GOLD FIELDS EXPLORATION PTY. LIMITED

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AUTHORITY TO PROSPECT, QUEENSTOWN

PROGRESS REPORT 1986/87

1M-40M/84

LETTER
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SUMMARY

The Authority to Prospect, Queenstown covers an area of 2961 hectares, surrounding the Mt. Lyell Consolidated Mine Lease, 30M/80, and is due to be relinquished on 5th August, 1987 in conjunction with the adjoining EL9/66. An application to retain 1005 ha of the A to P has been submitted to the Mines Department.

During 1986-87, exploration over the A to P has focussed on the southern portion, known as the Little Owen area. Encouraging gold mineralization, detected in the course of geological mapping and sampling here in 1984-86, was investigated further by systematic rock geochemistry over an area of 175 ha immediately south of the Mine Lease. This work highlighted a zone around old prospect tunnels, known as the Little Owen Adits, where high grade copper-gold mineralization was recorded in a report from the turn of the Century.

A helicopter-supported program was conducted, utilizing a small compressed air chipping hammer to continuously channel sample these adits. The results were very encouraging with a zone 16m wide (true width) of anomalous gold mineralization being outlined. The best values occur in the upper, Little Owen No. 1 Adit where a high grade section averages 5.7m (true width) at 6.2g/t Au. Detailed channel sampling of outcrops above the workings delineated a surface expression and orientation of the anomalous gold zone which enabled the siting of two shallow diamond drill holes to test for extension of this mineralization along strike. The two holes, LO1 and LO2, were completed for a total of 310m using helicopter support during March-April, 1987. The results from the drilling were a little disappointing whilst the gold anomalous zone was intersected in both holes as expected, gold grades were rather subdued, viz: 14m (down-hole) at 0.13g/t Au in LO1 and 21m (down-hole) at 0.31g/t Au including a maximum of 1m at 1.98g/t Au in LO2.

However, considerable potential still exists in the Little Owen area to locate economic gold + copper mineralization. The results from investigations in the immediate vicinity of the Little Owen Adits has shown that significant gold mineralization occurs within a WNW trending zone. This appears to be related to a similar trending major fault which off-sets the Great Lyell Fault to the south east. Recent experience on the adjoining EL9/66 suggests that such structural patterns are important as controls on gold mineralization. Several old workings lie close to this fault intersection and encouraging gold values have been obtained from preliminary sampling around these and other

locations in the Little Owen area.

A program of structural mapping and detailed channel sampling leading to additional diamond drilling is proposed to further investigate the gold mineralization potential of this area during 1987-88. This program is expected to cost a minimum of $100,000. The estimated total expenditure for 1986-87 on the A toP is $120,000.

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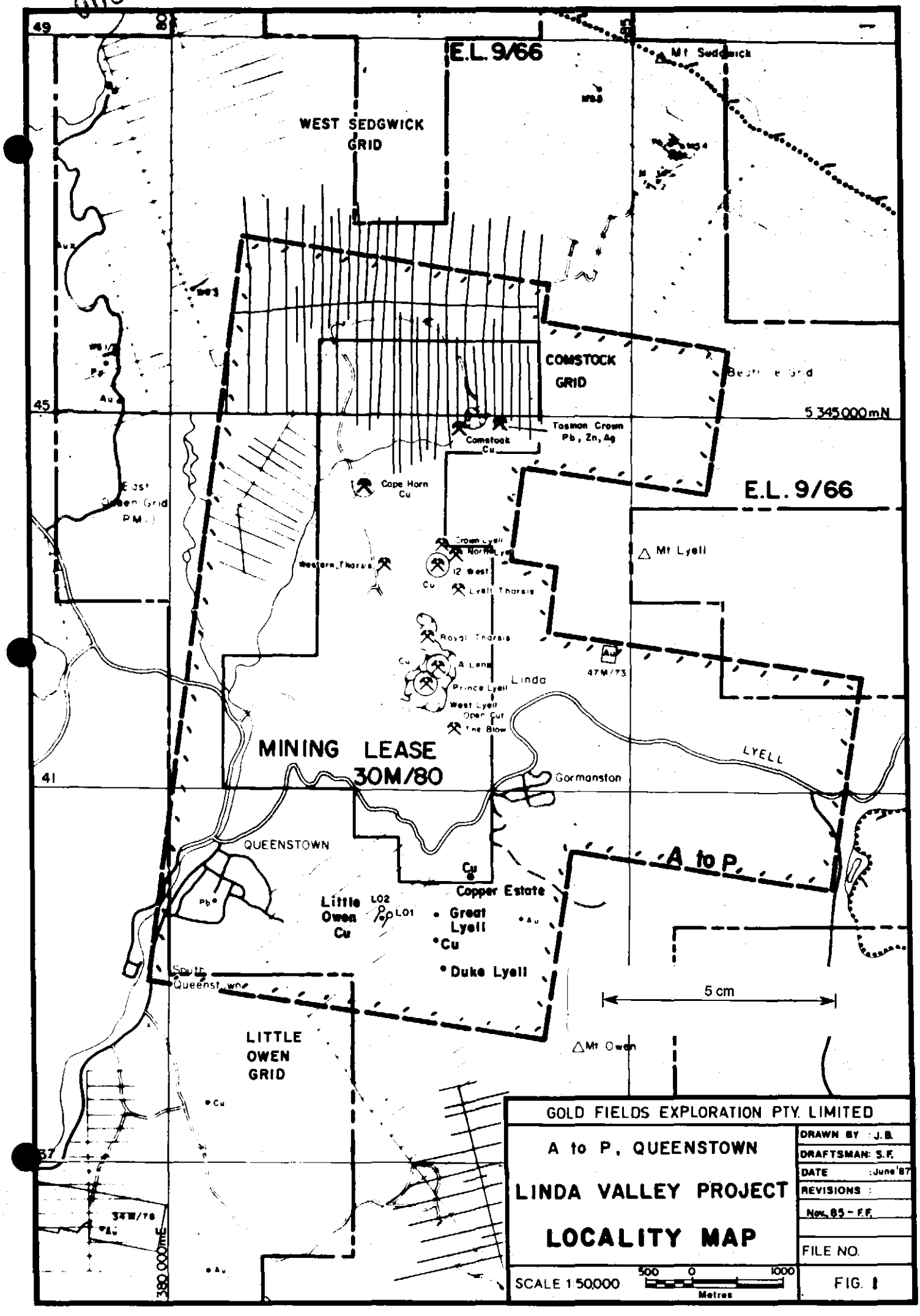
1. INTRODUCTION

The Authority to Prospect, Queenstown covers an area of 2961 hectares, surrounding the Mt. Lyell Consolidated Mine Lease 30M/80. Gold Fields Exploration Pty. Ltd. has carried out exploration over this area since the tenement was first granted to the Mt. Lyell Mining and Railway Co. Ltd. in 1984. Both companies are divisions of Renison Goldfields Consolidated Ltd.

This work has involved: several detailed geological assessments of the general Mt. Lyell area; comprehensive and detailed geological mapping and sampling; re-logging and additional assaying, especially for gold, of previous drill core; and the completion of 3 diamond drill holes for a total of 1369m. These investigations have been conducted by both Company employees and consultant/contractor geoscientists. Reports by Arnold (1985), Beddows (1985), Bird (1984), Brook (1984 and 1985), Herrmann (1986), Jones (1984), Komyshan (1985) and Sillitoe (1984 and 1985) have been submitted to the Tasmanian Mines Department.

During 1986-87, exploration on the A to P has focussed primarily over the Little Owen area, immediately south of the Mt. Lyell Mine Lease. A program of systematic rock chip geochemistry and comprehensive literature review and data compilation was completed to investigate further, encouraging gold mineralization out-lined by sampling in 1984-86. This was followed by: helicopter-supported channel sampling of old prospects, the Little Owen Adits; detailed surface channel sampling and the completion of two helicopter-supported diamond drill holes for a total of 310 metres. The work completed and the results obtained from the above 1986-87 exploration program are the subject of this report, which also incorporates the significant data from almost a Century of prospecting over the area.

It is difficult to accurately establish the detailed expenditure on the A to P during the twelve months ending 30th June, 1987 because of the inclusion of costs associated with work carried out by Gold Fields Exploration Pty. Ltd. on the adjoining Mt. Lyell Mining Lease. However, it is estimated that a total of$120,000 has been expended on the A to P during 1986-87 with a rough breakdown of these costs presented in Appendix A.



GOLD FIELDS EXPLORATION PTY. LIMITED

A to P, QUEENSTOWN

LINDA VALLEY PROJECT

LOCALITY MAP

DRAWN BY : J.B.
DRAFTSMAN: S.F.
DATE : June '87
REVISIONS :
Nov. 85 - F.F.
FILE NO.

SCALE 1:50,000 500 0 1000 Metres

FIG. 1

2. LAND TENURE

The Authority to Prospect, Queenstown area, Western Tasmania was first granted to the Mt. Lyell Mining and Railway Company Limited on 5th January, 1984 to cover forty Mining Lease Applications surrounding the current Mt. Lyell Consolidated Mining Lease, 30M/80. The total area included in this A to P is 2961 hectares.

The area covered by the A to P was initially held by the Mt. Lyell Co. as part of Consolidated Mining Lease 15M/75. Mt. Lyell had carried out exploration over sections of this Mine Lease as part of their work program on the adjoining EL10/69. Then, in 1980, the Mining Lease was reduced from 4912 ha to 1171 ha (30M/80) with the balance of the area, known as the "Buffer Zone", being incorporated into EL9/66 (itself an amalgamation of former EL's 9/66, 10/69, 41/71 and 21/76). The "Buffer Zone" was not included in the Joint Venture Agreement signed in 1976 with the Getty Oil Development Co. Ltd., over the rest of EL9/66. The Company sought to have the current A to P excluded from the EL area just prior to the major reduction in area of EL9/66 in 1984. This led to pegging of the Mining Lease Applications, 1M/84-40M/84.

The A to P is due to expire on 5th August, 1987, the same date as EL9/66. A proposal to renew a total of 1005ha of the A to P covering 14 MLA's has been submitted to the Mines Department in June, 1987 (Roberts, 1987).

3. EXPLORATION HISTORY, GREAT LYELL-LITTLE OWEN AREA

3.1 PRE 1910

3.1.1 GREAT LYELL LEASES

A company was initially floated as Great Lyell South in about 1898 to explore leases south of the main Mt. Lyell mineral field and, in particular, to develop a possible gold mine on a working known as the Hematite Tunnel. The company was re-floated in London as the Great Mt. Lyell Copper Co. in 1899 and worked on three leases: 793, 1441 and 1655 until the winter of 1902. Then, in January, 1903 the company was reformed as the wildcat Ballarat and Lyell Mines Ltd. to extend the Hematite Tunnel on section 1282. This work was suspended in mid 1903. In 1906, two speculators from Linda employed men to fossick on the leases, including an attempt to mine ore from the Little Owen No. 1 Adit winze. This work did not proceed very far before further activity in the area was suspended.

Specific prospects within the Great Lyell leases are discussed in detail below. These workings are all located on Figure 2.

3.1.1.1 Little Owen Adits (Section 1655)

Between 1899 and 1901 two adits were driven westwards into the eastern slopes of the Little Owen Ridge. The No. 1 (Upper) Adit was driven for 163.5m with the development of a south drive (16.5m long), a north drive (13m long) and a winze (26m deep) sunk to within 12.5m of the lower adit. The No. 2 (Lower) Adit was driven for 196m, 38.5m below the No. 1 Adit and a south drive (8.5m long) developed.

Schloesser (1900) reported that: "a vein 2 feet wide of rich ore was cut at 243 feet [74m]. This vein was

driven on [south] for 50 feet [15m] and was found to dwindle down to an inch in thickness, though still rich in copper and gold". The vein was also driven on northwards but appears to have been lost in the face at about 6m. The vein, however, had widened to 1m at about 1.4m along the southern drive and was sunk on until stopped by heavy water. The lower adit was driven to explore for this rich vein at depth. Schloesser stated that: "the rich vein of copper and iron pyrites worth 12 to 15% [had] the peculiarity of carrying 1½ to 4 ozs of gold per ton [46-122g/t Au]."

Cundy (1901) inspected the property just after work on sinking the winze had been abandoned. He commented that: "from present appearances the prospect is not a promising one". He suggested that the "small ore - carrying body 3 feet wide [intersected in the upper adit was in a] fairly defined channel [which] may improve when driven on".

In 1906 an attempt to mine a 10 ton sample of ore from the winze in the No. 1 Adit was made by men employed by Linda speculators Ridler and Rawson (Blainey, 1954). However, there is no record of any ore being sold to Mt. Lyell from these workings.

3.1.1.2 Hematite Tunnel (Section 1441, later Section 1282)

Between 1898 and 1901 a surface trench and pit were dug on reported auriferous quartz-specular hematite outcrops on the western slopes of Little Owen Ridge. Subsequently, a tunnel approximately 64m long was driven eastwards to test the ground some 40m below the outcrops. Later a drive was put in near the entrance of the tunnel to cut a quartz reef. Then in 1903 the Ballarat and Lyell Mines Ltd. employed 3 men to extend the Hematite Tunnel for 46m in order to test an auriferous

gold formation (Blainey, 1954).

Cundy (1901) reported that the original property was floated as a gold mine on the basis of a "remarkable outcrop" of specular hematite and quartz within chloritic schist. It was claimed that this Iron Blow-type outcrop gave "rich assays for gold". However, subsequent work including pitting, trenching and driving of the Hematite Tunnel returned disappointing results viz: approximately 0.8g/t Au from the surface and 2.1m assaying 3g/t Au from the "lode" underground (Cundy, 1901). The drive on the quartz reef was similarly proved to be "broken and valueless".

3.1.1.3 Great Lyell (Whim) Shaft (Section 793)

Between 1900 and 1902 an outcrop of copper ore on the middle branch of Conglomerate Creek was mined as an open cut, after the creek had been diverted. A second cupriferous outcrop was located a little further downstream and a shaft was sunk to 18m and cross-cuts and drives both east and west were developed for a total of 29m within "ore". The shaft was deepened to 52m and a second level was developed with a 14m drive to the north and a 9m deep winze being sunk from this.

Schloesser (1900) reported that some 230 tons of copper ore were mined from dark chloritic schist in the open cut. The outcrop above the shaft was 0.6 x 0.3m in extent and assayed up to 6%Cu. The "ore body" was found to be 18m wide in the upper level with assays of 3%Cu and 3g/t Au. Cundy (1901) visited the property during work on deepening the shaft to the lower level and commented that the work to date had given "little encouragement". The Mt. Lyell Standard reviewed the field independantly in August 1901 and wrote: "This body of ore gives indications of proving

good and consists of iron sulphide with hematite and copper pyrites through it" (Blainey, 1954).

3.1.1.4 Great Lyell Adits (Section 793)

During 1900 to 1901, a tunnel was driven east into a spur of Mt.Owen for 12m to test an outcrop of mineralized schist. A second adit was driven eastwards fro 46m some 18m lower down the hill with 31m of cross-cut being developed. A winze was commenced from this lower adit to follow the ore at depth. Earlier, a shaft approximately 11m deep was sunk adjacent to the upper adit.

Schloesser (1900) reported that both adits intersected ore between 3 and 5m wide which assayed 2.5%-3%Cu. Some higher grade "streaks" were apparently encountered in the lower adit with reported assays up to 10% Cu and 30g/t Au. Schloesser also stated that 500 tons of ore had been raised including 5 tons of high grade Cu-Au mineralization, however there is no record of any ore being sold from here (Blainey, 1954).

Work had been abandoned on this prospect when Cundy visited it in mid 1901. He commented that the ore body was only 1.5m wide and "of little value at present" (Cundy, 1901). It appears that the lower adit was extended to 93m and ended in Owen Conglomerate and a cross cut was developed off the southern drive for approximately 20m (see map in Wells, 1971). Although these developments are not described in detail by Cundy it is likely that the work occurred between 1900 and 1901.

3.1.1.5 Other Workings (Sections 793, 1441 and 1655)

Numerous other minor workings, mainly short trenches and shallow pits were dug to test mineralized outcrops

south of the Little Owen Adits. A short(?) tunnel was driven further up the slope of Mt. Owen from the Great Lyell Shaft on lease no. 793 but it was apparently cut entirely within Owen Conglomerate (Cundy, 1901). There is no further information available on any of these workings.

