55	1	<1	2.38	85	8	940	210	grey sericitic crystal tuff with strong cleavage	
36	379320	5331510	5loot grab	5	15	30	1	<1	1.94	140	8	710	<3	green chloritic-sericitic crystal tuff, strong cleavage	
37	379290	5331480	5loot grab	5	15	50	1	<1	1.47	40	4	980	<3	veiny vein gtz with chlorite + feldspar	
38	379180	5331450	5loot grab	30	135	40	2	25	4.81	50	124	140	<3	weathered Fe-stained sericitic sandy tuff.	
39	378865	5331580	5loot grab	5	20	90	1	19	1.73	55	8	60	10	horous sandy lithology - marble?	
40	378860	5331490	5loot grab	<5	40	140	1	<1	0.57	20	32	30	400	milky massive gtz with fuchsite?	
41	379330	5331040	5loot grab	15	25	15	1	49	2.46	10	20	510	55	hale green hyritic + gtz veined breccia? - Owen Cong??	
42	379250	5331010	5loot grab	10	145	170	1	36	1.10	50	140	170	<3	fuchsite marble?? derived from same source as 1198941.	
DETECTION LIMIT				5	5	5	1	1	0.01	5	4	10	3		
ANALYTICAL METHOD				←		IC	580	→		XRF	XRF	PM205			
Project: Stream Prospecting Lynchford				1: 250 000 Sheet: SK 55-5				AMG Zone:				Sheet No.: TASC 2869, 3102			
Tenement: Lynchford (47/83)				DPO's: 31982								Laboratory: A.L.S			
Area / Prospect: Lynchford												Collected By: was. Date:			



