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GOLD FIELDS EXPLORATION PTY. LIMITED

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12994/86

E.L.41/83 - LAKE LEA AREA

ANNUAL REPORT 1985-86

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E.L.41/83 - LAKE LEA AREA

ANNUAL REPORT 1985/86

R.H. Roberts.

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SUMMARY

E.L.41/83 covers an area of 56 sq. km. in northern Tasmania. The licence was granted to Renison Limited in December 1983. Exploration in the past twelve months has been principally for gold.

Cambrian volcanics are the oldest rocks in the area. These form part of the northern end of the Mt. Read Volcanics. The volcanics are overlain by a thick sequence of Ordovician rocks consisting of Owen Conglomerate, Moina Sandstone and Gordon Limestone. Extensive Tertiary basalt occurs in the southern part of the licence and in the Lea River valley. A few old gold mines are present within E.L.41/83. Good gold grades (>20 g/t Au) were obtained from some of the workings, but tonnages were small.

A major stream sediment survey and regional mapping exercise was undertaken by R.A. Poltock on behalf of Gold Fields Exploration. Results of the stream sediment survey were compiled with previous Geopeko and Comalco data onto 1:5,000 sheets. This work identified seven main areas of interest. Follow-up of these areas has involved:

- (1) Refurbishment of the Mariner 4 and 6 grids
- (2) Cutting 5 km of access tracks into the Mt. Stormont and North West regions
- (3) Geological mapping and rock sampling of Mariner 6, Mariner 4, and various tracks and streams in the Devonport and Deep Creek areas
- (4) Collection of a further 41 stream sediment samples
- (5) Break-of-slope sampling along the two major creeks in the Devonport region.

Soil sampling orientation studies were also conducted over the Mariner 6 and Stormont grids.

Most of the gold mineralisation in the area appears to be in vein deposits associated with shearing. The gold occurs in limonitic quartz veins, and hematitic-limonitic veined quartz and silicified host rock. The gold mineralisation seems to be related to a north-south to northwest-southeast trending series of faults and shears. Gold-bismuth mineralisation also occurs disseminated in skarn at the Stormont bismuth mine.

Tertiary gravels underlying the basalt on the licence have been worked for gold in the past, and some of the stream sediment anomalies may be derived from this source.

The following work is proposed for 1987:

- (1) Continued break-of-slope sampling in the North West and Mt. Stormont regions
- (2) Continued geological mapping and rock sampling
- (3) Chip sampling of the adits at Blacks and Devonport mines.

This work should lead to the construction of grids which would be mapped, soil sampled, and possibly covered by some geophysics. Should results be encouraging drill targets may be outlined in the next twelve months. Work should also begin at the Stormont-Fletchers Adit area with chip sampling of the workings, reconnaissance mapping, and data compilation.

Expenditure in the last twelve months has been approximately \$70,000. Spending on the above proposed programme is expected to cost about \$100,000.

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1. INTRODUCTION

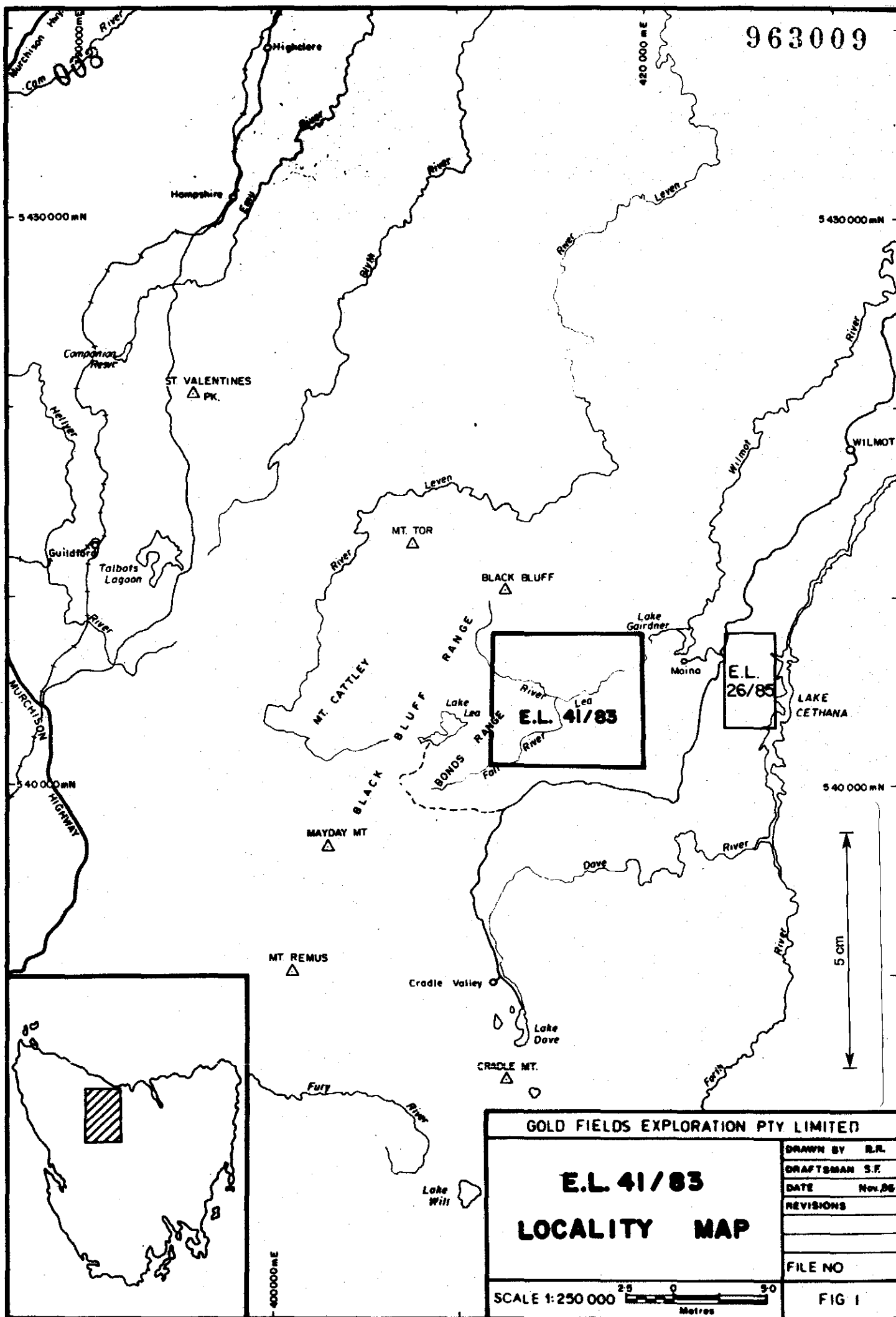
E.L.41/83 covers an area of 56 sq. km. south of Black Bluff in northern Tasmania (Figure 1). Lake Gairdner lies immediately to the northeast and Lake Lea to the west. The Lea and Fall Rivers flow through the area. The southern and central part of the Licence are well accessed by logging roads branching off from the Cradle Mountain Road. The northeast part of the Licence is accessed via a 4WD track to the old Stormont workings. However, vehicular access into the northwest part of the licence is not possible.

The Lake Lea Licence is at the northern end of the Mt. Read volcanic belt where the Cambrian and Ordovician rocks structurally turn east-west around the northern end of the Precambrian Tyennan Block. Cambrian volcanics occur mainly in the north and central part of the licence. They are unconformably overlain by a thick Ordovician sequence consisting of a lower unit of Owen Conglomerate equivalent, a central unit of Moina Sandstone, and an upper unit of Gordon Limestone (Figure 2). During the Tertiary there was extensive basalt coverage, and from its present distribution it is apparent that the present drainage system is mirroring that which existed in the Tertiary. Tertiary gravels, often cemented to greybilly, underlie the basalt.

A few old gold workings occur within E.L.41/83. These comprise the Devonport, Blacks, and Golden Cliff mines (Figure 2). The Stormont gold mine is situated on the northern slope of Mt. Stormont (Twelvetreets, 1913 and Broadhurst, 1934) but its actual location is presently in doubt. Good gold values have been quoted from the workings, in particular at Devonport (maximum 19 g/t Au) and Blacks (maximum >20 g/t Au), but tonnages were small. Gold and bismuth have also been extracted from the Stormont bismuth mine in the northeast of the E.L. (Figure 2). Production there from 1928-1934 was 6.3 tons of bismuth concentrate grading 63% Bi and 450 g/t Au. The mineralisation at the Stormont bismuth mine occurs disseminated within skarn. Minor gold-bismuth mineralisation was also obtained from skarn and vein deposits in the vicinity of Fletchers Adit.

Several companies have carried out modern exploration in the area since 1961, but little emphasis was given to the region's gold potential. This report briefly summarises previous exploration in the area, describes work carried out in 1985/86, discusses results to date, and outlines proposed work for the following year.

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GOLD FIELDS EXPLORATION PTY LIMITED

E.L. 41/83
LOCALITY MAP

SCALE 1:250 000

DRAWN BY	R.R.
DRAFTSMAN	S.F.
DATE	Nov. 86
REVISIONS	
FILE NO	
FIG 1	

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2. EXPENDITURE

Expenditure on E.L.41/83 since the previous renewal to the end of November 1986 amounts to \$62,421 (Appendix I). Spending to the renewal date is expected to reach approximately \$70,000.

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LAND TENURE

E.L.41/83 was granted on 21st December, 1983. This followed Geopeko's relinquishment of E.L.10/74, which previously covered much of the area in question. E.L.41/83 was originally 112 sq. km. The Licence was reduced to its present size of 56 sq. km. in November 1985 (Figure 3).

The E.L. is held in the name of Renison Limited, a wholly-owned subsidiary of Renison Goldfields Consolidated (RGC). Exploration on the licence is being carried out by Gold Fields Exploration Pty. Limited (the exploration division of RGC).

There are three current mining leases within E.L.41/83; two Stone Leases (1M/83 and 2M/83) held by Gunns Holdings Pty. Ltd., and a Mineral Lease (23M/64) held by D.G. Clark. The Stone Leases occur near the junction of the Lea and Fall Rivers, and are presently being worked for road metal. The Mineral Lease occurs in the vicinity of Stormont and Fletchers Adit workings, but because it is unsurveyed its exact location is uncertain.

Three properties are held on Crown leased land in the Licence (Figure 3):

1. property 2036 held by Mr. K.J. Cook,
2. property 2035 held by J. & T. Gunn Property Holdings Ltd.,
3. property 2011 held by W.G. Wright Pty. Ltd.

The latter two of these owners have been informed of our presence in the area. No work has been carried out on the first property listed.

4. PREVIOUS EXPLORATION

A review of previous exploration in the licence was given in the Lake Lea Annual Report for 1983/84 by P.A. Roberts, of which the following is a brief summary.

In 1961/62 New Consolidated Gold Fields carried out mapping, gridding and soil sampling over Stormont mine and Fletchers Adit. Mt. Lyell carried out further exploration, including ground magnetics, IP, SP and scintillometer surveys, over the areas between 1967 and 1971, and concluded there was insufficient potential for a bismuth orebody. Tasminex held the area during 1973/74, but no report was produced on the work done.

In May 1974, Union Oil pegged E.L.10/74 which included the western part of the present E.L.41/83. Their target was a volcanogenic base metal massive sulphide deposit within the Cambrian volcanics. They mapped and stream sediment sampled exposed areas of the volcanics, and carried out reconnaissance IP. Union Oil joint ventured E.L.10/74 with Geopeko in 1977. Geopeko, as managers, initially carried out a further stream sediment survey on the Bond and Black Bluff Ranges and gridded two of Union Oil's geochemically anomalous areas (Mariner 1 and 2) (Figure 2). Encouraging results at Mariner 1 led to a northeast extension to the grid (Mariner 3), and the subsequent drilling of one hole. The hole revealed numerous quartz-pyrite veins within altered porphyry. The grid was extended still further to the northeast (Mariner 5) and a gravity survey indicated the possibility of a hidden granite body. Geological reconnaissance identified siliceous, corundum-bearing alteration at the northeast end of Bonds Range. This area was gridded (Mariner 4) but soil sampling results were disappointing. X

Early in 1980 a Digheem II survey was flown over E.L.10/74. Six anomalies (Mariner 6 to Mariner 11) were identified and followed up by geological mapping and stream sediment sampling. This led to gridding of Mariners 6 and 7. Mariner 7 was over Cambrian volcanics which subsequently proved to be low in base metals. Mariner 6 was gridded to follow up encouraging gold values collected from the dumps of Blacks mine. The Mariner 6 grid was then C-horizon soil sampled, and covered by magnetics. Selected lines were surveyed by SP and IP. A diamond drill hole was sited to test a coincident gold geochemical anomaly and a resistivity low, and drilled beneath the

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old workings. The hole intersected an unexpectedly thick sequence of Tertiary basalt and sediments before drilling into hematitic Ordovician sediments. Gold values were low throughout. The E.L. was relinquished in 1983.

The area immediately east of E.L.10/74 and now the eastern half of E.L.41/83 was held by Comalco under E.L.7/74. They extensively gridded the Stormont-Fletchers Adit area and carried out mapping, rock sampling, magnetics and IP. No holes were drilled. Shell joint ventured into the area, and in 1980/81 carried out a stream sediment programme on the licence for tin and base metals with generally disappointing results.

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5. WORK COMPLETED 1985/86

Since relinquishment of the western part of E.L.41/83 in November 1985, exploration has been principally for gold.

5.1 Stream Sediment Survey and Regional Mapping

Orientation studies were carried out along Castle Creek, draining the Stormont bismuth mine, and Devonport Creek draining the Devonport mine. -80# samples weighing 600 to 750 g were collected at duplicate sites along the creeks. High gold values (some greater than 1 g/t Au) were obtained in both creeks. A disturbing variation occurred in the results between sub-samples in the laboratory and especially between duplicate sample sites. The results indicate a problem with coarse-grained gold in the sampling and marked variations in stream hydraulics. To help alleviate this problem it was recommended that -150 mesh samples be separated out and assayed for gold and that sample sites be described (see Appendix III for more complete explanation).

Subsequently, a major stream sediment survey was undertaken for GFEL by R.A. Poltock across all areas draining the Cambrian and Ordovician rocks. Sufficient material was wet sieved (often over 20 Kg) on site to give approximately 500 g of -80# material. This was separated in the laboratory into +150 and -150# fractions, and both fractions were assayed for gold. 30 g sub samples were preroasted before aqua regia digestion and assay by AAS. Cu, Pb, Zn, Ag, As, Bi and W analyses were also obtained. Results for all elements are tabulated in Appendix II (T2054-T2100, T2301-T2381, T3505-T3513) and shown in Figures 4 to 43 at a scale of 1:5,000.

Previous geochemical data obtained by Geopeko and Comalco, including stream sediments, pan concentrates, grab samples and soil samples have also been compiled onto these sheets.

Regional geological mapping was carried out by R.A. Poltock during the stream sediment programme. A series of 1:5,000 geological maps were produced which have been subsequently modified by more detailed follow-up mapping (outlined below). The modified 1:5,000 geology is shown in Figures 44 to 49.

5.1.1 DISCUSSION AND DEFINITION OF AREAS FOR FOLLOW UP

On the basis of eight samples per sq. km., it was calculated that values above 80 ppb would be considered anomalous. In reality sampling density was approximately half this. Site variability and sub-sampling difficulties resulting from coarse gold were still evident, and it was concluded that creeks with gold values above the threshold had potential for gold but could not be ranked in priority, whereas values below the threshold did not necessarily imply no gold potential.

Despite the difficulties of assay variability, main areas of interest shedding anomalous gold were still clearly delineated. These areas are shown in Figure 50 and are described below:

1. Stormont-Fletchers Adit Area

This area is obviously of interest because of the gold-bismuth mineralisation in the old workings. Castle Creek and the two creeks draining to the north between the Stormont mine and Fletchers Adit returned anomalous gold values. Tungsten values in the creeks draining into the Lea River are consistently anomalous, though the tungsten may be coming from the Tertiary gravels.

2. Mt. Stormont Region

This is the area above (south of) the Stormont bismuth mine and below Mt. Stormont. All creeks draining from this area contain anomalous gold in the stream sediments. The old Stormont gold mine is located within this area, but as noted above, its exact location is uncertain.

3. Devonport Region

Anomalous gold results occurred in the stream sediment orientation study both downstream and upstream of the Devonport mine. The main western tributary of Devonport Creek is also anomalous in all samples taken, and the whole region between the two creeks is prospective.

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4. Deep Creek Region

Deep Creek lies within a distinct linear topographic feature which probably reflects faulting sub-parallel to the Kauri Fault. The Golden Cliff mine occurs along the creek associated with shearing in the rocks (Broadhurst, 1934). Anomalous gold values occur within stream sediments from the lower reaches of the creek.

5. Mariner 6

Creeks draining from the Mariner 6 grid are highly anomalous in gold. Blacks mine is located on the grid, and Tertiary gravels on the grid have been worked for gold in the past.

6. Mariner 4

Anomalous gold values are recorded in the stream sediments from the major creeks draining from the Mariner 4 grid. The grid was examined by Geopeko for base metal and tin mineralisation associated with siliceous alteration of the Cambrian volcanics. Soil sample results were disappointing, but the grid needs to be checked for gold.

7. North West Region

Anomalous stream sediment gold values occur in the lower reaches of the creeks draining into the Lea River from the North West region. The geology of this area is unknown.

5.2 Follow Up

5.2.1 LOGISTICS

A field camp was set up in the centre of the licence south of the junction between the Fall and Lea Rivers. Road access across the Lea River and east to Devonport Creek was re-established. The Mariner 4 and 6 grids were refurbished. A 2 km access track was cut from the northern end of Mariner 6

along the north side of the Lea River to provide access to creeks draining the North West region. A 1 km baseline was cut from the Stormont bismuth mine up the northern slope of Mt. Stormont and a 2 km line cut at right angles to the baseline to give access to the Mt. Stormont region.

5.2.2 GEOLOGY

Mariner 4 and Mariner 6 grids have been geologically mapped and rock sampled. Blacks mine has been examined and dump samples collected (T3593-T3599, T4701-T4703). The geology of Mariner 6 is shown in Figure 51 at 1:1,000 scale. The geology of Mariner 4 is included in the 1:5,000 Lea 3-4 sheet (Figure 46).

The entrance to the Devonport mine adit and the surrounding dump material has been examined and sampled. Devonport Creek north of the access road and its main western tributary have been mapped. The lower sections of Deep Creek have been mapped, but the Golden Cliff mine has not yet been reached. The Stormont mine and Castle Creek area has been briefly examined.

Results of all grab samples collected during the geological follow-up are tabulated in Appendix II and plotted on the 1:5,000 geological sheets (Figures 4-43). The geological data is presented on Figures 44-49 at 1:5,000.

5.2.3 GEOCHEMISTRY

Stream Sediment Follow-Up

A further 41 stream sediment samples were collected by R.A. Poltock within the areas of interest, generally upstream from previous sites (T4580-T4642). These results have been included in the 1:5,000 geochemical sheets and in Appendix II.

Break-of-Slope Sampling

Long linear steep-sided drainage patterns have developed at Lake Lea rather than extensive dendritic drainage. The

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creeks have large catchment areas which are fed by sheet wash down the steep slopes. Consequently the stream sediments represent large drainage areas which are not easily followed up because of the lack of small-scale creek drainage. On the basis that some gold will be carried by the sheet wash break-of-slope sampling was implemented along anomalous creeks to follow up the stream sediment survey. Samples were collected above the highest flood level of the creeks. Sample lengths along the creeks varied depending on the topography, with each sample representing a drainage area of approximately 40-50,000 sq.m. Soil material immediately below the top humus layer was collected and each sample weighed approximately 2 kg.

To date, break-of-slope sampling has been completed in the Devonport region. Sampling was carried out along the Devonport Creek and its main western tributary upstream from their junction. 38 samples were collected and assayed for Au (by roasting, aqua regia digestion and carbon rod finish), Cu, Pb, Zn, As and Bi. Results are tabulated in Appendix II (T4801-T4842) and shown on the 1:5,000 geochemical sheets.

Soil Sampling Oreintation Study

Soil sampling orientation studies were conducted on the Mariner 6 grid and the Comalco grid over the Stormont bismuth mine area. The study on Mariner 6 was centred over a gold soil and rock chip anomaly previously recognised on line 10,100N. Unfortunately, all soil values in our survey were less than 10 ppb, and little could be concluded.

The survey on the Stormont grid was conducted along line 3250W from 1650S to 1700S over an area of outcropping magnetite skarn containing low levels of gold (0.07-0.10 ppm Au). The line was sampled by a wacker-casing method, involving the driving of NQ casing into the soil profile with the wacker, and by the normal wacker system. Excellent "core-like" samples of the soil profile were collected using the wacker-casing method with large (500g-1 kg) samples of both the B and C horizons being taken. 100g C-horizon samples were collected with the normal wacker system.

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The line proved to be anomalous in gold with three peaks (20-50 ppb Au) present across the traverse. The wacker-casing B and C horizon samples and the normal wacker samples all detected the anomalies and gave very similar results. Two of the gold peaks corresponded with Cu, Pb, Zn, Bi, Sn, W and ?As anomalism, whereas the third coincided with Pb, Zn, As peaks only. Again, very similar element profiles were produced in all three sample types. It appears that the gold and pathfinder elements occur throughout the soil profile and it is concluded that cost-effective hand augering, getting at least into the B horizon, should suffice to pick up gold anomalism in this area.

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6. DISCUSSION6.1 Areas of Interest**Mariner 6**

Shallowly east dipping hematitic sediments of the Owen Conglomerate equivalents occur on the western side of the Mariner 6 grid (Figure 51). Three separate units have been recognised within these sediments. The hematitic sediments are overlain to the east by Moina Sandstone, which on the grid is typified by tubicolar sandstone. An ancient river channel now filled with Tertiary basalt underlain by Tertiary gravel cuts through the centre of the grid. DDH-1 drilled by Geopeko intersected 23 vertical metres of Tertiary gravels beneath the basalt (Figure 53), and, by correlation to surface, the Tertiary channel appears to have had a near-vertical relief. The Kauri Fault is a major structure which occurs on the western side of the Mariner 6 grid and is manifested by a steep cliff edge down to the Lea River.

Dump samples from Blacks mine carried gold values between 1 g/t Au and 13 g/t Au. These values occur in intensely silicified and hematite-veined pink host rock. Limonitic boxwork texture after pyrite also commonly occurs within the rocks. There is a distinct strike change in the sediments in the vicinity of the workings which may represent the hinge of an anticline. Shearing has occurred in the rocks with slickensides apparent in the rock faces. It is difficult to get an orientation on the lode, but Broadhurst (1934) has surmised that it runs roughly north-south.

A range of other rock types and quartz veins on the grid have been grab sampled, but all carried gold levels below detection.

Bedding typically dips between 20° and 30° to the east. However, dips are much steeper (70° to the east) in a ridge of outcropping tubicolar sandstone in the northeast part of the grid, and at the western end of line 9800N where the hematitic units dip at 55° to the east. It is postulated that these represent areas of shearing where the beds have been kinked into a steeper orientation. It is noteworthy that both areas correspond with soil gold anomalies as shown on Geopeko's gold contour map (Figure 52). Other notable structural features on

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the grid are a persistent north-south foliation and a strong east-west joint pattern.

DDH-1 was drilled to test a conductive IP zone associated with gold anomalism around Blacks mine. It is now apparent that the conductive zone corresponds with the steeply dipping edge of the Tertiary sediments. Gold values were less than 0.003 ppm throughout the hole except for a minor concentration at the base of the Tertiary gravels returning 0.070 ppm Au. Hematitic quartzite intersected approximately 60 metres below the old workings appears to be barren.

At present, significant gold mineralisation seems to be restricted to Blacks mine, and these workings appear to show little strike or depth extension. A chargeability zone to the south of Blacks mine strikes along a highly hematitic unit of pebbly conglomerate and is not considered worth drilling.

Mariner 4

Outcrop and scree on Mariner 4 consist predominantly of Cambrian quartz-feldspar-biotite porphyry. This is a distinctive unit with phenocrysts up to a centimeter in diameter. Hematitic Ordovician sediments occur at the northwestern end of the grid, with a creek delineating the contact between the two rock types. A thin wedge of fine-grained foliated quartz-phyric volcanic outcrops within the creek. A strong northeast-southwest foliation occurs in the Cambrian rocks parallel to the axial plane of a major anticline structure (Figure 46).

Prominent outcrop ridges of silicified porphyry strike across the grid parallel to the foliation. The degree of silicification varies within these ridges with corundum forming in the more silicified zones. Blue corundum is clearly seen in some outcrops. The silicification appears to be a metasomatic alteration feature with the corundum resulting from the breakdown of feldspar in the original porphyry. Extensive sampling of the porphyries has shown that the more silicified corundum-bearing sections are slightly, though distinctly, anomalous in tin and tungsten (20-60 ppm Sn and 10-20 ppm W), but gold values are consistently below detection.

Shallowly dipping quartz veins occur throughout the grid. Minor workings

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occur on these quartz veins along the main creek in the southeastern end of the grid where they can contain coarse-grained cubic pyrite and minor chalcopyrite mineralisation. Samples from these workings (T4734, and T4737-4739) have elevated base metal and bismuth values, but only low gold values (less than 0.04 g/t Au). Several other samples of quartz float on the grid were assayed, with all returning values of 0.01 g/t Au or below.

Follow-up stream sediment sampling has confirmed the presence of anomalous gold in the streams draining the northwestern end of the grid (T4581/82 and T4603/4). However, streams draining the central and southeastern part of the grid, including the zone of siliceous corundum-bearing alteration, were not anomalous.

The silicified alteration spines do not appear to be the source of gold in the streams. The pyritic quartz veins may be shedding minor gold, but no significant gold grades have been achieved to date from the quartz. An area of abundant quartz float in the north western part of the grid requires further investigation.

Devonport

Sampling of the Devonport mine dump has confirmed the presence of limonitic quartz with good gold values (T4756: 9.83 g/t Au, T4575: 3.83 g/t Au). From previous descriptions of the mine (Collins, 1975) such quartz lenses were mined from an anastomosing system of fractures within a shear zone, which marks the contact between the Moina Sandstone and Owen Conglomerate equivalents. It is apparent from the dump material that the adit ended in hematitic sediments. The shear zone occurs 38 metres from the adit entrance. It is described as being 1.5 metres wide and strike 165° MN.

Rocks at the entrance of the adit are strongly sheared and steeply dipping, though quartzites 10 to 20 metres to the east are shallowly dipping as is typical in the area. Pale green shaley rocks also occur at the entrance and may be related to the shearing. The shales are strongly foliated parallel to the shearing at 175° MN/83°E. Thin (1-10 mm) quartz veins occur along the shearing and foliation, and slickensides on the quartz indicate vertical movement. Sampling of the quartz, however, gave less than 0.01 g/t Au.

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Regional mapping has identified the sheared contact between the Moina Sandstone and Owen Conglomerate in the main western tributary of Devonport Creek (Figure 45). Again the rocks rapidly steepen in dip, have a strongly foliated black shale component and have thin quartz veins parallel to the bedding and foliation. A thick limonitic ooze also occurs in the shear fractures and generally coats the rocks in the area. Sampling of the rocks in this zone, including the quartz and limonitic ooze, gave values of 0.01 g/t Au or below. However, elevated arsenic values occur in the shales and limonite. Regardless of these gold values, a major structural zone known to contain high-grade gold mineralisation has been shown to have a strike length of at least 1.5 km, and the zone deserves further investigation.

Results of the break-of-slope sampling in the Devonport region are generally low. Repeat assays were taken and again there is variability in the results inherent with gold sampling. Anomalous values of 17 and 66 ppb Au were recorded downslope from the Devonport mine, but no other significant gold anomalies were found along the Devonport Creek. An arsenic anomaly has been delineated by samples T4802, T4804 and T4823, which all drain the southern end of the previously described shear zone, and are probably related to the elevated arsenic values obtained from the limonitic ooze associated with this structure in the western tributary of Devonport Creek. T4802 also gave an anomalous gold result (17 ppb) in one of the assays. No major gold anomalies were identified in the break-of-slope sampling along the western tributary, but sporadic low level (around 8 ppb) gold "anomalies" occur in samples downslope from areas of hematitic sediments.

Deep Creek

A hematite-limonite-veined float sample (T3545) in Deep Creek just north of the Devonport mine road gave an assay value of above 1 g/t Au. However, the anomalous stream sediment gold values in the lower reaches of Deep Creek and this anomalous float sample may have been derived from Tertiary gravels. Several float samples containing spectacular veins of quartz and hematite were assayed, but did not contain detectable gold values. Also, several examples of quartzite containing both veined and disseminated pyrite were assayed, but again gold values were below 0.01 g/t. Such pyritic sandstones are common to the Moina Sandstone in the area, and typically seem to contain no gold.

Mt. Stormont Region

01 023

Follow-up stream sediment sampling has been carried out in the area. A disturbing feature has been recognised in the Mt. Stormont region where the follow-up samples were consistently low in gold compared with almost uniformly high values in the initial sampling, especially in cases where follow-up samples were collected above and below previously anomalous sites. From a comparison of site descriptions, it appears that more fine-grained silt was collected from moss in the second survey compared with the first, which in the Stormont area sampled mainly the bottom gravels. Anomalous values were still recorded in the second phase of sampling (e.g. T4636: 1.20 g/t Au in the -150# fraction), but these differences in gold values emphasise the problem of site variability, and that results below threshold do not necessarily define areas of no gold potential. A region which is approximately 1 km north to south and 1.6 km east to west has now been delineated on the northern slope of Mt. Stormont which has anomalous gold geochemistry in the streams which drain it.

North West Region

Follow-up stream sediment sampling has clearly delineated a distinct topographic shelf as the source of gold picked up in the initial sampling programme. Creeks draining from the shelf are highly anomalous in gold (up to 0.98 g/t Au; T4621), whereas upstream from the shelf gold values in the stream sediments are consistently below detection. The shelf may represent an old Tertiary river terrace, but topographically it is higher than known levels of Tertiary gravels and basalt. The shelf covers an area of approximately 500m x 200m, and should be further investigated.

6.2 Gold Mineralisation**6.2.1 MODE OF OCCURRENCE**

In the present work gold values above 1 g/t Au have been obtained at Blacks workings, the Devonport mine, and from float in Deep Creek. The gold has been present in limonitic quartz veins and in hematite-limonite veined quartz and silicified

host rock. Blacks mine, Devonport mine, Golden Cliff mine and the Stormont gold mine are all vein deposits associated with some degree of shearing in the rocks. The bismuth-gold mineralisation in the Stormont-Fletchers Adit area is described by Burns (1959) as occurring both as disseminated orebodies in skarn and as vein deposits. The vein deposits are associated with a series of faults and fractures.

6.2.2 STRUCTURE AND MINERALISATION

Broad east-west folding exists throughout the area. A strong foliation in the volcanics at Mariner 4, and an east-west jointing in the Ordovician sediments appear to be parallel to the axial plane of this folding. Various types of shallow dipping quartz, quartz-pyrite and quartz-hematite veins in the area are probably related to this folding and are typically barren of gold.

A later more brittle period of deformation has developed a series of major north-south trending faults and shears in the area (including the Kauri Fault). A broadly north-south orientated foliation is commonly present in the rocks which is probably related to the faults and shears. A series of shallowly south plunging folds are apparent in the northern part of the licence overprinting the earlier folding, and these are also likely to have formed in this same period of deformation. The gold mineralisation seems to be related to this structural episode, for it consistently occurs in north-south to northwest-southeast trending shear zones and fractures.

6.2.3 GOLD IN THE TERTIARY GRAVELS

The Tertiary gravels, which underlie the basalt, have been worked in the past for gold, and it is possible that some of the anomalous gold in the stream sediments has been derived from this source. In effect gold anomalies derived in this manner have been concentrated twice, once in the Tertiary and once in the present drainage system, and would not reflect the true magnitude of the original source which could be quite minor. Secondly such gold could have been transported well away from its original source, and cannot be followed up using the present drainage pattern.

7. RECOMMENDATIONS FOR 1987

7.1 Break-of-slope sampling should be carried out in the North West and Mt. Stormont regions to follow up the anomalous stream sediment results. 36 samples are planned for the North West region and 38 at Mt. Stormont.

7.2 Geological mapping and rock sampling in the areas of interest should be continued to directly follow up the anomalous stream sediments and to improve the 1:5,000 geological interpretation. In particular the following should be accomplished:

- (1) Further mapping and sampling of the sheared quartzites in the northeast of the Mariner 6 grid.
- (2) Detailed mapping of the north western end of Mariner 4 grid to recognise a source for the strong gold anomalism in the streams.
- (3) Regional mapping and sampling in the creeks in the Mt. Stormont region; the old Stormont gold mine should be located and sampled.
- (4) Mapping and sampling of the major shear zone in the Devonport region.
- (5) Mapping and sampling up Deep Creek to the Golden Cliff mine.
- (6) Regional mapping in the North West region, concentrating on the topographic shelf which is apparently shedding gold into the surrounding creeks.

7.3 The Devonport adit (44m long) should be mapped and chip sampled.

7.4 Blacks adit (70m long) should be mapped and chip sampled.

7.5 Following completion of the above work, areas should be selected for gridding. It is intended that the grids would be geologically mapped,

soil sampled by hand auger, and possibly covered by some geophysics. The Mariner 4 grid has been refurbished and it is recommended that the grid be soil sampled for gold. Should results from the grid work be encouraging, drill targets could be outlined during the next twelve months, with drilling commencing in the next financial year.

- 7.6 Work on the Stormont-Fletchers Adit area should begin. The open cut and underground workings at the Stormont bismuth mine should be chip sampled. Geological mapping should be undertaken, and all the previous data over the area should be compiled and assessed. Depending on results, the previously established Comalco grid could be refurbished and similar grid work to that described above carried out. Drill targets may be outlined in 1987.

7.7 Budget

The above programme is expected to cost between \$80,000 and \$110,000. In the remaining part of the 1986/87 financial year, expenditure is expected to reach \$50,000 (Appendix IV).

8. REFERENCES

BROADHURST, E., 1934: Report on the Stormont, Bell Mount and Black Bluff district. Unpublished Report, Dep. Mines Tas. 1934:32-45.

BURNS, K.L., 1959: The Stormont bismuth mine. Tech. Rep. Dep. Mines Tas. 3:36-42.

COLLINS, P.L.F., 1975: The Devonport gold mine, Black Bluff. Tech. Rep. Dep. Mines Tas. 18:10-13.

TWELVETREES, W.H., 1913: The Middlesex and Mount Claude mining field. Bull. Geol. Surv. Tas., 14.

APPENDIX I

G.F.E.L. EXPENDITURE TO END NOVEMBER, 1986

029

APPENDIX 1G.F.E.L. EXPENDITURE TO END NOVEMBER, 1986

<u>Item</u>	<u>Cost</u>
Salaries, Wages and On-Costs	\$ 24,677
Travel and Accommodation	321
Consultants and Contractors	20,483
Sample Preparation and Assays	8,581
Stores	3,191
Vehicle/Plant Hire	3,323
Tenement Rentals	760
Office	1,085
TOTAL	\$ 62,421

APPENDIX IIGEOCHEMICAL RESULTS

- Rock Samples
- Stream Sediment Samples
- Break-of-Slope Samples
- Soil Orientation Study Samples

031

ROCK SAMPLES

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R.H. ROBERTS

PROJECT: LAKE LEA PROSPECT: REGIONAL REC.