3.1.2 DUKE LYELL

A Queenstown syndicate, the Duke Lyell Mining Co. N.L., prospected lease no. 2624 at the turn of the Century and outlined a large belt of pyrite and chalcopyrite mineralization on a spur west of Mt. Owen. The mineralized outcrops were traced over 100m along strike into adjoining sections 793 (Great Lyell Co.) and 794 (unknown owner). During 1900, the Company drove two tunnels to test this mineralized zone at depth. The upper adit was driven less than 18m below the outcrop north-easterly for a distance of 20m and encountered a zone of chloritic schist 6-10m wide averaging 2% Cu (Cundy, 1901). Cundy reported that this adit was driven along a major fault with mineralization only being exposed on the south-eastern wall of the opening. A second tunnel was driven 16.5m below the upper adit south-easterly for a total of 49.5m and encountered a "small patch of rich ore" (Schloesser, 1900). A short drive 9m long was cut to the north east to test this body and found it to be less than 2m wide. A trial shipment of 10 tons of hand-picked ore from this "rich body" was packed to the Queenstown smelters in 1900 and returned an average assay of 5.28%Cu and 25.5g/t Ag. Schloesser (1900) reported that the ore assayed less than 3g/t Au.

The Company commenced negotiations to sell the property in 1901 but were unsuccessful and further operations were suspended. Cundy (1901) stated that while the property was only a prospecting proposition at that time, it was still "worthy of having further capital expended upon it". In 1906-07 a Linda Valley Syndicate commenced exploration of the lease as part of their investigations in the general area. They sold

a further 10 tons of ore from the Duke Lyell prospect to the Queenstown smelters, viz. 7.3 tons at 4.66%Cu and 3 tons at 5.13%Cu. However, they were unable to raise sufficient capital to continue their work and activity here lapsed once again.

3.1.3 EMPRESS LYELL

The Empress Lyell Company worked on a lease 2736 during 1900. A short tunnel 21m long was driven east into the western flank of Mt. Owen to test a line of mineralized outcrops which extend over more than 400m into the adjoining lease 4201 (Duke Lyell Extended). The adit encountered only small veins of low value when work was suspended awaiting developments in the Duke Lyell Extended property (Schloesser, 1900)

3.1.4 DUKE LYELL EXTENDED

The Duke Lyell Extended Mining Co. prospected section 4201 and located a "bold outcrop of quartzite and schist" on the western slopes of Mt. Owen. A tunnel was driven east for about 24m to test the ground some 34m below the outcrop. The adit encountered about 2m of quartzite carrying 4%Cu (as copper silicates) and 2.2g/t Au (Schloesser, 1900). The rest of the adit was within chloritic schist which contained only minor mineralization.

3.1.5 LYELL RESERVE

The Mt. Lyell Reserve Copper and Gold Mines Company explored numerous leases which covered a large area to the south and west of the main Mt. Lyell Mineral Field. Only those prospects and workings which lie within the northern Little Owen area will be considered in this discussion.

3.1.5.1 Section 4693

Mineralized outcrops were discovered in the bed of

Conglomerate Creek and on the slopes at the north end of the Little Owen Ridge above the creek late last Century. Schloesser (1900) reported that "gold is found in small quantities in the surface wash" here. A tunnel was driven just above the creek southwards into the hillside for 30.5m. The tunnel intersected about 6m of mineralized chloritic schist running about 2%Cu (Schloesser). A second adit was driven below the upper outcrop for 12m and apparently interesected similar mineralization. No gold assays were reported from these workings.

A small cutting 4 x 2m and 3m deep, was dug on a bold outcrop of quartz which carried some chalcopyrite and was located just above the present Lyell Highway (then the Queenstown-Gormanston dray road.) A shaft was commenced about 20m below the outcrop just south of the road but was only sunk to a depth of 15m. Schloesser (1900) recommended that a tunnel be driven from Conglomerate Creek to test this zone approximately 90m below the road but there is no record of this work ever beginning.

3.15.2 Section 4692

A trench was cut across weakly mineralized schist and quartzite just north of Conglomerate Creek. A tunnel was commenced just above the creek 60m below the trench and driven NNE for 53m but no significant mineralization was encountered. However, Schloesser (1900) observed that a minimum of 60m of additional driving would be necessary before the surface mineralized zone was intersected at depth. There is no record that this work was ever carried out.

3.1.6 OTHER WORKINGS

The most important group of miscellaneous workings in the Little Owen area are those south of the Little Owen Adits

in the vicinity of the big pine tree. These were outside the Great Lyell Company leases and it is unknown which Company held this ground. The workings comprise a small open cut, a trench and an adit 50m long driven westwards into the Little Owen Ridge. A drive 22m long was cut to the south from this adit and a small stope was developed towards the southern end. No record can be found about these workings although Brophy (1977) stated that there was an early report of lead and zinc sulphides in this area. It seems likely that this prospect was developed during the early 1900's when similar activity was occurring on the adjacent leases.

3.2 1910-1965

Following the cessation of prospecting after the "Copper Boom" at the turn of the Century had ended, there was very little activity over the Great Lyell-Little Owen area until 1936-37. During these two years, Gordon Douglas, visited many of the principal workings in the area on behalf of the Mt. Lyell Mining and Railway Co. The following adits, including all main drives and cross-cuts were continuously channel sampled over 5 feet (1.5m) intervals.

Little Owen No. 1 (upper) Adit:- best assay 5 feet at 1.4%Cu in SE drive
Little Owen No. 2 (lower) Adit:- best assay 5 feet at 0.4% in SE drive
Duke Lyell No. 1 (upper) Adit:- best assay 5 feet at 1.4%Cu within 30 feet at 0.6%Cu
Duke Lyell No. 2 (lower) Adit:- best assay 10 feet at 0.6%Cu.

Each sample was analysed for Cu and bulked intervals were analysed for FeS_2 but unfortunately no gold assaying was carried out. This sampling confirmed the generally low levels of copper mineralization, mostly <0.3%Cu. At the same time the Government Inspector of Mines, Mr. Harrison toured some of the workings. He felt that the winze in the Little Owen No. 1 Adit was the most promising feature of the Great Lyell prospects but he was unable to sample this because it was water-logged (Blainey, 1954).

In 1953, M.L. Wade, the first permanent mine geologist at Mt. Lyell, inspected the Great Lyell-Little Owen area as part of his program of detailed geological mapping in conjunction with M. Soloman. He collected samples from most of the main working's mullock dumps for assay. These confirmed the moderately low levels of copper mineralization identified by the 1936-37 sampling program. Wade (1954) concluded that any further exploration in the area must be guided by geophysical surveys.

During 1957, the Bureau of Mineral Resources carried out tests on the suitability of electromagnetic, magnetic and self potential methods over known mineralization in the area (Rowston, 1959). Subsequently, the Great Lyell Grid was covered by a helicopter-supported Turam E.M. survey (see Figure 3) and a vertical field magnetics survey.. The S.P. method was found to be unsatisfactory. This work outlined two moderately weak E.M. anomalies which formed part of an elongated zone roughly co-incident with the Great Lyell Shaft-Duke Lyell Adits line of mineralization. The observed magnetics anomalies have no definate association with mineralization. Rowston (1959) recommended that the E.M. anomalies be tested by a minimum of two diamond drill holes for a total of 285m.

In 1959, the Great Lyell area was covered by an IP survey (Bonniwell and McKenzie, 1961). McPhar Geophysics carried out this survey but unfortunately no records of the results are held by the Mt. Lyell Co. Presumably the survey was designed to better define the Turam E.M. anomalies outlined in 1957. It appears that several(?) I.P. anomalies were identified as these were used, in part, to guide the ensuing drilling program.

Between June 1961 and February 1962, five diamond drill holes, GL1-5 were completed for a total of 750m. The purpose of each hole and the significant results are summarized in Table 1 and the locations are shown on Figure 2. The results from this drilling program were disappointing with only moderately low levels of copper mineralization intersected in the immediate

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Table 1 GREAT LYELL DRILLING 1961-62

Hole No.	Length	Purpose	Significant Results
GL1	191.7m	To test BMR Turam anomaly 56/67 and McPhar IP anomaly north of Great Lyell Shaft	Best assay 1.5m 0.41% Cu within 32m≈0.2% Cu of brecciated quartz-sericite & minor hematite schist.
GL2	134.3m	To test for extensions of mineralization beneath Great Lyell Shaft	Best assay 1.5m 0.88% Cu within 36m≈0.3% Cu + 6% FeS_2 of hematitic quartz-sericite schist
GL3	122.2m	To test McPhar IP anomaly	Best assay 1.5m 0.5% Cu within pink (hematitic) quartz-sericite schist
GL4	152.7m	To test BMR Turam anomaly 57/57 at NNW end	Average assay 9.5m 0.07% Cu in mixed chloritic±sericitic schists
GL5	149.2m	To test BMR Turam anomaly 57/57 in vicinity of Great Lyell Adits	Weakly mineralized predominantly chlorite-sericite±hematite schists Hole ended in Owen Conglomerate No assays

vicinity of the Great Lyell Shaft. No assaying for gold was carried out at this time.

3.3 1965-1969

Between 1965 and 1969, the area was covered by EL12/65 held by Pickands Mather International Ltd. It appears that their main exploration target was Mt. Lyell-style copper mineralization. During 1966, reconnaissance stream sediment geochemical surveys over the licence outlined several anomalous areas including the Roaring Meg area west of the Little Owen Ridge. At the same time, a stream sediment sampling program along the Cambrian volcanic-Ordovician conglomerate contact, recognized as the locus of many of the Mt. Lyell ore bodies, was carried out. The results were largely negative, due mainly to thick glacial moraine and scree cover identified by concurrent reconnaissance geological mapping here.

A large grid (63 line km total) was cut to cover the Roaring Meg Cu-Pb stream sediment anomaly and this was surveyed by electromagnetics (broadside and in-line), vertical field magnetics, pole-dipole I.P., and soil geochemistry as well as detailed geological mapping during 1967. Although Pickands-Mather recognized the problems of contamination from the Mt. Lyell smelter, as well as the patchy remnant soil cover over the sparsley vegetated area, they were sufficiently confident to identify several geochemical anomalies with co-incident E.M. and/or I.P. anomalies to target drill holes (Smith, 1967).

Eight holes (2 were abandoned before reaching their target depths) were drilled between February and June 1967 for a total of 818m. These holes were restricted to the north west section of the grid area (see Figure 2). Only minor disseminated sulphides were encountered by this drilling. The best results are from hole RM201, which was collared just west of the Hematite Tunnel but drilled away from the workings towards the south west. Best assays are: 1.5m at 0.49%Cu, 9g/t Ag; 2.1m at 0.43%Cu and 6.1m at 0.21%Cu. The core was also analysed for gold but no significant assays were obtained from the limited sections that were sampled. No further exploration was carried out on the Roaring Meg Grid at the completion of this drilling.

During 1968 McPhar Geophysics carried out a reconnaissance dipole-dipole IP survey along 21 km of the volcanics-conglomerate contact north and south of the Mt. Lyell Mine Leases for Pickands-Mather. The survey used a 500 feet (152.5m) dipole spacing and located several anomalies. The strongest of these occurred in the Basin Lake area and were followed up by detailed I.P., Turam E.M. and diamond drilling. No further work, however, was carried out to investigate those responses south of the Mine Lease in the Great Lyell-Huxley area (Wuerch, 1971).

3.4 1969-1976

In 1969, EL10/69 (Dora-Huxley) was granted to the Mt. Lyell Mining and Railway Co. for the area adjoining the Mt. Lyell Mining leases. Exploration was carried out over the southern portion of the Mining Lease in conjunction with the work on EL10/69 during the years 1970-76. A brief chronology of this exploraion, including a summary of the results, over the Little Owen-Great Lyell area is given below.

Between 1970 and 1972 K. Wells reviewed the early exploration data, re-logged the Mt. Lyell holes GL1 to 5 and attempted to sample the main workings in the area. However, he believed that these were unsafe and, apart from some chip sampling along the first 52m of the Little Owen No. 1 Adit, his work was confined to sampling the mullock dumps at the Great Lyell Shaft and the Duke Lyell Adits. A complete list of samples and assay results is not available, however Wells (1972) indicated that encouraging copper values had been obtained; gold was not assayed for.

In 1972-73, K. Lee geologically mapped the area and was able to elucidate the major geological elements. He confirmed exploration interest in the Great Lyell-Duke Lyell "mineralized belt". He also indentified sulphide haloes, containing both pyrite and chalcopyrite, up to 8m wide outcropping around two andesitic intrusive bodies south and west of the Little Owen Ridge. Lee (1973) recommended that these zones of mineralization be surveyed by I.P. to define possible drill targets.

Consequently, during 1973-74 the Little Owen Grid was established by extending the Huxley Grid 3000m to the north. This grid, and extensions, which were cut to the north the following season to complete the coverage, were surveyed by Scintrex Limited using gradient array IP or moving Schlumberger array IP when the electrical noise from the underground trains at Mt. Lyell became too great. (Howland-Rose, 1974, 1975). The grid was also covered by total field magnetic surveys. A total of 69 separate IP responses were identified with several extensive anomalous IP zones. The most prominent of these anomalies occurs over the Great Lyell-Duke Lyell "mineralized belt". Other zones were related to known graphitic shale horizons and areas of disseminated mineralization particularly over sections of the margins of the large intermediate intrusive bodies.

Detailed geological mapping and sampling of the Little Owen Grid was commenced by Wells (1974) and completed by P. Brophy (1975) the following season. At the same time, a soil geochemical program was attempted over the main IP anomalous zones. The results from this work were quite erratic, however, due to the irregular soil cover and probable previous smelter contamination and were of little use. Brophy (1975) also carried out a detailed assessment of the known mineralization here, including the re-logging of drill core from the Pickands-Mather holes. He concluded this work by proposing a 10-hole diamond drilling program to test IP anomalies within geologically favourable horizons. The program was apparently included in the Mt. Lyell Mine drilling schedule, but, owing to economic constraints, was never carried out.

During 1975-76, Brophy completed further detailed geological mapping over the Little Owen area. At the same time, he took rock chip samples over two of the IP anomalous zones not covered by the previous soil geochemistry but was unable to sample the main Great Lyell-Duke Lyell anomaly zone because of extensive scree cover. However, the Great Lyell Shaft and Adits and Little Owen Adits' mullock dumps were sampled yet again with the data being used to help refine the information on mineralization, alteration and structural styles here.

3.5 1977-1986

A Joint Venture Agreement between the Mt. Lyell Mining and Railway Co. and the Getty Oil Development Co., which included the area of EL10/69, was signed on 4th November, 1976. Since the Great Lyell-Little Owen area fell within the Consolidated Mining Lease 15M/75, it was not included in this Joint Venture Agreement. When the Mining Lease was reduced in 1980, the remaining area, known as the "Buffer Zone" was incorporated into EL9/66, which was itself an amalgamation, in 1978. of former licences EL9/66, EL10/69, EL41/71 and EL21/76. The "Buffer Zone" was still excluded from the Joint Venture Agreement, consequently no exploration occurred over the Little Owen-Great Lyell area during the years 1977-1984.

Then, in 1984, Bird (1984, 1985), Brook (1984a, 1984b) and Sillitoe (1984, 1985) re-kindled exploration interest in the area as a result of their major changes to the genetic theories of the Mt. Lyell mineralization. This lead to G.O. Arnold (1985) re-mapping the main part of the Mt. Lyell mineralized belt and he produced a comprehensive and detailed geological map of the Mt. Read Volcanics and Owen Conglomerate within this area which resulted in significantly different stratigraphic and structural interpretations for Mt. Lyell.

W. Herrmann (1986) continued this detailed geological mapping to the south of Arnold's work, in particular covering the Little Owen-Great Lyell-Copper Estates area. At the same time, Herrmann sampled all the major prospects and most of the minor workings as well as other prominently mineralized or altered outcrops within the area. The most significant result to emerge from this work was the indentification of anomalous gold (max. value 4.2g/t Au) at several locations within the area. This confirmed similar results obtained earlier by Komyshan (1986) from his brief reconnaissance over this part of the Mt.Lyell belt.

