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1. SUMMARY

CRAE's principal commodity of interest in the Trowutta area is Cu. Regional studies of Cu potential in Proterozoic sequences Australia-wide by CRAE drew attention to NW Tasmania as being prospective for stratiform/stratabound Cu mineralisation in a variety of lithological and structural settings within the Rocky Cape Group and the Smithton Trough. Review of all CRAE and competitor stream sediment geochemistry highlighted the Kanunnah Sub-group as having strongly elevated Cu values.

During the first year of tenure, a limited stream sediment sampling program confirmed that elevated Cu results within Kanunnah Sub-group lithologies are lithochemical, and not related to mineralisation. A sample of chloritic sheared rock from a quarry on the Roger River Fault contained 4.35% Cu.

A combined airborne magnetic and radiometric survey was completed during year 1 over the SW of the EL as part of the larger Mount Frankland survey.

The Year 2 program addressed three targets:-

- sandstone-hosted Cu in Forest Conglomerate
- carbonate-hosted Zn-Pb-Cu in Black River Dolomite
- structurally controlled replacement style Cu deposits in chemically favourable sediments adjacent to the Roger River Fault

Sulphidic quartzite from the Forest Conglomerate was identified at Lamprey Creek. Iron-stained and pitted rocks were located near Nabageena where the Mines Department had reported chalcopyrite. No samples returned elevated Cu or indicator element geochemistry.

An air-photo study aimed to identify any structures within the Black River Dolomite that may be suggestive of collapse features. Some linear structures are apparent, particularly the Rapid River Lineament, and numerous sinkholes are developed in the Lake Chisholm area.

Sampling of targets identified by the air-photo study was rendered ineffective by the poor outcrop of carbonate lithologies. Chert beds within the Black River Dolomite are preferentially preserved in outcrop and scree, with carbonate beds generally minor to absent at the surface.

No anomalous base-metal geochemistry was detected.

Weakly elevated geochemistry up to 0.24% Zn was detected in small gossanous pods within chert from the Black River Dolomite. These values are not of economic significance.

The Roger River Fault was investigated for structurally controlled replacement style Cu deposits. The Roger River quarry (source of the 4.35% Cu sample in 1992/93) was mapped as a tectonic melange adjacent to the fault. Copper is thought to have been liberated by shearing of the mafic lithologies and fixed by the juxtaposed carbonate. Widely spaced rockchip and soil sampling traverses failed to identify any areas of elevated base-metal geochemistry indicative of mineralisation.

Exploration by CRAE on EL 19/92 failed to identify any targets requiring continued attention.

Some potential still exists for carbonate-hosted mineralisation within the EL, however to date there have been no encouraging results to justify continuing the program. It is recommended the EL be relinquished in its entirety.

2. INTRODUCTION

Trowutta EL 19/92 was granted to CRA Exploration Pty. Limited (CRAE) on 19th September 1992. The EL covers 240sqkm located at Trowutta, S of Smithton in the far NW of Tasmania (Plan Tv 447). During the first two years of tenure, CRAE has a statutory obligation to expend \$96000.

CRAE's principal commodity of interest in the area is Cu. Regional studies of Cu potential in Proterozoic sequences Australia-wide by CRAE drew attention to NW Tasmania as being prospective for stratiform/stratabound Cu mineralisation in a variety of lithological and structural settings within the Rocky Cape Group and the Smithton Trough. Review of all CRAE and competitor stream sediment geochemistry highlighted the Kanunnah Sub-group as having strongly elevated Cu values. CRAE subsequently applied for and was granted the tenement.

The Year 2 program addressed three targets:-

- sandstone-hosted Cu in Forest Conglomerate
- carbonate-hosted Zn-Pb-Cu in Black River Dolomite
- Structurally controlled replacement style Cu deposits in chemically favourable sediments adjacent to the Roger River Fault

Work completed during the second year of tenure included air-photo interpretation to identify structures in the Black River Dolomite, geological mapping and rockchip sampling of Forest Conglomerate and Black River Dolomite, and traverses with soil and rock sampling of the Roger River Fault. This report details all exploration activities conducted within EL 19/92 by CRAE during 1993/94.

3. CONCLUSIONS

Exploration by CRAE during the year failed to identify any targets requiring continued attention. Conceptual targets of mineralisation within the carbonate sequences are still applicable however. To pursue base-metals in the Black River Dolomite on the E margin of the trough would require regional soil geochemical sampling, as carbonate exposure is too poor for mapping and rockchip geochemistry to be effective.

Targets along the Roger River Fault will be concealed and can only be effectively explored by drilling and electrical geophysical surveys. A program such as this would be high cost and to date there is no encouragement to pursue a target in this position.

4. RECOMMENDATIONS

Some potential still exists for carbonate-hosted mineralisation within the EL, however to date there have been no encouraging results to justify continuing the program. It is recommended the EL be relinquished in its entirety.

5. REGIONAL GEOLOGY

Refer to Parkinson (1993).

6. MINERALISATION

Refer to Parkinson (1993).

7. PREVIOUS EXPLORATION PRIOR TO 19/9/92

Refer to Parkinson (1993).

8. PREVIOUS EXPLORATION BY CRAE ON EL 19/92

Year 1: Key open-file and CRAE reports were reviewed as part of the research into the Cu potential of NW Tasmania.

All available CRAE and competitor stream sediment geochemistry was reassessed. Within the Trowutta EL, areas draining the Kanunnah Sub-group are clearly elevated in Cu above local and regional background. The extent of the anomaly indicates the cause to be lithochemical rather than mineralisation-related.

A limited stream sediment sampling program was carried out to confirm whether the highest Cu results from previous surveys were indeed lithochemical. As suspected, previously identified Cu anomalies coincided with Kanunnah Sub-group lithologies. As the stream sediment Cu values do not increase with decreasing catchment size, the cause of the anomaly can be concluded as widespread high background Cu values in this lithology.

A small number of float and outcrop samples were collected during year 1 from various localities. A sample of chloritic sheared rock from a quarry on the Roger River Fault contained 4.35% Cu.

During March 1993, a combined airborne magnetic and radiometric survey was completed over the SW of the EL as part of the larger Mount Frankland survey.

9. EXPLORATION ACTIVITIES FOR THE PERIOD 19/8/93 TO 18/8/94

9.1 Exploration philosophy

CRAE's principal commodity of interest in the Trowutta area is Cu. The Year 2 program addressed three targets:-

- sandstone-hosted Cu in Forest Conglomerate
- carbonate-hosted Zn-Pb-Cu in Black River Dolomite
- structurally controlled replacement style Cu deposits in chemically favourable sediments adjacent to the Roger River Fault

9.2 Sandstone-hosted Cu in Forest Conglomerate

Consultant geologist Mr Nicol Turner was engaged to investigate the Forest Conglomerate for indications of sediment hosted Cu mineralisation analogous to the Cu deposits of Zambia, Ziare, Belt Supergroup, White Pine etc. The requirement was to traverse the sequence looking for sulphides or indications of the prior existence of sulphides before removal by weathering.

Sulphidic quartzite was identified at Lamprey Creek, but nowhere was there any elevated Cu or indicator element geochemistry. Mr Turner's report is included as Appendix 1 and sample locations are compiled on plan Tv 846.

In addition, outcrops of Forest Conglomerate between the Bass Hwy at Forest and the EL were sampled. Iron-stained and pitted rocks were sampled near Nabageena where the Mines Department had reported chalcopyrite (Brown 1989). No anomalous geochemistry was detected. Geochemical results and analytical techniques are given in Appendix 2.

9.3 Carbonate-hosted Zn-Pb-Cu in Black River Dolomite

An air-photo study was completed by Mr Turner with the aim of identifying any structures within the Black River Dolomite that may be suggestive of collapse features (Appendix 1). Collapse breccias of varying configurations are common hosts to MVT mineralisation throughout the world.

These collapse structures may manifest themselves as linear features, circular depressions, or possibly as areas of enhanced sinkhole development. Often a limestone to dolomite boundary will be present at or near the breccia margin.

Some linear structures are apparent, particularly the Rapid River Lineament, and numerous sinkholes are developed in the Lake Chisholm area.

Sampling of targets identified by the air-photo study was unsuccessful. Chert beds within the Black River Dolomite are preferentially preserved in outcrop and scree, with carbonate beds generally minor to absent at the surface. Also, by their very nature, collapse structures will not be positive features amenable to rock sampling. Poor outcrop also made the limestone - dolomite boundaries (if present) indeterminate. Sample locations are compiled on plan Tv 846.

No anomalous base-metal geochemistry was detected (Appendix 2). Regional widely spaced C-horizon soil geochemistry probably would be more appropriate for identifying large subcropping areas of alteration or mineralisation.

Some outcrops of chert and shale from the Black River Dolomite between the Bass Hwy at Forest and the EL were sampled. Weakly elevated geochemistry up to 0.24% Zn can be attributed to very small gossanous bands after pyrite (Appendix 2). These values are not of economic significance.

9.4 Structurally controlled Cu deposits adjacent to the Roger River Fault

Two areas of carbonate on the E side of the Roger River Fault were investigated by Mr Turner for structurally controlled replacement style Cu deposits (Appendix 1). No sign of mineralisation was detected by inspection or geochemistry at the Rogerton area. The Roger River quarry (source of the 4.35% Cu sample in 1992/93) was mapped as a tectonic melange adjacent to the fault. Copper is thought to have been liberated by shearing of the mafic lithologies and fixed by the juxtaposed carbonate.

To further test for mineralisation developed within or adjacent to the fault, a series of widely spaced rockchip and hand-augered C-horizon soil sampling traverses were completed. Up to 320ppm Cu in rockchips and 529ppm Cu in soils were returned from mafic lithicwacke, however this is not significant for this unit (Appendices 2 and 3). No other values were of significance. Sample locations are compiled on plan Tv 846.

9.5 Other areas

Rock samples of a fault zone in the Cowrie siltstone near Mawbanna returned up to 0.21% Cu and 0.9ppm Au. The exposure is of limited extent and does not require additional work.

10. ENVIRONMENT AND REHABILITATION

During the year no exploration having an environmental impact was undertaken, consequently no rehabilitation is required.

REFERENCES

- | | | |
|--------------------|-------|---|
| BROWN A.V. (comp.) | 1989: | Geological atlas 1:50000 series. Sheet 21(7916S).
Smithton. <i>Explan. Rep. Geol Surv. Tasm.</i> |
| PARKINSON R.G. | 1993: | Trowutta EL 19/92. Report on exploration for the
first year of tenure, 19/8/93 TO 18/8/94, <i>CRA
Exploration Pty. Limited Report 19015.</i> |

KEYWORDS

TASMANIA, PROTEROZOIC, CAMBRIAN, AIR-PHOTO INTERPRETATION, ROCKCHIP SAMPLING, SOIL SAMPLING, COPPER

LOCATION

BURNIE	SK55-3	1:250000
ARTHUR RIVER	7915	1:100000
SANDY CAPE	7815	1:100000
TROWUTTA	7915N	1:50000
BLUFF POINT	7815N	1:50000
ROGER	3245	1:25000
SUMAC	3244	1:25000
DEMPSTER	3443	1:25000
TAYATEA	3445	1:25000

LIST OF DPOs

77111, 77116, 77117, 77118, 77667, 77674

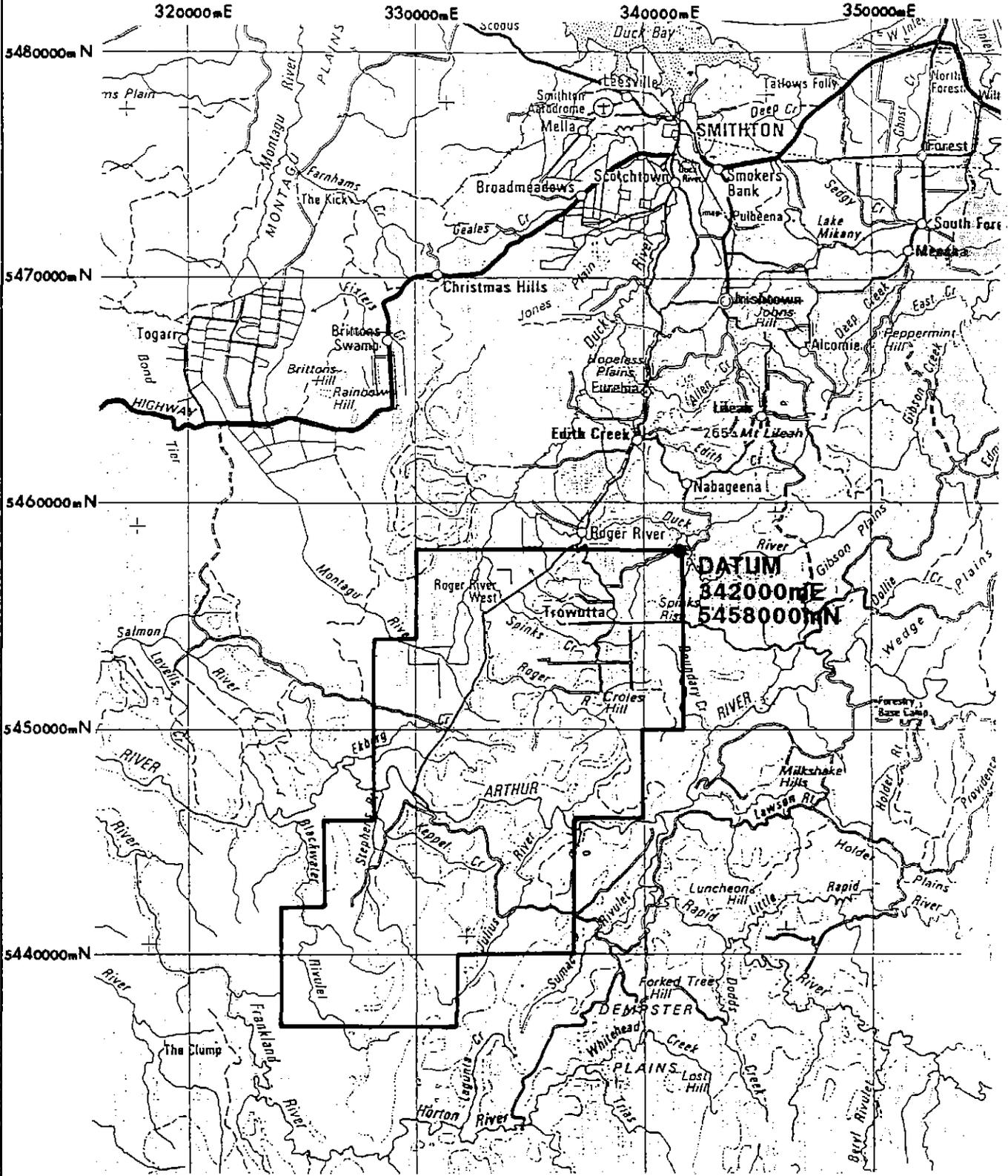
LIST OF PLANS

<u>Plan no.</u>	<u>Title:</u>	<u>Scale:</u>
Tv 447	Application for EL 19/92 "Trowutta"	1:250,000
Tv 846	Trowutta EL 19/92 Sample	1:25,000

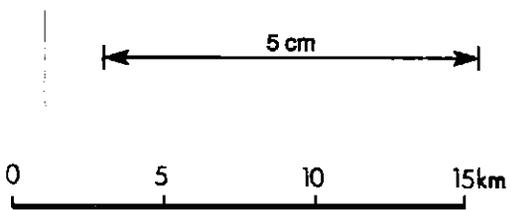
LIST OF APPENDICES

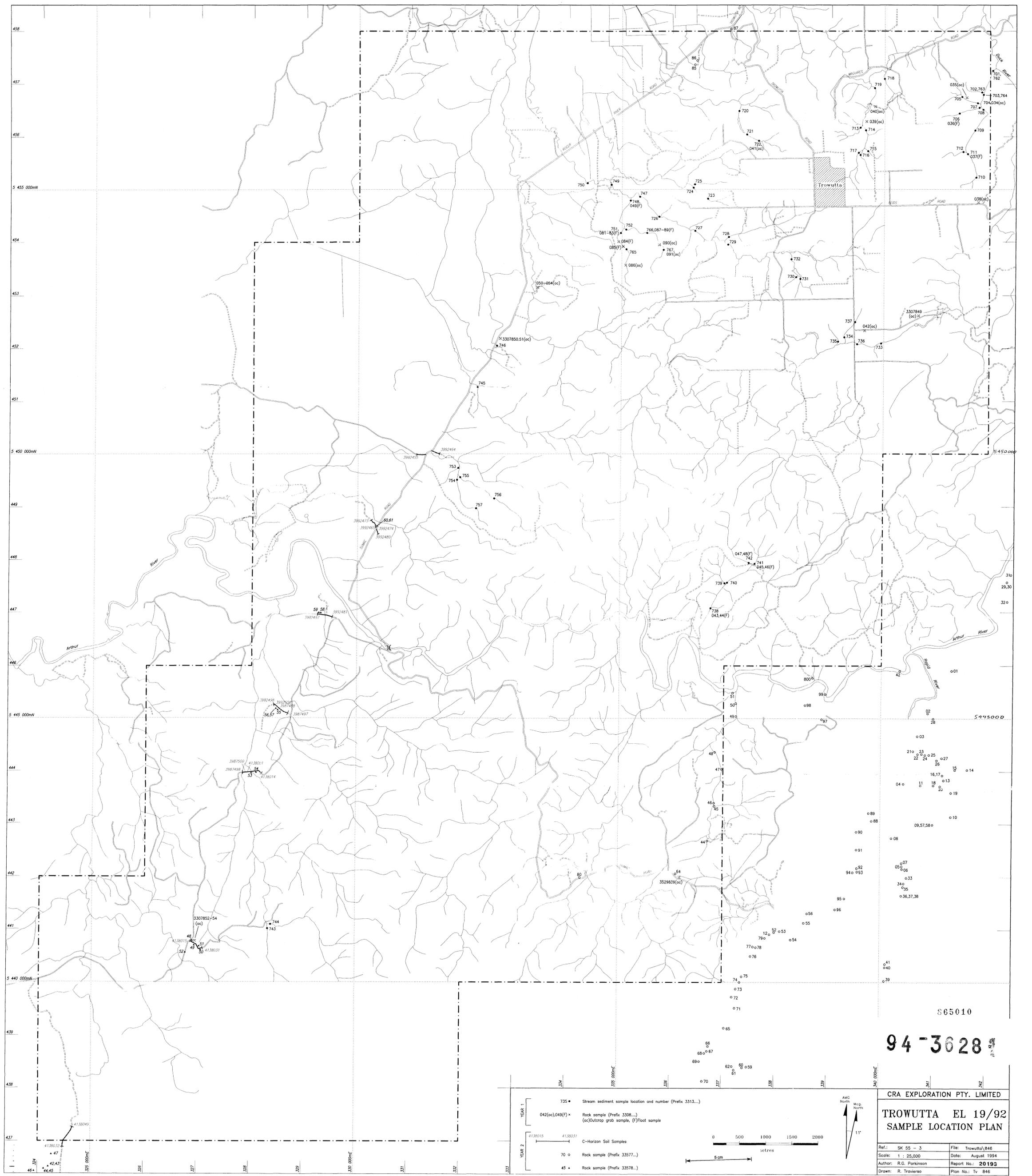
APPENDIX 1:	N.J Turner consultants reports
APPENDIX 2:	Rockchip lithological codes, sampling ledgers and geochemistry
APPENDIX 3:	Soil sampling ledgers and geochemistry

