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Tasmania - Regional Bulk Sampling - Inter-Office
Memorandum
CSR Limited*
Ellis, P.D.

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**SUBJECT: TASMANIA – REGIONAL BULK GOLD
SAMPLING**

AUTHOR: PETER ELLIS

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5th SEPTEMBER 1989

TO: GARTH WILSON

FROM: PETER ELLIS

SUBJECT: TASMANIA - REGIONAL BULK GOLD SAMPLING

1. GENERAL

During the 1984-1988 period CSR undertook a bulk gold cyanide leach sampling programme in selected areas of Tasmania. The areas selected were:

- (a) Northeast Tasmania- the area of Ordovician to Devonian turbidite micaceous quartzwacke/mudstone sequence (known as the Mathinna Beds) intruded by late Devonian granitic rocks. The Mathinna Beds supposedly contain calcaneous and/or carbonaceous horizons which may be suitable hosts for Carlin style gold mineralisation, while gold vein mineralisation in quartz has been worked in a small way since the 1890's.

This area is on the eastern side of the Tamar Graben in the northeast of the State (north of Fingal).

- (b) The Far Northwest of Tasmania - the area known as the Smithton Trough - a late Precambrian structure filled

with late Precambrian (~720my) to Cambrian massive dolomites, limestones, quartzites/mudstones and unfossiliferous volcanoclastics with some dominantly basic to intermediate volcanic and associated rocks. Copper mineralisation is known at Smithton and Balfour. A Carlin type model was envisaged with fine gold possibly occurring in the carbonate rocks after possibly being derived from the volcanics or an underlying heat source.

- (c) The Mt Read Volcanic Belt - a sequence of Cambrian dominantly acid to intermediate volcanic and associated rocks extending from Elliot Bay (south of Macquarie Harbour) to Que River/Hellyer and then extending eastwards to the Deloraine area. This belt hosts the polymetallic deposits of Hellyer, Que River, Rosebery, Tullah, Williamsford and Mr Lyell as well as numerous basemetal and/or gold prospects.
- (d) Other areas - areas containing carbonate and/or carbonaceous horizons which may form a suitable host for fine gold deposits and/or areas of igneous rocks (especially high magnesia/low titania volcanics or mafic and ultramafic rocks) which may provide a suitable source of gold.

At each site bulk samples (2-5kg) of -1.0cm sand and gravel were taken for cyanide leach and analysis for Au, Cu and Ag. Also -20 mesh stream sediment samples were taken and analysed for Cu, Pb, Zn, Bi, As, W, Sn with some also being analysed for Ni, Ba, Sb, Ag, Au, Mo and Hg. In the early stages panned concentrate and ferroginous gravel (magnetic concentrate) samples were also taken and analysed for Cu, Pb, Zn, Ni, Bi, Sn, W, As, Sb, An, Ag and Mo. The difficulty involved in obtaining these panned

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concentrate and ferruginous gravel samples and the lack of any significant results in the analyses caused inter sample points to only have bulk fold and stream sediment samples taken.

2. RESULTS

(A) Northeast Tasmania

(i) Swan Island 1:100,000 sheet 8 sample sets taken.

An area of Mathinna Beds intruded by the Devonian tin bearing Mt William granite and overlain by an extensive cover of Quaternary sands and minor Tertiary Basalts and associated rocks.

The only significant stream sediment anomaly was the 85ppm As in sample A119531. This sample drained an area of sand and Mathinna Beds containing the old Portland Au mine. No other anomalies in stream sediments were noted probably due to the abundance in most drainages of quartz rich sands derived from the quarnites and/or Quaternary sands.

Panned concentrate samples showed the presence of tin in the Mt William area (2.15% in A119440, 260ppm in A119433 and 860ppm in A119436). The only one of these that was significant was A119440 from Icena Creek as this also contained 100ppm As and 0.37ppm Au. This was from an area on the fringes of the Portland Goldfields.

Although the bulk gold sample from A119440 was not anomalous the sample from further upstream (A119435) contained 1.5ppb Au and 32ppb Cu (bulk gold). No bulk gold samples were taken from the A119529 - 531 area.

The ferruginous gravel samples showed no anomalous values.

Further work required is in the area of A119431 and to the south and southwest of A119430 in the Gladstone Goldfield area, currently held by Placeco as EL34/86. Follow-up of the A119440/435 anomaly is required. This work is regional low priority/low cost.

(ii) Cape Portland 1:100,000 sheet
5 sample sets taken

An area of Mathinna Beds intruded by Devonian granitic rocks but with little outcrop due to a widespread cover of Tertiary basalt and gravels and Quarternary sands.

The only stream sediment sample to show an anomalous value was A119404 with a weak (130ppm) Cu anomaly. This was confirmed by the ferruginous gravel sample which showed 560ppm Cu, 370ppm Pb and 135ppm Zn. The bulk gold sample showed no anomalous values although those from the adjacent streams to the east showed weak anomalies (A119405 with 0.30ppb Au and A119406 with 0.10ppb Au). These samples came from the area immediately west of the Gladstone goldfields area. (see Swan Island Sheet).

The only other bulk gold sample to show a weak anomaly was A119402 (with 0.30ppb Au and 32ppb Cu). This was not confirmed either by other samples from the same site or samples from further upstream.

The only panned concentrate anomaly was A119405 (with 270ppm Sn) which was in an area of old alluvial tin workings.

The only work required in this area is in the area of the Gladstone Goldfields near and to the east of A119405/406 currently held by Placeco as E134/86 and in the Waterhouse

Goldfield area west of A119403 currently held by Placeco as EL27/56 and by Bach Holdings as EL41/87. This is regional low priority/low cost work.

(iii) Georges Bay 1:100,000 sheet
28 sample sets taken.

Most of this area consists of granitic rocks of the Blue Tier Batholith that have intruded Mathinna Beds. The Mathinna Beds occur mainly in the south with a small area in the northeast. Minor Quarternary sands, Tertiary Basalt and Permian sands occur.

The most noticeable stream sediment anomaly is A119583 from Flagstaff Creek to the southwest of St Helens. This showed 160ppm Sn, 140ppm As, 530ppm Cu and 250ppm Zn while the panned concentrate contained 480ppm Sn, 105ppm As, 290ppm Cu, 60ppm Pb and 215ppm Zn, the bulk gold contained 2.17% Cu and 157ppb Ag and the ferruginous gravel contained 380ppm Cu, 110ppm Pb and 370ppm Zn. A161403/404/405 from further upstream showed anomalous values in the bulk gold sample (0.265 ppb Au, 165ppb Cu and 38.6ppb Ag). This area requires further work but is currently held by P.F. Mining Shelf as EL76/87.

Stream sediment sample A119577 shows anomalous Zn (120ppm) and As (12ppm) while the bulk gold sample shows anomalous Au (0.4 ppb) and Cu (128 ppb). This drainage covers the area to the southwest of the Golden Ridge and this backs onto the Hogan Track Brilliant Creek/Queen of the Earth goldfield which is shown by the anomalous bulk gold samples of A119525 (0.4ppb Au) and A119526 (0.45ppb Au).

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Weak bulk gold anomalies shown by A119578 (0.2ppb Au), A119527 (0.3ppb Au) and A119513 (0.45 ppb Au) have not been explained and are not confirmed by other sample type.

A Panned concentrate anomaly in A119588 (0.36ppm Au) has not been explained although this was not confirmed by bulk gold or ferruginous gravel samples.

A panned concentrate Sn anomaly in A119439 (400ppm) relates to the tin bearing Gardens Pluton while a ferruginous gravel anomaly from A119386 (1050ppm W, 160ppm Zn and 160ppm Pb) is associated with the Poimena Pluton and more probably the Mt Paris granitic mass with its many Sn/W prospects and mines.

The high Cu (175ppb) value in the A119581 bulk gold sample confirmed by the ferruginous gravel sample (but not by the stream sediment sample) probably relates to Cu mineralisation in the Orieco Mine area. Similarly the high Cu (108ppb) in the A119584 bulk gold sample probably relates to mineralisation in the Echo Mine vicinity. Both these areas require low priority follow-up sampling.

Follow-up sampling to confirm and define the Flagstaff Creek anomaly (A119583) is required as a medium priority objective. Lower priority should be given to sampling the area around the Hogan Track/Brilliant Creek/Queen of the Earth goldfield (including A119578, A119525, A119526, A119527 but especially the A119577 arch and the Orieco/Echo mineralised area (A119581, A119584). These areas are held by PF Mining Shelf as EL76/87 and by Oceania as EL24/82.

(iv) Forester 1:100,000 sheet

47 sample sets taken

An area of Mathinna Beds intruded by the Mr Paris and Mt Cameron tin bearing granites (of the Blue Tier Batholith) to the east and by the adsmillites of the Scottsdale Batholith to the west. Tertiary sediments and basalt overlie significant parts of the area, with smaller areas of Permian sediments and jurassic dolerite in the south.

The area is bisected by north-northwest trending structure along which the Mathinna, Mangana, Alberton, Warrentina and Mt Horror goldfields are aligned. This structure continues northwards to the Waterhouse gold area. The goldfields were not sampled in most cases.

Anomalous bulk gold samples A119550, 551 and 552 are related to the Dan Rivulet goldfield while A119548 and 549 are related to the Alberton goldfield, A119488 is related to the Warrentina goldfield and A119535 is probably related to the Mt. Horror and Warrentina fields.

Other significant bulk gold anomalies were:

- A119402 with 0.3ppb Au (0.5ppm Au in the panned concentrate) is in an area of Mathinna Beds between the Warrentina and Waterhouse goldfields but itself with no recorded gold. This is adjacent to the A119403 anomaly on the Cape Portland sheet.
- A119536 with 0.75ppb Au is in an area of metamorphosed Mathinna Beds to the northeast of the Mt Horror gold area.

- A119572 with 2.05ppb Au (also 150ppm Zn in the stream sediment) is in an area of metamorphosed Mathinna Beds and significant Scottsdale Batholith with no recorded gold. One drainage does extend from the Tombstone area towards Mathinna (but not as far as the goldfields).
- A119542 with 0.4ppb Au is in an area of metamorphosed Mathinna Beds adjacent to the Scottsdale Batholith and with no known gold.
- the most significant anomaly is A119576 with 10.5ppb Au, 220ppb Cu and 12ppb Ag in the bulk gold (85ppm As, 8ppm Sb and 190ppm Zn in the ferruginous gravel and 100ppm Zn and 95ppm As in the stream sediment). This is a stream draining Mathinna Beds to the northeast of the Mathinna goldfields. This is adjacent to the A119577 anomalous drainage discussed under the Georges Bay sheet.

Anomalous Sn values in stream sediments (with minor Pb and Zn) occur in the central area of the sheet in the vicinity of the Mt Paris tin granite. These are exaggerated in the panned concentrate samples (A119496C with 3.35% Sn, A119496A with 3.95% Sn and A119536 with 6.2% Sn).

Minor anomalous As and Zn in stream sediments are related to the goldfields. The Alberton field is further emphasised by A119549 panned concentrate with 2.7ppm Au and 240ppm As and 130ppm As, 135ppm Cu and 145ppm Zn in the ferruginous gravel while the Warrentina field is emphasised by A119589 with 0.16ppm Au in the panned concentrate. Some

with 0.16ppm Au in the panned concentrate. Some goldfields showed low gold in the panned concentrates (i.e. A119557 from the Dan Rivulet field and A119488 from the Warrentina field).

Further work is required on this sheet area in the following areas:

- the A119576/A119577 area (Claytons Creek and Evercreech Rivulet) is currently not under mining title. Further sampling in an area of 120 Sq km is required (best under Exploration Licence) to determine the source of the anomalous gold values. Medium priority.
- the A119572 area (headwaters of the South Esk River in the Tombstone area) requires further sampling to explain the anomaly. Part of this area is held by Goldsearch as EL31/88. Preliminary follow-up sampling should be completed prior to application for title. Medium priority.
- the A119536 area (Marton and Swanee Creeks near Mt. Horror) requires further follow-up sampling to determine the source. This area is not under mining title. Medium priority.
- the A119402 area (Tomahawk River headwaters) requires low priority follow-up sampling - probably in conjunction with A119403 anomaly of the Cape Portland sheet. This area is held partially by Placeco as EL27/86.
- the A119542 area (Becketts' Creek) requires low priority follow-up sampling to confirm and/or define the anomaly. This is low cost/low

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priority work in ground not covered by mining title.

(v) St. Patricks (Pipers) 1:100,000 sheet
48 Sample sets taken

The northeastern half of the area is underlain by Mathinna Beds intruded by granitic rocks of the Scottsdale Batholith. This has been overlain by some Tertiary basalts and sediments and Quarternary sands. In the southwestern half of the area (dominantly unsampled) the main rocks are Permian sediments capped with Jurassic dolerite. Some Tertiary and Quarternary cover is present.

The Back Creek, Lebrina/Golconda, Lisle and Lefroy goldfields occur within the Mathinna Beds. The trends of these fields tend to be parallel to the Tamar Graben structure and to the Mangana to Waterhouse trend (on the Forester sheet).

Anomalous bulk gold sample A119413 is related to leads beneath the Tertiary basalt such as at Back Creek and Lefroy fields while A119426 is related to the Lebrina field and A119448 is related to the Lisle and Golconda fields. Apart from A119542 (see Forester sheet) no other significant bulk gold anomalies were obtained.