During 1984-85, M.T. Jones independently assessed the gold potential of the Mt. Lyell area. As part of this comprehensive investigation, he resampled the Great Lyell holes, GL1 to 5 by taking systematic chip samples of core over broad intervals for gold analysis. Only

minor levels of gold were detected, the best assay being 8m at 0.62g/t Au from Hole GL2. However, Jones (1985) recommended further work to follow-up this gold occurrence. Pulps from the Lyell Highway culvert channel samples, which had been collected some years earlier, were also analysed for gold and several low level anomalies were outlined (see Figure 9).

Several major geophysical investigations over the Mine Lease during the last 6 years also extended to cover parts of the Little Owen Area. In 1980-81, Scintrex surveyed the entire Mt. Lyell AMG grid along 200m spaced lines with gradient array IP and total field magnetics (see Figures 4-6). Several anomalous zones were identified over the southern block, the strongest responses occurring just north of Conglomerate Creek, straddling the Lyell Highway (Street, 1981). Bishop (1982) recommended follow-up EM surveys over two of thes areas within the A to P viz: Conglomerate Creek and Copper Estates. Grids were established and surveyed by Mitre Geophysics in 1982 using the Turam EM method (see Figure 3). The results were disappointing: the Conglomerate Creek IP anomaly was attributed solely to disseminated pyrite and the partially covered Copper Estates area did not yield any significant EM responses (Bishop, 1984).

By the end of the 1985-86 season, the Little Owen-Great Lyell area had been identified as a zone, just south of the main Mt. Lyell Mineral Field, which appeared to have considerable untested potential for gold ± copper mineralization.

4. WORK COMPLETED LITTLE OWEN AREA 1986-87

4.1 GEOLOGY

4.1.1 GENERAL GEOLOGY: LITTLE OWEN-GREAT LYELL AREA

The most recent detailed geological mapping of the Little Owen area was completed by Herrmann in 1986. This work incorporated all of the latest ideas on the genisis of the Mt. Lyell mineralization, particularly the structural and/or stratigraphic controls and the characteristic alteration assemblages associated with the major ore bodies. Early in the 1986/87 program, Herrmann's geological data was compiled, along with previous detailed mapping, primarily from Brophy (1976) Corbett (1979) and Arnold (1985), as well as from the excellent mapping over the Owen Conglomerate and its contact with the Mt. Read Volcanics by Wade and Solomon during the mid 1950's. The geological interpretation plan covering the standard 1:5000 scale Township Sheet was then produced (see Figure 7). Detailed descriptions of each of the rock units identified in the accompanying legend have been presented in Arnold (1985) and Herrmann (1986).

During the course of the geochemical program carried out in the current season, Herrmann's factual geology has been thoroughly checked and the present author is largely in agreement with his geological interpretation. The major elements of this geology are summarized below.

The Little Owen area is underlain by Cambrian Mt. Read Volcanics which form part of the Central Sequence of Corbett (1979). These, predominantly sub-aerial felsic to intermediate volcanics and associated intrisive and epiclastic lithologies abut the older, predominantly marine volcano-sedimentary Western Sequence just east of Queenstown. The eastern extent of the Central Sequence is marked by a largely fault-controlled contact against Upper Cambrian-Lower Ordovician Owen Conglomerate which forms the main mass of Mt. Owen. Only two locations with possible correlates of the uppermost volcanic sequence,

the Jukes Breccia of the Tyndall Group, have been recognized in the area. These are outcrops of hematitic volcano-lithic conglomerate which occur in the south eastern part of the area immediately underlying the Owen Conglomerate and they may indicate a folded depositional contact between the volcanics and the conglomerate in this area (Herrmann, 1986).

The Central Sequence is made up of a complex suite of volcanic and related lithologies which generally form linear units elongated roughly north-south. In detail, however, it is virtually impossible to trace these units very far because of: rapid facies variations; masking of original textures and compositions by differential alteration, deformation and often intense surface leaching; lag-gravel and scree cover; and lack of distinctive marker horizons. However, a very simplified sequence going west from the Owen Conglomerate contact to the Little Owen Ridge is (see Figure 7):

1) Rhyolitic to dacitic lavas and intrusives characterized by: massive outcrops feldspar-phyric porphyritic textures, pinkish colour and moderate magnetism (when fresh)

2) A thin belt of epiclastic rocks which are typically well-bedded and vary from fine-grained grey to green, and rare black, shales and siltstones to coarse grained more massive tuffaceous sandstones and conglomerates, some of which might be primary volcaniclastic in origin.

3) A broader zone of variable felsic pyroclastics which form the Little Owen Ridge and include distinctive very coarse grained agglomerates tuffs and fine vitric ash, with some of these lithologies probably ignimbritic in origin.

This sequence is intruded by andesites which occur as two large bodies to the west and south of the Little Owen area as well as numerous smaller dykes. The andesites are typically massive in outcrop , although the dykes are often strongly cleaved, and have a distinctive pink-green colour with zoned

feldspar and dark green pyroxene phenocrysts and are moderately magnetic, when fresh. Specular hematite veins have been mapped, especially towards the margins of the main bodies in the vicinity of the Little Owen South workings and the Hematite Tunnel. The andesites weather to a characteristic deep red-brown soil.

The main hydrothermal alteration zone associated with the Mt. Lyell mineralization extends into the northern parts of the Little Owen area. The alteration and subseqent intense deformation, lower greenschist facies metamorphism and supergene leaching has obscured primary volcanic textures in some areas and these rocks are included in the metamorphogenic "Lyell Schists". Herrmann was able to map different "units" within the schists on the basis of surface weathering textures and remnant or inferred compositions following the classification of Arnold (1985) and Komyshan (1985). Felsic quartz-sericite with siliceous pods and bands predominate and appear to grade into less altered felsic pyroclastics south along the Little Owen Ridge. Elsewhere, Herrmann inferred that other primary lithologies could have also been precursors to these schists. A broad area of strongly disseminated pyrite $\pm$ chalcopyrite occurs within the felsic schists over the Glen Lyell area and extends intermittently southwards to the Little Owen Adits.

Dark green chlorite-rich mafic schists make up much less of the "Lyell Schists" and are characterized by fine grained pocked surface etched bodies which occur as small lenses or thin irregular masses within the more felsic units. In some instances, the mafic schists can be clearly related to basaltic-andesite lavas, dykes and breccias. However, Herrmann also noted that some of the rhyodacitic lavas and intrusives and epiclastic units appear to grade into mafic schists especially in the Great Lyell Shaft-Duke Lyell "mineralized belt". It is also interesting to note that, while the limits of the "Lyell Schists" are difficult to locate precisely, in broad terms the Little Owen Adits gold mineralization lies at the south-western extremity of this large hydrothermal alteration zone.

The nature of the volcanic-conglomerate contact south of the Blow was investigated in detail by Herrmann. Whilst he was unable to observe the actual contact along most of its length, he was confident, from bedding orientations within the adjacent Owen Conglomerate, that this very irregular contact is largely fault-controlled. He found good evidence for imbricate thrust structures associated with this contact in the Karlson's Gap and Copper Estates area identical to the Great Lyell Fault further north. However, he did not locate any areas here, or elsewhere along the contact zone, which had significant hematite-silica-barite alteration adjacent to sericitic-pyritic volcanics and which might indicate the presence of high grade Cu±Ag±Au mineralization. Further south, along the volcanic-conglomerate zone from the Copper Estates area, the nature and extent of the Great Lyell Fault is unclear.

Both Corbett and Herrmann found some evidence, from possible facings within the thin epiclastic units on either flank of the Little Owen Ridge, to suggest that the spine of the ridge occupies the axis of a syncline which has a northerly strike. Such a structure would be associated with the earlier (D_1) Devonian phase of folding of Arnold. Elsewhere, structures within the volcanics are difficult to elucidate because of the lack of clear primary layering and because of the strong penetrative NW trending cleavage which pervades the area. This cleavage clearly post-dates the D_1 deformation and is almost certainly related to the later Devonian (D_2) phase of deformation and cross-faulting which is prominent in the area and may have important implications for gold mineralization (see later discussion).

4.1.2 LITTLE OWEN ADITS AREA

During the course of detailed geochemical investigations in the vicinity of the Little Owen Adits, geological data was collected to clarify the style of the gold mineralization identified here and to elucidate any lithological, compositional and/or structural controls on this mineralization. As part of this work, a suite

of 10 rock samples, taken from auriferous sections of the adit channel samples as well as gold anomalous outcrop and dump rocks were submitted to Dr. A.S. Joyce (Geochempet Services) for detailed petrographic descriptions. His report is presented in Appendix C.

In detail, the geology of this area is quite complex, and, despite reasonable exposure of bedrock it is difficult to produce a reliable interpretation. The following lithologies have been recognized: bedded fine grained epiclastics (shales and siltstones); relatively massive tuffaceous sandstones and conglomerates; less altered felsic lavas; distinctive very coarse grained agglomerates and probable ignimbrites. However, much of the geology is less distinct, and comprises probable volcaniclastics and completely altered and detextured quartz-sericite and chlorite schists.

Petrographic work indicates that this suite is andesitic-dacitic in composition with a predominance of unwelded tuffs or immature volcaniclastic sediments which carry clasts of pumiceous fragments, glass shards and feldspar crystals. Quartz phenocrysts are generally rare or absent. All lithologies are pervasively altered by a variable assemblage of quartz, sericite, chlorite and lesser magnetite, hematite and sphene. In general, quartz-sericite dominated alteration is most common, but the more chloritic rocks form distinctive rugged outcrops which weather to a striking dark red-brown colour (iron oxides after chlorite-magnetite).

These chlorite-rich "tombstones" form part of a well defined belt up to 75m wide which stretches from just north of the Little Owen Adits for over 450m south along the eastern flank of the Little Owen Ridge (see Figure 7). This belt corresponds with the "minerlized zone" identified by Solomon and Wade in the 1950's and was specifically prospected by numerous small trenches and pits, as well as the main Little Owen Adits, at the turn of the Century. The rocks within this zone typically carry disseminated pyrite and locally trace to very minor chalcopyrite blebs, although the total sulphides are generally less than 5%. A weak, but well defined IP anomaly (see Figure

4) can be correlated with this mineralized zone.

Within this "mineralized belt" but apparently striking at quite an oblique angle to it, is the "gold anomalous zone" centred on the Little Owen Adits. No distinctive feature sets this gold zone apart from the enclosing variably altered and mineralized rocks apart from the common, but often minor occurrence of hematite, both as very fine grained dissemations and as micaceous, specularite veinlets which appear to cross-cut the penetrative cleavage. Herrmann noted a similar association between gold and hematite from rocks at the Little Owen Adits as well as from the Great Lyell Shaft-Empress Lyell line of workings. Similarly, hematite is closely related to the encouraging copper and gold mineralization within both quartz-sericite dominated and more chloritic altered rocks intersected in drill holes GL1 and GL2.

It is notable that hydrothermal and/or tectonic brecciation has been mapped within the gold zone both in outcrop and also within the Great Lyell and Little Owen drill holes. Joyce also identified incipient to well developed brecciation in auriferous samples as part of his petrographic study. Numerous structures, some being quite major fault zones, have been mapped or logged in drill core in the Little Owen Adits area. Although the structures are mostly unmineralized, it is interesting to observe that their general strike coincides closely with the trend of the anomalous gold zone, i.e. WNW. This structural orientation is also observed in several major faults mapped within the Owen Conglomerate to the east and the Eldon Group to the west of the area (see Figure 7).

4.2 GEOCHEMISTRY

There have been three principal phases of geochemical sampling over the Little Owen area during 1986-87. Each program was designed to investigate, in more detail, encouraging gold mineralization previously outlined. These were as follows:

1. Systematic rock chip sampling from outcrop spaced roughly

25m apart along east-west orientated grid lines located 200m apart (the Mt. Lyell AMG Grid)-total 290 samples, analysed for Au, Cu, Pb, Zn, Ag and As (see Appendix D1, and Figures 8, 9 & 10).

2. Continuous channel samples over 2m intervals along adit walls and main drives in the Little Owen No. 1. and No. 2 Adits and Little Owen South Adit - total 232 samples, all analysed for Au, with anomalous samples analysed for Cu, Pb, Zn, Ag, As, Ba, Bi, Mo, W and Fe (see Appendix D2 and Figures 11-14).

3. Surface channel samples over 2-3m intervals roughly along the 50m spaced Little Owen Adits Grid-total 113 samples analysed for Au and Cu (see Appendix D3 and Figures 11 and 14).

In addition, numerous rock chip samples were collected throughout the year from specific workings or interesting outcrops or to follow-up anomalous sample sites both on the surface and from underground exposures (see Appendix D4 and Figures 8-14). In all cases, the largest practical sample size was collected, mostly 3-6 kg, to minimize potential sampling errors inherent in the possible patchy distribution of gold mineralization. All samples were prepared and analysed by Analabs and significant gold values were checked by fire assay, if this was not the method used initially.

The systematic rock chip sampling program along the AMG grid extended from the Lyell Highway, within the Mt. Lyell Mine Lease, south to the A to P boundary and covered the area between the Owen Conglomerate to the east and the crest of the Little Owen Ridge to the west. The results were quite encouraging. Despite the common, often intense, surface leaching of outcrops which predominates in the Lyell area, numerous anomalous gold values were detected, ranging from 0.05 to 1.91 g/t Au. These assays were obtained from a range of lithologies, including felsic lavas, pyroclastics and epiclastics, and indicate a widespread area of gold mineralization. Two zones, which were particularly highlighted by this and previous rock sampling, are in the vicinity of the Little Owen Adits and south east of the Little Owen South Adit. The three, old prospect adits here were

inspected and found to be still accessible.

The program to channel sample these adits was initiated in December after attempts to locate samples from earlier work in the 1930's and 1971 had failed. A small compressor was flown to the main adit portals using a helicopter and the adit walls were sampled using a lightweight percussion chipping hammer with a chisel point. The results were very enouraging with the best values coming from the Little Owen No. 1 (Upper) Adit (see Figure 14). A zone up to 16m wide (true width) of significant gold mineralization was outlined in the main adit and adjoining drives with consistent values in the range 0.1 to 3 g/t Au and maximum values, over 2m each, of 20.0, 15.1, 8.3 and 6.7 g/t Au. A high grade section from the structural hanging wall side of this gold zone in the No. 1 Adit averaged 5.7m (true width) at 6.2 g/t Au (see Figure 15). The results from the Little Owen No. 2 (Lower) Adit, driven 38.5m below the No. 1 Adit, have identified a similarly wide gold mineralized zone, but with significantly lower values; maximum assay is 1.4 g/t Au over 2m. The results from the Little Owen South Adit were not as encouraging, with ony one significant value of 2.1 g/t Au over 2m from a small slope at the end of the southern drive.

The program of surface channel sampling across outcrops above the Little Owen Adits was designed to help delineate the orientation and possible strike extent of the gold anomalous zone. The sample lines were aligned normal to the average strike of the lateral drives within the gold zones of both adits. Although the sample coverage was not complete, due to scree cover, and many of the outcrops are deeply leached and weathered, the results appear to have outlined a clearly anomalous zone of gold mineralization with peak values of 0.62, 0.13 and 0.79 g/t Au each over 2m intervals on the 3 respective lines (see Figure 14). The strike of this zone coincides closely with that of the underground drives i.e. 300° AMG. A second zone with a maximum value of 1.21 g/t Au over 2m was identified adjacent to a small prospect trench which cuts a siliceous-hematitic vein carrying 3.87 g/t Au.

The recognition of possible structural control on the gold mineralization led to detailed mapping and sampling of specific faults within the "ore zone" of both Little Owen Adits. The results from these samples, however, were quite disappointing with only one sample assaying significant gold viz 1.33 g/t Au. Similarly, chip sampling of an old prospect trench above the Hematite Tunnel and several small trenches and pits south of the Little Owen Adits has failed to identify any significant gold values. Also, follow-up sampling in the vicinity of anomalous gold near line 39000N, south east of the Little Owen South Adit was quite disappointing: repeat samples gave significantly lower gold assays (0.30 vs 0.57 g/t Au and 0.13 vs 1.90 g/t Au) and no other assays from samples taken around these were above the detection limit for gold.