865009



CRA EXPLORATION PTY. LIMITED	
APPLICATION FOR EXPLORATION LICENCE 'TROWUTTA'	
246km ²	
Ref.: SK55-3	Scale: 1: 250 000
Author: T.W. Dickson	Report No.: 20193
Drawn: A. Jelen Apr. 92	Plan No.: Tv 447





865010

94-3628

<p>YEAR 1</p> <ul style="list-style-type: none"> 735 • Stream sediment sample location and number (Prefix 3313...) 042(oc),049(F) × Rock sample (Prefix 3308...) (oc)Outcrop grab sample, (F)Float sample 		<p>0 500 1000 1500 2000</p> <p>metres</p> <p>5 cm</p>	<p>AMG North</p> <p>Maj North</p> <p>11°</p>
<p>YEAR 2</p> <ul style="list-style-type: none"> 41,380,15 41,380,31 C-Horizon Soil Samples 70 ○ Rock sample (Prefix 3357...) 45 • Rock sample (Prefix 33578...) 			
<p>CRA EXPLORATION PTY. LIMITED</p> <p>TROWUTTA EL 19/92</p> <p>SAMPLE LOCATION PLAN</p>		<p>Ref.: SK 55 - 3 File: Trowutta_B46</p> <p>Scale: 1 : 25,000 Date: August 1994</p> <p>Author: R.G. Parkinson Report No.: 20193</p> <p>Drawn: R. Travieso Plan No.: Tv 846</p>	

865011

APPENDIX 1:
N.J Turner consultants reports

CRA EXPLORATION PTY LTD

1/23 BELL STREET, PRESTON, 3072

**REPORT ON GEOLOGY AND ROCK CHEMISTRY
IN PARTS OF EL 19/92, TROWUTTA DISTRICT,
NORTH WESTERN TASMANIA.**

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12th January, 1994

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- Fig 6 : Geology and samples in Wents Creek.
- Fig 7 : Geology and samples along the Roger River Fault.
- Table 1 : Anomalous rock chemistry in the Black River Dolomite.

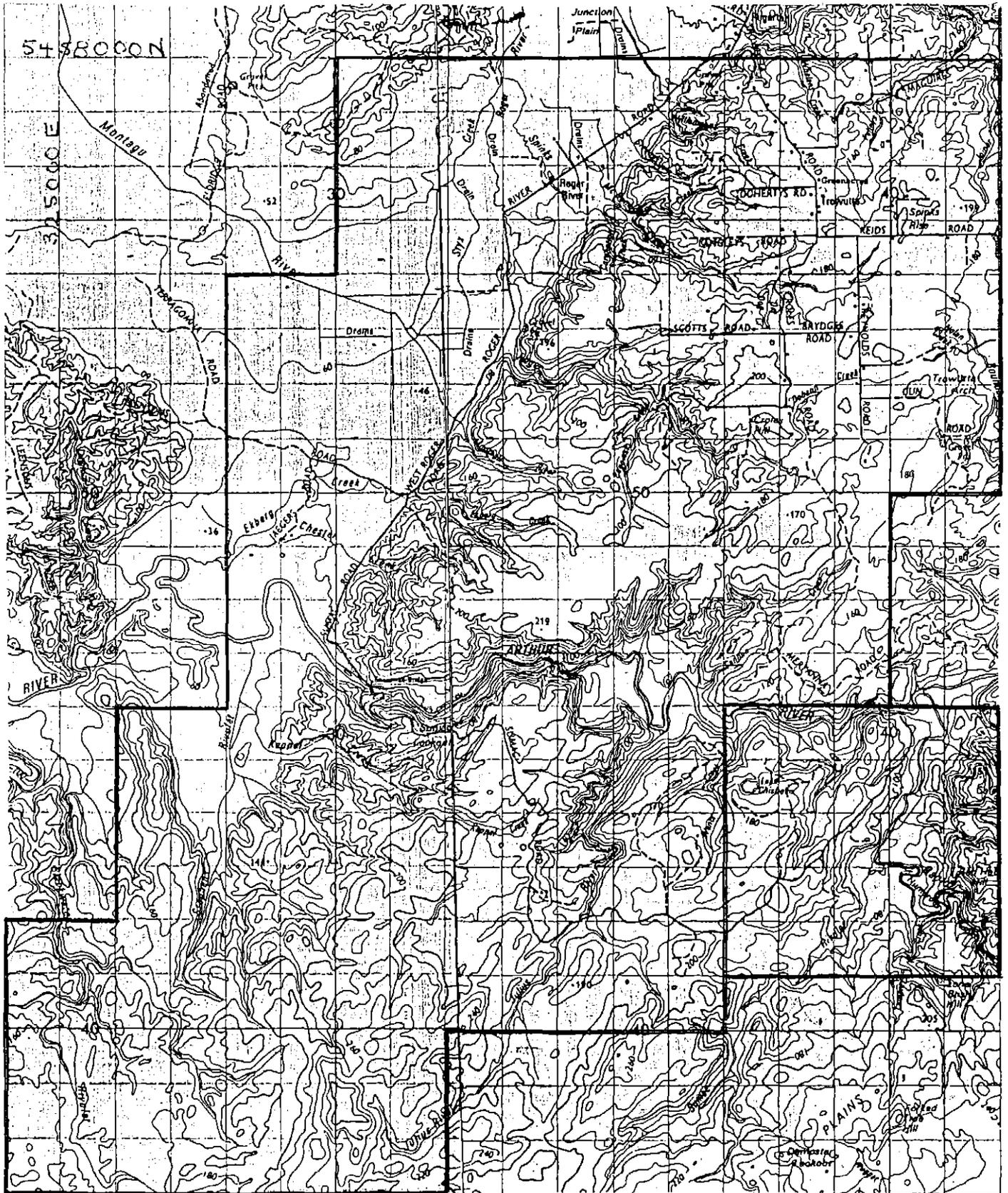
Summary and Recommendations

- Parts of the latest Proterozoic succession in EL 19/92 were investigated for stratiform/stratabound mineralisation, for mineralised solution collapse structures and for fault related mineralisation.

- Various lithologies with low order anomalous copper (60-65 ppm), zinc (45-317 ppm) and arsenic (3.5 -24.5 ppm) were identified in the Black River Dolomite in the general area west of Deception Pool. The lithologies are probably in the upper part of the dolomitic formation though there may be unrecognised stratigraphic complications due to faulting. Further work aimed at investigating the geochemistry of the upper Black River Dolomite in EL 19/92 is recommended.

- Very low values of gold were found in pyritic Cowrie Siltstone, pyritic Forest Conglomerate and Quartzite, dolomite near the base of the Black River Dolomite and pyritic mixtite overlying the dolomitic formation.

- Using the Black River Dolomite as a reference, rocks along the Roger River Fault contain elevated arsenic (4-12 ppm) and zinc (25-112 ppm). An anomalous copper value (412 ppm) was obtained where the fault rocks have been quarried beside the Roger River. These values suggest that a regional evaluation of the Roger River Fault as a locus of mineralisation should be undertaken and this is recommended for the future programme in EL 19/92.



SCALE 1:100000

Fig 1: Boundaries of EL 19/92 and the Lake Chisholm Exempt Area.

5 cm

Introduction

This report summarises the results of 20 days of geological mapping and rock chip sampling in and around mineral Exploration Licence 19/92 (Fig 1) near Trowutta in NW. Tasmania. The work was aimed at testing mineralisation models in rocks of latest Proterozoic age, in particular the Forest Conglomerate and Quartzite, the Black River Dolomite and rocks along the Roger River Fault.

Traverses were carried out in areas (Fig 3) selected on the basis of recent mapping in the Trowutta 1:50000 map quadrangle by Mineral Resources Tasmania (Brown, Everard and Seymour, in pep.) Most traverses were in the SE part of the Smithton synclinorium around Lake Chisholm and near the lower Rapid River. Two localities on the Roger River Fault, some 10km NW. of Lake Chisholm, were also examined.

Regional Relationships

EL 19/92 contains two groups of Proterozoic rocks which are overlain by scattered, thin deposits of Tertiary and younger age. The older group of Proterozoic rocks is the Rocky Cape Group which is represented by the Cowrie Siltstone. The younger group unconformably overlies the Cowrie Siltstone and forms the lower part of the succession in the Smithton synclinorium. Included in the group are the Forest Conglomerate and Quartzite which is transgressively overlain by the Black River Dolomite then the basaltic Smithton volcanics followed by the Smithton Dolomite.

The Smithton synclinorium is a large northerly trending fold structure which occupies much of N.W. Tasmania. In the areas of interest to this report the folds trend SSW.-NNE and have variable plunge. They are of open style with gently dipping limbs.

Linear Features

Linear features that can be recognised on aerial photographs and on topographic maps (Fig 2) include distinct NNE and ESE groups together with a scatter of other orientations. The NNE group of features is dominated by the Roger River Fault and there is another major fault of similar orientation at Dempster Plains. Mapping near Balfour has shown that the Roger River Fault has right lateral displacement of about 2.5kms. Vertical displacement on the fault at Roger River is east-side-up but of unknown magnitude. Vertical displacement on the Dempster Plains fault is also east-side-up.

Linear features of NNE trend in the lower Rapid River and nearby part of the Arthur River may correspond to the Dempster Plains fault though the fault is difficult to identify between Dempster Plains and the Rapid River. This apparent extension of the Dempster Plains fault terminates the Rapid River linear which is a 'corridor' that narrowly confines the Rapid River for the most part of its course. The Rapid River corridor is the most prominent of the ESE linears though it lies mostly east of the area of interest.

There is no recognisable displacement of the geological boundary mapped in the lower Rapid River and which is shown in Fig 4. Thus, the Rapid River corridor does not correspond to large scale faults. However, small scale faults and shears of ESE trend were observed in a number of places (eg. Fig 7) thus indicating that the ESE is a direction of shearing if not of major faulting.

Mineralisation models

CRA Exploration Pty. Ltd. specified three models of mineralisation for investigation:

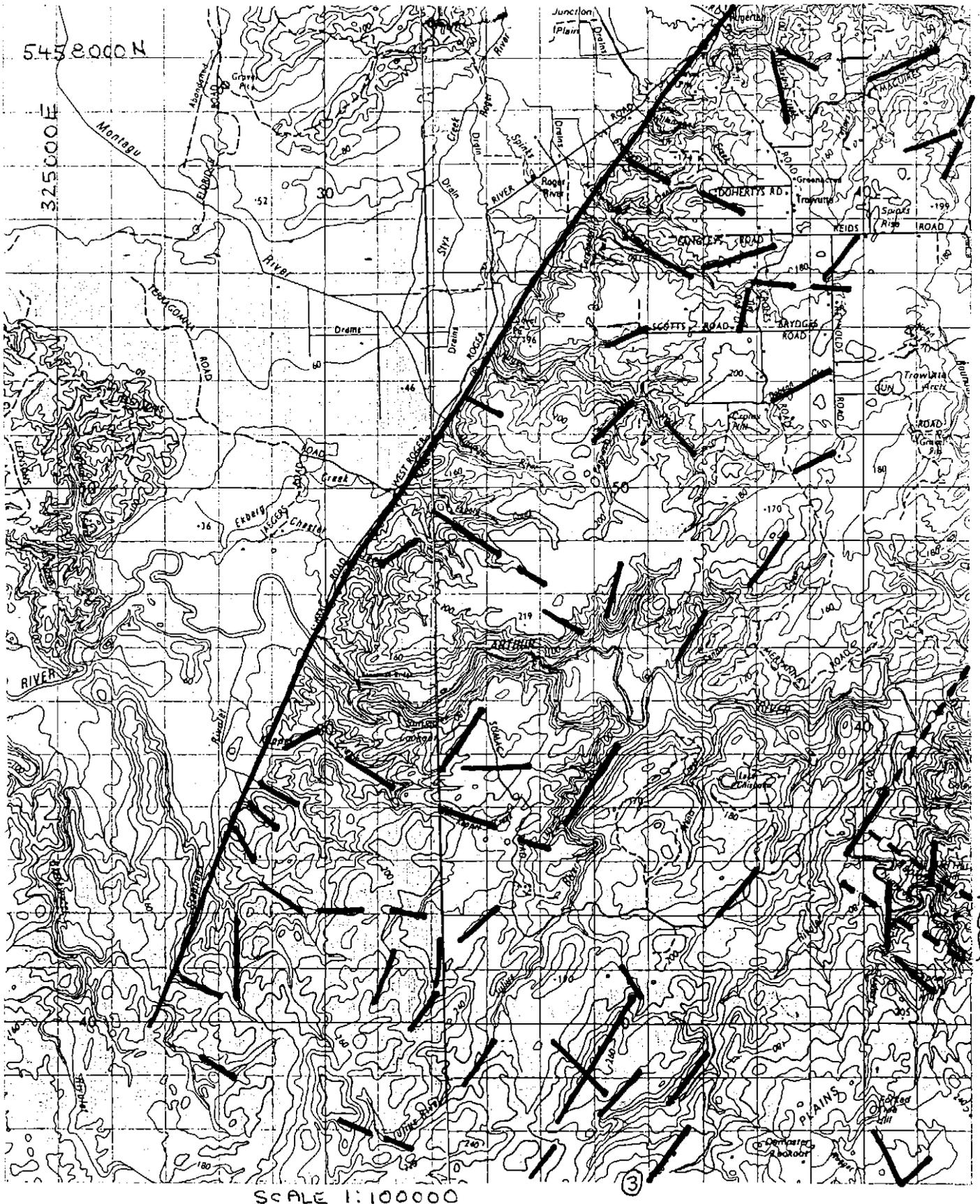


Fig 2: Linear features identified on air photographs and on 1:25000 and 1:100000 topographic maps.

- 1. Roger River fault ; 2. Rapid River 'corridor' ; 3. Dempster Plains fault - see Min Res. Tasm. 'Trowutta' (in prep.).

5 cm

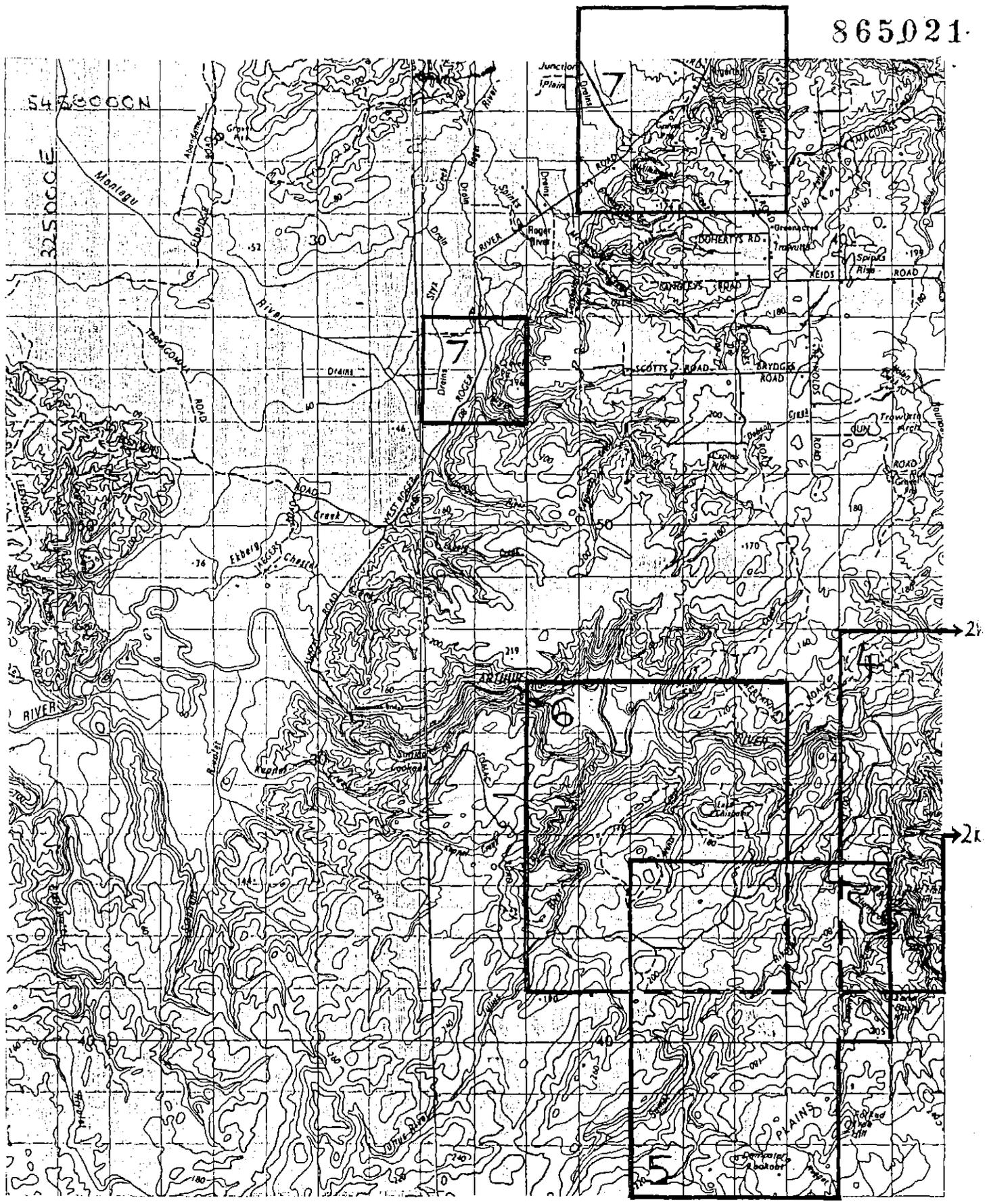
1. Stratiform/stratabound mineralisation in the Forest Conglomerate and Quartzite and in the Basal Black River Dolomite near the unconformity with the Rocky Cape Group.
2. Mineralised solution collapse structures in the Black River Dolomite.
3. Replacement mineralisation in dolomite adjacent to faults, particularly the Roger River Fault.