SAMPLE STORAGE REQ'D:

LABORATORY: ANALABS - TAS

DATE DISPATCHED: 30/7/86

1:250,000 SHEET: LEA/CETHANA/PENCIL PENK TYPE OF SAMPLE: ROCK

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED: 1/8/86

15762

SAMPLE NUMBER	LOCATION		DESCRIPTION	AQUA REG'D	FIRE ASSAY	ANALYSES						
				Au	Au	Cu	Pb	Zn	Ag	As	Bi	W
3515	STH. OF LAKE 5399 450 N	LEA PROSPECT 413 350E	Pyroclastic Ash? (E). Pyritic and base metal veining. ^{Sericite} Alteration	0.026	7	260	2450	3000	2.5	39	10	14
3517	"	"	Siliceous Porphyry (E). Minor Sil ⁿ .	<0.008		40	570	2100	0.5	13	10	8
3518	"	"	Veined altered volc (E). Py, Gal and silicification	0.012		20	0.41%	330	4.5	16	20	<10
3519	"	"	Veined altered volc (E). Shaley - Py, Sil ⁿ .	0.009		330	0.84%	0.88%	6.0	50	<10	7
3521	"	"	Altered volc. Coarse veins (1/2 cm). Py, Gal, Sil ⁿ , Sericite	0.037		225	0.62%	0.30%	4.5	.67	<10	8
3522	"	"	Altered volc. Cherty sil ⁿ and Py in veins. Sericite alt.	1.310 1.023	1.310	330	0.24%	170	33	1400	50	<10
3524	FLETCHER'S DUMP (419400E/5406330N)	ADIT	Calc-silicate (garnet-cpx) with veins of amphib, Py, Po, Cpx ^(minor)	0.100 0.059	0.100	790	155	90	1.5	5	3750	120
3525	"		Calc-silicate with Py-Po-Cpx-amph veins	<0.008		3650	10	90	1.0	4	20	0.5
3526	"		Lenses of calc-silicate in massive magnetite	0.014		140	20	50	0.5	5	200	26
3528	BISMUTH CK CABLE MTN. RD (423900E/5405900N)	FAULT ON	Silicified Mornia SS - Pyritic + sericite alteration.	0.008 0.037	0.008	10	<5	5	<0.5	1	20	<10
3529	BISMUTH CK WARRAWA STN (425000E/5404200N)	FAULT	Silicified Mornia SS	0.010		90	<5	5	0.5	7	50	50
3534	WILMOT DAM (5408400N/422500E)	EXPOSURE	Silicified and pyritic veining in Mornia SS	0.012		30	2500	55	17	58	20	10

963033

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R. ROBERTS

PROJECT: LAKE LEA

PROSPECT:

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

1:250,000 SHEET: LEA

TYPE OF SAMPLE: ROCK

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES							
				Au	Cu	Pb	Zn	Ag	Bi	As	W
T3535	DEEP CREEK 416100 E	- Rd. JTN. 5404800 N	FLOAT QUARTZ with specular hematite	2.008 FA 2.01	10	25	20	2.5	210	3	35
T3536	"	"	FLOAT: Sugary - textured pink quartzite, Hem/lim. vms.	0.067 FA 0.01	325	15	140	1.0	20	220	210
T3537	"	"	FLOAT: Tubular SS, foliated and sericite	2.01	10	25	10	0.5	10	4	210
T3538	+ " 40 M	Downstream	FLOAT: Hematite-rich SS - Cgl	2.008 FA 0.01	10	25	10	0.5	210	8	210
T3539	"	"	FLOAT: Quartz - Hematite veining in hematitic SS	2.008 FA 0.01	10	25	5	0.5	210	2	210
T3540	"	"	FLOAT: "	NOT	ASSAYED						
T3541	LEA R. 416000 E	5404700 N	% : Tertiary Mud in bank of Lea R.	2.01	240	25	60	2.5	10	13	210
T3542	DEEP CK 416100 E	5404800 N	+20M UPSTREAM: FLOAT: Quartz - hematite	2.008 FA 2.01	15	100	110	2.5	20	44	210
T3543	"	"	" " FLOAT: Tg veining in pink SS	2.01	5	25	25	0.5	10	2	10
T3544	416100 E + 80M	5404800 N UPSTREAM	FLOAT: White quartzite	NOT	ASSAYED						
T3545	416100 E + 175M	5404800 N UPSTREAM	FLOAT: Hem - lim veins in quartzose altered rock	1.070 FA 1.19	220	6350	195	128.0	5000	400	180
T3546	DEVONPORT 416300 E	Rd. 5404900 N	%/c: Grey pyritic quartzite	NOT	ASSAYED						
T3547	DEVONPORT 416600 E	Rd. 5405100 N	%/c: Grey quartzite, foliated & sericite, qtz nodules	NOT	ASSAYED						
T3548	"	"	%/c: Altered quartzite, pyrite/sericite	2.008 2.01	20	25	10	2.5	210	23	210
T3549	"	"	%/c: Grey glaucous quartzite, sericite, pyrite	2.01	10	15	15	2.5	210	8	210
T3550	DEVONPORT 416650 E	Rd. 5405150 N	% in creek: Grey metaquartzite	2.01	10	5	20	0.5	210	6	210
T3551	DEEP CK 415800 E	5405000 N	%/c: Grey pyritic SS	2.01	10	25	15	2.5	210	9	210
T3552	415450 E	5405500 N	%/c: Pink SS to grit	NOT	ASSAYED						
T3553	WEST. TRIB. 415400 E	DEEP CK. 5405300 N	: Weld micaceous quartzite	NOT	ASSAYED						
T3554	"	"	Tertiary gravel - loosely cemented	2.01	10	25	10	2.5	210	4	210
T3555	415500 E	5405300 N	Coarse TY Congl. - Partially consolidated, hem-cement	0.01	45	5	425	2.5	210	7	210

963034

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R. H. ROBERTS

PROJECT: LAKE LEA

PROSPECT: GENERAL

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

1:250.000 SHEET: LEA

TYPE OF SAMPLE: ROCK

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A1996:

034

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES							
				Al	Cu	Pb	Zn	Ag	Bi	As	W
T3556	DEEP CK E 415540	5405300 ^N	% grey quartzite %	NOT	ASSAYED						
T3557	415550	5405250	% grey quartzite with pyrite %	<0.1	35	40	15	<0.5	<10	6	<10
T3558	"	"	% Quartz vein %	<0.1	15	<5	10	<0.5	<10	4	<10
T3559	"	"	% Fracture zone qtz fill	0.01	60	220	40	<0.5	<10	16	<10
T3560	"	"	% grey quartzite	NOT	ASSAYED						
T3561	415880	5405000	% grey siliceous greywacke	NOT	ASSAYED						
T3562	LEA R. 415380	5404720	% Siliceous SS/quartzite	NOT	ASSAYED						
T3563	415120	5404800	% Tubular Quartzite	NOT	ASSAYED						
T3565	HARINER 6 L10000E	GRID 9790N	% Tubular SS	<0.1	15	<5	<5	0.5	<10	13	<10
T3566	L9960E	L9850N	% Pink hematitic SS → Pebbly Cgl	<0.1	5	<5	10	0.5	10	1	<10
T3567	10025E	L4850N	% Stg-rich conglomerate/Breccia	<0.1	5	<5	10	<0.5	10	2	<10
T3568	9940E	L9950N	% Conglomerate = boulder-sized blocks	<0.1	5	<5	<5	<0.5	20	<1	<10
T3569	9970E	L9950N	% Pink hematitic sandstone	<0.1	5	<5	<5	<0.5	10	1	<10
T3570	9970E	L9950N	% " " Pebbly conglomerate	0.01	10	<5	20	<0.5	10	2	<10
T3572	STANMONT 6 3250W	GRID 1650S	% Magnetite/Chlorite skarn	0.017FA 0.01	40	20	45	<0.5	500	7	360
T3573	418660E	5405600N	% Garnet/Chloropyroxene calc-silicate	0.01	15	<5	30	<0.5	20	25	<10
T3574	"	5405500N	% Meta-siltstone - greywacke	NOT	ASSAYED						
T3575	"	5405450N	% grey quartzite	<0.1	10	<5	5	<0.5	40	5	<10
T3578	HARINER 6 L9950E	L9700N	% Tubular SS	<0.008	5	<5	<5			5	
T3579	10160E	9710N	% grey SS	<0.008	5	<5	<5			11	
T3580	10190E	9710N	% green-grey SS	<0.008	<5	<5	<5			22	

9630852

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R. H. ROBERTS

PROJECT: LAKE LEA PROSPECT: GENERAL

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

1:250,000 SHEET: LEA

TYPE OF SAMPLE: ROCK

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A1996

035

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	Bi	As	W	Sn
T3581	MARKER 10190E	6 9710N	1/2 2 _{1/2} veins	4.008	5	45	45			22		
T3582	9980E	L9800N	1/2 Sandstone	4.008	20	45	45			55		
T3583	10180E	L9800N	1/2 Pyrite	4.008	5	45	20			3		
T3584	10060E	L9850N	1/2 Pyrite	NOT	ASSAYED							
T3585	9960E	L9900N	1/2 Bedded pink-maroon ss/Pebbly Cgl	NOT	ASSAYED							
T3586	9940E	L9900N	1/2 2 _{1/2} - Hematite veins in Cgl	T3586A- 4.008	5	45	45			1		
				T3586B- 4.008	5	45	45			41		
T3587	9940E	L9900N	1/2 Foliated pebbly Cgl	4.008	5	45	45			1		
T3588	9945E	L9900N	1/2 Cgl (adjacent to minor fracturing)	4.008	5	45	45			41		
T3589	9975E	L9800N	1/2 2 _{1/2} veins in sandstone	4.008	5	45	5			1		
T3590	9970E	L9800N	1/2 "	4.008	45	45	5			41		
T3591	9953E	L9800N	1/2 Maroon ss with bedded hematitic ss	NOT	ASSAYED							
T3592	9953E	L9800N	1/2 2 _{1/2} veins & some hematite in maroon ss	4.008	5	45	45			1		
T3593	9960E	L10000N	DUMP Hem/lim. veins in sil. ss/Cgl. lim. breccia texture	12.67 GRW 7.33 FA	35	45	5	40.5	150	50	340	160
T3594	9970E	L10000N	DUMP Pink Pebbly Cgl	4.008	5	45	5			2		
T3595	9960E	L10000N	DUMP Sil. ss/Cgl. Intense del. & lim. staining, breccia test.	0.050	45	320	45	40.5	410	25	410	43
T3596	9960E	L10000N	DUMP Coarse qtz rock, ? bld. Cgl. Pockets of hematite	0.983	5	50	5	40.5	410	8	10	43
T3597	9960E	L10,000N	DUMP Similar to T3593	NOT	ASSAYED							
T3598	9950E	L10,000N	DUMP Sil. - red stained qtz. ? bld. Cgl. Pkt of hem.	1.670	100	20	10	23.5	100	29	15	43
T3599	9950E	L10000N	DUMP Sil. Host, Pkts of Hem (Main chunk rock = T3598)	12.00 GRW 13.830 FA	115	10	45	41.0	500	25	40	6
T3600			STD B65 (1.70)	1.83								

963036

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R. H. ROBERTS

PROJECT: LAKE LEA

PROSPECT: GENERAL

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

1:250,000 SHEET: LEA

TYPE OF SAMPLE: ROCKS

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	Bi	As	W	Sn
T4701	MARINER 9955E	6 10,005N	DUMP 2 _{1/2} -reined pink SS on Mullock Heap	<0.08	5	240	<5			2		
T4702	"	"	DUMP Sld. 2 _{1/2} ite - white-pink blotchy	0.028	80	115	10	0.5	10	21	<10	<3
T4703	"	"	DUMP Totally alt. qtz rock = veins of spec. hem.	2.00	<5	20	5	0.5	10	5	60	35
T4704	9934E	10000N	% Whitish maroon SS	<0.08	5	<5	<5			1		
T4705	9927E	10000N	% Maroon SS = hematite (dark) blotches	0.008	5	<5	<5			1		
T4706	"	"	Float Hematite and Barrow veins in qtz-reined pink SS	0.233	85	<5	<5	<0.5	200	41	<10	<3
T4707	9920E	10000N	% Maroon Pebbly SS/Cgl.	<0.08	5	<5	<5			1		
T4708	9950E	10050N	% 2 _{1/2} -reined Maroon SS, minor spec hem.	<0.08	5	<5	<5			1		
T4709	MARINER 10465E	4 12400N	% (?) 2 _{1/2} veins	<0.01	<5	165	<5	1.0	<10	<1	<10	<3
T4710	10425E	12400N	% Green chloritic Mega-quartz porphyry	<0.01	<5	15	230	<0.5	<10	1	<10	6
T4711	10385E	12400N	% 2 _{1/2} veins in porphyry = coarse talc	<0.01	5	5	5	0.5	<10	<1	<10	130
T4712	13330E	12400N	flt. Mega qtz porphyry	<0.01	5	5	30	<0.5	<10	<1	<10	5
T4713	13330E	12400N	flt. 2 _{1/2} veining in porphyry	<0.01	5	10	20	<0.5	<10	<1	15	5
T4714	10225E	12400N	flt. 3 _{1/2}	<0.01	5	10	5	<0.5	<10	<1	<10	<3
T4715	9975E	12400N	flt. 2 _{1/2} veining	0.01	<5	5	15	<0.5	<10	<1	<10	<3
T4716	9862-9840	12400N	flt/% 2 _{1/2} - hematite veining in pink maroon SS.	<0.01	<5	<5	<5	<0.5	<10	<1	<10	<3
T4717	"	12400N	flt/% Siliceous (qtz) veining in pink SS.	<0.01	<5	<5	<5	0.5	<10	<1	<10	3
T4718	9862	12400N	Creek flt. limonitic qtz block. Hematite pockets in qtz.	<0.01	20	25	105	<0.5	<10	2	10	<3
T4719	9862	12400N	"	<0.01	10	30	135	0.5	<10	2	<10	<3
T4720	9862	12400N	Creek flt. Grey foliated phyllite (qtz phenos)	<0.01	<5	<5	<5	<0.5	<10	<1	<10	<3
T4721	9825	12400	% Sil. Cgl. = hem. veinlets	<0.01	<5	30	<5	<0.5	<10	<1	15	4

963037

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R. H. ROBERTS

PROJECT: LAKE LEA

PROSPECT: GENERAL

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

1:250,000 SHEET: LEA

TYPE OF SAMPLE: ROCKS

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A19962

037

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	Bi	As	W	SH
T4722	9955 E	L 12200N	1/4 St. 2 _{1/2} veining with limonite	0.01	10	15	15	<0.5	<10	1	<10	<3
T4723	9955-9965 E	12200 N	1/4 St: 2 _{1/2} with black needle (? Mn)	0.01	5	5	5	<0.5	<10	14	<10	<3
T4724	9970 E	12200 N	1/4 St: 2 _{1/2} with Fe oxide and red alt.	0.01	5	5	25	<0.5	<10	1	<10	<3
T4725	10080 E	12200 N	?% : Corundum-bearing siliceous porphyry	<0.1	<5	15	<5	0.5	<10	1	10	25
T4726	10180-10185 E	12200 N	?% : Dk. green mega-qtz porphyry	0.18	5	10	15	<0.5	<10	<1	20	4
T4727	10200 E	12250 N	% : Corundum-bearing sil. qtz. porphyry	<0.1	<5	15	<5	0.5	<10	17	<10	60
T4728	10250 E	L12200N	% : Dk. grey sil. rock in pheno-foliated matrix	<0.1	25	20	185	<0.5	<10	<1	<10	9
T4729	DEEP CREEK 415 580 E	5405450N	Grass St: 2 _{1/2} - hematite veins	<0.1	<5	<5	<5	<0.5	<10	<1	<10	<3
T4730	"	"	" : 3 _{1/2} & 2 _{1/2} - hem veins in green porphyry	<0.1	<5	5	60	<0.5	<10	<1	20	<3
T4731	415 530 E	5405550N	"	<0.1	10	<5	70	<0.5	150	<1	45	<3
T4732	415 400 E	5405830N	% : green volcanic	NOT	ASSAYED							
T4734	MARINER 4 10500	L12200N	% : 2 _{1/2} veins at adit portal	<0.1	45	125	40	0.5	<10	3	<10	<3
T4735	10400-10390	L12200N	% : green mega qtz porphyry	<0.1	5	25	70	<0.5	<10	1	<10	4
T4736	10400 E	L12200N	% 10M NE of line: Alt. Corundum-bearing Porphyry	<0.1	5	10	<5	<0.5	10	2	20	60
T4737	10425 E	12000N	% : 2 _{1/2} - Pyrite diggings	0.02	110	400	20	4.0	20	100	<10	<3
T4738	"	"	"	0.04	175	775	150	11.0	80	34	<10	<3
T4739	"	"	" with clay & limonite	0.04	580	545	15	3.5	<10	26	<10	<3
T4740	10250 E	12000N	% : Foliated Mega 2 _{1/2} Porphyry	<0.1	5	10	<5	0.5	<10	26	<10	30
T4741	10225 E	12000N	% : green alt. Mega-qtz-porphyry? Dissem. Hem.	<0.1	5	5	<5	0.5	<10	1	<10	5
T4742	10100 E	12000N	fl: 2 _{1/2} (assoc & old. Mega-qtz porphyry)	0.03	5	75	<5	9.5	10	<1	<10	<3
T4743	MARINER 4 - 9850 E	WESTERN CR 12020N	% : Phyllitic qtz porphyry	<0.1	5	15	80	<0.5	<10	3	<10	<3

963038

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R. H. ROBERTS

PROJECT: LAKE LEA PROSPECT: GENERAL

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

1:250.000 SHEET: LEA TYPE OF SAMPLE: ROCKS

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES							
				Al	Cu	Pb	Zn	Ag	Bi	As	Sn
T4744	9850E	12296N	% 2ty-veined Mega-gtz porphyry	NOT	ASSAYED						
T4745	= 9900E	12430N	% dk. green fol. mega-gtz porphyry	<0.01	10	10	225	0.5	<10	<1	<10
T4746	DEVONPORT CREEK 417090E	5405960N	% greywacke with thin pyrite veinlets	<0.01	5	5	15	0.5	<10	25	<10
T4747	417030E	5406040N	% Quartzite with minor pyrite in fractures	<0.01	30	30	15	0.5	<10	52	<10
T4748	417030E	5406060N	% Quartzite with Py in vugs.	<0.01	5	45	10	0.5	<10	30	<10
T4749	416950E	5406140N	FeO staining out of rocks - red gunge	0.01	5	25	25	<0.5	<10	790	<10
T4750	417150E	5405845N	Hem.-rich gravel in river bank	<0.01	10	10	15	<0.5	<10	10	<10
T4751	417190E	5405790N	? Testing gravel in creek bank	<0.01	5	10	10	<0.5	<10	7	<10
T4752	DEVONPORT 416900E	5407400N	% Py veining in tubular gtzite	<0.01	10	20	5	2.0	<10	3	<10
T4754	10-15M inside portal		% Pyritic grey ss.	<0.01	10	5	5	0.5	<10	6	<10
T4755	Portal entrance		% 2ty veins sub-parallel to fol. in pub. green shale	<0.01	<5	<5	5	<0.5	<10	<1	<10
T4756	Line - Dump		hematitic ruggly gtz	F.A. 8.33 13.80	AN 9.83 GMV 125	85	20	0.5	150	56	<10
T4757	"	"	Veined and alt. ss. Hem + lim along fractures i gtz	F.A. 9.83 3.00		230	180	25	<0.5	280	100
T4758	"	"	Hematitic Pelty Cgl	0.01	5	5	5	<0.5	<10	5	<10
T4759	WASTE MARINER 9900E	DUMP 6 10150N	TY gravel cemented with limonite	<0.01	100	45	315	0.5	<10	210	<10
T4760	9980E	10150N	% Tub. gtzite i entire yell. lim. staining	<0.01	10	<5	10	<0.5	<10	7	<10
T4774	DEVONPORT 416800E	5406290N	% grey quartzite with dissem. Py	<0.01	25	10	10	<0.5	<10	39	<10
T4775	"	"	% Shale interbeds with minor Py	0.01	20	20	20	0.5	<10	70	<10
T4776	"	"	% Puggy layers in fractures (observed)	0.01	380	40	60	3.0	<10	86	<10
T4777	416780E	5406290N	% Black Shale	<0.01	10	40	<5	<0.5	<10	36	<10
T4778	"	"	% Maroon Hem. gtzite.	<0.01	5	10	5	<0.5	<10	3	<10

963039

GOLD FIELDS EXPLORATION PTY. LTD.

PROJECT: LAKE LEA PROSPECT: GENERAL

1:250,000 SHEET: **LEA** TYPE OF SAMPLE: **ROCKS**

SAMPLE RECORD AND ANALYTICAL DATA SHEET

SAMPLE STORAGE REQ'D:

SAMPLE PREP. REQ'D:

LABORATORY:

ANALYSIS REQ'D:

COLLECTED BY: R. H. ROBEATS

DATE DISPATCHED:

DATE RECEIVED:

A199

[illegible]

963040

040

STREAM SEDIMENT SAMPLES

GOLD FIELDS EXPLORATION PTY. LTD.

PROJECT: LAKE LBA

PROSPECT:

1:250,000 SHEET:

TYPE OF SAMPLE:

SAMPLE RECORD AND ANALYTICAL DATA SHEET

SAMPLE STORAGE REQ'D:

SAMPLE PREP. REQ'D:

LABORATORY: Analabs Coor DATE DISPATCHED:

ANALYSIS REQ'D:

COLLECTED BY: R.A. Paltok

DATE RECEIVED:

A19962

041

-150# ASSAY RESULTS

see later sheet
for ~~sample~~ sample
+150# assay

ANALYSES

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES								
			AV	AV check	Cu	Pb	Zn	Ag	As	Bi	W
T0254		-80# SED.	<0.008		10	5	10	<0.5	<2	<1	20
T0256		-80# SED.	<0.008		5	45	55	<0.5	4	<1	20
T0256		-80# SED	<0.008		5	45	75	<0.5	<2	<1	50
T0257		-80# SED.	0.024		5	5	<5	<0.5	5	<1	15
T0258		-80# SED.	0.028		5	5	10	<0.5	<2	<1	<10
T0259		-80# SED.	Trace	1/5	<5	<5	<5	<0.5	<2	<1	<10
T0260		STANDARD									
T0261		-80# SED.	0.041		10	10	10	<0.5	2	<1	25
T0262		-80# SED	0.051		15	<5	70	<0.5	<2	4	15
T0263		-80# SED	<0.008		20	5	45	<0.5	<2	7	15
T0264		-80# SED	0.043		25	5	65	<0.5	<2	4	<10
T0265		-80# SED	<0.008		35	10	145	<0.5	<2	<1	10
T0266		-80# SED	<0.008		50	5	170	<0.5	<2	<1	25
T0267		-80# SED	0.162		55	5	155	<0.5	<2	<1	<10
T0268		-80# SED	0.051		30	<5	145	<0.5	2	12	<10
T0269		-80# SED	0.093	<0.008	5	5	<5	<0.5	2	<1	15
T0270		STANDARD									
T0271		-80# SED	<0.008		5	10	<5	<0.5	3	<1	10
T0272		-80# SED	0.010		10	15	<5	<0.5	<2	<1	<10
T0273		Soil sample. getzite	0.021								
T0274		-80# SED	<0.008		10	55	10	<0.5	15	<1	<10

963042

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R A POWLOCK

PROJECT: LAKE LEA

PROSPECT:

SAMPLE STORAGE REQ'D:

LABORATORY: Analabs Coode

DATE DISPATCHED:

1:250.000 SHEET:

TYPE OF SAMPLE:

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A1994

042

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES									
			As ⁻¹⁵⁰	As ⁻¹⁵⁰	Cu ⁻¹⁵⁰	Pb ⁻¹⁵⁰	Zn ⁻¹⁵⁰	Ag ⁻¹⁵⁰	As ⁻¹⁵⁰	B ⁻¹⁵⁰	W ⁻¹⁵⁰	
T0275		-80# SED	<0.008		5	30	45	<0.5	<2	<1	15	
T0276		-80# SED	<0.008		5	<5	<5	0.5	2	<1	20	
T0277		-80# SED	<0.008		5	5	<5	<0.5	2	3	15	
T0278		-80# SED	<0.008		10	<5	<5	0.5	5	5	25	
T0279		-80# SED	As ⁻¹⁵⁰ <0.008	As ⁻¹⁵⁰ <0.008	H ⁻¹⁵⁰ 30	H ⁻¹⁵⁰ 20	+150 130	+150 <0.5	+150 <2	+150 <1	+150 15	
T0280		STANDARD										
T0281		-80# SED	0.064	<0.008	30	20	155	<0.5	<2	<1	<10	
T0282		-80# SED	TRACE	<0.008	35	20	150	<0.5	<2	<1	30	
T0283		-80# SED	0.014	0.016	45	15	250	<0.5	<2	<1	90	
T0284		-80# SED	0.034	0.016	25	10	80	<0.5	2	11	40	
T0285		-80# SED	0.026	0.016	15	10	5	<0.5	5	<1	20	
T0286		-80# SED	0.019	0.008	10	10	<5	<0.5	6	<1	<10	
T0287		-80# SED	0.043	0.015	20	30	5	<0.5	10	<1	<10	
T0288		-80# SED	0.010	0.028	10	60	<5	<0.5	7	<1	40	
T0289		-80# SED	0.010	0.016	10	20	5	<0.5	2	<1	10	
T0290		STANDARD										
T0291		-80# SED	0.015	0.021	10	10	<5	<0.5	3	<1	<10	
T0292		-80# SED	0.043	0.244	15	20	15	<0.5	7	<1	<10	
T0293		-80# SED	0.013	0.014	10	15	5	<0.5	<2	<1	20	
T0294		-80# SED	0.030	0.020	10	30	5	<0.5	3	<1	10	
T0295		-80# SED	0.047	Trace	5	5	<5	<0.5	<2	<1	<10	

963043

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R A Poutock

PROJECT: LAKE LABA

PROSPECT:

SAMPLE STORAGE REQ'D:

LABORATORY: Analabs Coode DATE DISPATCHED:

1:250.000 SHEET:

TYPE OF SAMPLE:

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A1996

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES								
			AJ ⁺¹³⁰	AN ⁺¹³⁰	CU ⁺¹³⁰	Pb ⁺¹³⁰	Zn ⁺¹³⁰	Ag ⁺¹³⁰	AS ⁺¹³⁰	Bi ⁺¹³⁰	W ⁺¹³⁰
T02296		-80# SED	0.261 0.093	0.053 0.043	5	10	45	40.5	6	<1	<10
T02297		-80# SED	<0.008	0.008	10	10	45	40.5	4	<1	<10
T02298		-80# SED	TIF	<0.008	20	5	45	40.5	2	<1	<10
T02299		-80# SED	0.024	<0.008	15	15	20	40.5	5	<1	55
T02300		STANDARD									
T02301		-80# SED	0.091	Trace	15	15	5	40.5	<2	<1	<10
T02302		-80# SED	0.018	0.148	10	25	5	40.5	4	<1	<10
T02303		-80# SED	0.072	0.010	15	20	5	40.5	4	<1	<10
T02304		-80# SED	0.011	0.012	25	20	5	40.5	5	<1	<10
T02305		-80# SED	0.171	0.017	15	10	45	40.5	6	<1	<10
T02306		Rock chip	<0.008						<2	<1	20
T02307		-80# SED	0.020	0.301	10	10	5	40.5	5	<1	<10
T02308		-80# SED	0.014	0.309	25	20	10	40.5	4	<1	15
T02309		-80# SED	0.013	0.360 0.440	15	25	10	40.5	2	<1	<10
T02310		STANDARD									
T02311		-80# SED	0.067	0.168 0.272	15	10	5	40.5	42	<1	<10
T02312		-80# SED	0.079	0.039	20	35	25	40.5	7	<1	35
T02313		Rock chip	<0.008						<2	<1	20
T02314		-80# SED	0.048	0.003 40.008	10	30	25	40.5	5	<1	10
T02315		Rock chip	<0.008						3	<1	20
T02316		-80# SED	0.020	0.302	15	35	20	40.5	4	<1	<10

963044

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R. A. Poltack

PROJECT: LAKE LEA

PROSPECT:

SAMPLE STORAGE REQ'D:

LABORATORY: Analabs Coor DATE DISPATCHED:

1:250.000 SHEET

TYPE OF SAMPLE:

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A1996

04A

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				As ⁺¹⁵⁰	As ⁺¹⁵⁰	Cu ⁺¹⁵⁰	Pb ⁺¹⁵⁰	Zn ⁺¹⁵⁰	Ag ⁺¹⁵⁰	As ⁺¹⁵⁰	B ⁺¹⁵⁰	W ⁺¹⁵⁰	
T02317			-80# SED	0.038	<0.008	10	30	25	40.5	42	<1	10	
T02318			ROCK CHIP	<0.008						3	<1	60	
T02319			ROCK CHIP										
T02320			-80# SED	0.043	<0.008	10	25	30	40.5	3	<1	<10	
T02321			-80# SED	0.021	<0.008	15	30	25	40.5	5	<1	<10	
T02322			-80# SED	0.011	0.023	15	20	40	40.5	3	<1	<10	
T02323			-80# SED	0.011	0.008	10	110	65	40.5	6	<1	<10	
T02324			-80# SED	0.146	0.065	15	15	5	40.5	42	<1	15	
T02325			-80# SED	0.202	0.087	10	20	5	40.5	2	<1	<10	
T02326			-80# SED	0.032	0.018	15	25	5	40.5	42	<1	<10	
T02327			-80# SED	<0.008	0.091	15	35	15	40.5	2	<1	<10	
T02328			-80# SED	<0.008	0.036	15	30	15	40.5	3	<1	<10	
T02329			-80# SED	Trace	0.017	10	30	10	40.5	42	<1	<10	
T02330			REPEAT OF T02329 -80# SED	<0.008	0.017	15	35	5	40.5	2	<1	<10	
T02331			-80# SED	Trace	0.025	10	15	5	40.5	2	<1	10	
T02332			-80# SED	0.058	0.019	15	20	45	40.5	42	<1	<10	
T02333			-80# SED	0.030	0.020	15	30	20	40.5	42	<1	<10	
T02334			ROCK CHIP - float cobbles, hematitic	<0.008						40	<1	30	
T02335			ROCK CHIP - Cream sulfstone - micaceous s/s										
T02336			ROCK CHIP - pink grey gtzite-grt	<0.008						25	<1	<10	
T02337			-80# MESH SED	0.026	0.010	15	10	5	40.5	2	<1	<10	

963045

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R.A. Pollock

PROJECT: LAKE LEA

PROSPECT:

SAMPLE STORAGE REQ'D:

LABORATORY: Analabs Coore DATE DISPATCHED:

1:250,000 SHEET:

TYPE OF SAMPLE:

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A1996

045

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES									
			Ag ⁺¹⁵⁰	Ag ⁺¹⁵⁰	Cu ⁺¹⁵⁰	Pb ⁺¹⁵⁰	Zn ⁺¹⁵⁰	As ⁺¹⁵⁰	As ⁺¹⁵⁰	Bi ⁺¹⁵⁰	W ⁺¹⁵⁰	
T02338		-80# SED	0.004	<0.005	15	5	10	<0.5	3	<1	<10	
T02339		-80# SED	0.105	<0.008	15	10	5	<0.5	<2	<1	<10	
T02340		STANDARD										
T02341		-80# SED	<0.008	0.016	15	30	35	<0.5	3	<1	<10	
T02342		-80# SED	0.025	<0.008	20	160	65	<0.5	5	<1	10	
T02343		-80# SED	0.138	0.017	20	175	55	20.5	7	<1	<10	
T02344		-80# SED	0.017	Trace	10	65	45	<0.5	3	<1	<10	
T02345		-80# SED	0.199	0.218	20	175	90	<0.5	4	<1	10	
T02346		-80# SED	0.374	0.416	10	50	45	<0.5	2	<1	<10	
T02347		-80# SED	0.034	0.036	15	25	45	<0.5	4	<1	<10	
T02348		-80# SED	0.013	<0.008	10	10	20	<0.5	3	<1	<10	
T02349		Rock chip - hematite shear-silicification	<0.008	<0.008					6	<1	<10	
T02350		-80# SED	0.011	0.010	20	40	35	<0.5	5	<1	<10	
T02351		-80# SED	0.122 0.023	0.027 0.031	20	40	35	<0.5	3	<1	<10	
T02352		-80# SED	0.038	0.018	10	20	15	<0.5	2	<1	<10	
T02353		-80# SED	0.112	1.071	5	15	15	<0.5	3	<1	<10	
T02354		-80# SED	0.214	0.015	10	5	20	<0.5	4	<1	<10	
T02355		-80# SED	0.036	0.018	5	5	15	<0.5	<2	<1	<10	
T02356		-80# SED	0.166	0.033	5	15	15	<0.5	2	<1	<10	
T02357		-80# SED	0.081	0.039	10	40	25	<0.5	2	<1	<10	
T02358		-80# SED	0.048	0.020	5	15	25	<0.5	6	<1	<10	

963046

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R.A. Pollock

PROJECT: LAKE LEA

PROSPECT:

SAMPLE STORAGE REQ'D:

LABORATORY: Analabs Coore

DATE DISPATCHED:

1:250.000 SHEET:

TYPE OF SAMPLE:

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A1996.

046

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES									
			AU ^{HIS}	AU ^{HIS}	CU ^{HIS}	Pb ^{HIS}	Zn ^{HIS}	Ag ^{HIS}	AS ^{HIS}	B ^{HIS}	W ^{HIS}	
T02359		-80# SD	<0.008	0.026	45	10	340	<0.5	<2	<1	<10	
T02360		STANDARD										
T02361		-80# SD	0.073 0.021	<0.008 <0.008	10	60	25	<0.5	<2	<1	<10	
T02362		-80# SD	0.096	<0.008	10	10	15	<0.5	<2	<1	<10	
T02363		-80# SD	0.101	<0.008	10	10	20	<0.5	<2	<1	<10	
T02364		-80# SD	0.017	0.266	5	5	10	<0.5	<2	<1	<10	
T02365		-80# SD	Trace	0.027	5	10	10	<0.5	<2	<1	10	
T02366		-80# SD	0.027	<0.008	5	<5	15	<0.5	<2	<1	<10	
T02367		-80# SD	<0.008	0.008	10	<5	15	<0.5	<2	<1	<10	
T02368		-80# SD	0.054	0.024	5	5	10	<0.5	<2	<1	<10	
T02369		-80# SD	<0.008	0.008	5	<5	10	<0.5	<2	<1	10	
T02370		-80# SD	0.070	<0.008	5	<5	10	<0.5	<2	<1	<10	
T02371		REPEAT T02370	0.021 0.012	0.008 Trace	5	<5	15	<0.5	<2	<1	<10	
T02372		-80# SD	0.102	0.011	10	10	10	<0.5	2	<1	10	
T02373		-80# SD	<0.008	<0.008	25	10	12	<0.5	<2	<1	<10	
T02374		-80# SD	0.009	0.012	10	5	10	<0.5	3	<1	<10	
T02375		-80# SD	0.303	<0.008	10	5	20	<0.5	3	<1	<10	
T02376		-80# SD	<0.008 0.474	<0.008 N/A	20 10	5 10	15 135	<0.5 <0.5	3 <2	<1 <1	<10 15	
T02377		-80# SD	<0.008	0.010	15	<5	10	<0.5	<2	<10	<10	
T02378		-80# SD	<0.008	<0.008	15	10	15	<0.5	3	<10	<10	
T02379		-80# SD	0.011	0.009	15	40	25	<0.5	5	<10	<10	

963047

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R.A. Parrock

PROJECT: LAKE LEA

PROSPECT:

SAMPLE STORAGE REQ'D:

LABORATORY: Analabs - Coode DATE DISPATCHED:

1:250.000 SHEET:

TYPE OF SAMPLE:

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				As ¹⁵⁰	As ⁷⁵⁰	Cd ¹⁵⁰	Pb ¹⁵⁰	Zn ¹⁵⁰	Ag ¹⁵⁰	As ¹⁵⁰	B ¹⁵⁰	As ¹⁵⁰	B ¹⁵⁰
T02380			-80# SED	0.010	<0.008	15	25	15	<0.5	<2	<10	<10	<10
T02381			-80# SED	<0.008	<0.008	10	10	15	<0.5	<2	<10	<10	<10
T3505			-80# SED	<0.008	0.019	15	25	10	<0.5	<2	<1	<10	<10
T3506			"	0.009	0.019	20	20	5	<0.5	<2	<1	10	10
T3507			"	0.016	0.012	20	15	5	<0.5	<2	<1	<10	<10
T3508			"	0.013	0.020	15	40	45	<0.5	<2	<1	<10	<10
T3509			"	<0.008	<0.008	25	20	15	<0.5	<2	<1	<10	<10
T3510			STANDARD										
T3511			"	0.008	0.012	20	15	10	<0.5	<2	<1	<10	<10
T3512			"	0.018	1/5	140	435	345	1.5	35	<1	15	15
T3513			"	0.023	0.012	20	20	10	<0.5	<2	<1	<10	<10

963048

GOLD FIELDS EXPLORATION PTY. LTD.

PROJECT: LAKE LEA PROSPECT:

1:250,000 SHEET:

TYPE OF SAMPLE: -80th SA

SAMPLE RECORD AND ANALYTICAL DATA SHEET

SAMPLE STORAGE REQ'D:

SAMPLE PREP. REQ'D:

LABORATORY: Analabs, Coode

ANALYSIS REQ'D:

COLLECTED BY: R. A. Pollock

DATE DISPATCHED:

DATE RECEIVED:

A19962

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES									
			Au	Cu	Pb	Zn	Ag	As	Bi	W		
T2054			<0.008	5	10	<5	<0.5	<2	<1	55		
T2055			<0.008	5	<5	<5	<0.5	<2	<1	160		
T2056			0.172	5	<5	<5	<0.5	<2	<1	160		
T2057			<0.008	5	<5	<5	<0.5	3	<1	40		
T2058			<0.008	10	155	<5	<0.5	<2	<1	15		
T2059			0.534	20	140	15	<0.5	<2	<1	80		
T2060		STANDARD										
T2061			1.133	5	<5	<5	<0.5	<2	<1	10		
T2062			Trace	2	<5	80	<0.5	<2	5	65		
T2063			<0.008	15	<5	45	<0.5	<2	<1	<10		
T2064			<0.008	20	<5	70	<0.5	<2	<1	<10		
T2065			<0.008	35	<5	150	<0.5	<2	<1	<10		
T2066			<0.008	50	25	170	<0.5	<2	<1	<10		
T2067			<0.008	55	<5	165	<0.5	<2	<1	<10		
T2068			<0.008	30	10	150	<0.5	<2	5	<10		
T2069			0.010	5	<5	<5	<0.5	<2	<1	<10		
T2070		STANDARD										
T2071			<0.008	5	<5	<5	<0.5	<2	<1	25		
T2072			0.270	5	<5	<5	<0.5	<2	<1	<10		
T2073		Soil sample - quartzite	<0.008	15	35	50	<0.5	7	<1	15		
T2074			<0.008	5	15	5	0.5	10	<1	<10		

963049

A1996

+ 150th Assay results

042

[illegible]

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R.A. POLTOCK

PROJECT: LAKE LEA

PROSPECT: GENERAL

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

1:250.000 SHEET: LEA

TYPE OF SAMPLE: - 80 #
STREAM SEDIMENTS

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A1996

050

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				Au +50#	Au -50#	Cu	Pb	Zn	Ag	Bi	As	W	
T4580	MARTNER 414830E	6 GRID 5405340N	-80# STREAM SED -169.1g	0.01 0.01 NR	0.19 0.08 NR	30	5	20	<0.5	1	4	<10	
T4581	MARTNER 9850E	4 GRID 12300N	" -282.2g	0.01 0.06 NR	0.08 0.10 NR	20	55	145	<0.5	4	7	<10	
T4582	9875E	12100N	" 208.3g	0.08 0.14 NR	0.06 0.14 NR	15	145	65	0.5	3	2	<10	
T4601	MARTNER 10100E	6 GRID 9925N	" 487.4g	0.87 1.33 NR	2.86 2.30 NR	20	5	30	<0.5	2	3	<10	
T4602	10140E	9950N	" 471.2g	0.40 0.04 NR	0.21 0.11 NR	15	5	10	<0.5	<1	2	<10	
T4603	MARTNER 10050E	4 GRID 12100N	" 154.6g	0.01 0.01 NR	0.19 0.18 NR	25	160	80	<0.5	3	3	<10	
T4604	10075E	12275N	" 254.3g	0.01 0.08 NR	0.29 0.13 NR	25	160	80	<0.5	3	3	<10	
T4605	10100E	12275N	" 365.8g	0.01 0.02 NR	0.01 0.01 NR	20	135	60	<0.5	2	4	<10	
T4606	10450E	11975N	" 163.3g	0.01 0.01 NR	0.01 0.03 NR	20	45	30	<0.5	<1	1	<10	
T4607	10475E	12375N	" 204.8g	0.01 0.01 NR	0.01 0.01 NR	25	135	55	<0.5	<1	3	<10	
T4608	N.W. 266 XON 413580E	5406140N	" 507.7g - Mon	0.01 0.01 NR	0.11 0.01 NR	10	5	10	<0.5	<1	2	<10	
T4609	413850E	5406150N	" 592.6g	0.01 0.01 NR	0.01 0.01 NR	10	10	15	<0.5	<1	5	<10	
T4610	L		STD B70 (0.36)	0.27	0.27								
T4611	413580E	5406230N	" 550.2g - Mon	0.01 0.01 NR	0.22 0.06 NR	5	10	10	<0.5	<1	3	<10	
T4612	413170E	5406580N	" 582.7g - Mon	0.01 0.01 NR	0.01 0.01 NR	5	<5	5	<0.5	2	2	<10	
T4613	413400E	5406440N	" 432.9g - Mon	0.01 0.01 NR	0.05 0.13 NR	5	<5	5	<0.5	1	3	<10	
T4614	412710E	5405960N	" 448.2g Mon	0.01 0.01 NR	0.01 0.01 NR	5	5	10	<0.5	<1	3	<10	
T4615	412650E	5406090N	" 496.2g Mon-gravel	0.01 0.01 NR	0.01 0.01 NR	10	5	10	<0.5	<1	4	<10	
T4616	412530E	5406240N	" 565.3g Mon	0.01 0.01 NR	0.01 0.01 NR	5	5	5	<0.5	<1	3	<10	
T4617	412460E	5406375N	" 516.5g Mon	0.01 0.01 NR	0.01 0.01 NR	<5	10	5	<0.5	<1	3	<10	
T4618	412250E	5406550N	" 407.3g Mon	0.01 0.01 NR	0.01 0.01 NR	<5	<5	5	<0.5	1	3	<10	

NR-SAMPLE
NOT ROASTED

963051

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R.A. POLTOCK.

