

GEOPEKO
A Division of Peko-Wallsend Operations Ltd
ACN 000 081 434

REPORT No. MI94/04S

EL 45/89 "SAVAGE RIVER"

RELINQUISHMENT AND ANNUAL REPORT
DECEMBER 1992 - DECEMBER 1993

by

D. GARDNER

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HARDCOPY STORED AT MELBOURNE / MOUNT ISA
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MICROFICHE NO.

ABSTRACT Follow-up rock-chip and auger sampling failed to find a source for the Au anomalous water samples in several streams draining a ridge N of Karilyn Creek. Further water sampling reconfirmed the anomaly.

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SUMMARY

Auger and rockchip sampling along the ridge to the north of Karilyn Creek, together with repeat and follow up stream water sampling and rockchip sampling in Monday and Friday Creeks has been used to try and find a source for the 4 sample Au anomaly in creeks draining the ridge, found during regional water sampling in 1991-92.

Auger and rockchip samples had high base metal values in Cambrian meta basalts outcropping at the western end of the ridge. Very low base metal values were recorded from PreCambrian meta silts and mudstones to the east. Some Cambrian greywackes are the possible source of slightly elevated base metal results towards the east end. No gold anomalism was found.

Repeat and follow-up water sampling around the ridge produced a 4 point Au anomaly around the same area as the 1991-92 sampling but in different creeks.

CONCLUSIONS

The 1992-93 work on Karilyn Creek Ridge and surrounding areas has failed to find a source for the gold anomalous stream water samples taken in 1991-92. Repeat and follow-up sampling of creeks however, defines a similar area as anomalous in gold. Repeatability in individual water samples is questionable.

Time and budget constraints have prevented follow-up of the base metal anomalies from last year's water sampling.

Mapping of the distinct greywacke lithologies may help resolve the stratigraphy and structure of the area. Further work in this EL is of a lower priority than work in areas such as Rohani Creek in EL 40/89 (Gardner, 1993).

RECOMMENDATIONS

A review of the water sampling program should examine data from all the ELs. Because of easy access and the large number of samples taken previously, EL 45/89 would be a useful area for check sampling during this review.

Mapping of distinct units such as the greywackes, to try and resolve stratigraphy and/or structure.

Further reconnaissance traverses along ridges around the gold anomalous streams.

Further work in EL 45/89 is of a low priority compared to other areas in the Arthur Project and should not proceed at their expense. The project is still at a grass roots stage after two (short) field seasons and if a committment cannot be made to fund it for several years, relinquishment is recommended.

1.0 INTRODUCTION

1.1 Location and Access

EL 45/89, Savage River (Fig. 1), is located in NW Tasmania approximately 5 km north of the township of Luina.

Access within the EL is reasonable and is provided by old exploration tracks and unsealed logging roads.

1.2 Tenure and Land Usage

EL 45/89 of 239 km² was granted to Peko Exploration Ltd in January 1990. Part of the EL was relinquished in June 1992 (Fig. 2).

The EL consists predominantly of The Savage River RAP with the eastern edge being Deferred Forest Land. Approximately 30 km² on the southern edge is Multiple Use Forest Land. The EL includes part of the Savage River Australian Heritage Area.

1.3 Regional Geology

The Arthur Project area lies within the Rocky Cape Region of NW Tasmania (Fig. 3). The most interesting rocks in the area are those of the ?Cambrian - Precambrian Arthur Lineament. The Arthur Lineament is a north-east trending metamorphic belt consisting of highly deformed sediments, basic volcanics and dolomite. To the west of this belt lies the Rocky Cape Group, a thick shallow marine shelf sequence. The Rocky Cape Group contains Precambrian dolerite/gabbro dykes which have been emplaced into north-north west trending faults.

Rocks assigned to the Oonah Formation and the Cleveland Waratah Association lie to the east of the Arthur Lineament. The Precambrian Oonah Formation is predominantly comprised of turbiditic quartz wacke and siltstone. The south eastern corner of the area (which includes EL 45/89) is underlain by rocks of the Cleveland-Waratah Association that lie within the Dundas Trough. These rocks have been correlated with the Crimson Creek Formation and consist of basaltic, andesitic and tholeiitic lavas and volcanoclastic sediments of Eo-cambrian age.

The Precambrian-Cambrian rocks in the area are in many places overlain by Permian fluvio-glacial sediments and/or Tertiary basalt.

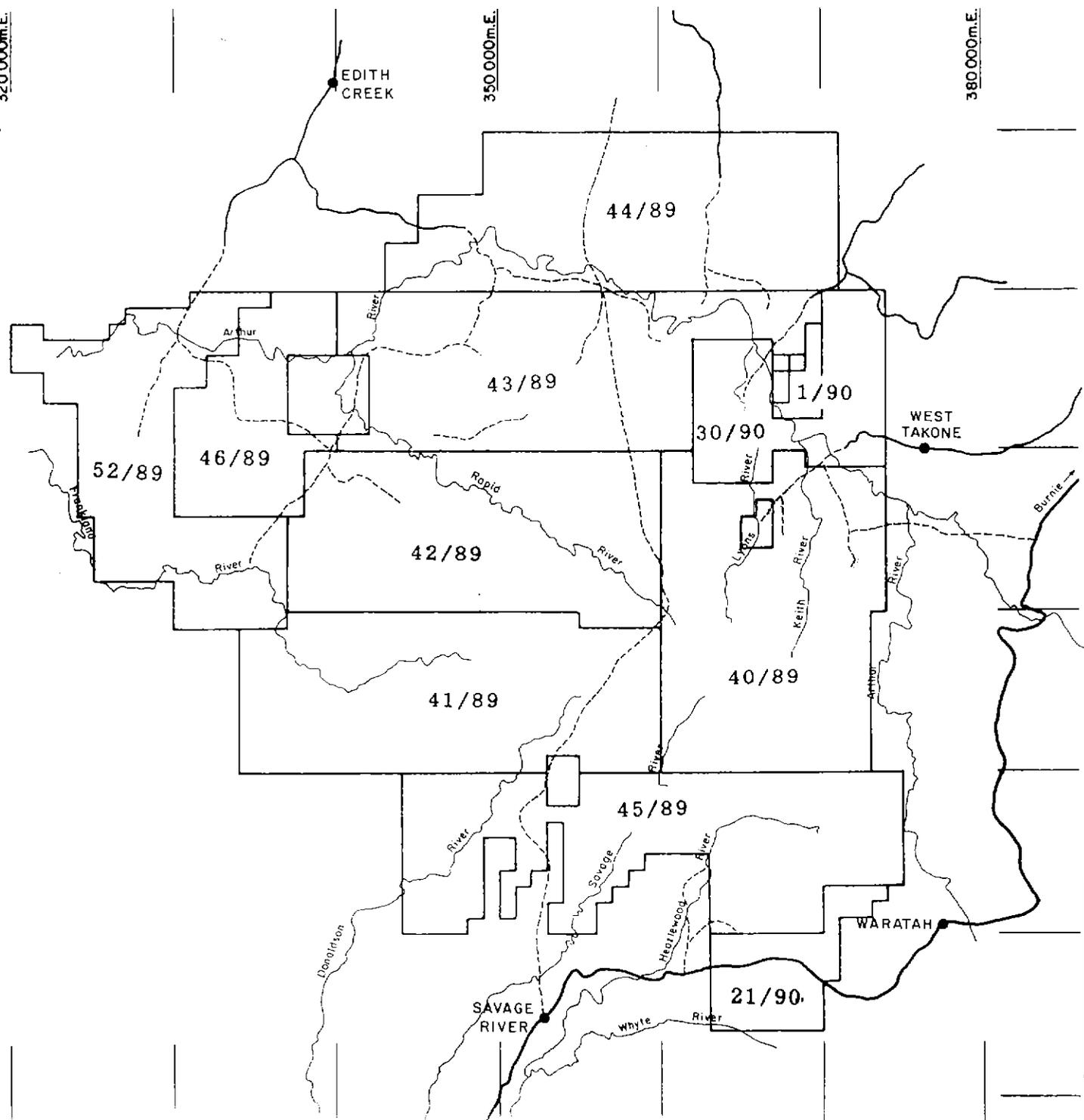
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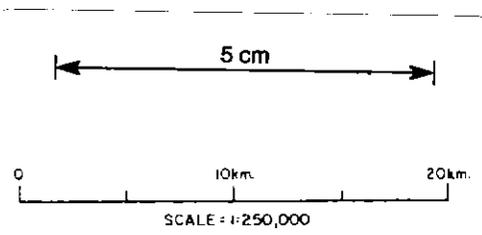
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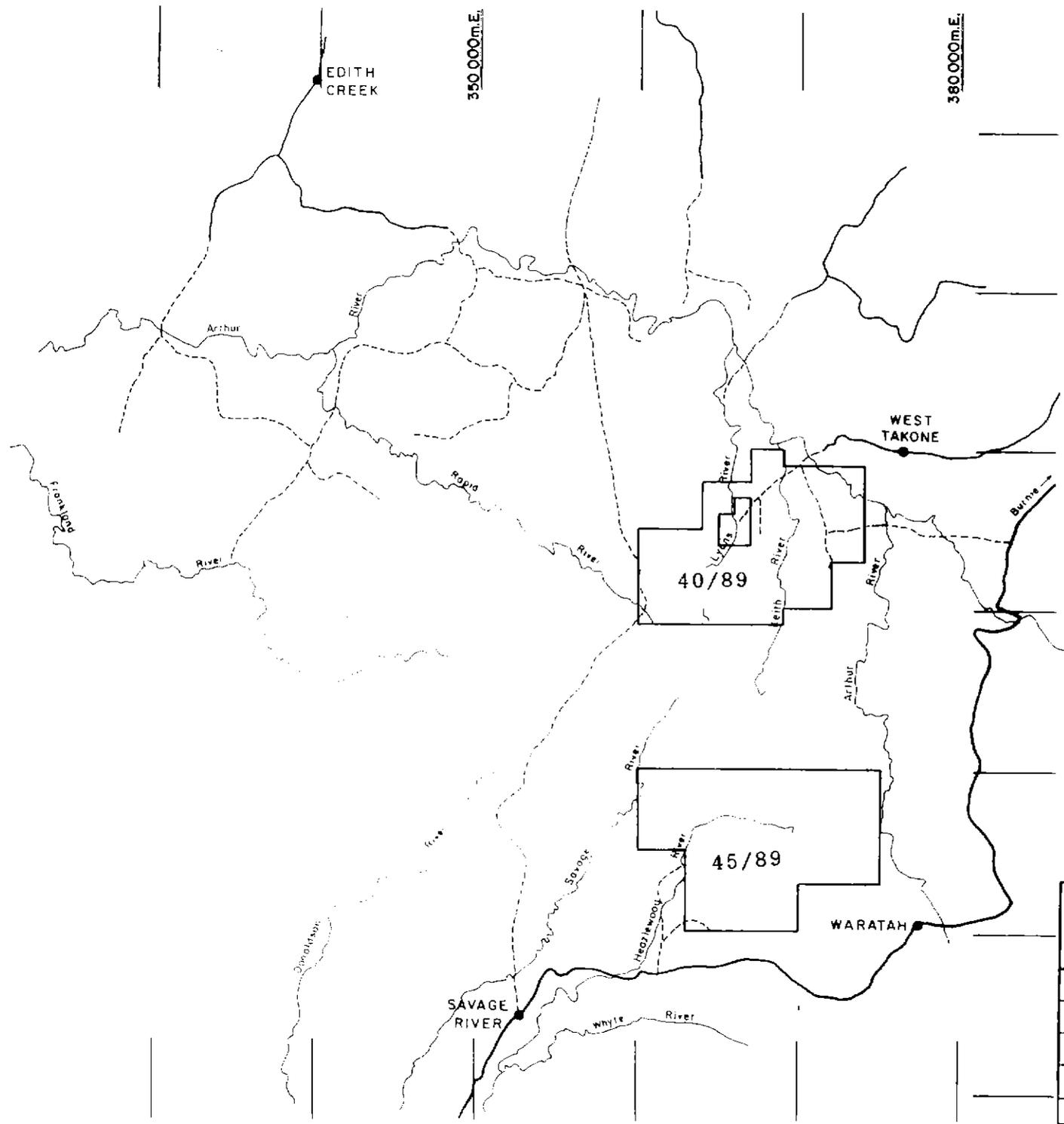
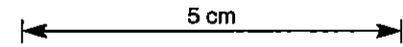
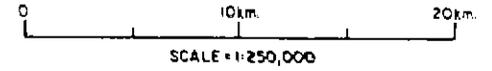
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	GEOPEKO
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	ARTHUR RIVER PROJECT
	ACCESS / EL's
	Figure 1

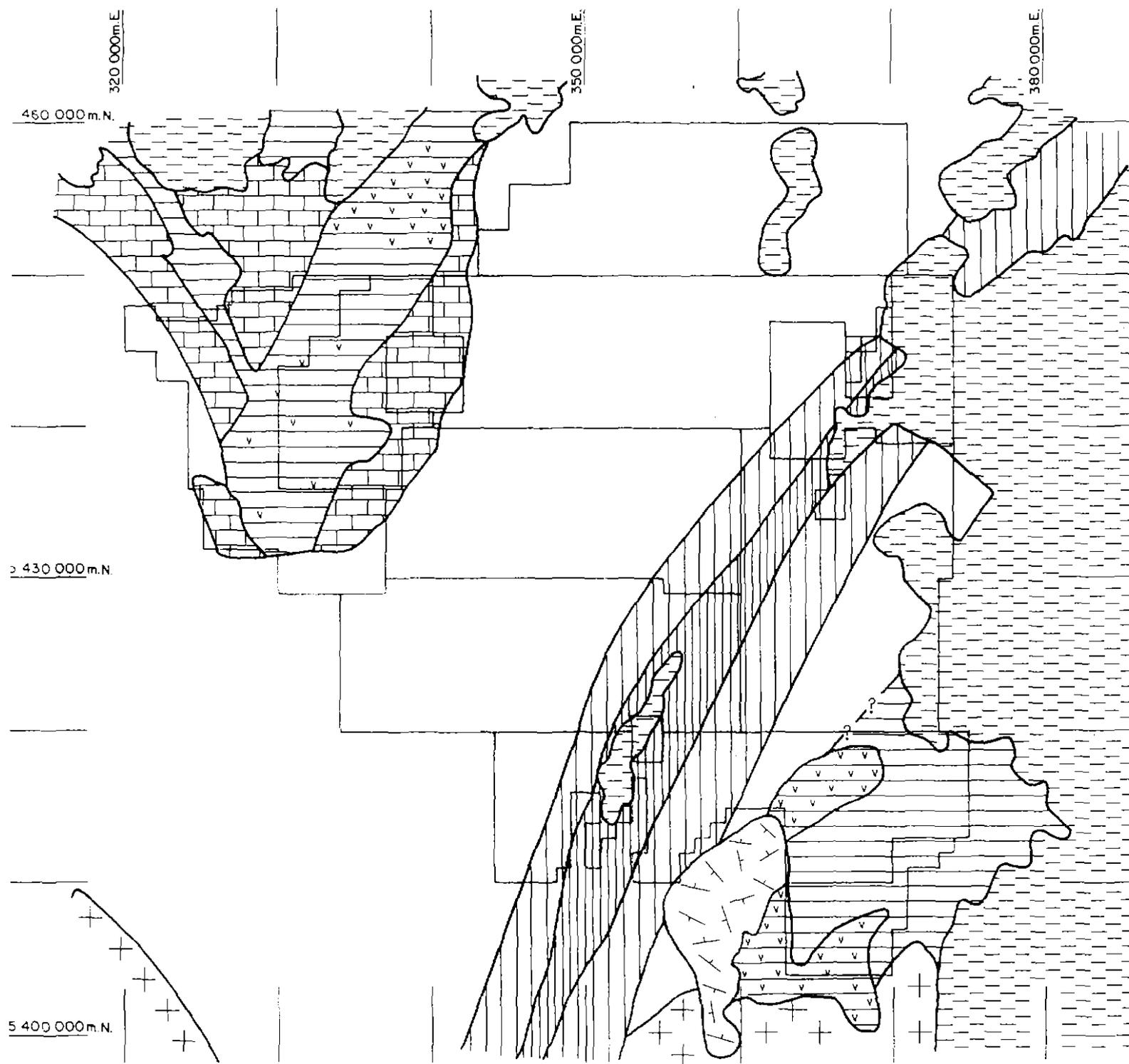
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	GEOPEKO
	ARTHUR RIVER PROJECT
	ARTHUR RIVER PROJECT
	EL's at JUNE 1992
	Figure 2



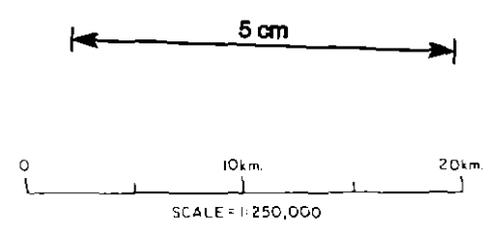
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350 000 m.E.
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LEGEND

<u>Holocene</u> <u>-Carboniferous</u>	Cover Rocks, Alluvium, Tertiary Basalts, Permian Glauc. Marine Sediments.	
<u>Carboniferous</u> <u>- Devonian</u>	Granites.	
<u>Cambrian</u>	Ultramafic bodies.	
	Sediments, usually greywacke turbidites, (with intermediate volcanics, V V dominant).	
<u>Cambrian</u> <u>- Pre Cambrian</u>	Metamorphic rocks, generally quartz, mica, schist/phyllites and quartzites.	
	With more mafic greenschist, greenstone and amphibolite rocks.	
<u>Pre Cambrian</u>	Mudstone - Sandstone Sequences relatively unmetamorphosed.	
	Calomite sequences.	