Forest Conglomerate and Quartzite

Traversing in the lower Rapid River/Arthur River area (Fig 4) has shown that the Forest Conglomerate and Quartzite forms a thin lens which extends some 3 km along strike. The lens has an estimated maximum thickness of about 50m and is overlain by the Black River Dolomite which transgresses onto basement (Cowrie Siltstone) to the north and south of the lens.

Much of the area underlain by the lens of Forest conglomerate and Quartzite is distinguished by lag and rubble outcrop of leached quartz arenite. There is relatively unweathered outcrop around 341150E5443950N, at 340500E5442100N in the Rapid River and at 340425E5441675N in Lamprey Creek. In these localities the beds comprise mainly greenish interbedded quartz arenite and well sorted pebble conglomerate.

In the Rapid River and Lamprey Creek localities there is common to abundant disseminated pyrite. Its presence demonstrates that conditions in the Forest Conglomerate and Quartzite were appropriate for the deposition of sulphide.



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Fig 3 : Locality key to figures showing field data at 1:25000 . Figure numbers are shown.

5 cm

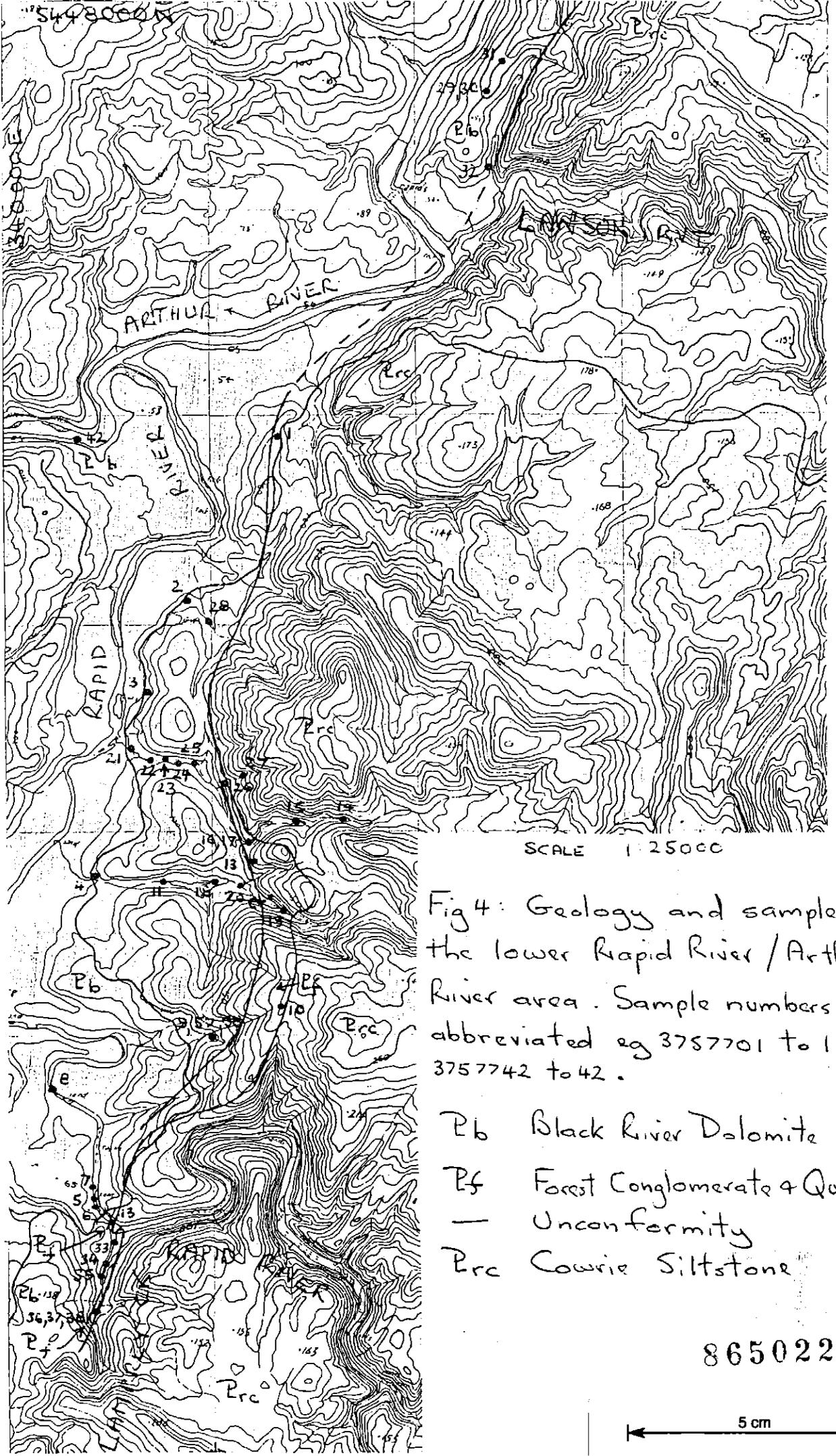
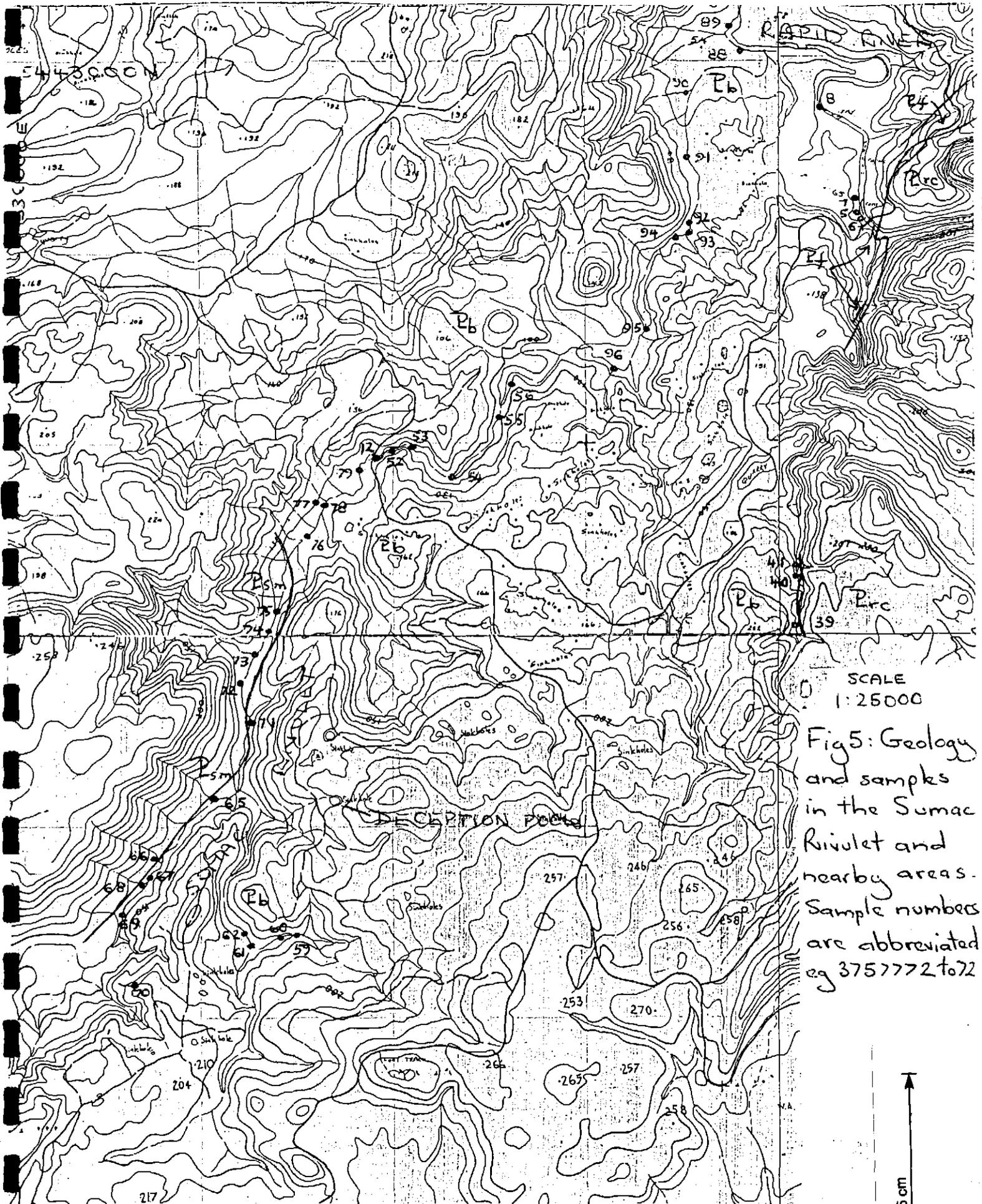


Fig 4: Geology and samples in the lower Rapid River / Arthur River area. Sample numbers are abbreviated eg 3757701 to 1, 3757742 to 42.

- Pb Black River Dolomite
- Pf Forest Conglomerate & Quartzite
- Unconformity
- Prc Cowrie Siltstone

865022

5 cm

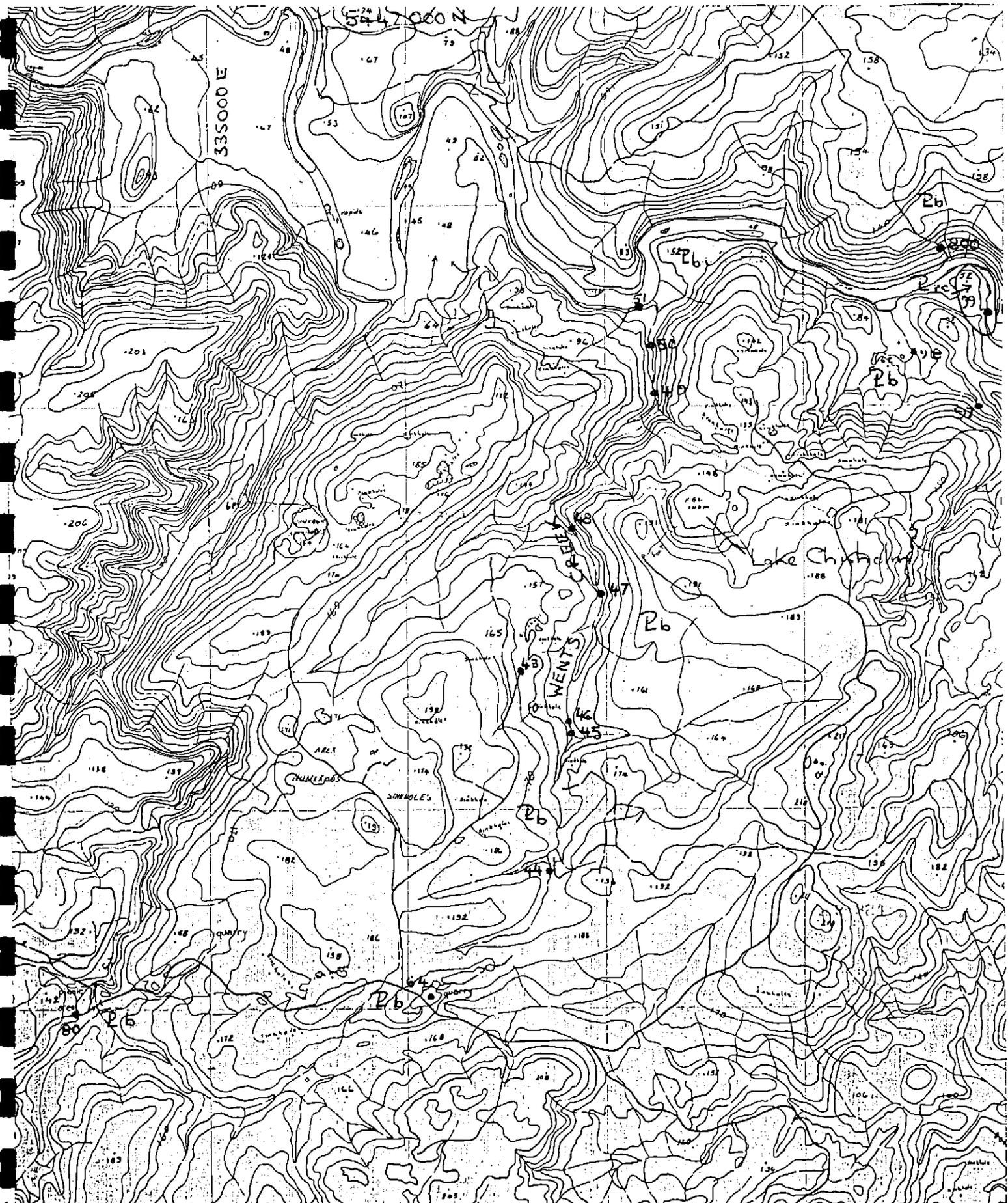


SCALE
1:25000

Fig 5: Geology and samples in the Sumac Rivulet and nearby areas. Sample numbers are abbreviated eg 3757772 to 72

5 cm

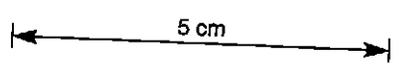
- Psm Dolomitic mixtite with basalt detritus.
- Pb Black River Dolomite.
- P5 Forest Conglomerate and Quartzite.
- Unconformity
- D Carcin. C. H. etano



SCALE 1:25000

Fig. 6: Geology and samples in Went's Creek and nearby areas. Sample numbers are abbreviated eg 3757748 to 48, 3757800 to 800. 865024

- Pb Black River Dolomite
- Unconformity
- Prc Cowrie Siltstone



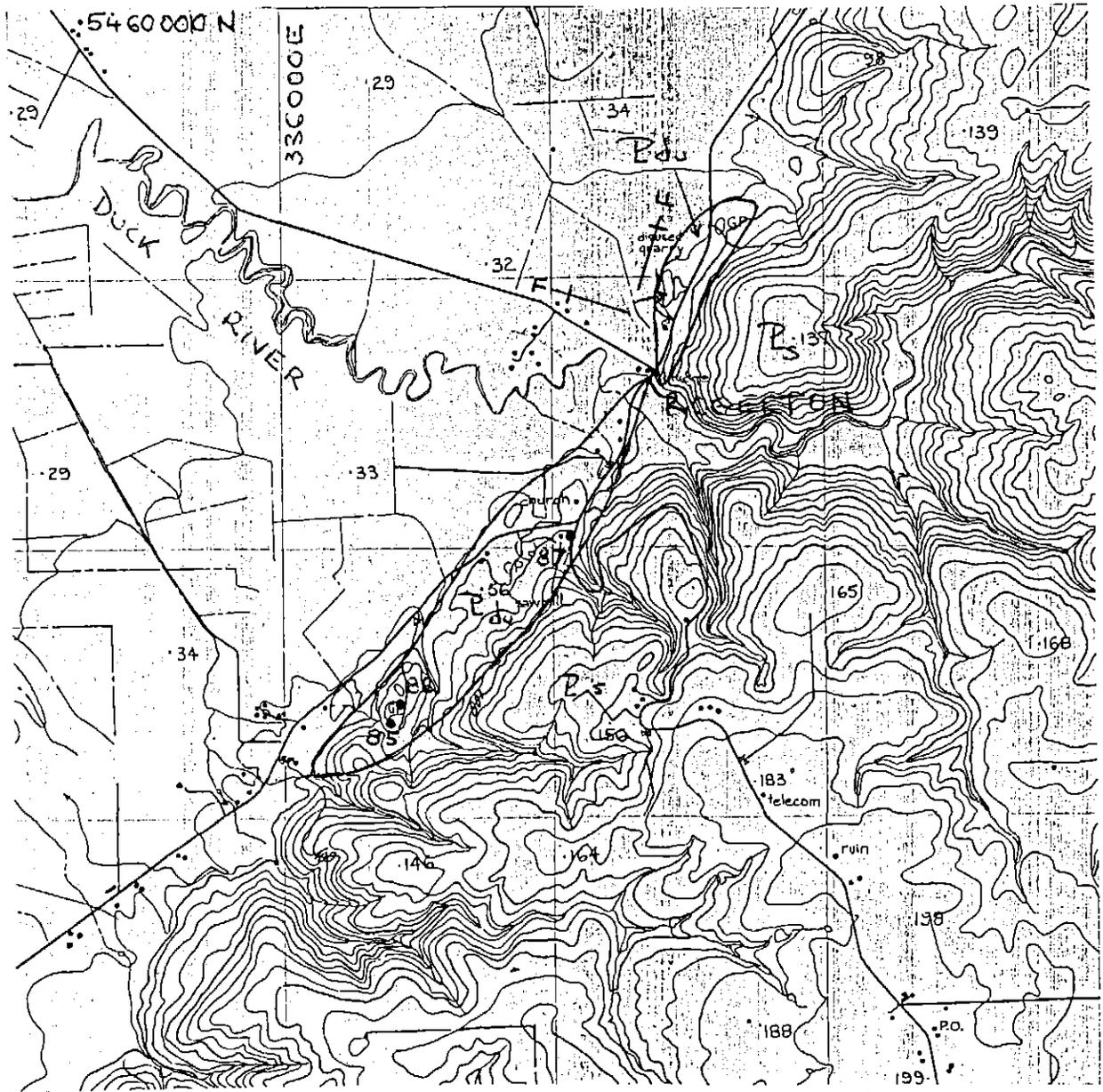


Fig 7: Geology and samples along the Roger River fault. Sample numbers are abbreviated eg. 375786 to 86.