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950022

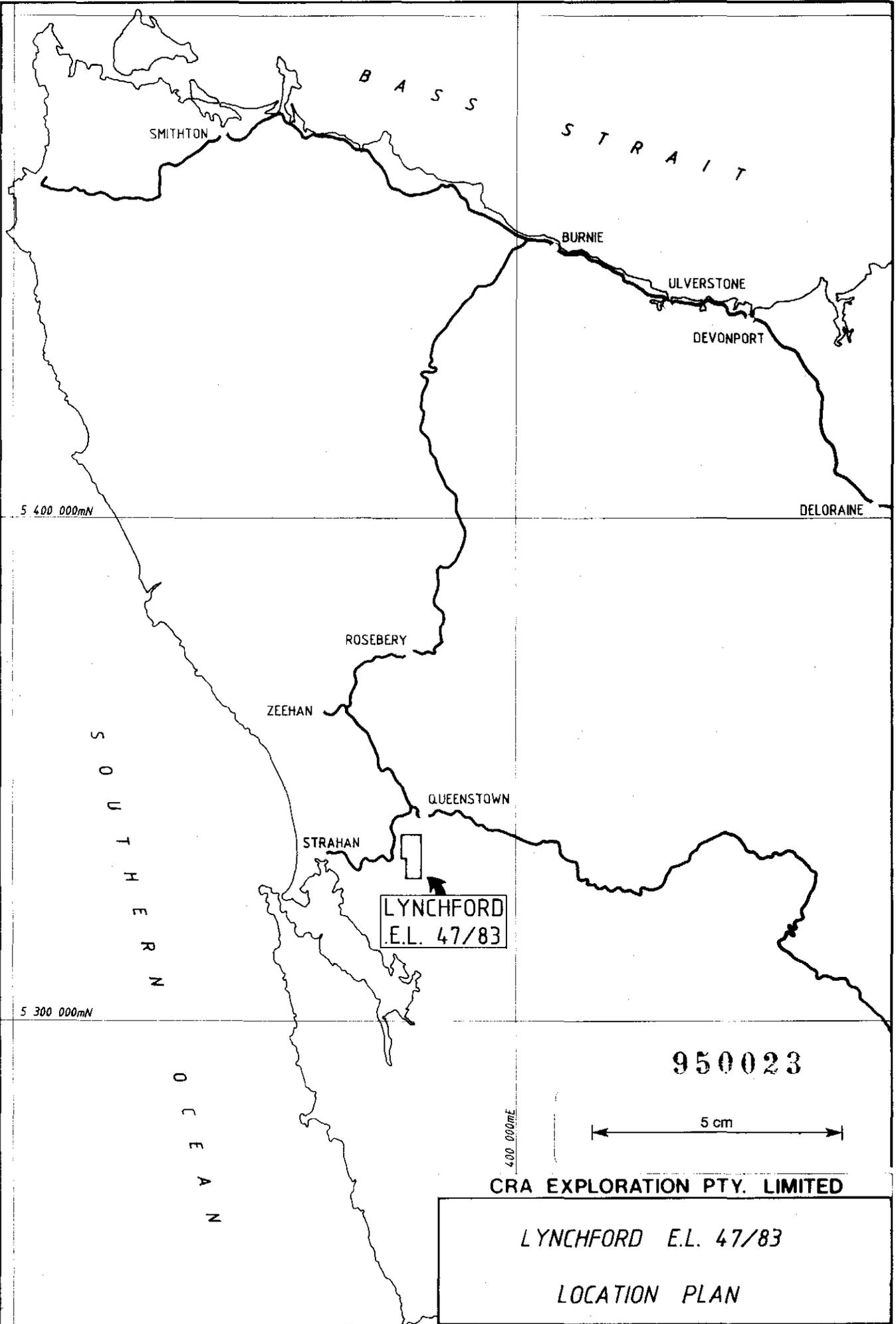
CRA EXPLORATION PTY. LIMITED

APPLICATION FOR EXPLORATION LICENCE
LYNCHFORD
32 Sq. km (Approximately)

Ref:	SK55 - 5	Drawn:	R. T.
Scale:	1 : 100 000	Report N°:	14328
Author:	T. W. D.	Plan N°:	TASh 1457
Date:	29 - 7 - 1983		