Some general comments on the geochemical sampling program are worth presenting. Schloesses (1900) was the first author to comment that the gold content of the rocks appeared to be higher at the southern end of the Mt. Lyell Mineral Field. There is a broad association between anomalous gold and elevated copper values here, but, in detail specific gold mineralization often occurs alone. No other metal relationship with gold is discernable viz neither Pb, Zn, Ag, As, Bi, W, nor Mo apart from a tenuous Ba association in some samples. Similarly, the pyrite content of auriferous rocks can vary widely from semi-massive pyrite to virtually nil. While copper (and other metals) appear to have been significantly leached from surface outcrops, the gold content has often remained en-situ. In fact Joyce (see Appendix C) could see no significant effects of supergene enrichment or depletion of gold in any of the samples that he studied, petrographically.

Finally, a comprehensive program to check the reliability of the initial very encouraging assay results has been conducted. The sample preparation, analytical methods and laboratory have been checked by: repeating AAS gold determinations by fire assay; re-preparing the original bulk samples and checking the Analabs results at Comlabs. These results, which are summarized in table 2, are remarkably consistent and clearly demonstrate that the analytical results are reliable. In addition, repeat chip sampling was conducted along several of the most anomalous channel sample intervals. Given

Table 2 LITTLE OWEN ADITS: GOLD ASSAYING CHECK RESULTS

Sample No.	Interval	Analabs(1)	Analabs(2)	Comlabs(1)	Comlabs(2)	Sample No*	Interval	Analabs(1)	Analabs(2)
T5464	76-78W	8.40	9.33	9.0	9.4	T7910	76-78W	0.33	
T5465	78-80W	1.17	0.60	0.41	0.30				
T5467	82-84W	0.98	1.00	0.95	0.85	T4942	82-84W	5.25	4.93
T5469	84-86W	20.00	19.33	18.8	18.9	T4943	84-86W	21.53	22.57
T5711	0-2N	1.05	1.26	0.99	1.05				
T5712	2-4N	1.33	2.00	1.41	1.69				
T5713	4-6N	2.03	2.08	2.0	2.4				
T5714	6-8N	15.10	16.60	17.9	17.4	T4944	6-8N	6.34	5.93
T5719	2-4S	8.30	8.00	6.7	7.3				
T5720	4-6S	1.63	2.67	1.80	1.59				
T5722	8-10S	2.63	1.25	0.97	1.19				
T5723	10-12S	6.71	7.17	6.9	6.7				
T5724	12-14S	2.14	2.83	2.5	2.4				
Analytical Method		329 (AAS)	309 (Fire assay)	FAS1 (Fire assay)	FAS1			309	310 (Screen fire assay)

Notes:

1. All assays are in g/t Au
2. All samples are from Little Owen No. 1 Adit
3. * Repeat chip sampling over approximately the same interval as original channel sample.

98 036

035

that the two sampling methods are substantially different, the results, which are also presented in Table 2, confirm the presence of significantly anomalous gold within this zone.

4.3 DRILLING

The results from the surface and adit geochemical sampling programs indentified a significant zone of gold mineralization in the vicinity of the Little Owen Adits. It was decided that this occurrence warranted further, immediate testing by diamond drilling before the end of the current season. Consequently, an initial two hole program was designed to test for extensions to the high grade mineralized zone located in Little Owen No. 1 Adit approximately 50m along strike to the north west and south east of this adit and 50m beneath this level. The rugged topography in this area precluded development of easy access to site for a normal surface rig (e.g. Longyear 38) and so it was decided to utilize a lightweight underground drill rig (Kempe) which is powered by compressed air and uses conventional drilling techniques.

The drilling was carried out by Paterson Drilling Pty. Ltd. during March-April, 1987. A helicopter was utilized to position the rig and other gear onto each site and a long hose ran air from the compressor, which had been towed into place on the crest of the Little Owen Ridge by bulldozer up the existing 4WD track from Queenstown. Details of the two holes, LO1 (130.0m) and LO2 (180.0m) are presented in Appendix B along with geological logs and complete assay results. The hole locations are shown on Figure 13 and drill sections on Figures 16 and 17. The core from each hole was split from the collar to the end and submitted to Analabs for analyses for Au, Cu, Pb, Zn and Ag. Assay intervals were either 2m (aqua regia digest and AAS Au determination) or more interesting sections were 1m long (fire assay Au determination).

Both drill holes intersected the strike extension of the gold mineralized zone as expected but unfortunately gold grades were disappointingly low viz: LO1 85.0-99.0m, 14m at 0.13 g/t Au, 0.05% Cu
LO2 81.0-102.0m, 21m at 0.31 g/t Au, 0.05% Cu

LO2.....Continued

including 88.0-90.0m, 2m at 0.67 g/t Au, 0.14% Cu

and 98.0-102.0m, 4m at 0.89 g/t Au, 0.13% Cu

including 101.0-102.0m, 1m at 1.98 g/t Au <0.01% Cu

In addition, LO1 intersected three other narrow zones of anomalous gold higher up the hole viz: 20.0-21.0m, 1m at 0.41 g/t Au, 038 % Cu

37.0-38.0m, 1m at 0.81 g/t Au, 0.10% Cu

49.0-51.0m 2m at 0.25 g/t Au, 0.08% Cu, 0.18% Zn

These zones appear to correspond with narrow "shoots" of mineralization located by the surface sampling, including the old prospect trench close to the portal of the Little Owen No. 1 Adit (max. assay 3.87 g/t Au).

The gold zones intersected in each hole are not distinguishable, lithologically: the host rocks are felsic-intermediate volcaniclastics. Hydrothermal alteration is also non-specific being predominantly quartz-sericite rich, although there is a broad tendancy for anomalous gold to be associated with more chloritic zones. The only obvious characteristic is the presence of striking but mostly minor blebs of chalcopyrite and/or pervasive or veinlet hematite. However, even these features are not always indicative of the presence of gold mineralization. It is interesting to note that an apparent hydrothermal (or tectonic) breccia was intersected within the main gold zone in hole LO1. However, none of the prominent faults intersected in either hole carry significant gold, which is a similar negative result to that obtained from sampling faults underground. Thus, the precise style of the gold mineralization at the Little Owen Adits remains enigmatic at present, although a structurally controlled source is the favoured model.

Despite the somewhat discouraging gold grades from this initial drilling program several positive features have now been delineated in the Little Owen Adits area:

1. An anomalous gold zone has been outlined which strikes at 300° AMG, dips at 75° to the SW, is approximately 10-16m wide (true thickness) and extends continuously over at least 125m strike extent (see Figures 14 and 15).

2. Assays of up to 20.0 g/t Au have been obtained from within this gold zone with a high grade section of 5.7m (true thickness) at 6.2 g/t Au being outlined in the No. 1 Adit (see Figure 18, longitudinal projection of the gold zone).

3. The gold zone, which is sub parallel to the trend of major cross faults that appear to off-set the Great Lyell Fault, is open both along strike and at depth, where possible improvement in gold grades could be expected.

4. Several other, thin but anomalous gold shoots exist in proximity to the main gold zone, with assays of up to 3.9 g/t Au being obtained.

5. CONCLUSIONS AND RECOMMENDATIONS

A program of comprehensive rock geochemistry south of the Mt. Lyell Mine Lease has identified the Little Owen area as a belt of variably altered Mt. Read Volcanics which carry widespread anomalous gold mineralization. Detailed investigations centred on the Little Owen Adits, including surface and underground channel sampling of these old workings and the completion of two diamond drill holes have outlined a consistent gold anomalous zone which strikes at 300° AMG, dips SW at 75°, is up to 16m thick and extends over at least 125m along strike. Assays of up to 20.0 g/t Au have been obtained from within this mineralized zone, with a high grade interval on the structural hanging wall of the zone averaging 5.7m (true thikness) at 6.2 g/t Au.

This gold zone, which is oblique to the general strike of both the stratigraphy and the penetrative cleavage is sub parallel to the trend of major structures which appear to off-set the inferred Great Lyell Fault in this area. There is no obvious lithological or hydrothermal alteration control on the gold mineralization. Apart from copper, there is no other apparent metal association with the gold, however there appears to be a close relationship between anomalous gold and pervasive and/or veinlet hematite. Similarly, it has been observed that tectonic or hydrothermal breccias occur within parts of this gold zone.

A structurally controlled gold mineralization model is proposed based on the evidence to date. It is suggested that minor gold mineralization may have been introduced into the andesitic-dacitic volcaniclastic sequence during sub volcanic hydrothermal activity in the Middle Cambrian when pervasive quartz-sericite-chlorite-pyrite-magnetite(?) assemblages were formed. Penetrative cleavage developed during the Devonian Tabberabberan Orogony when the volcanics were regionally metamorphosed and structurally deformed. Oxidizing fluids, implied by micaceous hematite veinlets and breccia-fill, may have leached the gold$^{\pm}$copper (or possibly introduced it from elsewhere) and concentrated the mineralization within permeable structures late in this orogenic cycle.

Whilst the gold assays from the initial drilling in the immediate vicinity of the Little Owen Adits are disappointing, considerable potential still exists within the main gold anomalous zone. This zone is open both at

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C. 039

depth and along strike and it is recommended that further investigations, including detailed channel sampling and diamond drilling, be carried out to test for the occurrence of high grade gold±copper mineralization along this structural trend.

At the same time, it is recommended that structurally based mapping and detailed rock geochemistry be carried out over other parts of the Little Owen area and also the belt immediately east of the main Mt. Lyell Mine area to investigate the gold potential of similar untested structural zones. Part of this work should involve a follow-up of existing gold anomalies and would include the possible channel sampling of accessible adits from old prospects including the Great Lyell Adits, Duke Lyell, Empress Lyell Hematite Tunnel and the Lyell Reserve workings at the northern end of the Little Owen Ridge. Much of this work would have to be helicopter supported because of the rugged topography here.

On the basis of these conclusions and recommendations an application to retain the Little Owen area along with other parts of the A to P beyond the relinquishment date of 5th August, 1987 has been made with the Tasmanian Mines Department. Due to the proximity of the Little Owen area to Queenstown, it is possible for these investigations to commence early in 1987-88.

C. 040

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98 042

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C. 044

APPENDIX A

SUMMARY OF EXPENDITURE: A TO P, 1986-87

AND

PROPOSED BUDGET: A TO P, 1987-88

GOLD FIELDS EXPLORATION PTY. LIMITED

045

98 046

AUTHORITY TO PROSPECT, QUEENSTOWN

SUMMARY OF EXPENDITURE: 1986-87*

	$
Salaries, Wages and On Costs	40,000
Travel and Accomodation	1,000
Consultants and Contractors	25,000
Assaying	12,000
Drilling	25,000
Stores	4,000
Vehicle/Plant	7,000
Tenement Costs	2,000
Computing	1,000
Office Costs	3,000
TOTAL	$120,000

*Estimate only

GOLD FIELDS EXPLORATION PTY. LIMITED

046

98 047

AUTHORITY TO PROSPECT, QUEENSTOWN

PROPOSED BUDGET: 1987-88

	$
Salaries, Wages and On Costs	26,800
Travel and Accomodation	2,000
Consultants and Contractors	18,400
Assaying	8,000
Drilling	30,000
Stores	3,800
Vehicle/Plant	5,000
Tenement Costs	2,000
Computing	1,000
Office Costs	3,000
TOTAL	$100,000

. 0: 617

APPENDIX B

DIAMOND DRILL HOLE LOGS

HOLES LO1 & LO2

98 049

HOLE NO. :	LO1
STATE :	TASMANIA

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE RECORD

PROJECT	A to P LINDA VALLEY
DESIGNED BY	F.G. FITZGERALD
LOGGED BY	F.G. FITZGERALD
COMMENCED	18.3.87
COMPLETED	1.4.87

PURPOSE

To test for gold mineralization, along strike to the south east of the Little Owen Adits' mineralized zone.

LOG SUMMARY

GENERAL COMMENTS

The hole encountered a mixed suite of altered felsic pyroclastics and epiclastics and minor possible lavas. The main "gold zone" was intersected (85-99m) within moderately pyritic, sericitic and chloritic rocks with prominent but minor chalcopyrite. Several narrow gold anomalous zones also occur higher up the hole with associated chalcopyrite.

SAY SUMMARY

INTERVAL From	INTERVAL To	Au(g/t)	Cu(ppm)	Pb(ppm)	Zn(ppm)	Ag(ppm)	COMMENTS
20.0	21.0	0.41	3750	65	585	<0.5	Chalcopyrite blebs in sericitic lithic volcaniclastics.
37.0	38.0	0.81	970	175	115	1.0	Minor chalcopyrite in stronger chloritic felsic pyroclastics(?)
49.1	51.0	0.25	805	285	1800	<0.5	Moderately pyritic sericitic felsic pyroclastics(?).
85.0	99.0	0.13	531	151	245	<0.5	Minor chalcopyrite in quartz-sericite -pyrite altered felsic volcaniclastics and possible hydrothermal breccia zones - Main gold mineralized zone.

CATION

NORTHING	5339653.2
EASTING	382354.8
R.L.	361.8
GRID	AMG
LENGTH	130.0m

HOLE CONDITION

SIZE Hole Size	SIZE Depth
NQ	3.0m
46TT	130.0m

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost
10.0	15.2	42
20.5	30.7	21

POOR GROUND CONDITION ZONES From	To	Condition

HOLE CONDITIONS AFTER COMPLETION

3m NQ casing left in top of hole, all other gear recovered from hole.

RVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D.Sin.Dip	R.L.	HORIZONTAL D.Cos.Dip	Prog.Total
ar	211°	-45°	0.0	20.0	20.0	14.1	347.7	14.1	14.1
40m	211°	-43°	20.0	62.5	42.5	29.0	318.7	31.1	45.2
85m	211°	-39°	62.5	104.5	42.0	26.4	292.3	32.6	77.8
24m	211°	-33.5°	104.5	130.0	25.5	14.1	278.2	21.3	99.1

SURVEY Depth	Bearing	Dip	INTERVAL From	To	Distance	VERTICAL D.Sin.Dip	R.L.	HORIZONTAL D.Cos.Dip	Prog.Total

98 050

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: LINDA VALLEY

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: LO1

INTERVAL from	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA (ppm) Au	Cu	Pb	Zn	Ag	Au (repeat)
1.0	36.2	28.7	78	LITHIC VOLCANICLASTICS										
				Grey coarse grained volcaniclastic with prominent cream and less common dark grey coloured sub-angular to sub-rounded lithic clasts up to 5cm long scattered throughout especially down to 24m. The rock could be either pyroclastic or epiclastic in origin (favour latter) but morphology is now obscured by strong foliation and cleavage overprint with the result that the lithics are orientated and deformed along this foliation viz: 43° at 4.0m, 34° at 16.7m, 46° at 27.5m. Possible primary										
				layering or bedding contact is preserved at 9.0m of 40° to LCA which	T8247	3.0	5.0	87	<0.01	85	60	405	<0.5	
				is oblique to the cleavage direction. The original rock appears to have	T8248	5.0	7.0	90	<0.01	60	25	360	0.5	
				been relatively felsic in composition but this too is obscured by strong	T8249	7.0	9.0	92	<0.01	30	10	420	<0.5	
				pervasive hydrothermal alteration. The rock is relatively fresh (un-	T8250	9.0	11.0	85	<0.01	20	15	385	<0.5	
				weathered) below 3m with only minor Fe oxides on fractures extending	T8251	11.0	13.0	56	<0.01	245	40	295	<0.5	
				down to 9m.	T8252	13.0	15.0	39	<0.01	90	70	435	<0.5	
				Alteration: Moderate-strongly altered with pervasive sericite-	T8253	15.0	17.0	86	<0.01	55	35	495	<0.5	
				quartz predominant resulting in detexturing of the	T8254	17.0	19.0	90	<0.01	35	10	515	<0.5	
				primary crystals and vitric groundmass. Some zones	T8255	19.0	20.0	88	*<0.01	45	30	500	<0.5	
				of moderate chloritic alteration especally of original	T8256	20.0	21.0	89	* 0.41	3750	65	585	<0.5	0.34
				vitric (?) material which now forms stringers along	T8258	21.0	22.0	48	* 0.05	1200	68	585	<0.5	0.07
				the cleavage e.g. 15.8-23.0m. Very minor thin cream	T8259	22.0	24.0	84	0.07	300	65	510	0.5	0.03
				carbonate-quartz veinlets mostly sub-parallel to cleavage.	T8260	24.0	26.0	87	0.03	110	50	490	<0.5	
				Mineralization: Weak-moderately sulphidic throughout, predominantly	T8261	26.0	28.0	77	0.02	100	45	340	<0.5	
				as fine grained disseminated pyrite which is typically	T8262	28.0	30.0	83	0.04	45	60	350	0.5	
				concentrated along the cleavage. Also some coarser	T8263	30.0	32.0	95	0.03	75	30	415	<0.5	
				veins of pyrite up to 4mm thick which tend to be	T8264	32.0	34.0	96	0.04	75	10	440	<0.5	
				sub-parallel to cleavage. Rare chalcopyrite occurs as	T8265	34.0	36.0	95	0.04	150	10	70	<0.5	
				scattered blebs see below.										
				0-12m <0.5% pyrite										
				12-20m 1-2% pyrite										
				20-22m 2-5% sulphide with 20.3-20.9m 1-2% chalcopy-										
				rite, 21.6m minor chalcopyrite.										
				22-26.5m ave.1% pyrite										
				26.5-36.2m 1-3% pyrite within strong quartz-sericite-										
				pyrite zone.										
								*	309					
					ANALYTICAL METHOD				329	101	101	101	101	309