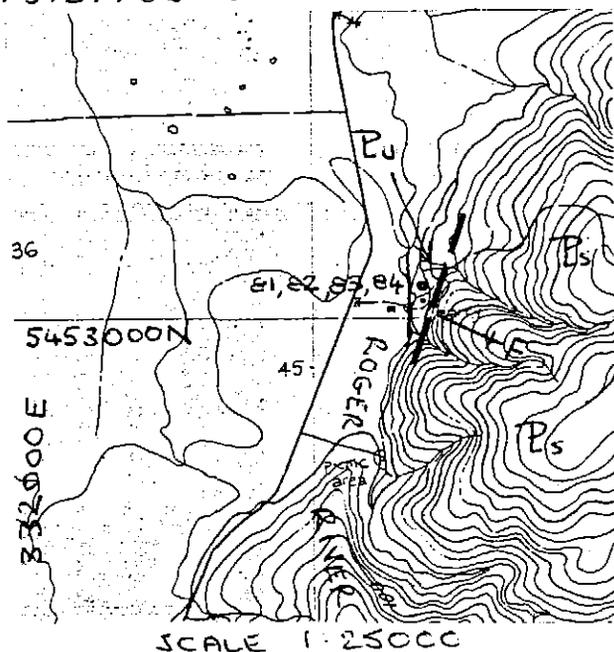
Pdu Unassigned brecciated and silicified dolomite. The boundaries are from Min. Res. Tasm. 'Trowutta' (in prep).

Pu Unassigned dolomite, chocolate brown mudstone and minor chert. Chlorite and rhodochrosite veining present.

Ps Smithton volcanics - sediment and basalt.

—+F— Observed vertical fault.

- - - Obscured major fault.



5 cm

However, best values for economically significant elements in 8 samples from the formation were only 34ppm Cu, 34 ppm Zn and 11.5. ppm As in 3757738 from Lamprey Creek. Gold is present in 3757713 from Rapid River and 3757736 from Lamprey Creek.

Black River Dolomite

Outcrop of dolomite in the Black River Dolomite in the overall area of interest (Figs 4,5,6) is patchy and almost entirely confined to stream beds. Interfluvies are characterised by lag of chert and silicified dolomite which appear to comprise a fairly minor part of the dolomitic bedrock succession. Interbeds of grey siltstone are another minor component in the bedrock succession. Sink holes are abundant, particularly around Lake Chisholm (Fig 6) and Deception Pool (Fig 5), attesting to the presence of extensive dolomite. However, only sparse outcrop of grey chert and subordinate siltstone is present in streams such as Wents Creek which flow through the sinkhole country.

The paucity of outcrop in general and dolomite outcrop in particular makes it unsatisfactorily to test for potentially relatively small targets like solution collapse structures by means of geological mapping and chip sampling. Sampling of C-horizon soils is probably a better alternative. It is thought that these soils should reflect bedrock geochemistry accurately because the rocks are not deeply leached. The presence of pyritie in rocks just below the C-horizon demonstrates the absence of deep leaching.

Despite reservations concerning the effectiveness of the work performed so far in testing the terrain for solution collapse structures the work has certainly identified rocks exhibiting geochemical anomalism (Table 1). These anomalous rocks include dolomite but textures indicative of collapse structures have not yet been identified.

The dolomite in the Black River Dolomite is usually massive, fine grained and varies in colour from cream to dark grey. Dolomite in stratigraphically lower parts of the formation often has a breccia texture in which the fragments comprise pieces of algal mat. In good exposures down-stream of the Rapid River Bridge there is a regular alternation of massive dolomite with the algal mat breccia. This alternation probably represents cyclic depositional conditions. Despite the abundance of algal mat stromatolites are uncommon in the dolomite. Silicified variants of the dolomite throughout the formation are usually oolitic or pisolitic whilst interbedded chert has textures which range from massive and dark grey to simple grey and white laminae to complicated nodular intermixtures of the grey and white varieties. Silicified stromatolites are known to occur as clasts in mixite in the upper part of the formation near the Julius River Bridge on the Sumac Road.

Rock chip sampling (Appendix 1,2) has shown that the dolomite and associated rocks have generally small trace metal contents and that anomalous values are of low order. Anomalous Dolomite samples from the basal part of the formation include 3757721, 3757735, 3757739 and 3757741 (Table 1). Two of these have elevated zinc and two contain detectable gold. The gold-bearing samples are from Lamprey Creek where there is also detectable gold in the Forest Conglomerate and Quartzite.

Unit	Lithology	Total Samples	No.	Cu	Zn	As	Au
Psm	mixtite	4	75			100	0.014
Pb	dolomite	33	21		41		
	dolomite		35				0.012
	dolomite		39				0.005
	dolomite		41		79		
	dolomite		59		82		
	dolomite		65			5.5	
	dolomite		69		45		
	dolomite		76		58	3.5	
	dolomite		78			4.5	
	Pb	chert	16	71	65		
Pb	Siltstone	14	42			4.5	
	Siltstone		43			5.0	
	Siltstone		61	60		4.5	
	Siltstone		64			7.5	0.010
	Siltstone		91			6.0	0.016
	Siltstone		94	54	88		
	limonitic Si	5	77		317	24.5	

Table 1:

Rock chip geochemistry for the Black River Dolomite and overlying basaltic mixtite showing anomalous assays (ppm) in each lithological group. All samples with detectable gold are listed. Sample numbers are abbreviated eg 3757742 to 42, etc. Eight samples are from Pb in the general vicinity west of Deception Pool (Fig 5 -59, 61, 65, 69, 71, 76, 77, 78) whilst one is from Psm in the same area (75).

Other anomalous dolomite samples show low order zinc and arsenic and are from west of Deception Pool (Fig 5). They appear to be from the upper part of the Black River Dolomite though the position and effect on stratigraphy of the Dempster Plains fault near Deception Pool has not been determined. In the same area there are chert (3757771), siltstone (3757761) and secondary limonitic silica (3757777) which are variously anomalous in copper, zinc and arsenic.

Metal values in the mixite unit which overlies the Black River Dolomite are variable but appear to be generally higher than in the dolomitic formation. This may reflect the influence of basaltic detritus. One sample (3757775) of grey, carbonaceous pyritic pebbly siltstone has detectable gold along with markedly higher arsenic than the other Psm samples.

Carbonaceous shale (3757791) and olive siltstone (3757794) with anomalous metal values outcrop near to one another in the lower reaches of the Sumac Rivulet. The latter sample is anomalous in copper and zinc whereas the former contains detectable gold and elevated arsenic. Carbonaceous siltstone on the Arthur River (3757742) and near Wents Creek (3757743, 3757754) also contains elevated arsenic and one of the samples from near Wents Creek contains detectable gold.

Roger River Fault

Two areas along the Roger River Fault were investigated (Fig7). The northern area spans the Duck River near Rogerton and is underlain by rocks that are interpreted as silicified dolomite. *Mineral Resources Tasmania mapping* indicates that these rocks are equivalent to the Black River Dolomite (Brown, 1993- pers. com.) The southern area is a quarry beside the Roger River from which dolomite was extracted by Pulbeena Limestone.

Northern Area

There is good exposure of the siliceous rocks in the northern area but no unsilicified carbonate was located. In the cuttings and quarries south from the Trowutta Road junction the siliceous rocks are extensively brecciated though the breccia texture is unclear in places. The breccia is highly indurated and comprises very angular fragments of very fine grained, dark grey silica in a white to cream matrix of fine grained, saccharoidal silica. In places the matrix is iron stained. Fragments in the breccia range up to 60mm or more across and do not retain any distinctive carbonate textures such as oolites or stromatolites. Only one fragment was observed with thin, planar lamination of possibly algal origin.

In the old quarry at 336400E5457400N and near the Trowutta Road junction there are patches of moderately indurated to soft breccia that are several metres across and which appear to be surrounded by the indurated breccia. These patches are interpreted as Cainozoic collapse structures whereas the indurated breccia is probably much older, silicified fault breccia.

North of the Trowutta Road junction there are exposures of layered, partially brecciated siliceous rocks. In the old quarry at 337400E5458900E the general appearance of bedding is retained but the rocks are extensively fractured and there are several well-exposed faults.

Using the Black River Dolomite data as a reference, samples of the indurated breccia (3757785-87) contain elevated zinc (25,36 ppm) and arsenic (4-12 ppm).

Southern Area

The steep, west facing eastern face of the quarry beside the Roger River consists of fairly uniform basalt belonging to the Smithton volcanics. A fault appears to separate the basalt from a varied suite of rocks which underlie the floor of the quarry and the disturbed ground along its western side. This suite includes dolomite, red-brown mudstone, minor chert and altered rocks. Shearing characterises the suite which is probably a melange.

The dolomite (eg 3757783,84) is fine grained but courser than the usual dolomite in the Black River Dolomite. It is intensively fractured, veined and partially recrystallised to medium grainsize. It is light greyish to cream and has pink patches enriched in rhodochrosite. Manganese dendrites are common on fractures in the dolomite. Rhodochrosite and chlorite both occur in veinlets in the dolomite and chlorite can be pervasive (eg 3757782) with associated pyrite and possibly chalcopyrite. Chlorite veining is intense in the red-brown mudstone which may also contain rhodochrosite veinlets (3757781).

Comparison of the four assays from the melange with results from the Black River Dolomite indicates that arsenic is generally elevated (4-12 ppm) whilst zinc is anomalous (107,112 ppm) in two samples and copper (421 ppm) is markedly anomalous in one.

APPENDIX 1: ROCK SAMPLES

EL19/92

SAMPLES TO ANALABS, COOEE

<u>NUMBER</u>	<u>AMG</u>	<u>ROCK TYPE</u>
3757701	341400E5450900N	Limonitic, silica with honeycomb patches
3757702	340900E5445100N	Partly silicified carbonate
3757703	340675E5440700N	Dark grey silicified oolitic fine breccia
3757704	340425E5443800N	Black slate
3757705	340475E5442350N	Dolomite - from bedded mat breccia/ untextured successio
3757706	340475E5442325N	" " "
3757707	340475E5442375N	" " "
3757708	340225E5442750N	" " " ,C - rich
3757709	341025E5443025N	Dolomite with common small patches of pyrite
3757710	341350E5443125N	Iron stained quartz arenite
3757711	340775E5443750N	Dark grey chert with graphite bands
3757712	337900E5440925N	Dolomite
3757713	341100E5443850N	Fairly fresh quartz arenite
3757714	341625E5444075N	Light olive Cowrie Siltstone
3757715	341400E5444050N	Red oxidised Cowrie Siltstone
3757716	341150E5443950N	Red and green quartz conglomerate
3757717	341150E5443950N	Red and green quartz arenite
3157718	340950E5443750N	Dolomite with brecciated algal mat
3757719	341400E5443575N	Leached, silicified, oolitic material
3757720	341125E5443750N	Dolomite with fine breccia texture

3757721	340600E5444400N	Dark grey dolomite with chert patches
3757722	340750E5444350N	Black siliceous siltstone
3757723	340850E5444350N	Planar banded grey chert
3757724	340875E5444350N	Pale grey dolomite with brecciated algal mat
3757725	340925E5444325N	Medium grey dolomite
3757726	341025E5444225N	Quartz arenite
3757727	341150E5444250N	Red and green Cowrie Siltstone
3757728	340975E5445025N	Pale grey dolomite
3757729	342375E5447575N	Dark grey shale (weathered)
3757730	342375E5447575N	Dark grey shale (weathered)
3757731	342400E5447675N	Pyritic siltstone in road fill (exotic)
3757732	342350E5447175N	Cream dolomite with chert patches
3757733	340500E5442000N	Cream uniform dolomite
3757734	340475E5441950N	Pale grey dolomite
3757735	340425E5441775N	Grey dolomite with brecciated algal mat
3757736	340425E5441675N	Greenish grey quartz arenite with pyrite
3757737	340425E5441675N	Greenish grey quartz arenite with pyrite
3757738	340425E5441675N	Greenish grey quartz arenite with pyrite
3757739	340075E5440050N	Fawn dolomite with carbonaceous laminae
3757740	340075E5440300N	Dolomite
3757741	340075E5440375N	Dolomite with patches of limonitic honeycomb
3757742	340350E5445900N	Hard siliceous siltstone with limonitic honeycomb
3757743	336500E5443675N	Dark grey, shaly oolitic carbonate with pyrite
3757744	336700E5442700N	Dark grey chert

3757745	336800E5443350N	Dark grey chert
3757746	336800E5443400N	Black siliceous siltstone
3757747	336975E5444075N	Black chert
3757748	336800E5444375N	Dark grey chert
3757743	337250E5445050N	Dark grey chert
3757750	337250E5445300N	Dark grey chert
3757751	337175E5445500N	Cream and pale grey blocky chert
3757752	338000E5441000N	Fawn to dark grey dolomite
3757753	338075E5441000N	Pale chert
3757754	338300E5440825N	Dark grey chert
3757755	3385550E5441100N	Dark grey chert
3757756	338625E5441350N	Dolomite
3757757	341025E5443025N	Pale grey to fawn dolomite with pyrite
3757758	341025E5443025N	Pale grey to fawn dolomite with pyrite
3757759	337450E5438425N	Pale grey dolomite, carbonaceous stringers
3757760	337375E5438425N	Pale grey dolomite
3757761	337250E5438375N	Interbanded siltstone and pug
3757762	337225E5438450N	Buff siliceous rock with honeycomb
3757763	337150E5438725N	Dark grey dolomite with carbonate veins
3757764	336125E5442075N	Carbonaceous siliceous siltstone with pyrite
3757765	337025E5439100N	Pale grey dolomite
3757766	336775E5438850N	Pebbly siltstone with pyrite
3757767	336750E5438750N	Pale grey dolomite
3757768	336750E5438700N	Pale grey dolomite
3757769	336475E5438450N	Banded green-grey dolomite

3757770	336650E5438175N	Khaki siliceous rock with honeycomb
3757771	337250E5439575N	Black chert
3757772	337200E5439775N	Khaki siltstone (Smithton Volcs.)
3757773	337275E5439100N	Possible volcanic agglomerate with pyrite (Smithton Volcs.)
3757774	337375E5440075N	Iron stained siliceous rock
3757775	337400E5440125N	Carbonaceous pebbly siltstone with pyrite
3757776	337575E5440550N	Pale grey dolomite with dark veinlets
3757777	337650E5440675N	Orange-brown siliceous rock with honeycomb
3757718	337650E5440675N	Fawn dolomite with dark veinlets
3757779	337825E5440850N	Dolomite with etched planar banding
3757780	334325E5441975N	Pebbly dolomitic siltstone with pyrite
3757781	333375E5453075N	Chocolate mudstone with chlorite veins
3757782	333375E5453075N	Green carbonate with rhodochrosite, sulphide
3757783	333375E5453075N	Recrystallized dolomite with rhodochrosite
3757784	333375E5453075N	Recrystallized dolomite with chlorite, rhodochrosite
3757785	336425E5457400N	Silicified dolomite breccia
3757786	336425E5457400N	Iron stained silicified dolomite breccia
3757787	337100E5458075N	Iron stained silicified dolomite breccia
3757788	339825E5443075N	Pale grey dolomite with carbonate
3757789	339800E5443175N	Dolomite with small in situ stromatolites
3757790	339525E5442825N	Dark grey chert
3757791	339525E5442500N	Carbonaceous shale
3757792	339550E5442125N	Silicified oolitic dolomite
3757793	339550E5442100N	Pale grey dolomite

3757794	339450E5442075N	Hard olive siltstone
3757795	339300E5441625N	Interbanded dolomite and siltstone
3757795	339150E5441375N	Banded, flaggy, grey chert
3757797	338875E5445025N	Pale grey dolomite
3757798	338550E5445250N	Fawn chert
3757799	338975E5445500N	Fine grained, red-brown sandstone (Cowrie Siltstone)
3757800	338725E5445775N	White chert with grey patches
3757801	338650E5445825N	Dark grey banded siltstone
3757802	339875E5446350N	Dark grey banded siltstone

APPENDIX 2: ANALYTICAL DATA FOR ROCK SAMPLES

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ANALYTICAL DATA

SAMPLE PREFIX

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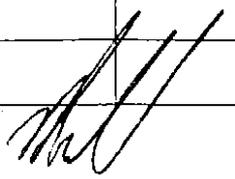
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1 OF 1

TUBE No.	SAMPLE No.	Cu	Pb	Zn	As				
1	3757701	16	66	99	22.0				
2	3757702	3	15	18	2.0				
3	3757703	7	8	10	3.0				
4	3757704	25	18	14	4.5				
5	3757705	2	8	11	1.0				
6	3757706	3	8	11	0.5				
7	3757707	3	7	16	1.0				
8	3757708	<2	6	7	1.0				
9	3757709	3	7	12	2.0				
10	3757710	2	<3	3	2.0				
11	3757711	23	4	12	1.0				
12	3757712	2	4	4	2.0				
13									
14									
15									
16									
18									
19									
20									
21									
22									
23	DETECTION	2	3	2	0.5				
24	UNITS	ppm	ppm	ppm	ppm				
25	METHOD	GA140	GA140	GA140	HA140				

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

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UBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Fe	Fe	Mn	Co	Ni		
1	3757713	7	3	5	<1	0.75	-	39	<3	<3		
2	3757714	4	<3	15	<1	0.77	-	34	<3	<3		
3	3757715	7	<3	10	<1	2.61	-	37	<3	3		
4	3757716	10	<3	30	<1	0.93	-	58	<3	7		
5	3757717	10	<3	5	<1	0.69	-	70	<3	9		
6	3757718	12	<3	17	<1	0.13	-	242	<3	5		
7	3757719	8	<3	19	<1	0.64	-	69	<3	13		
8	3757720	4	<3	11	<1	0.20	-	537	<3	4		
9	3757721	5	<3	41	<1	0.15	-	216	<3	<3		
10	3757722	10	8	7	<1	0.34	-	20	<3	<3		
11	3757723	3	<3	11	<1	0.27	-	27	<3	<3		
12	3757724	6	6	22	<1	0.09	-	198	<3	<3		
13	3757725	3	<3	11	<1	0.12	-	128	<3	<3		
14	3757726	3	<3	3	<1	0.46	-	36	<3	<3		
15	3757727	3	<3	19	<1	3.35	-	25	3	7		
16	3757728	3	<3	5	<1	0.11	-	145	<3	7		
17	3757729	3	<3	<2	<1	0.21	-	20	<3	4		
18	3757730	3	9	5	<1	0.24	-	17	<3	4		
19	3757731	273	24	86	<1	-	8.51	143	35	98		
20	3757732	3	<3	16	<1	0.12	-	208	<3	3		
21	3757733	3	<3	11	<1	0.21	-	352	<3	<3		
22	3757734	3	<3	5	<1	0.06	-	125	<3	<3		
23	3757735	3	<3	12	<1	0.07	-	109	<3	<3		
24	3757736	6	<3	7	<1	0.79	-	40	<3	5		
25	3757737	7	<3	8	<1	1.38	-	76	<3	7		