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GEOPEKO	
ARTHUR RIVER PROJECT	
ARTHUR RIVER PROJECT	
REGIONAL GEOLOGY	
Figure 3	

1.4 Known Mineral Deposits/Occurrences

There are a number of metallic mineral occurrences adjacent to the western, eastern and southern EL boundaries of Geopeko's Arthur River Project. (Green et al 1988).

The deposits range from small, relatively insignificant workings, e.g. Victory Mine, Atlas Leases to large world class ore bodies e.g. Mount Bischoff, Savage River. In most cases, extensions of the prospective host formations can be continued into Geopeko's Arthur River EL's.

1.5 Previous Exploration

Geopeko report T251 (Virgoe and Mathison, 1990) summarises previous exploration by other companies, and describes results of Geopeko's 1990 Exploration program. Report T265 (Mathison, 1991) details 1991 exploration activity. For the 1991-92 season, report T272 (Mathison and Gardner, 1992) details work in the relinquished part of the EL, T278 (Gardner and Mathison, 1992) covers the retained area, and T276 (Gardner et al, 1992) describes the overall water sampling program.

1.6 Scope of this report

The aim of Geopeko's exploration of EL 45/89, is to use water sampling, rock chip sampling, geological mapping and the results of previous exploration to delineate prospective and geochemically anomalous areas within the EL. Areas worthy of further investigation are to be followed up with more detailed exploration.

Due to major problems with the DMMR's analytical techniques for stream water geochemistry, little work was carried out in EL 45/89 in 1991. It was felt necessary to suspend exploration until these problems were corrected and consequently a waiver of expenditure commitment was sought and granted. Regional water sampling recommenced in December 1991 and was completed in February 1992. A temporary extension of the licence was negotiated to allow the results of 1992 sampling to be evaluated. A large part of the Arthur River Project area was selected for relinquishment after this interpretation. This report details follow up work to the 1991-92 water sampling that took place in the 1992-93 summer season.

2.0 WORK COMPLETED

2.1 Karilyn Creek Ridge

Work in 1991-92 identified 4 streams with anomalous gold draining a ridge north of Karilyn Creek in EL 45/89 (Gardner and Mathison, 1992). Other samples draining areas further east along this ridge have elevated Zn and As.

Because of the difficult terrain, time and personnel constraints, it was decided to run one geochemical sampling line E-W along 8km of the ridge north of Karilyn Creek (see plans 3447, 3448).

The ridge was sampled over 50m intervals collecting outcrop samples where possible or else float samples with auger sample every 50m as a supplement (auger to refusal). Lithologies were recorded. It was hoped that this would:

- a) Give some indication of the source of the Au anomaly.
- b) Give a section across the ?NNE trending geology.
- c) Pick up sources of the weaker base metal anomalies to the east of the Au anomaly.

102 rockchip (float and outcrop) and 125 auger samples were collected from the ridge. 19 rockchip samples were collected from and around Monday Creek and Friday Creek to the north of the ridge (where the highest Au anomaly was found). 6 water samples repeated last year's work and covered previous unsampled drainages around the Au anomaly.

To access the eastern end of the ridge, part of the old Comstaff Exploration Track had to be re-opened. Geopeko cleared approximately 7kms of this in 1991 (Gardner and Mathison, 1992). During the year, 10 or so large trees and a number of smaller ones had fallen over this section and had to be cut. Natural revegetation is working very well in this area.

2.2 Regional

3 extra water samples were collected in the EL this season, 1 a repeat, and 2 previously unsampled. 9 rockchip samples were collected.

3.0 RESULTS

3.1 Karilyn Creek Ridge

Geology

The geology of the Karilyn Creek Ridge area appears fairly simple (plan 2057B). To the west are meta basalts that show strong affinities to the Crimson Creek basalts (eg. samples 23007, 23051 and 23025, see appendix 4). To the east lie a sequence of ?gently folded meta siltstones and mudstones.

Micaceous greywackes (correlated with the Animal Creek Greywacke, appendix 4 samples 23013 and 23071) outcrop in Monday Creek and around the junction of auger lines 2E and 2W. Similar rocks were found last year in a small tributary of the Heazlewood (22116) and in the upper reaches of Karilyn Creek. Thus on plan 2057B the greywackes can be seen outcropping in two areas separated by more than 3km.

Geochemistry

The auger sampling produced very disappointing results and only served to define the major lithological contacts with great precision. Moving east from the meta basalts into the meta silts and muds (at about 1050m on Auger Line 1) Cu, Zn, Co, V, Bi, P, Sb, Ni, Mn, Fe and Ag values all decrease markedly (see Appendix 3 for assay results) across the contact, and stay low for all the lines to the east except for a small section around the start of lines 2E and 2W.

From approximately 300m on line 2W to 150m on line 2E, Cu and Zn values are elevated from <10 to around 50ppm with a highest Zn of 390ppm at 250m on line 2W.

Auger line rockchip geochemistry follows an identical pattern (Appendix 2). Cu, Zn, Co, V, Bi, P, Sb, Ni, Mn, Fe and Ag are all much higher in the meta basalt to the west, and there is a small increase in Cu and Zn values between 300m on line 2W and 150m on line 2E (the highest Zn of 460ppm occurs between 100 and 150m on line 2E).

The high metal geochemistry of the basalts is to be expected. The smaller eastern 'anomaly' occurs around (but extends much further than) the outcrops of micaceous greywacke. The degree of anomalism here is not of major interest, and probably reflects a mafic source for the greywacke.

All gold assays were extremely low.

Water Sampling

Out of 64 water samples taken in the 1992-93 season from ELs 40/89 (Gardner, 1993) and 45/89, 10 had above detection gold (considered anomalous). Samples 23402-07 repeated and followed up the anomalous samples taken in 1991-92 around the Karilyn Creek Ridge. Of the 6 samples, 4 were above detection (see plan 2057A, appendix 1). Samples 23402, 23403, 23405 and 23406 defined a similar Au anomalous area to last year's sampling.

Repeats of samples taken in 1991-92 produced varied results, 3 repeat samples were taken.

1991-92 sample no.	Possibly anomalous elements	Probably anomalous elements	1992-93 sample no.	Possibly anomalous elements	Probably anomalous elements
22007	Cu	Au	23407		
22012		Au	23402		Au, Zn?
22017	-	-	23401		Au

Thus one sample site was anomalous in 1991-92 but not 1992-93, one was not anomalous in 1991-92, but anomalous in 1992-93, and one was anomalous both years. This is not a good indicator of repeatability in individual samples.

3.2 Regional

The sampling to the north of the Heazlewood, found meta basic rocks of similar composition to the Crimson Creek correlates to the south. Textures in samples 23058 and 23061 (appendix 4) indicate that these are intrusives rather than extrusives. Assay results are consistent with the lithology. Of the 2 water samples taken north of the Heazlewood, 23408 has a probably anomalous Au assay.

4.0 CONCLUSIONS

The 1992-93 work on Karilyn Creek Ridge and surrounding areas has failed to find a source for the gold anomalous stream water samples taken in 1991-92. Repeat and follow-up sampling of creeks however, defines a similar area as anomalous in gold. Repeatability in individual water samples is questionable.

Time and budget constraints have prevented follow-up of the base metal anomalies from last year's water sampling.

Mapping of the distinct greywacke lithologies may help resolve the stratigraphy and structure of the area. Further work in this EL is of a lower priority than work in areas such as Rohani Creek in EL 40/89 (Gardner, 1993).

5.0 RECOMMENDATIONS

A review of the water sampling program should examine data from all the ELs. Because of easy access and the large number of samples taken previously, EL 45/89 would be a useful area for check sampling during this review.

Mapping of distinct units such as the greywackes, to try and resolve stratigraphy and/or structure.

Further reconnaissance traverses along ridges around the gold anomalous streams.

Further work in EL 45/89 is of a low priority compared to other areas in the Arthur Project and should not proceed at their expense. The project is still at a grass roots stage after two (short) field seasons and if a committment cannot be made to fund it for several years, relinquishment is recommended.

REFERENCES

- GARDNER, D., (1993) - EL 40/89 Keith River - Relinquishment Report and Annual Report - December 1992 to December 1993. Unpublished Geopeko Report MI93/05S.
- GARDNER, D., MATHISON, I.J., (1992) - EL 45/89 Savage River - Annual Report - December 1991 to December 1992. Unpublished Geopeko Report T278.
- GARDNER, D., VANZINO, L., MATHISON, I., (1992) - Arthur River Project Technical Report on Fieldwork December 1991 - February 1992. Unpublished Geopeko report T276.
- GREEN, G.R., BOTTRILL, R.S., BACON, C.A., TURNER, N.J. (1988) - Mineral Deposits and Metallogenic Map of Tasmania 1:50 000, Tas. DMMR.
- LEAMAN, D. E. (1990) - Geophysical - Structural Review Rocky Cape Block NW Tasmania. Unpublished Report for Geopeko.
- VIRGOE, K., MATHISON, I.J., (1990) - Savage River EL 45/89 - Report on Exploration Activity - January 1990 to November 1990. Unpublished Geopeko report T251.
- MATHISON, I. (1991) - EL 45/89 Savage River - Report on Exploration Activity December 1990 to November 1991. Unpublished Geopeko report T265.
- MATHISON I.J., GARDNER D. (1992) - EL 45/89 Savage River - Partial Relinquishment Report. Unpublished Geopeko report T272.

APPENDICES

Abbreviations usedTertiary Basalt

Tb

Carboniferous - Permian Wynyard Tillite

C-Pwt

Precambrian - Cambriansediments

Ssst sandstone
 SgwK greywacke
 Sslt siltstone
 Sdol dolomite
 Ssha shale
 Smst mudstone

volcanics

Volc volcanic
 tuff tuff

Mineralogy

qtz quartz
 fs feldspar
 Fe iron
 py pyrite
 ser sericite
 chl chlorite
 si siliceous

metamorphics

Msch schist
 Mphy phyllite
 Mgnst greenstone
 Mgnsch greenschist
 Msla slate

others

U/m ultramafic
 int intrusive

Textures

vn vein
 lam laminated
 stn stain
 wth weathered
 clvd cleaved
 foln foliation
 mas massive
 bx brecciated
 strg strongly
 m medium

Colour

bk black
 wh white
 gn green
 gy grey
 yl yellow
 bn brown
 dk dark
 pl pale

APPENDIX 1
WATER GEOCHEMISTRY
SAMPLE DESCRIPTIONS AND RESULTS

ARTHUR RIVER PROJECT - 1992-93 WATER SAMPLES

SAMPLE NUMBER 23407 DATE 22.12.1992 EL45/89 MAP WARATAH
 AMG COORDS. 364251 mE 5413241 mN

VEGETATION RAIN FOREST

STREAM FLOW MODERATE CONTAMINATION FROM NONE
 LEVEL AVERAGE WATER COLOUR CLEAR
 WIDTH 1.0m PH 7.40
 DIRECTION 174° DRAINAGE AREA 0.2 km²

GEOLOGY
 OUTCROP Mgnst/mafic int FLOAT 80 % Smst/Sslt
 chl 20 % Mgnst
 o/c as for 22106 0 %

SAMPLE NUMBER 23408 DATE 10.01.1993 EL45/89 MAP WARATAH
 AMG COORDS. 366091 mE 5418494 mN

VEGETATION RAIN FOREST

STREAM FLOW FAST CONTAMINATION FROM NONE
 LEVEL AFT.RAIN WATER COLOUR BROWN
 WIDTH 2.5m PH 5.00
 DIRECTION 170° DRAINAGE AREA 3.0 km²

GEOLOGY
 OUTCROP no o/c FLOAT 90 % dk-pl gy Msst
 5 % bk Sslt/Smst
 0 %

SAMPLE NUMBER 23410 DATE 10.01.1993 EL45/89 MAP WARATAH
 AMG COORDS. 366176 mE 5418428 mN

VEGETATION RAIN FOREST

STREAM FLOW FAST CONTAMINATION FROM NONE
 LEVEL AFT.RAIN WATER COLOUR BROWN
 WIDTH 1.5m PH 5.00
 DIRECTION 270° DRAINAGE AREA 2.0 km²

GEOLOGY
 OUTCROP gy Ssst FLOAT 100% gy Ssst
 0 %
 0 %

12.12.1993

946024

TABLE 1

Page 1
Tasmanian River Water- Data

sample No.	Precipitate Condition	% stream solids in ppt.	Au ng/l	As ug/l	Cd ug/l precon	Cd ug/l orig	Cu ug/l precon	Cu ug/l orig
23401	Tan	10	3.2	0.07	<0.005	<0.2	0.42	<0.2
23402	Lht Brown		1.9	0.10	<0.005	<0.2	0.87	0.3
23403	Drk Brown	20	2.0	0.19	<0.005	<0.2	0.49	0.4
23404	Drk Brown	20	<1.0	0.21	<0.005	<0.2	1.10	1.0
23405	Lht Brown	20	1.7	0.24	<0.005	<0.2	0.87	0.0
23406	Cream	20	3.1	0.16	<0.005	<0.2	0.76	0.7
23407	Cream	20	<1.0	0.13	<0.005	<0.2	0.98	0.7
23408	Drk Brown-green	10	3.2	0.21	<0.005	<0.2	0.69	0.9
23410	Drk Brown	10	<1.0	0.21	0.006	<0.2	0.83	0.8

946025

TABLE 1

Page 2
Tasmanian River Water-Data

Sample No.	Pb	Pb	Zn	Zn	U	U
	ug/l preconc	ug/l orig	ug/l preconc	ug/l orig	ug/l preconc	ug/l orig
23401	0.12	<0.2	0.52	1.0	<0.005	<0.2
23402	0.22	<0.2	1.40	3.4	0.013	<0.2
23403	0.25	<0.2	1.40	3.4	0.022	<0.2
23404	0.35	<0.2	1.30	2.7	0.009	<0.2
23405	0.71	0.3	1.70	2.6	0.008	<0.2
23406	0.09	<0.2	1.10	2.8	<0.005	<0.2
23407	0.11	<0.2	1.10	1.3	<0.005	<0.2
23408	0.27	0.3	1.30	3.3	0.017	<0.2
23410	0.44	0.3	1.50	1.9	0.020	<0.2