PROJECT: LAKE LEA PROSPECT: GENERAL
1:250,000 SHEET: TYPE OF SAMPLE: -80# STREAM SEDIMENTS

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A1996

151

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				Au+150#	Au-150#	Cu	Pb	Zn	Ag	Bi	As	W	
T4619	N.W. REGION 43345 E	5405850 N	-80# STREAM SEDIMENTS 537.2g Moss	0.20 0.29 NR	0.21 0.46 NR	<5	10	10	<0.5	3	4	<10	
T4620	413220	5405990	" 378.8g Moss	0.49 0.14 NR	0.23 0.42 NR	10	20	15	<0.5	2	5	10	
T4621	"	"	" 481.2g Moss	0.36 0.98 NR	0.41 0.47 NR	5	20	10	<0.5	1	4	<10	
T4622	413235	5405955	ROCK SAMPLE - Quartzite with minor disseminated Py.	<0.01		15	40	10	4.0	<10	26	<10	5
T4623	STORMONT REGION 418110	540610	-80# STREAM SEDIMENT 489.4g Moss	<0.01 0.01 NR	<0.01 0.03 NR	5	<5	10	<0.5	1	2	<10	
T4624	418040	5404980	" 399.9g Moss	0.03 0.03 NR	0.14 0.04 NR	15	<5	10	<0.5	1	3	<10	
T4625	417960	5405295	" 373.5g Moss	<0.01 0.06 NR	0.01 0.01 NR	15	10	10	<0.5	1	3	<10	
T4626	418180	5405455	" 351.1g Moss	<0.01 0.01 NR	0.16 0.10 NR	15	<5	10	<0.5	3	3	<10	
T4627	418385	5405360	" 417.6g Silt	<0.01 0.01 NR	<0.01 0.01 NR	15	<5	15	0.5	<1	3	<10	
T4628	418750	5405345	" 236.3g "	<0.01 0.01 NR	<0.01 0.02 NR	5	<5	10	0.5	<1	2	<10	
T4629	418865	5404960	" 403.1g Moss	<0.01 0.01 NR	<0.01 0.01 NR	5	<5	5	0.5	<1	2	<10	
T4630			STD B65 (1.70)	1.43	1.29								
T4631	418810	5404790	" 138.9g Silt	<0.01 NR	<0.01	5	5	10	<0.5	1	3	<10	
T4632	418845	5404910	ROCK SAMPLE - Congl. 2 minor varieties hematite	Au <0.01		<5	15	<5	0.5	<10	1	<10	5
T4633	419090	5405320	-80# STREAM SEDIMENT 492.4g Moss	<0.01 0.01 NR	0.07 0.01 NR	5	<5	10	<0.5	1	1	<10	
T4634	419425	5405385	542.0g Silt-Moss	0.01 0.01 NR	<0.01 0.01 NR	5	<5	10	0.5	1	2	<10	
T4635	419600	5405260	439.6g Moss	<0.01 0.01 NR	<0.01 0.01 NR	10	<5	10	0.5	<1	6	<10	
T4636	419530	5405110	193.5g Moss	<0.01 0.01 NR	0.23 1.20 NR	5	<5	5	<0.5	3	3	<10	
T4637	418650	5405480	284.2g Moss-gravel	<0.01 0.01 NR	<0.01 0.01 NR	5	5	10	<0.5	2	2	<10	

NR - SAMPLE
NOT ROASTED

963052

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R.A. POLTOCK

PROJECT: LAKE LEA

PROSPECT: GENERAL

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

1:250,000 SHEET:

TYPE OF SAMPLE: - 80H STREAM
SEDIMENTS

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A1996[illegible]

NR- SAMPLE
NOT ROASTED

963053

053

BREAK-OF-SLOPE SAMPLES

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: RHR-
RW, T.L. & P.M.

PROJECT: LAKE LEA

PROSPECT: DEVONPORT

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

1:250,000 SHEET: LEA

TYPE OF SAMPLE: BREAK-OF-SLOPE
B-O-S

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

05
1994

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES							
				Cu	Pb	Zn	Bi	As	Au	Au
T4801	EASTERN BRANCH EAST 0-250M	BREAK-OF-SLOPE (COLLECTIVE 2kg SAMPLES JUST		2	5	36	3	2	FINE ASSAY 0.100	AURUM RESID 0.002
T4802	WEST 0-250M	" BELOW HUMUS LEVEL)		4	13	43	<1	28	0.017	0.004
T4803	EAST 250M-500M	"		3	5	19	2	3	<0.008	0.001
T4804	WEST 250-400M	"		5	35	31	<1	13	<0.008	0.005
T4805	WEST 400M-450M	"		5	13	88	<1	3	<0.008	0.002
T4806	WEST 450M-800M	"		3	7	77	1	2	<0.008	0.001
T4807	EAST 500M-700M	"		6	5	26	<1	2	<0.008	0.003
T4808	EAST 700M-900M	"		3	5	43	1	2	<0.008	0.004
T4809	WEST 800M-900M	"		2	4	24	<1	1	<0.008	0.001
T4810	EAST 900M-1100M	"		2	6	42	2	2	<0.008	<0.001
T4811	WEST 900M-1100M	"		3	4	27	2	2	<0.008	0.003
T4812	EAST 1100M-1300M	"		3	6	23	1	1	<0.008	0.001
T4813	WEST 1100M-1300M	"		114	15	40	3	4	0.008	0.006
T4814	EAST 1300M-1450M	"		5	8	17	<1	3	<0.008	0.001
T4815	WEST 1300M-1450M	"		5	10	11	5	2	0.017	0.066
T4816	EAST 1450M-1650M	"		4	4	52	<1	2	<0.008	0.002
T4817	WEST 1450M-1650M	"		2	4	12	<1	1	<0.008	0.004
T4818	EAST 1650M-1800M	"		3	4	15	3	<1	<0.008	0.003
T4819	WEST 1650M-2000M	"		4	5	21	1	<1	<0.008	0.002
T4820		STD B44 (0.60)		2	3	88	20	1	0.575	0.570
T4821	EAST 1800M-2000M	B-O-S (Humus rich)		4	5	20	2	<1	<0.008	0.010

963055

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

 COLLECTED BY: RHR
 R.W., T.L., P.M.
 DATE DISPATCHED:
 DATE RECEIVED:

PROJECT: LAKE LEA

PROSPECT: DEVONPORT

SAMPLE STORAGE REQ'D:

LABORATORY:

1:250,000 SHEET: LEA

TYPE OF SAMPLE: B-O-S

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

A19962

055

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES							
					Cu	Pb	Zn	Bi	As	Au	Au
T4822	WESTERN WEST 0-	BRANCH 310M	BREAK-OF-SLOPE SAMPLE		7	8	48	<1	<1	2.008	0.007
T4823	EAST (NW) 0 -	250M	"		9	11	17	<1	13	2.008	0.004
T4824	EAST 250 -	500M	"		13	45	35	<1	4	0.032	0.004
T4825	EAST 500 -	700M	"		8	6	29	3	2	2.008	0.009
T4826	WEST 500 -	700M	"		12	18	17	<1	1	0.008	0.004
T4827	WEST 310 -	500M	"		9	12	32	1	3		
T4828	WEST 700 -	900M	"		10	25	27	2	1	0.008	0.006
T4829	EAST 700 -	900M	"		3	3	16	2	1	2.008	0.003
T4830			—								
T4831	EAST 900 -	1100M	"		3	4	13	<1	1	2.008	0.003
T4832	WEST 900 -	1100M	"		5	6	12	<1	<1	0.017	0.003
T4833	EAST 1100M -	1200M	"		5	20	25	2	8	2.008	0.008
T4834	EAST 1200M -	1300M	"		4	9	15	<1	5	2.008	0.002
T4835	WEST 1100M -	1300M	"		6	7	20	<1	2		<0.001
T4836	EAST 1300 -	1450M	"		3	4	12	<1	2	2.008	0.002
T4837	WEST 1300 -	1550M	"		7	4	18	<1	<1	2.008	<0.001
T4838	EAST 1450M -	1675M	"		3	4	11	4	<1	2.008	0.001
T4839	300M BETWEEN NW & N.W. BRANCHES (CENTRE = 1450M)		"		3	5	12	1	<1	2.008	0.001
T4840			STD B44 (0.60)		3	4	85	21	1	1.670	0.580
T4841			—								
T4842	280M BETWEEN NW & WEST BRANCHES (CENTRE = 1450M)		"		4	3	17	<1	1	0.008	0.005

963056

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: ^{RHR}
RW, TL, P.M.C.

PROJECT: LAKE LEA

PROSPECT: NTH. WEST. REGION

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

1:250.000 SHEET: LEA.

TYPE OF SAMPLE: BREAK-OF-SLOPE

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A199

[illegible]

963057

SOIL ORIENTATION STUDY SAMPLES

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R. ROBERTS

PROJECT: LAKE LEA

PROSPECT: MARINER 6 GRID

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

1:250,000 SHEET:

TYPE OF SAMPLE: SOIL ORIENT.
STUDY

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A1996

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				Au	Cu	Pb	Zn	Ag	Bi	As	Sn	W	
T4301	10100N	10115E	POWER AUGER (P.A.) - ^{SKELETON} C-110R - 0.6M, Dh. grey silty	0.002	<5	140	15	<0.5	<1	5	7	<10	
T4302	"	"	T4301 Repeat 0.5M	0.007	5	110	25	"	"	3	8	"	
T4303	10100N	10130E	P.A. - SK. C-110R, Dh. grey silty	0.004	<5	10	15	"	"	2	4	"	
T4304	"	"	T4303 Repeat	0.005	5	<5	15	"	"	1	8	"	
T4305	10100N	10150E	P.A. - SK. C-110R, Med grey clayey	0.009	<5	40	15	"	"	12	10	"	
T4306	"	"	T4305 Repeat	0.003	<5	40	20	"	"	13	9	"	
T4307	10100N	10155E	P.A., SK. C-110R, l. grey brown, 1.3M	0.005	<5	85	15	"	"	6	5	"	
T4308	"	"	T4307 Repeat, 1.3M	0.006	<5	165	10	"	"	7	<3	"	
T4310			STANDARD B7D	0.280	<5	<5	35	"	35	1	9	"	
T4312	10050N → 10150N	10175E	Break-of-slope (B.O.S) sample west side of creek	0.004 0.005	7	14	20	0.2	<1	2	7	<10	
T4313	"	"	" sample east side of creek	0.001 0.004	<1	<1	5	<0.1	"	1	<3	"	
T4314	10075N	10180E	Rock float along western B.O.S. sample	0.001 0.002	65	<5	20	<0.5	"	73	5	"	
T4315	10100N	10145E	Rock-chip sample - grey-green gneiss	0.008 0.001	5	"	10	"	"	7	8	"	
T4316	10100N	10150E	TEST PIT: A1-110R, 0.1-0.2M, black	0.001 0.001	<5	<5	15	<0.5	<1	2	4	<10	
T4317	"	"	" : TRANS, 0.2-0.3M, med. grey	0.001 0.002	<5	"	10	"	"	1	5	"	
T4318	"	"	" : TRANS, 0.3-0.4M, med. grey	0.001 0.001	<5	"	5	"	"	5	<3	"	
T4319	"	"	" WITHD. bedrock, 0.4-0.5M, siltstone/shale	0.001 0.001	<5	5	15	"	"	30	9	10	
T4320	"	"	" WITHD. bedrock, 0.5-0.6M, " with organic stain	0.001 0.001	<5	<5	15	"	"	<1	4	<10	

963059

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R. ROBERTS

PROJECT: LAKE LEA

PROSPECT: STORMONT GRID

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

1:250,000 SHEET:

TYPE OF SAMPLE: SOIL ORIENTATION
STUDY

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A19962

059

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				Au	Cu	Pb	Zn	Ag	Bi	As	Sn	W	
T4321	3250W	1650S	POWER AUGER (P.A.), B-HOR, 0.2-0.6M, Orange-bm clayey	0.088	555	30	115	40.5	1700 1330	11	300	500	
T4322	"	"	Repeat of T4321	0.077	575	50	115	"	1875 1500	10	280	450	
T4323	3250W	"	P.A., C-HOR, 0.6-1M, Blue green with sham chips	0.049	550	60	155	"	1170 2300	9	260	510	
T4324	"	"	Repeat of T4323	0.051	590	60	135	"	2100	7	230	600	
T4325	3240W	1650S	Rock % - Magnetite sham	0.070	70	10	150	"	1800 1440	7	120	290	
T4326	3240W	1650S	TEST PIT: 0.1-0.25M, B-HOR; Bm.	0.072 0.100	145	30	125	"	710	10	240	240	
T4327	"	"	" : 0.25-0.55M, B/C HOR, Orange-bm.	0.080 0.100	425	75	130	"	660	21	230	140	
T4328	"	"	" : 0.45-0.60M, B-HOR, Bm	0.160 0.140	165	25	100	"	710	14	250	230	
T4329	"	"	" : 0.70-0.90M, C-HOR, Yell-Orange	0.113 0.100	355	175	145	"	910	12	320	230	
T4330	"	"	" : 0.90M, % base of pit: Calc-silicates	0.092 0.074	195	60	170	"	990	6	210	150	
T4331	3250W	1660S	P.A., C-HOR, 0.2-0.6M, blue grey ± mag. sham	0.019	60	<5	60	"	680	9	150	150	
T4332	"	"	Repeat of T4331	0.010	100	"	60	"	810	20	160	250	
T4333	3250W	~~1665S~~ (1660S)	WACKER CASING (W/C), B/C-HOR, 0.1-0.3M, dk Brngilly	0.005	60	"	70	"	560	19	230	350	
T4334	"	"	W/C Repeat of T4333	0.002	50	"	80	"	450	17	260	260	
T4335	3250W	~~1665S~~ (1660S)	W/C, C-HOR, Blue-grey ± mag. sham	0.016	50	"	80	"	575	12	240	430	
T4336	"	"	Repeat of T4335	0.015	55	15	110	"	900	40	340	180	
T4337	3250W	~~1670S~~ (1665S)	W/C, A/B HOR, 0.1-0.2M, mag sham chips	0.006	10	10	70	"	560	8	250	280	
T4338	"	"	Repeat of T4337	0.004	55	70	110	"	395	4	150	120	
T4339	"	~~1670S~~ (1665S)	W/C, C-HOR, 0.2-0.6M, blue-grey ± mag. sham	0.006	60	20	115	"	370	3	160	100	
T4340	"	"	Repeat of T4339	0.008	85	10	110	"	610	4	170	160	

963060

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R. ROBERTS

PROJECT: LAKE LEA

PROSPECT: STORMONT GRID

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

1:250,000 SHEET:

TYPE OF SAMPLE: ORIENT. STUDY
CONT.

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A1996.

060

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES									
				Au	Cu	Pb	Zn	Ag	Bi	As	Sn	W	
T4341	3250W	1675S(1670S)	W/C, C-HOR, 1.4-1.5M, Blue-grey & mag. sh. am	0.020	85	65	115	40.5	865	11	210	150	
T4342	"	"	Repeat of T4341, 1.5-1.6M, li. bn-grey	0.021	40	65	100	"	300	5	160	75	
T4343	"	1675S(1670S)	W/C, B/C-HOR, 1.1-1.4M, Orange-bn.	0.019	115	85	115	"	960	15	180	140	
T4344	"	"	Repeat of T4343	0.015	140	110	130	"	905	12	190	130	
T4345	3100W	1550S	SOIL ABOVE STORMONT MINE - IN TREE BASE; Dh. bn	0.560	10	90	75	"	220	13	40	10	
T4346	"	"	" " " " - CRACKS IN ROCK, Dh. bn	0.680	25	80	165	"	131	14	40	410	
T4347	"	"	ROCK % - Pale green calc. - silicate	0.360	45	25	115	"	71	2	20	10	
T4348	3250W	1675S	W/C, B/C-HOR, 1.5-1.8M, grey-bn clayey	0.016	55	85	75	"	535	14	120	150	
T4349	"	"	Repeat of T4348	0.020	95	90	85	"	370	12	130	100	
T4350	"	1675S	W/C, B-HOR, 0.6-1.5M, Med.-grey bn.	0.015	70	85	80	"	360	9	120	75	
T4351	"	"	Repeat of T4350	0.045	115	105	85	"	560	19	160	100	
T4352	3250W	1680S	W/C, C-HOR, lt grey cream & quartz chips	0.012	15	10	50	"	15	3	30	35	
T4353	"	"	Repeat of T4352	0.006	15	20	40	"	41	6	9	10	
T4354	"	1680S	W/C, B-HOR, Black & organic	0.007	5	15	20	"	11	25	25	10	
T4355	"	"	Repeat of T4354	0.010	45	45	15	"	41	10	8	410	
T4356	3250W	1690S	W/C, C-HOR, 0.9-1.5M, grey & calc. silicate chips	0.007	5	45	45	"	32	3	35	15	
T4357	"	"	Repeat of T4356	0.004	10	45	50	"	37	3	30	20	
T4358	"	1690S	W/C, B-HOR, 0.3-0.75M, Orange/Bn clayey	0.009	5	10	40	"	15	76	20	15	
T4359	"	"	Repeat of T4358	0.007	5	5	40	"	14	75	25	15	
T4360	"	1695S	W/C, C-HOR, 1.0-1.6M, Tan Bn & silst. chips	0.008	20	45	40	"	41	21	20	410	
T4361	"	"	Repeat of T4360, Mn staining	0.007	5	45	60	"	21	90	30	10	

963061

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: R. ROBERTS

PROJECT: LAKE LEA

PROSPECT: STORMONT GRID

SAMPLE STORAGE REQ'D:

LABORATORY:

DATE DISPATCHED:

1:250,000 SHEET:

TYPE OF SAMPLE: ORIEN. SOIL
STUDY

SAMPLE PREP. REQ'D:

ANALYSIS REQ'D:

DATE RECEIVED:

A19962

1961

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES								
				Au	Cu	Pb	Zn	Ag	Bi	As	Sn	W
T4362	3250W	1695S	w/c, B-HOR, Orange-bm clayey, Mn	0.018	5	15	90	40.5	25	180	30	410
T4363	"	"	Repeat of T4362	0.009	5	20	70	"	28	10	40	25
T4364	3250W	1700S	w/c, C-HOR, 1.5-1.8M, grey-blue & med chips	0.004	5	5	25	"	106	16	60	15
T4365	"	"	Repeat of T4364	0.003	5	5	35	"	51	42	45	40
T4366	"	1700S	w/c, B-HOR, 0.8-1.5M, Orange-bm clayey	0.006	5	45	20	"	43	38	50	20
T4367	"	"	Repeat of T4366	0.004	5	45	25	"	39	80	40	20
T4368	3250W	1700S	w/c, LAG skeletal material, Med. bn grit	0.004	5	45	25	"	21	40	30	30
T4369	"	"	Repeat of T4368	0.008	5	45	35	"	16	90	30	30
T4370	3250W	1700S	WACKER SAMPLE (W), 1.5M, B/C-HOR, Orange-bm	0.006	15	45	45	"	112	120	50	30
T4371	"	1695S	WACKER, 1.2M, B/C-HOR, Bm clayey	0.002	10	10	75	"	17	150	20	15
T4372	"	1690S	WACKER, 1M, C-HOR, Blue-grey with rocks	0.006	10	45	55	"	60	4	45	30
T4373	"	1685S	WACKER, 1M, C-HOR, green-grey	0.004	15	45	60	"	41	12	20	410
T4374	"	1680S	WACKER, 0.7M, C-HOR, grey & gtzite chips	0.006	15	45	35	"	30	3	80	140
T4375	"	"	STANDARD 844	0.380	5	45	95	"	12	1	15	410
T4376	"	1675S	WACKER, 1.9M, grey gravel ? site	0.052	10	45	20	"	10	1	15	410
T4377	"	1670S	WACKER, 2.0M, C-HOR, Orange-bm clay & sh. chips	0.007	20	45	35	"	101	3	55	35
T4378	"	1665S	WACKER, 0.6M, C-HOR, green-black & sh. mag. Rx	0.006	50	30	155	"	255	2	70	30
T4379	"	"	WACKER, 1.4M, C-HOR, Blue-grey & sh. chips	0.110	465	25	215	"	1295	280	300	85
T4380	"	1660S	WACKER, 0.4M, C-HOR, grey-black & mag. sh. chips	0.034	80	45	85	"	635	9	170	90
T4381	"	1655S	WACKER, 0.25M, C-HOR, Black-grey & sh. chips	0.006	20	45	135	"	58	5	110	190
T4382	"	1650S	WACKER, 1.0M, B/C-HOR, Bm-grey & mag. sh. chips	0.036	1000	45	175	"	2100	12	400	430

963062

APPENDIX IIILAKE LEA STREAM SEDIMENT ORIENTATION SURVEY

063

MEMORANDUM

To Simon Gatehouse - G.F.E.L. Canberra
From Fergus FitzGerald - G.F.E.L. Burnie
Subject E.L.41/83 Lake Lea: Stream Sediment Orientation Survey
Date 8th November, 1985.

FGF/9513/4

Following your visit to Burnie Office last month, geological contractor Roger Poltock and I spent two days in the field collecting stream sediment samples as part of an orientation geochemical survey. The 21st October was spent sampling in Castle Creek adjacent to the Stormont Mine, and the 22nd was spent sampling the Devonport Creek in the vicinity of the old workings. A list of the sample numbers, their location and brief comments is attached.

The field sampling method involved wet sieving to minus 80# fine stream sediment material collected from the active parts of the stream over an interval of between 10 and 20 metres. Approximately 600-750 g of saturated minus 80# material was collected for each sample. A duplicate sample was taken at each site by similarly sampling over an adjacent 10 to 20 m interval, either upstream or below the first sample location.

Castle Creek is a minor tributary of the Lea River and drains a geologically complex area (approximately 0.5 km²) composed of Moina Sandstone, metamorphosed calcareous "transition beds" and Gordon Limestone (now calc-silicate and magnetite skarns), greybilly and basalt.

The Stormont Mine, a bismuth-gold skarn deposit, occurs on the bank of the creek towards the junction with the Lea River. The orientation sample sites were chosen to test the stream sediment material: downstream from the workings and prominent mine dumps; immediately upstream from the workings; several locations further upstream and a final site in the headwaters above any evidence of disturbance and prospecting activity.

Devonport Creek is a larger tributary of the Lea River and drains an area approximately 1.7 km² which appears to be composed entirely of Moina Sandstone-Owen Conglomerate. The Devonport Mine, which is located towards the headwaters of the creek, consists of small scale workings exploiting auriferous veins and fractures within the bedrock sandstones. The sample sites were similarly chosen to test the stream sediments: well below the workings; close to the workings and upstream from any evidence of prospecting activity.

The samples were submitted to Analabs Burnie where they were prepared as follows:

1. Oven dried
2. The entire sample was pulverized in a Labtech mill to a nominal -200#
3. Weighed
4. Sub-sampled for assay of Cu, Pb, Zn, Ag and Fe by AAS in Burnie
5. Sub-sampled for assay of Sn, W, Ba, As and Bi by XRF in Cairns
6. 30 g sub-sample: roasted at 500°C before aqua regia digest and assay for Au by AAS in Burnie.

064
Simon Gatehouse

8th November, 1985.

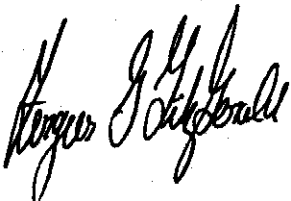
2.

As a result of discussions between yourself and Peter Dzwonczyk, the Analabs Chief Chemist in Burnie, it was decided to repulverize the remainder of each sample in the Labtech mill for a minimum of 10 minutes and then repeat the gold determinations. Two samples were selected which contained apparently high gold values and a 50 g sub-sample was taken before and after this additional pulverizing. These sample pulps, labelled T946A and B and T962A and B, are included for your examination of the size fraction. After further discussion with Peter, I agreed to pulverize the remaining material yet a third time using a disc grinder and repeat the gold analyses again. The results from all of these determinations are attached.

My preliminary comments on the results are that generally the second and third grindings provided much better reproducibility in gold than the initial preparation, which suggests that the latter was possibly inadequate and/or that perhaps we are dealing with relatively coarse gold grains within the minus 80# fraction. However, a more important concern is the marked variation between the gold values at duplicate sites even for those samples approaching 500g dry weight.

I would appreciate your comments and suggestions on this study, so that we can plan an effective geochemical program. We still expect to commence this work early in the New Year using Roger.

Regards,



Fergus FitzGerald

Encl:

065

E.L.41/83 LAKE LEA : STREAM SEDIMENT ORIENTATION SURVEY: 7/11/85

<u>Sample No.</u>	<u>Drainage</u>	<u>Location (AMG)</u>	<u>Local Geology</u>	<u>Remarks</u>
T0946	Castle Creek	5406080mN 418870mE	Calc-silicate	Just below
T0947	"	5406065mN 418865mE	skarn	Stormont Mine
T0948	"	5405960mN 418835mE	Moina	Just above
T0949	"	5405940mN 418830mE	Sandstone	mine dumps
T0950	"	5405940mN 418770mE	Transition Beds	150m above
T0951	"	5405835mN 418760mE	skarns	workings
T0952	"	5405725mN 418680mE	Calc-sil and	Just below
T0953	"	5405710mN 418680mE	magnetite skarns	dam
T0954	"	5405600mN 418650mE	Greybilly	100m above
T0955	"	5405585mN 418650mE		dam
T0956	Devonport Creek	5406335mN 416890mE	Moina	Just above
T0957	"	5406320mN 416895mE	Sandstone	major junction
T0958	"	5406830mN 417010mE	Moina	Approx. 600m
T0959	"	5406850mN 417005mE	Sandstone	below workings
T0960	"	5407235mN 416985mE	Moina	100m below
T0961	"	5407270mN 416975mE	Sandstone	Devonport Mine
T0962	"	5407540mN 416815mE	Moina	Just above
T0963	"	5407570mN 416810mE	Sandstone	last workings

066 SG:dt

MEMORANDUM

To : Fergus Fitzgerald cc. J. Angus
From : Simon Gatehouse
Subject : LAKE LEA STREAM GEOCHEMICAL ORIENTATION
Date : 27th November, 1985.

DATE: 23 DEC 1985
FILE No: 9513/4
INITIALS: R

1. INTRODUCTION

The description of the orientation is more than adequately covered in your memo to me on the 8th November, 1985 (REF. FGF/9513/4). This memo should be read in conjunction with yours. I agree with your preliminary comments and add the following for your contemplation.

2. RESULTS

Plots of the stream sediment geochemistry are attached (Figures 2-9 inclusive). Unfortunately I do not have a topographic map to pencil in the streams at the moment.

3. DISCUSSION3.1 GOLD

I have attempted to assess the imprecision of the gold results.

3.1.1 Sub-sampling and assay precision.

The initial results, plotted as figure 2, indicated the overall reproducibility of sampling and analysis was extremely poor. It remained a possibility at that stage that this may have been due to poor preparation of the original material. A repeat assay on one sample (T956, 0.079ppm, 2.332ppm) supported this view. Ten minutes of further pulverising in the Labtec was carried out to ensure gold particle comminution. A further fine grinding in a disc pulverizer was also carried out as a further attempt at improving sub-sampling precision. Comparison of Au⁰ and Au¹ pairs with Au⁰ and Au² pairs did not indicate any improvement in the precision due to the final grinding.

067

Consequently Au¹ and Au² represent duplicate pairs which can be used to assess the sub-sampling plus assay precision of the orientation. A Howarth and Thompson plot suggests the precision of this step is +70% at two standard deviations. It is not possible to further partition this error into sub-sampling and assay-step precisions separately with the information we have at present. It is probable that the main contribution to this error comes from the sub-sampling step and not from the assay step. This will be independantly checked in the near future.

There has been suggestion from Wau ore (not proof) that extended grinding may, in some circumstances, make precisions worse. I say this as a cautionary note only. It is something we must check in due course.

3.1.2 Site precision

Plotting of site duplicates on a Howarth and Thompson plot indicated these had significantly worse precision than sample duplicates (figure 1). A figure of +100% is suggested and indicates that lack of site reproducability is the dominant component of overall error. The effect of this precision can be seen in figure 3 where both sample and site duplicates are plotted on one diagram.

Given this information the best possible site reproducability we could hope for would be around +80% if sub-sampling and analytical errors were made negligably small, say 10%. Given say 900gms this would be the best possible outcome we could expect by sampling -80# material and I feel it is unacceptably bad.

For comparison the Mount Morgan survey where -80# samples have been taken with the same specifications, the site precisions are +40% so far.

3.1.3 Options and Discussions

Despite possible improvements in sampling and assay precision there would remain severe site imprecision in -80# samples. This could be tackled or assessed in a number of ways.

- a) Accept it! Given both fine and coarse grained mineralized gold sources in a particular survey area the consequences of this approach are that the following circumstances could not be distinguished.
- i) high potential coarse from background.
 - ii) low potential coarse from background.
 - iii) high potential fine from low potential coarse.
 - iv) high potential fine from high potential coarse.

In summary, all drainages with gold above threshold may have potential; some drainages with gold below threshold may have potential for coarse gold deposits and threshold would be extremely difficult to define with confidence.

- b) Assess site variability With this approach an attempt would be made to assess the hydraulic variability of stream sample sites. This may assist in better ranking of follow-up work for any non-below detection limit samples. Parameters which may reflect hydraulic conditions are:
- i) % boulders, gravel sand.
 - ii) -80# yield (course on fine).
 - iii) stream and bank gradient and character.
 - iv) stream width and amount of incision.
 - v) % of stream bed which is free of alluvium.
 - vi) bed relief i.e. average height of turbulence causing obstructions. eg. waterfalls rapids, boulders, trees, gravel etc.
 - vii) intuitive ranking of trap site and/or possible turbulence when in flood.

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These are selected as a compromise between ease of observation and probable hydraulic significance.

I am currently doing a literature review on the subject. Similar information to the above has been collected at Mount Morgan but has not been assessed yet.

- c) Assess the site precision of finer factors If 200-300 gms of -150# material were used we could reasonably expect sampling plus analytical precision to be around 20-30% (see fig. 8), provided analytical precision alone is not greater than this.

-200# fraction could be even better at 50gms initial samples mass. It can be argued that finer fractions are less subject to hydraulic differentiation of variably dense fractions given similar stream conditions. I will leave to you the agony of assessing the logistic implications of this suggestion. I would however strongly urge you not to dismiss this approach due, to potential logistic problems, before trying it.

Consider the trade-offs implicit in figures 8 and 9 and the following table.

MESH	MASS			
	50g	100g	500g	1kg
-80#	100%	100%	60%	40%
-150#	60%	50%	20%	15%
-200#	42%	35%	12%	9%

070

The grainsize versus sample mass tradeoff for an expected 50% precision is given in figure 9. It remains a possibility that 30-50gms of -200# may be conveniently extractable from the stream in some manner

3.2.1. Iron, Arsenic, Bismuth and Tin

Figure 4 shows these are anomalous in Castle Creek (draining both Stormont Workings and probably other sites).

To a degree there appears to be sympathetic lack of site reproducibility between these elements and gold in Castle Creek. Lack of source detection limits thus giving values prevents any similar assessment in Devonport Creek.

This sympathy, it was thought, may have been due to a similar heavy mineral concentration mechanisms operating on both gold and these metals. If this were the case then ratioing Au to these metals may have removed some of the imprecision. It was tried and site reproducibility did not improve.

It is also probable that the source for gold upstream from the Stormont workings is of different character to the Stormont mineralization, viz richer in As and poorer in Bi. If this is a 'basal billy' gold source might these elements be characteristic?

3.2.2 Copper Lead Zinc Silver

Figure 5 suggests low level zinc may be characteristic of the sources shedding into Castle Creek both the skarn, as at Stormont, and the unknown source type further upstream. Low level lead may be characteristic of the skarn source.

3.2.2 Tungsten and Barium

Neither of these elements are of discriminatory value due to their background levels (Ba) or their low level erratic distribution (W).

4. DISCUSSION

Given the problems of -80# sampling it becomes relevant to discuss alternative sampling schemes.

- i) Panned Concentrate. I understand that in most cases a larger amount of material was processed to achieve the desired quantity of -80# than would have been used to obtain a panned concentrate.

Thus, this sampling would be more representative of the stream than would a panned concentrate. It is apparent there is no problem with detection limits and thus there is not the need for the preconcentration step implicit in panning.

Information I have does not indicate that a panned concentrate would give a 'better' signal under the circumstances.

- ii) Bulk cyanide

Under the circumstances and assuming no problems were encountered with the bulk cyanide technique, the selection of 4-5kg of - 1mm ore material would similarly not be expected to give 'better' values. Given this and my reservations on bulk cyanide in active streams, I do not consider bulk cyanide would necessarily solve our problems.

- iii) Finer mesh sizes

The diagram in figure 9 represents the trade-off between sample mass and grain-size. The selection of -80# at say 600gms to achieve a +50% sample precision may not be logistically optimum in the Lake Lea EL or on the West Coast in general. It is possible that less mass of finer fractions may be easier to achieve. Certainly there is an expectation in finer fractions that hydraulic effects would be less and consequently site variability may improve as well.

In terms of previous conversations we have had, might not a smaller quality of finer material be more easily collected by pumps and filters?

5. SUMMARY

Sampling of 300-400gm, -80# for goldgeochemistry has extremely poor reproduce ability at the Lake Lea EL. Precisions of around +100% are probable.

It seems this is not due to poor sub-sampling but is intrinsic stream variability and would be inherent in a -80# sampling program should it be carried out. These results obviously have significant implications for gold sampling of the West Coast in general.

6. RECOMMENDATIONS

- 6.1 Logistic and technical orientation should be carried out for finer sediment fractions in the same streams.
- 6.2 As precisions may vary from program to program, depending on sample site and gold source characteristics, periodic duplication in all surveys is necessary to assess the overall reliability of the data for that program. Duplication should be biased towards areas considered prospective, from independent criteria, so that values are likely to be greater than detection limits.
- 6.3 Irrespective of the size fraction being sampled, it is strongly recommended that stream parameters be recorded. Some or all may prove eventually to be of little value but such an assessment cannot be made without a reasonable base of figures.
- 6.4 If it is considered that the eventual cost/effectiveness for implementing these recommendations is too high, serious consideration should be given to not conducting stream sediment surveys as a viable prospect location technique in areas such as the Lake Lea EL. Such poor precisions can make data extremely misleading and alternative exploration techniques should be considered.