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Fe	Fe	Mn	Co	Ni
1	3757738	34	7	34	<1	-	7.12	30	20	18
2	3757739	3	<3	10	<1	0.26	-	630	<3	<3
3	3757740	2	<3	7	<1	0.09	-	205	<3	<3
4	3757741	3	4	79	<1	0.34	-	958	<3	<3
5	3757742	10	<3	42	<1	0.75	-	164	<3	13
6	3757743	8	<3	36	<1	0.51	-	113	<3	8
7	3757744	4	<3	13	<1	0.61	-	60	<3	6
8	3757745	4	<3	22	<1	0.61	-	229	<3	5
9	3757746	5	<3	21	<1	0.54	-	100	<3	6
10	3757747	4	<3	9	<1	0.64	-	108	<3	9
11	3757748	4	<3	7	<1	0.63	-	65	<3	8
12	3757749	6	<3	11	<1	0.79	-	205	<3	8
13	3757750	3	<3	6	<1	0.51	-	177	<3	4
14	3757751	8	4	14	<1	0.90	-	145	<3	3
15	3757752	2	<3	9	<1	0.08	-	115	<3	3
16	3757753	3	<3	13	<1	1.09	-	149	<3	6
17	3757754	3	<3	5	<1	0.62	-	151	<3	6
18	3757755	4	<3	10	<1	0.51	-	74	<3	4
19	3757756	6	<3	16	<1	0.13	-	205	<3	<3
20										
21										
22										
23	DETECTION	2	3	2	1	0.01	0.01	3	3	3
24	UNITS	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm
25	METHOD	GA140	GA140	GA140	GA140	GA140	GA104	GA140	GA140	GA140

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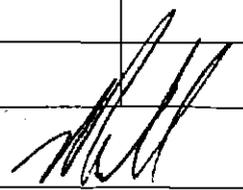
77117

3 OF 4

JBE No.	SAMPLE No.	Au	Au(R)	Au(S)	As	As				
1	3757713	0.005	-	-	8.0	-				
2	3757714	<0.005	-	-	1.0	-				
3	3757715	<0.005	-	-	2.0	-				
4	3757716	<0.005	-	-	1.0	-				
5	3757717	<0.005	-	-	0.5	-				
6	3757718	<0.005	-	-	1.0	-				
7	3757719	<0.005	-	-	2.0	-				
8	3757720	<0.005	-	-	1.0	-				
9	3757721	<0.005	-	-	1.5	-				
10	3757722	<0.005	-	-	2.5	-				
11	3757723	<0.005	-	-	0.5	-				
12	3757724	<0.005	<0.005	<0.005	0.5	-				
13	3757725	<0.005	-	-	0.5	-				
14	3757726	<0.005	-	-	1.0	-				
15	3757727	<0.005	-	-	1.0	-				
16	3757728	<0.005	-	-	0.5	-				
17	3757729	<0.005	-	-	<0.5	-				
18	3757730	<0.005	-	-	<0.5	-				
19	3757731	0.014	-	-	-	150				
20	3757732	<0.005	-	-	2.0	-				
21	3757733	<0.005	-	-	1.5	-				
22	3757734	<0.005	<0.005	<0.005	1.0	-				
23	3757735	0.012	-	-	1.0	-				
24	3757736	0.006	-	-	9.0	-				
25	3757737	<0.005	-	-	2.0	-				

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
 - = element not determined

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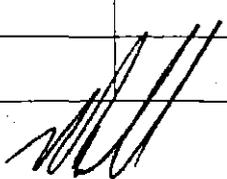
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4 OF 4

TUBE No.	SAMPLE No.	Au	Au (R)	Au (S)	As	As				
1	3757738	<0.005	-	-	11.5	-				
2	3757739	0.005	-	-	2.0	-				
3	3757740	<0.005	-	-	0.5	-				
4	3757741	<0.005	-	-	2.0	-				
5	3757742	<0.005	-	-	4.5	-				
6	3757743	<0.005	-	-	5.0	-				
7	3757744	<0.005	-	-	1.0	-				
8	3757745	<0.005	-	-	1.0	-				
9	3757746	<0.005	-	-	3.0	-				
10	3757747	<0.005	-	-	1.0	-				
11	3757748	<0.005	-	-	0.5	-				
12	3757749	<0.005	<0.005	-	1.0	-				
13	3757750	<0.005	-	-	1.0	-				
14	3757751	<0.005	-	-	1.5	-				
15	3757752	<0.005	-	-	1.0	-				
16	3757753	<0.005	-	<0.005	2.0	-				
17	3757754	<0.005	-	-	1.0	-				
18	3757755	<0.005	-	-	1.0	-				
19	3757756	<0.005	-	-	0.5	-				
20										
21										
22										
23	DETECTION	0.005	0.005	0.005	0.5	100				
24	UNITS	ppm	ppm	ppm	ppm	ppm				
25	METHOD	GG313	GG313	GG313	HA140	GA140				

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
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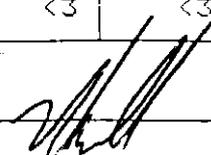
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1	3753762	21	20	14	<1	1.80	-	101	<3	5	
2	3753763	43	37	32	<1	2.00	-	44	4	9	
3	3753764	5	7	5	<1	0.17	-	16	<3	6	
4	3753765	6	5	6	<1	0.64	-	20	<3	5	
5	3753766	4	3	12	<1	0.88	-	15	<3	7	
6	3753767	5	<3	11	<1	0.60	-	13	<3	9	
	3753768	7	<3	13	<1	0.51	-	10	<3	6	
8	3753769	5	3	5	<1	0.25	-	10	<3	<3	
9	3753770	23	24	16	<1	1.34	-	61	<3	90	
10	3753771	13	<3	123	<1	3.26	-	209	10	14	
11	3753772	17	43	12	<1	0.36	-	32	<3	3	
12	3753773	18	63	26	<1	1.08	-	182	<3	12	
13	3753774	22	4	15	<1	2.72	-	63	<3	<3	
14	3753775	24	<3	28	<1	-	6.56	83	16	39	
15	3757757	26	3	7	<1	0.20	-	397	<3	5	
16	3757758	5	3	12	<1	0.22	-	495	<3	3	
17	3757759	3	<3	82	<1	0.19	-	703	<3	<3	
18	3757760	2	<3	10	<1	0.08	-	181	<3	3	
19	3757761	60	17	45	<1	3.48	-	244	17	91	
20	3757762	7	<3	27	<1	1.57	-	96	<3	15	
21	3757763	3	<3	14	<1	0.07	-	157	<3	<3	
22	3757764	22	4	20	<1	1.16	-	57	<3	7	
23	3757765	2	<3	7	<1	0.19	-	185	<3	<3	
24	3757766	20	4	26	<1	2.47	-	563	6	14	
25	3757767	3	3	5	<1	0.17	-	95	<3	<3	

Results in ppm unless otherwise specified
T = element present; but concentration too low to measure
X = element concentration is below detection limit
- = element not determined

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 Division of In-house Testing Services (Australia) Pty. Ltd.
 A.C.N. 004 591 664

ANALYTICAL DATA

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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Fe	Fe	Mn	Co	Ni
1	3757768	4	3	13	<1	0.54	-	178	<3	6
2	3757769	4	<3	45	<1	2.12	-	529	4	54
3	3757770	4	<3	6	<1	0.22	-	37	<3	3
4	3757771	65	3	38	<1	0.72	-	404	<3	5
5	3757772	49	<3	135	<1	-	5.67	654	21	112
6	3757773	18	4	32	<1	2.60	-	684	7	14
	3757774	6	<3	16	<1	1.22	-	381	7	5
8	3757775	41	11	77	<1	-	13.60	103	24	77
9	3757776	9	<3	58	<1	0.19	-	234	<3	6
10	3757777	24	<3	317	<1	-	8.97	609	26	44
11	3757778	5	3	18	<1	0.56	-	343	<3	<3
12	3757779	3	5	10	<1	0.10	-	133	<3	<3
13	3757780	9	<3	16	<1	1.75	-	318	<3	10
14	3757781	6	<3	107	<1	-	9.04	1390	30	80
15	3757782	421	4	112	<1	-	8.41	1386	46	71
16	3757783	6	<3	5	<1	0.28	-	1824	<3	7
17	3757784	6	4	7	<1	1.04	-	2046	<3	7
18	3757785	4	3	2	<1	0.87	-	88	<3	<3
19	3757786	4	3	25	<1	0.51	-	49	<3	3
20	3757787	5	<3	36	<1	1.44	-	116	<3	27
21	3757788	2	<3	28	<1	0.08	-	162	<3	<3
22	3757789	4	<3	23	<1	0.17	-	305	<3	5
23	3757790	4	<3	5	<1	0.51	-	65	<3	<3
24	3757791	22	37	26	<1	0.68	-	26	<3	3
25	3757792	5	<3	23	<1	0.51	-	232	<3	6

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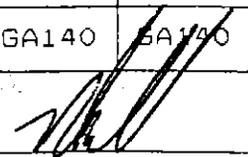
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TUBE No.	SAMPLE No.	Cu	Pb	Zn	Ag	Fe	Fe	Mn	Co	Ni
1	3757793	2	<3	11	<1	0.10	-	250	<3	4
2	3757794	54	<3	88	<1	4.73	-	286	18	224
3	3757795	19	3	21	<1	1.50	-	405	6	18
4	3757796	10	<3	18	<1	0.52	-	609	6	<3
5	3757797	2	<3	8	<1	0.15	-	341	<3	<3
6	3757798	7	<3	10	<1	0.88	-	174	3	<3
	3757799	5	5	13	<1	1.95	-	99	<3	<3
8	3757800	2	<3	2	<1	0.12	-	20	<3	<3
9	3757801	2	<3	2	<1	0.36	-	54	<3	<3
10	3757802	3	<3	<2	<1	0.19	-	21	<3	<3
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	2	3	2	1	0.01	0.01	3	3	3
24	UNITS	ppm	ppm	ppm	ppm	%	%	ppm	ppm	ppm
25	METHOD	GA140	GA140	GA140	GA140	GA140	GA104	GA140	GA140	GA140

Results in ppm unless otherwise specified
T = element present, but concentration too low to measure
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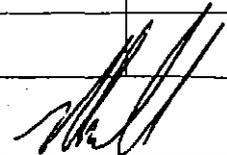
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UBE No.	SAMPLE No.	Au	Au (R)	Au (S)	As	As			
1	3753762	<0.005	-	-	14.0	-			
2	3753763	<0.005	-	-	17.5	-			
3	3753764	<0.005	-	-	4.5	-			
4	3753765	0.007	-	-	5.5	-			
5	3753766	<0.005	-	-	2.0	-			
6	3753767	<0.005	-	<0.005	3.0	-			
	3753768	<0.005	-	-	0.5	-			
8	3753769	<0.005	-	-	0.5	-			
9	3753770	<0.005	-	-	8.0	-			
10	3753771	<0.005	-	-	2.0	-			
11	3753772	0.009	-	-	3.0	-			
12	3753773	0.005	0.005	-	6.0	-			
13	3753774	<0.005	-	-	1.5	-			
14	3753775	0.009	-	-	>100.0	100			
15	3757757	<0.005	-	-	1.5	-			
16	3757758	<0.005	-	-	2.5	-			
17	3757759	<0.005	-	-	2.0	-			
18	3757760	<0.005	-	-	2.5	-			
19	3757761	<0.005	-	-	4.5	-			
20	3757762	<0.005	-	-	5.0	-			
21	3757763	<0.005	-	-	2.0	-			
22	3757764	0.010	0.006	-	7.5	-			
23	3757765	<0.005	-	-	5.5	-			
24	3757766	<0.005	-	-	12.5	-			
25	3757767	<0.005	-	-	3.0	-			

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
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UJBE No.	SAMPLE No.	Au	Au(R)	Au(S)	As	As				
1	3757768	<0.005	-	-	1.0	-				
2	3757769	<0.005	-	-	1.0	-				
3	3757770	<0.005	-	-	<0.5	-				
4	3757771	<0.005	-	-	1.5	-				
5	3757772	<0.005	-	-	4.0	-				
6	3757773	<0.005	-	-	4.0	-				
	3757774	<0.005	-	-	4.0	-				
8	3757775	0.014	-	-	40.5	-				
9	3757776	<0.005	-	<0.005	3.5	-				
10	3757777	<0.005	-	-	24.5	-				
11	3757778	<0.005	-	-	4.5	-				
12	3757779	<0.005	<0.005	-	1.0	-				
13	3757780	<0.005	-	-	2.5	-				
14	3757781	<0.005	-	-	4.0	-				
15	3757782	<0.005	-	-	12.0	-				
16	3757783	<0.005	-	-	4.0	-				
17	3757784	<0.005	-	-	8.0	-				
18	3757785	<0.005	-	-	4.0	-				
19	3757786	<0.005	-	<0.005	8.0	-				
20	3757787	<0.005	-	-	12.0	-				
21	3757788	<0.005	-	-	2.0	-				
22	3757789	<0.005	<0.005	-	2.5	-				
23	3757790	<0.005	-	-	1.5	-				
24	3757791	0.016	-	-	6.0	-				
25	3757792	<0.005	-	-	1.5	-				

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
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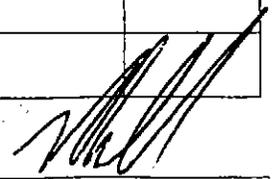
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TUBE No.	SAMPLE No.	Au	Au (R)	Au (S)	As	As				
1	3757793	<0.005	-	-	0.5	-				
2	3757794	<0.005	-	-	1.0	-				
3	3757795	<0.005	-	-	1.5	-				
4	3757796	<0.005	-	-	3.0	-				
5	3757797	<0.005	-	-	0.5	-				
6	3757798	<0.005	-	-	1.5	-				
	3757799	<0.005	-	-	2.0	-				
8	3757800	<0.005	-	-	0.5	-				
9	3757801	<0.005	-	-	<0.5	-				
10	3757802	<0.005	-	-	<0.5	-				
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23	DETECTION	0.005	0.005	0.005	0.5	100				
24	UNITS	ppm	ppm	ppm	ppm	ppm				
25	METHOD	GG313	GG313	GG313	HA140	GA140				

Results in ppm unless otherwise specified
 T = element present; but concentration too low to measure
 X = element concentration is below detection limit
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APPENDIX 2:

**Rockchip lithological codes, sampling 1
edgers and geochemistry**

865051

ROCKCHIP AND DRILLING CODES

22/2/1994

BMR LITH

Rock code as per published geological map
For time designation use:-

Q	Quaternary	M	Permian	P	Proterozoic
T	Tertiary	C	Carboniferous	A	Archaean
		S	Silurian		
K	Cretaceous	D	Devonian		
R	Triassic	O	Ordovician		
J	Jurassic	E	Cambrian		

FIELD ID

Field term for rock type
Broad groupings are:-

S	Sedimentary	I	Intrusive	C	Surficial
M	Metamorphic	E	Extrusive	O	Others

SEDIMENTARY

Sog	Conglomerate	Sls	Limestone	Sw	Wacke
Sss	Sandstone	Sdl	Dolomite	Sag	Agglomerate/mixtite
Sst	Siltstone	Sch	Chert	Sbx	Breccia
Ssh	Shale	Sif	BF		
Sbs	Black shale				

METAMORPHIC

Mel	Slate	Mq	Quartzite	Mmg	Migmatite
Mph	Phyllite	Mm	Marble		
Msc	Schist	Ma	Amphibolite	Msk	Skarn
Mbs	Graphitic schist	Mcs	Calcsilicate		
Mgn	Gneiss	Mh	Hornfels		

INTRUSIVE IGNEOUS

If	Felsic undiff.	Ii	Intermed undiff.	Iu	Ultramafic
Ifp	Felsic porphyry	Iip	Intermed porph	Ius	Serpentinite
Iap	Aplite	Iim	Mafic undiff.	Ipg	Pegmatite
Igr	Granite	Ild	Dolerite		
Igd	Granodiorite	Igb	Gabbro		

EXTRUSIVE IGNEOUS

Ery	Rhyolite	Ean	Andesite	Et	Tuff undiff
Edc	Dacite	Eb	Basalt	EIt	Felsic tuff
				Emt	Mafic tuff

SURFICIAL (COVER) MATERIAL

Ca	Alluvium	Clt	Laterite	Csg	Gossan
Coa	Colluvium	Csp	Pisolites	Coy	Clay
Ca	Sand	Cst	Ironstone	Cv	Vegetation/peat
Cbs	Black soil	Csl	Silcrete		
Cg	Gravel	Ccl	Calcrete		

OTHERS

Ovq	Vein quartz	Omy	Mylonite	Oms	Massive sulphide
Ovc	Vein carbonate	Obx	Breccia	Oxc	Contamination
Ovs	Vein sulphide	Of	Fault gouge	Ox	Unknown

TEXTURAL CODES

WEATHERING/SURFICIAL FEATURES

We	Weathered	Fe	Ferruginous
Bl	Bleached	Fo	Fe ox in fract
Le	Leached		

MINERALISATION/ALTERATION FEATURES

Gs	Gossanous	Vs	Vein sulphide	Al	Altered
Vn	Veined	Ds	Dissem sulph	Sl	Silicified
Vc	Vein carbonate	Fs	Fracture sulph		
Vq	Vein quartz	Bs	Banded sulph	Di	Disseminated

GEOLOGICAL FEATURES

Bd	Bedded	Fr	Fractured	Po	Porphyritic
Bn	Banded	Ib	interbedded	Sc	Schistose
Bx	Brecciated	Lm	Laminated	Sh	Sheared
Fi	Fissile (slaty)	Ma	Massive	Vu	Vuggy

DIAGNOSTIC MINERALOGY

PRIMARY MINERALISATION

Ga	Galena	Py	Pyrite	Ni	Ni sulphides
Sp	Sphalerite	Po	Pyrrhotite		
Cp	Chalcopyrite	Su	Unknown sulph		

SECONDARY MINERALISATION

Ls	Lead secondaries	Cs	Copper sec.	Ni	Ni secondaries
Zs	Zinc "	Us	Uranium "		

ALTERATION/DIAGNOSTIC MINERALS

Cy	Clay	He	Haematite	Gt	Garnet
Ep	Epidote	Mt	Magnetite	Ky	Kyanite
Cc	Carbonate	Js	Jarosite	To	Tourmaline
Sd	Siderite/Ankerite	Mn	Manganese mins	Cl	Chlorite
Di	Dolomite				