A119447 (from the headwaters of the Little Forester River) showed a weak bulk gold anomaly (0.2ppb Au, 45ppb Cu and 8ppb Ag) which was confirmed by the stream sediment sample (390ppm Cu, 330ppm Zn and 110ppm Ni). This stream drains an area of metamorphosed Mathinna Beds.

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The only other stream sediment anomalies were minor Cu and Zn anomalies near the Lisle goldfield and Cu and/or Zn anomalies near Tertiary Basalt.

Similarly, apart from minor Zn values (to 500ppm) from areas of contact between the Mathinna Beds and Jurassic dolerite, there were no significant ferruginous gravel anomalies.

One panned concentrate sample (A119428 from the Golconda fields) showed 0.84ppm Au. All other samples showed no anomalies.

Surprisingly the Lefroy goldfield in the far northwest of the sheet (A119414) showed no anomalous samples.

No further work is required on this area except in the areas of the known goldfields. These are all held under Exploration Licences and/or (more particularly) Mining Leases.

A low priority minor sampling programme in the headwater of the Little Forester River (A119447) should be undertaken if in the area.

(vi) Break O'Day 1:100,000 sheet

Essentially only 2 sample sets on this sheet - remainder of samples discussed on the Georges Bay sheet (north) and St. Pauls sheet (west).

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The area sampled contains mainly mudstones of the Mathinna Beds intruded by the Picaninny Point granite of the St. Mary's Batholith. These drainages also contain Permian sediments capped by Jurassic dolerite.

Neither drainage contained any stream sediment, panned concentrate or bulk gold anomaly. However, the A119580 ferruginous gravel showed 1200ppm W, 110ppm Cu and 110ppm Zn. The W value must have been a laboratory problem (see also A119421 on the Tamar sheet) with no confirmation in the stream sediment or panned concentrate samples.

No further work is required in this area.

(vii) St Pauls 1:100,000 sheet
23 sample sets taken.

The area sampled covers the southern end of the Mathinna Beds where they have been intruded by the Storey's Creek/Rossarden (Sn/W) and Royal George (Sn/W) portions of the Ben Lomond granite. The entire area is overlain by Permian sediments (containing coal seams) intruded (now capped) by Jurassic dolerite. The Mangana gold area was not sampled.

The most obvious anomalous samples are A119561 from Aberfoyle Creek and A119562 from Ormley Creek which showed significant anomalies in all sample types.

A119561 showed the following anomalous values:

- stream sediment 4.7% Sn, 4250ppm W, 160ppm As, 450ppm Cu, 100ppm Pb, 970ppm Zn, 48ppm Bi.

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- panned concentrate 2650ppm Sn, 850ppm W, 1350ppm Cu, 90ppm Pb, 4800ppm Zn, 60ppm Bi, 6ppm Ag.
- ferruginous gravel 520ppm Cu, 270ppm Pb, 760ppm Zn, 40ppm Bi, 1ppm Ag.
- bulk gold 2320ppb Cu, 306ppb Ag.

Those sample values from Aberfoyle Creek were expected as this drainage contains the workings of the Story's Creek/Rossarden tin/tungsten mineralisation with subsidiary copper, bismuth, arsenic, lead and zinc mineralisation.

Similar values would also be expected from the adjacent Story's Creek (A119560) which actually drains the Story's Creek Mine. None of the samples from this creek showed any anomalies.

A119662 showed the following anomalous values:

- stream sediment 870ppm Sn, 110ppm W, 20ppm As, 3100ppm Cu, 90ppm Pb, 3000ppm Zn, 25ppm Bi.
- panned concentrate 4850ppm Sn, 430ppm W, 70ppm As, 4500ppm Cu, 1900ppm Zn, 30ppm Bi, 28ppm Ag.
- ferruginous gravels 2900ppm Cu, 630ppm Pb, 7250ppm Zn, 24ppm Bi, 18ppm Ag.
- bulk gold 3650ppb Cu, 376ppb Ag.

These values are very similar to those for samples from Aberfoyle Creek. However Ormley Creek contains no known mineralisation.

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Resampling of Ormley Creek (A161406) and the adjacent creek to the west (A161408) showed no anomalous values. The creek to the east (A119563) showed only minor Sn (42ppm in stream sediment) and Cu (195ppb in bulk gold) anomalies.

It is thus apparent that A119562 probably was taken from Story's Creek. This needs to be confirmed by resampling Story's Creek.

The only significant bulk gold Au anomaly was a weak anomaly from Tower Rivulet (A119568) with 0.3ppb Au and 24ppm As in the stream sediment. Further sampling in the area of this drainage (upstream and to the east) will provide a test of the area around the Mangana goldfield.

Bulk gold samples from streams draining the St Pauls Dome area (A119563 draining the north and A119557 draining to the south) showed anomalous Cu values (195 and 345ppb, respectively). These were not confirmed by stream sediment samples. However the panned concentrate samples from A119557 and A119556 (to the east of A119537) showed slightly elevated Sn values.

Apart from the resampling of Story's Creek and minor sampling around Mangana, no other work is warranted on this sheet.

(viii) Tamar 1:100,000 sheet

6 samples taken from east of the Tamar in areas of Mathinna Beds.

4 samples taken from the Port Sorell area in an influx of Cambrian pyrite carbonaceous and dolomite siltstones, dolomite conglomerate, thin quartzites and

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laminated siltstone and chert containing barite within dominantly Permian mudstones and overlain by Jurassic dolerite.

4 samples taken from the Mole Creek area (southwest corner) from streams draining an area of Ordovician sediments (quartzite, conglomerate, siltstone and limestone) and Cambrian sediments and volcanics (phylite, slate, sandstone, acid volcanics). These will be discussed in the Forth sheet.

(a) East of the Tamar (part of the Northeast Tasmania section).

The only samples from this area to show any anomalous values were A119407 and 408 panned concentrates with 0.18 and 0.11 ppm Au respectively. These values probably reflect the effects of the Lefroy goldfield in their headwaters. A ferruginous gravel W anomaly of 1050ppm (A119421) has not been explained. No W anomaly occurred in either the panned concentrate or stream sediment samples.

No further work is required in this area.

(b) The Port Sorell area.

A small area of barite in a Cambrian sequence was sampled due to occurrence elsewhere of gold in barite rich associations.

The only anomaly shown for this area was in a stream sediment sample (A183752) with 0.35ppm Hg.

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Further sampling of the Cambrian sediments throughout the Port Sorell area (currently held by Shell as EL50/87 is required. This could be in conjunction with sampling of the Cambrian (ultramafics, slates and cherts) and Ordovician (limestone, siltstone, sandstone and chert) rocks of the Beaconsfield area (held by Placeco as EL18/87 and Beaconsfield Operations as EL7/88). Gold is associated with the Beaconsfield area, probably being derived from the ultramafics and deposited in carbonate rich horizons in positions controlled by faults.

Areas of the Precambrian sandstone, slate and phyllites between the Port Sorell and Beaconsfield area contain minor Cu mineralisation. These could be sampled in the above programme.

(c) Mole Creek Area.

These sites were only sampled with bulk gold and stream sediment samples. The two anomalous bulk gold samples A272785 (0.6ppb Au) and 787 (0.52ppb Au) were from the Mersey River and probably reflect a gold source further upstream (see Mersey sheet). The anomaly in A272785 was confirmed by the stream sediment sample (A272786 with 0.9ppm Au and 10ppm As).

(B) Far Northwest Tasmania

(i) Welcome (Hunter) 1:100,000 sheet

4 sample sets taken.

This area is underlain by a basement of comparatively unmetamorphosed mudstones, sandstones, orthoquartzites, greywackes, conglomerates and some basalt lavas. These rocks outcrop on the west and are largely unsampled. Within a basin in these rocks have been deposited PreCambrian dolomites overlain by a Cambrian sequence of interbedded siltstone, mudstone, greywacke, tuff, basic volcanic breccia, mixtite and amygdaloidal spilite. Significant amounts of the area are covered by Quaternary sands and minor Tertiary basalts.

This is the Western side of the Smithton Trough.

Most areas of dolomite have been covered by the sampling programme although only minor areas of Cambrian rocks have been tested.

No significant stream sediment anomalies were noted although A119613 showed weak Zn (165ppm), As (18ppm) and Ni (250ppm) values, A119626 showed weak Zn (380ppm) and A119611 showed weak As (20ppm).

Similarly the panned concentrates showed only weak values in A119613 (170ppm Zn, 80ppm Ni) and A119612 (145ppm Zn) while the ferruginous gravels showed weak values in A119613 (400ppm Zn and 250ppm Ni).

A119612 had an anomalous Au (0.31ppm) in the ferruginous gravel which was not shown in the panned concentrate or the bulk gold.

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Bulk golds had elevated Cu values in A119612 (235ppb) and A119626 (245ppb).

The above results show no encouragement for further work. However more recent work by Tony Crawford (Uni of Tas) and Brown/Baillie (Mines Dept.) suggest the Cambrian Volcanics may carry Au mineralisation. Contrary to this is gravity work which suggests there is no major heat source (granite) beneath this area. Native copper is known from several areas within the volcanics.

Possible low priority sampling to cover the Cambrian exposures is required.

(ii) Circular Head 1:100,000 sheet
8 sample sets taken.

The area is underlain by a basement of comparatively unmetamorphosed mudstones, sandstones, orthoquartzites, greywackes, conglomerates and some basalt lavas. These rocks outcrop on the eastern half of the area and are generally unsampled. Within a basin in these rocks have been deposited Precambrian dolomites overlain by a Cambrian sequence of interbedded siltstones, mudstones, greywacke, tuff, basic volcanic breccia, mixtite and amygdaloidal spilite. Significant amounts of the area are covered by Quaternary sands and/or Tertiary basalts.

This is the eastern side of the Smithton Trough.

Most areas of dolomite have been covered by the sampling programme although only minor areas of Cambrian rocks have been tested.

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Sample A119594 from Copper Creek is the only significantly anomalous drainage with 380ppb Cu in the bulk gold, 920ppm Zn and 170ppm As in the stream sediment, 175ppm As, 1700ppm Zn and 210ppm Bi in the panned concentrates and 620ppm Zn in the ferruginous gravel.

Most other samples had elevated Zn values (90-380ppm) in the stream sediments and elevated Cu values (100-355ppb) in the bulk golds. Most of these values probably relate to elevated values of basemetals in the Cambrian volcanics. Similarly A119599 with 990ppm Zn and 90ppm Bi in the ferruginous gravel probably relates to the Cambrian volcanics.

However A119600 with 1150ppm W and 220ppm As in the ferruginous gravel (105ppb Cu in the bulk gold) drains an area of mainly Tertiary basalt which does not explain the anomaly.

Further investigations (sampling and mapping) are required in the area of Copper Creek (A119594) and in the A119600 drainage.

Also recent work by Crawford (Uni of Tas) and Brown/Baillie (Mines Dept) suggest the Cambrian volcanics may carry the concentrations. Contrary to this is gravity data which suggests there is no major heat source (granite) beneath this area. Native copper is known from several areas within the volcanics.

Possible low priority sampling to cover the Cambrian exposures is required.

(iii) Sandy Cape (Nelson Bay) 1:100,000 sheet
29 sample sets taken.

The area is underlain by a basement of comparatively unmetamorphosed mudstones, sandstones, orthoquartzites, greywackes, conglomerates and some basalt lavas. These rocks outcrop on the western and southern portions of the sheet and are generally unsampled. The exception is the Balfour mining district (Cu, Sn, W) in the Frankland River (A119627).

Within a basin in the PreCambrian basement have been deposited PreCambrian dolomites overlain by a Cambrian sequence of interbedded siltstones, mudstones, greywacke, tuff, basic volcanic breccia, mixtite and amygdaloidal spilite. Parts of the area are covered by Quaternary sands and/or Tertiary basalts.

This is the southern end of the Smithton Trough.

Most areas of Cambrian rocks and the (Eo) Precambrian dolomites have been sampled.

One obviously anomalous sample site was the Arthur River at A119617 where the bulk gold sample gave 8.85ppb Au, 495ppb Cu and 45ppb Ag, the panned concentrate sample gave 6150ppm Sn, 1150ppm As, 90ppb Sb, 350ppm Cu, 220ppm Pb, 430ppm Zn and 110ppm Bi and the stream sediment sample gave 5300ppm Sn, 1200ppm As, 185ppm Cu, 130ppm Pb, 780ppm Zn and 28ppm Bi. This anomaly was traced up the Arthur River (see Arthur River 1:100,000 sheet) with a vast majority of the anomaly being derived from the Waratah/Mt Bischoff/Magnet area.

Most other samples from the Cambrian rocks had elevated Zn values (80-210ppm) in the stream sediments and elevated Cu values (140-490ppb) in the bulk golds. These probably relate to Cambrian Volcanics with elevated basemetal backgrounds.

Elevated Cu values in the bulk golds from A119637 and 641 (220 and 120ppb) are unexplained (in the Precambrian). However no other sample types showed significant anomalies from these sites.

Stephens Rivulet (A119619) and the adjacent Blackwater Rivulet (A119620) showed anomalous gold in both the panned concentrates (0.15ppm and 0.17ppm respectively) and the bulk golds (0.3 and 0.2ppb, respectively). These drainages contained a major north-northeast trending faulted contact between the Precambrian (EoCambrian) dolomites and the Cambrian volcanics and volcanoclastics of the Smithton Trough. Gold may be associated with the fault.