Simon Buchanan

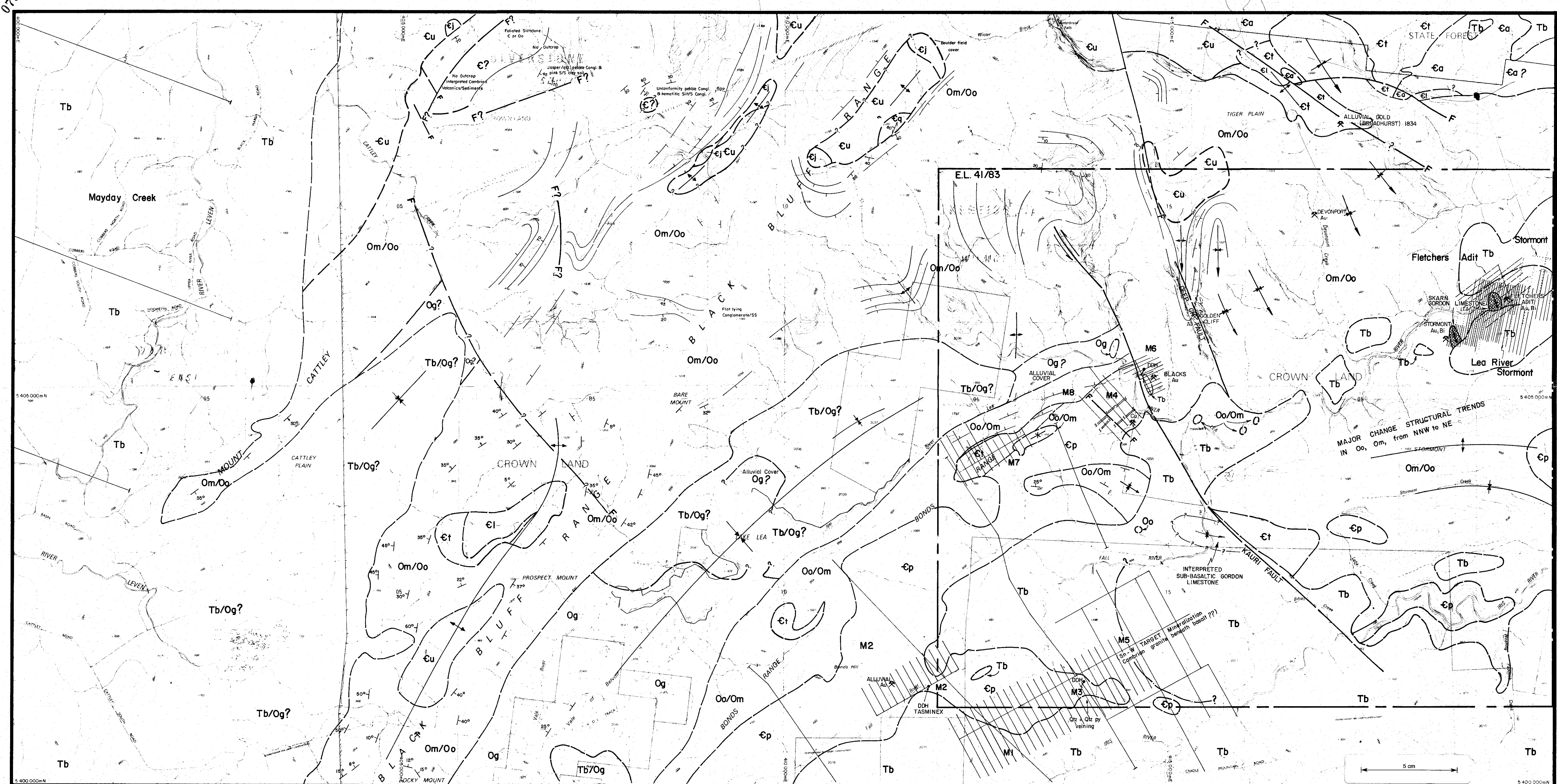
073

APPENDIX IV

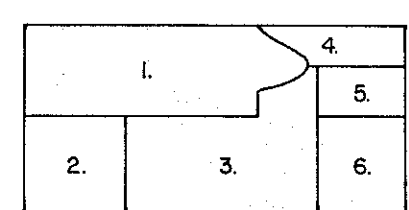
BUDGET, 1986-87

APPENDIX IVBUDGET, 1986-87Expenditure to the end of the 1986-87 Financial Year

<u>Item</u>	<u>Cost</u>
Salaries, Wages and On-Costs	\$ 26,000
Travel and Accommodation	200
Consultants and Contractors	12,800
Sample Preparation and Assays	5,000
Stores	2,000
Vehicle/Plant Hire	3,000
Office	1,000
TOTAL	\$ 50,000



GEOLOGICAL RESPONSIBILITY DIAGRAM



1. Burnie 1:250,000 sheet : D.B. Seymour, R.P. unpublished mapping
2. Mackintosh 1 mile sheet
3. Geopko mapping (1978-1982)
4. Comalco mapping (Weste, 1978)
5. Sheffield 1 mile sheet, R.P. unpublished mapping
6. Middlesex 1 mile sheet, R.P. unpublished mapping

TERTIARY

- Tb Basalt, locally underlain by greybill
- Tb/Og Basalt over interpreted Gordon Limestone
- Og Gordon Limestone
- Om/Oo Moine Sandstone/Owen Conglomerate undifferentiated Predominantly bioturbated sandstone

ORDOVICIAN

- CAMBRIAN
- Cj Volcanoclastic Conglomerate - Jukes Equivalent(?)
 - Cq Quartz phric volcanics
 - Ct Fine-medium grained volcanics, clastics
 - Cl Rhyolite-dacite volcanics, probably lavas
 - Ca Andesite lavas
 - Cp Quartz-feldspar-biotite porphyry, partly intrusive, local sericitic alteration
 - Cu Undifferentiated volcanics and sediments

LEGEND

ALTERATION

- Magnetite, garnet skarns
- Silicification with corundum sericite-specularite alteration

CULTURE

- Grid Lines
- M1 : Mariner I (Geopko grid)
- Diamond drill hole
- Strike with dip of bedding
- Bedding trend line
- Anticline
- Syncline
- Blacks Au
- Old mines and prospects, name and contained metals
- Fault with movement shown
- Possible margin of concealed granite cupola

GOLD FIELDS EXPLORATION PTY. LIMITED

963076

E.L. 41/83
LAKE LEA AREA
FACTUAL AND INTERPRETIVE
GEOLOGY
BLACK BLUFF RANGE/CAMBRIAN WINDOWS

SCALE 1:25000

500 0 500 1000 METRES

DRAWN BY	R.P.
DRAFTSMAN	TGDS/S.E.
DATE	Nov. 84
REVISIONS	
R.P./D.S.-Oct. 85	
FILE NO.	
FIG 2	

86 2619

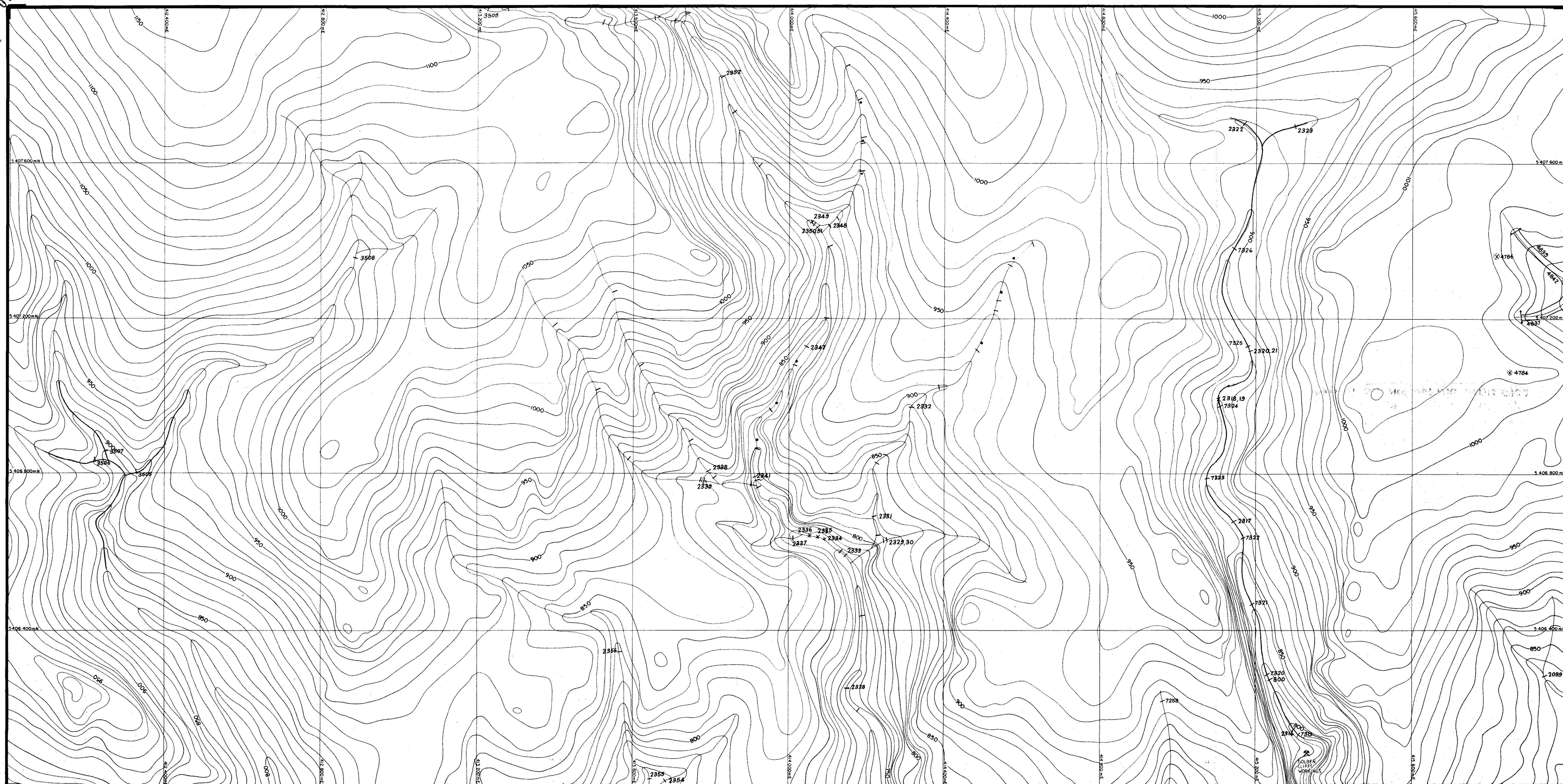
EL 41/83 56SKM
RENISON LTD
22-12-86
RIVER

000 7H
HOLDINGS P/L
TL
49/2155
1M/83
GUNNS HOL
M

INDEX TO ADJOINING MAPS

GUILDFORD 2841	LOONGANA 4041	WILMOT SOUTH WILMOT North 4221
PEARSE 0840 015	LEA 4040	CETHANIA 4240
CHARTER 3839	PENCIL PINE 8139	LIENA 4239

963077 FIG. 3 86-2619



GOLD FIELDS EXPLORATION PTY. LIMITED

SAMPLE LOCATIONS

SCALE 1:5000

DRAWN BY :	R.R.
DRAFTSMAN :	S.F.
DATE :	JULY.86
REVISIONS :	
FILE NO.	

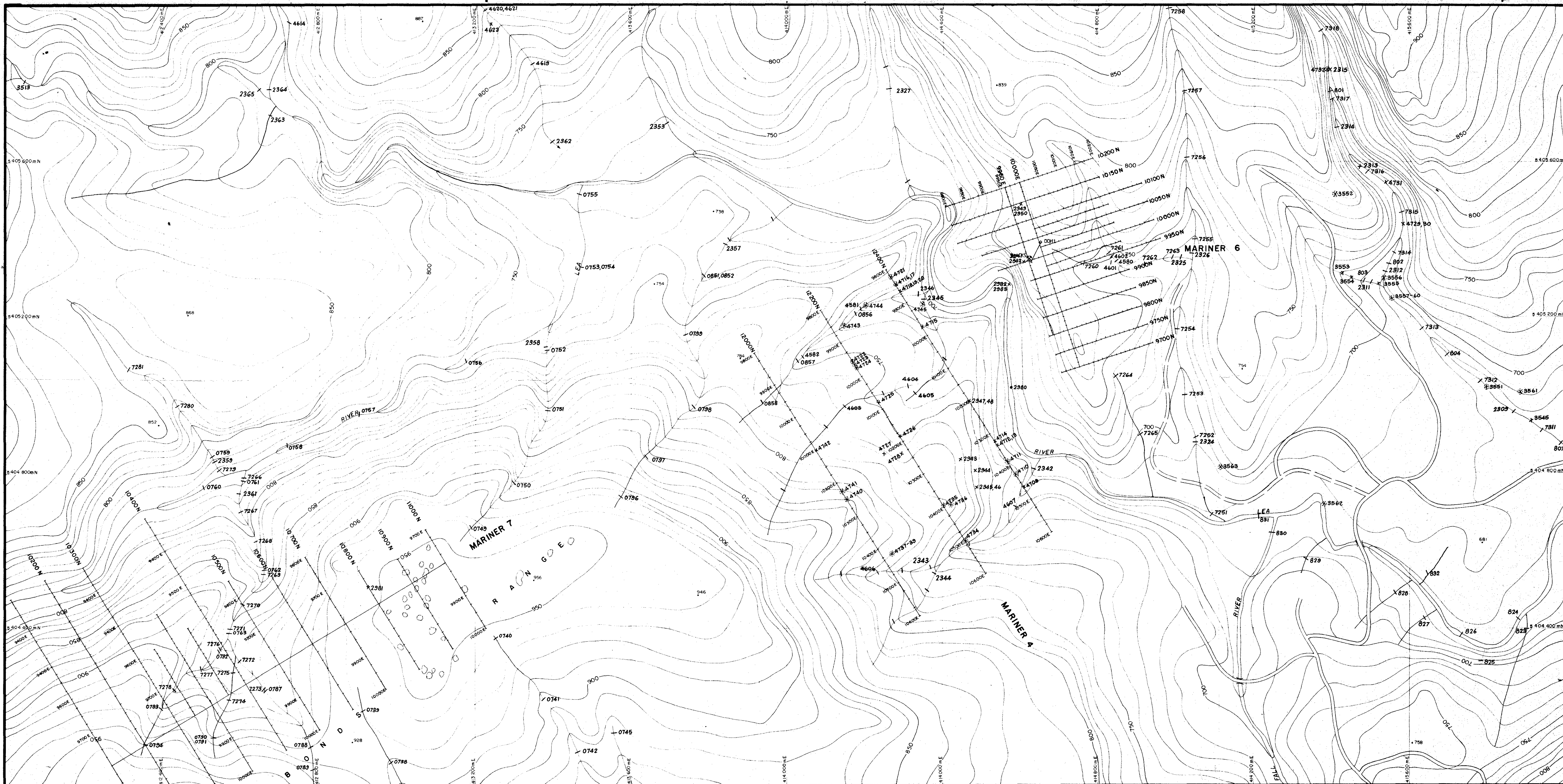
FIG.4

86-2619

KEY

- x Rock Chip (Float) Sample
- ⊗ Rock Chip (Outcrop) Sample
- Stream Sediment Sample
- Break - of - Slope Sample
- Soil Sample

INDEX TO ADJOINING MAPS		
1-3	1-4	1-5
1-3	LEA 2-4	2-5
3-3	3-4	3-5



KEY
x Rock Chip (Float) Sample
* Rock Chip (Outcrop) Sample
- Stream Sediment Sample
- Break-of-Slope Sample
• Soil Sample

INDEX TO ADJOINING MAPS		
2-3	2-4	2-5
3-3	LEA 3-4	3-5
4-3	4-4	4-5

963080

GOLD FIELDS EXPLORATION PTY. LIMITED

E.L. 41/83-LAKE LEA AREA

SAMPLE LOCATIONS

5 cm

86-2619

5932

SCALE 1:5000

100 50 0 100 200 METRES

DRAWN BY R.R.

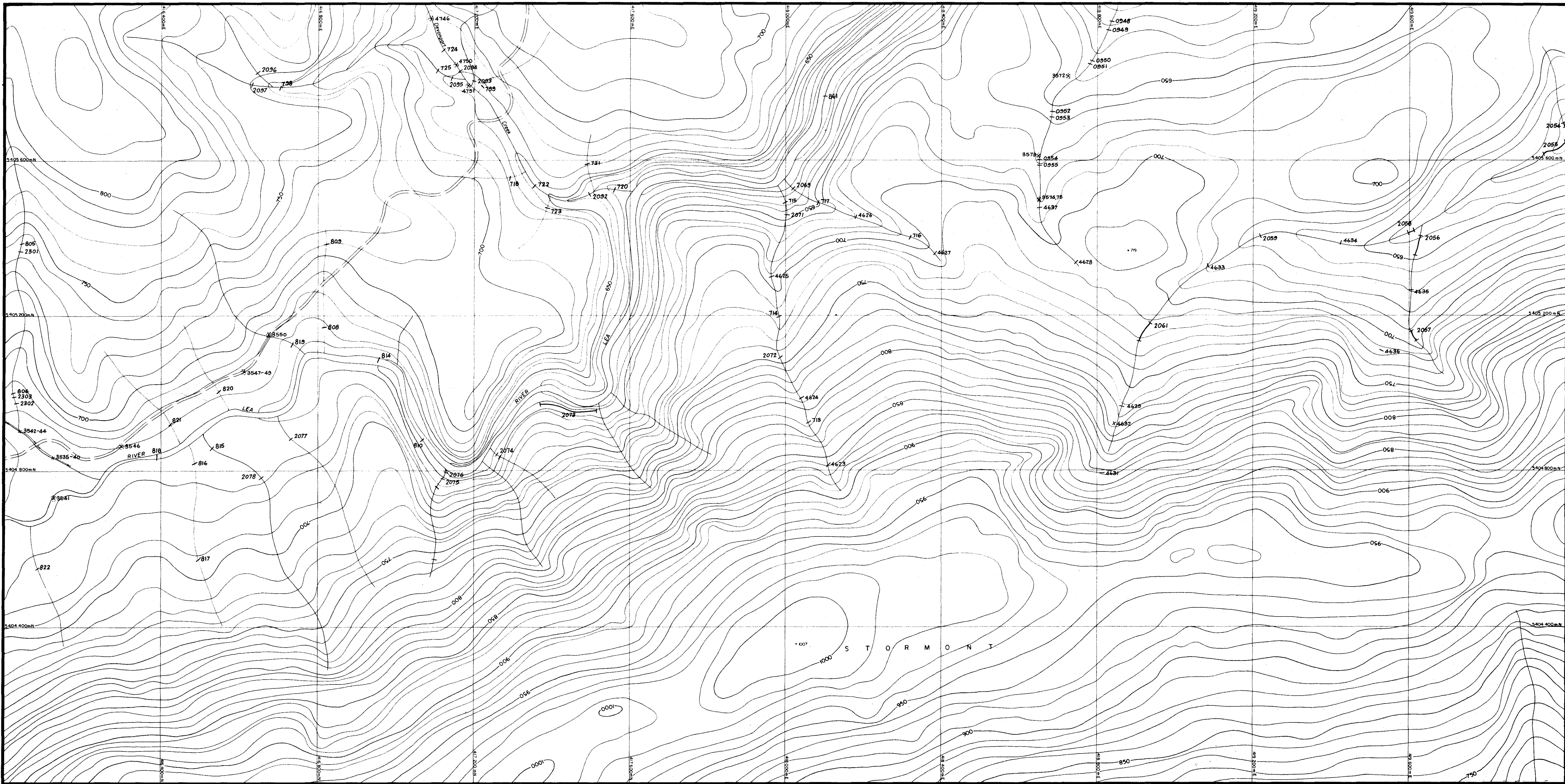
DRAFTSMAN S.F.

DATE JULY 86

REVISIONS

FILE NO.

FIG 6



- KEY**
- x Rock Chip (Float) Sample
 - x Rock Chip (Outcrop) Sample
 - x Stream Sediment Sample
 - Break of Slope Sample
 - Soil Sample

INDEX TO ADJOINING MAPS

2-4	2-5	2-1
3-4	LEA 3-5	CETHANA 3-1
4-4	4-5	4-1

963081

GOLD FIELDS EXPLORATION PTY. LIMITED

SAMPLE LOCATIONS

5 cm

36-2619-1

SCALE 1:5000

100 50 0 50 200 METRES

DRAWN BY : R.R.

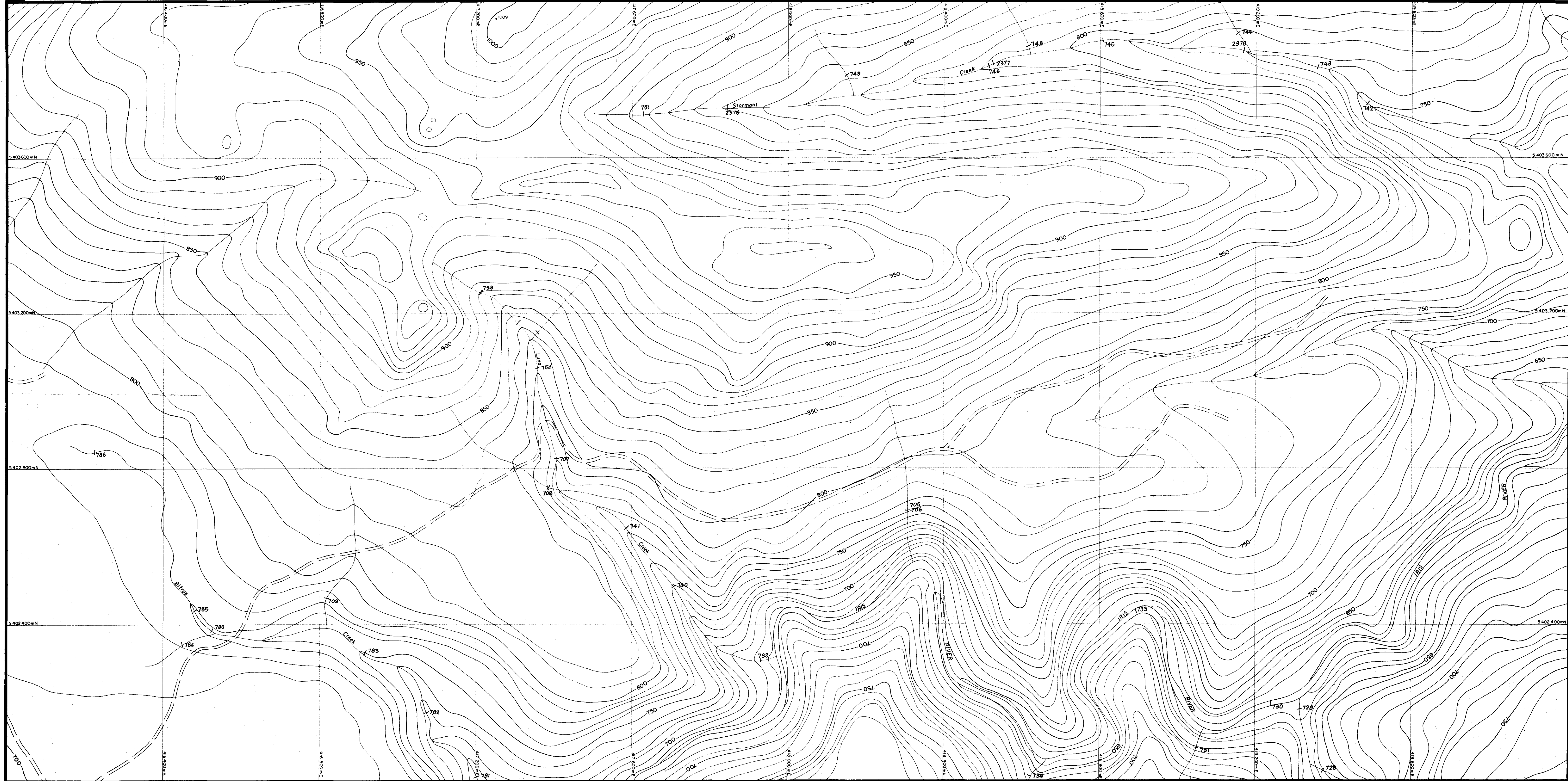
DRAFTSMAN : S.F.

DATE : JULY.86

REVISIONS :

FILE NO.

FIG. 7



- KEY**
- x Rock Chip (Float) Sample
 - * Rock Chip (Outcrop) Sample
 - X Stream Sediment Sample
 - Break-of-Slope Sample
 - Soil Sample

INDEX TO ADJOINING MAPS

3-4	3-5	3-1
4-4	LEA 4-5	CETHANA 4-1
5-4	5-5	5-1

GOLD FIELDS EXPLORATION PTY. LIMITED

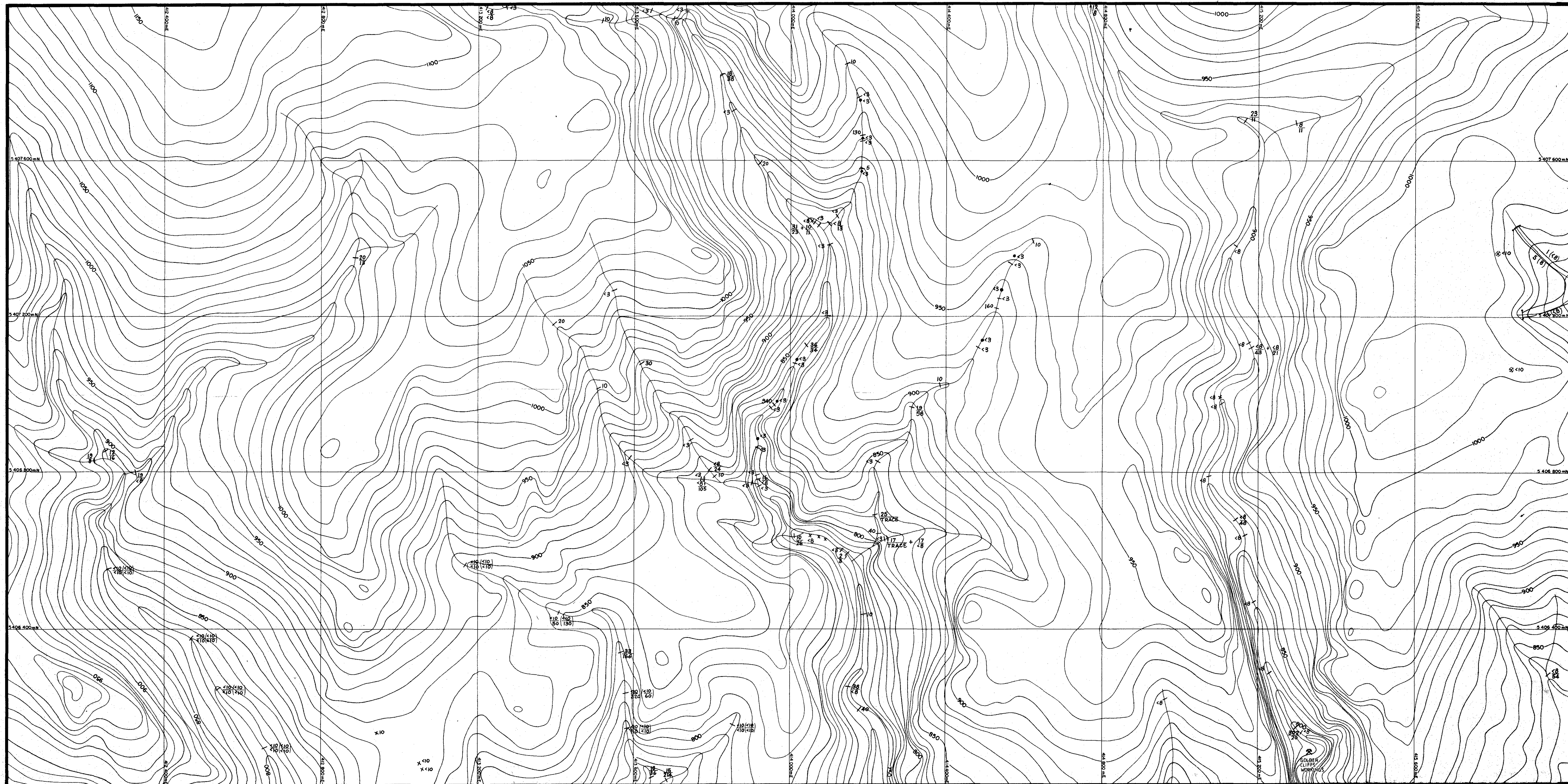
SAMPLE LOCATIONS

5 cm

26 26 19 5935

SCALE 1:5 000

DRAWN BY: R.R.
DRAFTSMAN: S.F.
DATE: JULY, 86
REVISIONS:
FILE NO.
FIG. 9



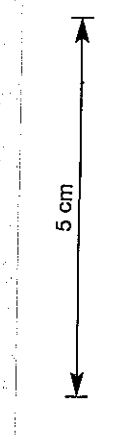
KEY

- * Rock Chip (Float) Sample
- ⊕ Rock Chip (Outcrop) Sample
- Stream Sediment Sample
- ⊕ Break-of-Slope Sample
- Soil Sample

NB :150 # Au values in brackets refer to
 :150 # non-roasted assays eg. :150 #

INDEX TO ADJOINING MAPS

1-3	1-4	1-5
1-3	LEA 2-4	2-5
3-3	3-4	3-5



GOLD FIELDS EXPLORATION PTY. LIMITED

GOLD GEOCHEMISTRY (P.R.B.)

86-2619

SCALE 1:5000

DRAWN BY : R.R.

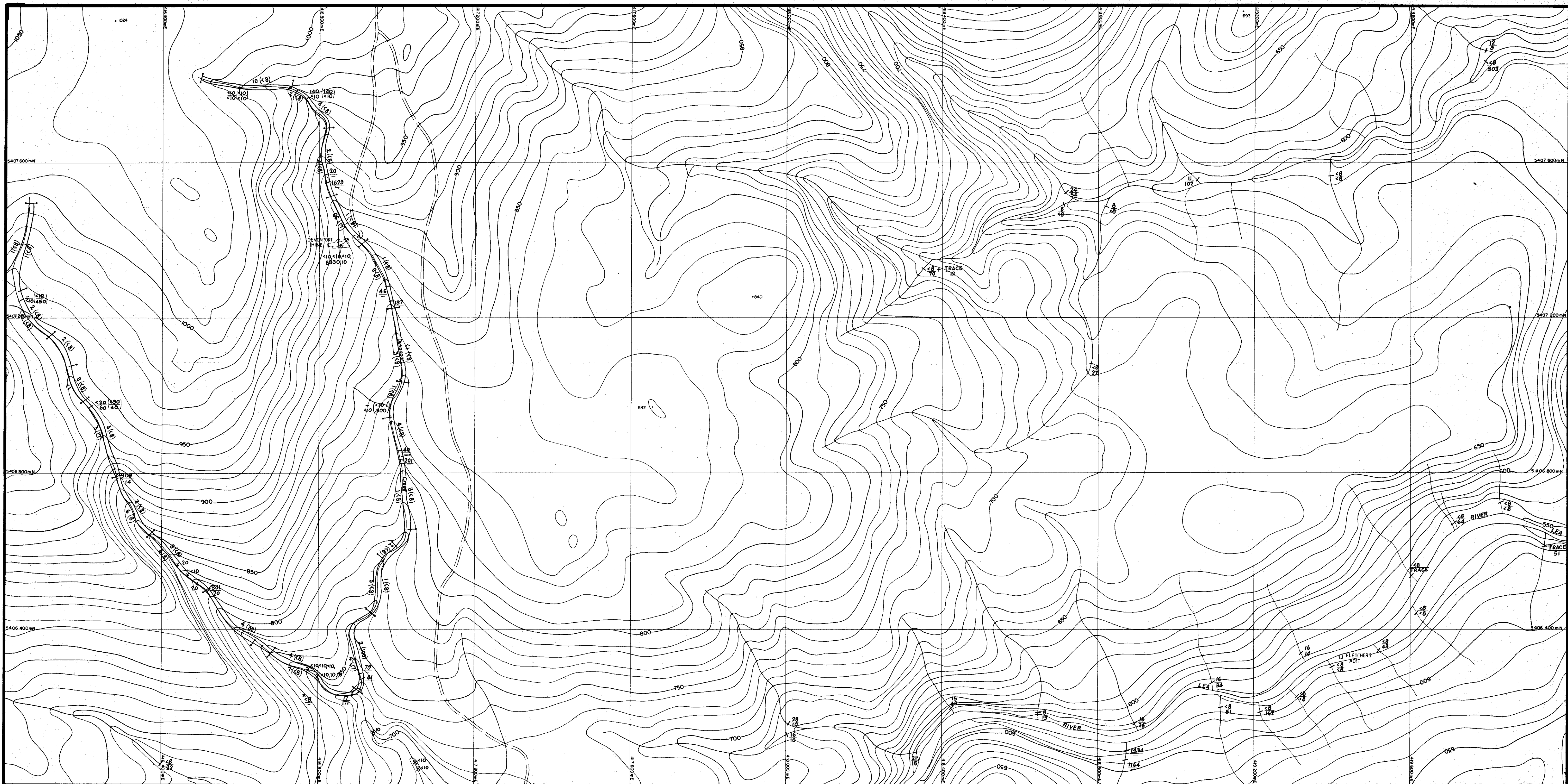
DRAFTSMAN : S.F.

DATE : JULY, 86

REVISIONS :

FILE NO.

FIG. 10



KEY
* Rock Chip (Flot) Sample
* Rock Chip (Outcrop) Sample
x Stream Sediment Sample
- Break-of-Slope Sample
• Soil Sample
NB: 1/50 = Au values in brackets refer to 1/50 = non-roasted assays eg (1/50 g)

INDEX TO ADJOINING MAPS		
1-4	1-5	1-1
2-4	LEA 2-5	CETHANA 2-1
3-4	3-5	3-1

5 cm

GOLD FIELDS EXPLORATION PTY. LIMITED

GOLD GEOCHEMISTRY (PPB)

86-2619 5937

SCALE 1:5000

DRAWN BY : R.R.

DRAFTSMAN: S.F.

DATE : AUG. 86

REVISIONS :

FILE NO.

FIG. 11



KEY
x Rock Chip (Float) Sample
o Rock Chip (Outcrop) Sample
Stream Sediment Sample
Break-of-Slope Sample
Soil Sample
NB: ± 150 = Au values in brackets refer to ± 150 g
-150 = non-roasted assays eg. (-150 g)

INDEX TO ADJOINING MAPS		
2-3	2-4	2-5
3-3	LEA 3-4	3-5
4-3	4-4	4-5

5 cm

GOLD FIELDS EXPLORATION PTY LIMITED

E.L. 41/83-LAKE LEA AREA

GOLD GEOCHEMISTRY (PPB.)

86-2619

SCALE 1:5000

0 50 100 200 METRES

DRAWN BY RR.

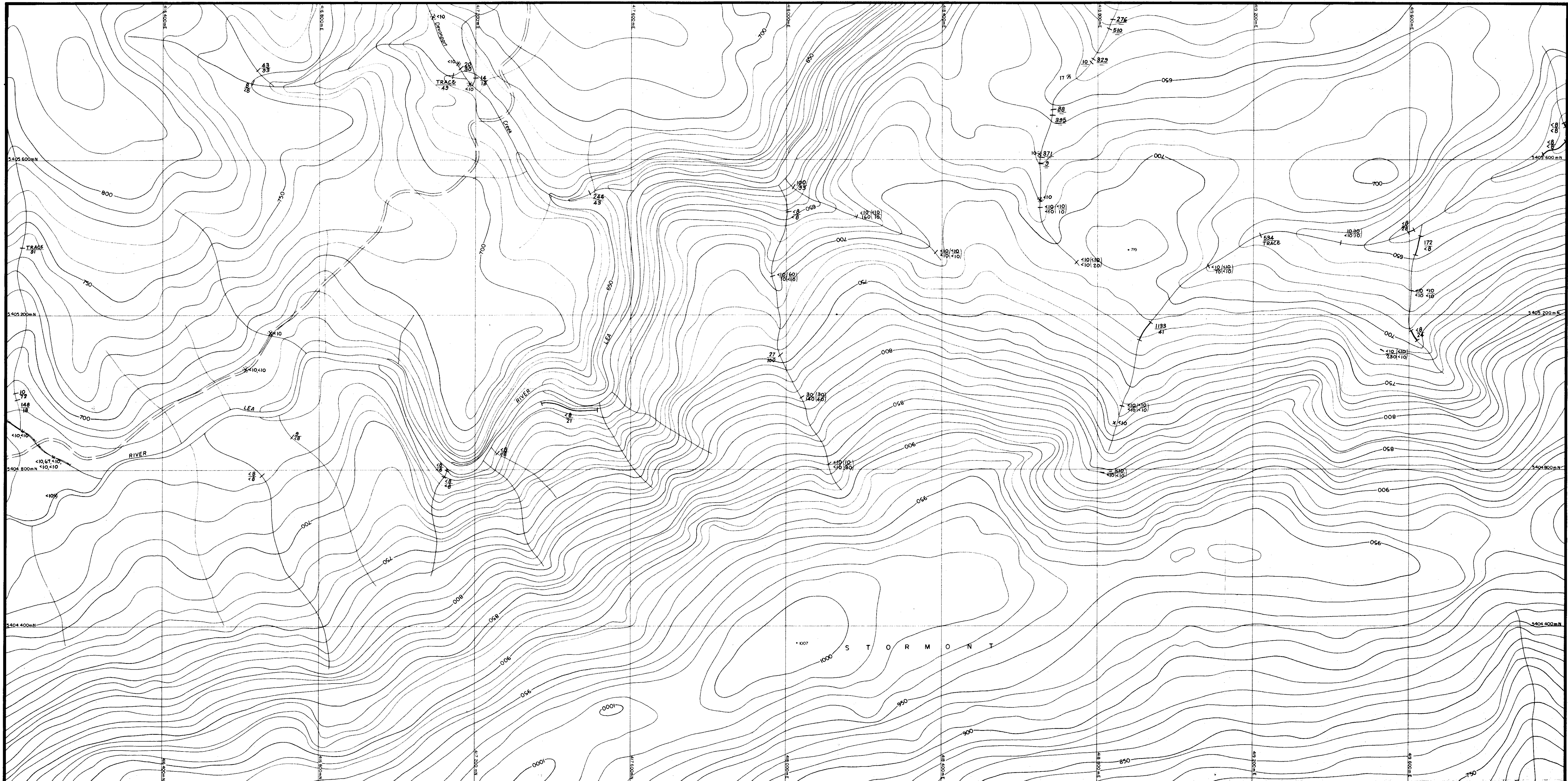
DRAFTSMAN S.F.

DATE JULY 86

REVISIONS

FILE NO.

FIG 12



KEY

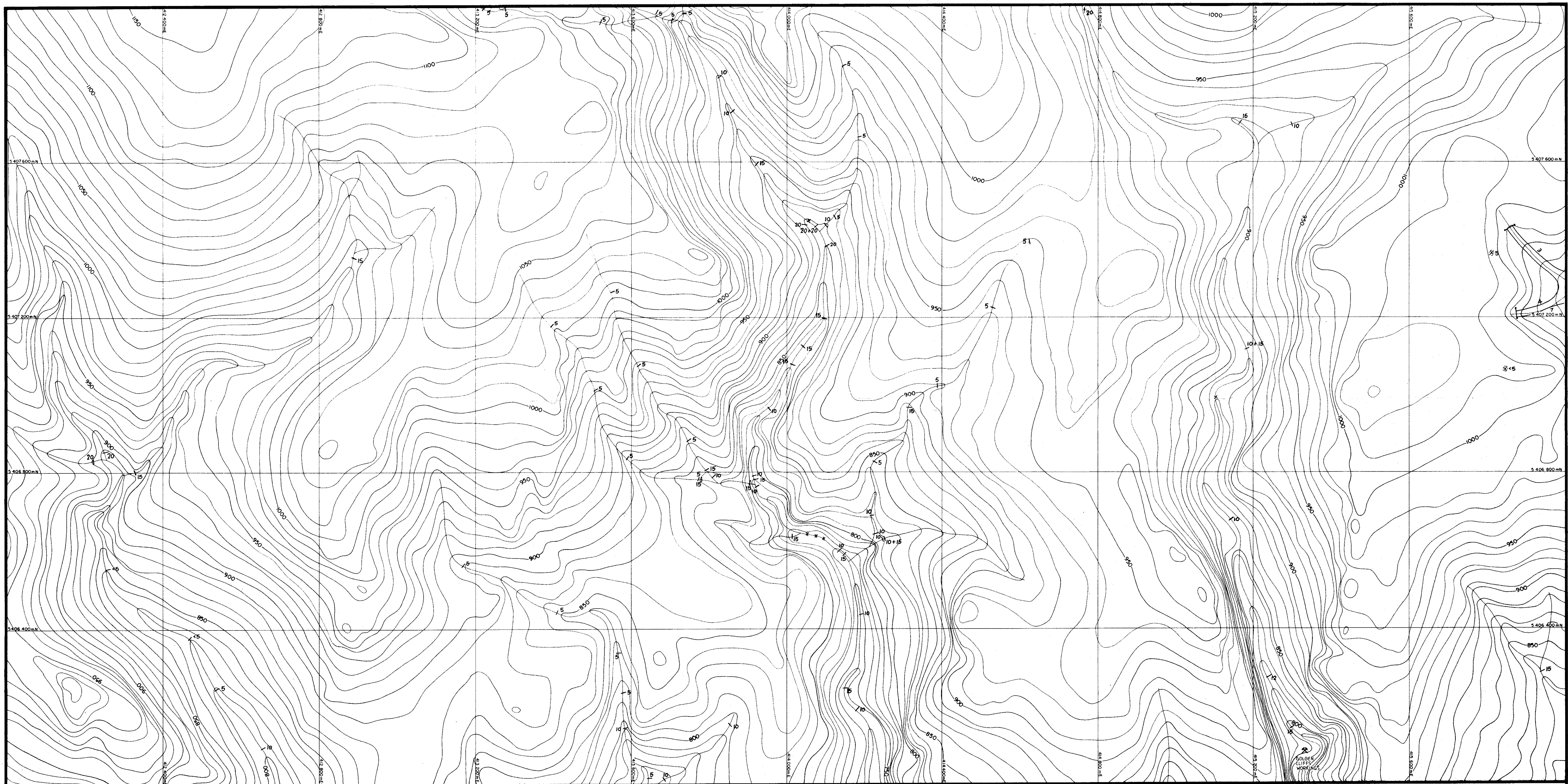
- * Rock Chip (Float) Sample
- ⊗ Rock Chip (Outcrop) Sample
- Stream Sediment Sample
- Break-of-Slope Sample
- Soil Sample

NB: +150 # Au values in brackets refer to
-150 # non-roasted assays eg. (-150 #)

INDEX TO ADJOINING MAPS		
2-4	2-5	2-1
3-4	LEA 3-5	CETHANA 3-1
4-4	4-5	4-1

5 cm

GOLD FIELDS EXPLORATION PTY. LIMITED	
GOLD GEOCHEMISTRY (PPB.) 86-2619 5939	
SCALE 1:5000 	
DRAWN BY : R.R. DRAFTSMAN : S.F. DATE : JULY, 86 REVISIONS : FILE NO.	FIG. 13



GOLD FIELDS EXPLORATION PTY. LIMITED

DRAWN BY : R.R.