GOLD FIELDS EXPLORATION PTY. LIMITED

98 051

PROJECT: LINDA VALLEY

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: LO1

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA (ppm) Au	Cu	Pb	Zn	Ag	Au (repeat)
				Structure: Moderate-strong penetrative cleavage with result that core is quite broken in upper part, down to 25m. Prominent structural zones, small crush zones with clay pug as follows: 9.0m (10cm), 10.0m (5cm), 10.8m (10cm), 11.9-14.5m (major fault, much core lost), 15.9m (20cm), 19.8m (10cm), 22.2m (15cm, fault), 23.2m (30cm, broken) 28.4 (10cm).										
36.2	71.0	33.8	97	**MIXED PYROCLASTIC(?) SEQUENCE**										
				Predominantly a grey medium-coarse grained volcaniclastic sequence										
				with some finer grained more uniform "ashy" material e.g. 59.2-63.0m,	T8266	36.0	37.0	95	*0.10	30	95	120	0.5	0.10
				66.2-67.8m. A prominent "flow foliation" is defined by orientation of	T8267	37.0	38.0	97	*0.81	970	175	115	1.0	0.88
				dark vitric(?) components and streaks up to 3cm long some of which	T8269	38.0	39.0	98	*0.01	35	55	120	0.5	
				preserve relict glass shard shapes giving the rock an appearance of	T8270	39.0	40.0	99	*0.03	30	25	185	<0.5	
				welded ignimbrite in part. Although the rock is strongly altered it	T8271	40.0	41.0	98	*0.05	55	80	215	<0.5	
				appears to be similar in felsic composition to the above sequence. No	T8272	41.0	42.0	100	*0.05	30	10	285	<0.5	
				prominent lithic clasts are observed although subtle inclusions up to 4cm	T8273	42.0	43.0	100	*0.05	985	15	240	<0.5	
				occur locally where alteration/deformation are weaker e.g. 44.6m,	T8274	43.0	44.0	98	*0.05	65	10	260	<0.05	
				48.4m.	T8275	44.0	45.0	100	*0.04	30	55	320	<0.05	
				Alteration: Quite strongly altered sequence with moderate-strong	T8276	45.0	46.0	100	*0.02	15	40	320	<0.5	
				pervasive quartz-sericite especially within the ground-	T8278	46.0	47.0	100	*0.04	3400	80	410	<0.5	0.05
				mass. Pervasive chlorite is less dominant but increases	T8279	47.0	49.0	100	0.01	20	515	305	<0.5	<0.01
				in intensity downhole, especially within relict pumice and	T8280	49.0	51.0	100	0.25	805	285	1800	<0.5	0.27
				glass shards. The "ashy" bands are strongly altered by	T8281	51.0	53.0	100	0.04	10	50	340	<0.5	0.03
				quartz-sericite but chlorite is virtually absent. Only	T8282	53.0	55.0	100	0.03	10	105	300	0.5	
				minor cream-pale brown carbonate-quartz gash veins	T8283	55.0	57.0	99	0.01	140	85	370	<0.5	
				and irregular breccia-fill up to 3cm thick occurs,	T8284	57.0	59.0	97	0.06	85	275	475	<0.5	
				particularly towards lower margin of sequence.	T8285	59.0	61.0	92	0.02	10	45	250	<0.5	
				Mineralization: The sequence is quite sulphidic and averages 5% pyrite	T8286	61.0	63.0	81	0.02	5	25	295	<0.5	
				throughout, although the finer grained units are	T8288	63.0	65.0	93	0.06	10	55	375	<0.5	
				noticeably less pyritic, mostly 1-3 pyrite. From 59m	T8289	65.0	67.0	95	0.02	10	35	305	<0.5	
				onwards generally less pyritic apart from narrow	T8290	67.0	69.0	95	0.03	10	95	65	<0.5	
				zones of coarser grained rock e.g. 63.6-65.7m with 5%	T8291	69.0	71.0	100	0.01	40	15	200	<0.5	
				pyrite. The pyrite is mostly fine-medium grained and										
				disseminated but often recrystallized into euhedral				*	309					
									329	101	101	101	101	309

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA (ppm) Au	Cu	Pb	Zn	Ag
				pyrite cubes 1-3mm in size which are concentrated in in bands along cleavage. The finer grained units have very fine grained disseminated pyrite with little recrystallization.									
				Scattered "splashes" of chalcopyrite occur in the upper part of the section, above 46.3m mostly as irregular blebs and veins closely associated with stronger chloritic alteration. Viz:									
				37.4m minor chalcopyrite									
				40.9m minor chalcopyrite									
				42.5m 10cm at 5% chalcopyrite									
				46.3m 1.5cm massive chalcopyrite vein with thin red hematite veinlets closely associated.									
				It appears that the chalcopyrite mineralization may post-date most of the pyrite in the sequence.									
				Structure: Moderate-strong penetrative cleavage at 35-40° to LCA throughout. The core is quite competent, however, minor broken zones of rubbly and crushed core may represent small faults viz: 62.9m, 63.2m, 63.6m, 66.2m, 69.1m. NB water lost at 46.1m where small open cavity with Fe/Mn oxide coating was recovered in drill core.									
71.0	78.2	6.9	97	FELSIC LAVA(?)									
				Grey medium-coarse grained porphyritic probable felsic lava. The unit is relatively homogeneous, however, both margins are gradational into more strongly foliated (cleaved) rocks which appear to be more clastic in origin. The "lavas" are composed of: cream-pink subhedral feldspar crystals 1-4mm; other relict white euhedral feldspar phenocrysts, which are (rarely) up to 1cm long; minor quartz crystals 2-3mm set in a fine-grained altered groundmass.	T8292	71.0	73.0	95	0.03	25	10	215	<0.5
					T8293	73.0	75.0	95	0.01	35	25	200	<0.5
					T8294	75.0	77.0	98	0.01	35	10	200	<0.5
					T8295	77.0	79.0	100	0.02	45	10	200	<0.5
				Alteration: Overall much weaker than above sequence with moderate pervasive quartz-sericite alteration, especially of the groundmass with weak pervasive chlorite. Minor white carbonate±quartz±chlorite±pink carbonate veins up to 2cm thick e.g. 75.8m.									

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: LINDA VALLEY

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: LO1

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA (ppm) Au	Cu	Pb	Zn	Ag	Au (repeat)
				Mineralization: Very weakly mineralized with <0.5% fine grained disseminated pyrite which increases slightly downhole.										
				Structure: Structureless apart from weak foliation especially towards the margins of the unit, this is probably syn-metamorphic cleavage.										
78.2	94.1	15.6	98	FELSIC VOLCANICLASTICS										
				Grey and light grey fine-coarse grained foliated volcaniclastic. The sequence has a prominent streaky appearance which may represent disrupted bands from an originally layered rock, perhaps an epiclastic. Banding e.g. 45° at 87.6m. The strong alteration deformation obscures much of the primary rock fabric which appears to have been a more variable sequence of predominantly coarser tuffaceous material with										
				layers of finer, more ashy(?) material interbedded e.g. 89.8m where	T8296	79.0	81.0	98	0.02	60	55	220	<0.5	
				apparent crystal rich tuff is now strongly deformed with feldspar crystals	T8297	81.0	83.0	90	0.04	60	40	215	<0.5	
				elongated by 3-4 times. Some scattered quartz crystals now form an	T8298	83.0	85.0	100	0.02	20	45	180	<0.5	
				augen fabric within sericite rich cleaved groundmass. Rare definite lithic	T8299	85.0	87.0	98	0.24	10	15	160	<0.5	0.32
				clastics observed e.g. 93.2m 4cm cream carbonate altered clast.	T8300	87.0	89.0	100	0.13	25	5	165	<0.5	0.13
				Alteration: Moderate-strong pervasive sericite-quartz, locally	T8301	89.0	91.0	95	0.14	45	20	200	<0.5	0.20
				completely obliterating the primary composition.	T8302	91.0	93.0	98	0.13	15	110	225	<0.5	0.07
				Chloritic alteration is much weaker and mostly confined	T8303	93.0	94.0	100	*0.01	100	65	550	<0.5	<0.01
				to distinct bands and streaks within coarser units but tends to increase in intensity downhole. Minor scattered cream and fawn carbonate±quartz±chlorite gash veins and irregular "clots" e.g. 88.5m.										
				Mineralization: Relatively weakly mineralized average 0.5-1% pyrite but with local sections up to 5% pyrite e.g. 84.0-84.3m, 84.7-88.2m. Pyrite occurs both as fine grain disseminations and more common medium-coarse grained re-crystallized euhedral pyrite concentrated in veins and bands along cleavage. Pyrite tends to be associated with strongest chlorite alteration.										
				Structure: Strongly cleaved at 40-45° to LCA but still relatively competent. Major structures are:										
				81.4m 10cm clay/rubble-fault										
				84.0m 20cm broken core with pyrite leached, no Fe oxides.										

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (ppm)												
om	To	m	%		Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Au (repeat)			
4.1	99.5	5.4	100	**BRECCIATED VOLCANICLASTICS**													
				Grey medium-coarse grained foliated volcaniclastic sequence similar to above but with prominant zones of apparent hydrothermal breccia e.g. 94.1-94.9, 95.7-95.9m. These breccia zones are composed of sub-angular to sub-rounded apparently corroded clasts of a pinkish siliceous fine grained rock set in a strongly altered matrix. The rest of the section is similar to above possible epiclastic sequence although parts could be strongly deformed/cleaved breccia zones.												
				Alteration: Moderate-strong pervasive quartz-sericite and weaker chlorite alteration as above. The breccia matrix is entirely sericite-quartz-chlorite. Scattered irregular cream-fawn carbonate veins. 95.0m 10cm wide carbonate-pinkish (Kfeldspar?) + minor chlorite vein and breccia fill.	T8304	94.0	95.0	100	*0.15	4100	1450	515	1.0	0.10			
					T8305	95.0	96.0	100	*0.06	140	190	300	<0.5	0.09			
					T8307	96.0	97.0	100	*0.06	1150	70	200	<0.5	0.08			
					T8308	97.0	98.0	100	*0.08	95	25	185	<0.5	0.13			
					T8309	98.0	99.0	100	*0.22	1850	15	185	<0.5	0.30			
					T8310	99.0	100.0	99	*0.01	180	10	250	<0.5	0.01			
				Mineralization: Moderately mineralized with striking "splashes" of chalcopyrite, typically as clots up to 2cm in size but quite widely scattered. Estimate <0.5% chalcopyrite overall with local patches up to 10cm wide with up to 5% chalcopyrite e.g. 94.1m, 96.5m, 98.7m. The chalcopyrite tends to be orientated along cleavage and some is clearly associated with the hydrothermal(?) breccia zones, but other mineralization is not. Apart from the chalcopyrite the core carries 1-3% medium grained pyrite which is concentrated along the cleavage. Some evidence that chlorite±pyrite over prints some of the chalcopyrite but there is a general association of chlorite with Cu.												
				Structure: Apart from moderate-strong cleavage at 45-50° to LCA the core is relatively structureless.													
99.5	106.4	6.6	97	**FELSIC VOLCANICLASTICS**													
				Grey-dark grey fine-medium grained uniform foliated volcaniclastics which are similar to the possible epiclastic sequence above but with less pronounced relict primary banding. Rare scattered lithic clasts of pinkish (siliceous) lava? up to 1cm long. Gradational contact with breccia zone above.													

98 055

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: LINDA VALLEY

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: LO1

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (ppm)													
om	To	m	%		Sample No	From	To	Rec. %	Au	Cu	Pb	Zn	Ag					
				Alteration: Moderate pervasive quartz-sericite with weaker chloritic alteration mainly in bands and patches. Minor thin carbonate veinlets. Zone of chloritic alteration associated with a chalcopyrite vein at 102.4m. Zone of strong quartz-sericitic-pyrite adjacent to a fault at 103.4m.	T8311	100.0	102.0	98	0.03	90	20	250	<0.5					
					T8312	102.0	104.0	96	0.04	135	15	195	<0.5					
					T8313	104.0	106.0	95	0.02	60	<5	145	<0.5					
				Mineralization: Moderate-weakly mineralized generally decreasing downhole from 2-4% pyrite to 1% pyrite mostly as fine grained disseminated and lesser medium grained re-crystalized grains. Some prominent chalcopyrite veinlets and blebs especially 102.1-102.4m and 105.1m but mostly only very minor.													
				Structure: Moderately cleaved at approx. 50° to LCA, 103.4m 10cm fault zone with clay pug.														
6.4	130.0	23.6	100	**MASSIVE PYROCLASTICS/FELSIC LAVA?**														
				Fawn-grey medium grained uniform massive foliated sequence of felsic volcaniclastics. Dark green flecks becoming paler downhole aligned sub-parallel define the foliation which is 55-60° to LCA. Relict feldspar crystals 1-2mm in size especially from 125m onwards give rock a uniform appearance.	T8314	106.0	108.0	100	0.01	10	5	65	<0.5					
					T8315	108.0	110.0	92	0.01	<5	<5	55	<0.5					
					T8316	110.0	112.0	97	0.04	5	15	65	<0.5					
					T8317	112.0	114.0	99	0.04	15	15	55	0.5					
					T8318	114.0	116.0	100	0.03	10	10	70	<0.5					
				Alteration: Moderate-weak pervasive quartz-sericite with only minor chloritic alteration of vitric "flecks" and absent from last 5m. Cream carbonate-quartz veins up to 1cm thick (and minor fawn siderite veins) are relatively common throughout. Minor chlorite associated with these veins especially along selvages.	T8319	116.0	118.0	96	0.04	10	25	80	0.5					
					T8320	118.0	120.0	100	0.02	10	5	65	<0.5					
					T8321	120.0	122.0	100	0.03	20	10	85	0.5					
					T8322	122.0	124.0	100	0.04	30	40	160	0.5					
					T8324	124.0	126.0	99	0.03	5	<5	60	<0.5					
					T8325	126.0	128.0	100	0.03	5	10	45	0.5					
				Mineralization: Quite weak with <0.5% fine grained disseminated pyrite locally concentrated along fractures or as medium grained clots up to 3cm thick e.g. 122.7m. At 117.8m 2cm thick pyrite-hematite clots. Basal section virtually unmineralized.	T8326	128.0	130.0	100	0.04	5	10	60	0.5					
				Structure: Relatively massive and uniform At 113.0m, 127.9m narrow crush zones.														
				END OF HOLE														