946026

TABLE 1

Page 3
Tasmanian River Water-Data

Sample No.	Mn	Mn	Co	Co	Cr	Cr	Ni	Ni
	ug/l preconc	ug/l orig	ug/l preconc	ug/l orig	ug/l preconc	ug/l orig	ug/l preconc	ug/l orig
23401	5.1	0.5	0.08	<0.2	0.49	0.7	2.50	2.2
23402	46.0	47	0.88	0.6	1.00	1.2	0.71	0.7
23403	55.0	53	0.78	0.9	1.20	1.1	0.93	0.7
23404	54.0	48	0.52	0.5	1.10	1.1	0.62	0.6
23405	45.0	47	0.57	0.7	0.92	1.0	0.70	0.8
23406	20.0	3.0	0.19	<0.2	0.42	0.6	0.51	0.4
23407	13.0	2.0	0.19	<0.2	0.91	0.8	1.20	1.0
23408	14.0	14	0.28	0.3	0.83	0.9	0.70	0.7
23410	19.0	19	0.34	0.3	1.10	1.0	1.20	1.0

TABLE 1

946027

Page 4
Tasmanian River Water-Data

Sample No.	V ug/l preconc	V ug/l orig	Al ug/l preconc	Fe ug/l preconc
23401	0.52	0.3		
23402	0.83	0.6		
23403	1.20	0.7		
23404	0.77	0.6		
23405	0.61	0.6		
23406	1.30	1.5		
23407	1.70	1.5		
23408	0.47	0.4		
23410	0.64	0.5		

APPENDIX 2
ROCK SAMPLING
SAMPLE DESCRIPTIONS AND RESULTS

NUMBER	LINE		TYPE	AMG COORDS	
	FROM	TO		EAST	NORTH
23001	25	25	FLOAT	363818	5413591
23002	85	85	FLOAT	363894	5413635
23003	125	125	FLOAT	363928	5413657
23004	175	175	FLOAT	363976	5413687
23005	225	225	FLOAT	364011	5413708
23006	675	675	FLOAT	364439	5413882
23007	725	725	FLOAT	364490	5413885
23008	900	900	FLOAT	364665	5413851
23103	900	1000	FLOAT	364724	5413854
23009	950	950	FLOAT	364710	5413832
23010	1000	1000	FLOAT	364763	5413818
23104	1000	1050	FLOAT	364793	5413825
23011	1040	1040	FLOAT	364809	5413793
23105	1050	1100	FLOAT	364828	5413776
23106	1100	1150	FLOAT	364861	5413745
23107	1150	1200	FLOAT	364871	5413702
23108	1200	1250	FLOAT	364862	5413659
23109	1250	1300	FLOAT	364853	5413620
23110	1300	1350	FLOAT	364853	5413585
23111	1350	1400	FLOAT	364854	5413547
23112	1400	1450	FLOAT	364862	5413503
23113	1450	1500	FLOAT	364882	5413453
23114	1500	1550	FLOAT	364929	5413443
23115	1550	1600	FLOAT	364987	5413468
23116	1600	1650	FLOAT	365045	5413491
23117	1650	1700	FLOAT	365096	5413495
23118	1700	1750	FLOAT	365127	5413461

ARTHUR RIVER PROJECT - ROCK SAMPLE DESCRIPTIONS
 KARILYN CREEK RIDGE AUGER LINE 1

946030

NUMBER	LINE		TYPE	AMG COORDS	
	FROM	TO		EAST	NORTH
23119	1750	1800	FLOAT	365149	5413408
23120	1800	1850	FLOAT	365184	5413371
23121	1850	1900	FLOAT	365233	5413372
23122	1900	1950	FLOAT	365279	5413373
23123	1950	2000	FLOAT	365326	5413373
23124	2000	2050	FLOAT	365371	5413378
23125	2050	2100	FLOAT	365415	5413375
23126	2100	2150	FLOAT	365462	5413374
23127	2150	2200	FLOAT	365512	5413378
23128	2200	2250	FLOAT	365547	5413385
23129	2250	2300	FLOAT	365603	5413404
23130	2300	2350	FLOAT	365693	5413433
23131	2400	2400	O/C	365872	5413517
23132	2400	2450	FLOAT	365827	5413480
23133	2450	2500	FLOAT	365871	5413460
23134	2500	2550	FLOAT	365907	5413421
23135	2550	2600	FLOAT	365927	5413369
23136	2600	2650	FLOAT	365941	5413319
23137	2650	2700	FLOAT	365953	5413283
23138	2750	2800	FLOAT	366021	5413239
23139	2800	2850	FLOAT	366071	5413229
23140	2850	2900	FLOAT	366116	5413213
23141	2950	3000	FLOAT	366193	5413176
23031	3000	3050	FLOAT	366242	5413154
23032	3050	3100	FLOAT	366289	5413134
23033	3100	3150	FLOAT	366331	5413114
23034	3150	3200	FLOAT	366359	5413124

ARTHUR RIVER PROJECT - ROCK SAMPLE DESCRIPTIONS
KARILYN CREEK RIDGE AUGER LINE 1

946031

NUMBER	LINE		TYPE	AMG COORDS	
	FROM	TO		EAST	NORTH
23035	3200	3250	FLOAT	366374	5413156
23036	3250	3300	FLOAT	366388	5413189
23037	3300	3350	FLOAT	366403	5413234
23038	3400	3450	FLOAT	366454	5413332
23039	3450	3500	O/C +	366477	5413375
23040	3500	3550	O/C +	366491	5413417
23041	3550	3600	O/C +	366515	5413458
23042	3600	3650	O/C +	366544	5413480
23043	3620	3620	O/C	366545	5413472
23044	3650	3700	FLOAT	366579	5413505
23045	3700	3750	O/C +	366609	5413535
23046	3750	3800	O/C +	366648	5413565
23047	3800	3850	FLOAT	366684	5413601
23048	3850	3900	FLOAT	366722	5413625
23049	3900	3950	O/C +	366756	5413652
23050	3950	4000	O/C +	366788	5413668

11.69

ARTHUR RIVER PROJECT -- ROCK SAMPLE DESCRIPTIONS
KARILYN CREEK RIDGE AUGER LINE 2E

946032

NUMBER	LINE		TYPE	AMG COORDS	
	FROM	TO		EAST	NORTH
23073	0	0	O/C	368325	5414928
23072	0	50	FLOAT	368362	5414796
23071	50	100	FLOAT	368404	5414823
23070	100	150	FLOAT	368471	5414833
23069	150	200	FLOAT	368515	5414843
23068	200	250	O/C +	368562	5414856
23150	200	250	FLOAT	368540	5414851
23067	250	300	O/C +	368607	5414869
23151	250	300	FLOAT	368580	5414864
23066	300	350	FLOAT	368653	5414883
23064	550	550	O/C	368841	5414966
23065	780	800	O/C	369002	5415132

ARTHUR RIVER PROJECT - ROCK SAMPLE DESCRIPTIONS
KARILYN CREEK RIDGE AUGER LINE 2W

NUMBER	LINE		TYPE	AMG COORDS	
	FROM	TO		EAST	NORTH
23052	50	50	FLOAT	368335	5414734
23302	300	300	O/C	368204	5414576
23303	300	350	O/C +	368175	5414565
23304	350	400	FLOAT	368129	5414546
23305	400	450	FLOAT	368081	5414525
23306	500	550	FLOAT	367987	5414504
23142	1000	1050	FLOAT	367785	5414194
23143	1100	1150	FLOAT	367719	5414124
23144	1150	1200	FLOAT	367692	5414099
23053	1300	1350	FLOAT	367654	5414031
23145	1300	1350	FLOAT	367654	5414032
23146	1350	1400	FLOAT	367637	5414000
23147	1400	1450	FLOAT	367610	5413964
23148	1450	1500	FLOAT	367572	5413939
23149	1500	1550	FLOAT	367536	5413928
23057	1550	1600	FLOAT	367507	5413911
23056	1600	1650	FLOAT	367473	5413897
23055	2150	2250	FLOAT	366921	5413707
23054	2250	2300	FLOAT	366872	5413693

946033

ARTHUR RIVER PROJECT - ROCK SAMPLE DESCRIPTIONS
REGIONAL ROCK CHIP SAMPLING - WARATAH SHEET

946034

NUMBER	TYPE	AMG COORDS	
		EAST	NORTH
23012	O/C	364415	5414547
23013	O/C	364819	5414291
23014	O/C	364962	5414268
23015	O/C	365466	5414337
23016	O/C	365480	5414310
23017	O/C	365553	5414243
23018	O/C	365510	5414265
23019	O/C	365599	5414256
23020	O/C	365737	5414248
23021	O/C	365742	5414158
23022	O/C	365869	5414068
23023	O/C	366153	5413935
23024	O/C	366236	5413889
23025	O/C	364171	5414459
23026	O/C	363881	5414355
23027	O/C	366252	5413777
23028	O/C	366400	5413978
23029	O/C	366582	5413986
23030	O/C	366843	5414055
23051	O/C	363551	5412708
23058	O/C	365183	5417463
23059	FLOAT	368593	5417077
23060	FLOAT	368878	5417176
23061	O/C	369083	5417238
23062	O/C	369371	5417275
23063	O/C	369069	5416798

ARTHUR RIVER PROJECT - ROCK SAMPLE DESCRIPTIONS
REGIONAL ROCK CHIP SAMPLING - WARATAH SHEET

946035

NUMBER	TYPE	AMG COORDS	
		EAST	NORTH
23101	O/C	362873	5414084
23102	O/C	362903	5414476
23301	FLOAT	368576	5415415

ARTHUR RIVER PROJECT - ROCK CHIP SAMPLES - ASSAY RESULTS

NUMBER	-----I.C.P. (ppm)-----															[---Fire Assay (ppm)---]			
	Ag	As	Bi	Cd	Co	Cu	Fe%	Mn	Mo	Ni	Pb	P	Sb	V	Zn	Au	Au Rp	Au Av	Au SS
23001	2.0	3	10	-1	75	350	15.10	2150	-1	80	12	780	10	500	270	-0.01	-3E3	-0.01	0.01
23002	1.5	-1	15	-1	34	240	9.70	1300	-1	65	4	940	10	340	160	-0.01	-0.01	-0.01	-3E3
23003	2.0	4	20	-1	60	320	11.60	1900	-1	90	4	1000	10	420	230	-0.01	-0.01	-0.01	-3E3
23004	2.0	-1	15	-1	100	330	14.60	3100	-1	65	-3	960	10	480	200	-0.01	-3E3	-0.01	-3E3
23005	2.0	2	15	-1	65	540	14.40	3000	-1	85	-3	980	10	500	190	-0.01	-0.01	-0.01	-3E3
23006	1.0	2	5	-1	50	130	9.60	2450	-1	40	12	420	-5	260	110	-0.01	-3E3	-0.01	-3E3
23007	2.5	2	15	-1	46	300	14.50	1900	-1	70	4	1100	10	520	310	-0.01	-0.01	-0.01	-3E3
23008	1.0	-1	10	-1	24	170	7.30	780	1	38	18	540	5	240	120	-0.01	-3E3	-0.01	-3E3
23009	1.5	1	10	-1	28	170	8.35	1000	-1	44	6	740	5	280	120	-0.01	-3E3	-0.01	-3E3
23010	1.0	4	5	-1	100	220	18.30	2650	-1	30	-3	960	5	560	90	-0.01	-0.01	-0.01	-3E3
23011	-0.5	1	-5	-1	14	170	3.30	370	-1	28	-3	130	-5	60	42	-0.01	-3E3	-0.01	-3E3
23012	1.5	2	10	-1	32	520	6.75	1700	-1	48	4	720	5	240	150	-0.01	-3E3	-0.01	-3E3
23013	0.5	5	-5	-1	55	140	11.10	1800	-1	90	-3	960	-5	150	120	-0.01	-3E3	-0.01	-3E3
23014	-0.5	1	-5	-1	6	20	1.99	250	2	15	-3	230	-5	19	17	-0.01	-0.01	-0.01	-3E3
23015	1.5	4	10	-1	36	230	10.10	1650	-1	60	4	800	5	350	160	-0.01	-0.01	-0.01	-3E3
23016	2.0	1	15	-1	32	360	10.10	1600	-1	38	6	1200	10	350	130	-0.01	-0.01	-0.01	-3E3
23017	-0.5	-1	-5	-1	8	24	2.02	290	-1	14	-3	250	-5	28	24	-0.01	-0.01	-0.01	-3E3
23018	1.5	3	10	-1	26	200	9.85	880	-1	42	-3	940	5	260	120	-0.01	-3E3	-0.01	-3E3
23019	-0.5	6	-5	-1	7	9	1.55	180	2	10	-3	190	-5	14	14	-0.01	-3E3	-0.01	-3E3
23020	-0.5	4	-5	-1	5	8	1.58	320	2	11	-3	260	-5	16	13	-0.01	-3E3	-0.01	-3E3
23021	-0.5	5	-5	-1	17	2	4.34	720	-1	42	8	360	-5	44	44	-0.01	-0.01	-0.01	0.02
23022	-0.5	-1	-5	-1	6	11	1.90	310	3	18	-3	200	-5	15	12	-0.01	-3E3	-0.01	-3E3
23023	-0.5	2	-5	-1	7	7	1.70	310	1	12	4	350	-5	14	13	-0.01	-0.01	-0.01	-3E3
23024	-0.5	5	-5	-1	11	15	2.04	600	1	10	-3	330	-5	15	13	-0.01	-0.01	-0.01	-3E3

046036

ARTHUR RIVER PROJECT - ROCK CHIP SAMPLES - ASSAY RESULTS

NUMBER	I.C.P. (ppm)															Fire Assay (ppm)			
	Ag	As	Bi	Cd	Co	Cu	Fe%	Mn	Mo	Ni	Pb	P	Sb	V	Zn	Au	Au Rp	Au Av	Au SS
23025	1.5	-1	10	-1	44	110	10.20	2400	-1	65	4	940	5	350	360	-0.01	-3E3	-0.01	-3E3
23026	1.5	7	10	-1	65	150	10.10	4300	-1	110	6	1050	10	300	230	-0.01	-3E3	-0.01	-3E3
23027	-0.5	-1	-5	-1	11	20	2.68	380	-1	17	4	360	-5	28	30	-0.01	-3E3	-0.01	-3E3
23028	-0.5	11	-5	-1	9	17	1.95	470	3	16	-3	410	-5	17	20	0.03	-0.01	0.01	-3E3
23029	-0.5	1	-5	-1	11	3	1.86	800	-1	13	-3	230	-5	18	22	0.02	-0.01	0.01	-3E3
23030	-0.5	-1	-5	-1	8	7	2.62	360	1	14	-3	270	-5	22	17	0.01	-3E3	0.01	-3E3
23031	-0.5	-1	-5	-1	6	9	1.62	175	-1	11	4	185	-5	32	25	-0.01	-3E3	-0.01	0.00
23032	-0.5	4	-5	-1	2	10	1.19	105	1	6	4	135	-5	17	16	0.01	-3E3	0.01	0.00
23033	-0.5	-1	-5	-1	-2	8	0.64	110	1	5	4	100	-5	11	9	0.01	-3E3	0.01	0.00
23034	-0.5	2	-5	-1	-2	11	0.92	45	1	4	4	105	-5	13	13	0.01	-3E3	0.01	0.00
23035	-0.5	1	-5	-1	8	7	1.84	340	-1	10	3	240	-5	28	25	0.02	-3E3	0.02	0.00
23036	-0.5	-1	-5	-1	7	7	1.96	280	-1	9	6	300	-5	32	22	0.01	-3E3	0.01	0.00
23037	-0.5	4	-5	-1	6	7	2.20	210	-1	8	4	220	-5	25	17	0.01	-3E3	0.01	0.00
23038	-0.5	9	-5	-1	-2	15	1.31	95	3	5	-3	95	-5	16	10	-0.01	-3E3	-0.01	0.00
23039	-0.5	4	-5	-1	2	5	1.14	230	2	7	-3	80	-5	15	12	0.01	-3E3	0.01	0.00
23040	-0.5	5	-5	-1	-2	11	1.16	130	2	7	-3	95	-5	15	13	0.01	-3E3	0.01	0.00
23041	-0.5	5	-5	-1	-2	38	1.29	175	4	6	-3	120	-5	14	8	-0.01	-3E3	-0.01	0.00
23042	-0.5	15	-5	-1	-2	38	1.75	75	10	6	4	210	-5	20	6	-0.01	-3E3	-0.01	0.00
23043	-0.5	94	-5	1	7	350	12.10	60	30	4	13	2250	-5	160	14	-0.01	-3E3	-0.01	0.00
23044	-0.5	3	-5	-1	2	11	0.81	75	6	12	-3	90	-5	12	4	-0.01	-3E3	-0.01	0.00
23045	-0.5	2	-5	-1	2	16	1.12	140	2	10	-3	120	-5	14	24	-0.01	-3E3	-0.01	0.00
23046	-0.5	3	-5	-1	4	10	1.37	150	2	9	-3	145	-5	14	25	-0.01	-3E3	-0.01	0.00
23047	-0.5	3	-5	-1	-2	13	0.96	70	2	7	-3	155	-5	11	10	0.01	-3E3	0.01	0.00
23048	-0.5	5	-5	-1	-2	22	0.67	35	2	4	-3	115	-5	13	6	0.01	-3E3	0.01	0.00