Samples A119615 (Lovells Creek) and the adjacent A119624 (Hawkes Creek) showed anomalous gold values in the panned concentrates (0.13 and 0.12ppm, respectively). No other sample types from these drainages showed any anomalous values. These drainages also contained a northwest trending fault along the western edge of the Smithton Trough. This fault was truncated by the major north-northeast fault in the Stephens Rivulet area.

Low priority checking of the Stephens Rivulet/Blackwater Rivulet and the Lovells Creek/Hawkes Creek areas should be undertaken.

FIGURES

1:100,000 SCALE MAPS

Arthur River	Bulk Gold As, Sn, Sb Locations Cu, Pb, Zn Ag, Au Stream Sediment Samples Stream Sediment Rock and Stream Sediment Panned Concentrates Ferruginous Gravels – Bulk Gold Stream Sediment E.L.'s Land Tenure Geology Stream Sediment
Break O'Day	Stream Sediment Stream Sediment Ferruginous Gravels – Bulk Gold Panned Concentrates Stream Sediment Samples
Cape Portland	Stream Sediment Stream Sediment Panned Concentrates Stream Sediments Ferruginous Gravels – Bulk Gold Samples
Cape Sorell	Samples Geology
Circular Head	Geology Stream Sediment Stream Sediment Panned Concentrates Stream Sediment Ferruginous Gravels – Bulk Gold Samples
D'Entrecasteaux	Samples Map-Land Tenure Geology Stream Sediments Stream Sediments

	<p>Stream Sediments Panned Concentrates Bulk Gold – Ferruginous Gravels</p>
Forester	<p>Land Tenure Land Tenure Stream Sediment Samples Geology Bulk Gold – Ferruginous Gravels Stream Sediments Land Tenure Map-Locations</p>
Forth	<p>Land Tenure Panned Concentrates Bulk Gold – Ferruginous Gravel Stream Sediment Geology Stream Sediment Stream Sediment Samples</p>
Franklin	<p>Samples Geology Geology Stream Sediment Samples Samples Land Tenure</p>
Georges Bay	<p>Stream Sediment Land Tenure Land Tenure Land Tenure Ferruginous Gravels – Bulk Gold Panned Concentrates Stream Sediments Samples</p>
Hellyer	<p>Samples</p>
Huon	<p>Samples Stream Sediment – Bulk Gold Stream Sediment – Bulk Gold Land Tenure Geology Panned Concentrates Stream Sediments Bulk Gold – Ferruginous Gravel</p>

Inglis (Hellyer Map)**Geology****Stream Sediment****Bulk Gold – Stream Sediment****Stream Sediment – Bulk Gold****Stream Sediment – Bulk Gold****Location map****Stream Sediment – Bulk Gold****Stream Sediment – Bulk Gold****Land Tenure***Land Tenure***Meander****Samples****Land Tenure****Stream Sediment – Bulk Gold****Stream Sediment – Bulk Gold****Mersey****Land Tenure****Land Tenure****Stream Sediment – Bulk Gold****Stream Sediment – Bulk Gold****Stream Sediment – Bulk Gold****Land Tenure****Nive****Geology****Samples****Stream Sediment – Bulk Gold****Stream Sediment – Bulk Gold****Olga****Geology****Bulk Gold – Ferruginous Gravel****Panned Concentrates****Stream Sediment****Samples****Stream Sediment – Bulk Gold****Land Tenure****Bulk Gold – Stream Sediments****Pieman****Samples****Land Tenure****Geology****Stream Sediments – Bulk Gold****Stream Sediments – Bulk Gold****Land Tenure****Pipers River****Land Tenure****Sandy Cape****Geology****Bulk Gold – Stream Sediments****Bulk Gold – Stream Sediments****Panned Concentrates**

	Bulk Gold – Ferruginous Gravels Stream Sediments Samples
Sophia	Samples Bulk Gold – Stream Sediments Bulk Gold – Stream Sediments Land Tenure Land Tenure Geology Bulk Gold – Ferruginous Gravel Stream Sediments Panned Concentrates
St Patricks	Geology Stream Sediments – Bulk Gold Stream Sediments – Bulk Gold Stream Sediments Ferruginous Gravels – Bulk Gold Samples
St Pauls	Samples Land Tenure Stream Sediments – Bulk Gold Geology Stream Sediments – Bulk Gold Ferruginous Gravels – Bulk Gold Stream Sediments
Swan Island	Stream Sediments – Bulk Gold Stream Sediments – Bulk Gold Geology Ferruginous Gravels Panned Concentrates Stream Sediments Samples
Tamar	Bulk Gold – Ferruginous Gravels Panned Concentrates Panned Concentrates Stream Sediments – Bulk Gold Stream Sediments – Bulk Gold Stream Sediments Ferruginous Gravels – Bulk Gold Geology
Welcome	Samples Stream Sediment Ferruginous Gravels – Bulk Gold Panned Concentrates

Geology
Bulk Gold – Stream Sediment
Bulk Gold – Stream Sediment

Regional/Arthur River

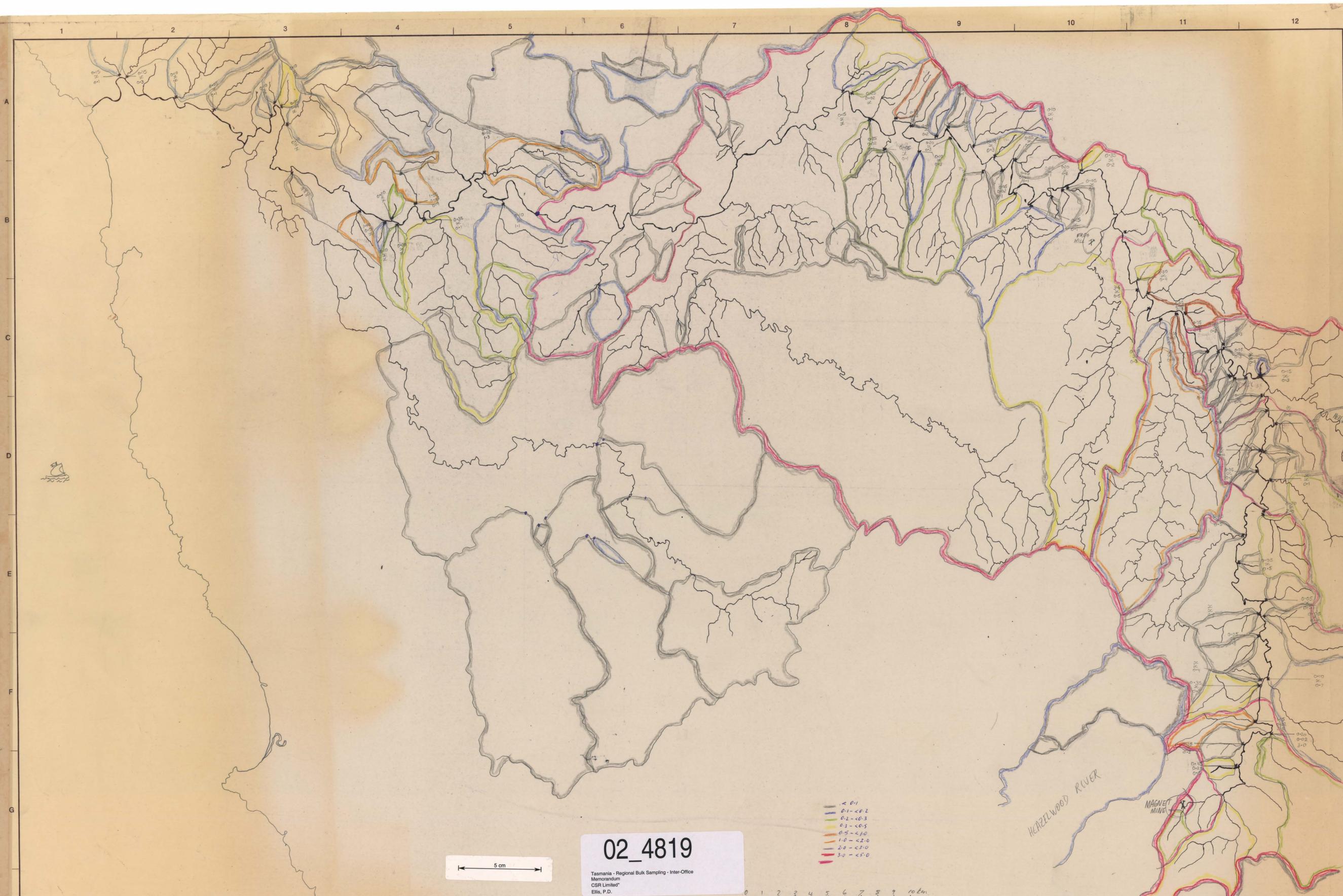
Sample Location and Number

BULK GOLD

1:100,000

ARTHUR RIVER

423030

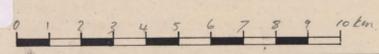


02_4819

Tasmania - Regional Bulk Sampling - Inter-Office Memorandum
CSR Limited
Ellis, P.D.

- < 0.1
- 0.1 - 0.2
- 0.2 - 0.3
- 0.3 - 0.5
- 0.5 - 1.0
- 1.0 - 2.0
- 2.0 - 3.0
- 3.0 - 5.0

5 cm



AMENDMENTS		REFERENCE PLANS		NUMBER		CSR Minerals Division <small>COPYRIGHT RESERVED</small> This drawing and all information thereon is the property of CSR Limited and shall be returned on demand. It is issued on the condition that except with our written permission it must not be reproduced, copied or communicated to any other party nor be used for any purpose other than that stated in the particular enquiry, order or contract with which it is issued.		A1 Bulk Gold Au Ag Cu
		DATE	CHECKED	SCALE	DESIGNED BY			
DATE	DRAWN	CHECKED	APPROVED					

AS
SN
SB

q29031

1:100,000

ARTHUR RIVER



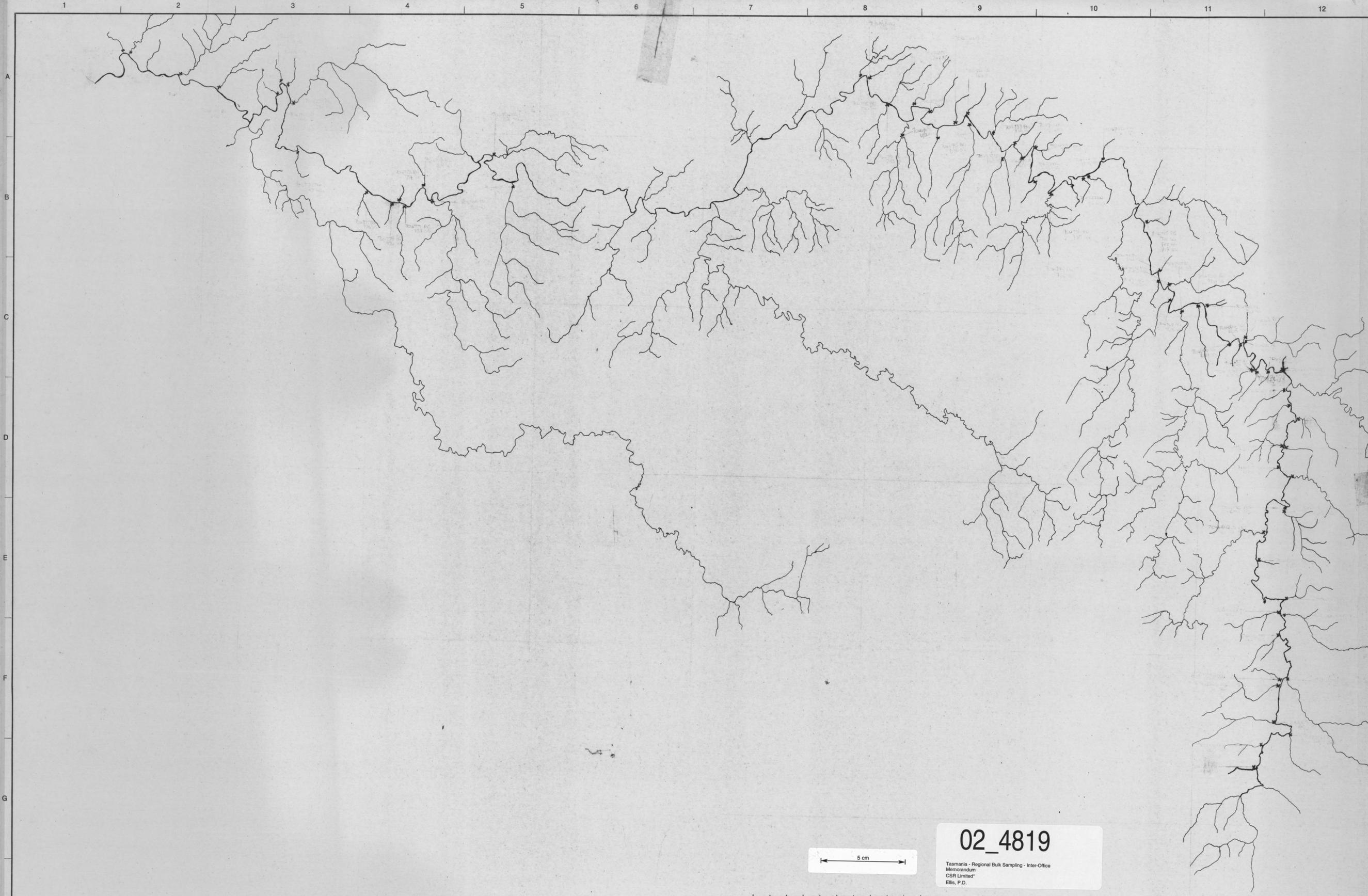
5 cm

02_4819
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 Memorandum
 CSR Limited*
 Ellis, P.D.