PROJECT: **LINDA VALLEY** HOLE NO.: **LO 1**

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL HOLE PLOT

SCALE 1:500

10 5 0 10 20

METRES

382 300mE

5339 600mN

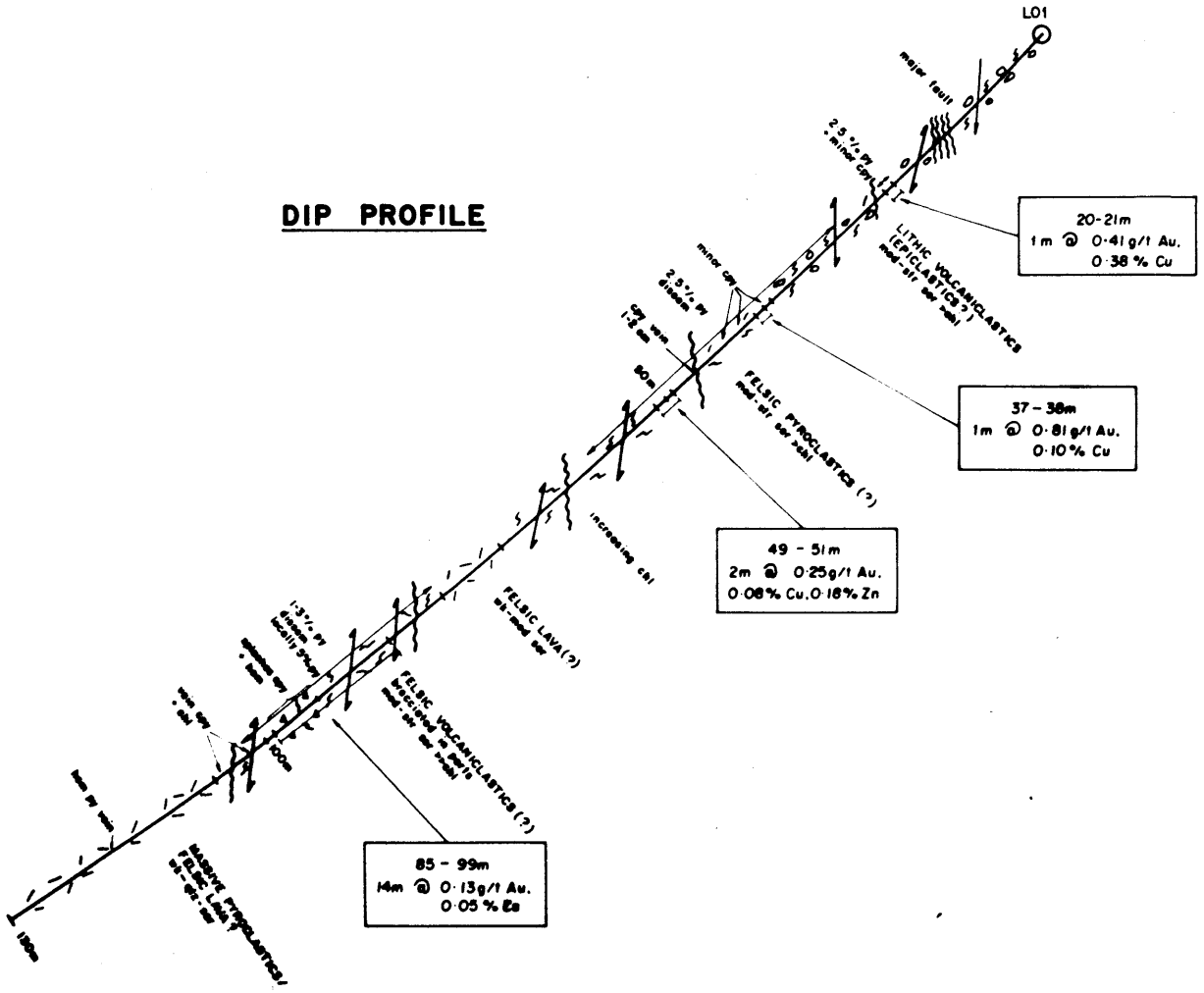
PLAN VIEW



361·8m R.L.

361·8m RL

DIP PROFILE



304·5m RL

278·2m RL

5 cm

LEGEND

Bedding or primary foliation

Cleavage or schistosity

Prominent fault

ALTERATION / MINERALIZATION

carb	Carbonate
chl	Chlorite
cpy	Chalcopyrite
hem	Hematite
mag	Magnetite
py	Pyrite
ser	Sericite
silif	Silicified
qtz	Quartz

STATE: **TAS.**

HOLE NO: **LO1**

98 057

HOLE NO.: LO20
STATE : TASMANIA

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE RECORD

PROJECT	A to P LINDA VALLEY
DESIGNED BY	F.G FITZGERALD
LOGGED BY	F.G. FITZGERALD
COMMENCED	3.4.1987
COMPLETED	22.4.1987

PURPOSE

To test for gold mineralization, along strike to the north west of the Little Owen Adits mineralized zone.

LOG SUMMARY

GENERAL COMMENTS

The hole encountered a sequence of moderately to very strongly altered felsic and intermediate volcaniclastics and minor mafic dykes(?). The "gold zone" was intersected at 81-102m within more chloritic and pyritic rocks where minor chalcopyrite occurs in hematite and/or pyrite veins and in quartz-chlorite veins.

SAY SUMMARY

INTERVAL From	INTERVAL To	Au (g/t)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Ag (ppm)	COMMENTS
81.0m	102.0m	0.31	481	198	811	=0.7	Average assays over entire gold mineralized zone.
88.0m	90.0m	0.67	1438	900	600	2.5	Minor chalcopyrite-galena in thick quartz-chlorite veins
98.0m	102.0m	0.89	1330	14	306	0.5	Scattered hematite+chalcopyrite veins in chloritic-pyritic zone
102.0m	102.0m	1.98	45	5	200	0.5	Highest Au assay: in hematite-pyrite rich chloritic-sericitic felsic volcaniclastics

CATION

NORTHING	5339712.9
EASTING	382276.2
R.L.	378.9
GRID	AMG
LENGTH	180.0m

HOLE CONDITION

SIZE Hole Size	SIZE Depth
46TT	180m

SIGNIFICANT CORE LOSS INTERVALS From	To	% Lost

POOR GROUND CONDITION ZONES From	To	Condition

HOLE CONDITIONS AFTER COMPLETION

All gear recovered from hole.
Hole open at collar.

SURVEY DATA (Note: Bearing type must be same as Project Grid Type)

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total
collar	208°	-45°	0.0	20.0	20.0	14.1	364.8	14.1	14.1
40m	208°	-43°	20.0	59.5	39.5	26.9	337.9	28.9	43.0
79m	208°	-38°	59.5	98.5	39.0	24.0	313.9	30.7	73.7
18m	208°	-32°	98.5	139.0	39.5	20.9	293.0	33.5	107.2
60m	208°	-25.5°	139.0	180.0	41.0	17.7	275.3	37.0	144.2

SURVEY Depth	SURVEY Bearing	SURVEY Dip	INTERVAL From	INTERVAL To	INTERVAL Distance	VERTICAL D.Sin.Dip	VERTICAL R.L.	HORIZONTAL D.Cos.Dip	HORIZONTAL Prog.Total

98 058

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: LINDA VALLEY

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: LO1

051

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
0.0	17.9	15.9	89	INTERMEDIATE VOLCANICLASTICS Dark green-grey medium grained strongly foliated volcaniclastic. Although strong pervasive alteration and deformation has obscured the primary texture and composition suggest that the original rock was intermediate, perhaps andesitic. Upper part of sequence (to 5.4m) has common feldspar crystal relicts and minor quartz crystals set in a fine grained dark green groundmass. Further down hole feldspar not preserved but prominent dark green "streaks" up to 5cm long e.g. 16.8m and these are aligned and define foliation e.g. 15° at 6.6m, 10° at 11.3m these may represent extremely flattened pumice. The penetrative cleavage destroys other primary rock fabrics. The core is relatively fresh (unweathered) from the collar of the hole apart from minor Fe oxides on open fractures. Alteration: Moderate-strong pervasive chlorite throughout decreasing in intensity down hole with an increase in quartz-sericite alteration. The vitric "streaks" are composed entirely of secondary chlorite. Very minor, mostly thin carbonate-quartz±chlorite veinlets. Some hematite associated with this veining e.g. 6.0-6.4m, 7.9m, 12.8m, 15.1m mostly as irregular clots and veins up to 0.5cm thick, usually associated with stronger chlorite. Mineralization: Moderate - strongly sulphidic, mostly 1-2% pyrite, locally up to 5% pyrite over intervals 10-30cm e.g. 10.3m, 13.3m, predominantly as medium grained recrystallized pyrite concentrated into bands along cleavage. Structure: Strong penetrative cleavage 15-20° to LCA. Minor broken zones at 2.9m, 6.0m, 9.7m 17.9m but none are major structures.
17.9	46.0	25.9	92	FELSIC VOLCANICLASTICS AND MAFIC DYKES(?) Mixed sequence of light grey medium grained strongly altered apparent felsic volcaniclastics with several dark green/grey fine grained possible mafic units which may represent dykes. viz 39.1-39.7m, 44.0-46.0m. The upper mafic body has sharp contacts which are sub parallel to

ASSAY DATA (ppm)

Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag
T8393	0.0	2.0	85	<0.01	35	60	460	<0.5
T8394	2.0	4.0	97	<0.01	40	55	495	<0.5
T8395	4.0	6.0	100	<0.01	25	45	565	<0.5
T8396	6.0	8.0	86	<0.01	45	50	315	<0.5
T8397	8.0	10.0	84	<0.01	30	60	255	<0.5
T8398	10.0	12.0	97	<0.01	25	50	360	<0.5
T8399	12.0	14.0	90	0.01	40	55	400	<0.5
T8400	14.0	16.0	86	<0.01	55	60	395	<0.5
T7401	16.0	18.0	75	<0.01	35	35	290	<0.5

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA (ppm) Au	Cu	Pb	Zn	Ag
				cleavage i.e. 33° and 48° respectively, but the lower body is more irregular with gradational contacts. Both units are strongly magnetic, the lower one with prominent dark green flecks up to 6-8mm long aligned at 32° to LCA.								
				The enclosing felsic volcaniclastics are less uniform but also strongly altered and deformed. The occurrence of elongated chloritic "streaks" up to 2cm long may represent relict pumice and glass shards which suggest that the primary rock may have been pyroclastic. Subtle clasts of pale fine grained volcanic inclusions up to 3cm indicate probable scattered lithics in the unit also e.g. 24.4m, 38.0-38.4m.								
				Alteration: Strongly altered throughout. Pervasive quartz-sericite which has completely detextured original rock. Chlorite decreases noticeably down hole apart from mafic units which are strongly chloritic. Several quartz-chlorite-carbonate veins, the largest associated with a major fault zone at 27.7-30.5m.	T7402	18.0	20.0	95	<0.01	65	35	160	<0.5
					T7403	20.0	22.0	99	<0.01	10	20	175	<0.5
					T7404	22.0	24.0	91	<0.01	25	30	240	<0.5
					T7405	24.0	26.0	82	<0.01	30	35	105	<0.5
					T7406	26.0	28.0	74	<0.01	80	30	140	<0.5
					T7408	28.0	30.0	53	0.02	95	110	325	<0.5
				Mineralization: Weak-moderate fine-medium grained disseminated pyrite 1-3% with most in strongest quartz-sericite altered zones, and generally increaseing down hole. Some zones of medium grained recrystallized pyrite concentrated in bands parallel to cleavage e.g. 31.8-32.2m, or as irregular clots up to 2cm thick e.g. 38.5m or as rare semi-massive pyrite in quartz-chlorite vein 15cm thick at 41.0m with zone surrounding this vein 39.7-41.7 carrying 5-10% pyrite. Some minor hematite veins overprint the pyrite at 41.3m.	T7409	30.0	32.0	100	<0.01	90	85	380	<0.5
					T7410	32.0	34.0	81	<0.01	30	45	110	<0.5
					T7411	34.0	36.0	100	<0.01	10	30	80	<0.5
					T7412	36.0	38.0	94	<0.01	10	30	90	<0.5
					T7413	38.0	40.0	100	<0.01	10	25	250	0.5
					T7414	40.0	42.0	87	<0.01	25	50	120	1.0
					T7415	42.0	44.0	100	<0.01	25	20	170	<0.5
					T7416	44.0	46.0	93	<0.01	15	25	305	0.5
				Structure: Strong penetrative cleavage which varies from 30°-55°. Major structure: 27.7-30.7m, much core loss, crenulated cleavage, crush zone and quartz-chlorite vein and minor Fe oxide. Minor open cavities with Mn oxide coatings e.g. 33.9m, 34.7m									
46.0	78.3	32.2	97	FELSIC VOLCANICLASTICS (FELSIC SCHISTS) Light grey coarse grained strongly foliated and altered sequence of									

98 060

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: LINDA VALLEY

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: LO2 Page: 3

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION	Sample No.	From	To	Rec. %	ASSAY DATA (ppm) Au	Cu	Pb	Zn	Ag	Au (check)
				probable felsic volcaniclastics similar to above. Sequence becoming	T7417	46.0	48.0	100	<0.01	10	20	50	<0.5	
				relatively uniform down hole. Intense alteration/deformation has	T7418	48.0	50.0	97	0.01	10	15	45	<0.5	
				obliterated primary textures and compositions so that now essentially	T7419	50.0	52.0	94	<0.01	10	10	35	0.5	
				quartz-sericite schists. Relict lithic clasts of fine grained fawn and grey	T7420	52.0	54.0	100	<0.01	15	15	65	0.5	
				volcanics up to 3cm (mostly < 1cm) are common throughout especially	T7422	54.0	56.0	100	<0.01	10	25	25	0.5	
				in the upper part of the sequence down to 69m. Some minor bands of	T7423	56.0	58.0	100	<0.01	10	20	70	1.0	
				fine grained possible ashy units 1-10cm thick e.g. 54.2m, 61.4m with con-	T7424	58.0	60.0	98	<0.01	5	10	160	1.0	
				tact at 30° to LCA.	T7425	60.0	62.0	100	<0.01	10	20	90	0.5	
				Alteration: Strong pervasive quartz-sericite-pyrite alteration	T7426	62.0	64.0	100	0.01	5	15	50	0.5	
				Chloritic alteration mostly weak or absent apart from	T7427	64.0	66.0	100	<0.01	15	20	50	<0.5	
				minor zones e.g. 57.5-59.4m. Virtually no veins in	T7428	66.0	68.0	100	<0.01	10	15	45	<0.5	
				this sequence apart from minor thin pale green sericite	T7429	68.0	70.0	100	0.02	10	20	55	0.5	
				veinlets.	T7430	70.0	72.0	100	<0.01	5	20	40	<0.5	
				Mineralization: Uniform moderate disseminated pyrite throughout	T7431	72.0	74.0	100	<0.01	10	20	30	<0.5	
				estimate 2-5%, mostly fine-medium grained recrystall-	T7432	74.0	76.0	100	<0.01	15	20	20	0.5	
				ized and often concentrated in elongated clots along	T7433	76.0	78.0	98	<0.01	5	10	75	<0.5	
				cleavage.										
				Structure: Moderate-strong penetrative cleavage at 30-45° to LCA										
				otherwise relatively structureless.										
78.3	95.8	17.3	99	INTERMEDIATE(?) VOLCANICLASTICS										
				Grey-green medium grained crystal rich foliated volcaniclastics.										
				This unit is much less altered than above sequence and original feldspar										
				crystal fragments, minor quartz crystals and relict mafic crystals are										
				preserved in a finer grained "gritty" matrix. Some hematite grains after										
				magnetite(?) occur. The feldspar and mafic crystals appear to be broken										
				(in part) which suggest that rock may be an epiclastic derived from										
				intermediate composition volcanics. These crystal fragments are prefer-										
				entially aligned along the cleavage which has obscured any primary lay-										
				ering that may have been present. No lithic clasts are evident.										
				Alteration: Mostly weak-moderate pervasive chlorite-sericite-quartz										
				alteration of groundmass and prominent chloritic										
				alteration of mafic crystals. Minor specular hematite	T7434	78.0	79.0	98	*0.08	85	20	250	0.5	
				veins and pods associated with chlorite-magnetite in	T7435	79.0	80.0	100	*0.02	400	15	320	<0.5	
				upper section viz 78.3-81.8m. Quartz-chlorite-carbonate	T7436	80.0	81.0	99	*<0.01	100	10	295	<0.5	
				veins occur, some are quite thick e.g. 87.4-88.5m with	T7437	81.0	82.0	100	*0.71	565	<5	500	<0.5	0.63