RAFTSMAN: S.F.

DATE : JULY, 86

REVISIONS :

Figure 1 is a line graph showing the percentage of correct responses for the 100-item test across four groups: 100% correct, 90% correct, 80% correct, and 70% correct. The x-axis represents the number of items (0 to 100). The y-axis represents the percentage of correct responses (0% to 100%). The 100% correct group shows a sharp increase in correct responses starting around item 20, reaching 100% by item 40. The 90% correct group shows a similar pattern but with a lower peak. The 80% correct group shows a more gradual increase, and the 70% correct group shows the lowest performance overall.

FILE NO.

FIG. 14

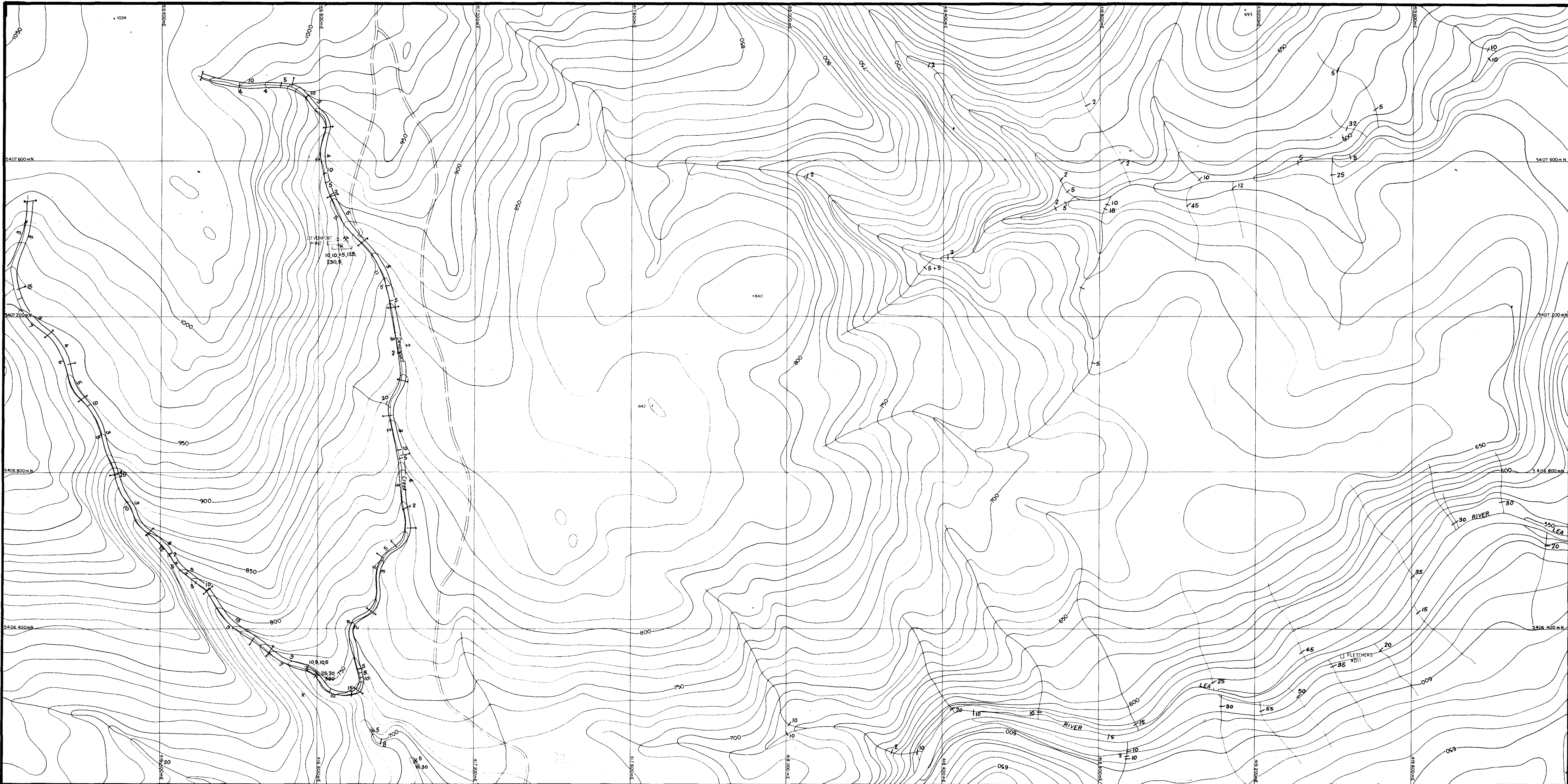
**COPPER GEOCHEMISTRY
(P.P.M.)**

86 - 2619 5940 FILE

SCALE 1:5000

FIG. 14 :

963088



- KEY**
- x Rock Chip (Float) Sample
 - ⊗ Rock Chip (Outcrop) Sample
 - ⊗ Stream Sediment Sample
 - ⊗ Break - of - Slope Sample
 - Soil Sample

INDEX TO ADJOINING MAPS

1-4	1-5	1-1
2-4	LEA 2-5	CETHANA 2-1
3-4	3-5	3-1

GOLD FIELDS EXPLORATION PTY. LIMITED

COPPER GEOCHEMISTRY
(P.P.M.)

86-2619-5941

SCALE 1:5000

DRAWN BY : R.R.

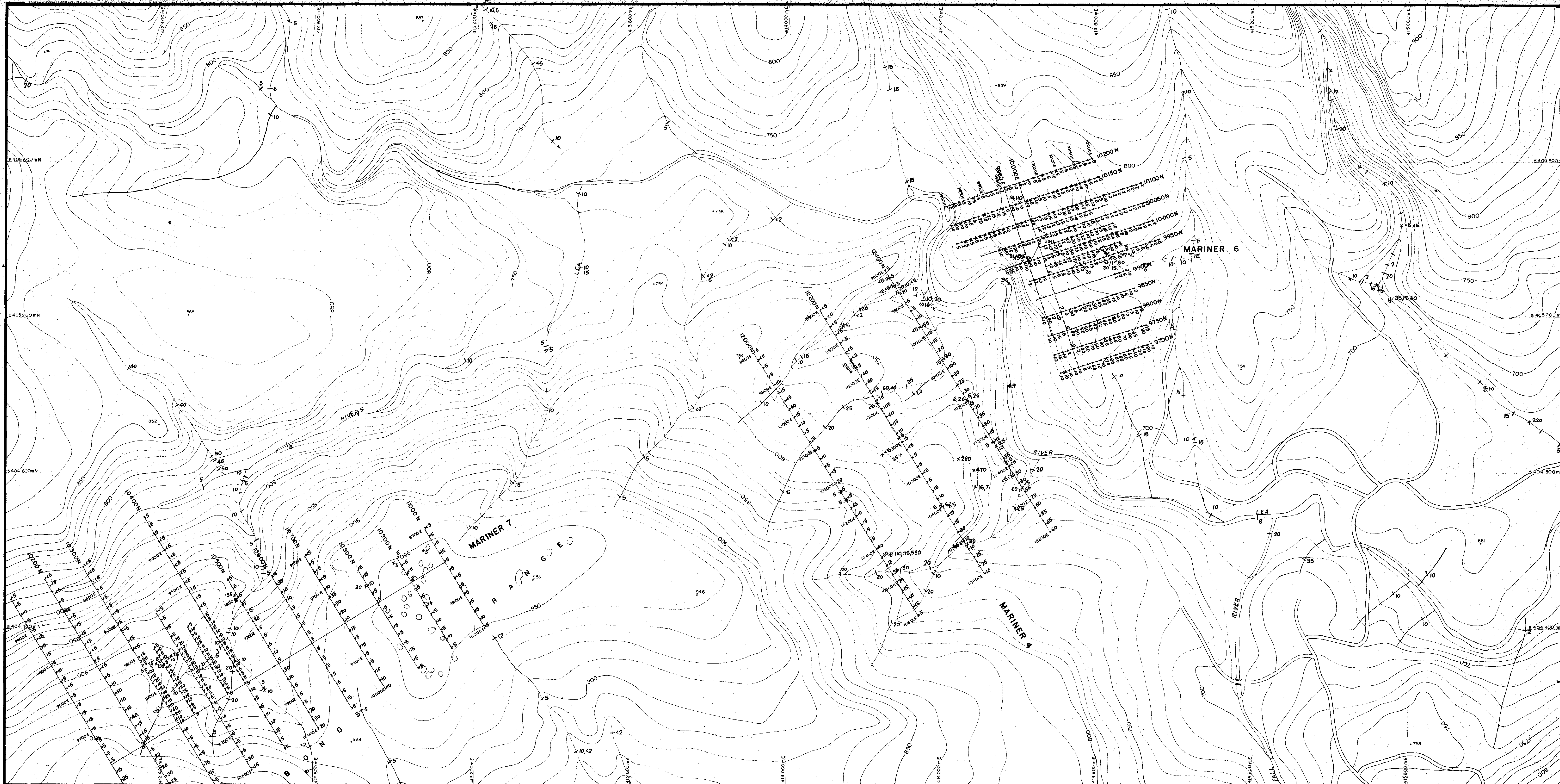
DRAFTSMAN: S.E.

DATE JULY.86

REVISIONS :

FILE NO.

FIG.15



KEY
x Rock Chip (Floor) Sample
o Rock Chip (Outcrop) Sample
- Stream Sediment Sample
- Break-of-Slope Sample
• Soil Sample

INDEX TO ADJOINING MAPS		
2-3	2-4	2-5
3-3	LEA 3-4	3-5
4-3	4-4	4-5

GOLD FIELDS EXPLORATION PTY. LIMITED

E.L. 41/83-LAKE LEA AREA

COPPER GEOCHEMISTRY

(P.P.M.)

86 26 19 5942

SCALE 1:5000

100 50 0 100 200 METRES

DRAWN BY R.R.

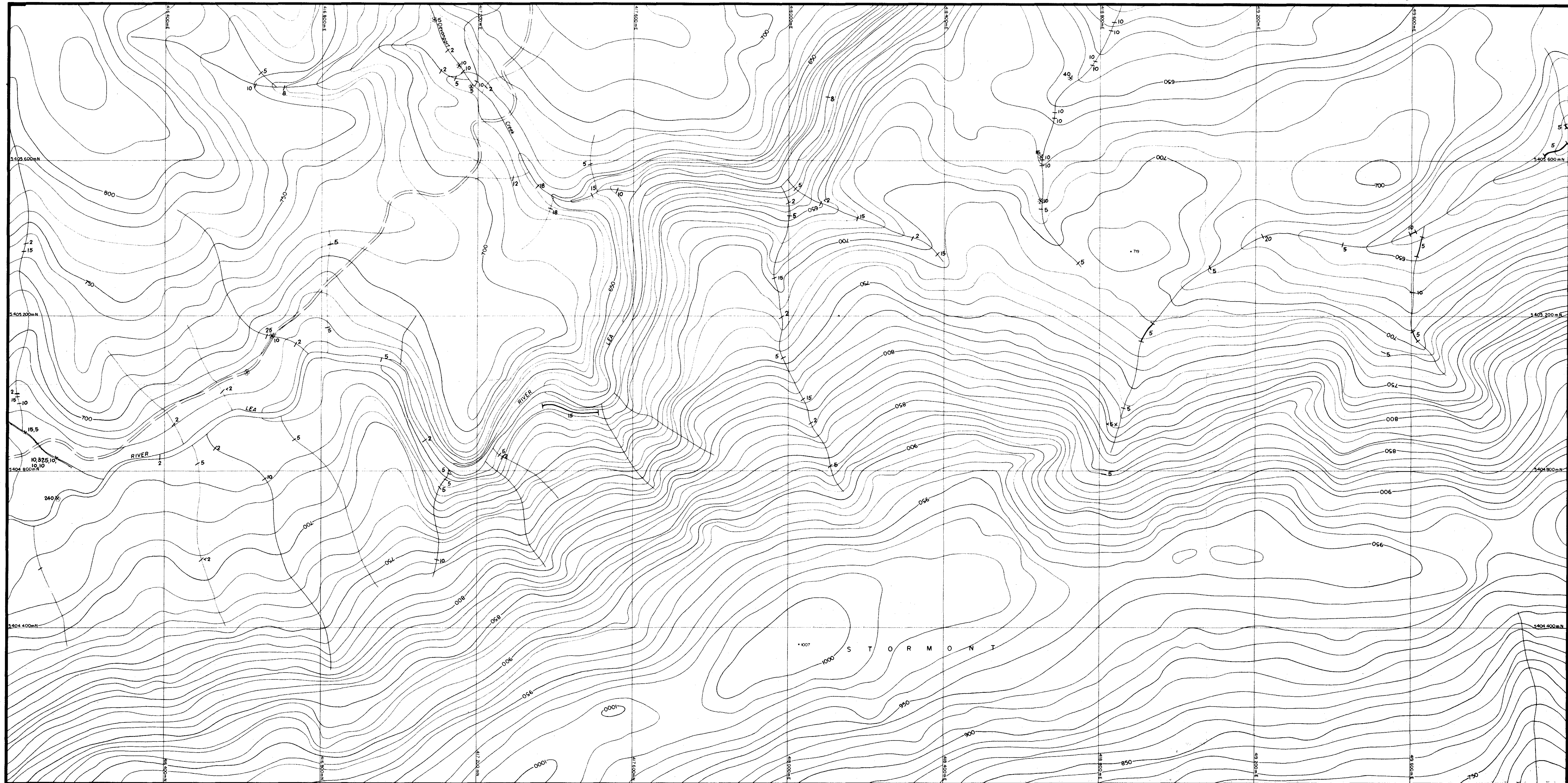
DRAFTSMAN S.F.

DATE JULY 86

REVISIONS

FILE NO.

FIG 16



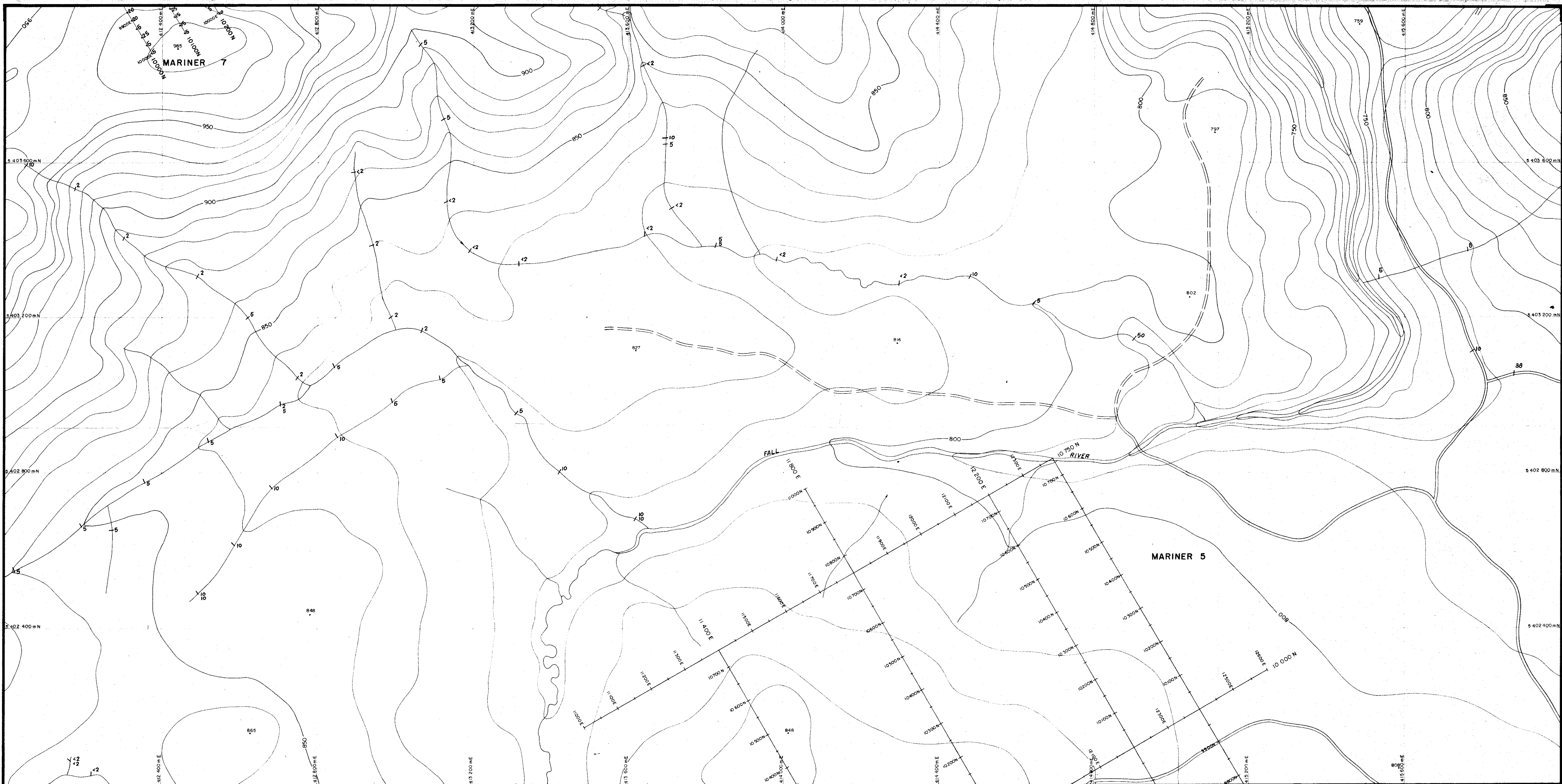
- KEY**
- x Rock Chip (Float) Sample
 - ⊕ Rock Chip (Outcrop) Sample
 - Stream Sediment Sample
 - Break-of-Slope Sample
 - Soil Sample

INDEX TO ADJOINING MAPS

2-4	2-5	2-1
3-4	LEA 3-5	CETHANA 3-1
4-4	4-5	4-1

5 cm

GOLD FIELDS EXPLORATION PTY. LIMITED	
COPPER GEOCHEMISTRY (PPM.)	
86-2619	
5943	FILE NO.
SCALE 1:5000	
METRES	
DRAWN BY : R.R.	
DRAFTSMAN : S.F.	
DATE : JULY, 86	
REVISIONS :	
FIG. 17	



- KEY**
- x Rock Chip (Float) Sample
 - o Rock Chip (Outcrop) Sample
 - Stream Sediment Sample
 - Break-of-Slope Sample
 - Soil Sample

INDEX TO ADJOINING MAPS		
3-3	3-4	3-5
4-3	4-4	4-5
5-3	5-4	5-5

5 cm

GOLD FIELDS EXPLORATION PTY LIMITED

E.L. 41/83 - LAKE LEA AREA
COPPER GEOCHEMISTRY
(P.P.M.)

8C 26 19 44

SCALE 1:5000

100 0 100 200
METRES

FIG 18

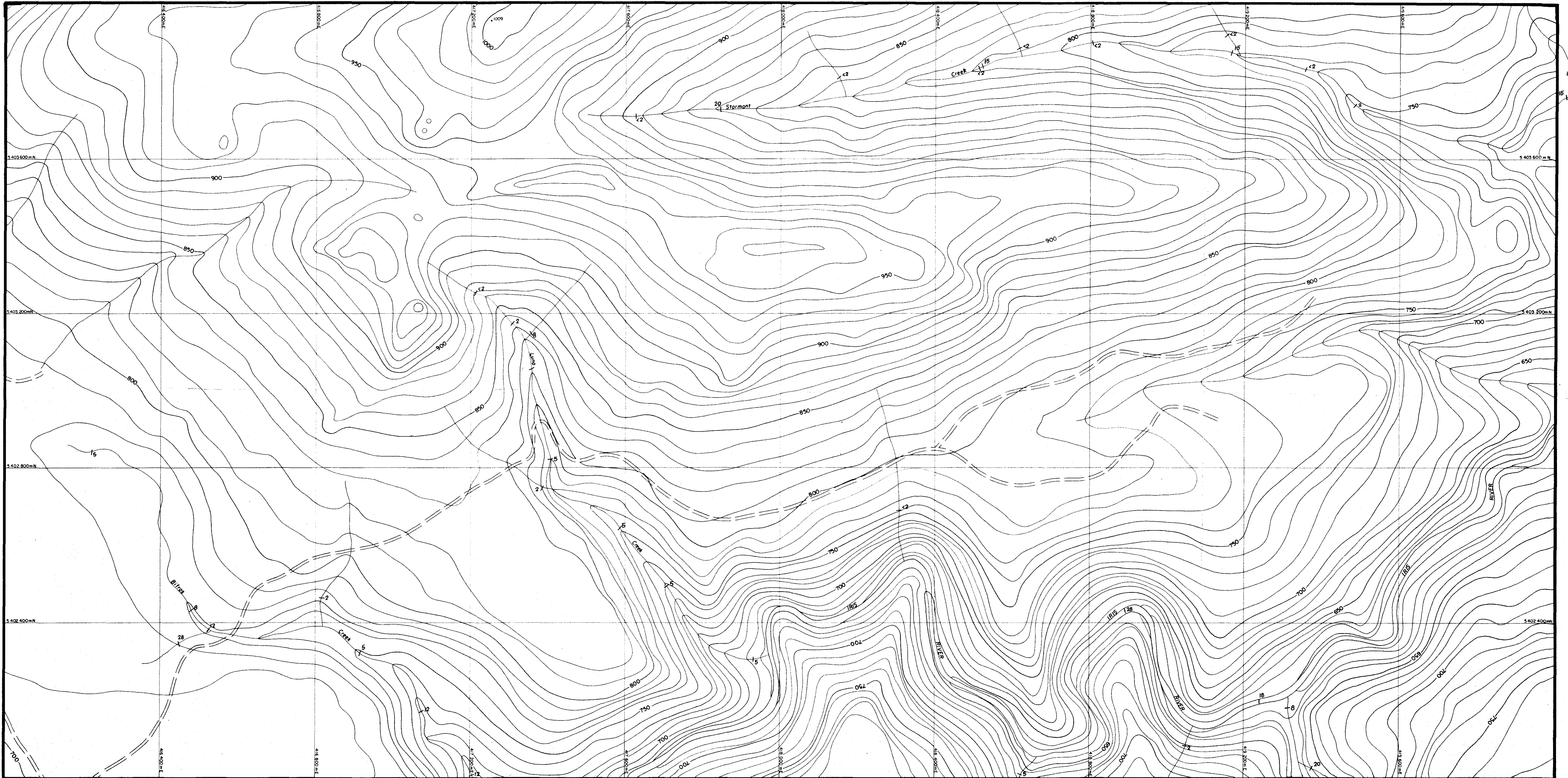
DRAWN BY R.R.

DRAFTSMAN S.F.

DATE AUG. 86

REVISIONS

FILE NO.

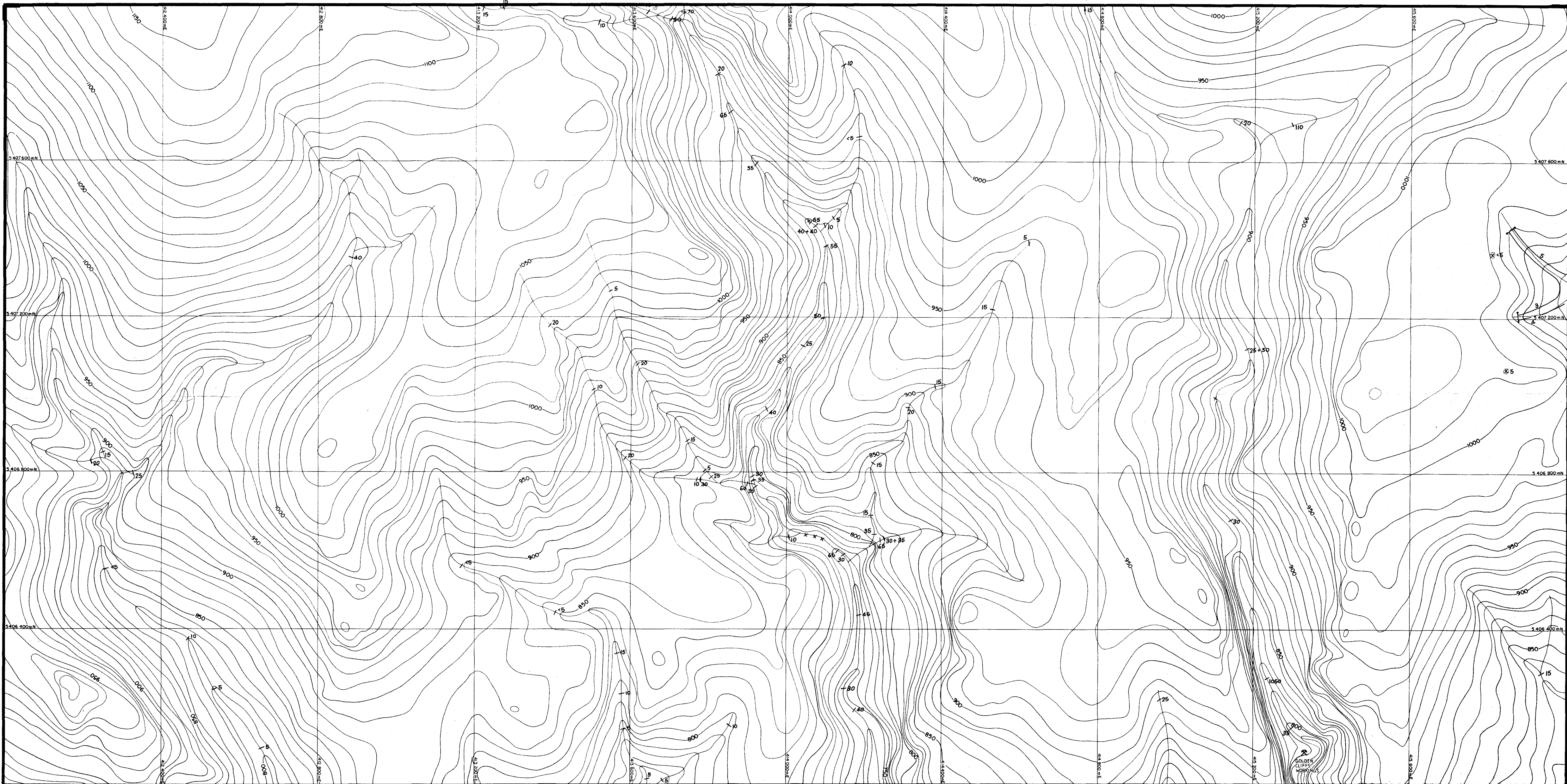


KEY
x Rock Chip (Float) Sample
o Rock Chip (Outcrop) Sample
x Stream Sediment Sample
x Break-of-Slope Sample
x Soil Sample

INDEX TO ADJOINING MAPS		
3-4	3-5	3-1
4-4	LEA 4-5	CETHANA 4-1
5-4	5-5	5-1

6 cm

GOLD FIELDS EXPLORATION PTY. LIMITED	
COPPER GEOCHEMISTRY (P.P.M.)	
86-26195945	
SCALE 1:5000	
100 50 0 50 100 200 METRES	
DRAWN BY : R.R.	FIG. 19
DRAFTSMAN : S.E.	
DATE : JULY.86	
REVISIONS :	
FILE NO.	



- KEY**
- x Rock Chip (Float) Sample
 - * Rock Chip (Outcrop) Sample
 - Stream Sediment Sample
 - Break-of-Slope Sample
 - Soil Sample

INDEX TO ADJOINING MAPS		
1-3	1-4	1-5
1-3	LEA 2-4	2-5
3-3	3-4	3-5

562094
5 cm

GOLD FIELDS EXPLORATION PTY. LIMITED

LEAD GEOCHEMISTRY (P.P.M.)

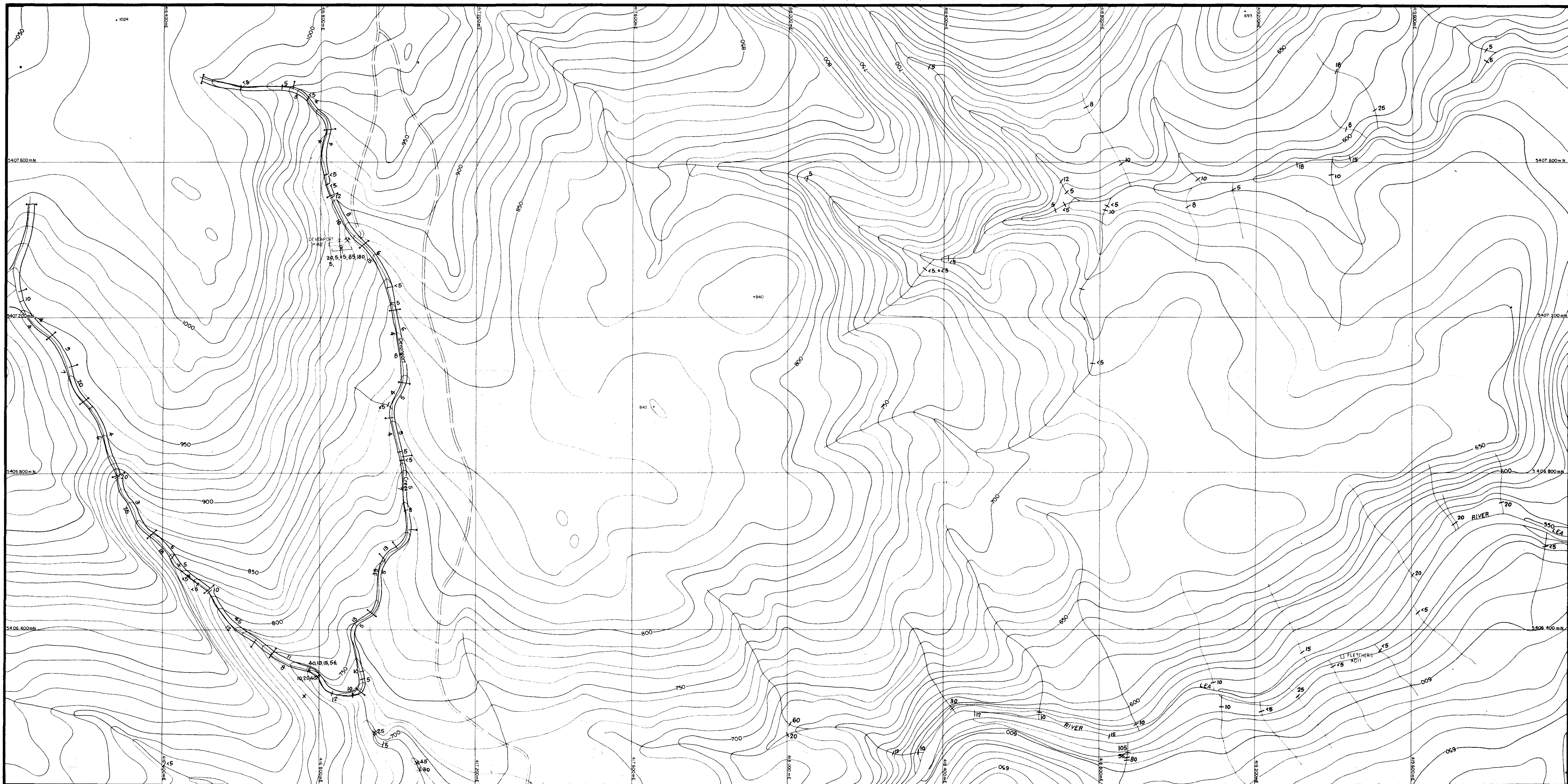
86-2619

SCALE 1:5000

5946

FIG. 20

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DRAFTSMAN: S.F.
DATE : JULY 86
REVISIONS :
FILE NO.



KEY
 x Rock Chip (Float) Sample
 * Rock Chip (Outcrop) Sample
 — Stream Sediment Sample
 — Break-of-Slope Sample
 • Soil Sample

INDEX TO ADJOINING MAPS

1-4	1-5	1-1
2-4	LEA 2-5	CETHANA 2-1
3-4	3-5	3-1

GOLD FIELDS EXPLORATION PTY. LIMITED

LEAD GEOCHEMISTRY (PPM.)

80-2619

SCALE 1:5000

5 cm

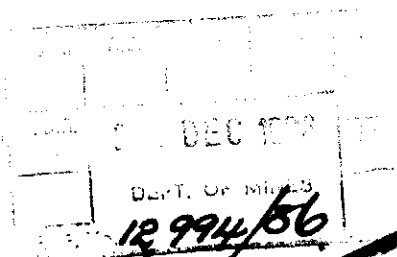
DRAWN BY: R.R.
 DRAFTSMAN: S.F.
 DATE: AUG. 86
 REVISIONS:
 FILE NO.
 FIG. 21

E.L.41/83 - LAKE LEA AREA

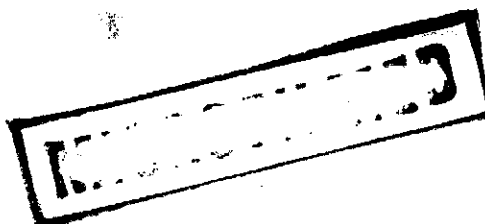
ANNUAL REPORT 1985-86

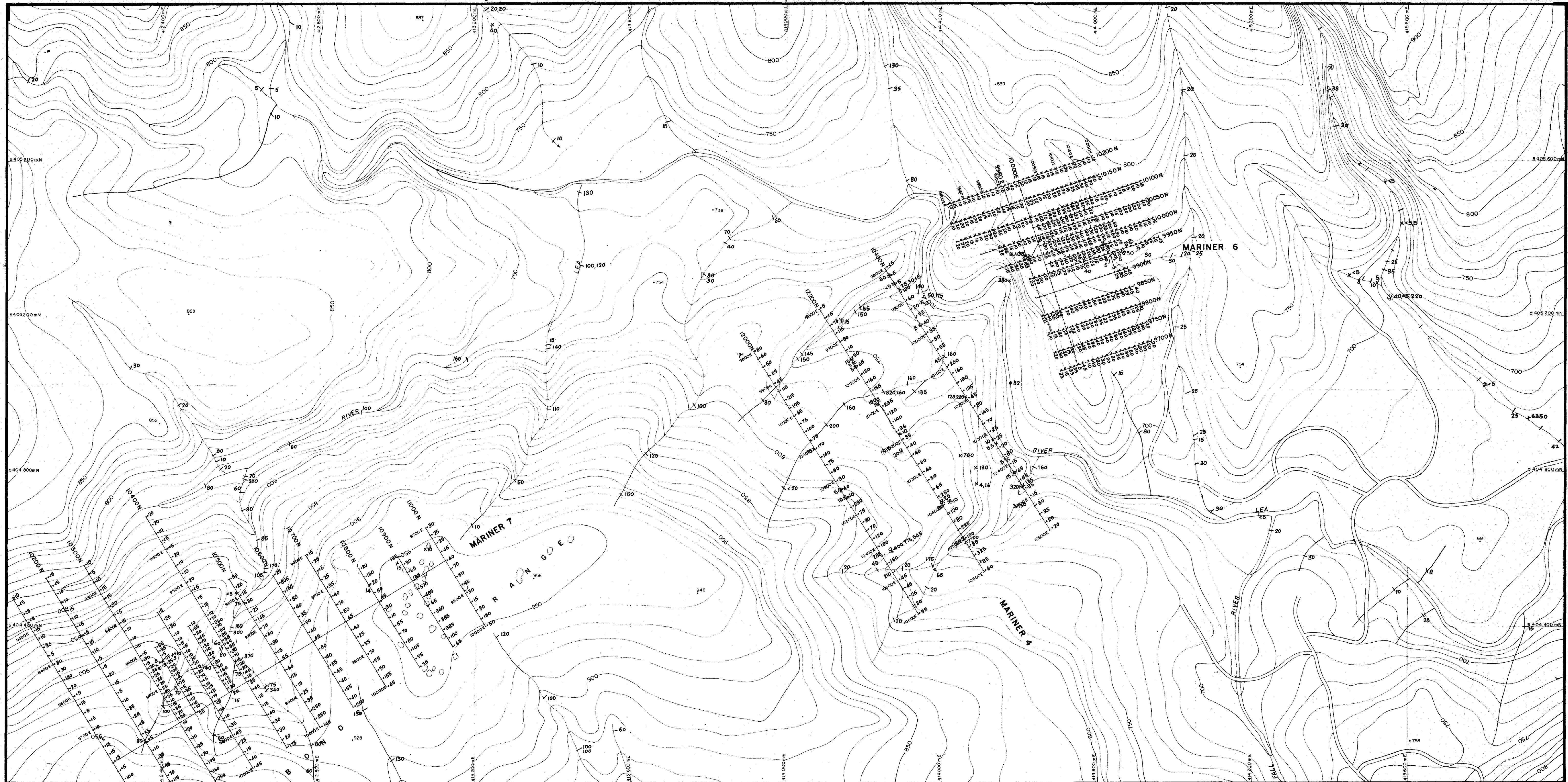
VOLUME 2 OF 2

Figures 22-53



OPEN FILE





KEY
x Rock Chip (Float) Sample
* Rock Chip (Outcrop) Sample
Stream Sediment Sample
Break-of-Slope Sample
• Soil Sample

INDEX TO ADJOINING MAPS		
2-3	2-4	2-5
3-3	LEA 3-4	3-5
4-3	4-4	4-5

5 cm

GOLD FIELDS EXPLORATION PTY LIMITED

E.L. 41/83-LAKE LEA AREA

LEAD GEOCHEMISTRY (PPM)

86-2619

5948

SCALE 1:5000

DRAWN BY RR.