AS SN SB AMENDMENTS	TITLE		NUMBER		CSR Minerals Division <small>COPYRIGHT RESERVED</small> This drawing and all information thereon is the property of CSR Limited and shall be returned on demand. It is issued on the condition that except with our written permission it must not be reproduced, copied or communicated to any other party nor be used for any purpose other than that stated in the particular enquiry, order or contract with which it is issued.	A1
	REFERENCE PLANS					
	DATE	CHECKED	SCALE	DESIGNED BY		
	DRAWN	APPROVED				

ARTHUR RIVER
1:100,000

929032



02_4819
Tasmania - Regional Bulk Sampling - Inter-Office
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CSR Limited
Ellis, P.D.

5 cm

AMENDMENTS	TITLE		NUMBER		SCALE	DESIGNED BY	A1
	DATE	CHECKED	DATE	APPROVED			

CSR Minerals Division

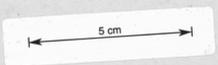
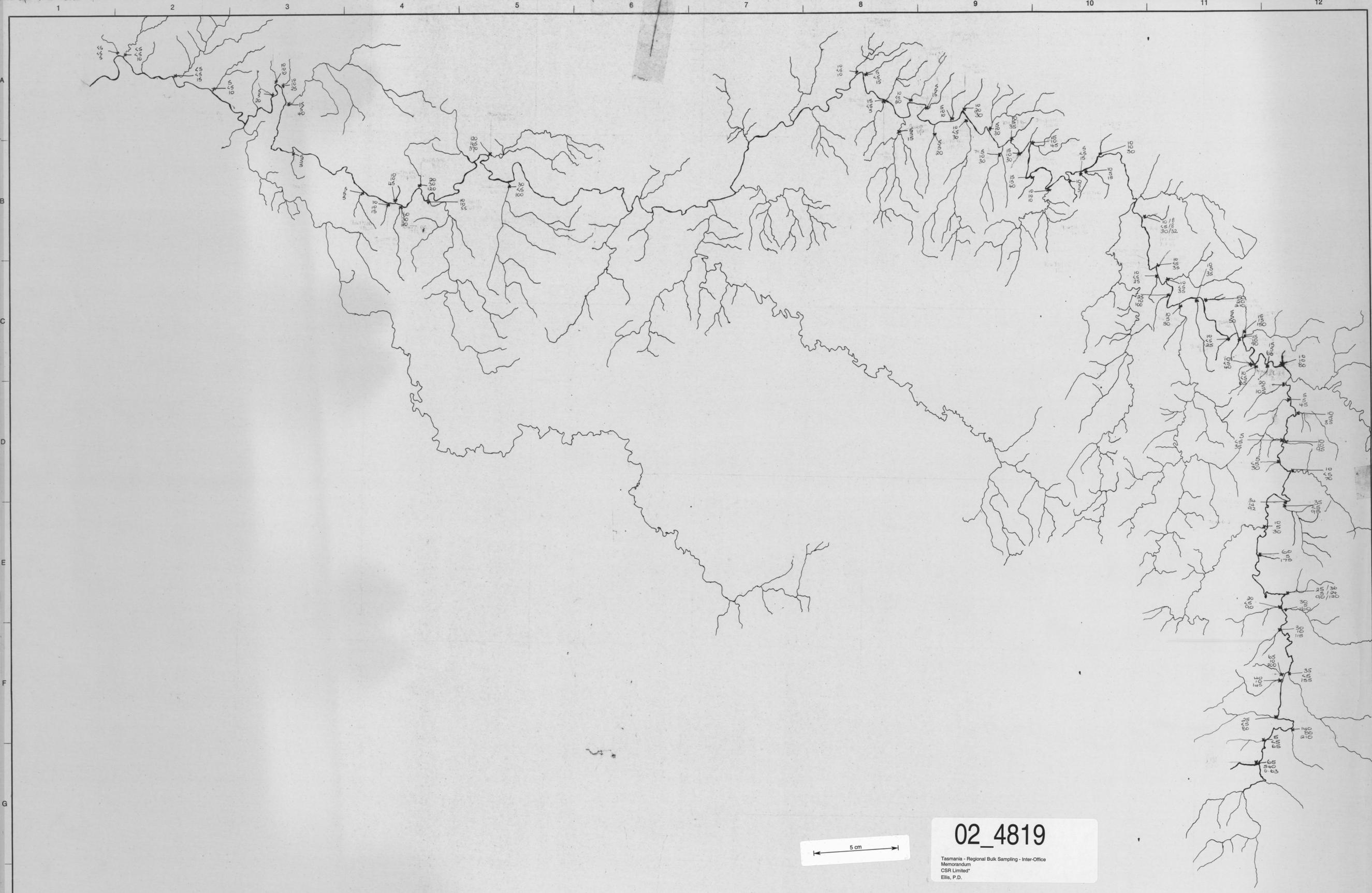
COPYRIGHT RESERVED
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Cu
Pb
Zn

029033

1:100,000

ARTHUR RIVER



02_4819
 Tasmania - Regional Bulk Sampling - Inter-Office
 Memorandum
 CSR Limited
 Ellis, P.D.

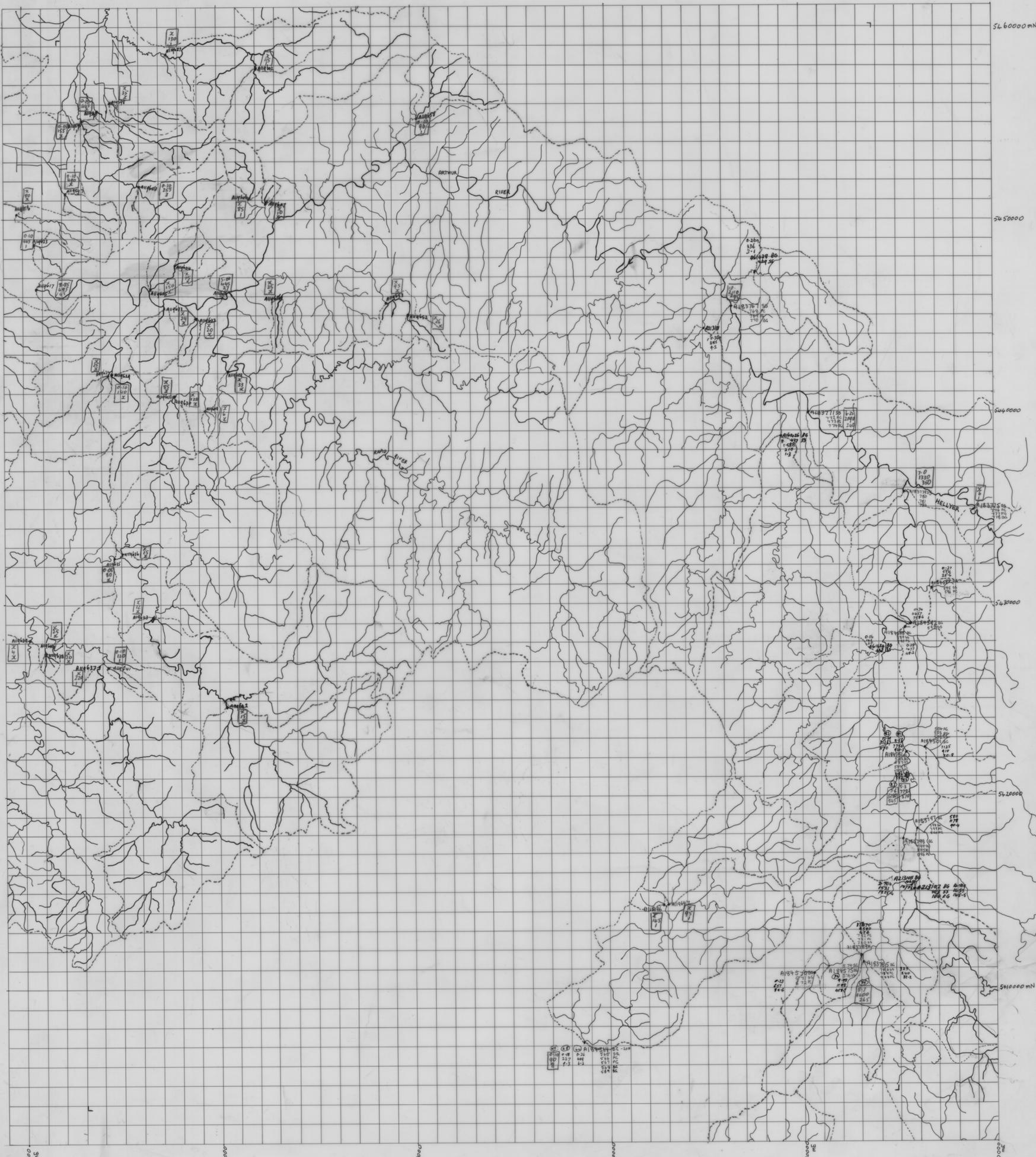
<p>Cu Pb Zn</p>	AMENDMENTS		DATE		CHECKED		DESIGNED BY		<p>CSR Minerals Division</p> <p>Copyright Reserved</p> <p>This drawing and all information thereon is the property of CSR Limited and shall be returned on demand. It is issued on the condition that except with our written permission it must not be reproduced, copied or communicated to any other party nor be used for any purpose other than that stated in the particular enquiry, order or contract with which it is issued.</p> <p>A1</p>
	TITLE		REFERENCE PLANS		SCALE		DESIGNED BY		
	NUMBER		APPROVED						
	DRAWN								

STREAM SEDIMENT

929035

ARTHUR RIVER 1:100 000 SAMPLES

ARTHUR RIVER



STREAM SEDIMENT

Sample ID	Cu	Pb	Zn	Bi	Ni	Ba	Sb	As	Sn	W	Ag	Au	Mn	Hg
A19595	87	10	14	X	80	-	-	9	13	10	-	-	4	-
592	49	12	150	X	85	-	-	3	2	15	-	-	X	-
597	740	8	210	X	140	-	-	5	6	2	-	-	X	-
598	24	4	25	X	30	-	-	3	2	2	-	-	X	-
602	20	6	36	X	23	-	-	3	2	2	-	-	X	-
603	62	6	180	X	100	-	-	7	2	2	-	-	X	-
604	14	4	28	X	28	-	-	2	2	2	-	-	X	-
605	28	28	80	X	32	-	-	10	12	6	-	-	X	-
606	16	4	28	X	22	-	-	6	6	30	-	-	X	-
607	4	X	2	X	X	-	-	4	8	2	-	-	X	-
609	12	X	10	X	12	-	-	X	6	10	-	-	X	-
608	18	X	10	X	2	-	-	X	6	10	-	-	X	-
610	20	10	60	X	60	-	-	20	6	25	-	-	X	-
616	57	4	80	X	60	-	-	6	6	X	-	-	X	-
617	185	120	280	X	22	-	-	1200	850	105	-	-	X	-
623	26	6	150	X	100	-	-	10	6	X	-	-	X	-
627	26	6	60	X	60	-	-	6	6	X	-	-	X	-
630	26	6	55	X	26	-	-	9	6	X	-	-	X	-
631	220	180	200	X	80	-	-	1200	850	105	-	-	X	-
632	18	X	16	X	8	-	-	7	4	10	-	-	X	-
633	16	X	26	X	22	-	-	28	48	70	-	-	X	-
634	16	X	28	X	22	-	-	2	2	2	-	-	X	-
635	16	X	28	X	2	-	-	2	2	2	-	-	X	-
636	10	6	10	X	10	-	-	3	6	20	-	-	X	-
637	10	10	20	X	20	-	-	2	2	2	-	-	X	-
638	12	9	26	X	14	-	-	6	4	10	-	-	X	-
639	8	X	20	X	10	-	-	3	X	2	-	-	X	-
640	26	22	64	X	12	-	-	6	6	2	-	-	X	-
641	16	X	8	X	12	-	-	2	2	2	-	-	X	-
642	10	4	12	X	8	-	-	2	X	10	-	-	X	-
643	16	4	12	X	4	-	-	2	X	2	-	-	X	-
644	28	8	104	X	100	-	-	18	2	26	-	-	X	-
647	-	-	-	-	-	-	-	-	-	-	-	-	-	-
652	-	-	-	-	-	-	-	-	-	-	-	-	-	-
653	-	-	-	-	-	-	-	-	-	-	-	-	-	-
658	-	-	-	-	-	-	-	-	-	-	-	-	-	-
A11 4 25	14	8	30	X	115	X	8	X	X	X	X	X	3	-
4 27	16	67	55	X	185	X	6	X	X	X	X	X	7	-
4 28	8	8	20	X	70	X	2	6	15	2	X	X	4	-
A193 7 17	200	220	1200	55	105	75	70	1400	38	6	0.005	-	0.05	-
7 21	15	210	1300	80	28	-	-	610	1700	25	8	-	0.10	-
7 22	20	18	180	14	60	-	-	410	610	25	8	-	0.10	-
7 24	28	180	840	170	26	-	-	840	610	25	8	-	0.10	-
7 26	26	26	135	10	62	-	-	18	30	X	8	-	X	-

Sample ID	Cu	Pb	Zn	Bi	Ni	Ba	Sb	As	Sn	W	Ag	Au	Mn	Hg
A193790	320	5650	1382	22	50	-	-	850	330	X	-	-	-	-
744	210	600	1900	20	20	-	-	820	220	10	-	-	-	-
748	28	16	15	10	785	-	-	9	8	X	-	-	-	-
A184502	60	26	145	16	130	-	-	8	8	2	-	-	-	-
562	28	18	110	2	220	28	-	5	2	2	-	0.10	-	-
572	15	15	200	2	125	-	-	60	4	X	-	-	-	-
576	870	400	970	100	X	-	-	620	620	X	-	-	-	-
583	400	200	700	40	24	-	-	270	280	20	-	-	-	-
585	36	20	180	X	85	-	-	10	10	X	-	-	-	-
587	4.50	2.70	800	20	50	-	-	950	4100	80	-	-	-	-
588	12	10	60	6	40	-	-	9	8	X	-	-	-	-
A217101	137	115	180	18	-	120	80	0.20	0.02	75	1	0.04	6	-
162	90	920	7100	X	-	82	44	860	300	X	26	0.02	6	-



WELCOME HEAD	CIRCUAR HEAD	TABLE CAPE
7916	7916	8016
SANDY CAPE <td>ARTHUR RIVER <td>HELLNER </td></td>	ARTHUR RIVER <td>HELLNER </td>	HELLNER
7912	7915	8015
CONICAL ROCKS <td>PIEMAN <td>SOPHIA </td></td>	PIEMAN <td>SOPHIA </td>	SOPHIA
7916	7914	8016

02_4819

Tasmania - Regional Bulk Sampling - Inter-Office Memorandum
CSR Limited
Ellis, P.D.