INTERVAL From	To	RECOVERY m	%	DESCRIPTION
				minor sulphides. Minor siderite veinlets.
				Mineralization: Overall relatively weakly mineralized with trace-minor disseminated pyrite. However, some minor but prominent chalcopyrite as follows:
				1. Associated with stronger chlorite alteration and hematite veins e.g. 78.3, 5cm at 1%cpy, 81.0-81.7m <0.5%cpy average;
				2. in major quartz-chlorite-carbonate veins with trace galena e.g. 88.0-88.7m, 89.2m, 89.5m but all <0.5% cpy;
				3. associated with hematite-carbonate gash fill in more chloritic zones as veins±pyrite e.g. 88.6-90.6m, ave. 0.5%cpy.
				Structure: Moderately cleaved e.g. 47° to LCA at 91.3m. Small fault, clay pug zone 15cm thick at 94.2m.
95.8	118.0	22.2	100	FELSIC VOLCANICLASTICS
				Grey medium grained relatively uniform foliated felsic volcaniclastics. This sequence is more strongly altered and deformed than the above unit, consequently much of the primary lithology has been obscured. The uniformity and degree of subsequent alteration/deformation suggest that this sequence may have been relatively massive pyroclastics.
				Alteration: Moderate-strong pervasive quartz-sericite and lesser chlorite, however stronger chloritic zones e.g. 95.8-101.5m, 111.0-112.4m, 115.1-118.0m.
				Minor specular hematite both as blebs (after magnetite?) or irregular veins e.g. 101.0-101.2m or with pyritic veins e.g. 111.2-112.4m.
				Several major quartz-chlorite±carbonate veins 5-65cm thick with some associated pyritic mineralization. Rare carbonate gash veins.
				Mineralization: Moderately mineralized throughout, average 2-5% pyrite as fine-medium grained disseminations. Prominent but minor chalcopyrite splashes and blebs generally associated with stronger chlorite-magnetite and

ASSAY DATA (ppm) Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Au (check)
T7438	82.0	84.0	93	0.15	35	10	370	<0.5	
T7440	84.0	86.0	99	0.05	230	165	545	0.5	
T7441	86.0	87.0	100	*0.02	35	685	840	1.0	
T7442	87.0	88.0	100	*0.01	20	10	640	1.0	
T7443	88.0	89.0	99	*0.64	1800	1475	650	4	0.68
T7444	89.0	90.0	100	*0.70	1075	325	550	<2	
T7445	90.0	91.0	100	*0.04	250	325	1300	<2	
T7446	91.0	92.0	100	*0.03	80	290	890	1.5	
T7447	92.0	94.0	99	0.17	170	255	3650	<0.5	
T7448	94.0	96.0	100	<0.01	25	35	400	<0.5	
T7449	96.0	98.0	100	0.08	15	25	250	<0.5	
T7450	98.0	99.0	98	*1.30	3000	10	340	0.5	1.24
T7451	99.0	100.0	100	*0.04	375	15	385	0.5	
T7452	100.0	101.0	100	*0.23	1900	25	300	<0.5	
T7453	101.0	102.0	100	*1.98	45	5	200	0.5	2.01
T7455	102.0	104.0	99	<0.01	25	10	120	<0.5	
T7456	104.0	106.0	99	<0.01	20	5	155	<0.5	
T7458	106.0	108.0	100	<0.01	10	20	135	0.5	

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: LINDA VALLEY

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: LO2 Page: 5

INTERVAL From	INTERVAL To	RECOVERY m	RECOVERY %	DESCRIPTION
				concentrated along cleavage as below:
				98.1-99.3m veins up to 0.7cm thick, but average <0.5%
				cpy; 100.8-101.0m chalcopyrite-pyrite veins.
				Some stronger pyritic zones with up to 10%py as
				follows: 100.9-101.2m, 110.6-112.6m and 116.0m -116.5m
				disrupted semi-massive pyrite bands in quartz-chlorite
				vein.
				Structure: Moderately cleaved e.g. 35° at 101.7m, 28° at 114.2m
				Possible minor fault at 109.5-109.8m associated with
				quartz-chlorite vein.
18.0	174.7	56.7	100	MIXED VOLCANICLASTICS AND MINOR MAFIC DYKES(?)
				Mixed grey and green fine-medium grained variable sequence of possible
				felsic pyroclastics and epiclastics which appear to have been intruded
				by several mafic bodies at 126.3-128.1m, 139.6-142.6m, 146.1-146.3m,
				147.9-149.0m, 149.9-159.7m, 160.7-160.9m, 162.0-163.8m. These mafic
				bodies are dark green fine grained massive and uniform units with con-
				tacts which vary from relatively sharp to, more commonly, diffuse.
				The main part of the sequence is made up of volcaniclastics which are
				similar to above lithologies. Some possible epiclastic units within this
				sequence may be finer grained strongly foliated "shaley" units e.g. 118.0-
				119.6m. Some of these finer grained units are similar to the mafic(?)
				bodies and have prominent white carbonate±hematite "grains" which are
				like amygdales 2-10mm in size e.g. 137.3-141.6m.
				Alteration: Mostly weak-moderate alteration with pervasive quartz-
				sericite in main volcaniclastic units and moderate-strong
				chlorite in mafic units. Alteration tends to decrease
				down hole especially within felsic units e.g. 153.9-
				160.7m. Minor hematite-carbonate±pyrite veinlets viz
				125.3m, 127.2-127.4m, 144.8-145.0m, 148.9m, 150.3m.
				Scattered carbonate-hematite clots 151.5-152.8m in
				mafic units.
				162.25m 1cm thick quartz-hematite-carbonate vein
				with pyritic selvage.
				Major quartz-carbonate veins 153.1-153.9m, 163.8-

ASSAY DATA (ppm) Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag
T7459	108.0	110.0	100	<0.01	75	25	205	<0.5
T7460	110.0	112.0	98	<0.01	35	25	265	0.5
T7461	112.0	114.0	100	<0.01	20	10	130	0.5
T7462	114.0	116.0	100	<0.01	5	5	175	<0.5
T7463	116.0	118.0	100	<0.01	15	5	220	<0.5
T7464	118.0	120.0	100	<0.01	10	10	215	<0.5
T7465	120.0	122.0	100	<0.01	10	<5	215	<0.5
T7466	122.0	124.0	99	<0.01	15	5	180	<0.5
T7467	124.0	125.0	100	*0.03	5	5	155	<0.5
T7468	125.0	126.0	100	*0.07	50	15	205	0.5
T7469	126.0	128.0	100	<0.01	15	10	395	0.5
T7470	128.0	130.0	98	<0.01	10	35	190	<0.5
T7471	130.0	132.0	100	<0.01	30	10	180	0.5
T7472	132.0	134.0	100	<0.01	20	5	240	0.5
T7474	134.0	136.0	100	*0.02	15	20	250	0.5
T7475	136.0	138.0	98	<0.01	50	10	230	0.5
T7476	138.0	139.0	100	*0.01	30	15	225	0.5
T7477	139.0	140.0	99	*0.01	50	10	360	0.5
T7478	140.0	141.0	98	*0.01	50	10	290	<0.5
T7479	141.0	142.0	98	*<0.01	105	25	400	<0.5
T7480	142.0	144.0	97	<0.01	60	15	290	0.5
T7481	144.0	146.0	100	<0.01	15	10	180	<0.5
T7482	146.0	148.0	97	<0.01	40	15	275	<0.5
T7483	148.0	150.0	99	<0.01	95	10	475	<0.5
T7484	150.0	152.0	100	<0.01	115	20	570	<0.5
T7485	152.0	154.0	100	<0.01	70	10	425	<0.5

GOLD FIELDS EXPLORATION PTY. LIMITED

PROJECT: LINDA VALLEY

DRILL CORE LOG AND ASSAY DATA

HOLE NUMBER: LO2 Page: 6

INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA (ppm)											
om	To	m	%		Sample No.	From	To	Rec. %	Au	Cu	Pb	Zn	Ag	Au (check)		
				166.0m and 171.4-174.7m but no sulphides associated	T7486	154.0	156.0	100	<0.01	45	10	240	<0.5			
				with these.	T7487	156.0	158.0	100	<0.01	40	15	120	<0.5			
				Mineralization: Overall quite weakly mineralized with minor dissem-	T7488	158.0	160.0	99	<0.01	30	15	255	<0.5			
				inated pyrite and scattered thin pyritic veinlets, but	T7489	160.0	162.0	98	<0.01	25	25	330	<0.5			
				average <0.5% pyrite apart from the following:	T7490	162.0	164.0	97	<0.01	35	15	665	0.5			
				134.6m 5cm zone of moderate pyrite veins.	T7491	164.0	166.0	99	<0.01	10	<5	250	0.5			
				161.7m 10cm zone of 5% disseminated pyrite.	T7492	166.0	168.0	100	<0.01	10	5	245	<0.5			
				Structure: Weak-moderately cleaved especially in finer grained	T7493	168.0	170.0	100	<0.01	15	<5	145	<0.5			
				epiclastic(?) units. This cleavage is often deformed	T7494	170.0	172.0	100	<0.01	15	40	160	<0.5			
				e.g. 118.2m. 120.1-120.5m minor zone broken core.	T7496	172.0	174.0	98	<0.01	10	10	135	<0.5			
74.7	180.0	5.3	100	FELSIC LAVA												
				Light grey medium grained sub-porphyritic uniform relatively massive												
				felsic lava composed of feldspar crystals 1-3mm which are partly deform-												
				ed and set in a very fine grained groundmass.	T7497	174.0	176.0	98	<0.01	15	40	145	<0.5			
				Alteration: Much weaker than above, predominantly quartz-	T7498	176.0	178.0	100	<0.01	5	90	140	<0.5			
				sericite alteration of groundmass and minor chloritic	T7499	178.0	180.0	100	<0.01	5	65	90	<0.5			
				alteration. Some carbonate-sericite alteration of												
				feldspar phenocrysts. Stronger quartz-sericite-pyrite												
				over 25cm adjacent to margin of major vein at upper												
				contact.												
				Mineralization: Very weakly mineralized, only trace to minor dissemin-												
				ated pyrite and rare thin pyritic veinlets.	Analytical method				*309							
				Structure: Only weakly cleaved e.g. 58° at 178.0m.					329	101	101	101	101	309		
				END OF HOLE												

PROJECT: **LINDA VALLEY** HOLE NO.: **L02**

GOLD FIELDS EXPLORATION PTY. LIMITED

DRILL HOLE PLOT

SCALE 1:500 — 10 5 0 10 20 METRES

063

382 200mE / 5339 600mN

PLAN VIEW

L02

DIP PROFILE

378·9m R.L.

378·9mRL

324·7mRL

312·0mRL

275·3mR.L.

LEGEND

- Bedding or primary foliation
- Cleavage or schistosity
- Prominent fault

ALTERATION / MINERALIZATION

carb	Carbonate
chl	Chlorite
cpy	Chalcopyrite
hem	Hematite
mag	Magnetite
py	Pyrite
ser	Sericite
silif	Silicified
qtz	Quartz

1-2% py

major fault zone

1-3% py

semi-mass py vein 50cm ± hem veins

FELSIC VOLCANICLASTICS qtz-ser ± chl

Mafic dykes ? qtz-chl

50m

2-5% diss py

FELSIC SCHISTS v. silic.-qtz-ser

cpy ± hem veins

qtz-chl-cpy veins ± hem/carb

chl-mag-cpy veinlets cpy-py vein

100m

2-5% py

50 cm semi mass py vein

hem-carb

py veins

hem carb clots

qtz carb veins 50 cm

qtz carb veins 250 cm

py veins

qtz carb vein 550 cm

FELSIC LAVA qtz-ser-carb 180m

150m

FELSIC VOLCANICLASTICS & MINOR MAFIC DYKES (?) qtz-carb-ser in felsic units hem-ser-chl in mafic units

FELSIC PYROCLASTICS (?) qtz-ser, ser-chl, minor hem after mag

INTERMEDIATE VOLCANICLASTICS weak-mod chl-mag>qtz-ser

INTERMEDIATE VOLCANICLASTICS mag-ser chl>ser minor hem-carb-qtz veins

81-102m, 21m @ 0·31 g/t Au, 0·05% Cu
incl. 88-90m, 2m @ 0·67 g/t Au, 0·14 % Cu
and 98-102 m, 4m @ 0·89 g/t Au, 0·13 % Cu
incl. 101-102m, 1m @ 1·98 g/t Au, <0·01% Cu.

5 cm

STATE: **TAS**

HOLE No: **L02**

064

APPENDIX C

PETROGRAPHIC REPORT

by

DR. A.S. JOYCE

065

Geochempet Services

98 666

PETROLOGICAL and GEOCHEMICAL CONSULTANTS

REGISTERED IN QUEENSLAND

Principal : A.S. Joyce B.Sc.(Hons), Ph.D.
200 Chapel Hill Road
Chapel Hill, Qld. 4069

Telephone: (07) 375 5258
A/H 378 6467

PETROLOGICAL REPORT

ON TEN AURIFEROUS SAMPLES

FROM THE LITTLE OWEN PROSPECT, QUEENSTOWN

prepared for

GOLD FIELDS EXPLORATION PTY. LTD.

DATE: 9/3/87
FILE No.: 9516/5
INITIALS:

Ref : F.G. Fitzgerald

Order No. : E 9092

Stan Joyce

A. S. Joyce, B.Sc.(Hons), Ph.D.

5th March, 1987.

GENERAL COMMENTS

1. Nine of the samples are considered to display intense hydrothermal alteration, with some associated or subsequent quartz veining, followed by incipient tectonic brecciation and in several cases by development of hematite.

   One sample is a breccia of probable hydrothermal origin.

2. Originally the rocks may have been unwelded tuffs or immature volcanolithic sediments and, in the absence of quartz phenocrysts or phenoclasts, it is fair to assume that most were probably andesitic. A few quartz phenocrysts or clasts are preserved in Sample T2788 and more are evident in T7923, suggesting possible variation towards dacite or similarly acid rock. A quartz phyric type is also represented as clasts in the breccia sample T5891.

3. The hydrothermal alteration has destroyed the primary mineralogy of the rocks and generated varying proportions of quartz, chlorite, sericite, pyrite and sphene. The dark greenish rocks are rich in chlorite and the paler rocks are more sericitic. The amount of disseminated pyrite varies from a trace amount to about 8%.

   Four samples (T2788, T7906, T7921 and T7927) carry disseminated magnetite which seems to be a product of alteration rather than representing a remnant mineral.

4. Fissure veins developed in the samples are dominated by quartz, but some also carry pyrite and sericite or chlorite. Pyrite with and without chlorite or sericite also occurs as replacement veins in several samples.

   The veining probably closely related to the pervasive hydrothermal alteration.

5. The sample T5891 is a pyrite impregnated, silicified breccia carrying sericitized quartz phyric clasts and hematite-pigmented siliceous clasts.

   It seems likely to be a hydrothermal breccia related to the pervasive styles of hydrothermal alteration represented in the other samples. The hematite pigment in the siliceous clasts pre-dates the impregnation by pyrite.

6. The hematite which is conspicuous in T2788 as a vein mineral and in T7927 as a matrix mineral is a micaceous type and seems to be related to the tectonic deformation which has produced incipient foliation, or related to some even later event.

2/...

7. The major alteration in the rocks is intepreted to relate to subvolcanic hydrothermal activity and temperatures transitional between those appropriate to propylitic and phyllic alteration are implied. Gold may have been introduced by the hydrothermal fluids.

Faint reddening of some rocks is related to oxidation early in the cycle of alteration, but the more obvious development of finely micaceous hematite in veins and breccia matrices is regarded as a much later event, related to the tectonic activity which has incipiently foliated the rocks or even to some later event. The oxidizing fluids implied by the hematite may have carried gold from elsewhere or they may have leached gold from the altered tuffs/volcaniclastics. In either case the gold may have become localized within late permeable structures.

8. No gold was seen in the samples examined.

9. The sample T2625 is sufficiently weathered to have undergone minor supergene enrichment of gold (by loss mainly of some sulphide components), but the other nine samples appear quite unlikely to have experienced significant supergene enrichment or depletion of gold.

10. There is no consistent correlation between the reported gold values and the mineralogy or texture of the samples. However, it may be significant that the highest value (20g/t Au) corresponds with a conspicuously brecciated rock (inferred permeability) which carries hematite (evidence of the passage of an oxidizing fluid which may have carried gold). This sample also carries chalcopyrite as an apparently late mineral. The sulphide typical of the earlier alteration is pyrite.

068

98 069

Sample Number : T2625

Identification : Incipiently brecciated, chloritized and intensely silicified and sericitized rock with many oxidized, disrupted fissure veins of quartz-pyrite.