COLOUR CODES

L	Light	A	Banded	M	Mottled
D	Dark				
N	Black	P	Purple	V	Green
G	Grey	R	Red	K	Pink
B	Brown	O	Orange	E	Blue
W	White	Y	Yellow	S	Silver

APPENDIX: TROWUTTA EL19/92 - ROCKCHIP LEDGERS AND GEOCHEMISTRY

APPENDIX 2: TROWUTTA EL19/92 ROCKCHIP DATABASE.										
YEAR 2 SAMPLES										
Results in ppm, except Fe%.										
SAMPNO.	DPO	EAST	NORTH	PROSPECT	BMRLITH	FIELD ID	TEXTURE	ALT/MIN	COLOUR	COMMENTS
3753801	77111	358500	5468300	PINE CORNER RD	Prc	Msc?	We	Mn	DB	Almost looks lignitic
3753802	77111	358500	5468300	PINE CORNER RD	Prc	Msc?	We	Fe	MYR	Gradational to 801?
3753803	77111	358200	5468450	PINE CORNER RD	Prc	Msc	ShDs	Py	MWYB	Py 20-30%
3753804	77111	358200	5468450	PINE CORNER RD	Prc	MscOv	ShVn	Sd	MVP	Siderite veins 40%
3753805	77111	358200	5468450	PINE CORNER RD	Prc	Ov	Ys	SdPy	P	Massive siderite
3753806	77111	358200	5468450	PINE CORNER RD	Prc	Csg	VuVn		MDRB	Gossanous rock. Strongly qtz veined.
3753807	77111	357250	5476650	BLACK RIVER	Pif	Mq	Ma		W	
3753808	77111	357200	5476600	BLACK RIVER	Pif?	Sss	Fe	He	DR	Fit? next to railway.
3753809	77111	357000	5476500	BLACK RIVER	Prc?	Ssi	LmFe		ALPO	Fit?
3753810	77111	354250	5474850	FERNY BRIDGE RD	Pif	Scg	Fe		MYRBP	Ferrug silt matrix to conglom.
3753811	77111	351850	5472050	PONDEROSA	Pif?	Sss			DPB	Fit, uncertain if in-situ.
3753812	77111	350300	5467700	PEPPERMINT HILL	Pif	Sss	Fe	He	FP	He sst layer in conglom
3753813	77111	350300	5467700	PEPPERMINT HILL	Pif	Scg	Fe	Js?	MYW	Jarosite? staining of matrix.
3753814	77111	347150	5470450	MUCKEY CREEK	Pld	O			DGN	Sooty material. stratiform 10cm wide.
3753815	77111	347150	5470450	MUCKEY CREEK	Pld	SlsSsh	Lm		G	
3753816	77111	347150	5470450	MUCKEY CREEK	Pld	Csg	Vu		MYR	Gossanous material in chert/lst.
3753817	77111	347000	5470600	MUCKEY CREEK	Pld	Csg	Vu		MYR	Gossanous fit in gravel pit.
3753818	77111	347000	5470600	MUCKEY CREEK	Pld	O			DGN	Sooty material. Fit in gravel pit.
3753819	77111	346750	5470550	MUCKEY CREEK	Pld	Ccy	Lm		G	Stratiform cly + minor ferrug layers.
3753820	77111	344350	5461300	EDITH CREEK	Pld?	SchSbx?	Vu		MWY	Fit in paddock
3753821	77111	344350	5461300	EDITH CREEK	Pld	Sch	LmVu		ALGDG	Fit in paddock. Vugs after sulph?
3753822	77111	344350	5461300	EDITH CREEK	Pld?	Ssi?	Vu		LB	Fit in paddock. Pits after sulph 5-10%
3753823	77111	344350	5461300	EDITH CREEK	Pld	Sch	LmVu		AYBG	Fit in paddock. Irreg voids 5-10%
3753824	77111	344350	5461300	EDITH CREEK	Pif?	SssCsf	Fe		DFB	Fit in paddock. Ironstone nodule?
3753825	77111	344350	5461300	EDITH CREEK	Pif	Sss	Vu	He	GR	Fit in paddock. Pits after sulph?
3753826	77111	344350	5461300	EDITH CREEK	PifPld?	Csf	Vu	He	DR	Fit in paddock. He rock, 5% vugs
3753827	77111	344350	5461300	EDITH CREEK	Pif?	Ssi?	Fe		OB	Fit in paddock. Fe spotted.
3753828	77111	344350	5461300	EDITH CREEK	Pld?	O	Vu		MLYP	Fit in paddock. Vugs 10-20%. Strange
3753829	77111	344350	5461300	EDITH CREEK	Pld?	Csf		He	R	Fit in paddock. He rock.
3753830	77111	344350	5461300	EDITH CREEK	Pld	SchSbx	Vu		MYLG	Fit in paddock. 5% vugs lined with FeOx
3753831	77111	344350	5461300	EDITH CREEK	Pld	Sbx	Vu		MKRY	Fit in paddock. Vugs after sulph?
3753832	77111	343750	5461300	EDITH CREEK	Pld	Ssh	Lm		DG	
3753833	77111	349050	5462750	GENTLE ANNIE CK	Pif	Mq			WLK	
3757701	77116	341400	5450900	TROWUTTA						Limonitic, silica with honeycomb patches

APPENDIX: TROWUTTA EL19/92 - ROCKCHIP LEDGERS AND GEOCHEMISTRY

APPENDIX : TROWUTTA EL19/92 ROCKCHIP DATABASE.														
YEAR 2 SAMPLES														
Results in ppm, except Fe%.														
SAMPNO.	Ag	As	Au	BI	Co	Cu	Fe%	Mn	Mo	NI	Pb	Sn	W	Zn
3753801	-1	2	0.008	-10	-3	3	0.38	11	-5	5	12			8
3753802	-1	31	0.016	-10	-3	11	4.29	92	-5	6	10			9
3753803	1	420	0.112	-10	115	10	5	23	-5	34	23			8
3753804	-1	20	0.025	-10	4	-2	19.3	34800	-5	-3	-3			31
3753805	3	65	0.917	12	6	1493	23.4	26600	-5	21	9			168
3753806	2	470	0.379	10	3	2054	30.6	1902	5	8	12			294
3753807	-1	10	-0.005	-10	-3	4	0.63	55	7	6	-3			3
3753808	-1	4	-0.005	-10	-3	6	1.95	828	15	11	-3			16
3753809	-1	2	0.009	-10	-3	5	2.5	35	-5	12	-3			9
3753810	-1	15	0.008	-10	-3	7	2.03	34	6	18	15			7
3753811	1	1	0.009	-10	-3	5	0.72	82	7	6	8			12
3753812	-1	-1	0.006	-10	-3	2	0.73	32	5	5	3			2
3753813	-1	-1	-0.005	-10	-3	2	0.78	39	6	7	7			8
3753814	-1	3	0.024	-10	-3	3	0.86	39	-5	5	17			13
3753815	-1	2	0.017	-10	-3	9	0.66	22	-5	9	12			37
3753816	-1	41	-0.005	-10	49	117	22.2	2581	6	141	8			1423
3753817	1	3	-0.005	-10	162	152	25.8	3822	-5	371	16			2354
3753818	1	17	-0.005	-10	4	5	0.66	38	-5	8	3			18
3753819	-1	21	-0.005	-10	3	25	2.08	317	-5	31	16			65
3753820	-1	3	-0.005	-10	-3	-2	0.57	41	-5	6	-3			10
3753821	-1	1	0.033	-10	-3	2	0.69	58	-5	10	-3			7
3753822	-1	6	-0.005	-10	5	21	13.5	90	-5	20	-3			31
3753823	-1	3	-0.005	-10	-3	-2	1.39	31	-5	3	-3			10
3753824	-1	5	-0.005	-10	5	29	23.6	144	-5	14	-3			43
3753825	-1	4	-0.005	-10	3	14	12	106	-5	30	-3			29
3753826	-1	6	-0.005	-10	3	19	8.4	190	-5	10	3			30
3753827	-1	4	0.02	-10	6	25	13.3	81	-5	12	-3			35
3753828	-1	3	0.02	-10	8	18	8.05	84	-5	22	-3			35
3753829	-1	6	-0.005	-10	5	9	27.1	51	-5	-3	-3			146
3753830	-1	2	-0.005	-10	-3	-2	1.24	20	-5	-3	-3			4
3753831	-1	2	-0.005	-10	4	12	6.92	52	-5	11	-3			18
3753832	-1	4	0.01	-10	-3	4	1.54	26	-5	-3	8			7
3753833	-1	-1	-0.005	-10	-3	-2	0.54	55	5	-3	-3			-2
3757701		22				16					66			99

APPENDIX: TROWUTTA EL19/92 - ROCKCHIP LEDGERS AND GEOCHEMISTRY

SAMPNO.	DPO	EAST	NORTH	PROSPECT	BMRLITH	FIELD ID	TEXTURE	ALT/MIN	COLOUR	COMMENTS
3757702	77116	340900	5445100	TROWUTTA						Partly silicified carbonate
3757703	77116	340675	5440700	TROWUTTA						Dark grey silicified oolitic fine breccia
3757704	77116	340425	5443800	TROWUTTA						Black slate
3757705	77116	340475	5442350	TROWUTTA						Dolomite
3757706	77116	340475	5442325	TROWUTTA						Dolomite
3757707	77116	340475	5442375	TROWUTTA						Dolomite
3757708	77116	340225	5442750	TROWUTTA						Dolomite
3757709	77116	341025	5443025	TROWUTTA						Dolomite with common small patches of pyrite
3757710	77116	341350	5443125	TROWUTTA						Iron stained quartz arenite
3757711	77116	340775	5443750	TROWUTTA						Dark grey chert with graphite bands
3757712	77116	337900	5440925	TROWUTTA						Dolomite
3757713	77117	341100	5443850	TROWUTTA						Fairly fresh quartz arenite
3757714	77117	341625	5444075	TROWUTTA						Light olive Cowrie Siltstone
3757715	77117	341400	5444050	TROWUTTA						Red oxidised Cowrie Siltstone
3757716	77117	341150	5443950	TROWUTTA						Red and green quartz conglomerate
3757717	77117	341150	5443950	TROWUTTA						Red and green quartz arenite
3757718	77117	340950	5443750	TROWUTTA						Dolomite with brecciated algal mat
3757719	77117	341400	5443575	TROWUTTA						Leached, silicified, oolitic material
3757720	77117	341125	5443750	TROWUTTA						Dolomite with fine breccia texture
3757721	77117	340600	5444400	TROWUTTA						Dark grey dolomite with chert patches
3757722	77117	340750	5444350	TROWUTTA						Black siliceous siltstone
3757723	77117	340850	5444350	TROWUTTA						Planar banded grey chert
3757724	77117	340875	5444350	TROWUTTA						Pale grey dolomite with brecciated algal mat
3757725	77117	340925	5444325	TROWUTTA						Medium grey dolomite
3757726	77117	341025	5444225	TROWUTTA						Quartz arenite
3757727	77117	341150	5444250	TROWUTTA						Red and green Cowrie Siltstone
3757728	77117	340975	5445025	TROWUTTA						Pale grey dolomite
3757729	77117	342375	5447575	TROWUTTA						Dark grey shale (weathered)
3757730	77117	342375	5447575	TROWUTTA						Dark grey shale (weathered)
3757731	77117	342400	5447675	TROWUTTA						Pyritic siltstone in road fill (exotic)
3757732	77117	342350	5447175	TROWUTTA						Cream dolomite with chert patches
3757733	77117	340500	5442000	TROWUTTA						Cream uniform dolomite
3757734	77117	340475	5441950	TROWUTTA						Pale grey dolomite
3757735	77117	340425	5441775	TROWUTTA						Grey dolomite with brecciated algal mat
3757736	77117	340425	5441675	TROWUTTA						Greenish grey quartz arenite with pyrite
3757737	77117	340425	5441675	TROWUTTA						Greenish grey quartz arenite with pyrite
3757738	77117	340425	5441675	TROWUTTA						Greenish grey quartz arenite with pyrite
3757739	77117	340075	5440050	TROWUTTA						Fawn dolomite with carbonaceous laminae

APPENDIX: TROWUTTA EL19/92 - ROCKCHIP LEDGERS AND GEOCHEMISTRY

SAMPNO.	Ag	As	Au	Bi	Co	Cu	Fe%	Mn	Mo	Ni	Pb	Sn	W	Zn
3757702		2				3					15			18
3757703		3				9					8			10
3757704		4.5				25					18			14
3757705		1				2					8			11
3757706		0.5				3					8			11
3757707		1				3					7			16
3757708		1				-2					6			7
3757709		2				3					7			12
3757710		2				2					-3			3
3757711		1				23					4			12
3757712		2				2					4			4
3757713	-1	8	0.008		-3	7	0.75	39		-3	3			5
3757714	-1	1	-0.005		-3	4	0.77	34		-3	-3			15
3757715	-1	2	-0.005		-3	7	2.61	37		3	-3			10
3757716	-1	1	-0.005		-3	10	0.93	58		7	-3			30
3757717	-1	0.5	-0.005		-3	10	0.69	70		9	-3			5
3757718	-1	1	-0.005		-3	12	0.13	242		5	-3			17
3757719	-1	2	-0.005		-3	8	0.64	69		13	-3			19
3757720	-1	1	-0.005		-3	4	0.2	537		4	-3			11
3757721	-1	1.5	-0.005		-3	5	0.15	216		-3	-3			41
3757722	-1	2.5	-0.005		-3	10	0.34	20		-3	8			7
3757723	-1	0.5	-0.005		-3	3	0.27	27		-3	-3			11
3757724	-1	0.5	-0.005		-3	6	0.09	198		-3	6			22
3757725	-1	0.5	-0.005		-3	3	0.12	128		-3	-3			11
3757726	-1	1	-0.005		-3	3	0.46	36		-3	-3			3
3757727	-1	1	-0.005		3	3	3.35	25		7	-3			19
3757728	-1	0.5	-0.005		-3	3	0.11	145		7	-3			5
3757729	-1	-0.5	-0.005		-3	3	0.21	20		4	-3			-2
3757730	-1	-0.5	-0.005		-3	3	0.24	17		4	9			5
3757731	-1	150	0.014		35	273	8.51	143		98	24			86
3757732	-1	2	-0.005		-3	3	0.12	208		3	-3			16
3757733	-1	1.5	-0.005		-3	3	0.21	352		-3	-3			11
3757734	-1	1	-0.005		-3	3	0.06	125		-3	-3			5
3757735	-1	1	0.012		-3	3	0.07	109		-3	-3			12
3757736	-1	9	0.006		-3	6	0.79	40		5	-3			7
3757737	-1	2	-0.005		-3	7	1.38	78		7	-3			8
3757738	-1	11.5	-0.005		20	34	7.12	30		18	7			34
3757739	-1	2	0.005		-3	3	0.26	630		-3	-3			10

APPENDIX: TROWUTTA EL19/92 - ROCKCHIP LEDGERS AND GEOCHEMISTRY

SAMPNO.	DPO	EAST	NORTH	PROSPECT	BMRLITH	FIELD ID	TEXTURE	ALT/MIN	COLOUR	COMMENTS
3757740	77117	340075	5440300	TROWUTTA						Dolomite
3757741	77117	340075	5440375	TROWUTTA						Dolomite with patches of limonitic honeycomb
3757742	77117	340350	5445900	TROWUTTA						Hard silic siltst with limonitic honeycomb
3757743	77117	336500	5443675	TROWUTTA						Dark grey, shaly oolitic co3 with pyrite
3757744	77117	337250	5445050	TROWUTTA						Dark grey chert
3757745	77117	336700	5442700	TROWUTTA						Dark grey chert
3757746	77117	336800	5443350	TROWUTTA						Dark grey chert
3757747	77117	336800	5443400	TROWUTTA						Black siliceous siltstone
3757748	77117	336975	5444075	TROWUTTA						Black chert
3757749	77117	336800	5444375	TROWUTTA						Dark grey chert
3757750	77117	337250	5445300	TROWUTTA						Dark grey chert
3757751	77117	337175	5445500	TROWUTTA						Cream and pale grey blocky chert
3757752	77117	338000	5441000	TROWUTTA						Fawn to dark grey dolomite
3757753	77117	338075	5441000	TROWUTTA						Pale chert
3757754	77117	338300	5440825	TROWUTTA						Dark grey chert
3757755	77117	338550	5441100	TROWUTTA						Dark grey chert
3757756	77117	338625	5441350	TROWUTTA						Dolomite
3753762	77118	325420	5440070	TROWUTTA	Pr	Sbs	Lm		N	
3753763	77118	324400	5440250	TROWUTTA	Pr	Sbs	LmDsBs	Py	N	Py 5%
3753764	77118	324000	5440040	TROWUTTA	Pr	Sss	We		LG	
3753765	77118	323995	5440040	TROWUTTA	Pr	Ssi	SGs		DGN	width 10cm
3753766	77118	323990	5440040	TROWUTTA	Pr	Ssi	Lm		ADGW	
3753767	77118	323985	5440040	TROWUTTA	Pr	Ccy			WLG	Clay in fold axis
3753768	77118	323980	5440040	TROWUTTA	Pr	Ssi	Lm		AVN	
3753769	77118	323975	5440040	TROWUTTA	Pr	Ox	We	Mn?	ADBLB	Unknown coaly rock.
3753770	77118	323250	5439880	TROWUTTA	Pr	Sbs	LmDsBs	Py	N	
3757757	77118	341025	5443025	TROWUTTA						Pale grey to fawn dolomite with pyrite
3757758	77118	341025	5443025	TROWUTTA						Pale grey to fawn dolomite with pyrite
3757759	77118	337450	5438425	TROWUTTA						Pale grey dolomite, carbonaceous stringers
3757760	77118	337375	5438425	TROWUTTA						Pale grey dolomite
3757761	77118	337250	5438375	TROWUTTA						Interbanded siltstone and pug
3757762	77118	337225	5438450	TROWUTTA						Buff siliceous rock with honeycomb
3757763	77118	337150	5438725	TROWUTTA						Dark grey dolomite with carbonate veins
3757764	77118	336125	5442075	TROWUTTA						Carbonaceous siliceous siltstone with pyrite
3757765	77118	337025	5439100	TROWUTTA						Pale grey dolomite
3757766	77118	336775	5438850	TROWUTTA						Pebbly siltstone with pyrite
3757767	77118	336750	5438750	TROWUTTA						Pale grey dolomite
3757768	77118	336750	5438700	TROWUTTA						Pale grey dolomite