0.3 Ar } 291 TETRAH
0.2 Cu }
0.5 Ag }

FROM METALLURGICAL LABORATORIES

CSR LIMITED - AMCD

ARTHUR RIVER

7915

SCALE 1:100 000
DRAWN P.D.E + B.D.
DATE 7-95



STREAM SEDIMENT

Sample ID	Cu	Pb	Zn	Bi	Ni	Ba	Sr	As	Sn	W	Ag	Au	Mo	Hg
A19995	87	10	145	x	80	-	9	13	10	-	-	-	-	-
5974	49	140	210	x	120	-	3	5	15	15	-	-	-	-
5977	20	32	30	-	-	-	3	x	x	x	-	-	-	-
599	20	32	30	-	-	-	3	x	x	x	-	-	-	-
605	20	32	30	-	-	-	3	x	x	x	-	-	-	-
601	20	32	30	-	-	-	3	x	x	x	-	-	-	-
604	20	32	30	-	-	-	3	x	x	x	-	-	-	-
605	20	32	30	-	-	-	3	x	x	x	-	-	-	-
606	20	32	30	-	-	-	3	x	x	x	-	-	-	-
607	20	32	30	-	-	-	3	x	x	x	-	-	-	-
609	20	32	30	-	-	-	3	x	x	x	-	-	-	-
604	20	32	30	-	-	-	3	x	x	x	-	-	-	-
610	20	32	30	-	-	-	3	x	x	x	-	-	-	-
616	20	32	30	-	-	-	3	x	x	x	-	-	-	-
617	20	32	30	-	-	-	3	x	x	x	-	-	-	-
623	20	32	30	-	-	-	3	x	x	x	-	-	-	-
627	20	32	30	-	-	-	3	x	x	x	-	-	-	-
631	20	32	30	-	-	-	3	x	x	x	-	-	-	-
632	20	32	30	-	-	-	3	x	x	x	-	-	-	-
633	20	32	30	-	-	-	3	x	x	x	-	-	-	-
634	20	32	30	-	-	-	3	x	x	x	-	-	-	-
635	20	32	30	-	-	-	3	x	x	x	-	-	-	-
636	20	32	30	-	-	-	3	x	x	x	-	-	-	-
637	20	32	30	-	-	-	3	x	x	x	-	-	-	-
638	20	32	30	-	-	-	3	x	x	x	-	-	-	-
639	20	32	30	-	-	-	3	x	x	x	-	-	-	-
640	20	32	30	-	-	-	3	x	x	x	-	-	-	-
641	20	32	30	-	-	-	3	x	x	x	-	-	-	-
642	20	32	30	-	-	-	3	x	x	x	-	-	-	-
643	20	32	30	-	-	-	3	x	x	x	-	-	-	-
644	20	32	30	-	-	-	3	x	x	x	-	-	-	-
645	20	32	30	-	-	-	3	x	x	x	-	-	-	-
646	20	32	30	-	-	-	3	x	x	x	-	-	-	-
647	20	32	30	-	-	-	3	x	x	x	-	-	-	-
648	20	32	30	-	-	-	3	x	x	x	-	-	-	-
649	20	32	30	-	-	-	3	x	x	x	-	-	-	-
650	20	32	30	-	-	-	3	x	x	x	-	-	-	-
651	20	32	30	-	-	-	3	x	x	x	-	-	-	-
652	20	32	30	-	-	-	3	x	x	x	-	-	-	-
653	20	32	30	-	-	-	3	x	x	x	-	-	-	-
654	20	32	30	-	-	-	3	x	x	x	-	-	-	-
655	20	32	30	-	-	-	3	x	x	x	-	-	-	-
656	20	32	30	-	-	-	3	x	x	x	-	-	-	-
657	20	32	30	-	-	-	3	x	x	x	-	-	-	-
658	20	32	30	-	-	-	3	x	x	x	-	-	-	-
A161	14	8	30	x	-	115	x	8	x	x	x	x	3	-
A27	14	8	30	x	-	115	x	8	x	x	x	x	3	-
A24	9	8	20	x	-	70	x	6	x	x	x	x	4	-
A183	250	220	1200	55	20	105	75	710	4000	30	8	0.03	-	0.05
721	145	120	1200	60	20	105	60	1700	55	8	0.03	-	-	0.10
725	20	16	100	16	60	-	-	16	x	x	x	-	-	-
728	200	180	7200	50	20	-	-	800	8120	35	8	-	-	0.10
761	26	26	135	10	85	-	-	18	20	x	7	-	-	-

Sample ID	Cu	Pb	Zn	Bi	Ni	Ba	Sr	As	Sn	W	Ag	Au	Mo	Hg
A183790	320	500	1300	22	50	-	-	8500	330	x	-	-	-	-
746	210	500	1800	20	60	-	-	8200	250	x	-	-	-	-
748	28	16	115	10	125	-	-	8	8	x	-	-	-	-
A180502	80	26	165	16	120	-	-	8	8	x	-	-	-	-
515	200	18	100	x	210	70	x	5	2	x	-	-	-	-
571	55	85	200	x	125	-	-	60	6	x	-	-	-	-
576	870	1030	9700	180	20	-	-	6200	610	x	-	-	-	-
581	600	620	2000	60	26	-	-	270	2920	20	-	-	-	-
584	36	20	180	20	65	-	-	10	10	x	-	-	-	-
583	100	40	800	20	50	-	-	950	4100	50	-	-	-	-
585	16	10	60	2	40	-	-	8	8	x	-	-	-	-
A213101	125	135	115	180	18	-	170	80	620	1400	75	1	0.04	6
162	90	920	7000	x	-	-	85	44	860	300	x	26	0.02	6



WELCOMB	CIRCUAR	TABLE	
7816	HEAD	CAPE	
7816	7916	8016	
SANDY	ARTHUR		
CAPE	RIVER	HELLYER	
7815	7915	8015	
CONICAL	PREMAN	SOPHIA	
ROCKS	7814	7914	8014

02_4819

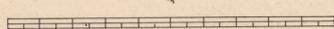
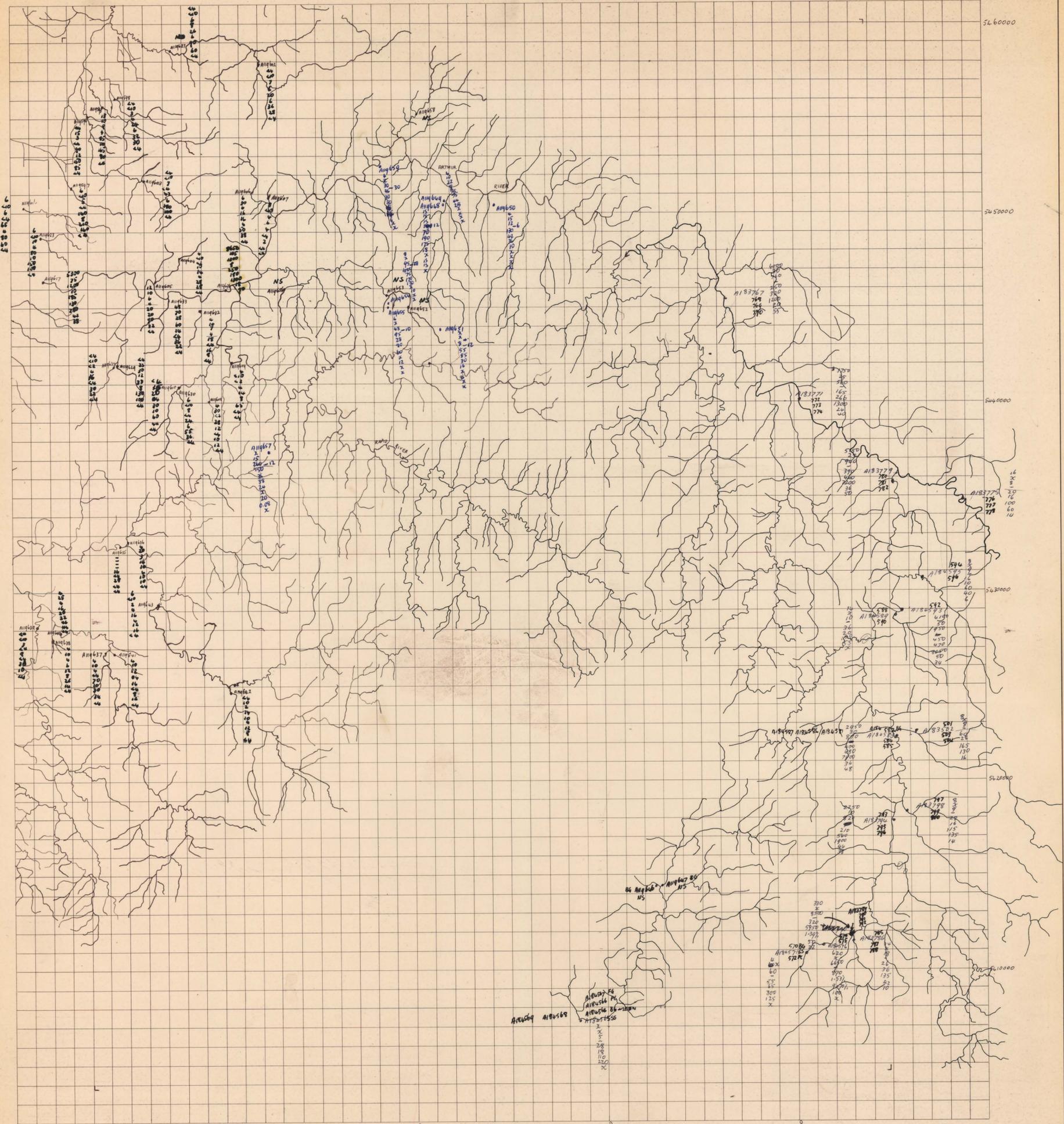
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Memorandum
CSR Limited
Ellis, P.D.