946037

ARTHUR RIVER PROJECT - ROCK CHIP SAMPLES - ASSAY RESULTS

NUMBER	{-----I.C.P. (ppm)-----}															{----Fire Assay (ppm)----}			
	Ag	As	Bi	Cd	Co	Cu	Fe%	Mn	Mo	Ni	Pb	P	Sb	V	Zn	Au	Au Rp	Au Av	Au SS
23049	-0.5	2	-5	-1	-2	16	0.69	55	2	5	-3	120	-5	9	9	-0.01	-3E3	-0.01	0.00
23050	-0.5	4	-5	-1	2	9	0.88	160	2	6	-3	130	-5	14	10	-0.01	-3E3	-0.01	0.00
23051	2.0	2	10	1	56	320	10.10	2250	-1	66	9	1180	-5	380	270	-0.01	-3E3	-0.01	0.00
23052	-0.5	1	-5	-1	14	155	4.92	230	-1	34	-3	460	-5	76	90	-0.01	-3E3	-0.01	0.00
23053	-0.5	2	-5	-1	-2	8	0.32	120	3	4	3	80	-5	6	3	-0.01	-3E3	-0.01	0.00
23054	-0.5	5	-5	-1	6	30	1.63	300	-1	9	-3	175	-5	22	18	-0.01	-3E3	-0.01	0.00
23055	-0.5	10	-5	-1	3	11	1.17	85	1	6	-3	140	-5	22	10	-0.01	-3E3	-0.01	0.00
23056	-0.5	7	-5	-1	-2	18	0.78	35	6	5	-3	60	-5	11	4	-0.01	-3E3	-0.01	0.00
23057	-0.5	5	-5	-1	-2	12	0.84	40	4	5	-3	40	-5	11	6	-0.01	-3E3	-0.01	0.00
23058	1.0	7	-5	1	90	46	9.50	2050	-1	360	10	3850	-5	140	120	0.01	-3E3	0.01	0.00
23059	-0.5	9	-5	-1	15	88	7.60	460	-1	48	9	1120	-5	115	90	0.01	-3E3	0.01	0.00
23060	-0.5	5	-5	-1	38	80	9.50	860	-1	88	-3	1020	-5	195	85	-0.01	-3E3	-0.01	0.00
23061	0.5	1	-5	-1	44	75	4.72	1360	2	160	14	175	-5	115	125	-0.01	-3E3	-0.01	0.00
23062	2.0	1	10	2	70	300	12.50	2650	-1	85	7	1050	5	550	350	-0.01	-3E3	-0.01	0.00
23063	2.0	-1	10	2	54	260	9.10	2100	-1	72	7	1120	-5	370	350	-0.01	-3E3	-0.01	0.00
23064	-0.5	10	-5	-1	8	140	3.80	200	-1	28	-3	175	-5	60	45	-0.01	-3E3	-0.01	0.00
23065	-0.5	-1	-5	-1	3	6	1.62	105	2	7	-3	165	-5	22	14	-0.01	-3E3	-0.01	0.00
23066	-0.5	2	-5	-1	2	10	0.94	65	2	7	-3	150	-5	18	280	-0.01	-3E3	-0.01	0.00
23067	-0.5	14	-5	-1	3	26	1.40	60	1	6	4	210	-5	25	11	0.02	-3E3	0.02	0.00
23068	-0.5	8	-5	-1	3	8	1.39	75	-1	5	-3	230	-5	24	14	-0.01	-3E3	-0.01	0.00
23069	-0.5	18	-5	-1	4	11	1.84	65	2	8	-3	220	-5	28	12	-0.01	-3E3	-0.01	0.00
23070	-0.5	6	-5	-1	-2	13	0.84	50	3	7	-3	125	-5	24	460	-0.01	-3E3	-0.01	0.00
23071	-0.5	1	-5	-1	22	26	3.84	790	3	22	-3	560	-5	75	55	-0.01	-3E3	-0.01	0.00
23072	0.5	4	-5	-1	30	12	6.20	660	-1	42	15	1000	-5	115	100	-0.01	-3E3	-0.01	0.00

946038

ARTHUR RIVER PROJECT - ROCK CHIP SAMPLES - ASSAY RESULTS

NUMBER	I.C.P. (ppm)															Fire Assay (ppm)			
	Ag	As	Bi	Cd	Co	Cu	Fe%	Mn	Mo	Ni	Pb	P	Sb	V	Zn	Au	Au Rp	Au Av	Au SS
23073	-0.5	30	-5	-1	-2	9	0.56	40	7	7	-3	85	-5	9	3	-0.01	-3E3	-0.01	0.00
23101	-0.5	2	-5	-1	16	7	2.04	780	-1	30	4	150	-5	75	60	0.01	-3E3	0.01	-3E3
23102	1.5	6	10	-1	30	75	6.85	960	-1	60	4	780	5	150	70	0.01	-3E3	0.01	-3E3
23103	1.5	4	10	-1	120	420	12.80	3300	-1	70	10	820	10	440	160	0.02	-0.01	0.01	-3E3
23104	2.0	3	15	-1	50	320	11.60	1000	-1	65	-3	840	10	410	150	0.01	-3E3	0.01	-3E3
23105	-0.5	4	-5	-1	7	26	1.56	190	-1	10	4	130	-5	34	12	0.01	-3E3	0.01	-3E3
23106	-0.5	2	-5	-1	4	40	1.41	140	2	11	6	200	-5	16	10	-0.01	-3E3	-0.01	-3E3
23107	-0.5	-1	-5	-1	-2	6	0.88	95	1	4	-3	55	-5	9	2	-0.01	-3E3	-0.01	-3E3
23108	-0.5	-1	-5	-1	-2	9	0.91	120	2	8	-3	46	-5	7	-1	-0.01	-3E3	-0.01	-3E3
23109	-0.5	1	-5	-1	3	4	0.91	45	-1	2	10	120	-5	22	2	0.01	-0.01	-0.01	-3E3
23110	-0.5	2	-5	-1	-2	9	0.75	55	3	9	4	50	-5	6	-1	-0.01	-3E3	-0.01	-3E3
23111	-0.5	-1	-5	-1	-2	4	0.42	50	3	8	-3	38	-5	4	-1	-0.01	-3E3	-0.01	0.01
23112	-0.5	-1	-5	-1	-2	9	0.73	150	2	6	-3	70	-5	8	-1	-0.01	-3E3	-0.01	-3E3
23113	-0.5	-1	-5	-1	-2	3	0.33	1150	2	5	-3	20	-5	2	-1	0.01	-3E3	0.01	-3E3
23114	-0.5	-1	-5	-1	-2	8	0.67	460	2	7	-3	55	-5	4	-1	-0.01	-3E3	-0.01	-3E3
23115	-0.5	-1	-5	-1	-2	4	0.84	70	4	8	-3	26	-5	6	-1	-0.01	-3E3	-0.01	-3E3
23116	-0.5	3	-5	-1	-2	10	1.16	55	3	9	-3	36	-5	7	-1	0.01	-3E3	0.01	-3E3
23117	-0.5	-1	-5	-1	-2	8	0.55	110	3	8	-3	38	-5	6	2	-0.01	-3E3	-0.01	-3E3
23118	-0.5	-1	-5	-1	3	18	1.20	240	2	9	6	160	-5	10	13	-0.01	-3E3	-0.01	-3E3
23119	-0.5	4	-5	-1	-2	8	0.85	45	-1	3	8	140	-5	16	5	-0.01	-3E3	-0.01	-3E3
23120	-0.5	-1	-5	-1	-2	10	0.84	75	2	7	4	130	-5	10	3	-0.01	-3E3	-0.01	-3E3
23121	-0.5	-1	-5	-1	-2	12	1.13	150	3	10	4	120	-5	7	6	-0.01	-3E3	-0.01	-3E3
23122	-0.5	5	-5	-1	-2	30	1.08	60	3	8	-3	65	-5	10	5	-0.01	-3E3	-0.01	-3E3
23123	-0.5	3	-5	-1	-2	15	0.81	50	3	8	-3	90	-5	11	-1	-0.01	-3E3	-0.01	-3E3

946039

ARTHUR RIVER PROJECT - ROCK CHIP SAMPLES - ASSAY RESULTS

NUMBER	{-----I.C.P. (ppm)-----}															{----Fire Assay (ppm)----}				
	Ag	As	Bi	Cd	Co	Cu	Fe%	Mn	Mo	Ni	Pb	P	Sb	V	Zn	Au	Au Rp	Au Av	Au SS	
23124	-0.5	2	-5	-1	-2	18	0.73	85	3	8	-3	55	-5	19	2	-0.01	-3E3	-0.01	-3E3	
23125	-0.5	-1	-5	-1	-2	22	1.04	460	3	10	-3	34	-5	7	3	0.01	-0.01	-0.01	-3E3	
23126	-0.5	28	-5	-1	-2	34	0.96	110	10	9	-3	46	-5	10	6	0.01	-0.01	-0.01	-3E3	
23127	-0.5	30	-5	-1	-2	65	1.13	220	3	11	-3	80	-5	18	3	0.01	-3E3	0.01	-3E3	
23128	-0.5	5	-5	-1	3	22	2.04	130	-1	5	6	360	-5	19	7	0.01	-3E3	0.01	-3E3	
23129	-0.5	5	-5	-1	3	14	1.56	170	3	10	4	120	-5	15	6	0.01	-0.01	-0.01	-3E3	
23130	-0.5	4	-5	-1	4	24	2.42	540	3	20	-3	85	-5	15	10	0.01	-0.01	-0.01	-3E3	
23131	-0.5	-1	-5	-1	-2	7	0.96	130	3	7	-3	30	-5	9	3	0.01	-3E3	-0.01	-0.01	
23132	-0.5	4	-5	-1	-2	40	1.02	170	3	7	-3	100	-5	12	8	-0.01	-3E3	-0.01	-3E3	
23133	-0.5	4	-5	-1	-2	19	0.84	85	2	5	4	130	-5	13	6	-0.01	-3E3	-0.01	-3E3	
23134	-0.5	2	-5	-1	-2	13	0.63	65	2	7	-3	75	-5	11	1	-0.01	-3E3	-0.01	-3E3	
23135	-0.5	2	-5	-1	-2	6	0.62	45	2	7	-3	40	-5	15	-1	0.01	-3E3	0.01	-3E3	
23136	-0.5	16	-5	-1	-2	190	4.06	80	8	20	6	170	-5	26	9	-0.01	-3E3	-0.01	-3E3	
23137	-0.5	9	-5	-1	-2	22	0.61	35	2	6	4	100	-5	10	2	-0.01	-3E3	-0.01	-3E3	
23138	-0.5	2	-5	-1	-2	15	1.17	40	4	10	-3	50	-5	4	4	-0.01	-3E3	-0.01	-3E3	
23139	-0.5	-1	-5	-1	-2	3	0.29	30	2	4	-3	40	-5	5	-1	-0.01	-3E3	-0.01	-3E3	
23140	-0.5	2	-5	-1	-2	11	0.58	100	3	7	-3	44	-5	3	-1	-0.01	-3E3	-0.01	-3E3	
23141	-0.5	-1	-5	-1	-2	8	0.47	80	2	5	-3	95	-5	4	4	-0.01	-3E3	-0.01	-3E3	
23142	-0.5	4	-5	-1	3	13	1.33	95	-1	4	7	360	-5	25	10	-0.01	-3E3	-0.01	0.00	
23143	-0.5	1	-5	-1	-2	9	1.37	75	1	3	-3	90	-5	19	3	-0.01	-3E3	-0.01	0.00	
23144	-0.5	-1	-5	-1	-2	4	0.58	60	4	9	-3	65	-5	7	4	-0.01	-3E3	-0.01	0.00	
23145	-0.5	2	-5	-1	-2	4	0.91	50	3	5	-3	140	-5	11	7	-0.01	-3E3	-0.01	0.00	
23146	-0.5	25	-5	-1	-2	64	1.71	30	7	4	-3	85	-5	19	4	-0.01	-3E3	-0.01	0.00	
23147	-0.5	2	-5	-1	-2	4	0.34	35	3	6	-3	55	-5	10	1	-0.01	-3E3	-0.01	0.00	

946040

ARTHUR RIVER PROJECT - ROCK CHIP SAMPLES - ASSAY RESULTS

NUMBER	{-----I.C.P. (ppm)-----}														{----Fire Assay (ppm)----}				
	Ag	As	Bi	Cd	Co	Cu	Fe%	Mn	Mo	Ni	Pb	P	Sb	V	Zn	Au	Au Rp	Au Av	Au SS
23148	-0.5	-1	-5	-1	-2	6	0.49	45	4	8	-3	150	-5	8	5	-0.01	-3E3	-0.01	0.00
23149	-0.5	2	-5	-1	-2	5	0.27	45	2	4	-3	115	-5	5	2	-0.01	-3E3	-0.01	0.00
23150	-0.5	12	-5	-1	-2	9	1.14	25	2	4	-3	175	-5	17	3	-0.01	-3E3	-0.01	0.00
23151	-0.5	-1	-5	-1	5	32	2.48	165	-1	6	-3	340	-5	34	12	-0.01	-3E3	-0.01	0.00
23301	-0.5	2	-5	-1	3	5	0.77	160	3	9	-3	195	-5	8	9	-0.01	-3E3	-0.01	0.00
23302	-0.5	9	-5	-1	-2	22	0.84	75	4	8	6	180	-5	9	80	0.01	-3E3	0.01	0.00
23303	-0.5	5	-5	-1	-2	18	0.42	35	2	3	-3	100	-5	10	2	-0.01	-3E3	-0.01	0.00
23304	-0.5	5	-5	-1	-2	38	1.11	80	3	3	-3	40	-5	11	2	-0.01	-3E3	-0.01	0.00
23305	-0.5	55	-5	-1	-2	62	1.91	30	3	4	-3	140	-5	15	2	0.01	-3E3	0.01	0.00
23306	-0.5	3	-5	-1	2	3	1.91	50	-1	3	-3	105	-5	32	11	0.01	-3E3	0.01	0.00