87-2636

022



5 400 000mN

DELORAINÉ

ROSEBERY

ZEEHAN

QUEENSTOWN

STRAHAN

LYNCHFORD
E.L. 47/83

S O U T H E R N

O C E A N

5 300 000mN

950023

5 cm

CRA EXPLORATION PTY. LIMITED

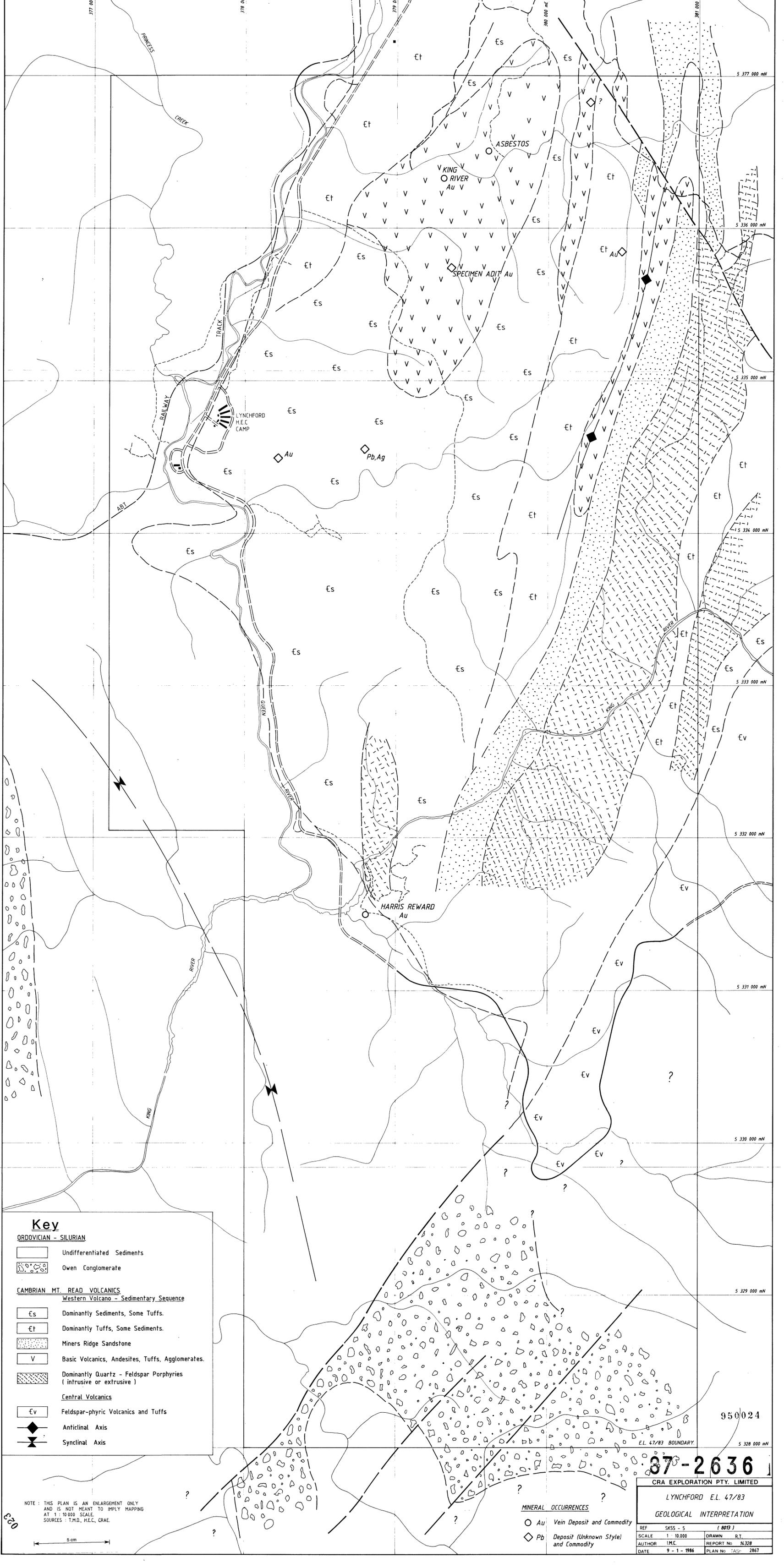
LYNCHFORD E.L. 47/83

LOCATION PLAN

87 - 2636

REF.	SK55 - 5	(8013)
SCALE	1 : 1000 000	DRAWN R.T.
AUTHOR	I.M.C.	REPORT No. 14328
DATE	13 - 1 - 1986	PLAN No. TASH 2065

300 000



Key

- ORDOVICIAN - SILURIAN**
- Undifferentiated Sediments
 - Owen Conglomerate
- CAMBRIAN MT. READ VOLCANICS**
Western Volcano - Sedimentary Sequence
- Es Dominantly Sediments, Some Tuffs.
 - Et Dominantly Tuffs, Some Sediments.
 - Miners Ridge Sandstone
 - V Basic Volcanics, Andesites, Tuffs, Agglomerates.
 - Dominantly Quartz - Feldspar Porphyries (intrusive or extrusive)
- Central Volcanics**
- Ev Feldspar-phyrlic Volcanics and Tuffs
 - Anticlinal Axis
 - Synclinal Axis

NOTE: THIS PLAN IS AN ENLARGEMENT ONLY AND IS NOT MEANT TO IMPLY MAPPING AT 1:10 000 SCALE.
SOURCES: T.M.D., H.E.C., CRAE.

5 cm

- MINERAL OCCURRENCES**
- Au Vein Deposit and Commodity
 - Pb Deposit (Unknown Style) and Commodity