APPENDIX: TROWUTTA EL19/92 - ROCKCHIP LEDGERS AND GEOCHEMISTRY

SAMPNO.	Ag	As	Au	Bi	Co	Cu	Fe%	Mn	Mo	Ni	Pb	Sn	W	Zn
3757740	-1	0.5	-0.005		-3	2	0.09	205		-3	-3			7
3757741	-1	2	-0.005		-3	3	0.34	958		-3	4			79
3757742	-1	4.5	-0.005		-3	10	0.75	164		13	-3			42
3757743	-1	5	-0.005		-3	8	0.31	113		8	-3			36
3757744	-1	1	-0.005		-3	4	0.61	60		6	-3			13
3757745	-1	1	-0.005		-3	4	0.61	229		5	-3			22
3757746	-1	3	-0.005		-3	5	0.54	100		6	-3			21
3757747	-1	1	-0.005		-3	4	0.64	108		9	-3			9
3757748	-1	0.5	-0.005		-3	4	0.63	65		8	-3			7
3757749	-1	1	-0.005		-3	6	0.79	205		8	-3			11
3757750	-1	1	-0.005		-3	3	0.51	177		4	-3			6
3757751	-1	1.5	-0.005		-3	8	0.9	145		3	4			14
3757752	-1	1	-0.005		-3	2	0.08	115		3	-3			9
3757753	-1	2	-0.005		-3	3	1.09	149		6	-3			13
3757754	-1	1	-0.005		-3	3	0.62	151		6	-3			5
3757755	-1	1	-0.005		-3	4	0.51	74		4	-3			10
3757756	-1	0.5	-0.005		-3	6	0.13	205		-3	-3			16
3753762	-1	14	-0.005		-3	21	1.8	101		5	20			14
3753763	-1	17.5	-0.005		4	43	2	44		9	37			32
3753764	-1	4.5	-0.005		-3	5	0.17	16		6	7			5
3753765	-1	5.5	0.007		-3	6	0.64	20		5	5			6
3753766	-1	2	-0.005		-3	4	0.88	15		7	3			12
3753767	-1	3	-0.005		-3	5	0.6	13		9	-3			11
3753768	-1	0.5	-0.005		-3	7	0.51	10		6	-3			13
3753769	-1	0.5	-0.005		-3	5	0.25	10		-3	3			5
3753770	-1	8	-0.005		-3	23	1.34	61		90	24			16
3757757	-1	1.5	-0.005		-3	26	0.2	397		5	3			7
3757758	-1	2.5	-0.005		-3	5	0.22	495		3	3			12
3757759	-1	2	-0.005		-3	3	0.19	703		-3	-3			82
3757760	-1	2.5	-0.005		-3	2	0.08	181		3	-3			10
3757761	-1	4.5	-0.005		17	60	3.48	244		91	17			45
3757762	-1	5	-0.005		-3	7	1.57	96		15	-3			27
3757763	-1	2	-0.005		-3	3	0.07	157		-3	-3			14
3757764	-1	7.5	0.01		-3	22	1.16	57		7	4			20
3757765	-1	5.5	-0.005		-3	2	0.19	185		-3	-3			7
3757766	-1	12.5	-0.005		6	20	2.47	563		14	4			26
3757767	-1	3	-0.005		-3	3	0.17	95		-3	3			5
3757768	-1	1	-0.005		-3	4	0.54	178		6	3			13

APPENDIX: TROWUTTA EL19/92 - ROCKCHIP LEDGERS AND GEOCHEMISTRY

SAMPNO.	DPO	EAST	NORTH	PROSPECT	BMRLITH	FIELD ID	TEXTURE	ALT/MIN	COLOUR	COMMENTS
3757769	77118	336475	5438450	TROWUTTA						Banded green-grey dolomite
3757770	77118	336650	5438175	TROWUTTA						Khaki siliceous rock with honeycomb
3757771	77118	337250	5439575	TROWUTTA						Black chert
3757772	77118	337200	5439775	TROWUTTA						Khaki siltstone (Smithton Volcs.)
3757773	77118	337275	5439100	TROWUTTA						Volc agglomerate? with pyrite (Smithton Volcs.)
3757774	77118	337375	5440075	TROWUTTA						Iron stained siliceous rock
3757775	77118	337400	5440125	TROWUTTA						Carbonaceous pebbly siltstone with pyrite
3757776	77118	337575	5440550	TROWUTTA						Pale grey dolomite with dark veinlets
3757777	77118	337650	5440675	TROWUTTA						Orange-brown siliceous rock with honeycomb
3757778	77118	337650	5440675	TROWUTTA						Fawn dolomite with dark veinlets
3757779	77118	337825	5440850	TROWUTTA						Dolomite with etched planar banding
3757780	77118	334325	5441975	TROWUTTA						Pebbly dolomitic siltstone with pyrite
3757781	77118	333375	5453075	TROWUTTA						Chocolate mudstone with chlorite veins
3757782	77118	333375	5453075	TROWUTTA						Green carbonate with rhodochrosite, sulphide
3757783	77118	333375	5453075	TROWUTTA						Recrystallized dolomite with rhodochrosite
3757784	77118	333375	5453075	TROWUTTA						Recrystallized dol with chlorite, rhodochrosite
3757785	77118	336425	5457400	TROWUTTA						Silicified dolomite breccia
3757786	77118	336425	5457400	TROWUTTA						Iron stained silicified dolomite breccia
3757787	77118	337100	5458075	TROWUTTA						Iron stained silicified dolomite breccia
3757788	77118	339825	5443075	TROWUTTA						Pale grey dolomite with carbonate
3757789	77118	339800	5443175	TROWUTTA						Dolomite with small in situ stromatolites
3757790	77118	339525	5442825	TROWUTTA						Dark grey chert
3757791	77118	339525	5442500	TROWUTTA						Carbonaceous shale
3757792	77118	339550	5442125	TROWUTTA						Silicified oolitic dolomite
3757793	77118	339550	5442100	TROWUTTA						Pale grey dolomite
3757794	77118	339450	5442075	TROWUTTA						Hard olive siltstone
3757795	77118	339300	5441625	TROWUTTA						Interbanded dolomite and siltstone
3757796	77118	339150	5441375	TROWUTTA						Banded, flaggy, grey chert
3757797	77118	338875	5445025	TROWUTTA						Pale grey dolomite
3757798	77118	338550	5445250	TROWUTTA						Fawn chert
3757799	77118	338975	5445500	TROWUTTA						Fine g/s, red-brown sst (Cowrie Siltstone)
3757800	77118	338725	5445775	TROWUTTA						White chert with grey patches
3757801	77118	338650	5445825	TROWUTTA						Dark grey banded siltstone
3757802	77118	339875	5446350	TROWUTTA						Dark grey banded siltstone
3757842	77667	324200	5436500	ROGER RIVER FAULT						Grey pebbly mixture
3757843	77667	324200	5436500	ROGER RIVER FAULT						Grey pebbly mixture
3757844	77667	324100	5436475	ROGER RIVER FAULT						White and dk grey siliceous material
3757845	77667	324100	5436475	ROGER RIVER FAULT						White and dk grey siliceous material

APPENDIX: TROWUTTA EL19/92 - ROCKCHIP LEDGERS AND GEOCHEMISTRY

SAMPNO.	Ag	As	Au	Bi	Co	Cu	Fe%	Mn	Mo	Ni	Pb	Sn	W	Zn
3757769	-1	1	-0.005			4	4	2.12		54	-3			45
3757770	-1	-0.5	-0.005			-3	4	0.22		3	-3			6
3757771	-1	1.5	-0.005			-3	65	0.72		5	3			38
3757772	-1	4	-0.005			21	49	5.67		112	-3			135
3757773	-1	4	-0.005			7	18	2.6		14	4			32
3757774	-1	4	-0.005			7	6	1.22		5	-3			16
3757775	-1	40.5	0.014			24	41	13.6		77	11			77
3757776	-1	3.5	-0.005			-3	9	0.19		6	-3			58
3757777	-1	24.5	-0.005			26	24	8.97		44	-3			317
3757778	-1	4.5	-0.005			-3	5	0.56		-3	3			18
3757779	-1	1	-0.005			-3	3	0.1		-3	5			10
3757780	-1	2.5	-0.005			-3	9	1.75		10	-3			16
3757781	-1	4	-0.005			30	6	9.04		80	-3			107
3757782	-1	12	-0.005			46	421	8.41		71	4			112
3757783	-1	4	-0.005			-3	6	0.28		7	-3			5
3757784	-1	8	-0.005			-3	6	1.04		7	4			7
3757785	-1	4	-0.005			-3	4	0.87		-3	3			2
3757786	-1	8	-0.005			-3	4	0.51		3	3			25
3757787	-1	12	-0.005			-3	5	1.44		27	-3			36
3757788	-1	2	-0.005			-3	2	0.08		-3	-3			28
3757789	-1	2.5	-0.005			-3	4	0.17		5	-3			23
3757790	-1	1.5	-0.005			-3	4	0.51		-3	-3			5
3757791	-1	6	0.016			-3	22	0.68		3	37			26
3757792	-1	1.5	-0.005			-3	5	0.51		6	-3			23
3757793	-1	0.5	-0.005			-3	2	0.1		4	-3			11
3757794	-1	1	-0.005			18	54	4.73		224	-3			88
3757795	-1	1.5	-0.005			6	19	1.5		18	3			21
3757796	-1	3	-0.005			6	10	0.52		-3	-3			18
3757797	-1	0.5	-0.005			-3	2	0.15		-3	-3			8
3757798	-1	1.5	-0.005			3	7	0.88		-3	-3			10
3757799	-1	2	-0.005			-3	5	1.95		-3	5			13
3757800	-1	0.5	-0.005			-3	2	0.12		-3	-3			2
3757801	-1	-0.5	-0.005			-3	2	0.36		-3	-3			2
3757802	-1	-0.5	-0.005			-3	3	0.19		-3	-3			-2
3757842	-1	15	0.01			23	39	5.8		96	5	9	8	103
3757843	-1	20	0.008			54	52	10.8		162	10	9	-5	165
3757844	-1	5	-0.008			85	4	1.55		14	5	6	-5	70
3757845	-1	0.5	-0.008			5	2	0.17		-3	-3	-3	-5	50

APPENDIX: TROWUTTA EL19/92 - ROCKCHIP LEDGERS AND GEOCHEMISTRY

SAMPNO.	DPO	EAST	NORTH	PROSPECT	BMRLITH	FIELD ID	TEXTURE	ALT/MIN	COLOUR	COMMENTS
3757846	77667	323950	5436400	ROGER RIVER FAULT						Bright, med. green siltstone
3757847	77667	324250	5436750	ROGER RIVER FAULT						White and dk grey siliceous material
3757848	77667	326900	5440775	ROGER RIVER FAULT						Pyritic grey cherty mudstone
3757849	77667	326950	5440700	ROGER RIVER FAULT						Pyritic grey cherty mudstone
3757850	77667	327075	5440625	ROGER RIVER FAULT						Weathered basaltic rocks
3757851	77667	327000	5440675	ROGER RIVER FAULT						Med. brown soil
3757852	77667	326775	5440575	ROGER RIVER FAULT						Indurated white silica flour
3757853	77667	328000	5444000	ROGER RIVER FAULT						Pale grey to fawn fine grained dolomite
3757854	77667	328100	5444000	ROGER RIVER FAULT						Sheared reddish mudstone
3757855	77667	328500	5445150	ROGER RIVER FAULT						Reddish-orange clay
3757856	77667	328475	5445175	ROGER RIVER FAULT						Leached yellow to white friable clay
3757857	77667	328475	5445175	ROGER RIVER FAULT						Orange-brown clay
3757858	77667	329300	5446975	ROGER RIVER FAULT						Leached pale friable clay
3757859	77667	329275	5446975	ROGER RIVER FAULT						Leached pale friable clay
3757860	77667	330350	5448625	ROGER RIVER FAULT						Med. brown clay soil
3757861	77667	330360	5448625	ROGER RIVER FAULT						Med. brown clay soil

APPENDIX: TROWUTTA EL19/92 - ROCKCHIP LEDGERS AND GEOCHEMISTRY

SAMPNO.	Ag	As	Au	BI	Co	Cu	Fe%	Mn	Mo	Ni	Pb	Sn	W	Zn
3757846	-1	0.5	-0.008		6	3	1.71	24		8	-3	9	-5	80
3757847	-1	1	-0.008		7	2	0.61	190		-3	-3	6	-5	53
3757848	-1	10	-0.008		10	25	2.95	144		26	10	7	-5	79
3757849	-1	4.5	-0.008		3	14	3.11	132		15	7	8	-5	71
3757850	-1	5.5	0.015		26	320	9.8	516		54	-3	10	5	132
3757851	-1	7.5	-0.008		6	45	9.2	184		31	4	8	-5	111
3757852	-1	0.5	-0.008		-3	3	0.2	-3		-3	-3	-3	-5	54
3757853	-1	4.5	-0.008		4	4	0.49	83		-3	3	-3	-5	58
3757854	-1	3.5	-0.008		33	61	13.2	502		70	-3	13	-5	147
3757855	-1	6	-0.008		9	27	11	50		31	3	11	-5	70
3757856	-1	3.5	-0.008		-3	9	0.32	8		22	6	-3	-5	60
3757857	-1	7	-0.008		-3	52	3.66	16		172	15	7	-5	66
3757858	-1	1	-0.008		4	10	1.32	41		50	16	12	5	90
3757859	-1	89	-0.008		-3	15	1.85	22		40	51	8	8	64
3757860	-1	2	-0.008		-3	9	1.74	14		11	4	8	-5	63
3757861	-1	2	-0.008		-3	8	1.9	12		9	3	9	6	68

APPENDIX 3:
Soil sampling ledgers and geochemistry

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ROCKCHIP AND DRILLING CODES

22/2/1994

BMR LITH

Rock code as per published geological map
For time designation use:-

Q	Quaternary	M	Permian	P	Proterozoic
T	Tertiary	C	Carboniferous	A	Archaean
		S	Silurian		
K	Cretaceous	D	Devonian		
R	Triassic	O	Ordovician		
J	Jurassic	E	Cambrian		

FIELD ID

Field term for rock type
Broad groupings are:-

S	Sedimentary	I	Intrusive	C	Surficial
M	Metamorphic	E	Extrusive	O	Others

SEDIMENTARY

Sog	Conglomerate	Ss	Limestone	Sw	Wacke
Sss	Sandstone	Sst	Dolomite	Sag	Agglomerate/mixtite
Ssi	Siltstone				
Ssh	Shale	Sch	Chert	Sbx	Breccia
Sbs	Black shale	Sif	BIF		

METAMORPHIC

Msl	Slate	Mq	Quartzite	Mmg	Migmatite
Mph	Phyllite	Mm	Marble		
Msc	Schist	Ma	Amphibolite		
Mbs	Graphitic schist	Mcs	Calcsilicate	Msk	Skarn
Mgn	Gneiss	Mh	Hornfels		

INTRUSIVE IGNEOUS

If	Felsic undiff.	Ii	Intermed undiff.	Iu	Ultramafic
Iip	Felsic porphyry	Iip	Intermed porph	Ius	Serpentinite
Iap	Aplite	Im	Mafic undiff.		
Igr	Granite	Ido	Dolerite	Ipg	Pegmatite
Igd	Granodiorite	Igb	Gabbro		

EXTRUSIVE IGNEOUS

Ery	Rhyolite	Ean	Andesite	Et	Tuff undiff
Eoc	Dacite	Eb	Basalt	Eit	Felsic tuff
				Emt	Mafic tuff

SURFICIAL (COVER) MATERIAL

Ca	Alluvium	Cl	Laterite	Csg	Gossan
Cco	Colluvium	Csp	Pisolites	Ccy	Clay
Ca	Sand	Csf	Ironstone	Cv	Vegetation/peat
Cbs	Black soil	Csi	Silcrete		
Cg	Gravel	Ccl	Calcrete		

OTHERS

Ovq	Vein quartz	Omy	Mylonite	Oms	Massive sulphide
Ovc	Vein carbonate	Obx	Breccia	Oxc	Contamination
Ovs	Vein sulphide	Of	Fault gouge	Ox	Unknown

TEXTURAL CODES

WEATHERING/SURFICIAL FEATURES

Ww	Weathered	Fe	Ferruginous
B	Bleached	Fo	Fe ox in fract
Le	Leached		

MINERALISATION/ALTERATION FEATURES

Ga	Gossanous	Vs	Vein sulphide	Al	Altered
Vn	Veined	Ds	Dissem sulph	Sl	Silicified
Vc	Vein carbonate	Fs	Fracture sulph		
Vq	Vein quartz	Bs	Banded sulph	Di	Disseminated

GEOLOGICAL FEATURES

Bd	Bedded	Fr	Fractured	Po	Porphyritic
Bn	Banded	ib	Interbedded	Sc	Schistose
Bx	Brecciated	Lm	Laminated	Sh	Sheared
Fi	Fissile (slatey)	Ma	Massive	Vu	Vuggy

DIAGNOSTIC MINERALOGY

PRIMARY MINERALISATION

Ga	Galena	Py	Pyrite	Ni	Ni sulphides
Sp	Sphalerite	Po	Pyrrhotite		
Cp	Chalcopyrite	Su	Unknown sulph		

SECONDARY MINERALISATION

Ls	Lead secondaries	Cs	Copper sec.	Ni	Ni secondaries
Zs	Zinc "	Us	Uranium "		

ALTERATION/DIAGNOSTIC MINERALS

Cy	Clay	He	Haematite	Gt	Garnet
Ep	Epidote	Mt	Magnetite	Ky	Kyanite
Cc	Carbonate	Js	Jarosite	To	Tourmaline
Sd	Siderite/Ankerite	Mn	Manganese mins	Cl	Chlorite
Di	Dolomite				

COLOUR CODES

L	Light	A	Banded	M	Mottled
D	Dark				
N	Black	P	Purple	V	Green
G	Grey	R	Red	K	Pink
B	Brown	O	Orange	E	Blue
W	White	Y	Yellow	S	Silver