946041

APPENDIX 3
AUGER SAMPLING
SAMPLE DESCRIPTIONS AND RESULTS

AUGER LINE 1

946043

SAMPLE NUMBER	LINE DISTANCE	A.M.G. COORDS		HOLE DEPTHS (m)				DESCRIPTION
		EAST	NORTH					
23201	0m	0.00m	0.00m	1.15	0.65	0.00	0.00	C horizon good sample chips of mafic int bk Ssha?
23202	50m	0.00m	0.00m	0.60	0.80	0.00	0.00	Bn with gn-pl gn particles. Lower moisture content than previous holes. Contained clay & rock
23203	75m	0.00m	0.00m	0.70	0.70	0.00	0.00	Contained clay & rock frags. Hard red to yl Ssst boulders found from depth .5 m
23204	100m	0.00m	0.00m	0.65	0.95	0.00	0.00	Contained clay rock frags & organic matter. Fragments were fine grained and dk.
23205	125m	0.00m	0.00m	1.00	0.00	0.00	0.00	Contained clay rock frags & organic matter. Bk fine grained material, as fragments, and fragments small.
23206	150m	0.00m	0.00m	0.65	0.60	0.65	0.00	Contained clay rock frags & organic matter. Red clay (Fe rich) with small rock fragments up to .02m
23207	175m	0.00m	0.00m	1.10	1.10	0.00	0.00	Contained clay rock frags & organic matter. Rock fragments on average 3mm - 10mm in diameter.
23208	200m	0.00m	0.00m	1.00	0.80	0.00	0.00	Samples contained clay, rock fragments & organic matter. Average particle size 2-4mm.
23209	225m	0.00m	0.00m	1.17	0.00	0.00	0.00	Samples contained clay, rock fragments & organic matter. Fine dk clay.
23210	250m	0.00m	0.00m	0.75	0.85	0.00	0.00	Samples contained clay, rock fragments & organic matter. Sampled soil reddish-orange. Surface rocks & float show
23211	275m	0.00m	0.00m	0.80	0.00	0.00	0.00	Samples contained clay & rock fragments. Large clast found, 7mm.
23212	300m	0.00m	0.00m	1.05	0.00	0.00	0.00	Samples contained clay, rock fragments & organic matter. Smaller particles than

AUGER LINE 1

SAMPLE NUMBER	LINE DISTANCE	A.M.G. COORDS		HOLE DEPTHS (m)				DESCRIPTION
		EAST	NORTH					
								previously. Red-brown in
23213	325m	0.00m	0.00m	0.90	0.00	0.00	0.00	Samples contained clay, rock fragments & organic matter. Fine particles, red-orange in colour.
23214	350m	0.00m	0.00m	0.72	0.00	0.00	0.00	Samples contained clay, rock fragments & organic matter. Few solid rock particles. Sample red-brown in colour.
23215	375m	0.00m	0.00m	0.90	0.00	0.00	0.00	Small reddish coloured, fine grained fragments.
23216	400m	0.00m	0.00m	0.95	1.00	0.00	0.00	Clay and rock fragments in sample. Deep red in colour, contained red silt grade chips 3-4mm.
23217	425m	0.00m	0.00m	1.10	0.00	0.00	0.00	Clay, rock fragments and organic matter in sample. Pink streaks through bn-red sample at depth.
23218	450m	0.00m	0.00m	0.75	0.00	0.00	0.00	Clay and organic matter in sample. Fragments found? Mn staining.
23219	475m	0.00m	0.00m	0.75	0.00	0.00	0.00	Soil is bn with red float. At depth soil was red as for 23218.
23220	500m	0.00m	0.00m	1.00	0.00	0.00	0.00	Sample contained clay, rock fragments and organic matter
23221	525m	0.00m	0.00m	1.40	0.00	0.00	0.00	Sample contained clay. Colour change: from red to pl bn. Few fragments.
23222	550m	0.00m	0.00m	1.35	0.00	0.00	0.00	3 soil horizons
23223	575m	0.00m	0.00m	1.25	1.35	0.00	0.00	Red-orange clays, Black stn (carbon? Mn?)
23224	600m	0.00m	0.00m	1.35	0.00	0.00	0.00	Red-orange clays. Black stn (carbon? Mn?) Sample contains rock fragments and organic matter
23225	625m	0.00m	0.00m	1.20	0.00	0.00	0.00	Dry red clay. Black stn Mn

AUGER LINE 1

946045

SAMPLE NUMBER	LINE DISTANCE	A.M.G. COORDS		HOLE DEPTHS (m)				DESCRIPTION
		EAST	NORTH					
								Some ferruginous rock chips
23226	650m	0.00m	0.00m	1.00	0.00	0.00	0.00	Dk orange-gy clay. Significant rock chips. Less ferruginous rock chips
23227	675m	0.00m	0.00m	1.10	0.00	0.00	0.00	Sample has clay, rock fragments & organic matter. Clay dk red-orange-bn with many rock chips.
23228	700m	0.00m	0.00m	1.40	0.00	0.00	0.00	Sample has clay & organic matter. Clay bn with few rock chips. Poss. organic matter
23229	725m	0.00m	0.00m	0.50	0.50	0.50	0.50	Bn organic soil with many rock chips.
23230	750m	0.00m	0.00m	0.50	1.00	0.00	0.00	Bn soil with many rock chips of dk gn, v. wth ?intrusive ?mafic. Deeper hole had few chips in red-orange clays
23231	785m	0.00m	0.00m	1.40	0.00	0.00	0.00	Wet mud orange clay with some pl gn patches.
23232	800m	0.00m	0.00m	1.48	0.00	0.00	0.00	Orange-bn clay.
23233	850m	0.00m	0.00m	1.48	0.00	0.00	0.00	Orange-bn soil/clay.
23234	900m	0.00m	0.00m	1.45	0.00	0.00	0.00	Orange-bn soil.
23235	950m	0.00m	0.00m	1.20	0.00	0.00	0.00	Red soil containing rock fragments & organic matter.
23236	1000m	0.00m	0.00m	0.40	1.00	0.00	0.00	Ferrogenous red soil with bk band 5cm thick. Rock sample same as soil sample? Clay, rock fragments, organics
23237	1050m	0.00m	0.00m	1.55	0.00	0.00	0.00	Bn small particles, orange colouration in areas. Sample contains clay.
23238	1100m	0.00m	0.00m	1.00	1.00	0.00	0.00	Bn with chips of ?Sslt ?metamorphics
23239	1150m	0.00m	0.00m	0.50	0.00	0.00	0.00	Sample contained clay and rock fragments. Thin layer of humus followed by >.5m of ground.

AUGER LINE 1

946046

SAMPLE NUMBER	LINE DISTANCE	A.M.G. COORDS		HOLE DEPTHS (m)				DESCRIPTION
		EAST	NORTH					
23240	1200m	0.00m	0.00m	1.80	0.00	0.00	0.00	Sample contained clay and small rock fragments. Thin layer of humis followed by >.5m of ground.
23241	1250m	0.00m	0.00m	0.80	0.00	0.00	0.00	Gravelly soil, possible MSilt
23242	1300m	0.00m	0.00m	0.90	0.00	0.00	0.00	Clay and rock fragments (wh to pink-bn ?cherty Ssst). Bk inorganic particle observed. Pl bone coloured soil
23243	1350m	0.00m	0.00m	0.80	0.00	0.00	0.00	Clay, sand and rock fragments Dk soil initially with red particles then with darker soil ?charcoal
23244	1400m	0.00m	0.00m	0.80	0.00	0.00	0.00	Bone coloured soil with ?cherty fragments
23245	1450m	0.00m	0.00m	0.68	0.00	0.00	0.00	Sand, rock fragments & organic matter present. Fragments .3-1cm dia. ?cherty
23246	1500m	0.00m	0.00m	0.30	0.00	0.00	0.00	Shallow soil running to heavily fragmented rock
23247	1550m	0.00m	0.00m	0.30	0.20	0.00	0.00	Bn soil with large rock fragments
23248	1600m	0.00m	0.00m	0.45	0.00	0.00	0.00	Irregularly sized rock fragments (?cherty) in loose soil with organic matter Lower soil is gy.
23249	1650m	0.00m	0.00m	0.65	0.00	0.00	0.00	Strg smelling soil with large rock fragments and much organic matter
23250	1700m	0.00m	0.00m	1.00	0.00	0.00	0.00	Clay, organic matter and small rock fragments.
23251	1750m	0.00m	0.00m	0.70	0.00	0.00	0.00	Soil colour changes from gy to orange, orange colouring being inconsistent
23252	1800m	0.00m	0.00m	0.40	0.00	0.00	0.00	Gy loose soil with clay, organic matter & densely packed rock fragments
23253	1850m	0.00m	0.00m	0.60	0.60	0.00	0.00	Gy loose soil with clay,

AUGER LINE 1

946047

SAMPLE NUMBER	LINE DISTANCE	A.M.G. COORDS		HOLE DEPTHS (m)				DESCRIPTION
		EAST	NORTH					
								organic matter & densely packed rock fragments
23254	1900m	0.00m	0.00m	0.30	0.50	0.00	0.00	Gy loose soil with clay and abundant rock fragments (?chert, ?metamorphosed fine sediment) a dk red fragment
23255	1950m	0.00m	0.00m	0.60	0.00	0.00	0.00	Gy loose soil with organic matter, sand and abundant rock fragments (?chert, ?metamorphosed fine sediment)
23256	2000m	0.00m	0.00m	0.60	0.00	0.00	0.00	Gy loose soil with organic matter, clay and abundant rock fragments (?chert, ?metamorphosed fine sediment)
23257	2050m	0.00m	0.00m	0.30	0.40	0.00	0.00	Gy clayey soil with organic matter and large rock fragments (?cherty)
23258	2100m	0.00m	0.00m	0.70	0.00	0.00	0.00	Surface layer of meta-fine grained fragments progressing to compact orange-red clayey soil with few
23259	2150m	0.00m	0.00m	0.80	0.00	0.00	0.00	Red clayey soil with rock fragments and organic matter.
23260	2200m	0.00m	0.00m	0.20	0.00	0.00	0.00	Gy soil containing organic matter and small rock fragments
23261	2250m	0.00m	0.00m	0.55	0.00	0.00	0.00	Bn soil with organic matter & rock fragments varying widely in size
23262	2300m	0.00m	0.00m	0.65	0.00	0.00	0.00	Red clayey soil with small rock fragments and organic matter.
23263	2350m	0.00m	0.00m	0.10	0.10	0.00	0.00	Loose rock fragments.
23264	2550m	0.00m	0.00m	1.40	0.00	0.00	0.00	Moist clay streaked red with rock fragments and organic matter.
23265	2600m	0.00m	0.00m	1.00	0.00	0.00	0.00	Wet gy clay with .1-1cm Mnst fragments

AUGER LINE 1

946048

SAMPLE NUMBER	LINE DISTANCE	A.M.G. COORDS		HOLE DEPTHS (m)				DESCRIPTION
		EAST	NORTH					
23266	2650m	0.00m	0.00m	0.40	0.00	0.00	0.00	Wh soil with Mmst fragments of up to 1.5cm and organic matter.
23267	2750m	0.00m	0.00m	1.05	0.00	0.00	0.00	Clayey sample engorged with water.
23268	2800m	0.00m	0.00m	0.70	0.00	0.00	0.00	Sample contains Sslt fragments of varying sizes (.1-3cm) & organic matter.
23269	2850m	0.00m	0.00m	0.65	0.00	0.00	0.00	Sample contains Sslt fragments of varying sizes (.1-3cm) & organic matter.
23270	2950m	0.00m	0.00m	0.60	0.60	0.00	0.00	Bn clay interspersed with gy & red clay & rock fragments Very waterlogged sample
23271	3000m	0.00m	0.00m	0.65	0.00	0.00	0.00	Gy silty rockchips with gravel & organic matter.
23272	3050m	0.00m	0.00m	0.65	0.00	0.00	0.00	Gy soil with silty (Mmst & Mslt) rockchips gy-bn & organic matter.
23273	3150m	0.00m	0.00m	0.70	0.00	0.00	0.00	Gy soil with bn & gy rock fragments up to .75cm & organic matter
23274	3300m	0.00m	0.00m	0.40	0.00	0.00	0.00	Gy sample with rock fragments of Mmst & Mslt up to 9cm, bn and pink chips & organics.
23275	3400m	0.00m	0.00m	0.80	0.00	0.00	0.00	Gy-red clay progressing to dk red soil at end. Sample had very few rock chips but contained organics.
23276	3500m	0.00m	0.00m	1.00	0.00	0.00	0.00	Bn, red & orange soil banded in places, contained white Mslt fragments.

AUGER LINE 2W

046049

SAMPLE NUMBER	LINE DISTANCE	A.M.G. COORDS		HOLE DEPTHS (m)				DESCRIPTION
		EAST	NORTH					
23278	0m	0.00m	0.00m	1.35	0.00	0.00	0.00	Red-yl clayey soil with rock chips (?mafic). Mica?
23279	50m	0.00m	0.00m	0.45	0.65	0.00	0.00	Pl bn soil, mafic fragments (?with mica)
23280	100m	0.00m	0.00m	0.60	0.00	0.00	0.00	Pl bn-yl soil, with rock fragments (?micaceous).
23281	150m	0.00m	0.00m	0.65	0.00	0.00	0.00	Pl bn-yl soil, with rock fragments (?micaceous).
23282	200m	0.00m	0.00m	0.00	0.00	0.00	0.00	Pl yl micaceous soil, with red micaceous rock fragments.
23283	250m	0.00m	0.00m	0.70	0.70	0.00	0.00	Pl bn clayey soil, with rock fragments.
23284	400m	0.00m	0.00m	0.80	0.00	0.00	0.00	Red soil, with few rock fragments overlain by gy clay
23285	500m	0.00m	0.00m	1.10	0.00	0.00	0.00	Gy & red micaceous banded sample, small rock fragments.
23286	600m	0.00m	0.00m	0.60	0.70	0.00	0.00	Wh-gy soil with many Mslt/clay fragments
23287	650m	0.00m	0.00m	0.40	0.00	0.00	0.00	Gy soil with large silicified rock fragments and organic material.
23288	700m	0.00m	0.00m	0.50	0.00	0.00	0.00	Gy soil with large Mslt rock fragments up to 1cm dia and organics
23289	750m	0.00m	0.00m	0.40	0.00	0.00	0.00	Gy soil with large Mslt rock fragments up to 1cm diam. and organics. Very waterlogged
23290	800m	0.00m	0.00m	0.40	0.40	0.40	0.00	Gy clayey soil with Mslt rock fragments and organics.
23291	850m	0.00m	0.00m	0.40	0.40	0.00	0.00	Fine gy clay interspersed with Mslt gy-bk rock fragments of varying sizes and organics.
23292	900m	0.00m	0.00m	0.10	0.10	0.10	0.00	Gy clay with rock fragments up to 10cm of pl bn-gy. Mostly rock chips, some 10cm and some soft mud coloured.

AUGER LINE 2W

946050

SAMPLE NUMBER	LINE DISTANCE	A.M.G. COORDS		HOLE DEPTHS (m)				DESCRIPTION
		EAST	NORTH					
23293	950m	0.00m	0.00m	0.40	0.00	0.00	0.00	Fine gy clay with Msilt rock fragments of varying sizes & organics. Mainly rock chips.
23294	1000m	0.00m	0.00m	0.30	0.00	0.00	0.00	Gy clay with many Msilt fragments and some organics. Mainly rock chips.
23295	1050m	0.00m	0.00m	0.20	0.20	0.00	0.00	Fine gy clay with Msilt rock fragments & organics. Mainly rock chips.
23296	1100m	0.00m	0.00m	0.00	0.00	0.00	0.00	Wet gy clay with Msilt rock fragments & organics.
23297	1150m	0.00m	0.00m	1.00	0.00	0.00	0.00	Gy soil initially then red with fewer rock fragments and some clay.
23298	1200m	0.00m	0.00m	1.10	1.10	0.00	0.00	Well compacted clayey mud with a band of gy, red & orange (the orange material was micaceous).
23516	1250m	0.00m	0.00m	0.45	0.55	0.00	0.00	Gy-bn clay with organics & Msilt fragments.
23299	1300m	0.00m	0.00m	0.50	0.00	0.00	0.00	Gy clay with many Msilt fragments and some organics. Mainly rock chips.
23300	1350m	0.00m	0.00m	0.00	0.00	0.00	0.00	Pl bn clay with small Msilt rock fragments and organics.
23501	1400m	0.00m	0.00m	0.40	0.40	0.00	0.00	Gy clay with many Msilt fragments.
23502	1450m	0.00m	0.00m	0.40	0.00	0.00	0.00	Gy clay with many large Msilt fragments and organics.
23503	1500m	0.00m	0.00m	0.40	0.00	0.00	0.00	Gy siltstone metamorphic fragments and many organics.
23504	1550m	0.00m	0.00m	0.10	0.00	0.00	0.00	Some gy clay with many rock fragments & Msilt.
23505	1600m	0.00m	0.00m	0.50	0.00	0.00	0.00	Bn-gy clay and many Msilt rock fragments and many organics.
23506	1650m	0.00m	0.00m	1.20	0.00	0.00	0.00	Red dry clay (?mafic) with no rock fragments.