CSR LIMITED - AMCD

ARTHUR RIVER

SCALE 1:100 000
DRAWN PDE + BD
DATE 7-95 24/95

7915



Sn } -20 r800 1RF
 W }
 As }
 Mo }
 Cu }
 Pb } -800 AAS
 Zn }
 Ni }
 Si }

Rock
 Sn
 W
 As
 Mo
 Cu
 Pb
 Zn
 Ni
 Si
 Ag

WELCOM	CHEVAL	TABLE
7916	HEAD	CARE
7916	7916	8016
SANDY	ARTHUR	HELLER
CARE	RIVER	
7915	7915	8015
CORRAL	PREMAR	SODHO
7914	7914	8014

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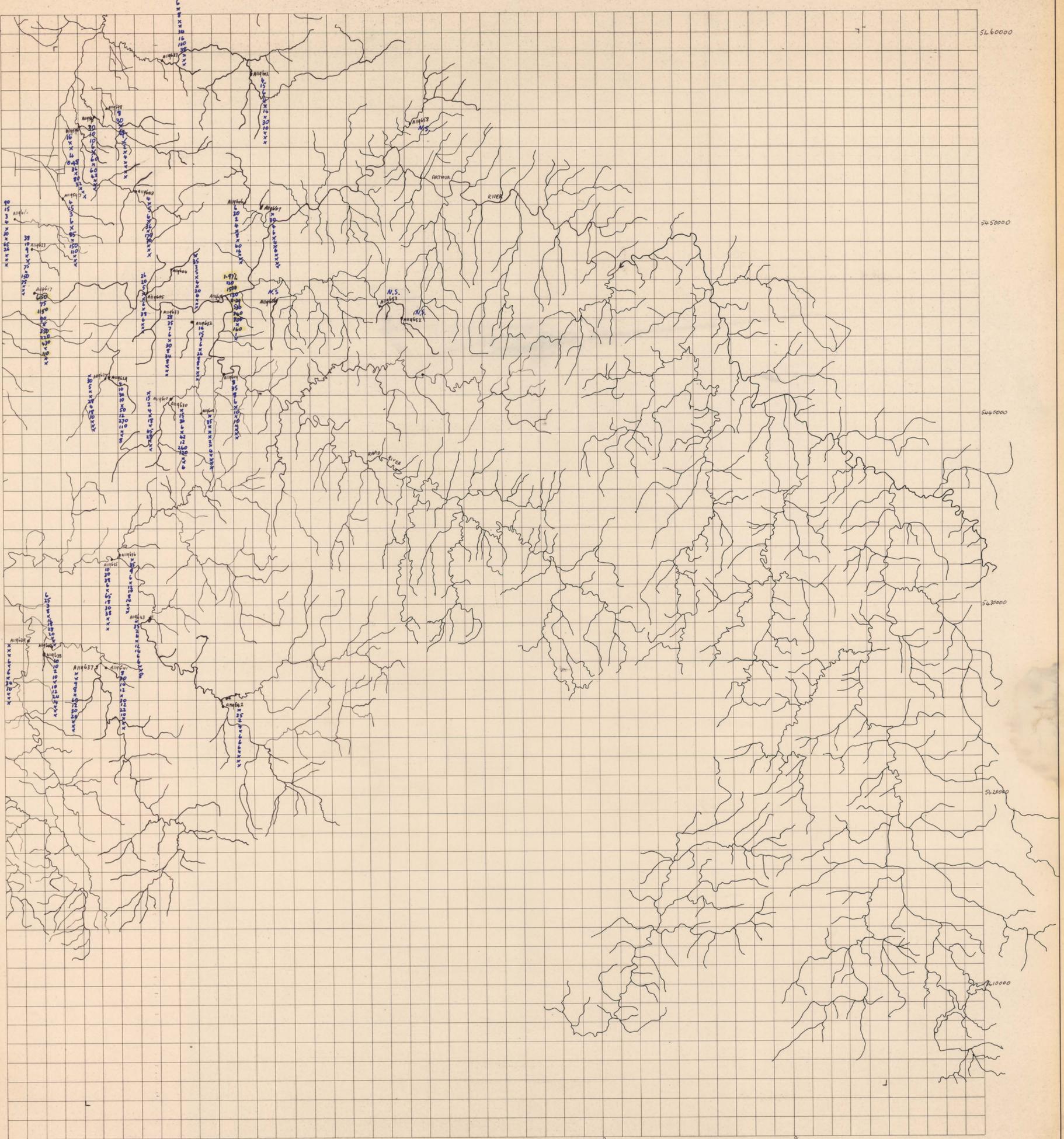
ARTHUR RIVER

7915

SCALE

DRAWN

DATE



Sn } XRF
 W }
 As }
 Sb }
 Au } FAS
 Cu }
 Pb }
 Zn } AAS
 Ni }
 Bi }
 Ag }
 Mo }

WELBING	CHEMAN	TODLE
7816	HEAD	CAPE
	7916	8016
SANDY	ARTHUR	HELLER
CAPE	RIVER	
7815	7915	8015
CONICAL	PREMAN	SOPHIA
ROCKS	7914	8014

5 cm

02_4819

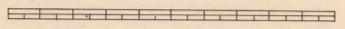
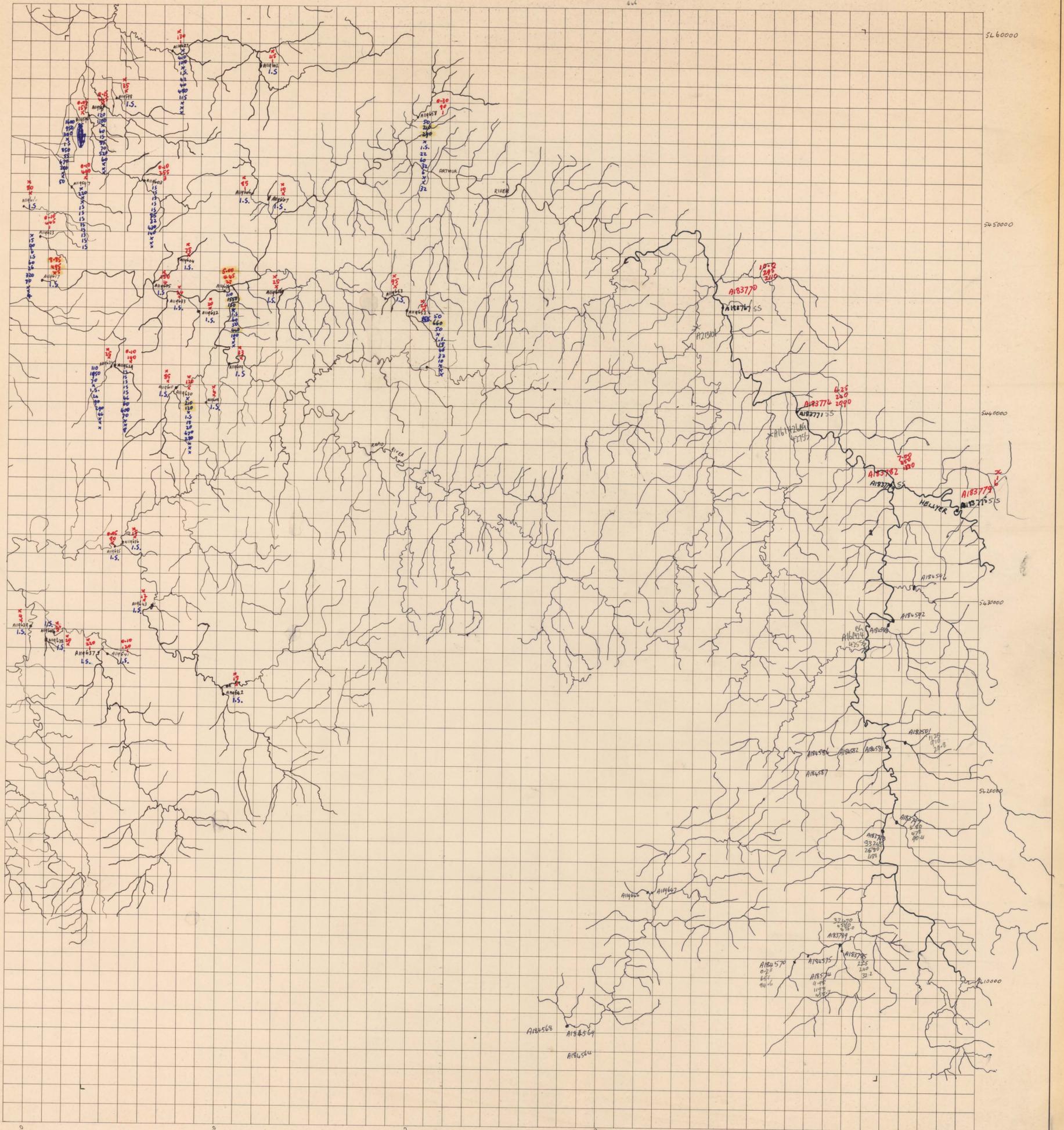
Tasmania - Regional Bulk Sampling - Inter-Office
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 CSR Limited
 Ellis, P.D.

CSR LIMITED - AMCD

ARTHUR RIVER

7915

SCALE	
DRAWN	
DATE	



Ferruginous Gravels
 Sn } XRF
 W }
 Pb }
 Zn }
 Ni } AAS
 Bi }
 Ag }
 Mo }

Bulk Gold
 Au
 Cu
 Ag

WELCOM HEAD	7914	7916
SANDY CREEK	7915	7918
CONICAL ROCKS	7914	7916

5 cm

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 CSR Limited
 Ellis, P.D.

CSR LIMITED - AMCD

ARTHUR RIVER

7915

SCALE	
DRAWN	
DATE	



STREAM SEDIMENT

Sample No.	Cu	Pb	Zn	Bi	Ni	Ba	Sb	As	Sn	W	Ag	Au	Mo	Hg
A183740	320	710	595	134	22	50	-	-	-	-	-	-	-	-
A183741	210	570	100	29	22	22	-	-	-	-	-	-	-	-
A183742	20	16	105	10	125	-	-	-	-	-	-	-	-	-
A183743	20	26	165	16	130	-	-	-	-	-	-	-	-	-
A183744	20	19	110	210	75	-	-	-	-	-	-	-	-	-
A183745	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183746	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183747	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183748	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183749	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183750	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183751	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183752	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183753	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183754	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183755	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183756	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183757	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183758	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183759	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183760	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183761	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183762	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183763	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183764	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183765	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183766	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183767	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183768	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183769	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183770	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183771	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183772	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183773	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183774	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183775	57	67	165	200	125	-	-	-	-	-	-	-	-	-
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A183784	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183785	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183786	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183787	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183788	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183789	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183790	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183791	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183792	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183793	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183794	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183795	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183796	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183797	57	67	165	200	125	-	-	-	-	-	-	-	-	-
A183798	57	67	165	200	125	-	-	-	-	-	-	-	-	-
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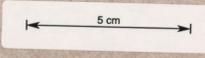
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WELCOME	CIRCUAR	TABLE
7916	HEAD	CAPE
SANDY	7916	7916
CAPE	ARTHUR	MELLYER
7915	7915	8015
CONICAL	PREMAN	SAPHIA
ROCKS	7916	7916

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ARTHUR RIVER
 SCALE 1:100,000
 DRAWN D.B.E. & B.D.
 DATE 7-85



7915

ARTHUR RIVER

1:100,000

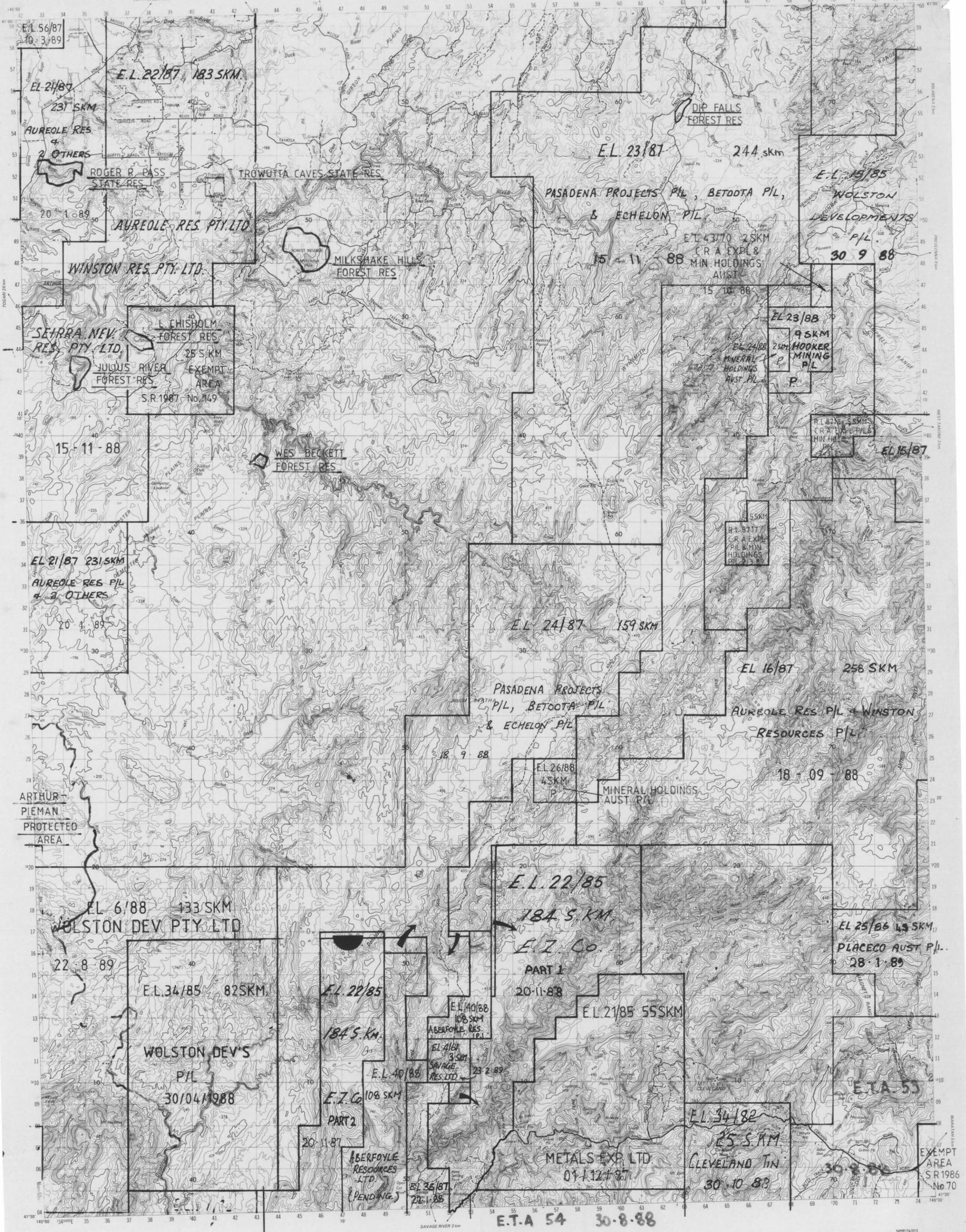
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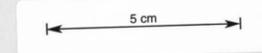
ARTHUR RIVER