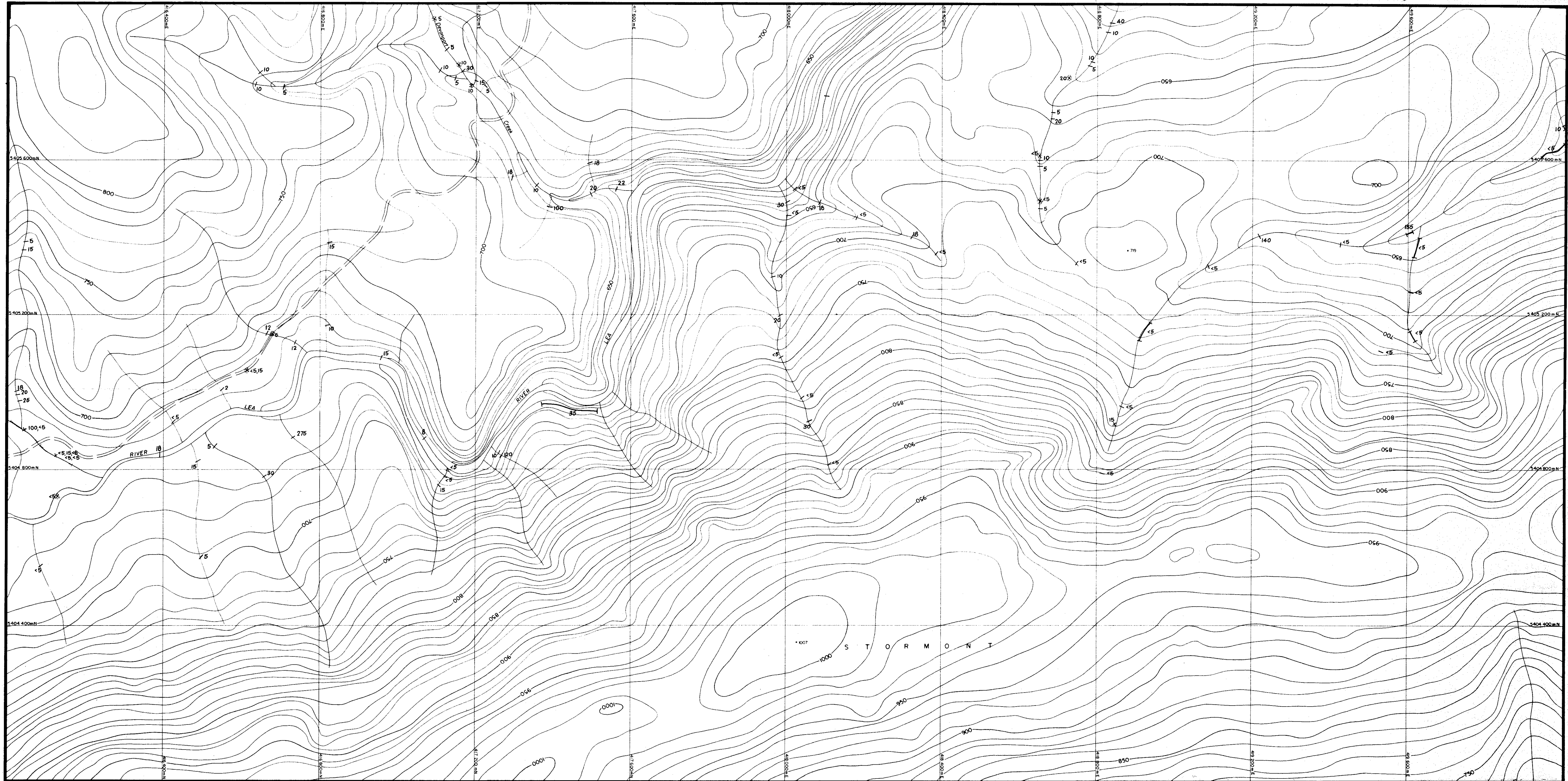
DRAFTSMAN S.F.

DATE AUG. 86

REVISIONS

FILE NO.

FIG. 22



- KEY**
- x Rock Chip (Float) Sample
 - s Rock Chip (Outcrop) Sample
 - Stream Sediment Sample
 - Break-of-Slope Sample
 - Soil Sample

INDEX TO ADJOINING MAPS		
2-4	2-5	2-1
3-4	LEA 3-5	CETHANA 3-1
4-4	4-5	4-1

GOLD FIELDS EXPLORATION PTY. LIMITED

**LEAD GEOCHEMISTRY
(P.P.M.)**

86 2619 5949

SCALE 1:5000

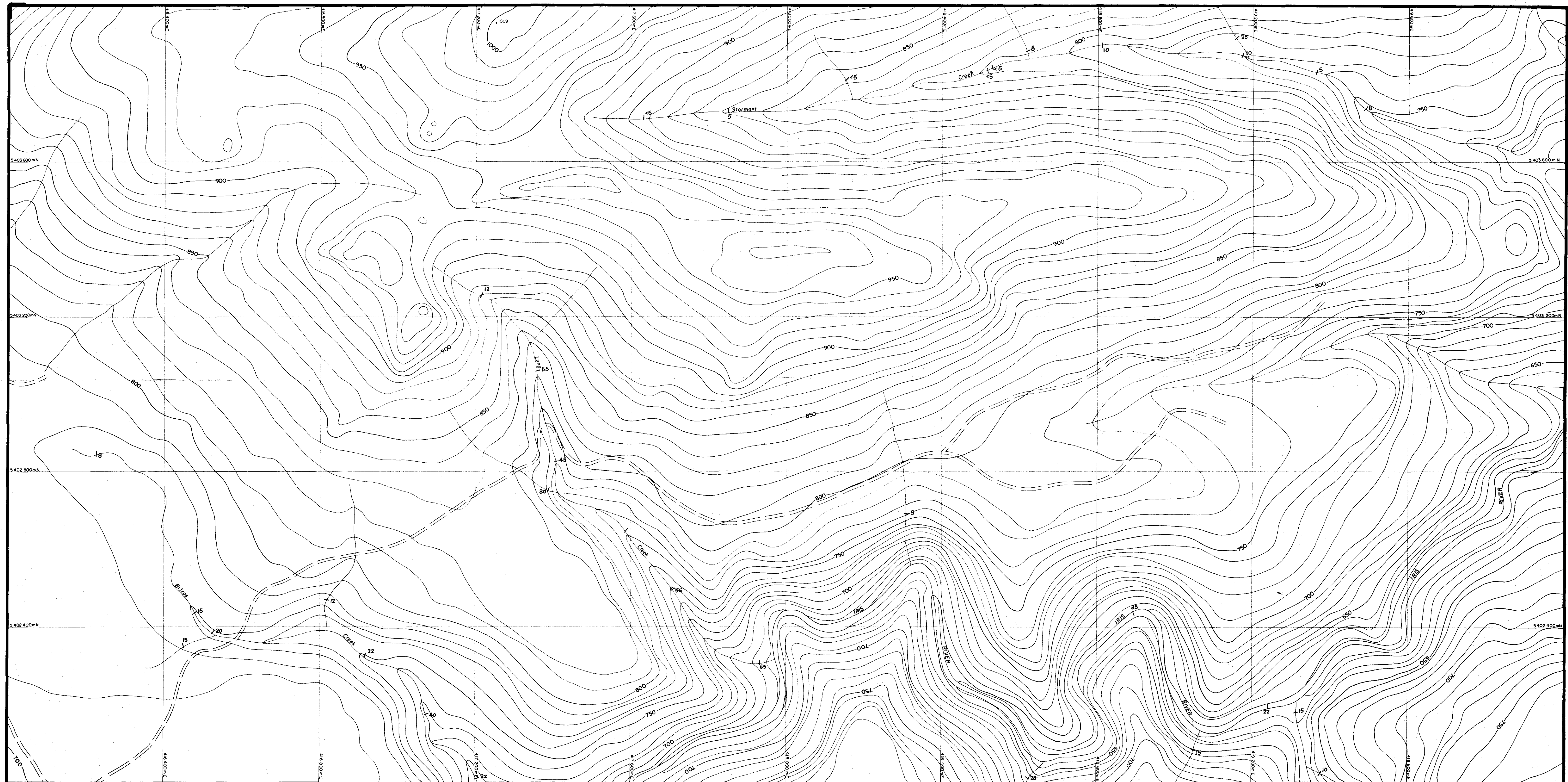


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DRAFTSMAN: S.F.
DATE: JULY, 86
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FILE NO.

FIG. 23

963098



- KEY**
- x Rock Chip (Float) Sample
 - ⊗ Rock Chip (Outcrop) Sample
 - Stream Sediment Sample
 - Break-of-Slope Sample
 - Soil Sample

INDEX TO ADJOINING MAPS		
3-4	3-5	3-1
4-4	LEA 4-5	CETHANA 4-1
5-4	5-5	5-1

5 cm

GOLD FIELDS EXPLORATION PTY. LIMITED

963100

LEAD GEOCHEMISTRY

(P.P.M.)

86-2619

5951

SCALE 1:5000

DRAWN BY : R.R.

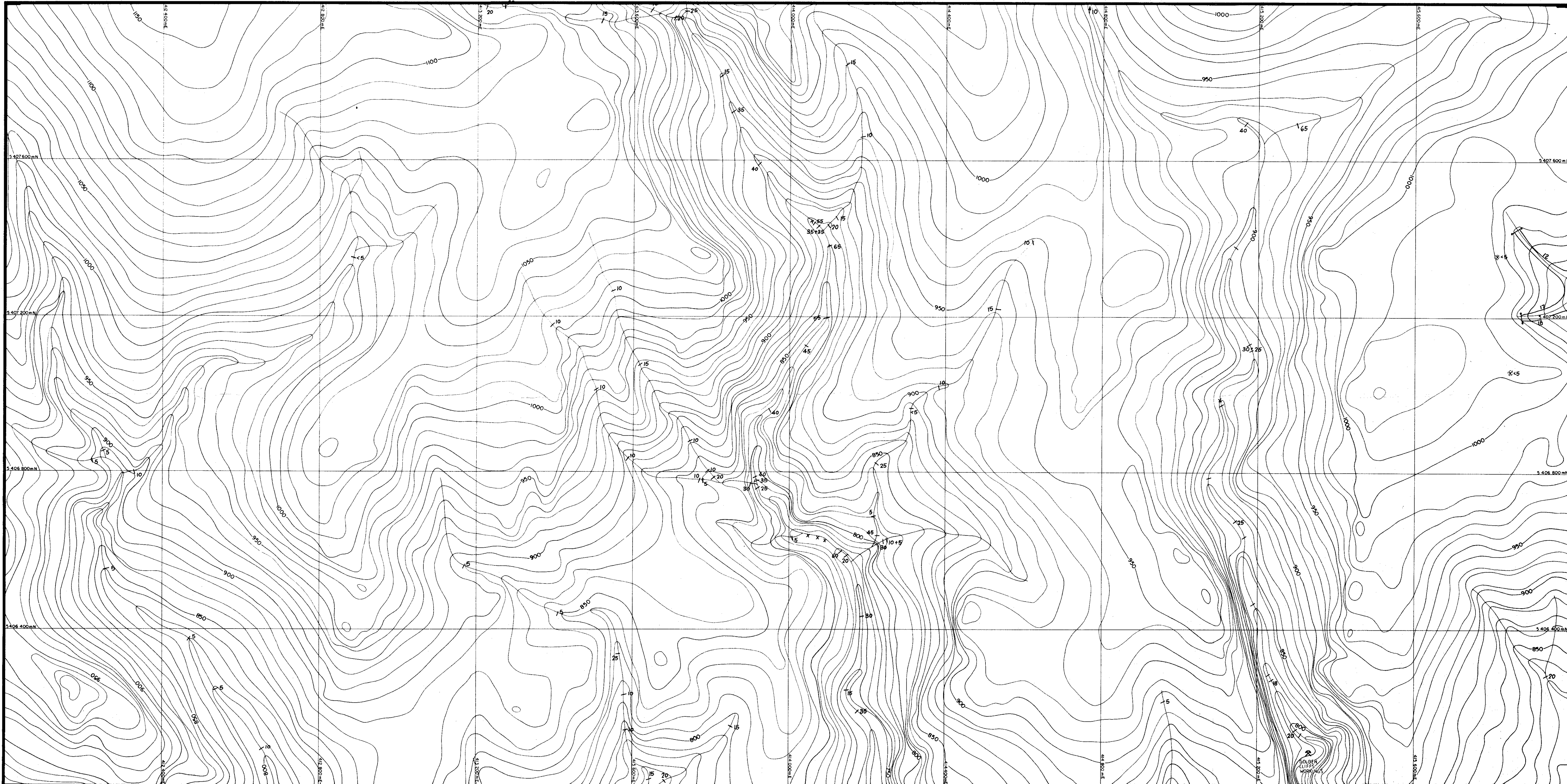
DRAFTSMAN : S.F.

DATE : JULY, 86

REVISIONS :

FILE NO.

FIG. 25



- KEY**
- x Rock Chip (Float) Sample
 - X Rock Chip (Outcrop) Sample
 - Stream Sediment Sample
 - Break-of-Slope Sample
 - Soil Sample

INDEX TO ADJOINING MAPS		
1-3	1-4	1-5
1-3	LEA 2-4	2-5
3-3	3-4	3-5

5 cm

GOLD FIELDS EXPLORATION PTY. LIMITED

963101

ZINC GEOCHEMISTRY

(P.P.M.)

86-2619 5952

SCALE 1:5000

DRAWN BY: R.R.

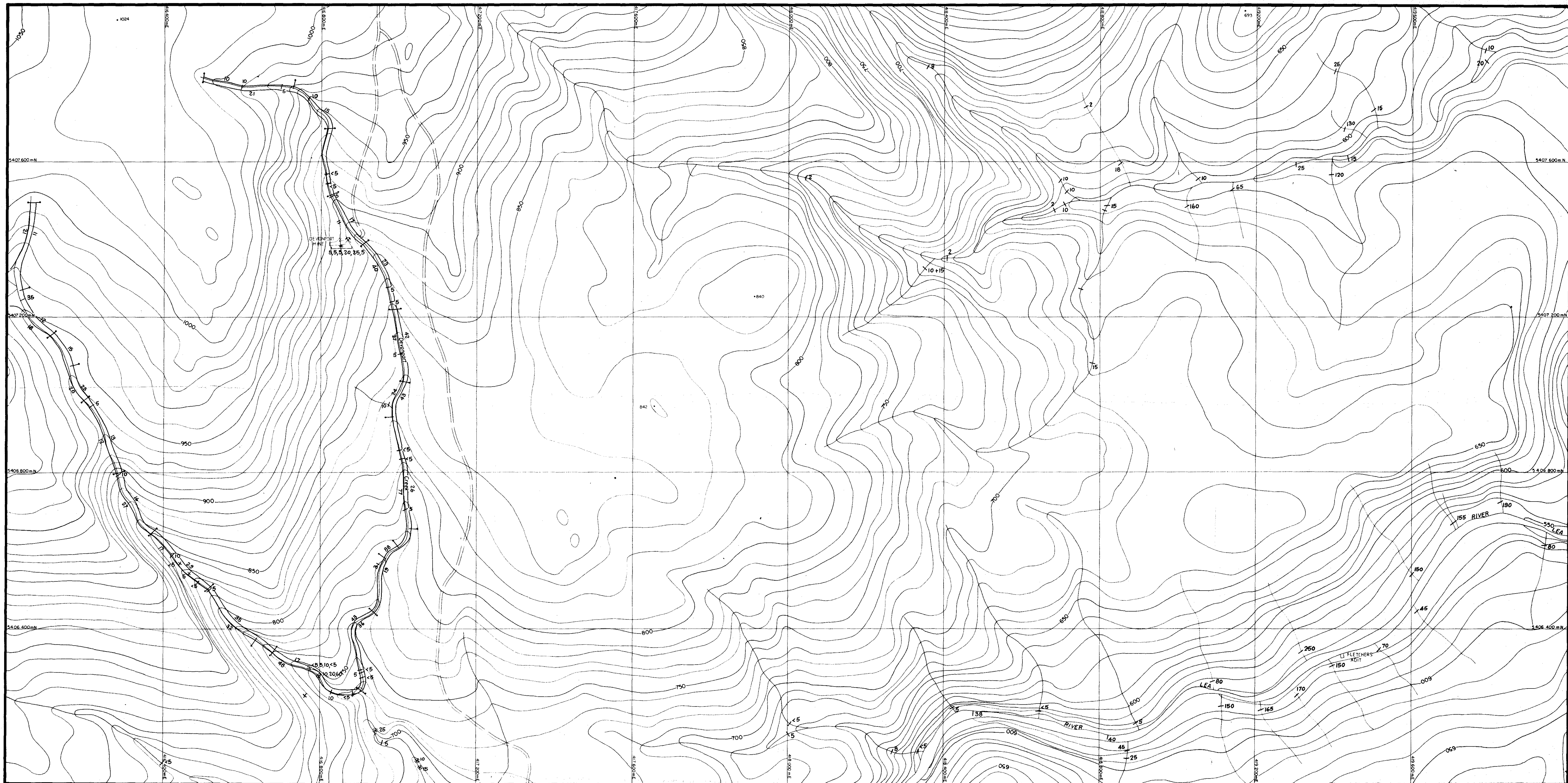
DRAFTSMAN: S.F.

DATE: JULY.86

REVISIONS:

FILE NO.

FIG. 26



KEY
 x Rock Chip (Float) Sample
 x Rock Chip (Outcrop) Sample
 x Stream Sediment Sample
 x Break-of-Slope Sample
 x Soil Sample

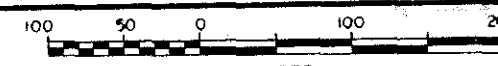
INDEX TO ADJOINING MAPS		
1-4	1-5	1-1
2-4	2-5	2-1
3-4	3-5	3-1

GOLD FIELDS EXPLORATION PTY. LIMITED

963102
ZINC GEOCHEMISTRY
 (PPM)

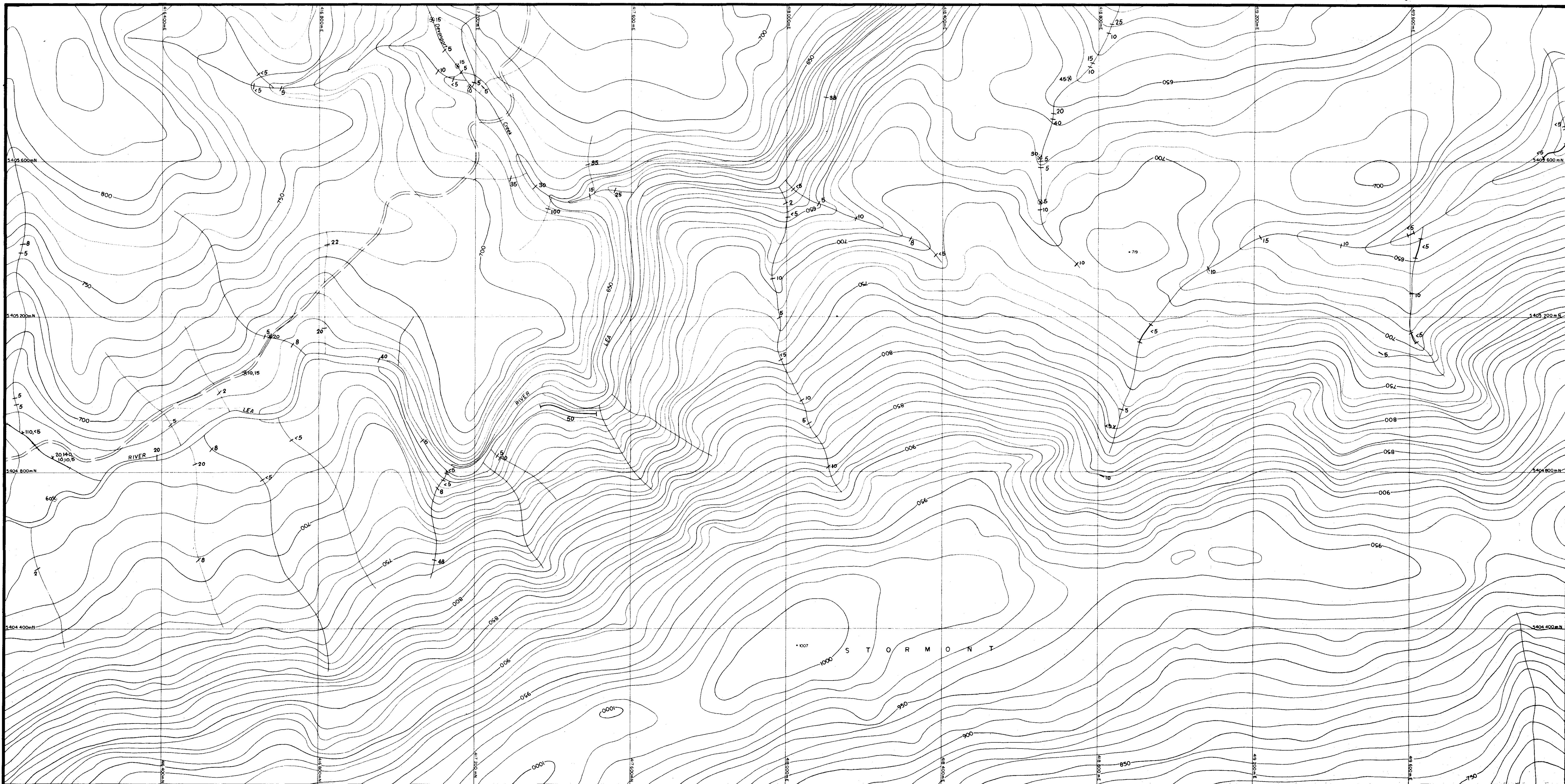
86-2619
 5453

SCALE 1:5000



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 FILE NO.

FIG. 27



KEY
 x Rock Chip (Float) Sample
 36 Rock Chip (Outcrop) Sample
 Stream Sediment Sample
 Break-of-Slope Sample
 • Soil Sample

INDEX TO ADJOINING MAPS		
2-4	2-5	2-1
3-4	LEA 3-5	CETHANA 3-1
4-4	4-5	4-1

GOLD FIELDS EXPLORATION PTY. LIMITED

**ZINC GEOCHEMISTRY
(PPM.)**

CC-2619 5955

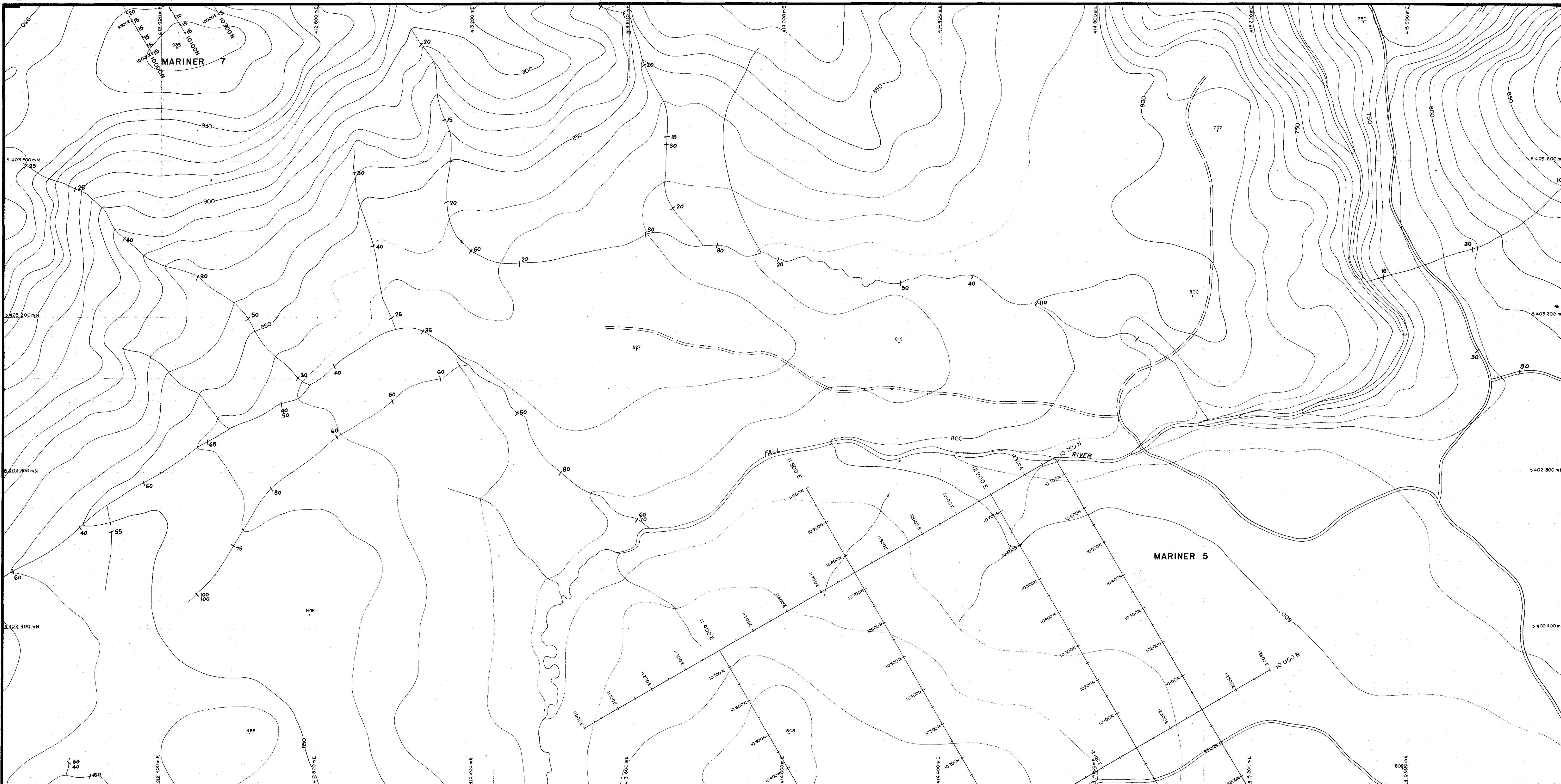
SCALE 1:5000

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 DRAFTSMAN : S.F.
 DATE : JULY 86
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FILE NO.

FIG. 29

963104



- KEY**
- × Rock Chip (Float) Sample
 - ⊗ Rock Chip (Outcrop) Sample
 - Stream Sediment Sample
 - Break-of-Slope Sample
 - Soil Sample

INDEX TO ADJOINING MAPS

3-3	3-4	3-5
4-3	4-4	4-5
5-3	5-4	5-5

5 cm

GOLD FIELDS EXPLORATION PTY LIMITED

EL. 41/83 - LAKE LEA AREA
ZINC GEOCHEMISTRY (P.P.M.)

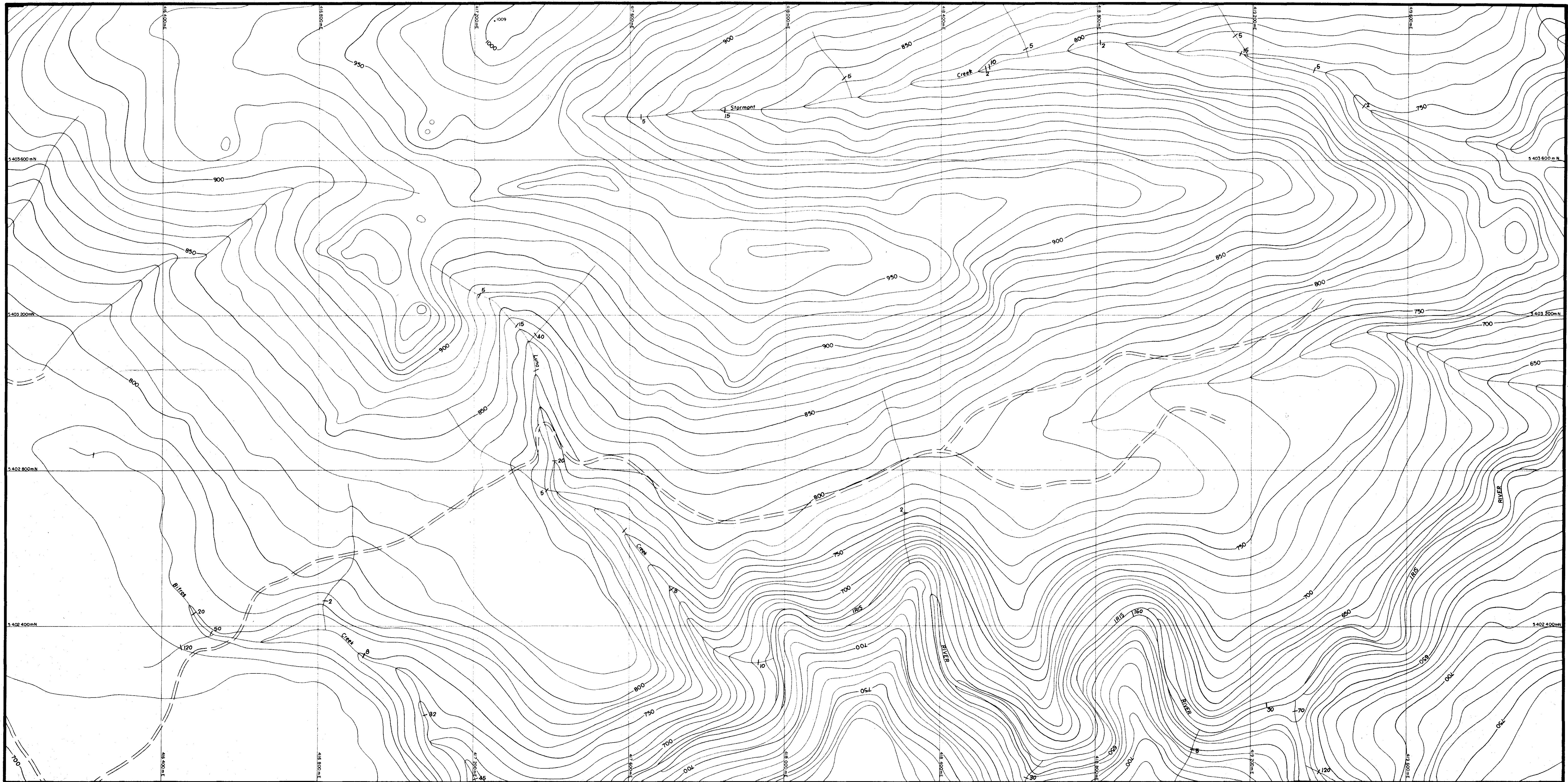
86-2619 5956

SCALE 1:5000

100 50 0 100 200 METRES

FIG 30

DRAWN BY	R.R.
DRAFTSMAN	S.F.
DATE	AUG. 86
REVISIONS	
FILE NO.	



- KEY**
- x Rock Chip (Float) Sample
 - ⊗ Rock Chip (Outcrop) Sample
 - ⊗ Stream Sediment Sample
 - ⊗ Break-of-Slope Sample
 - Soil Sample

INDEX TO ADJOINING MAPS		
3-4	3-5	3-1
4-4	LEA	CETHANA
5-4	5-5	5-1

5 cm

GOLD FIELDS EXPLORATION PTY. LIMITED

963106

ZINC GEOCHEMISTRY

(P.P.M.)

86-2619 5957

SCALE 1:5000

100 50 0 100 200 METRES

DRAWN BY : R.R.

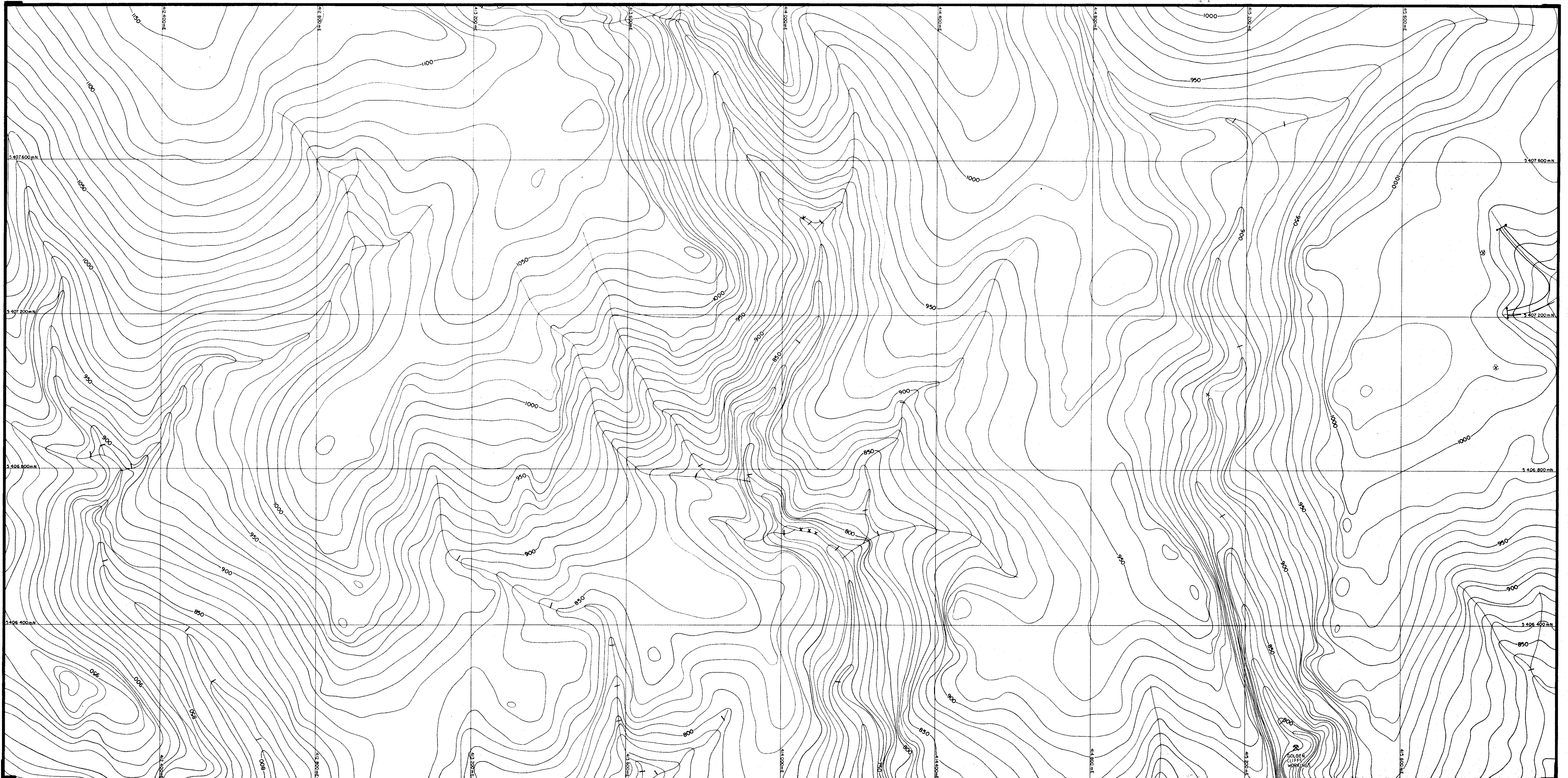
DRAFTSMAN : S.F.

DATE : JULY 86

REVISIONS :

FILE NO.

FIG.31



KEY
x Rock Chip (Flot) Sample
y Rock Chip (Outcrop) Sample
Stream Sediment Sample
Break of Slope Sample
Soil Sample
NB: ONLY ASSAYS GREATER THAN 10 PPM PLOTTED

INDEX TO ADJOINING MAPS		
1-3	1-4	1-5
1-3	2-4	2-5
3-3	3-4	3-5

5 cm

GOLD FIELDS EXPLORATION PTY. LIMITED

963107

ARSENIC GEOCHEMISTRY (PPM.)

86 2519

5958

SCALE 1:5000

DRAWN BY : R.R.

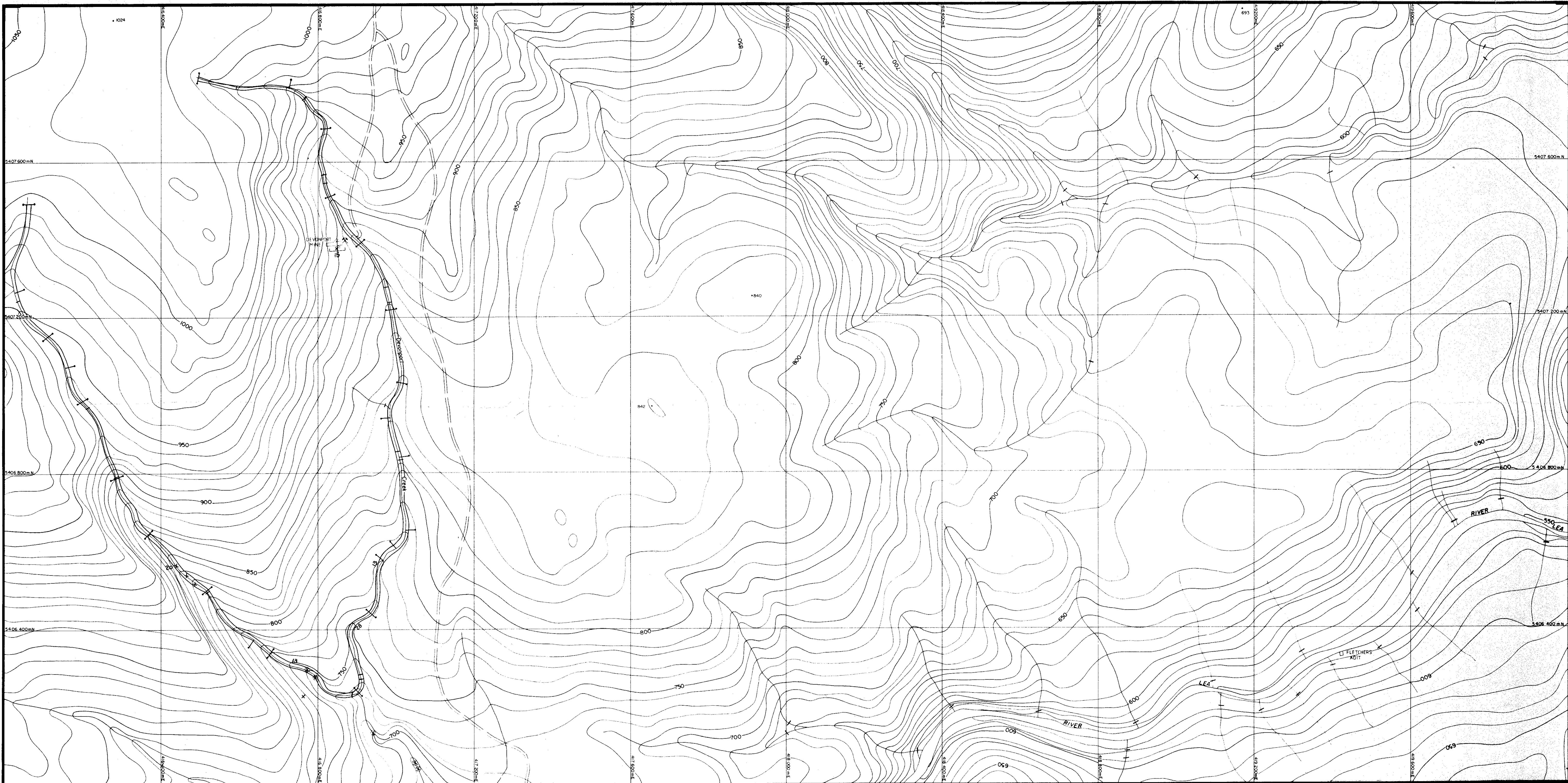
DRAFTSMAN: SF

DATE: SEP.86

REVISIONS:

FILE NO.

FIG. 32



KEY
x Rock Chip (Float) Sample
s Rock Chip (Outcrop) Sample
s Stream Sediment Sample
T Break-of-Slope Sample
• Soil Sample

NB: ONLY ASSAYS GREATER THAN 10 PPM PLOTTED

INDEX TO ADJOINING MAPS		
1-4	1-5	1-1
2-4	LEA 2-5	CETHANA 2-1
3-4	3-5	3-1

5 cm

GOLD FIELDS EXPLORATION PTY LIMITED

963108

ARSENIC GEOCHEMISTRY (PPM.)