AUGER LINE 2W

946051

SAMPLE NUMBER	LINE DISTANCE	A.M.G. COORDS		HOLE DEPTHS (m)				DESCRIPTION
		EAST	NORTH					
23507	1700m	0.00m	0.00m	0.00	0.00	0.00	0.00	Pl bn clay with small Mslt rock fragments and organics.
23508	1750m	0.00m	0.00m	0.35	0.35	0.00	0.00	Pl gy clay with Mslt rock fragments and some organics.
23509	1800m	0.00m	0.00m	0.70	0.70	0.00	0.00	Gy clay slurry with Mslt rock fragments and some organics.
23510	1850m	0.00m	0.00m	0.50	0.00	0.00	0.00	Slimy clay which was strg smelling with Mslt rock fragments & some organics.
23511	1900m	0.00m	0.00m	0.95	0.95	0.00	0.00	Gy clay slurry which was strg smelling with Mslt rock fragments up to .5cm.
23512	1950m	0.00m	0.00m	0.60	0.00	0.00	0.00	Some gy clay with Mslt rock fragments and many organics. Thick dk bn organic soil overlying solid bedrock.
23513	2000m	0.00m	0.00m	0.95	0.00	0.00	0.00	Pl lime gn clay with tan yl streaks & no rock fragments.
23514	2050m	0.00m	0.00m	1.30	0.00	0.00	0.00	Initial red soil then 20cm water layer and Gy waterlogged clay with red Smst rock fragments.
23515	2100m	0.00m	0.00m	0.65	0.00	0.00	0.00	Red soil with no large rock fragments.

AUGER LINE 2E

946052

SAMPLE NUMBER	LINE DISTANCE	A.M.G. COORDS		HOLE DEPTHS (m)				DESCRIPTION
		EAST	NORTH					
23517	50m	0.00m	0.00m	0.90	0.00	0.00	0.00	Red clay with organics & many red soft Sst fragments.
23518	100m	0.00m	0.00m	0.00	0.00	0.00	0.00	Wet red clay with darker red dry bands (?wth rock), some organics & rock fragments.
23519	150m	0.00m	0.00m	0.65	0.00	0.00	0.00	Reddish soil with wh-gy Sslt fragments.
23520	300m	0.00m	0.00m	0.60	0.60	0.00	0.00	Gy-red clayey soil with organics & many Mslt fragments. at depth became gy soil.
23521	350m	0.00m	0.00m	0.70	0.00	0.00	0.00	Thick red organic soil with mostly rock fragments up to 10cm
23522	400m	0.00m	0.00m	0.70	0.00	0.00	0.00	Thick red organic soil with mostly rock fragments up to 10cm at depth fragments of Mslt.
23523	450m	0.00m	0.00m	0.50	0.50	0.00	0.00	Rich organic clay soil with rock fragments of Mslt up to 10cm in dia.
23524	500m	0.00m	0.00m	0.00	0.00	0.00	0.00	Wet pl gy clay slurry strg smelling with Mslt fragments and organics.
23525	600m	0.00m	0.00m	0.00	0.00	0.00	0.00	Contained clay rock frags & organic matter. Fragments were fine grained and dk.

ARTHUR RIVER PROJECT - AUGER SAMPLES - ASSAY RESULTS

NUMBER	{-----I.C.P. (ppm)-----}																{----Fire Assay (ppm)----}				
	Ag	As	Bi	Cd	Co	Cu	Fe%	Mn	Mo	Ni	Pb	P	Sb	V	Zn	Au	Au Rp	Au Av	Au SS		
23201	1.0	-1	10	-1	32	230	11.60	940	-1	60	12	420	5	310	140	0.01	-3E3	0.01	-3E3		
23202	1.5	1	10	-1	65	460	12.10	1350	-1	46	-3	660	5	340	140	0.01	-3E3	0.01	-3E3		
23203	1.5	2	15	-1	38	350	14.90	1050	-1	60	-3	720	10	450	150	0.01	-3E3	0.01	-3E3		
23204	2.0	4	15	-1	90	420	16.20	2350	-1	95	-3	1000	10	520	240	0.01	-3E3	0.01	-3E3		
23205	2.5	-1	20	-1	130	1000	20.10	3250	-1	110	160	1050	15	700	490	0.01	-0.01	-0.01	-3E3		
23206	2.5	4	20	-1	95	520	19.20	2600	-1	50	22	1100	15	700	150	0.01	-3E3	0.01	-3E3		
23207	2.0	3	15	-1	46	320	19.60	1350	-1	28	6	820	10	600	110	0.01	-3E3	0.01	-3E3		
23208	2.0	-1	15	-1	150	460	18.50	3900	-1	65	4	920	10	560	210	0.01	-0.01	-0.01	-3E3		
23209	2.0	1	15	-1	80	480	16.90	2750	-1	75	6	980	10	520	210	0.01	-0.01	-0.01	-3E3		
23210	2.5	-1	20	-1	75	520	19.60	3350	-1	55	180	1150	15	660	140	0.01	-3E3	0.02	0.02		
23211	3.0	3	25	-1	120	520	19.50	3250	-1	75	12	1250	20	780	140	-0.01	-0.01	-0.01	-3E3		
23212	1.0	2	5	-1	20	390	15.70	780	-1	18	10	720	5	360	70	-0.01	-3E3	-0.01	-3E3		
23213	2.0	3	15	-1	85	400	21.10	3550	-1	46	26	1250	15	700	130	-0.01	-3E3	-0.01	-3E3		
23214	2.0	9	20	-1	65	370	20.00	3400	-1	60	8	1750	15	680	130	-0.01	-3E3	-0.01	-3E3		
23215	1.5	2	15	-1	100	370	17.20	2400	-1	40	48	840	10	580	110	0.01	-3E3	0.01	-3E3		
23216	2.5	5	20	-1	70	460	19.90	3000	-1	44	60	1350	15	700	170	0.01	-3E3	0.01	-3E3		
23217	2.0	2	15	-1	70	390	18.00	3250	-1	80	18	940	10	580	95	-0.01	-3E3	-0.01	-3E3		
23218	2.0	5	15	-1	80	350	18.20	5100	-1	70	65	1400	15	720	160	-0.01	-3E3	-0.01	-3E3		
23219	1.5	4	10	-1	150	360	17.40	3300	-1	36	20	1100	10	580	85	-0.01	-3E3	-0.01	-3E3		
23220	2.5	3	20	-1	60	240	20.40	2250	-1	30	14	1350	15	760	70	-0.01	-0.01	-0.01	-3E3		
23221	2.0	5	10	-1	12	210	19.80	390	-1	20	36	520	10	640	34	-0.01	-0.01	-0.01	-3E3		
23222	1.5	3	10	-1	90	290	17.90	4000	-1	42	6	940	10	540	170	0.01	-3E3	0.01	-3E3		
23223	1.5	4	10	-1	60	240	17.90	2300	-1	38	32	640	10	480	120	-0.01	-3E3	-0.01	-3E3		
23224	1.5	-1	10	-1	44	230	17.30	2750	-1	44	8	940	10	540	150	-0.01	-3E3	-0.01	-3E3		
23225	2.0	-1	15	-1	75	200	19.40	3350	-1	30	6	1100	10	580	110	-0.01	-3E3	-0.01	-3E3		

ARTHUR RIVER PROJECT - AUGER SAMPLES - ASSAY RESULTS

NUMBER	{-----I.C.P. (ppm)-----}															{----Fire Assay (ppm)----}				
	Ag	As	Bi	Cd	Co	Cu	Fe%	Mn	Mo	Ni	Pb	P	Sb	V	Zn	Au	Au Rp	Au Av	Au SS	
23226	1.5	2	10	-1	42	500	18.90	340	-1	60	4	1400	10	580	190	-0.01	-3E3	-0.01	-3E3	
23227	2.0	-1	15	-1	110	350	20.10	3650	-1	80	6	1150	15	580	220	0.01	-3E3	0.01	-3E3	
23228	1.5	2	15	-1	75	450	16.90	3200	-1	65	16	920	10	500	250	0.01	-3E3	0.01	-3E3	
23229	2.0	3	15	-1	65	420	16.70	2000	-1	80	4	1000	10	540	250	-0.01	-3E3	-0.01	-3E3	
23230	1.5	2	10	-1	70	290	16.00	2950	-1	60	16	860	10	440	130	-0.01	-3E3	-0.01	-3E3	
23231	1.0	5	5	-1	24	200	13.90	860	-1	30	16	380	10	400	55	-0.01	-3E3	-0.01	0.01	
23232	1.5	7	10	-1	90	250	16.40	2550	-1	44	16	740	10	490	120	-0.01	-3E3	-0.01	-3E3	
23233	1.5	7	10	-1	70	310	15.20	3300	-1	60	42	740	10	420	120	-0.01	-3E3	-0.01	-3E3	
23234	1.0	6	10	-1	70	210	14.50	2150	-1	55	28	480	5	360	65	-0.01	-3E3	-0.01	-3E3	
23235	1.5	4	10	-1	90	320	17.00	3900	-1	36	6	940	10	500	150	-0.01	-3E3	-0.01	-3E3	
23236	1.0	4	10	-1	120	210	16.00	2850	-1	36	4	1000	10	540	70	-0.01	-3E3	-0.01	-3E3	
23237	2.0	-1	20	-1	100	490	19.30	3350	-1	95	10	1200	15	580	160	-0.01	-3E3	-0.01	-3E3	
23238	-0.5	-1	-5	-1	6	42	3.10	160	-1	10	12	140	-5	95	16	-0.01	-0.01	-0.01	-3E3	
23239	-0.5	-1	-5	-1	2	15	1.09	95	2	12	4	95	-5	20	4	-0.01	-3E3	-0.01	-3E3	
23240	1.0	5	5	-1	340	22	1.59	2250	1	520	42	250	10	95	100	-0.01	-3E3	-0.01	-3E3	
23241	-0.5	-1	-5	-1	3	4	0.40	35	1	7	4	60	-5	8	2	-0.01	-3E3	-0.01	-3E3	
23242	-0.5	-1	-5	-1	3	3	0.21	30	-1	6	-3	24	-5	5	1	-0.01	-3E3	-0.01	-3E3	
23243	-0.5	-1	-5	-1	-2	8	0.66	35	3	8	4	70	-5	6	2	-0.01	-0.01	-0.01	-3E3	
23244	-0.5	-1	-5	-1	-2	2	0.20	15	-1	2	-3	24	-5	3	-1	-0.01	-3E3	-0.01	-3E3	
23245	-0.5	-1	-5	-1	-2	6	0.47	30	2	5	6	100	-5	5	-1	-0.01	-3E3	-0.01	-3E3	
23246	-0.5	-1	-5	-1	-2	3	0.47	35	1	4	4	55	-5	5	3	-0.01	-3E3	-0.01	-3E3	
23247	-0.5	-1	-5	-1	-2	8	0.63	55	3	9	-3	36	-5	3	2	-0.01	-3E3	-0.01	-3E3	
23248	-0.5	-1	-5	-1	-2	2	0.54	25	1	3	6	60	-5	9	2	-0.01	-3E3	-0.01	-3E3	
23249	-0.5	-1	-5	-1	-2	10	0.70	40	4	13	-3	30	-5	3	-1	-0.01	-3E3	-0.01	-3E3	
23250	-0.5	4	-5	-1	5	11	1.69	160	1	15	8	80	-5	42	18	-0.01	-3E3	-0.01	0.01	

ARTHUR RIVER PROJECT - AUGER SAMPLES - ASSAY RESULTS

NUMBER	I.C.P. (ppm)															Fire Assay (ppm)				
	Ag	As	Bi	Cd	Co	Cu	Fe%	Mn	Mo	Ni	Pb	P	Sb	V	Zn	Au	Au Ep	Au Av	Au SS	
23251	-0.5	1	-5	-1	-2	9	1.02	50	1	6	6	65	-5	20	4	-0.01	-0.01	-0.01	-3E3	
23252	-0.5	-1	-5	-1	-2	2	0.49	20	-1	3	4	80	-5	11	3	-0.01	-3E3	-0.01	-3E3	
23253	-0.5	-1	-5	-1	-2	4	0.32	20	1	5	4	65	-5	5	1	-0.01	-3E3	-0.01	-3E3	
23254	-0.5	-1	-5	-1	-2	2	0.44	20	1	4	4	46	-5	5	1	0.01	-0.01	-0.01	-3E3	
23255	-0.5	-1	-5	-1	-2	6	0.46	25	3	7	-3	28	-5	2	-1	-0.01	-3E3	-0.01	-3E3	
23256	-0.5	1	-5	-1	-2	4	0.38	20	-1	4	-3	60	-5	13	2	-0.01	-3E3	-0.01	-3E3	
23257	-0.5	-1	-5	-1	-2	8	0.52	30	3	8	-3	30	-5	4	-1	-0.01	-3E3	-0.01	-3E3	
23258	-0.5	2	-5	-1	2	6	1.74	120	-1	9	6	65	-5	42	7	-0.01	-3E3	-0.01	-3E3	
23259	-0.5	2	-5	-1	7	14	4.94	150	-1	13	10	70	-5	50	12	-0.01	-0.01	-0.01	-3E3	
23260	-0.5	-1	-5	-1	-2	4	0.24	30	1	8	-3	65	-5	8	2	-0.01	-3E3	-0.01	-3E3	
23261	-0.5	7	-5	-1	3	28	2.20	80	1	11	6	160	-5	34	10	-0.01	-3E3	-0.01	-3E3	
23262	-0.5	5	-5	-1	4	36	3.46	85	-1	9	6	140	-5	42	13	-0.01	-3E3	-0.01	-3E3	
23263	-0.5	-1	-5	-1	-2	12	0.92	100	2	13	-3	44	-5	6	3	-0.01	-3E3	-0.01	-3E3	
23264	-0.5	3	-5	-1	4	11	1.22	120	-1	9	12	120	-5	32	11	-0.01	-3E3	-0.01	-3E3	
23265	-0.5	1	-5	-1	-2	3	0.31	30	-1	3	4	65	-5	14	3	-0.01	-3E3	-0.01	-3E3	
23266	-0.5	2	-5	-1	-2	3	0.33	10	-1	2	4	75	-5	12	2	-0.01	-3E3	-0.01	-3E3	
23267	-0.5	2	-5	-1	-2	4	0.30	50	-1	4	6	85	-5	11	6	-0.01	-3E3	-0.01	-3E3	
23268	-0.5	-1	-5	-1	-2	4	0.21	10	1	1	-3	55	-5	5	2	0.01	-3E3	0.01	-3E3	
23269	-0.5	-1	-5	-1	-2	5	0.28	15	1	5	-3	46	-5	4	2	0.01	-3E3	0.01	-3E3	
23270	-0.5	3	-5	-1	7	14	1.63	170	2	22	8	110	-5	18	22	-0.01	-3E3	-0.01	-0.01	
23271	-0.5	1	-5	-1	-2	5	0.28	20	1	3	-3	75	-5	10	2	-0.01	-3E3	-0.01	-3E3	
23272	-0.5	2	-5	-1	-2	4	0.19	15	-1	-1	4	120	-5	15	2	-0.01	-3E3	-0.01	0.00	
23273	-0.5	1	-5	-1	-2	5	0.36	10	-1	-1	-3	50	-5	10	2	-0.01	-3E3	-0.01	0.00	
23274	-0.5	-1	-5	-1	-2	10	0.81	65	-1	-1	3	160	-5	36	4	-0.01	-3E3	-0.01	0.00	
23275	-0.5	3	-5	-1	8	28	2.66	75	-1	14	13	125	-5	64	14	-0.01	-3E3	-0.01	0.00	