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 Department of National Resources as part of the national mapping programme.
 MAP RELIABILITY: Topographic information shown on this map is correct to 1977
 PROJECTION: Authority of the Minister for National Resources, 1978
 DISTRIBUTION: by the Department of National Resources. A state edition is available from the
 Lands Department, Hobart.
 MAP ACCURACY: The average accuracy of this map is 5.25 metres in the horizontal position
 of all defined detail and 5 metres in elevation.
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55G	2. Locate first VERTICAL grid line to LEFT of point and read LARGE figure labelling the line in either the top or bottom margin or on the line itself.
55G	3. Estimate tenths from grid line to point.
55G	4. Locate first HORIZONTAL grid line BELOW point and read LARGE figure labelling the line in either the left or right margin or on the line itself.
55G	5. Estimate tenths from grid line to point.
55G	SAMPLE REFERENCE: 55G0525276



- Built up area, National route marker
- Principal road and highway, Cutting
- Secondary road, Embankment
- Minor road, Road bridge
- Vehicular track
- Gate, Cattle grid
- Railway, multiple track, Station, Railway bridge
- Railway, single track, Railway tunnel
- Light railway or tramway
- Power transmission line
- Fence, Levee or bank
- Mine, Windmill, Yard, Quarry
- Building's, Church, Run, Drive-in theatre
- Trig station, Bench mark, Spot elevation
- Contour with value, Depression contour
- Forest, dense, medium, scattered
- Scrub, dense, medium, scattered
- Tropical rainforest, Pine plantation
- Orchard, plantation or vineyard, Mangrove
- Windbreak
- Lake, perennial, Stream, perennial
- Lake, intermittent, Stream, intermittent
- Lake, mainly dry, Stream, mainly dry
- Swamp, perennial, intermittent
- Land subject to inundation, Rice field
- Bore or well, Spring, Tank or small dam
- Breakwater, Pier, Wharf
- Wreck, exposed, Lighthouse
- Rock, bare or washed, Foreshore flat, Sand
- Reef, Rock ledge

SCALE 1:100000

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INDEX TO ADJOINING MAPS

MAP NUMBER	MAP NAME	TABLE CODE
7914	WELSHMAN	YABE 0018
7915	ARTHUR RIVER	YABE 0019
7916	WELLER	YABE 0020
7914	CONICAL ROCKS	YABE 0014
7914	PIEMAN	YABE 0015
7914	SOPHIA	YABE 0016

SHEET 7915 ARTHUR RIVER TASMANIA EDITION 1 1977

GOVERNMENT PRINTER TASMANIA

ARTHUR RIVER

1:100,000

LAND TENURE

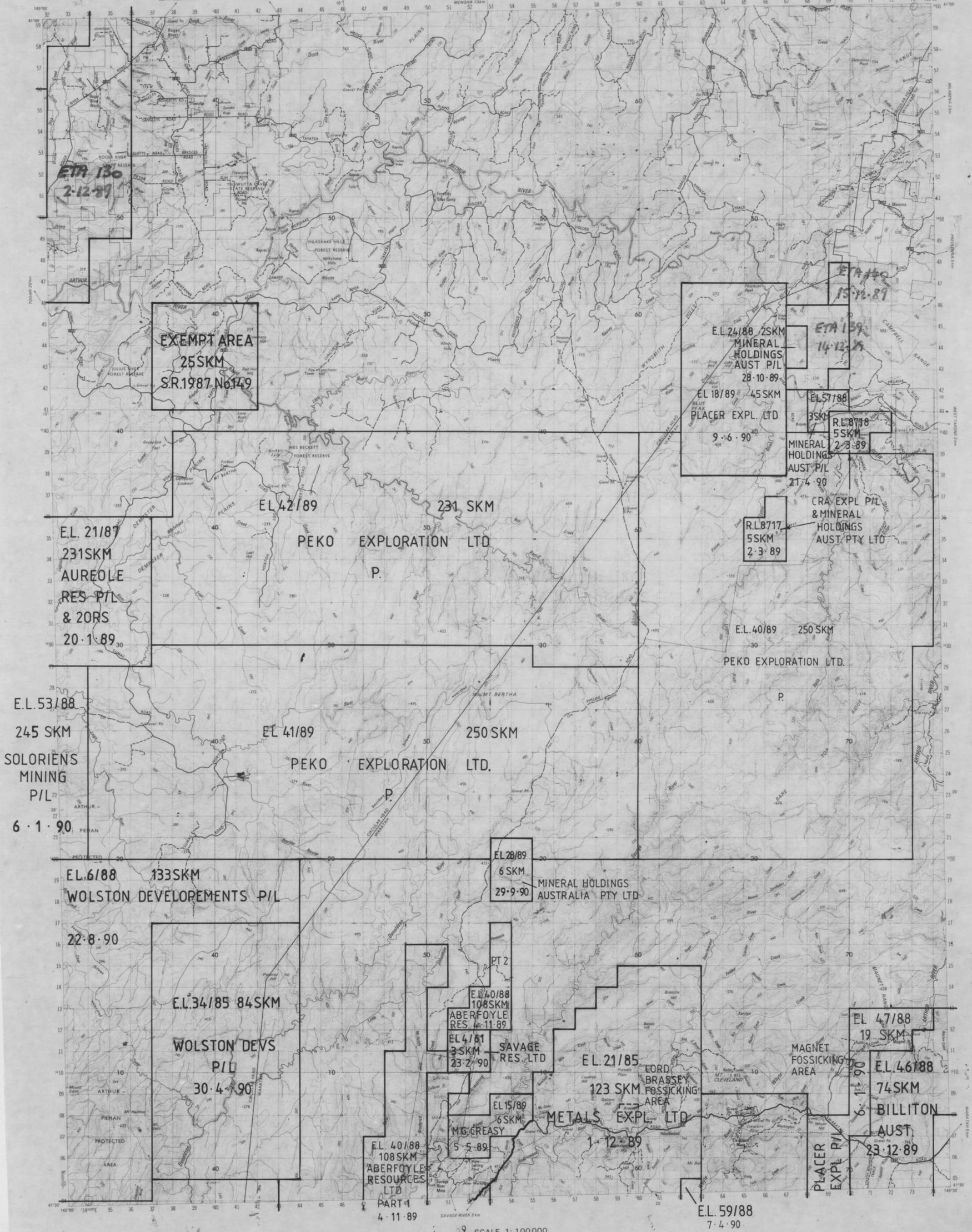
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MINES DRAFTING ROOM
Up to date as at
15 11 89
for Mining Information only

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EDITION 2 1982

ARTHUR RIVER LAND TENURE INDEX SERIES

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PRODUCED BY THE Mapping Division, Lands Department, Hobart, 1982
NOMENCLATURE: Topographic names on this map have been approved by the Nomenclature Board of Tasmania.
MAP ACCURACY: The average accuracy of this map is ± 25 metres in the horizontal position of land adjacent to the grid and ± 3 metres in elevation.
MAP RELIABILITY: Topographic information shown on this map is correct to 1:100 000.
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CORRECTIONS: To assist in correcting future editions of this map, users reporting errors and omissions are invited to write to the Director of Mapping, GPO Box 444, Hobart, Tasmania, 7501.

UNIVERSAL GRID REFERENCE
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7915 ARTHUR RIVER

GRID ZONE DESIGNATION
18S

100000 METRE SQUARE IDENTIFICATION
CD

GRID COORDINATES
Easting: 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73
Northing: 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59

TO GIVE A STANDARD REFERENCE ON THIS SHEET TO NEAREST 100 METRES
SAMPLE POINT: 703 & MT. BERTHA

- Read letters identifying 100 000 metre square in which the point lies.
- Locate first VERTICAL grid line to LEFT of point and read LARGE figures following the line in either the top or bottom margin, or on the line itself.
- Estimate metres from grid line to point.
- Locate first HORIZONTAL grid line BELOW point and read LARGE figures following the line in either the left or right margin, or on the line itself.
- Estimate metres from grid line to point.

SAMPLE REFERENCE
703 34 05 27

CONVERSION TABLE
If measuring beyond 100 m in any direction, prefix with Grid Zone Designation, ie: 55G2025276

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- Build-up area, National route marker
- Roads maintained for continuous public use
 - Primary road, Route number
 - Secondary road, Route number
 - Minor road, Route number
- Roads of restricted use or access
 - Other roads, Bridge
 - Vehicular track, Gate
- Walking track
- Railway, Tunnel, Station, Bridge
- Light railway or tramway
- Power transmission line
- Levee or bank, Landmark area
- Landmark object, Quarry, Mine
- Building's, Church, Ruin, Drive-in Theatre
- Trig station, Spot elevation
- Cliff, Contour with value, Depression contour

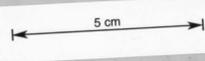
BLACK NUMBERED GRID LINES ARE 1000 METRE INTERVALS OF THE AUSTRALIAN MAP GRID, ZONE 55
GRID VALUES ARE SHOWN IN FULL ONLY AT THE SOUTH WEST CORNER OF THE MAP
VERTICAL DATUM FOR TASMANIAN MAINLAND, AUSTRALIAN HEIGHT DATUM (TASMANIA)
HORIZONTAL DATUM, AUSTRALIAN GEODETIC DATUM 1980
UNIVERSAL TRANSVERSE MERCATOR PROJECTION
CONTOUR INTERVAL 20 METRES
ELEVATIONS IN METRES

LAND TENURE INDEX INFORMATION has been compiled by the Lands Department with assistance from the Forestry Commission. Land tenure is correct to 1.1.82. Due to limitations of scale some small areas of land tenure within built-up areas or of less than one hectare are not depicted. Colours are designed to indicate the primary occupying authority. The indication of a particular land tenure does not necessarily indicate the right of entry or use. Boundaries of Crown land extend to low water mark unless otherwise indicated. Users are requested to consult the Registrar General's Department or the Lands Department.

- Private Freehold Land
- Forestry Commission, State Forest
 - Timber Reserve
 - Crown Reserve
 - Leased or Uncommitted Crown Land
- Lands Department, Crown Reserve
- National Parks & Wildlife Service, State Reserve, etc.
- N.P.W.S. administered Conservation Area
- Municipality boundary
- Municipality boundary, certain or indefinite
- boundary

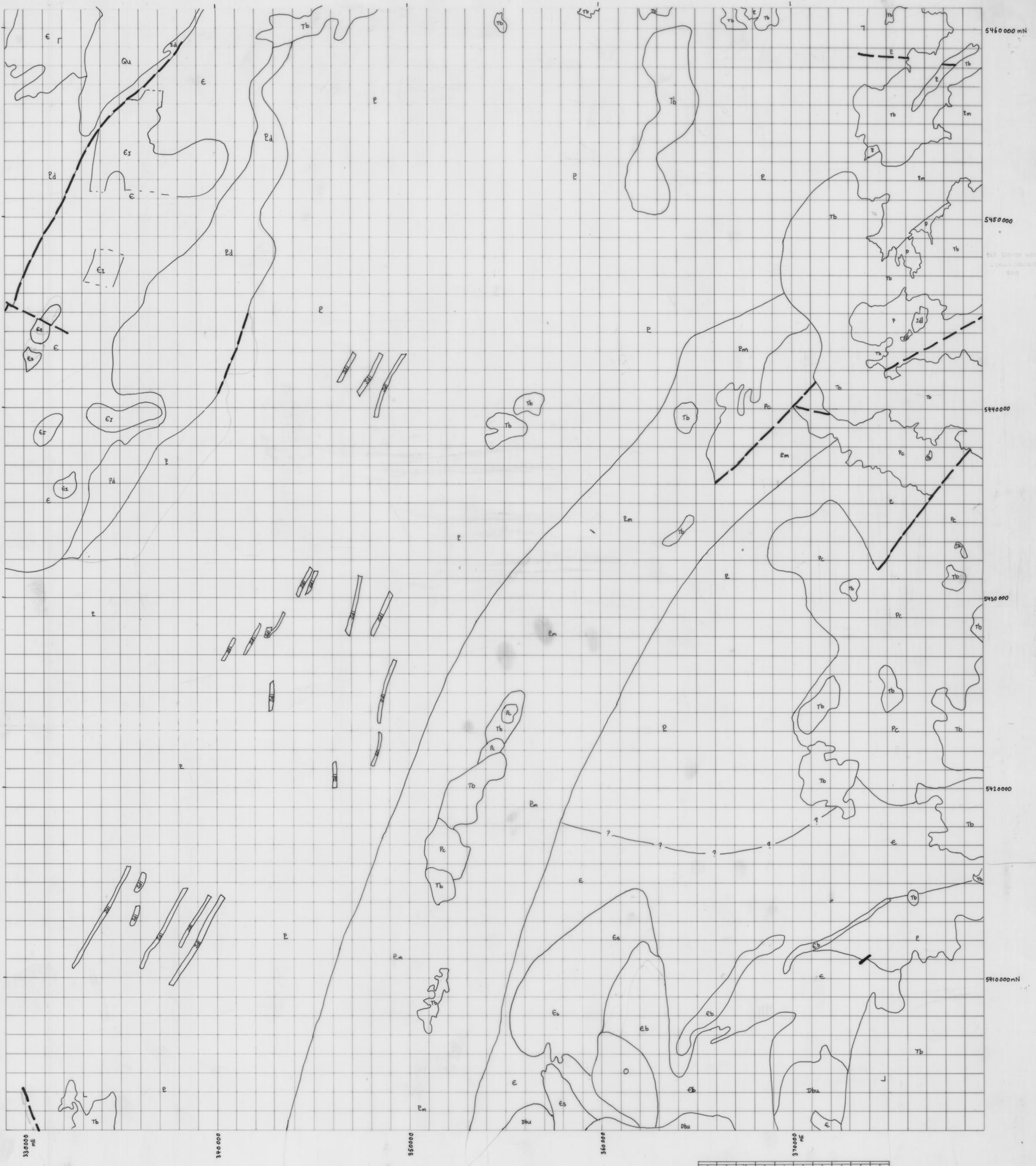
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LTIS SHEET 7915
ARTHUR RIVER
TASMANIA
EDITION 1 1982