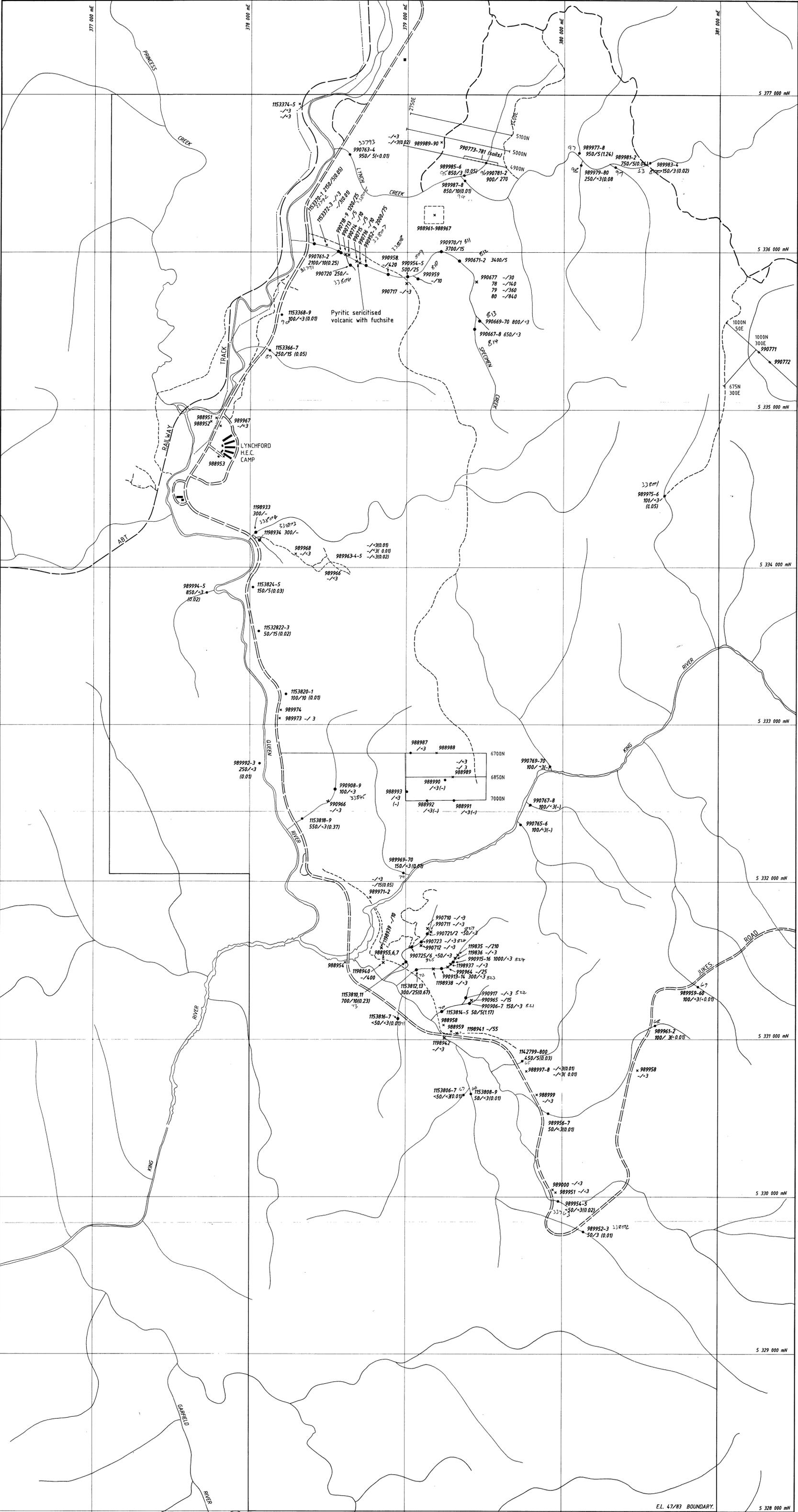
87-2636

CRA EXPLORATION PTY. LIMITED			
LYNCHFORD E.L. 47/83			
GEOLOGICAL INTERPRETATION			
REF	SK55 - 5	(8073)	
SCALE	1:10,000	DRAWN	R.T.
AUTHOR	IMC	REPORT NO.	14,328
DATE	9-1-1986	PLAN NO.	TASB 2867

023

950024

E.L. 47/83 BOUNDARY



KEY
 • 989977-8 STREAM SEDIMENT SAMPLE
 Au ppt / Au ppb (Au ppm)
 CN leach / -80 mesh AAS (-80 mesh Fine assay)
 * 989951 ROCK SAMPLE
 • 990773 SOIL SAMPLE

GIS
 33763-33814
 See BL-2529

950025

8 cm

E.L. 47/83 BOUNDARY. 5 329 000 MN

87-2636

CRA EXPLORATION PTY. LIMITED
 LYNCHFORD E.L. 47/83
 CRAE GEOCHEMICAL SAMPLING
 AND GOLD DRAINAGE
 GEOCHEMISTRY

REF. SK55 - 5	(8012)
SCALE 1 : 10,000	DRAWN R.T.
AUTHOR I.M.C.	REPORT No. 14328
DATE 20-1-1986	PLAN No. TASH 2869

024