ARTHUR RIVER PROJECT - AUGER SAMPLES - ASSAY RESULTS

NUMBER	I.C.P. (ppm)															Fire Assay (ppm)				
	Ag	As	Bi	Cd	Co	Cu	Fe%	Mn	Mo	Ni	Pb	P	Sb	V	Zn	Au	Au Ep	Au Av	Au SS	
23276	-0.5	2	-5	-1	5	3	2.18	150	-1	9	10	135	-5	40	15	-0.01	-3E3	-0.01	0.00	
23277	-0.5	5	-5	-1	12	9	4.86	330	-1	26	9	200	-5	68	40	-0.01	-3E3	-0.01	0.00	
23278	-0.5	6	-5	-1	16	45	6.25	510	-1	30	9	400	-5	75	55	-0.01	-3E3	-0.01	0.00	
23279	-0.5	3	-5	-1	10	105	4.70	185	-1	22	-3	390	-5	88	52	-0.01	-3E3	-0.01	0.00	
23280	-0.5	3	-5	-1	12	50	4.52	230	-1	28	-3	440	-5	76	62	-0.01	-3E3	-0.01	0.00	
23281	-0.5	4	-5	-1	6	28	3.66	85	-1	13	-3	270	-5	60	32	-0.01	-3E3	-0.01	0.00	
23282	-0.5	2	-5	-1	6	18	3.36	65	-1	12	-3	260	-5	58	36	-0.01	-3E3	-0.01	0.00	
23283	-0.5	7	-5	-1	10	32	5.00	200	-1	22	-3	490	-5	80	390	-0.01	-3E3	-0.01	0.00	
23284	-0.5	2	-5	-1	13	6	4.22	340	-1	35	9	110	-5	58	44	-0.01	-3E3	-0.01	0.00	
23285	-0.5	3	-5	-1	16	36	4.22	195	-1	32	4	280	-5	60	82	-0.01	-3E3	-0.01	0.00	
23286	-0.5	3	-5	-1	-2	9	0.66	15	-1	1	-3	100	-5	17	4	-0.01	-3E3	-0.01	0.00	
23287	-0.5	2	-5	-1	-2	7	0.49	10	1	2	-3	105	-5	20	1	-0.01	-3E3	-0.01	0.00	
23288	-0.5	4	-5	-1	-2	9	0.74	10	1	-1	-3	110	-5	30	1	-0.01	-3E3	-0.01	0.00	
23289	-0.5	1	-5	-1	-2	7	0.76	25	-1	-1	5	190	-5	30	2	-0.01	-3E3	-0.01	0.00	
23290	-0.5	2	-5	-1	-2	5	0.66	20	-1	-1	-3	110	-5	22	4	-0.01	-3E3	-0.01	0.00	
23291	-0.5	1	-5	-1	-2	4	0.31	15	-1	-1	-3	85	-5	14	1	-0.01	-3E3	-0.01	0.00	
23292	-0.5	2	-5	-1	-2	6	1.01	25	-1	2	-3	140	-5	24	4	-0.01	-3E3	-0.01	0.00	
23293	-0.5	1	-5	-1	-2	3	0.61	25	-1	1	-3	95	-5	28	2	-0.01	-3E3	-0.01	0.00	
23294	-0.5	2	-5	-1	-2	6	0.28	15	-1	-1	-3	85	-5	9	-1	0.01	-3E3	0.01	0.00	
23295	-0.5	-1	-5	-1	-2	4	0.38	15	1	-1	-3	75	-5	13	-1	-0.01	-3E3	-0.01	0.00	
23296	-0.5	2	-5	-1	-2	9	0.53	20	2	2	-3	85	-5	13	-1	0.01	-3E3	0.01	0.00	
23297	-0.5	-1	-5	-1	9	20	2.72	310	-1	18	15	270	-5	36	34	-0.01	-3E3	-0.01	0.00	
23298	-0.5	2	-5	-1	8	26	4.12	145	2	22	-3	280	-5	62	42	0.01	-3E3	0.01	0.00	
23299	-0.5	1	-5	-1	-2	3	0.28	20	2	2	-3	50	-5	5	1	-0.01	-3E3	-0.01	0.00	
23300	-0.5	1	-5	-1	-2	10	0.57	30	4	8	-3	55	-5	3	-1	0.01	-3E3	0.01	0.00	

ARTHUR RIVER PROJECT - AUGER SAMPLES - ASSAY RESULTS

NUMBER	{-----I.C.P. (ppm)-----}																{----Fire Assay (ppm)----}			
	Ag	As	Bi	Cd	Co	Cu	Fe%	Mn	Mo	Ni	Pb	P	Sb	V	Zn	Au	Au Rp	Au Av	Au SS	
23501	-0.5	-1	-5	-1	-2	4	0.28	20	2	4	-3	50	-5	3	1	-0.01	-3E3	-0.01	0.00	
23502	-0.5	1	-5	-1	-2	10	0.48	25	3	7	-3	30	-5	2	-1	-0.01	-3E3	-0.01	0.00	
23503	-0.5	3	-5	-1	-2	6	0.23	10	5	4	-3	50	-5	3	1	-0.01	-3E3	-0.01	0.00	
23504	-0.5	15	-5	-1	-2	30	1.22	50	6	15	-3	50	-5	8	4	0.01	-3E3	0.01	0.00	
23505	-0.5	3	-5	-1	-2	35	0.54	20	7	4	-3	45	-5	7	3	-0.01	-3E3	-0.01	0.00	
23506	-0.5	3	-5	-1	25	11	4.06	500	-1	52	10	75	-5	76	105	-0.01	-3E3	-0.01	0.00	
23507	-0.5	3	-5	-1	-2	25	1.17	30	2	7	3	80	-5	40	6	-0.01	-3E3	-0.01	0.00	
23508	-0.5	-1	-5	-1	-2	11	0.66	40	5	10	-3	40	-5	8	3	-0.01	-3E3	-0.01	0.00	
23509	-0.5	-1	-5	-1	-2	4	0.22	20	-1	2	-3	65	-5	9	3	-0.01	-3E3	-0.01	0.00	
23510	-0.5	-1	-5	-1	-2	3	0.24	20	1	3	-3	25	-5	4	1	-0.01	-3E3	-0.01	0.00	
23511	-0.5	-1	-5	-1	-2	-1	0.12	10	-1	2	-3	35	-5	3	2	-0.01	-3E3	-0.01	0.00	
23512	-0.5	8	-5	-1	-2	19	1.47	40	3	8	-3	310	-5	7	7	-0.01	-3E3	-0.01	0.00	
23513	-0.5	6	-5	-1	13	85	1.70	90	-1	55	10	155	-5	60	13	0.01	-3E3	0.01	0.00	
23514	-0.5	2	-5	-1	10	11	2.10	240	-1	28	10	90	-5	54	50	-0.01	-3E3	-0.01	0.00	
23515	-0.5	3	-5	-1	14	8	2.22	310	-1	30	10	125	-5	46	50	-0.01	-3E3	-0.01	0.00	
23516	-0.5	-1	-5	-1	-2	4	0.37	20	2	6	-3	35	-5	5	3	0.01	-3E3	0.01	0.00	
23517	-0.5	6	-5	-1	18	4	4.34	740	-1	18	22	250	-5	54	40	0.01	-3E3	0.01	0.00	
23518	-0.5	7	-5	-1	19	7	3.68	360	-1	34	12	2400	-5	60	35	0.01	-3E3	0.01	0.00	
23519	-0.5	15	-5	-1	8	70	4.46	155	3	10	-3	600	-5	94	28	0.01	-3E3	0.01	0.00	
23520	-0.5	-1	-5	-1	-2	7	0.38	20	3	7	3	55	-5	4	2	-0.01	-3E3	-0.01	0.00	
23521	-0.5	1	-5	-1	-2	2	0.21	10	3	4	-3	20	-5	3	-1	-0.01	-3E3	-0.01	0.00	
23522	-0.5	-1	-5	-1	-2	9	0.56	30	5	9	-3	30	-5	3	1	0.02	-3E3	0.02	0.00	
23523	-0.5	1	-5	-1	-2	3	0.12	5	2	2	-3	35	-5	2	1	0.02	-3E3	0.02	0.00	
23524	-0.5	-1	-5	-1	-2	7	0.25	15	3	3	-3	60	-5	4	1	-0.01	-3E3	-0.01	0.00	
23525	-0.5	-1	-5	-1	-2	3	0.19	15	2	4	-3	30	-5	1	1	0.01	-3E3	0.01	0.00	

APPENDIX 4

PETROGRAPHIC DESCRIPTIONS

Dr A.J. Crawford
University of Tasmania

SAMPLE NUMBER: ARTHUR 23007

CQ6449 1389

SUMMARY: This sample is a plagioclase+olivine+augite-phyric basaltic lava probably best correlated with the earlier, olivine-phyric rift tholeiites of the Smithton Trough and Luina areas.

HAND SPECIMEN:

This is a fine-grained mafic lava, either aphyric or very finely porphyritic.

THIN SECTION DESCRIPTION:

This rock is a texturally very well-preserved olivine+augite+plagioclase-phyric mafic lava. Plagioclase forms the largest phenocrysts, up to 3mm long, as occasional (1-2 modal%) rather elongate prism of albite lightly speckled with sericite and some yellowish chlorite. The next most abundant phenocryst phase was olivine, that occurs as quite common (2-5 modal%) small (<0.5mm long) perfectly euhedral crystals faithfully pseudomorphed by yellow serpentinous material. Microphenocrysts of augite are common (~5 modal%), and occur as small granular rather anhedral crystals that are perfectly fresh and mainly around 0.1-0.2mm long.

The groundmass of this sample was a vitrophyric intergrowth of abundant very elongate, narrow plagioclase laths, and subordinate small plates of augite, set in glassy mesostasis riddled by tiny FeTi oxides. The former interstitial glass, which is modally quite abundant (25-30 modal%) has devitrified to a messy brown, almost isotropic material.

The affinities of this basalt are not immediately obvious. The presence of abundant plagioclase phenocrysts rules out any relation with the mafic-ultramafic complexes around Heazlewood. The albitized plagioclase and apparently non-alkaline (ie, not pinkish) clinopyroxene phenocrysts are unlike those in the altered Tertiary olivine-bearing basalts. That leaves Crimson Creek Formation-correlated Latest Proterozoic rift tholeiites. Samples petrographically matching this are common in the lowest part of

the tholeiite succession in the Smithton Trough; basalts higher in that pile lack olivine. The metamorphic grade (prehnite-pumpellyite facies) is appropriate for Smithton basalt correlates.

SAMPLE NUMBER: ARTHUR 23013

1429
CQ64824#3

SUMMARY: This sample is a poorly-sorted greywacke containing abundant detrital quartz, Kspar and biotite thought to be derived from a coarse-grained pelitic metamorphic source, plus serpentine-chromite clasts derived from the Mafic-Ultramafic complexes such as Heazlewood.

HAND SPECIMEN:

This is a very weathered, brown graded sandstone (greywacke) to mudstone

THIN SECTION DESCRIPTION:

This rock is a graded greywacke that passes from fine sandstone to shale across the thin section. The greywacke has an average grainsize of the larger detrital grains around 0.2-0.5mm, and these make up about 50 modal% of the rock. The greywacke is poorly sorted and framework-supported, and the dominant detrital grains are very angular quartz that has the appearance of being derived from coarse pelitic metamorphics (gneisses). It lacks melt inclusions that typify often subhedral to euhedral quartzes from quartz-phyric rhyolitic Mount Read Volcanics, and has irregular extinction and limited strain features common in quartz derived from pelitic Precambrian metamorphics. Slightly less abundant than the detrital quartz, but still very common, are crystals of Kspar with very fine-grained patchy 'plaid' twinning, and commonly, rather elongate blocky crystal shapes preserved; these mainly have their long axes oriented along the bedding direction. Making up a few distinctive modal% of this greywacke are quite a number of long well-formed brown pleochroic biotite crystals, up to 1 mm long, and also generally aligned along the bedding. Less abundant again are large detrital muscovite crystals altered to sericite. Lithic clasts are quite common, the most abundant being

rather smeared-out, serpentinous to chloritic material, almost certainly derived from the mafic-ultramafic complexes. At least one such clast carries a few euhedral chromite inclusions. Several large detrital chromite grains are also present.

The matrix, making up at least 40-50 modal% of this rock, is a very weathered and messy brownish material riddled with small anhedral crystal detritus of all the phases mentioned above.

This greywacke is difficult probably correlates broadly with the Animal Creek Greywacke. First, it clearly carries detritus from the mafic - ultramafic complexes. Second, however, it appears to carry abundant detritus from rather coarse-grained pelitic metamorphics. I would say, given the post-ophiolite origin of the greywacke, that it may be a broad (but not lithological) correlate of either the Animal Creek-type greywackes. However Dundas Group greywackes, this sample carries no detrital material derived from the Mount Reads.

SAMPLE NUMBER: ARTHUR 23024

SUMMARY: This sample is a monomict tectonic breccia derived via fragmentation and healing by silica of a pelitic metasediment.

HAND SPECIMEN:

This is a monomict breccia, probably of tectonic origin, composed of small angular fragments of very fine-grained mudstone or chert, mainly less than 5mm across.

THIN SECTION DESCRIPTION:

This rock is a monomict tectonic breccia, derived by fragmentation and limited disaggregation of a very fine-grained siliceous metasediment. The extent of brecciation varies across the slide, from one end where the rock is essentially a jigsaw-fit array of angular interlocking fragments, to the other end, where the fragment size is reduced and adjacent fragments show no sign of jigsaw fit textures. The protolith of the breccia was a very fine-grained mudstone in which tiny detrital(?) sericite/muscovite crystals and much less abundant tiny angular quartz fragments are present in a near-isotropic matrix. Narrow discontinuous seams and small patches of secondary quartz are common within fragments, and even more common and coarser-grained in the inter-fragment areas. In some inter-fragments regions, the matrix is very fine-grained and stained messy brownish colours by dissolution of disseminated tiny Fe oxides.

It is not possible to confidently correlate this rock with any one particular formation on the West Coast with which I am aware. There are obviously many possible choices, and local geology would be far more informative than this section.

SAMPLE NUMBER: ARTHUR 23025 CQ64171446

SUMMARY: This sample is a plagioclase-phyric meta-tholeiitic lava correlated with the Crimson Creek Formation rift tholeiites of the Smithton and Dundas Troughs.

HAND SPECIMEN:

This is a sparsely plagioclase-phyric, rather fractured metabasaltic lava.

THIN SECTION DESCRIPTION:

This rock contains about 5 modal% of rather large blocky albitized plagioclase phenocrysts set in an intergranular-textured groundmass containing fresh augite. The plagioclase phenocrysts are up to 3mm long and mainly occur in clots of several crystals. They are riddled with small chlorite inclusions. A few small olivine phenocrysts were also present, but are altered to yellow serpentinous material.

The groundmass of this lava is an intergranular intergrowth of albite laths and less abundant small, granular augite grains. The latter are fresh, subhedral to anhedral colourless grains often occurring in clots of three or four crystals. Glassy mesostasis in interstices between groundmass plagioclase and augite is devitrified, overprinted to a large degree by chlorite, and charged with abundant tiny FeTi oxides. Many fractures cut this rock, and along several, extensive granulation and chloritization has occurred. The metamorphic assemblage albite-chlorite is typical of the prehnite-pumpellyite facies of burial metamorphism.

This is a plagioclase-phyric metabasaltic lava almost certainly correlated with the Crimson Creek Formation rift tholeiites of the Dundas and Smithton Troughs.

SAMPLE NUMBER: ARTHUR 23051 CQ63551711

SUMMARY: This sample is another plagioclase+sparsely olivine-phyric metatholeiitic basalt lava correlated with the Crimson Creek Formation rift tholeiites of the Dundas and Smithton Troughs.

HAND SPECIMEN:

This is a massive, sparsely and finely plagioclase-phyric metabasaltic lava.