APPENDIX : TROWUTTA EL19/92 - SOIL SAMPLING LEDGERS AND GEOCHEMISTRY

APPENDIX 3: TROWUTTA EL19/92 SOIL SAMPLE DATABASE.															
YEAR 2 SAMPLES															
Results in ppm, except Fe%.															
DPO 77674															
SAMPNO	AMGE	AMGN	DEPTH	HORIZON	BMLRITH	FIELDID	COLOUR	COMMENTS	Ag	As	Cu	Pb	Zn	Fe%	Mn
3992447	331300	5449980	1.0	T	Esb	CcyEbOvq	DB/YB	Limonitic coarse gr. vein quartz frags.	-1	4.5	148	8	79	13.9	176
3992448	331275	5449980	1.0	B	Esb	Ccy	LB/YB	Compacted, volcanic derived.	-1	4.0	151	10	93	14.3	166
3992449	331250	5449980	0.9	B/C	Esb	CcyEb	YB/OB	Lesser red hematitic Ccy specks.	-1	4.0	119	13	73	10.9	110
3992450	331225	5449980	1.0	B	Esb	Ccy	OB/YB	Limonite-rich, compacted.	-1	4.0	110	13	69	11.1	118
3992451	331200	5449980	1.1	B	Esb	Ccy	OB/LB	Ccy after basalt?	-1	4.0	135	9	80	13.2	125
3992452	331175	5449980	0.9	B	Esb	Ccy	YB	After Eb?	-1	4.0	88	10	63	9.3	75
3992453	331150	5449980	1.7	B	Esb	Ccy	LB/WM	Paler than previous sample, RB specks present.	-1	4.0	57	79	63	4.4	53
3992454	331125	5449980	1.7	B	Esb	CcyOvq	LB/WM	Pale limonitic clay.	-1	4.0	68	14	62	4.8	51
3992455	331100	5449980	0.8	B	Esb	Ccy	LB	Lesser DB Ccy laminations.	-1	4.5	74	9	65	7.0	54
3992456	331310	5450000	1.5	B/C	Esb	Ccy	YB	Gritty clay- after Eb?	-1	4.5	161	9	72	15.8	80
3992457	331335	5450000	1.7	B	Esb	Ccy	LYB	No R.F's, limonitic.	-1	3.5	79	8	55	12.4	43
3992458	331360	5450000	0.4	B/C	Esb	CcyEb	YB	Minor Eb R.F's.	-1	2.5	44	8	53	8.0	51
3992459	331385	5450000	0.7	B/C	Esb	CcyEb	YB	Minor Eb frags.	-1	6.5	74	7	70	15.1	29
3992460	331410	5450000	1.6	B	Esb	Ccy	YB	No R.F's.	-1	10.0	90	5	73	13.2	22
3992461	331435	5450000	0.6	B/C	Esb	CcyEb	YB	Lesser Eb grit.	-1	8.5	68	13	62	15.6	28
3992462	331460	5450000	1.2	B/C	Esb	Ccy	RB/YB	Mottled gritty clay.	-1	10.5	78	8	95	13.9	112
3992463	331485	5450000	0.4	B	Esb	Ccy	RB/YB	Mottled clay.	-1	10.5	83	11	93	12.3	71
3992464	331510	5450000	0.8	B	Esd	Ccy	LB	Paler clay than previous samples.	-1	6.5	51	10	77	7.4	68
3992465	330360	5448580	2.0	B	Esd	Ccy	LO/B	Mottled.	-1	5.0	63	27	66	3.6	15
3992466	330342	5448598	2.0	B	Esd	CcyOvq	W/LG	Minor Ovq frags.	-1	2.0	20	14	58	0.9	11
3992467	330324	5448616	2.0	B	Esd	Ccy	W/LB	After Sdl?	-1	4.0	26	7	55	1.7	20
3992468	330306	5448634	2.0	B	Esd	Ccy	LG/OW	Mottled clay.	-1	3.5	51	16	68	2.2	42
3992469	330288	5448652	2.0	B	Esd	Ccy	W/LB	After Sdl?	-1	5.5	55	23	75	2.6	37
3992470	330270	5448670	2.0	T	Esd	CcySss	YB/W	Rounded quartzarenite frags. present (5-6mm).	-1	8.0	45	11	58	3.0	22
3992471	330252	5448688	2.0	T?	Esd	Ccy	LB/DB	Ccy only.	-1	5.5	49	6	65	4.0	39
3992472	330234	5448706	1.7	T?	Esd	CcySss	LM	Ses grit.	-1	6.5	71	12	71	4.2	54
3992473	330216	5448724	2.0	T	Esd	CcyCg	LYBM	Minor well-rounded quartz gravel.	-1	4.0	39	6	67	2.9	40
3992474	330378	5448563	0.8	B	Esb	Ccy	OB	Ccy after Eb.	-1	7.0	76	3	63	13.5	47
3992475	330396	5448545	2.0	B	Esb	CcyEb	RB/YM	Minor Eb? R.F's, hematitic mottled clay.	-1	5.5	56	16	66	18.2	29
3992476	330414	5448527	1.7	B	Esb	Ccy	B/RBM	Compacted Ccy.	-1	4.0	50	11	97	15.6	70
3992477	330432	5448509	1.4	B	Esb	Ccy	LB/RBM	Ccy only.	-1	6.0	76	15	84	15.5	86
3992478	330450	5448491	1.3	B	Esb	Ccy	LOB	No R.F's.	-1	9.5	72	15	88	13.3	105
3992479	330468	5448473	1.3	C	Esb	CcyEb	LB/RB	Basalt strongly-We to ferruginous minerals.	-1	12.0	46	16	68	12.6	70
3992480	330486	5448455	1.4	B	Esb	Ccy	LYB/OB	No R.F's.	-1	20.0	77	10	85	11.8	34
3992481	329520	5446920	1.0	T?	Esb	CcyEbCg	LOB/M	Transported ferrug. basaltic and quartz frags.	-1	12.5	37	8	69	13.4	79
3992482	329485	5446925	0.3	T	Esd	CcyCg	LOB	Rounded quartz frags.	-1	4.5	18	11	51	5.0	47
3992483	329470	5446930	1.0	B	Esd	Ccy	LOB	Residual agaty silica R.F's.	-1	5.5	39	13	72	5.8	38
3992484	329445	5446935	1.2	C	Esd	CsCcy	LB/W	Agaty silica, silica flour grit.	-1	1.0	12	8	42	0.6	15
3992485	329420	5446940	0.3	B/C	Esd	CcyCs	LB/OB	Silica grit.	-1	1.0	9	8	49	1.7	29
3992486	329395	5446945	1.2	C	Esd	Cs	LB/W	Agaty silica R.F's.	-1	1.5	8	6	52	1.9	27

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APPENDIX : TROWUTTA EL19/92 - SOIL SAMPLING LEDGERS AND GEOCHEMISTRY

SAMPNO	AMGE	AMGN	DEPTH	HORIZON	BMRLITH	FIELDID	COLOUR	COMMENTS	Ag	As	Cu	Pb	Zn	Fe%	Mn
3992487	329370	5446950	0.7	T	Esd	CgCcy	DB/LB	Sss/Ovq gravels- could not penetrate further.	-1	1.5	8	3	46	1.0	33
3992488	329345	5446955	0.0	C	Esd	SshCs	LB	Outcrop sample- some agaty silica present.	-1	1.5	14	22	81	1.6	60
3992489	329320	5446960	0.0	C	Esd	Os	LG/W	Silica flour, agaty silica R.F's.	-1	0.5	4	4	40	0.4	9
3992490	329295	5446965	0.0	C	Esd	Os	LG/W	Silica flour.	-1	0.5	4	4	40	0.2	7
3992491	329270	5446970	0.0	C	Esd?	Ssh	LOB/B	Strongly-We shale R.F's.	-1	2.5	16	93	49	0.7	10
3992492	329245	5446975	0.0	C	Esd	Os	W	Silica flour, agaty grit.	-1	0.5	4	4	36	0.2	6
3992493	329220	5446980	0.0	C	Esd	Os	LG/W	Agaty silica grit.	-1	1.0	5	6	35	0.3	10
3992494	329195	5446985	0.0	C	Esd	Os	W	Agaty silica R.F's.	-1	1.0	5	6	35	0.2	5
3992495	329170	5446990	0.0	C	Esd	Os	W	Agaty silica.	-1	1.0	4	7	34	0.2	3
3992496	329145	5446995	0.0	C	Esd	Os	W	Silica flour.	-1	1.0	4	5	39	0.2	9
3992497	329120	5447000	0.0	C	Esd	CsSd	W/YW	Agaty silica flour, trace iron carbonate.	-1	1.0	4	-3	39	0.3	7
3992498	328478	5445156	0.3	C	Esd	Os	LB/W	Agaty silica, silica flour.	-1	1.0	3	4	37	0.3	8
3992499	328499	5445143	0.3	A/B	Esd	Os	DB/B	Agaty silica, minor humus.	-1	1.0	4	6	35	0.3	9
3992500	328520	5445130	0.3	B/C	Esd	Os	YB	Highly limonitic, str-We agaty silica.	-1	12.0	80	29	52	3.9	25
3987488	328541	5445117	0.0	C	Esd	Os	LB/W	Ferruginous agaty silica sand.	-1	1.0	9	19	37	0.4	23
3987489	328562	5445104	1.0	T	Esb?	CcyCg	YG/V	Rounded slate and sandstone gravel.	-1	14.0	32	8	102	8.6	180
3987490	328583	5445091	0.6	B	Esb?	Ccy	OR	No R.F's.	-1	7.5	52	18	68	13.7	97
3987491	328604	5445078	1.0	B	Esb	Ccy	YB	Limonitic clay.	-1	8.0	57	15	88	10.5	82
3987492	328625	5445065	2.0	B	Esb	Ccy	YB/V	No R.F's.	-1	4.0	36	14	149	15.8	490
3987493	328646	5445052	1.0	T?	Esb?	CcyCg	LY/V	Coarse gr. quartz/ f.gr. Sss R.F's.	-1	2.0	17	8	67	2.0	68
3987494	328667	5445039	1.0	B	Esb	CcyOvq	OGV/M	Quartz R.F's.	-1	5.0	48	15	74	6.6	103
3987495	328688	5445026	1.1	T?	Esb	Ccy	W/LBM	Minor rounded frags higher in hole.	-1	12.5	41	23	67	5.0	42
3987496	328709	5445013	2.0	B	Esb	Ccy	LOB	No R.F's.	-1	4.0	44	14	70	14.5	120
3987497	328730	5445000	1.3	B	Esb	Ccy	LOB/R	No R.F's, RB clay component increasing down hole.	-1	4.5	76	14	63	17.6	47
3987498	327930	5443965	1.3	T?	Esb	CcySdl	LOB/V	Black River Dol. rock frags.	-1	4.5	171	14	127	5.0	184
3987499	327952	5443978	1.8	T	Esb	CcyCg	LOB/V	Rounded Eb R.F's.	-1	4.0	140	4	177	6.8	407
3987500	327974	5443991	0.9	B/C	Esb	Ccy	B	No R.F's.	-1	6.5	88	12	140	11.1	522
4138001	327996	5444004	1.1	B/C	Esb	CcyEb	DB/M	Angular basaltic R.F's.	-1	4.5	81	7	199	9.3	549
4138002	328018	5444017	2.0	B	Esd?	Ccy	LB/W	Very pale clay.	-1	4.5	39	18	61	1.1	40
4138003	328040	5444030	1.8	C	Esb?	CcyEb	ORY	Highly ferruginous clay/Eb grit.	-1	154.0	24	54	61	9.2	336
4138004	328062	5444043	0.0	C	Esd	Sdl	W	Silicified dolomite.	-1	14.5	9	7	42	0.6	106
4138005	328084	5444056	0.3	C	Esd	Os	W/LB	Silica flour.	-1	2.0	5	-3	36	0.4	14
4138006	328106	5444069	1.5	B	Esd	Ccy	DB/M	Minor green clay 'marbling'.	-1	9.5	80	12	104	12.0	260
4138007	328128	5444056	2.0	B	Esd	CcyCs	LOY	Limonitic clayey silica flour.	-1	9.5	48	4	61	4.0	26
4138008	328150	5444043	0.0	C	Ess	SwCcy	OY	Strongly-We lithic wacke.	-1	15.0	105	14	70	14.1	16
4138009	328172	5444030	0.0	C	Ess	Sw	FB	Lithic wacke.	-1	6.0	90	-3	144	14.2	324
4138010	328194	5444017	0.0	C	Ess	Sw	OY/R	Str-We lithic wacke.	-1	8.5	84	16	73	15.9	47
4138011	328216	5444004	0.0	C	Ess	Sw	OB	Limonitic lithic wacke.	-1	7.5	75	12	71	11.1	50
4138012	328238	5443991	1.9	B	Ess	Ccy	DB/M	No R.F's.	-1	6.5	90	11	116	9.9	246
4138013	328260	5443978	0.6	B/C	Ess	SwCcy	LB	Str-We lithic wacke.	-1	3.5	55	7	70	9.8	80
4138014	328282	5443965	0.0	C	Ess	Sw	OB	Ferruginous lithic wacke.	-1	5.5	87	5	97	13.2	113
4138015	328300	5440770	0.0	C	Esd?	Ssi	G	Finely laminated siltstone.	-1	7.0	15	18	53	2.3	97
4138016	328318	5440752	0.0	C	Esd?	Ssi	G/Y	Laminated siltstone.	-1	9.5	12	10	56	2.5	123
4138017	328336	5440734	0.0	C	Esd?	Ssl	YG	Cleaved graphitic siltstone, limonitic fractures.	-1	26.5	28	16	48	3.7	63

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APPENDIX : TROWUTTA EL19/92 - SOIL SAMPLING LEDGERS AND GEOCHEMISTRY

SAMPNO	AMGE	AMGN	DEPTH	HORIZON	BMRLITH	FIELDID	COLOUR	COMMENTS	Ag	As	Cu	Pb	Zn	Fe%	Mn
4138018	328354	5440716	0.4	B	Esd	CcySsi	LB	Clay, minor siltstone R.F's.	-1	18.5	22	18	54	3.5	72
4138019	328372	5440698	0.6	B	Esd	Ccy	LOB/LG	Mixed clays, no R.F's.	-1	14.0	73	12	77	17.3	49
4138020	328390	5440680	0.5	B	Ess?	Ccy	LOB	No R.F's.	-1	17.0	56	17	89	12.5	87
4138021	328408	5440662	0.7	B/C	Ess	CcySw	LOY/V	Lithic wacke frags, minor green clay.	-1	11.0	103	14	100	13.3	283
4138022	328426	5440644	1.7	C	Ess	CcySw	LOB	Lithic wacke frags.	-1	4.0	134	10	105	17.1	276
4138023	328444	5440626	0.0	C	Esb	Eb	VG	Trace of native copper present in basalt.	-1	8.5	320	12	143	15.3	1917
4138024	328462	5440608	0.8	B/C	Esb	Ccy	OB/NM	Ferruginous clay, minor black clay.	-1	8.5	172	7	77	17.6	2088
4138025	328480	5440590	0.5	C	Esb	CcyEb	FB	Str-We basaltic R.F's.	-1	4.0	277	12	88	18.2	596
4138026	328498	5440572	1.1	C	Esb	Ccy	RBO	Alter Eb.	-1	4.0	165	10	87	17.3	1777
4138027	328516	5440554	0.0	C	Esb	Eb	RB/Y	Str-We basalt.	-1	2.0	327	10	79	17.8	2687
4138028	328534	5440536	1.5	B	Esb	Ccy	OB/R	Alter basalt.	-1	4.0	204	10	76	17.3	376
4138029	328552	5440518	0.0	C	Esb	Eb	OB/R	Strongly-We basaltic frags.	-1	2.0	316	6	101	18.5	790
4138030	328570	5440500	0.0	C	Esb	Eb	ORB	Str-We Eb.	-1	1.5	348	8	81	17.9	1211
4138031	328588	5440482	0.0	C	Esb	Eb	ORB	Str-We Eb.	-1	1.5	529	7	204	19.3	2162
4138032	324480	5436820	0.8	B/C	Esb	CcyEb	YB	Limonitic clay, Eb R.F's.	-1	21.5	52	22	57	12.0	55
4138033	324480	5436795	1.0	B	Esb	Ccy	OYB	Alter Eb.	-1	24.0	43	19	63	14.7	154
4138034	324480	5436770	0.5	B	P	Ccy	OB/V	Green clay after PreCambrian chloritic siltstone.	-1	19.5	76	21	118	16.3	342
4138035	324480	5436745	1.0	B	Esb	Ccy	OY	Alter Eb.	-1	8.0	32	14	85	13.3	139
4138036	324498	5436763	1.0	C	Esb	CcyEb	LB/LOB	Basaltic R.F's.	-1	12.5	57	18	135	18.5	294
4138037	324516	5436781	0.4	C	Esb	CcyEb	LOB/V	Basaltic R.F's.	-1	14.5	73	20	94	12.1	209
4138038	324534	5436799	1.1	B/C	Esb	CcyEb	LOB/V	Basaltic R.F's.	-1	11.5	44	21	106	16.5	187
4138039	324552	5436817	0.8	B	P?	Ccy	LOB/V	Minor green clay- after PreCambrian siltstone?	-1	17.5	56	29	100	17.8	127
4138040	324570	5436835	0.8	B	Esb	CcyEb	B/OB	Basalt-derived clay, Eb frags.	-1	14.0	12	18	132	18.4	111
4138041	324588	5436853	0.3	B/C	Esb?	CcySsiEb	B	Str-We R.F's; minor chloritic siltst (fault slice?).	-1	10.0	20	14	156	17.6	148
4138042	324606	5436871	0.3	B/C	Esb	CcyEb	LOB	Basaltic R.F's.	-1	9.0	163	12	117	16.1	1029
4138043	324624	5436889	0.8	B	Esb	Ccy	YB	Alter Eb.	-1	2.5	396	8	96	17.2	589
4138044	324642	5436907	0.4	B	Esb	CcyEb	LOB	Minor str-We basaltic R.F's.	-1	3.5	203	12	100	16.6	342
4138045	324660	5436925	0.4	B/C	Esb?	CcyEbSsi	LOB/V	Clay after Eb, part derived from chloritic siltst.	-1	12.5	58	20	93	11.8	263
4138046	324678	5436943	0.6	B/C	Pr	CcySsi	LY/V	After chloritic siltstone (PreCambrian).	-1	4.5	7	3	96	7.0	241
4138047	324696	5436961	0.6	B/C	Pr	Ccy	LV/OB	After chloritic siltstone.	-1	6.0	5	3	76	6.1	90
4138048	324714	5436979	0.5	B	Pr	Ccy	LOB/V	After chloritic siltstone.	-1	2.5	5	3	74	2.4	84
4138049	324732	5436997	1.1	B	Pr	Ccy	LOB/V	After chloritic siltstone.	-1	2.5	7	7	87	4.2	99