86-2619 5959

SCALE 1:5000

METRES

DRAWN BY: R.R.

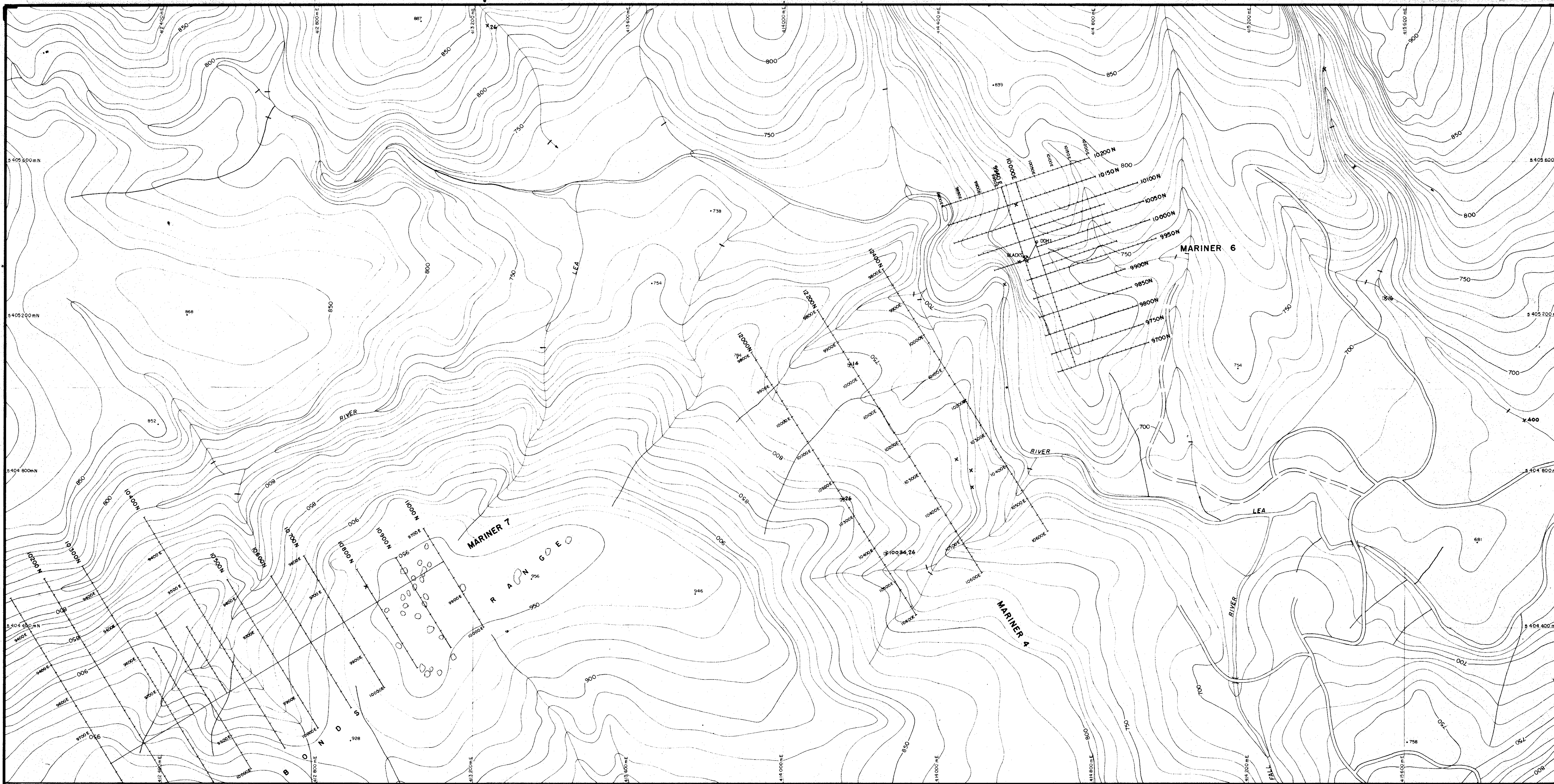
DRAFTSMAN: S.F.

DATE: SEP.86

REVISIONS:

FILE NO.

FIG.33



KEY

- * Rock Chip (Float) Sample
- o Rock Chip (Outcrop) Sample
- ~ Stream Sediment Sample
- Break-of-Slope Sample
- Soil Sample

NB: ONLY ASSAYS GREATER THAN 10 PPM, PLOTTED

INDEX TO ADJOINING MAPS

2-3	2-4	2-5
3-3	LEA 3-4	3-5
4-3	4-4	4-5

5 cm

GOLD FIELDS EXPLORATION PTY LIMITED

E.L. 41/83-LAKE LEA AREA

ARSENIC GEOCHEMISTRY (PPM)

86 26 19 5960

SCALE 1:5000

100 50 0 50 100 METRES

FIG 34

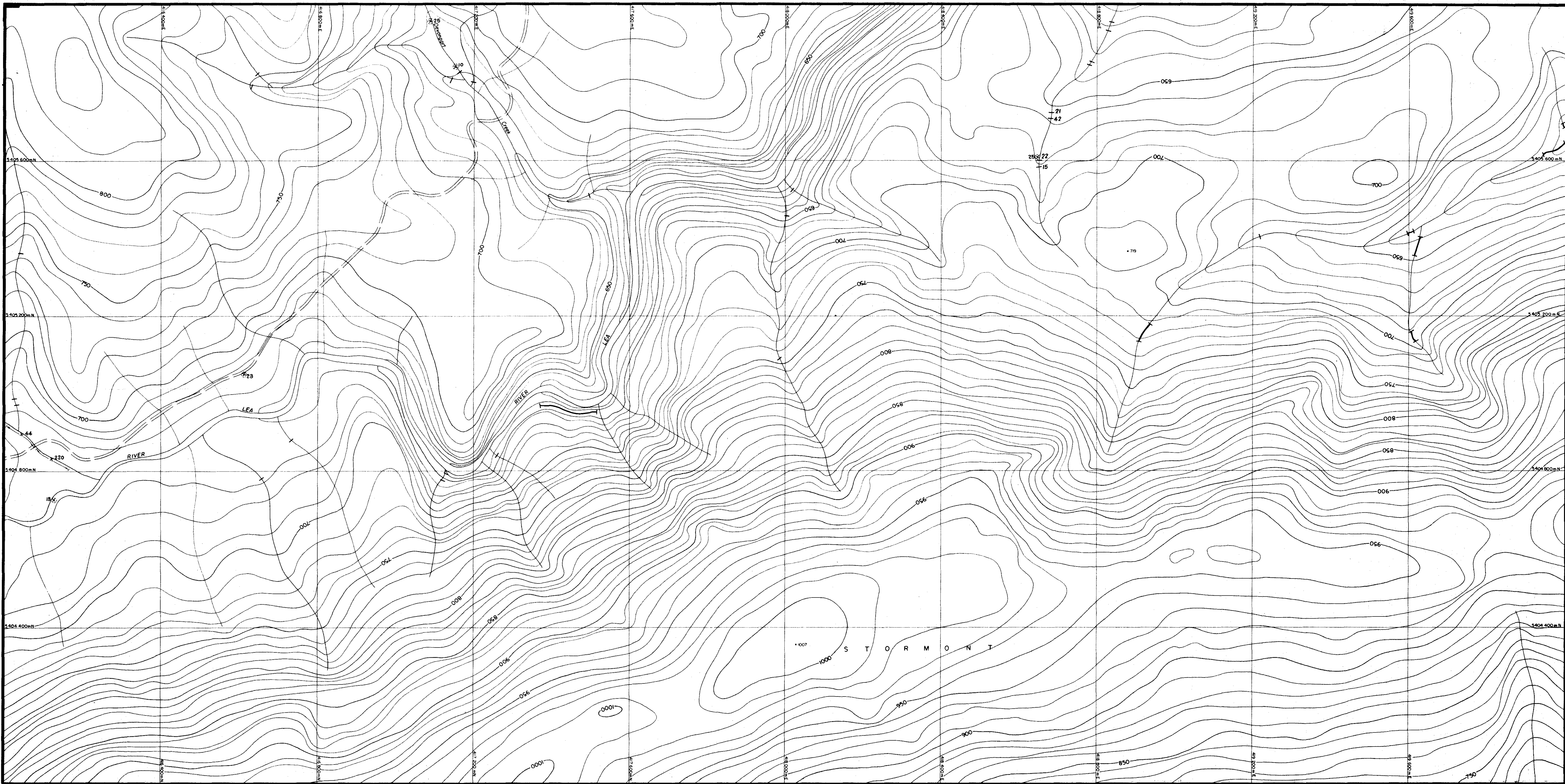
DRAWN BY R.R.

DRAFTSMAN S.F.

DATE SEP.86

REVISIONS

FILE NO.



KEY
x Rock Chip (Float) Sample
* Rock Chip (Outcrop) Sample
- Stream Sediment Sample
- Break-of-Slope Sample
• Soil Sample
NB: ONLY ASSAYS GREATER THAN 10 PPM. PLOTTED

INDEX TO ADJOINING MAPS

2-4	2-5	2-1
3-4	LEA 3-5	CETHANA 3-1
4-4	4-5	4-1

5 cm

GOLD FIELDS EXPLORATION PTY. LIMITED

963110

ARSENIC GEOCHEMISTRY (PPM.)

86-2619

5961

SCALE 1:5000

100 50 0 50 100 200 METRES

DRAWN BY : R.R.

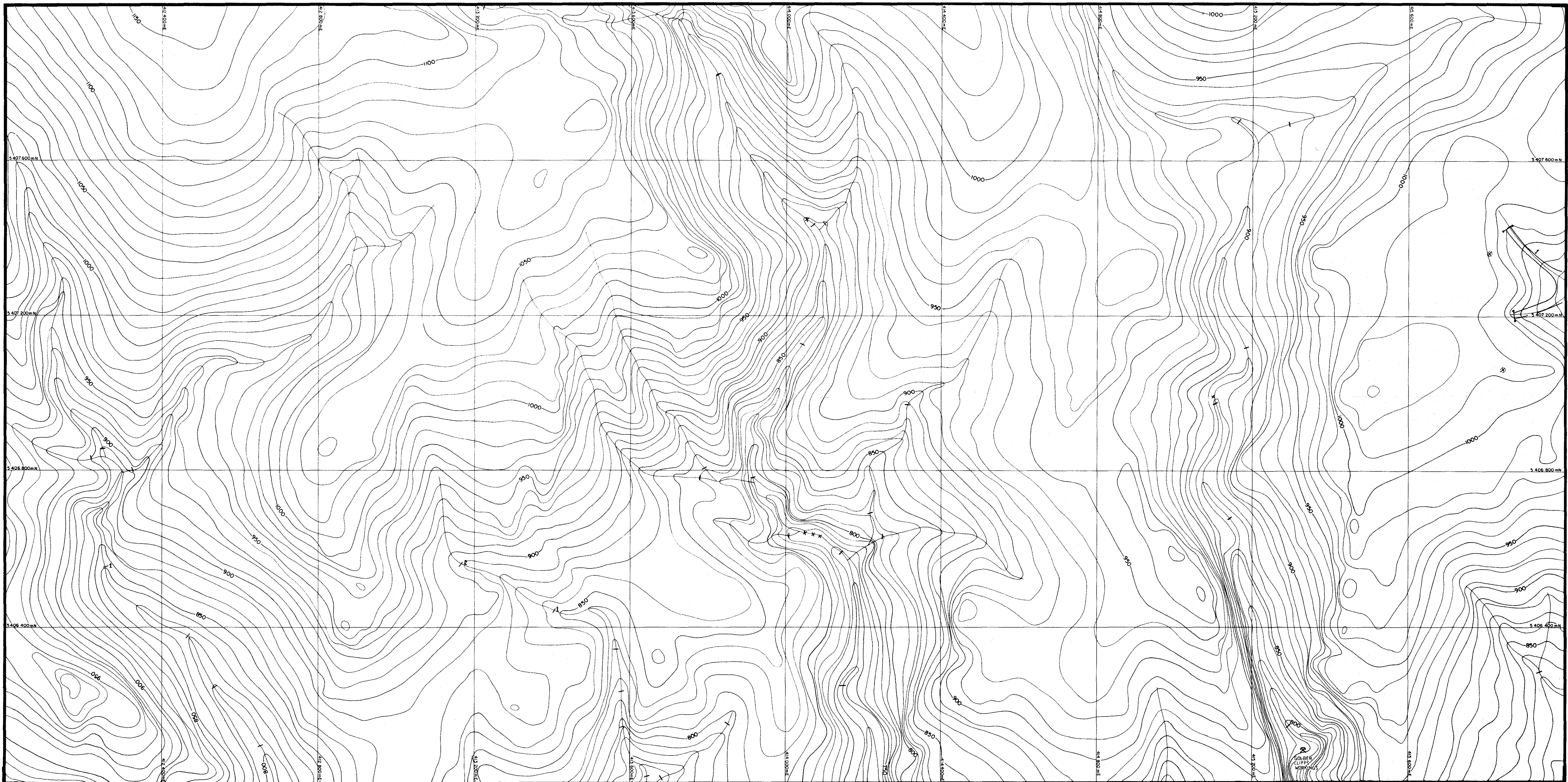
DRAFTSMAN: S.F.

DATE : AUG.86

REVISIONS :

FILE NO.

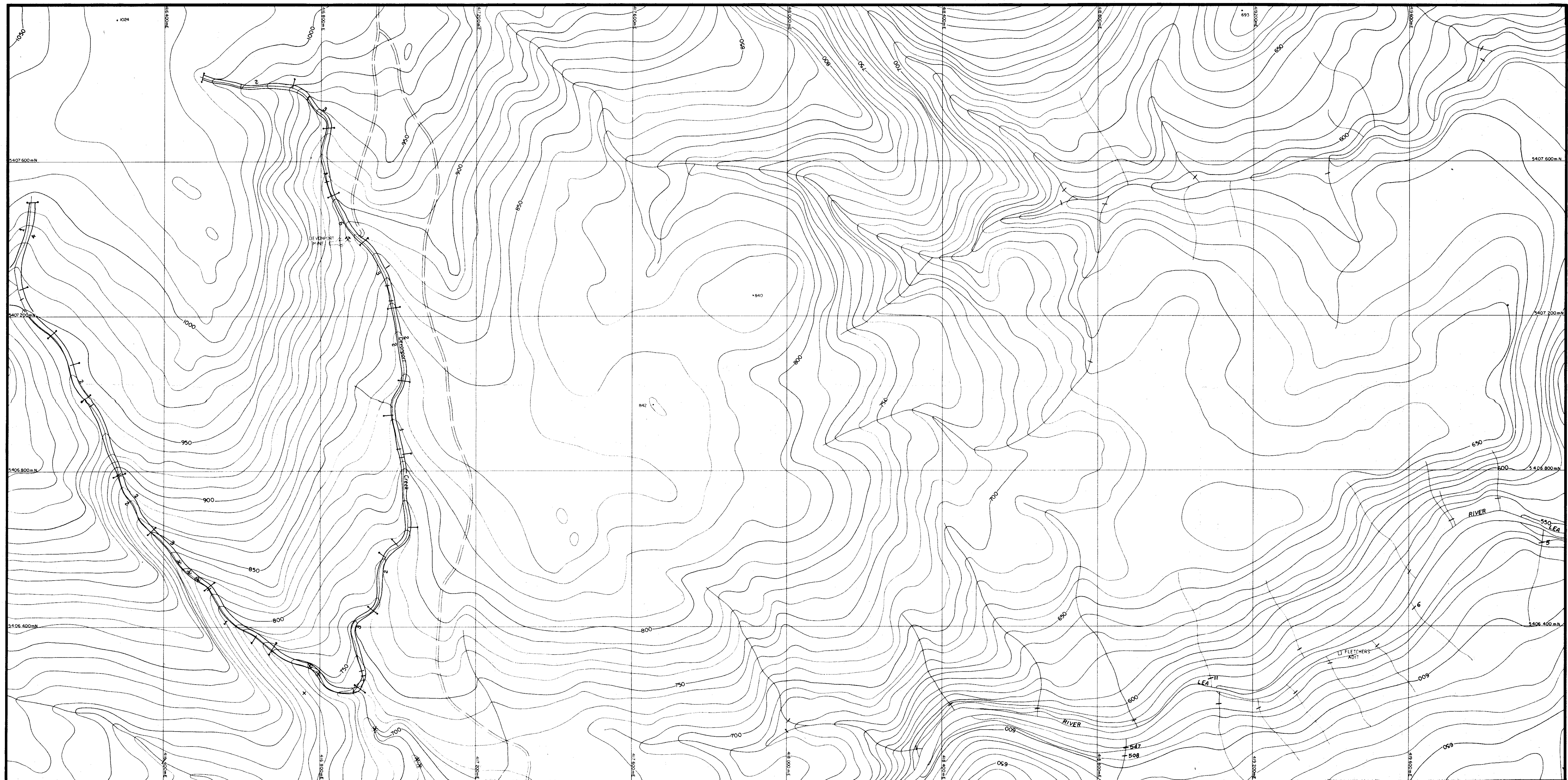
FIG.35



KEY
x Rock Chip (Float) Sample
o Rock Chip (Outcrop) Sample
—+— Stream Sediment Sample
—+— Break - of - Slope Sample
• Soil Sample
NB: ONLY ASSAYS ABOVE DETECTION
LIMIT PLOTTED

INDEX TO ADJOINING MAPS		
1-3	1-4	1-5
1-3	2-4	2-5
3-3	3-4	3-5

GOLD FIELDS EXPLORATION PTY. LIMITED	
963111	
BISMUTH GEOCHEMISTRY (PPM.)	
86-2619	
SCALE 1:5000	
5 cm	
DRAWN BY: R.R.	
DRAFTSMAN: SF	
DATE: SEP.86	
REVISIONS:	
FILE NO.	
FIG36	



KEY
x Rock Chip (Float) Sample
o Rock Chip (Outcrop) Sample
+ Stream Sediment Sample
+ Break-of-Slope Sample
+ Soil Sample
NB: ONLY ASSAYS GREATER THAN 10 PPM. PLOTTED

INDEX TO ADJOINING MAPS		
1-4	1-5	1-1
2-4	LEA 2-5	CETHANA 2-1
3-4	3-5	3-1

5 CM

GOLD FIELDS EXPLORATION PTY. LIMITED

963112

BISMUTH GEOCHEMISTRY

(PPM.)

86 26 19

5963

SCALE 1:5000

DRAWN BY: R.R.

DRAFTSMAN: S.F.

DATE: AUG. 86

REVISIONS:

FILE NO.

FIG. 37



KEY

- x Rock Chip (Float) Sample
- ⊗ Rock Chip (Outcrop) Sample
- Stream Sediment Sample
- Break-of-Slope Sample
- Soil Sample

NB: ONLY ASSAYS ABOVE DETECTION LIMIT PLOTTED

INDEX TO ADJOINING MAPS		
2-3	2-4	2-5
3-3	LEA 3-4	3-5
4-3	4-4	4-5

GOLD FIELDS EXPLORATION PTY. LIMITED

E.L. 41/83-LAKE LEA AREA

BISMUTH GEOCHEMISTRY (PPM.)

86 26 19 5964

SCALE 1:5000

6 cm

0 50 100 200

METRES

FIG 38

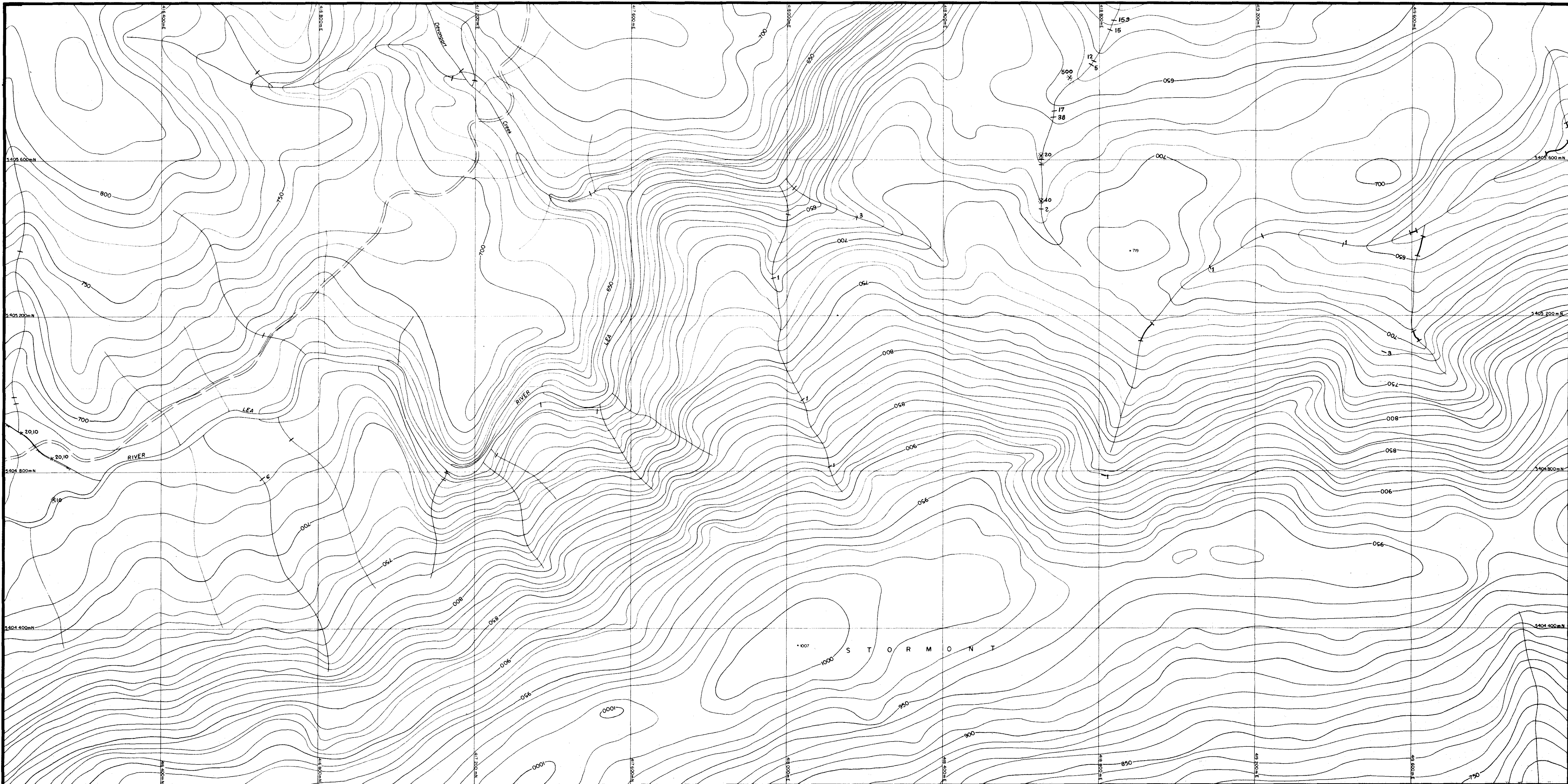
DRAWN BY R.R.

DRAFTSMAN S.F.

DATE AUG. 86

REVISIONS

FILE NO.



KEY

- ✱ Rock Chip (Float) Sample
- ⊗ Rock Chip (Outcrop) Sample
- ✕ Stream Sediment Sample
- ⌢ Break-of-Slope Sample
- Soil Sample

NB: ONLY ASSAYS ABOVE DETECTION LIMIT PLOTTED

INDEX TO ADJOINING MAPS

2-4	2-5	2-1
3-4	LEA 3-3	CETHANA 3-1
4-4	4-5	4-1

6 cm

GOLD FIELDS EXPLORATION PTY. LIMITED

963114

BISMUTH GEOCHEMISTRY (PPM.)

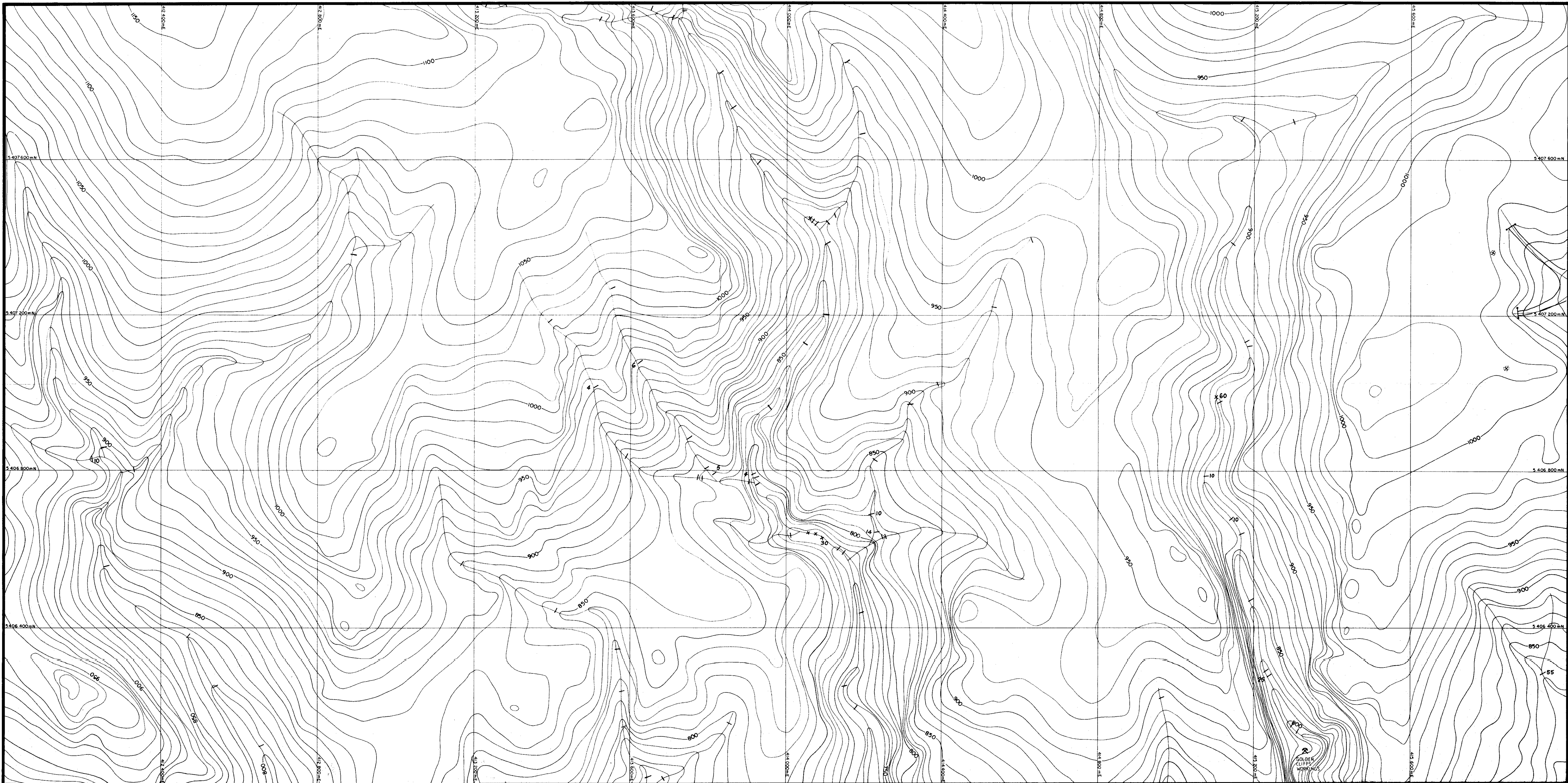
86-2619

SCALE 1:5000

100 50 0 50 100 200 METRES

DRAWN BY : RR.	FILE NO.
DRAFTSMAN : S.F.	
DATE : AUG. 86	
REVISIONS :	

FIG. 39



KEY

- x Rock Chip (Float) Sample
- o Rock Chip (Outcrop) Sample
- Stream Sediment Sample
- Break-of-Slope Sample
- Soil Sample

NB: ONLY ASSAYS ABOVE DETECTION LIMIT PLOTTED

INDEX TO ADJOINING MAPS		
1-3	1-4	1-5
1-3	2-4	2-5
	3-4	3-5

GOLD FIELDS EXPLORATION PTY. LIMITED

963115

TUNGSTEN GEOCHEMISTRY (PPM.)

86-2619 5966

SCALE 1:5000

DRAWN BY: R.R.
DRAFTSMAN: S.F.
DATE: AUG. 86
REVISIONS:
FILE NO.:
FIG. 40



KEY

- * Rock Chip (Floor) Sample
- o Rock Chip (Outcrop) Sample
- Stream Sediment Sample
- Break-of-Slope Sample
- Soil Sample

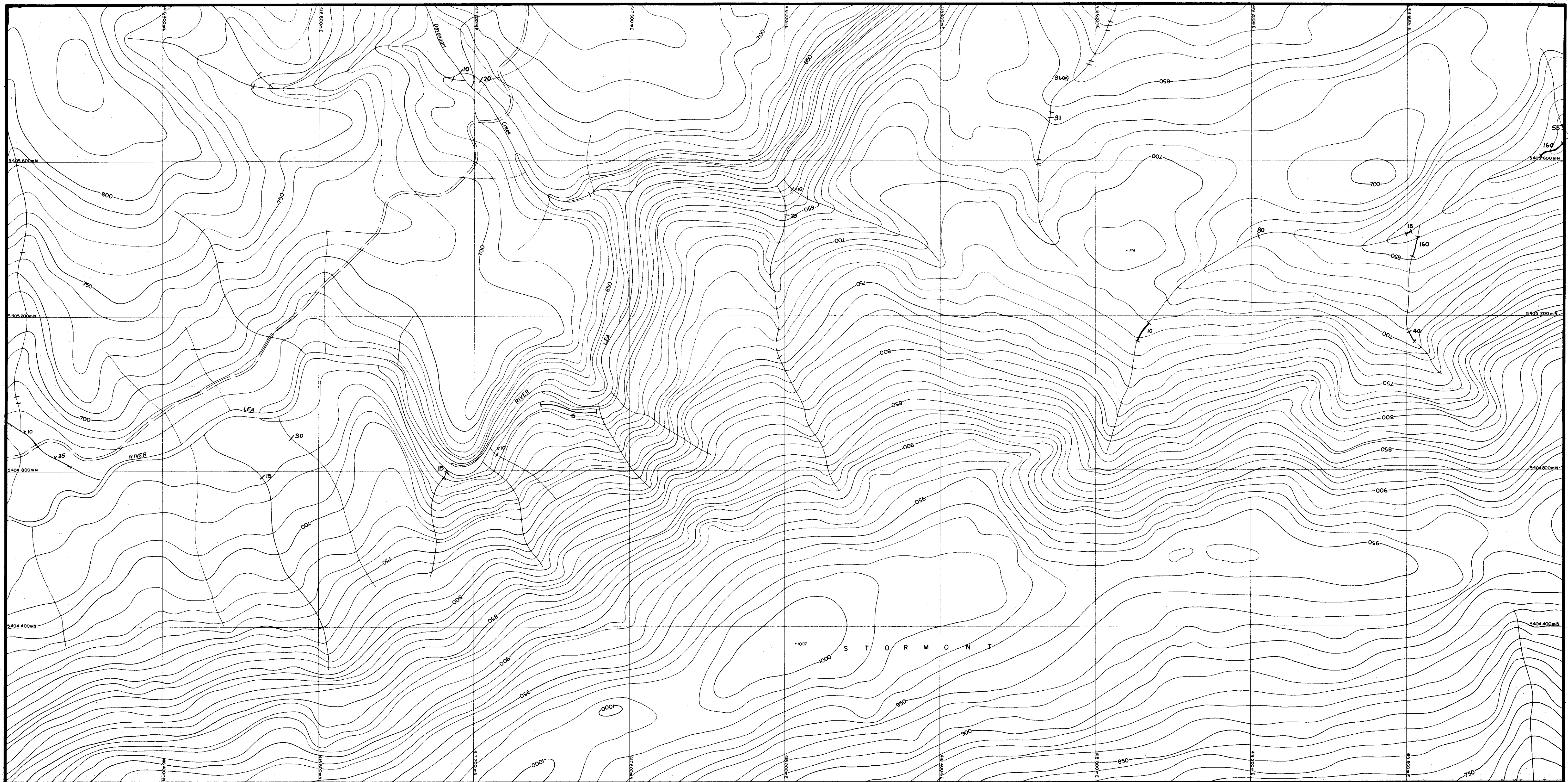
NB: ONLY ASSAYS ABOVE DETECTION LIMIT PLOTTED

INDEX TO ADJOINING MAPS		
2-3	2-4	2-5
3-3	LEA 3-4	3-5
4-3	4-4	4-5

5 cm

GOLD FIELDS EXPLORATION PTY LIMITED	
E.L. 41/83-LAKE LEA AREA	
TUNGSTEN GEOCHEMISTRY (PPM.)	
80 26 19 1	
5968	
SCALE 1:5000	100 50 0 100 200 METRES
DRAWN BY RR.	DRAFTSMAN S.F.
DATE AUG. 86	REVISIONS
FILE NO.	FIG 42

963117



KEY
* Rock Chip (Flat) Sample
* Rock Chip (Outcrop) Sample
x Stream Sediment Sample
- Break-of-Slope Sample
• Soil Sample
NB: ONLY ASSAYS ABOVE DETECTION
LIMIT PLOTTED

INDEX TO ADJOINING MAPS		
2-4	2-5	2-1
3-4	LEA 3-5	CETHANA 3-1
4-4	4-5	4-1

5 cm

GOLD FIELDS EXPLORATION PTY. LIMITED

363118

TUNGSTEN GEOCHEMISTRY (PPM.)

86-26191

5969

SCALE 1:5000

100 50 0 100 200 METRES

DRAWN BY : RR.

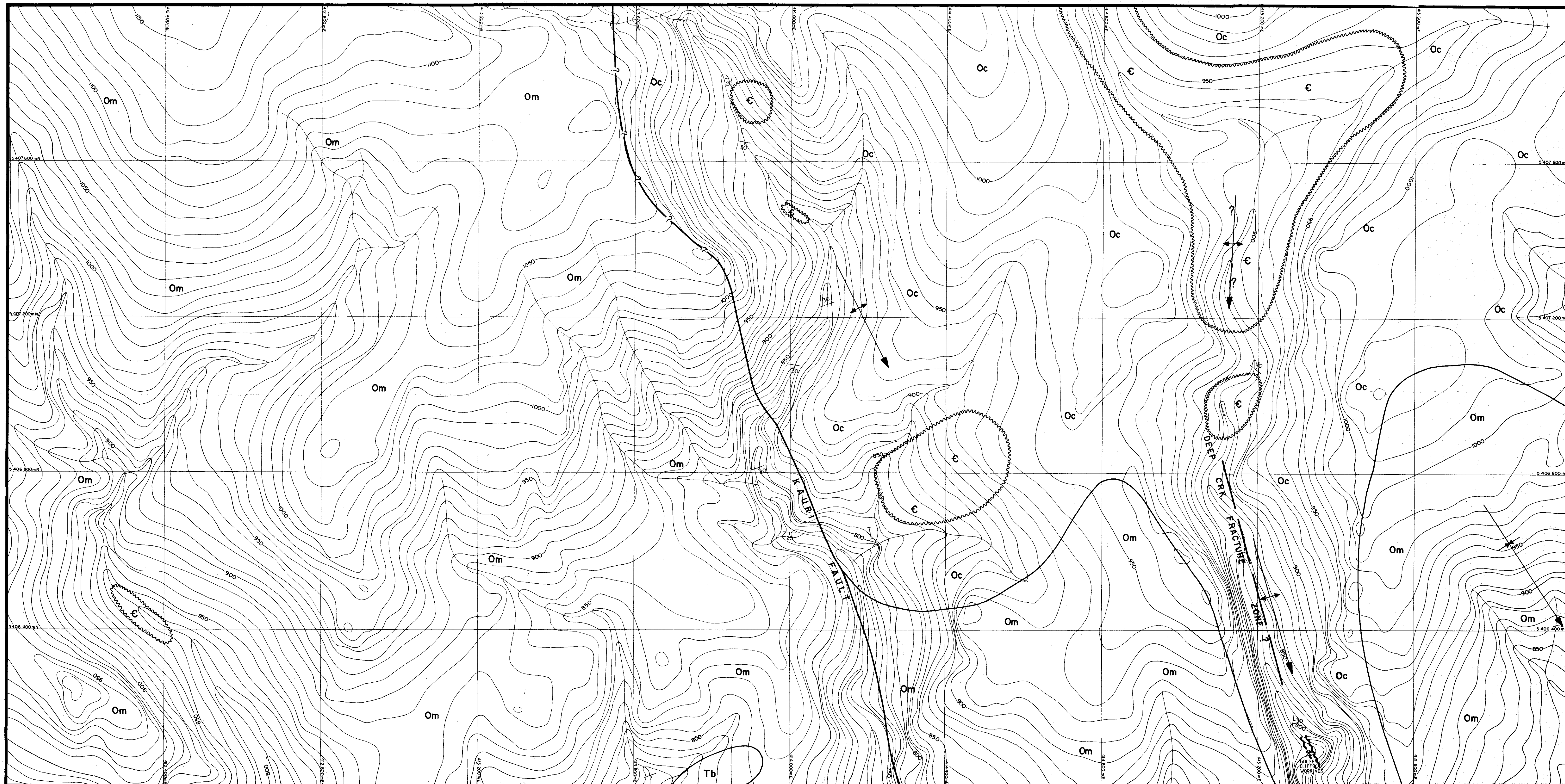
DRAFTSMAN : S.F.

DATE : AUG. 86

REVISIONS :

FILE NO.

FIG. 43



TERTIARY

Tb Basalt & Basalt Scree

Tg Gravels & Greybill

ORDOVICIAN

Og Gordon Limestone

Skarn

LEGEND

Om Moina Sandstone: Predominantly sandstone with minor shale bands. Worm casts commonly occur within the sandstone (tubicolite sandstone). Varies from sandstone to grey quartzite. Pyrite often occurs along microfractures and as disseminations within the sandstone.

Omh Hornfelsed sections of Moina Sandstone

CAMBRIAN

€ Undifferentiated Cambrian volcanics

Oc Owen Conglomerate equivalents: Interbedded pink quartz-rich conglomerate, pink sandstone, banded maroon sandstone, pebbly conglomerate with hematitic fragments, hematite-rich sandstone. All units have a hematite component and are distinguished from the overlying Moina sandstone by their reddish colorations.