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KEY

- Qu Quaternary Alluvium, sand, gravel and talus, fill, fluvioglacial, periglacial, and associated deposits.
- Tu Tertiary Non marine sequences, marine limestone.
- Pc Triassic Permian Upper Carboniferous Fluvio-lacustrine sequences of sandstone, siltstone, mudstone, with carbonaceous sequences. Fresh water sequence with some coal. Upper glacio-marine sequence of pebbly mudstone, pebbly sandstone and limestone. Lower glacio-marine sequence of pebbly mudstone, pebbly sandstone, minor limestone, Tasmania oil shale and basal tillite.
- O Lower Devonian - Silurian Ordovician Some quartzite sequences and siltstone shale sequences. Devonian limestone-siltstone limestone sequences. Siliceous tomatit conglomerate, marine quartzite and siltstone.
- E Cambrian Middle - Upper Cambrian fossiliferous usually greywacke turbidite sequences, and with intermediate volcanic and associated rocks, and margin with lower lifeforms. Upper Cambrian shallow water deposits. Probably Cambrian unmetamorphosed usually greywacke turbidite sequences, probably Cambrian unmetamorphosed orthoquartzite sequence.
- P Pre-Cambrian Comparatively unmetamorphosed sequences, mudstone, orthoquartzite, quartzite, turbidite successions, conglomerate, dolomite (D).
- Em Metamorphic rocks, gneiss, schist, mica-schist, amphibolite, with some phyllite, quartzite with indicated.

- Tb Tertiary Basalt and related rock types.
- Jd Jurassic Dolerite and related rock types.
- Dju Lower Carboniferous Dominantly adamellite-granite. Upper Devonian.
- E Cambrian Es - Ferruginous, peridotite and associated rocks. Et - Acid with intermediate volcanic and associated rocks. Eb - Basic - intermediate volcanic and associated rocks.

— Fault



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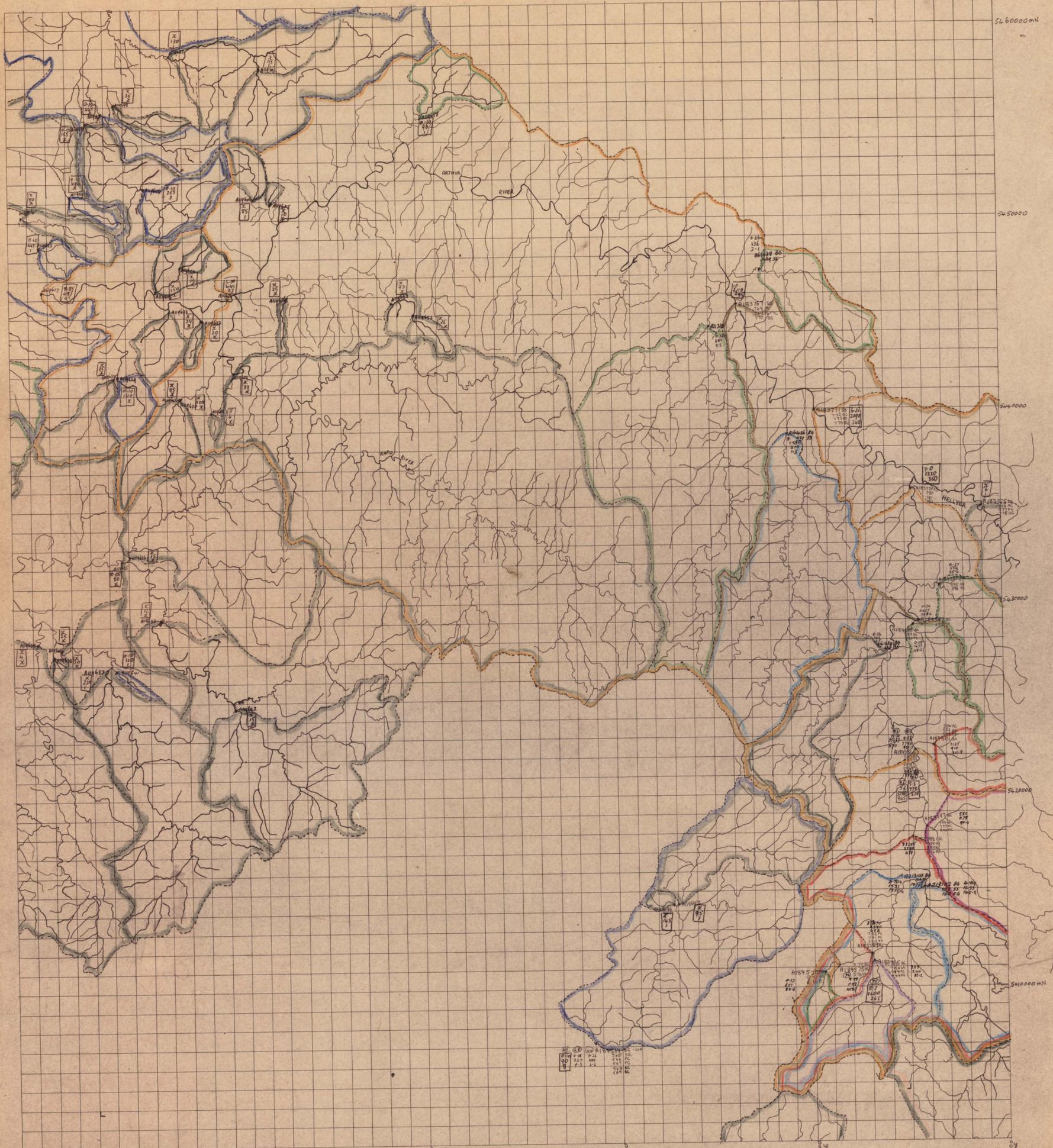
WELCOMB 7916	CRADOCK HERD 7918	TRULIF CAPE 8016
SANDY CAPE 7915	ARTHUR RIVER 7915	HELLWATER 7915
CONICAL ROCKS 7914	PIEMONT 7914	SOPHIA 8014

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ARTHUR RIVER

7915

SCALE 1:100 000
DRAWN B.D.
DATE 7-95



Sample ID	Cu	Pb	Zn	Bi	Ni	Ba	Sb	As	Sn	W	Ag	Au	Mo	Hg
A183790	220	12	150	x	87	-	-	3	7	x	x	-	-	-
A186501	61	26	165	16	120	-	-	7	x	x	x	-	-	-
A212101	183	162	215	120	12	-	-	170	80	420	1000	75	1	1.00

Sample ID	Cu	Pb	Zn	Bi	Ni	Ba	Sb	As	Sn	W	Ag	Au	Mo	Hg
A183790	220	12	150	x	87	-	-	3	7	x	x	-	-	-
A186501	61	26	165	16	120	-	-	7	x	x	x	-	-	-
A212101	183	162	215	120	12	-	-	170	80	420	1000	75	1	1.00



WELCOME	CIRCUAR	TABLE
7916	7916	8016
SANDY	ARTHUR	HELLYER
LAPE	7915	8015
CONICAL	DIEMAN	SOPHIA
RACKS	7916	8016

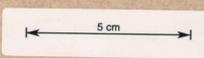
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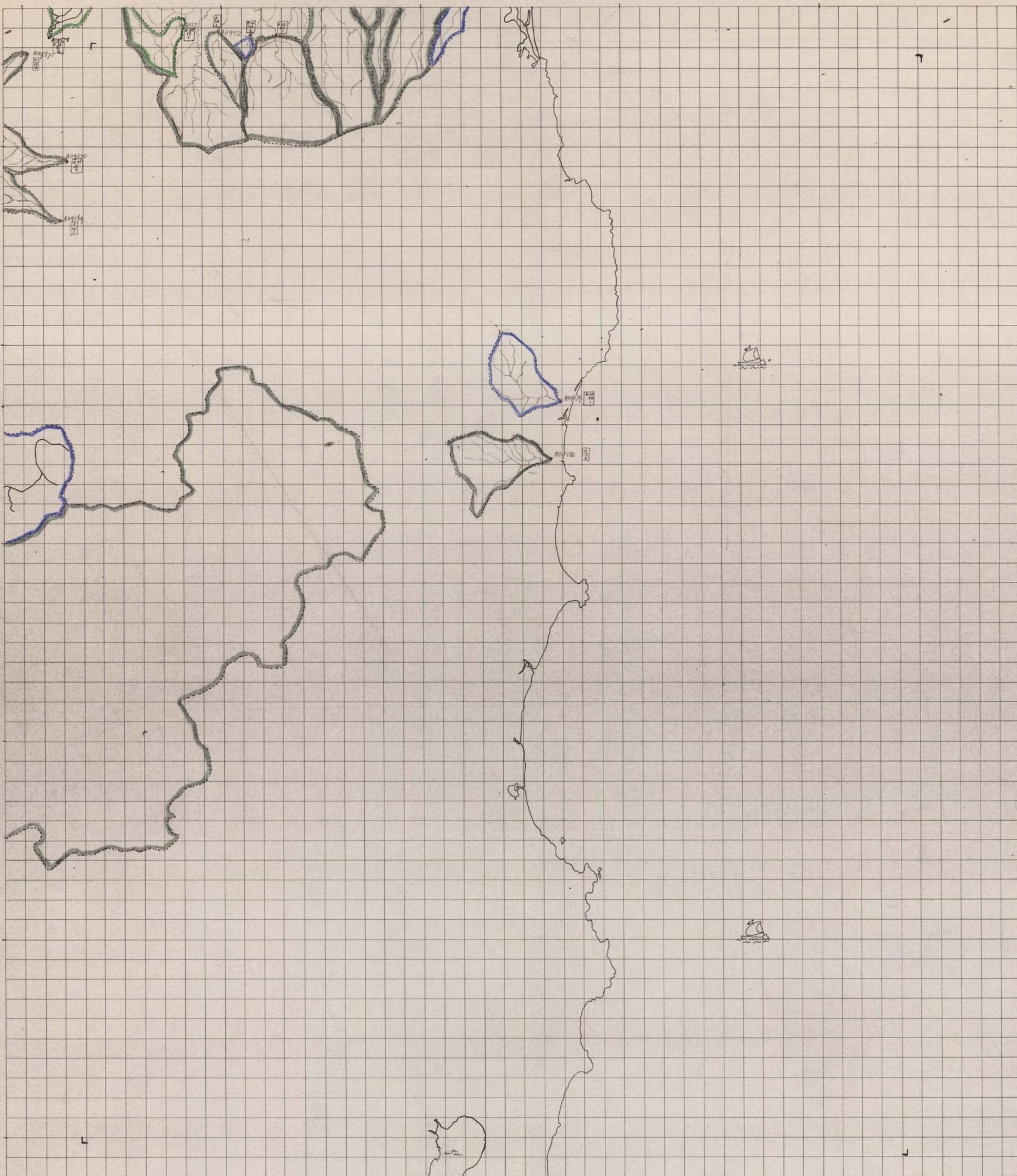
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ARTHUR RIVER

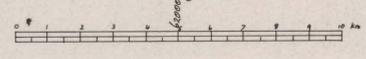
7915

SCALE 1:100,000
DRAWN DDE + B.D.
DATE 7-85



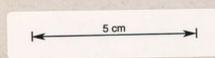


ID	STREAM										SEDIMENT																	
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AM521	12	10	40	2	28	-	-	6	8	2	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
AM522	20	10	48	2	24	-	-	6	8	2	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
AM523	28	10	40	2	24	-	-	6	8	2	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
AM524	12	10	42	2	20	-	-	6	8	2	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
AM525	6	6	10	2	10	-	-	6	8	2	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
AM526	12	12	32	2	24	-	-	6	8	2	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
AM527	14	8	36	2	24	-	-	6	8	2	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
AM528	12	16	60	2	24	-	-	6	8	2	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
AM529	8	6	24	2	20	-	-	6	8	2	-	-	-	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2



- 201
- 0.1 - 0.2
- 0.2 - 0.5
- 0.5 - 1.0
- 1.0 - 5.0
- 5.0 - 10
- 10 - 50
- 50 - 100
- 100 - 500
- 500 - 1000
- >1000

FORESTER BAY	8515
BREK O' DAY	8516
LITTLE SWANPOND	8513



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BREAK O'DAY

8514

SCALE	1:100,000
DRAWN	P.D.E.
DATE	7-95 12/95