THIN SECTION DESCRIPTION:

This rock is very similar petrographically to 23025, being a plagioclase+olivine-phyric metatholeiitic basaltic lava. Subtle differences from 23025 include: 1: this rock is slightly more porphyritic than 23025, with around 15-20 modal% of albitized plagioclase microphenocrysts, but lacking the large blocky plagioclases present in 23025. 2. This rock contains about twice as many serpentine-pseudomorphed small olivine phenocrysts as 23025. 3. This samples contains two or three augite phenocrysts to almost 1mm long, and a cognate microgabbroic clot of plagioclase and augite crystals a few mm across. The groundmass of this sample shows an identical texture and mineralogy to 23025.

This is another plagioclase+olivine-phyric metatholeiitic basaltic lava with a low grade burial metamorphic mineral assemblage. As for 23025, it is easily correlated with the Crimson Creek Formation-correlated rift tholeiitic basalts.

SAMPLE NUMBER: ARTHUR 23058 CQ65181746

SUMMARY: This sample is an unusual plagioclase-dominated leucogabbroic intrusive rock, derived from tholeiitic basaltic magma via crystal flotation or mechanical concentration.

HAND SPECIMEN:

This is a grey-green fairly fine-grained metadoleritic intrusive.

THIN SECTION DESCRIPTION:

This rock is an evolved, plagioclase-rich leucogabbroic intrusive with a remarkable paucity of mafic crystals. Plagioclase makes up about 75-80 modal% of the rock, and occurs as tabular to blocky, well-formed prisms, mainly 2-3mm long, that have been albitized and variably overprinted by sericite. These plagioclase crystals form an open, but self-supporting (like me) framework with abundant chloritized mesostasis between them. The latter areas are often triangular, and composed of almost colourless chlorite sometimes containing quenched crystallites of albite and common apatite needles. It is possible that some small percentage of this chloritic material was former augite crystals, although there are no obvious sites where this is the case. The oxides in this sample are bizarre. They occur as randomly-orientated, quite common strikingly elongate, narrow grains some up to almost 4mm long, yet only 0.1mm across. They are altered to leucoxenitic material and pierce straight through (or grew together with, but at odd angles to) plagioclase crystals.

This is probably a flotation aggregate or a mechanical concentration of plagioclase phenocrysts accumulating from an evolved tholeiitic basaltic magma. The residual liquid trapped between plagioclase crystals was very Fe-rich and evolved, and crystallized FeTi oxides before quenching to glassy mesostasis. This leucogabbro would almost certainly be associated with the Crimson Creek Formation-correlated tholeiitic basaltic

magmatism. It presumably comes from a major sill or dyke, in which some crystal settling and fractionation was able to occur.

SAMPLE NUMBER: ARTHUR 23061 C0691081724

SUMMARY: This sample is a prehnite-pumpellyite facies microgabbro associated with Crimson Creek Formation tholeiitic magmatism.

HAND SPECIMEN:

This is a dark, holocrystalline dolerite or microgabbroic intrusive with altered plagioclase, augite and altered olivine

THIN SECTION DESCRIPTION:

This rock is a texturally well-preserved microgabbro composed of around 50-60 modal% altered plagioclase, 15-20 modal% fresh augite, about 5-10 modal% of altered olivine, and the remainder altered mesostasis. Plagioclase occurs as blocky tabular prisms to about 3mm long, heavily overprinted by sericite so that even albite twinning is obliterated. Augite occurs as rather large (up to 3mm also) anhedral to subhedral colourless crystals, many with small ophitic inclusions of altered plagioclase. Altered olivine crystals are less abundant, and much smaller than either augite or plagioclase, mainly being around 1mm long and totally pseudomorphed by serpentine. Small former FeTi oxide grains have exsolved ilmenite along octahedral planes then altered to leucoxene.

Triangular interstices between plagioclase crystals are filled either by almost colourless chlorite after glassy mesostasis, or quite colourless prehnite. The latter mineral is fairly rare.

This is a typical tholeiitic microgabbroic rock probably deriving from a reasonably thick dyke or sill (maybe 50-100m thick) of Crimson Creek Formation-correlated tholeiitic basaltic magma. The metamorphic grade is clearly prehnite-pumpellyite facies.

SAMPLE NUMBER: 23071 (868401482)

SUMMARY: This sample is a quartz-mica-Kspar greywacke derived from rather coarse-grained, local pelitic metamorphics. It may be correlated with the Animal Creek Greywacke.

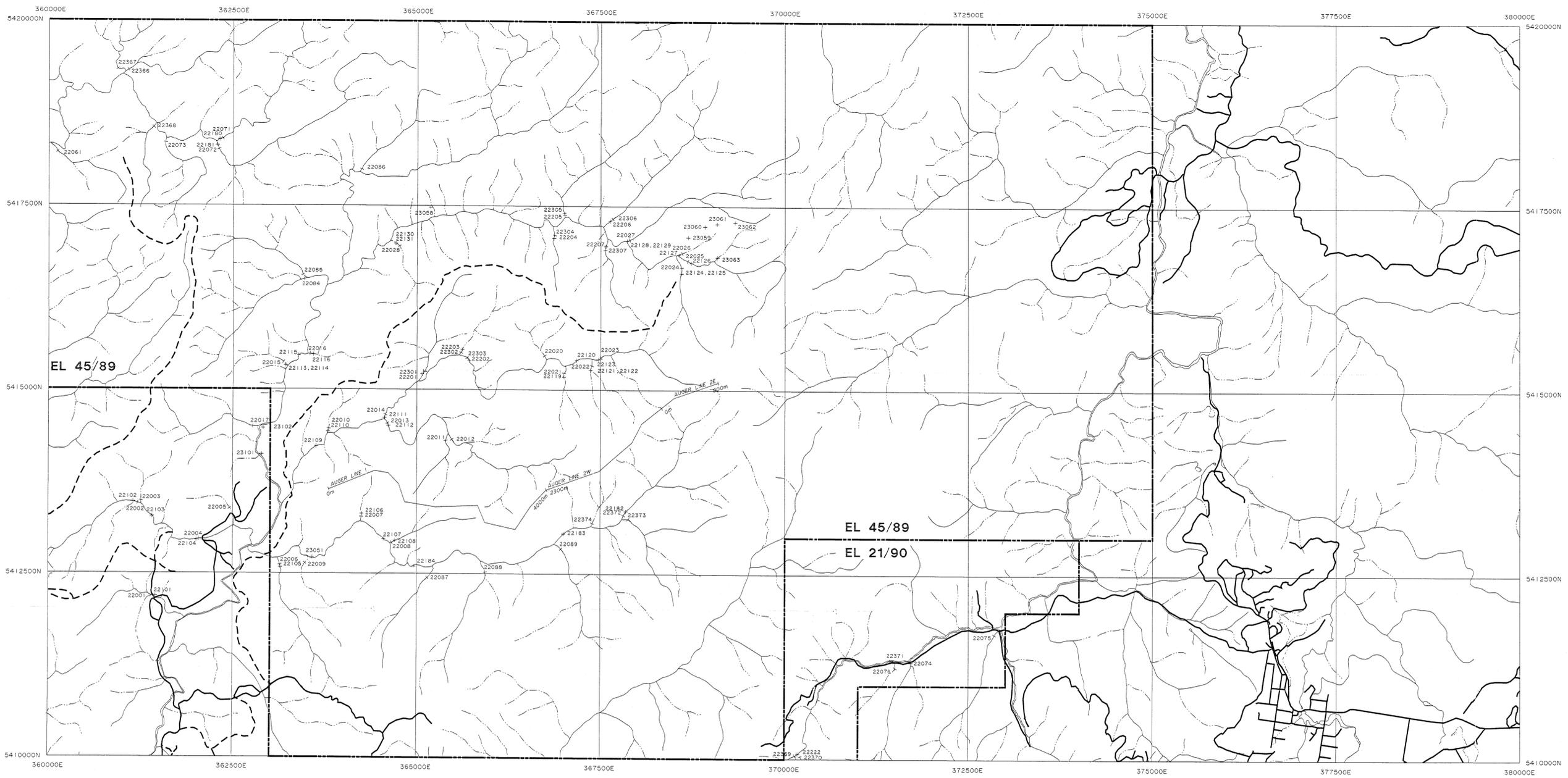
HAND SPECIMEN:

This is a fairly fine-grained, unbedded (on the scale of the hand specimen) grey-brown greywacke.

THIN SECTION DESCRIPTION:

This rock is a petrographically very distinctive greywacke, similar in many respects and implications to 23013. It is poorly-sorted, and almost framework-supported, and dominated by angular, 0.5mm-sized fragments of detrital quartz and Kspar, with abundant perfectly formed detrital crystals of biotite and muscovite aligned broadly with (ie, in this thin section, defining) the bedding. Lithic clasts in this rock are not uncommon, and most are quartz-muscovite schists or quartzites. The abundant detrital quartz, unlike that described for 23013, is rather strained and appears to be derived from coarse-grained pelitic metamorphics, similar but coarser-grained than the lithic fragments in this rock. Accessory detrital minerals include green tourmaline and occasional large euhedral zircons. Another difference from 23013 is the absence in this rock of any obvious detritus from the mafic - ultramafic complexes. The messy, weathered and Fe-stained matrix of this rock was probably silt composed of comminuted crystals of the same assemblage described above, plus some muddy fraction that has recrystallized to dirty sericitic material.

The presence of coarse biotite and muscovite in this rock is intriguing, and suggests rapid erosion and proximal deposition from coarse mica schists and gneisses. An obvious implication is the probable correlation of this sample with the Animal Creek Greywacke-type greywackes.



LOCATION SYMBOLS
 + Location of Rock Chip sample
 { Location of Water sample

FOR 1993 AUGER & ROCK CHIP SAMPLES AROUND
 THE AUGER LINES, SEE PLANS 3448 & 3447

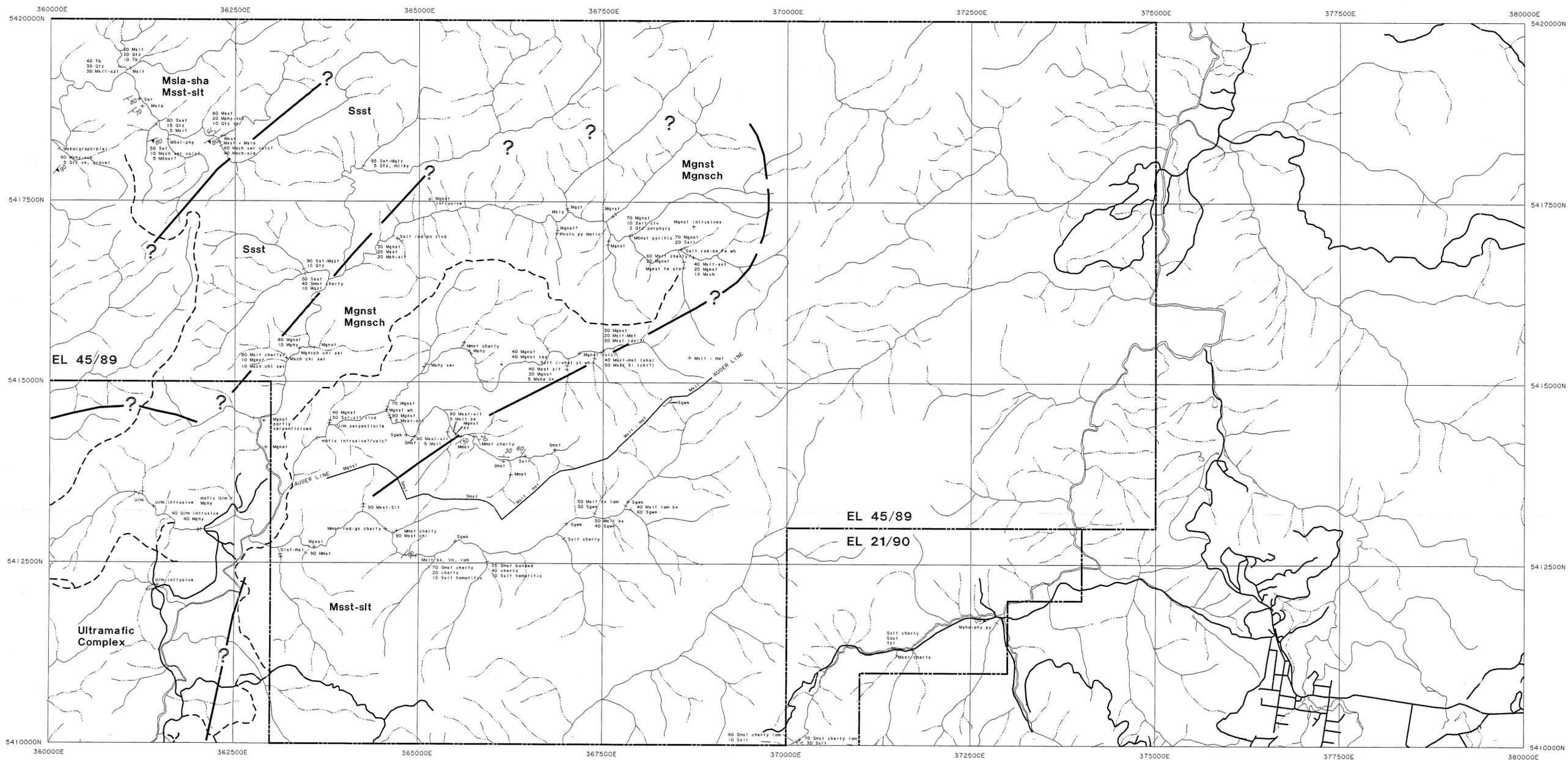
946069
 5 cm

93-3530.

1:25000 SHEET LAYOUT

3442	3642	3842
3441	3641	3841
3440	3640	3840

	GEOPEKO A DIVISION OF PEKO WALLSEND OPERATIONS LTD <small>A.C.N. 000 081 434</small>	
	Scale	1:25000
	500 0 500 1000 1500 2000 2500m	
PARKES Geo. Client: D. G. Carto. R. M. N.	Project / Tenure ARTHUR RIVER PROJECT WARATAH 3641	
Checked Date 12/3/92	SAMPLE LOCATIONS & NUMBER	
Appended Job No. 82_92	100k Sheet 7915	DWG No. 2057A



GEOLOGICAL LEGEND

- TERTIARY**
Tb Basalt
- CARBONIFEROUS - PERMIAN**
C-Pwt Wynyard Tillite
- PRE-CAMBRIAN -**
- | | | | |
|------------------|---------------------|----------------|--|
| SEDIMENTS | METAMORPHICS | COLOURS | LOCATION SYMBOLS |
| Ssst sandstone | Msch schist | bk black | + Location of outcrop with description |
| Sgwk greywacke | Mphy phyllite | wh white | + Location of stream float with percentages of each float type in stream |
| Sslt siltstone | Mgnst greenstone | gn green | |
| Sdol dolomite | Mgnsch greenschist | gy grey | |
| Ssha shale | Mqzt quartzite | pl pale | |
| | Msla slate | dk dark | |
| | | bn brown | |
-
- | | |
|------------------|----------------|
| VOLCANICS | OTHER |
| Volc volcanic | U/m ultramafic |
| tuff tuff | |
-
- | | | |
|-------------------|------------------|---------------------|
| MINERALOGY | TEXTURES | STRUCTURES |
| qtz quartz | Vn vein, veining | bedding |
| fs feldspar | lam laminated | foliation |
| Fe iron | stn stain | definite contact |
| py pyrite | wth weathered | approximate contact |
| ser sericite | clvd cleaved | possible contact |
| chl chlorite | foln foliation | |
| si siliceous | mas massive | |

93-3530. 946070
5cm

1:25000 SHEET LAYOUT

3442	3642	3842
3441	3641	3841
3440	3640	3840

GEOPEKO A DIVISION OF PERK WALLSEND OPERATIONS LTD
A.C.N. 000 081 434

Scale 1:25000
500 0 500 1000 1500 2000 2500m

PARIKES Project / Tenure
Geo. Client. D.G.
Carto. R.M.N.
Checked
Date 12/3/92
Appendix

ARTHUR RIVER PROJECT
WARATAH 3641
FACT GEOLOGY & INTERPRETATION

Job No. 82_92 100K, 7915 Sheet DWG No. 2057B