Strike & dip of bedding (—: vertical)

Strike & dip of jointing (—: vertical)

Strike & dip of foliation (—: vertical)

Anticline with plunge

Syncline with plunge

Unconformity

Geological Boundary

Geological Boundary (inferred)

Fault

Shearing

Quartz veins with strike & dip

Cut grid

Old Workings

INDEX TO ADJOINING MAPS

1-3	1-4	1-5
1-3	LEA 8-4	2-5
3-3	3-4	3-5

GOLD FIELDS EXPLORATION PTY. LIMITED

963119

FACTUAL

&

INTERPRETIVE GEOLOGY

8C 2619

SCALE 1:5000

5 cm

100 200 METRES

5970

FIG. 44

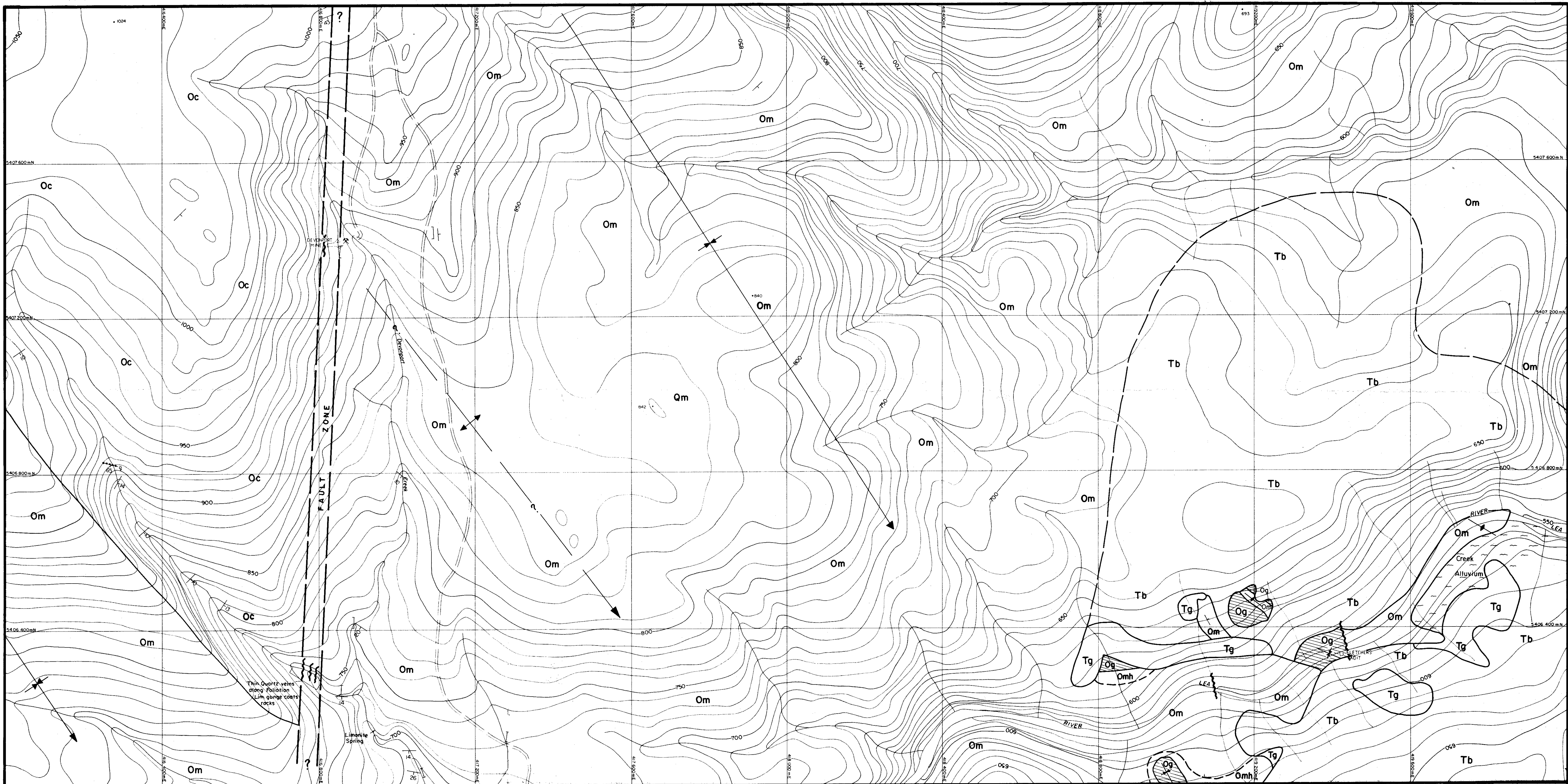
DRAWN BY: R.R.

DRAFTSMAN: S.F.

DATE: DEC. 86

REVISIONS:

FILE NO.



TERTIARY

- Tb** Basalt & Basalt Scree
Tg Gravels & Greybilly

ORDOVICIAN

- Og** Gordon Limestone **Og** Skarn

LEGEND

- Om** Moina Sandstone: Predominantly sandstone with minor shale bands. Worm casts commonly occur within the sandstone (tubular sandstone). Varies from sandstone to grey quartzite. Pyrite often occurs along microfractures and as disseminations within the sandstone.
Omh Hornfelsed sections of Moina Sandstone

- Oc** Owen Conglomerate equivalents: Interbedded pink quartz-rich conglomerate, pink sandstone, banded maroon sandstone, pebbly conglomerate with hematitic fragments, hematite-rich sandstone. All units have a hematite component and are distinguished from the overlying Moina sandstone by their reddish colorations.

CAMBRIAN

- C** Undifferentiated Cambrian volcanics

- Strike & dip of bedding (— vertical)
 Strike & dip of jointing (— vertical)
 Strike & dip of foliation (— vertical)
 Anticline with plunge
 Syncline with plunge

- Unconformity
 Geological Boundary
 Geological Boundary (inferred)
 Fault
 Shearing
 Quartz veins with strike & dip
 Cut grid
 Old Workings

INDEX TO ADJOINING MAPS		
1-4	1-5	1-1
2-4	2-5	2-1
3-4	3-5	3-1

GOLD FIELDS EXPLORATION PTY. LIMITED

963120

FACTUAL

&
 INTERPRETIVE GEOLOGY

5971

SCALE 1:5000

DRAWN BY: R.R.

DRAFTSMAN: S.F.

DATE: DEC. 86

REVISIONS:

FILE NO.

FIG. 45

86-2619



TERTIARY
Tb Basalt & Basalt Scree
Tg Gravels & Greyblity
ORDOVICIAN
Og Gordon Limestone
Om Skarn

LEGEND
Om Moira Sandstone: Predominantly sandstone with minor shale bands. Worm casts commonly occur within the sandstone (tubular sandstone). Varies from sandstone to grey quartzite. Pyrite often occurs along microfractures and as disseminations within the sandstone.
Omh Hornfelsed sections of Moira Sandstone

Oc Owen Conglomerate equivalents: Interbedded pink quartz-rich conglomerate, pink sandstone, banded maroon sandstone, pebbly conglomerate with hematitic fragments, hematite-rich sandstone. All units have a hematite component and are distinguished from the overlying Moira sandstone by their reddish colorations.

CAMBRIAN
€ Undifferentiated Cambrian volcanics

Strike & dip of bedding (vertical)
Strike & dip of jointing (vertical)
Strike & dip of foliation (vertical)
Anticline with plunge
Syncline with plunge

Unconformity
Geological Boundary
Geological Boundary (inferred)
Fault
Shearing
Quartz veins with strike & dip
Cut grid
Old Workings

INDEX TO ADJOINING MAPS		
2-3	2-4	2-5
3-3	LEA 3-4	3-5
4-3	4-4	4-5

GOLD FIELDS EXPLORATION PTY LIMITED

E.L. 41/83-LAKE LEA AREA

963121

FACTUAL

&

INTERPRETIVE GEOLOGY

5972

SCALE 1:5000

100 50 0 50 100 200 METRES

DRAWN BY R.R.

DRAFTSMAN S.F.

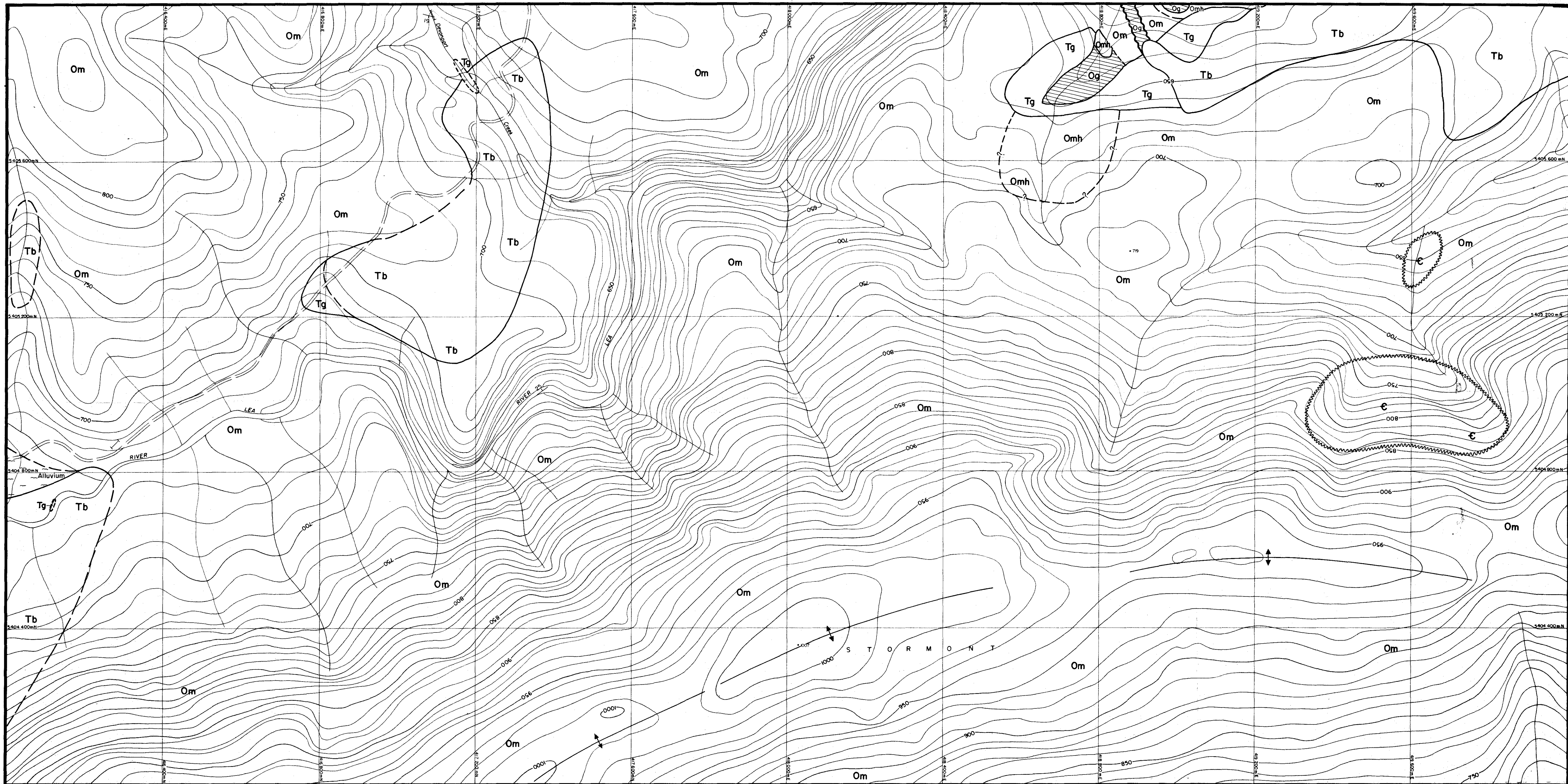
DATE DEC. 86

REVISIONS

FILE NO.

FIG 46

86-26191



TERTIARY

- Tb** Basalt & Basalt Scree
- Tg** Gravels & Greyblly

ORDOVICIAN

- Og** Gordon Limestone
- Skorn**

LEGEND

- Om** Moina Sandstone: Predominantly sandstone with minor shale bands. Worm casts commonly occur within the sandstone (tubular sandstone). Varies from sandstone to grey quartzite. Pyrite often occurs along microfractures and as disseminations within the sandstone.
- Omh** Hornfelsed sections of Moina Sandstone

- Oc** Owen Conglomerate equivalents: Interbedded pink quartz-rich conglomerate, pink sandstone, banded maroon sandstone, pebbly conglomerate with hematitic fragments, hematite-rich sandstone. All units have a hematite component and are distinguished from the overlying Moina sandstone by their reddish colourations.

CAMBRIAN

- €** Undifferentiated Cambrian volcanics

- 20** Strike & dip of bedding (vertical)
- 30** Strike & dip of jointing (vertical)
- 40** Strike & dip of foliation (vertical)
- 50** Anticline with plunge
- 60** Syncline with plunge

- Unconformity**
- Geological Boundary**
- Geological Boundary (inferred)**
- Fault**
- Shearing**
- Quartz veins with strike & dip**
- Cut grid**
- Old Workings**

INDEX TO ADJOINING MAPS		
2-4	2-5	2-1
3-4	LEA 3-5	CETHANA 3-1
4-4	4-5	4-1

GOLD FIELDS EXPLORATION PTY. LIMITED

963122

**FACTUAL
&
INTERPRETIVE GEOLOGY**

DRAWN BY: R.R.

DRAFTSMAN: S.F.

DATE: DEC.86

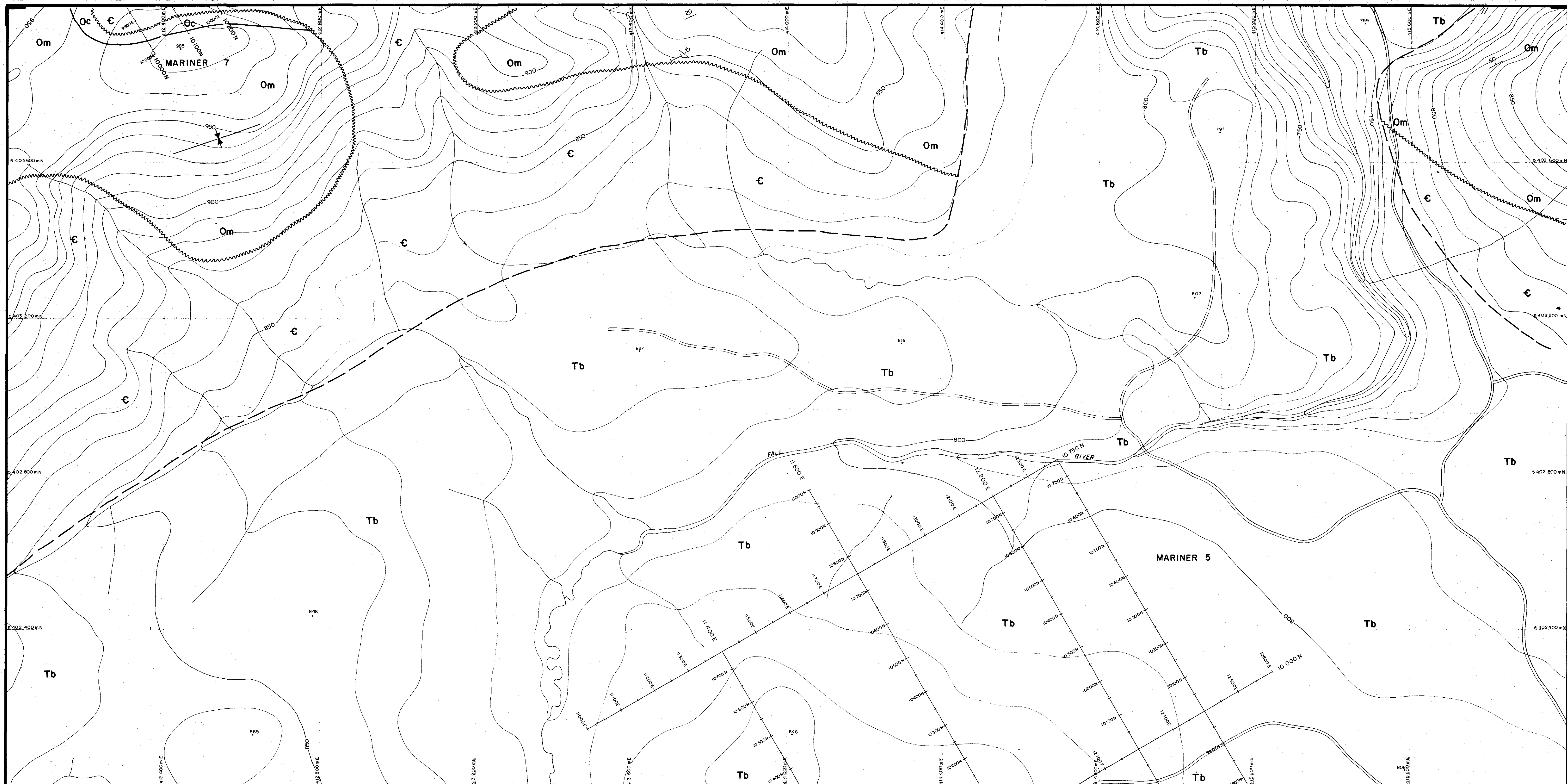
REVISIONS:

5973 FILE NO.

SCALE 1:5000

100 50 0 50 100 200 METRES

FIG. 47



TERTIARY

Tb Basalt & Basalt Scree

Tg Gravels & Greybilly

ORDOVICIAN

Og Gordon Limestone

Sk Skorn

LEGEND

Om

Moina Sandstone: Predominantly sandstone with minor shale bands. Worm casts commonly occur within the sandstone (tubicolite sandstone). Varies from sandstone to grey quartzite. Pyrite often occurs along microfractures and as disseminations within the sandstone.

OmH Hornfelsed sections of Moina Sandstone

Oc

Owen Conglomerate equivalents: Interbedded pink quartz-rich conglomerate, pink sandstone, banded maroon sandstone, pebbly conglomerate with hematitic fragments, hematite-rich sandstone. All units have a hematite component and are distinguished from the overlying Moina sandstone by their reddish colorations.

CAMBRIAN

C Undifferentiated Cambrian volcanics

- Strike & dip of bedding (vertical)
- Strike & dip of jointing (vertical)
- Strike & dip of foliation (vertical)
- Anticline with plunge
- Syncline with plunge

- Unconformity
- Geological Boundary
- Geological Boundary (inferred)
- Fault
- Shearing
- Quartz veins with strike & dip
- Cut grid
- Old Workings

INDEX TO ADJOINING MAPS		
3-3	3-4	3-5
4-3	LEA 4-4	4-5
5-3	5-4	5-5

GOLD FIELDS EXPLORATION PTY LIMITED

963123
E.L. 41/83 - LAKE LEA AREA
FACTUAL

INTERPRETIVE GEOLOGY

3C 26191

SCALE 1:5000

100 50 0 50 100 200
METRES

DRAWN BY R.R.

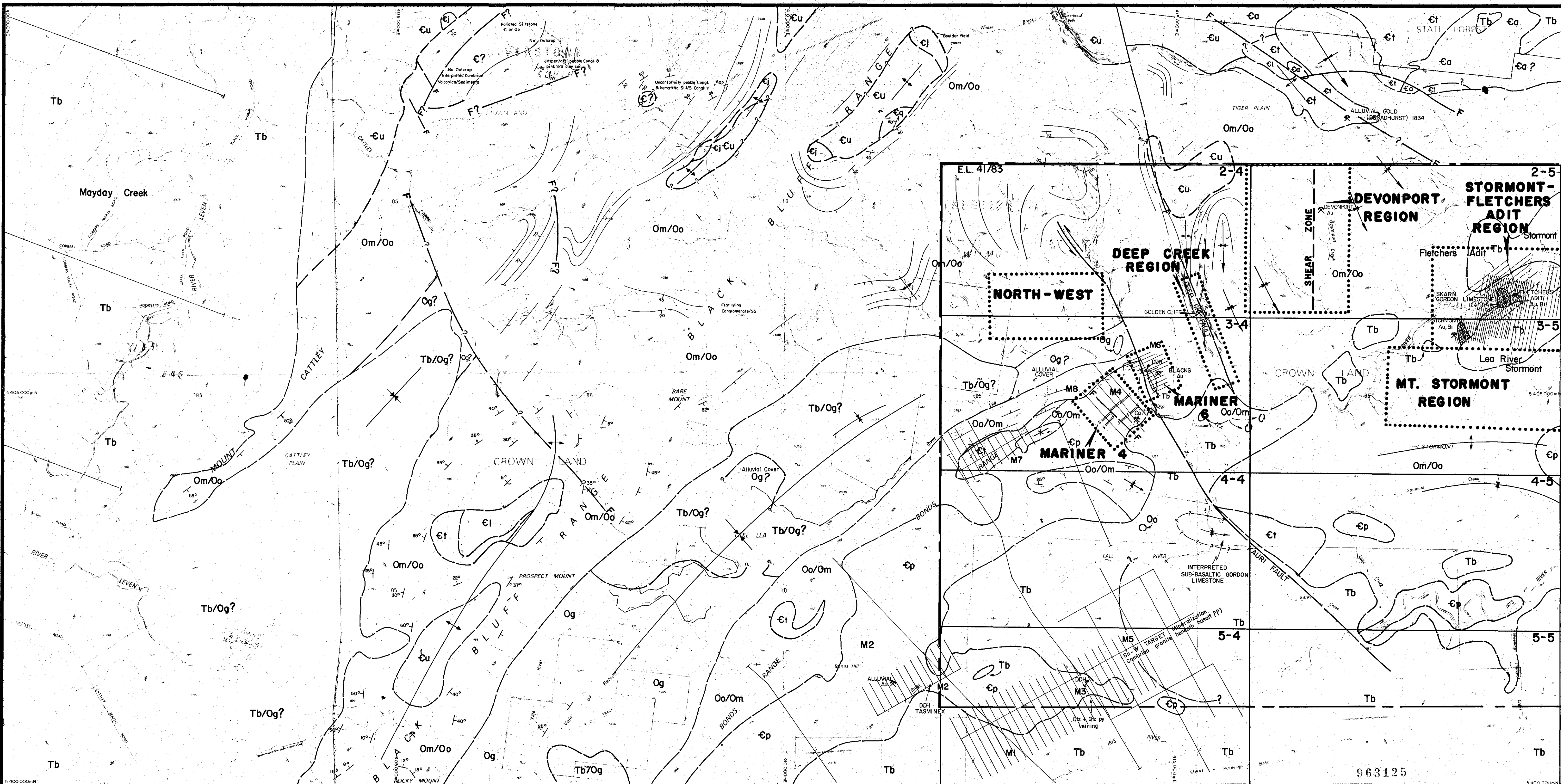
DRAFTSMAN S.F.

DATE DEC.86

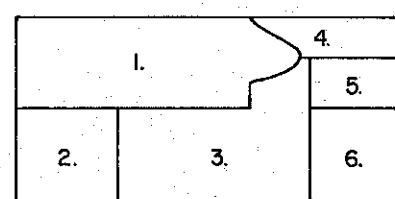
REVISIONS

FILE NO.

FIG48



GEOLOGICAL RESPONSIBILITY DIAGRAM



1. Burnie 1:250,000 sheet : D.B. Seymour, R.P. unpublished mapping
2. Mackintosh 1 mile sheet
3. Geopko mapping (1978-1982)
4. Comalco mapping (Weste, 1978)
5. Sheffield 1 mile sheet, R.P. unpublished mapping
6. Middlesex 1 mile sheet, R.P. unpublished mapping

TERTIARY

- Tb Basalt, locally underlain by greyblite
- Tb/Og Basalt over interpreted Gordon Limestone

ORDOVICIAN

- Og Gordon Limestone
- Om/Oo Main Sandstone/Owen Conglomerate undifferentiated
- Predominantly bioturbated sandstone

CAMBRIAN

- Cj Volcanoclastic Conglomerate - Jukes Equivalent(?)
- Cq Quartz phric volcanics
- Cf Fine-medium grained volcanoclastics, clastics
- Cl Rhyolite-dacite volcanics, probably lavas
- Ca Andesite lavas
- Cp Quartz-feldspar-biotite porphyry, partly intrusive, local sericitic alteration
- Cu Undifferentiated volcanics and sediments

LEGEND

ALTERATION

- Magnetite, garnet skarns
- Silicification with corundum sericite-specularite alteration

CULTURE

- Grid Lines
- M1 : Mariner (Geopko grid)
- Diamond drill hole
- Strike with dip of bedding
- Bedding trend line
- Anticline
- Syncline

2-4 LEA 1:5000 SHEETS

AREAS DESIGNATED FOR FOLLOW-UP

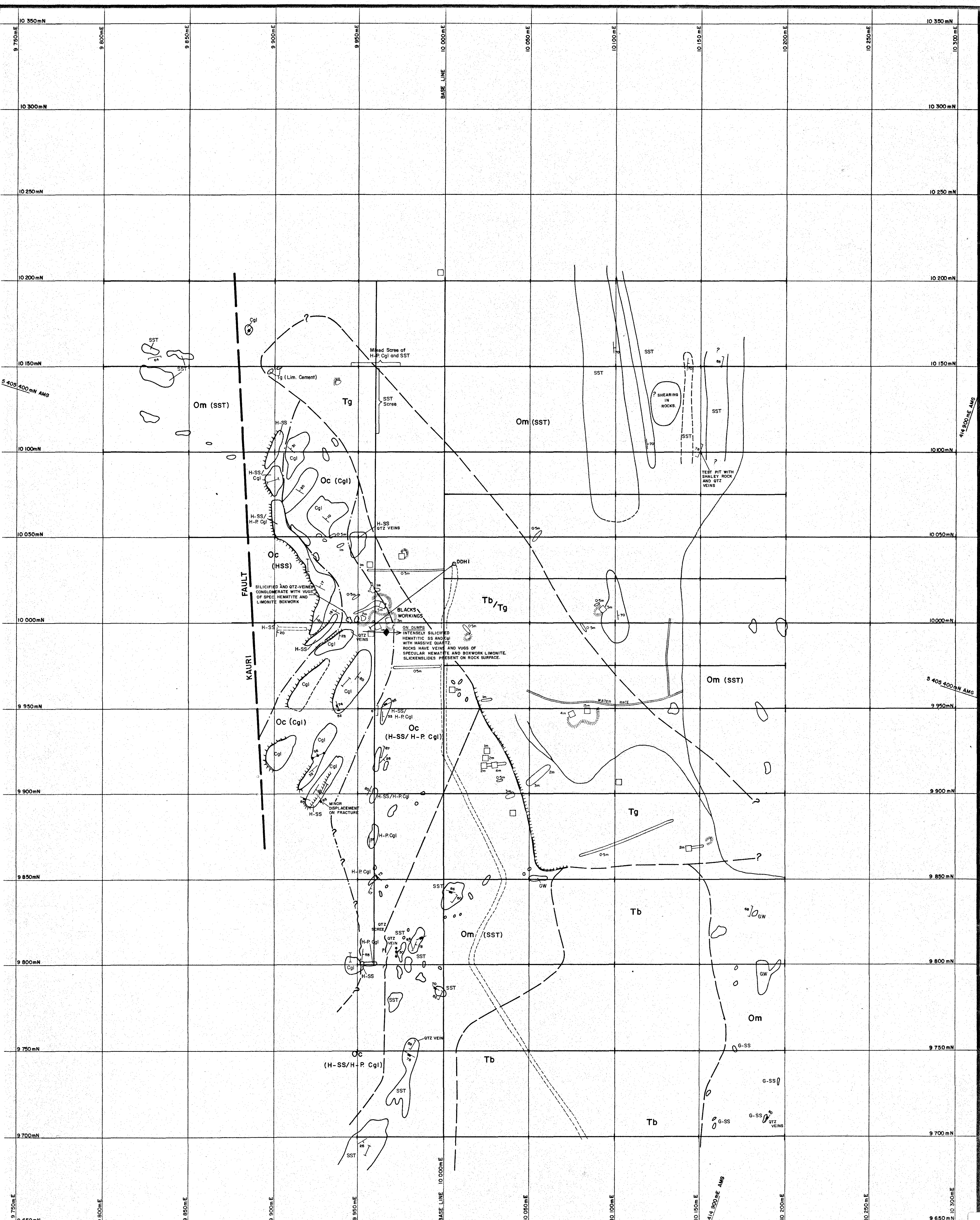
- BLACKS Au Old mines and prospects, name and contained metals
- Fault with movement shown
- Possible margin of concealed granite cupola

GOLD FIELDS EXPLORATION PTY LIMITED

E.L. 41/83
LAKE LEA AREA
FACTUAL AND INTERPRETIVE GEOLOGY
WITH AREAS FOR FOLLOW-UP
SCALE 1:25000
5976

DRAWN BY R.P.
DRAFTSMAN TGD/S.S.F.
DATE Nov '84
REVISIONS
R.P./D.S.-Oct.85
R.R.-DEC.86
FILE NO.
FIG50

80 2019



TERTIARY

Tb Basalt & Basalt Scree

Tg Gravel & Greyblt

ORDOVICIAN

Oc Gordon Limestone

Om Main Sandstone: Predominantly sandstone with minor shale beds. Worm casts commonly occur within the sandstone (tubular sandstone). Varies from sandstone to grey quartzite. Pyrite often occurs along microfractures and as disseminations within the sandstone.

OmH Hornfelsed sections of Main Sandstone

LEGEND

Om Main Sandstone

Oc Owen Conglomerate equivalents: Interbedded pink quartz-rich conglomerate, pink sandstone, bedded maroon sandstone, pebbly conglomerate with hematitic fragments, hematite-rich sandstone. All units have a hematite component and are distinguished from the overlying Main sandstone by their reddish colorations.

CAMBRIAN

Cg Undifferentiated Cambrian volcanics

SYMBOLS

Strike & dip of bedding (vertical)

Strike & dip of jointing (vertical)

Strike & dip of foliation (vertical)

Anticline with plunge

Syncline with plunge

Unconformity

Geological Boundary

Geological Boundary (Inferred)

Fault

Shearing

Quartz veins with strike & dip

Cut grid

Old Workings

OUTCROP SYMBOLS

SST - TUBULAR SANDSTONE

G-SS - GREY SANDSTONE

G-W - GREYWACKE

H-SS - HEMATITIC SANDSTONE: Varying from pink sandstone to maroon sandstone. Commonly banded with darker layers.

H-P Cgl - HEMATITIC PEBBLY CONGLOMERATE: Typically well bedded and intercalated with hematitic sandstone. (ie. H-SS/H-P Cgl)

H-Cgl - QUARTZ-RICH HEMATITIC CONGLOMERATE: Commonly with cobble to boulder-sized fragments.

LEGEND

Cliff

Trench (with depths)

Shaft (with depths)

Mullock Heaps

963126

GOLD FIELDS EXPLORATION PTY. LIMITED

FIG. 51

E.L.41/83-LAKE LEA AREA

MARINER 6

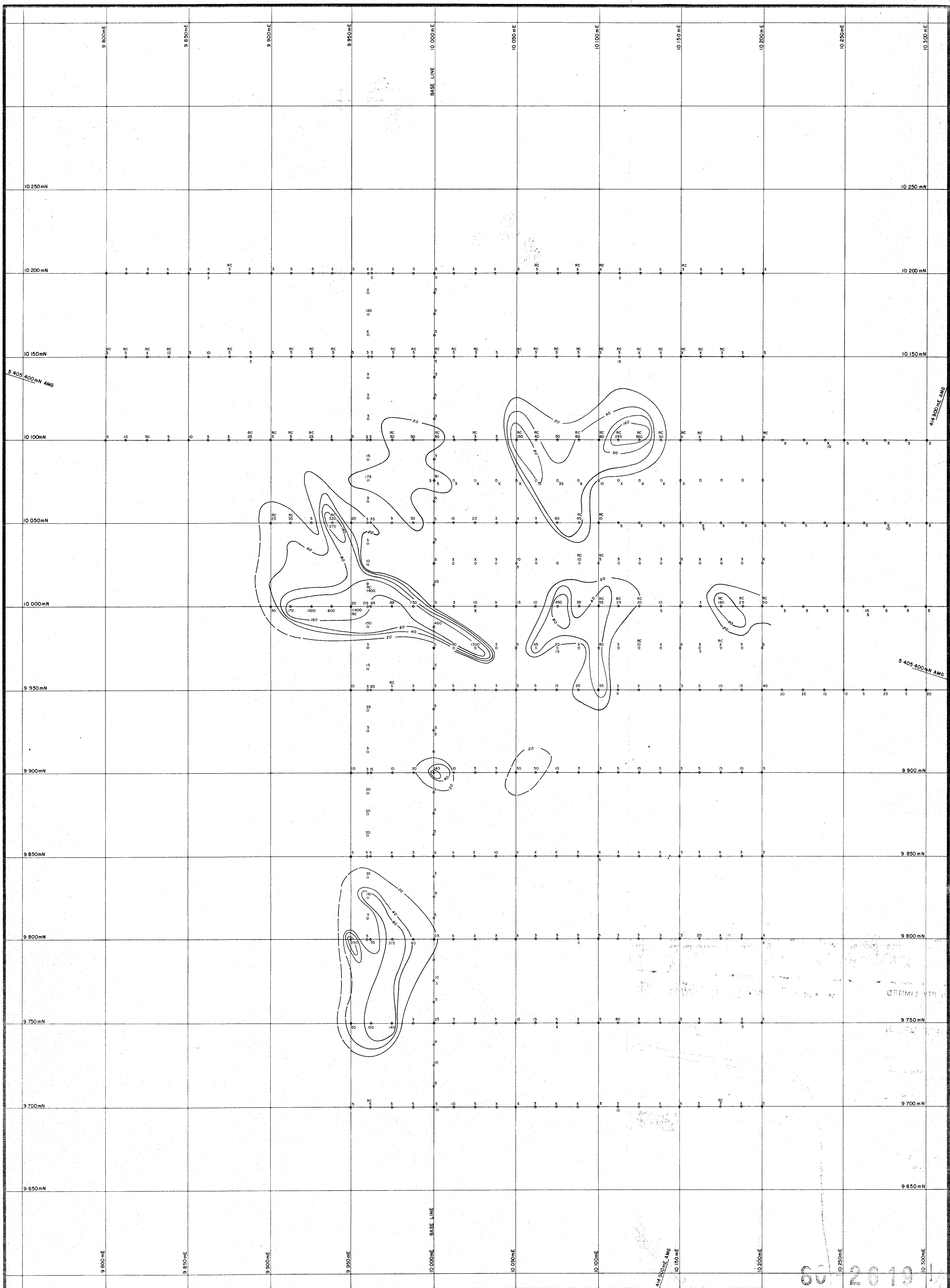
FACTUAL AND INTERPRETIVE GEOLOGY

DATE: DEC. 86

GEOL.

DRAWN: S.F.

REVISED: R.R.



LEGEND:

O Hand auger

3 — SAMPLE POSITION
 10 — DUPLICATE SAMPLE

35 — SAMPLE TAKEN ON EXTENDED GRID

X BELOW LEVEL OF DETECTION
 RC ROCK CHIP SAMPLE

CONTOUR INTERVAL ppb

19-6	20-39	19-22	160+
19-10	40-79		
19-15	80-159		

5 cm



DATE: DEC. 86
 GEOLOGIST: C.R.A.
 DRAWN: S.F.
 REVISED: R.R.

GOLD FIELDS EXPLORATION PTY. LIMITED

SCALE: 1:1000

FIG. 52

E.L. 41/83-LAKE LEA AREA
 MARINER 6
 Au Contours

963127

PROJECT LAKE LEA

HOLE NO. DDH 1
MARINER 6

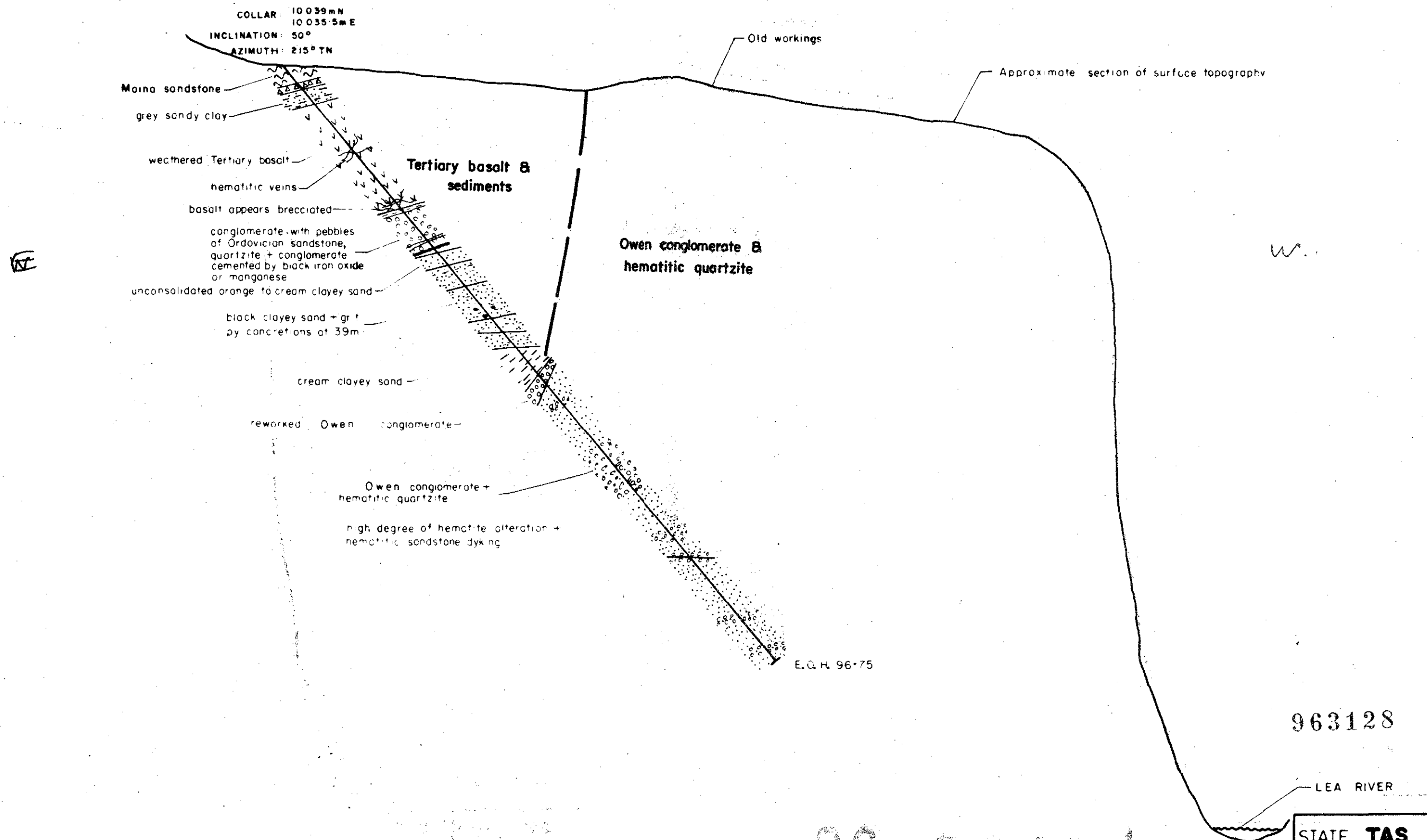
GOLD FIELDS EXPLORATION PTY LIMITED
DRILL HOLE PLOT
&
GEOLOGICAL INTERPRETATION

SCALE 1:500



5 cm

LOOKING S.



963128

LEA RIVER

STATE TAS

HOLE NO DDH 1

5979 FIG. 53