Description :

The sample is a moderately weathered hand specimen of moderately foliated, light greenish grey, sericitic rock containing wispy chloritized clasts (up to about 5mm in size) and displaying brecciated textures involving clasts generally 1 to 20mm in size and a matrix of obvious dusky red iron oxides and less obvious quartz.

In thin section the rock is seen to consist mainly of fine quartz (0.02 to 0.03mm) and finer sericite, but there are ghosted textures of unwelded, unsorted or poorly sorted tuffaceous style involving inferred mineral and lithic clasts about 0.2 to 5mm in size scattered through a fine matrix. Weathered chlorite, with and without sericite, is concentrated within ragged clasts of pumiceous style about 0.5 to 5mm in size. There is additional minor disseminated chlorite and a few fine, ferruginous pores after probable pyrite (less than 0.1mm).

Disrupted segments of oxidized quartz-sulphide fissure veins, about 0.5 to 2mm wide, are common throughout the specimen. The vein segments now display anhedral, strained and recrystallized quartz grains about 0.05 to 0.5mm in size and porous, translucent to opaque goethite/limonite pseudomorphs of subhedral and anhedral former sulphides about 0.2 to 2mm in size. Most of the pseudomorphs resemble former pyrite. Remnants of pyrite persist in the cores of some of the largest oxidized grains.

Incipient shear foliation has disrupted the veins and generated a crude lenticular pattern of brecciation in the bulk rock. Mobilized limonite stains the foliation fractures.

An approximate mode is :

40-45%	sericite
35-40%	fine quartz
4-6%	chlorite
0.2-0.3%	ferruginous pores after disseminated fine pyrite
4-6%	vein quartz
3-4%	iron oxides and pores developed from vein pyrite

Comments and Interpretations :

This rock is interpreted to have originated as unwelded tuff or immature tuffaceous sediment of probably intermediate composition (no quartz phenocrysts).

It has been intensely altered to a quartz-sericite-chlorite-pyrite assemblage by pervasive hydrothermal alteration and fissure veined by quartz-pyrite. It was subsequently mildly brecciated by tectonic processes and then moderately weathered.

The rock is not multiply brecciated.

The rock carries oxidized sulphide, but not significant hematite.

069

Sample Number : T2788

Identification : Incipiently brecciated, magnetized, chloritized, silicified and sericitized rock with traces of pyrite and fissure veins of hematite-quartz-chlorite

Description :

The sample is a small specimen of slightly weathered, dark greenish grey, magnetic moderately foliated, chloritic rock with traces of fine pyrite and several discordant, thin, irregular veins of very dusky red hematite. Sawn surfaces reveal some small, dark, chloritic blebs. Weathering is confined to minor brown iron staining on several fracture surfaces.

In polished thin section the sample is seen to be intensely altered to fine quartz (0.03 - 0.1mm), chlorite, sericite and magnetite. Remnant textures are obscure, but seem consistent with an abundantly porphyritic rock, a tuff or a volcaniclastic sediment. Clasts or phenocrysts about 0.5 to 2mm in size have been variously replaced by sericite, chlorite or aggregates of quartz. There are rare phenocrysts or clasts of quartz with β form. The dominating matrix consists of quartz, sericite and chlorite. Subhedral to euhedral magnetite, about 0.01 to 0.3mm in size, is disseminated throughout the matrix and the chloritic clasts : its distribution patterns appear not to be primary.

Hematite of micaceous style occurs in deformed and disrupted fissure veins (ranging up to about 2mm in thickness) accompanied by chlorite and strained quartz (grainsizes ranging up to 1mm). The hematite flakes are slim but about 0.05 to 0.3mm in size. Sparse, relatively coarse (up to 0.7mm), subhedral grains of pyrite occur near and in the disrupted veins.

An approximate mode is :

30-35%	fine quartz
25-30%	chlorite
25-30%	sericite
10-12%	magnetite
2-3%	veins of hematite with quartz and minor chlorite
tr	pyrite
rare	quartz phenocrysts/clasts

Comments and Interpretations :

Remnant textures suggest that this rock originated as a tuff, volcaniclastic sediment or abundantly porphyritic volcanic rock of perhaps andesitic to dacitic composition. There are rare phenocrysts or clasts of quartz.

The rock is interpreted to have been silicified, sericitized, chloritized and magnetized by hydrothermal processes. Fissure veins carrying coarser quartz, abundant micaceous hematite and minor chlorite developed at a later stage of hydrothermal activity. Traces of pyrite formed in and near the veins. Subsequent tectonic activity has strained and disrupted the hematitic veins.

It may be noteworthy that the host rock is essentially devoid of sulphide. The few grains of pyrite (and perhaps the reported copper minerals) probably accompanied the late, hematitic veins.

071

98 072

Sample Number : T2798

Identification : Incipiently foliated, silicified and intensely chloritized tuff with disseminated pyrite and traces of quartz fissure veining

Description :

The sample is an essentially unweathered hand specimen of moderately foliated, dark greenish grey, chloritic rock with disseminated fine pyrite. Sawn surfaces reveal wispy, dark chloritic structures of pumiceous or coarsely vitric style, ranging up to about 5mm in size.

In thin section the sample is seen to consist mainly of anhedral quartz (about 0.01 to 0.02mm) and flakes of chlorite of similar size. Conspicuous remnant textures suggest that there were numerous pumiceous or coarsely vitric clasts (about 0.3 to 5mm) scattered through a fine matrix; such clasts are now richly chloritic. Within some chloritic clasts and disseminated throughout the rock there are tabular aggregates of quartz and sericite after probable phenocrysts/clasts of feldspar about 0.2 to 0.5mm in size. In many cases the siliceous aggregates have been overprinted by single, multifaceted grains of pyrite. The rims of the pyrite grains show traces of oxidation. There are disseminated small aggregates of sphene after platy inferred ilmenite or titaniferous magnetite.

Several thin fissure veins (less than 0.4mm) carry strained quartz and traces of fine sericite and pyrite.

Incipient tectonic foliation is expressed by partial alignment of some chlorite and stretching of some chloritic clasts.

An approximate mode is :

70-80%	chlorite
20-30%	quartz
2-3%	pyrite
0.1-0.2%	sphene
0.2-0.3%	sericite

Comments and Interpretations :

This rock seems to have originated as unwelded tuff or immature tuffaceous sediment, composed of clasts of pumice or coarse vitric clasts and a few feldspar phenoclasts scattered through a fine matrix. The primary composition may well have been andesitic.

Pervasive hydrothermal alteration is regarded as responsible for silicification and intense chloritization, along with development of disseminated pyrite and traces of sericite. A few thin fissure veins carried quartz with traces of sericite and pyrite. The last events recorded are pervasive development of an incipient tectonic foliation and very local incipient oxidation by weathering.

072

98 073

Sample Number : T5891

Identification : Pyrite impregnated, silicified breccia carrying sericitized clasts and hematite-pigmented siliceous clasts

Description :

The sample is a sawn slab which displays an obviously weathered, porous, light brown, jarositic rim (about 5 to 20mm thick), but internally it retains fresh, very fine pyrite disseminated through a light grey and pale red, brecciated and altered host.

In thin section the sample is seen to be intensely silicified and impregnated with disseminated pyrite, but its somewhat blurred textures appear consistent with a breccia in which clasts of two different types (one sericitic and the other hematitic) were densely packed in a quartz-pyrite matrix.

The dominant clasts are crudely equidimensional, about 1 to 10mm in size, and composed of mildly strained anhedral quartz (about 0.02 to 0.1mm), pigmented with hematite : they also carry disseminated grains of subhedral pyrite (about 0.02 to 0.2mm).

Other common clasts, about 0.5 to 5mm in size, carry fine sericite, fine quartz (less than 0.1mm), subhedral pyrite (up to 0.2mm) and, in some cases, phenocrysts or phenoclasts of quartz (about 0.5mm).

The matrix between the clasts consists of strained, crudely toothy quartz (0.1 to 1mm) and disseminated subhedral pyrite (0.1 to 0.4mm).

Incipient foliation is expressed by a few streaks of sericite.

An approximate mineralogical mode is :

75-80%	quartz
15-20%	sericite
4-6%	pyrite (and resultant weathering pores)
0.1-0.2%	fine hematite

Comments and Interpretations :

This sample is interpreted to represent pyritized, intensely silicified breccia. It carries a mixture of two types of clasts, one being hematite-pigmented fine quartz and the other silicified and sericitized porphyritic volcanic or tuffaceous rock. The interstices between the clasts have been filled by quartz with pyrite and similar pyrite has impregnated the clasts.

The breccia may well be of hydrothermal origin, commencing with brecciation of sericitized quartz phyric volcanic rock or tuff, continuing with development and brecciation of a hematite pigmented, finely siliceous rock (?recrystallized, leached pyrite-quartz?) and terminating with cementation by quartz and impregnation by pyrite.

Tectonic effects are limited to strain in the quartz and a few streaks of sericite. Recent weathering is not responsible for the hematite.

This sample is not petrographically similar to T2625. The rock has been leached of some of its pyrite by probable weathering.

073

98 074

Sample Number : T7906

Identification : Incipiently brecciated, magnetized, chloritized and intensely sericitized and silicified rock with minor disseminated pyrite and quartz fissure veining

Description :

The sample is a lightly weathered hand specimen of moderately foliated, greenish grey, chloritic rock with minor fine pyrite. Sawn surfaces reveal wispy, dark, chloritic structures of pumiceous or coarsely vitric style (ranging up to about 7mm in size).

In thin section the sample is seen to be chloritized and intensely sericitized and silicified. Remnant textures are difficult to interpret, but seem generally consistent with unwelded lithic pumice tuff or volcanolithic arenite. Incipient tectonic brecciation has complicated the textures.

Aggregates of sphene pseudomorph a few phenocrysts or clasts of inferred ilmenite or titaniferous magnetite, about 0.3mm in size. Aggregates of quartz-sericite-pyrite-chlorite replace a few inferred 0.3 to 0.7mm phenocrysts. Possible pumiceous or lithic clasts are variously enriched in chlorite or sericite. Strained and disrupted fissure veins (up to 1mm thick) of quartz are common.

Fine magnetite (subhedral and quite magnetic grains of 0.005 to 0.02mm) is disseminated unevenly throughout the rock and locally concentrated in incipient tectonic fractures. Pyrite is coarser (0.05 to 0.2mm), less abundant and disseminated as small clusters probably in altered phenocrysts/clasts.

An approximate mode is :

40-45%	sericite
30-40%	quartz
10-15%	chlorite
4-6%	magnetite
0.2-0.3%	pyrite
0.1%	sphene
3-4%	vein quartz

Comments and Interpretations :

This rock may have originated as an unwelded lithic pumice tuff or related immature sediment, probably of intermediate composition (in the absence of quartz phenocrysts).

It is interpreted to have experienced intense hydrothermal alteration to produce a sericite-quartz-chlorite-pyrite-sphene assemblage. It was also fissure veined by quartz and subsequently mildly brecciated by tectonic processes to produce a foliation. The timing of prominent fine magnetiteis uncertain : it does not seem to represent a remnant primary mineral and it does tend to be enriched in tectonic fractures. It may have formed during the hydrothermal alteration or during a later event.

074

Sample Number : T7908

Identification : Incipiently brecciated, chloritized and intensely silicified and sericitized rock with abundant disseminated pyrite and a few quartz-pyrite fissure veins

Description :

The sample is a lightly weathered, moderately foliated hand specimen of greenish grey, chloritic and very finely pyritic rock. Brown iron oxides coat some fracture surfaces and line several porous veins. Sawn surfaces reveal wispy, dark, chloritic structures of pumiceous or coarsely vitric style (up to 5mm).

In thin section the sample is seen to consist of fine quartz (0.02 to 0.05mm), sericite, chlorite, pyrite and secondary sphene. Primary textures have been greatly blurred by alteration and by incipient tectonic brecciation, but there are suggestions of some phenocrysts or clasts (replaced variously by quartz and sericite) and some pumiceous clasts (replaced by chlorite with variable quartz, sericite and pyrite). Inconspicuous aggregates of sphene are probably pseudomorphous after small grains of former ilmenite or titaniferous magnetite.

Pyrite occurs mainly as disseminated subhedral cubes (0.01 to 0.3mm in size), concentrated to some extent in chloritized clasts, some of which have been stretched and streaked by tectonic processes.

There are a few disrupted segments of quartz fissure veins, up to about 0.2mm wide, carrying minor pyrite. Mobilized goethite occurs along some tectonic fractures.

An approximate mode is :

40-45%	fine quartz
35-40%	sericite
8-10%	chlorite
6-8%	pyrite
tr	sphene
0.1-0.2%	goethite
0.1-0.2%	vein quartz with minor pyrite

Comments and Interpretations :

This rock may have originated as an unwelded lithic pumice tuff or related immature sediment, probably of intermediate composition (in the absence of quartz phenocrysts).

Pervasive hydrothermal alteration is regarded as responsible for development of the quartz-sericite-pyrite-chlorite-sphene assemblage. There was also minor fissure veining by quartz with pyrite and subsequent mild tectonic brecciation to produce a moderate foliation. Weathering effects are confined to development of minor mobilized goethite along tectonic fractures and development of a few pores after pyrite.

075

98 076

Sample Number : T7910

Identification : Incipiently brecciated, slightly chloritized, pyritized, intensely sericitized and silicified rock with fissure veins of quartz-pyrite-chlorite.

Description :

The sample is a lightly weathered, small specimen of greenish grey, foliated, sericitic, chloritic and finely pyritic rock. Sawn surfaces reveal a subrounded, finely siliceous clast about 15mm in size and small, wispy, chloritic clasts. Weathering is confined to light brown and yellowish brown limonitic coatings on outer surfaces.

In polished thin section the sample is seen to have been intensely altered to sericite, quartz, pyrite, minor chlorite and traces of sphene. There are no confidently interpretable remnant textures, but there are vague suggestions of lithic clasts and a few phenoclasts or phenocrysts. The most obvious phenocrysts/clasts are two 0.5 and 1mm quartz clasts and several finely silicified tabular grains of similar size. Much of the rock consists of varying abundance of fine sericite and fine quartz (0.02 to 0.1mm). A large rounded lithic clast (about 15mm) consists of a sutured mosaic of coarser quartz (0.5mm grainsize) clouded by fine sericite and with faintly hematite pigmented ghosts of equant former grains about 0.05 to 0.1mm in size. Sphene forms sparse aggregates about 0.1mm in diameter.

Pyrite is irregularly distributed as clusters and crude veins of subhedral grains, about 0.01 to 0.3mm in size. The greatest concentrations occur in sericitized (?)pumiceous or lithic clasts carrying minor chlorite.

There are several deformed, strained and locally disrupted fissure veins (up to 0.5mm thick) carrying quartz with pyrite and chlorite.

An approximate mode is :

50-60%	sericite
40-45%	quartz
4-6%	pyrite
0.5-1%	chlorite
tr	sphene
tr	hematite pigment
0.3-0.5%	fissure veins of quartz with pyrite and chlorite

Comments and Interpretations :

Poor remnant textures suggest that this rock originated as a coarse tuff or immature volcanic sediment, possibly of andesitic to dacitic composition (several quartz phenocrysts/clasts).

Intense hydrothermal activity has sericitized and silicified the rock. Abundant pyrite has formed as disseminations and crude veins. Faint hematitic pigment is preserved in the cores of coarsely recrystallized quartz grains (implying that the hematite is an early feature). Chlorite occurs in the vicinity of disseminated pyrite and there are some deformed fissure veins carrying quartz-pyrite-chlorite. The rock displays incipient tectonic brecciation.

076

98 077

Sample Number : T7921

Identification : Incipiently foliated, magnetized, chloritized, silicified and intensely sericitized rock with traces of disseminated pyrite and a thin pyrite-quartz vein

Description :

The sample is a slightly weathered hand specimen of greenish grey, moderately foliated rock carrying inconspicuous very fine pyrite. There are small dark chloritic clasts about 1 to 3mm in size. Weathering is confined to a varnish of brown iron oxides on several fracture surfaces.

In thin section the sample is seen to have been intensely altered to sericite, fine quartz (0.02 to 0.05mm), chlorite, sphene and magnetite, but remnant textures are consistent with unwelded tuff or a similar, immature sediment. Sparse tabular shapes (suggestive of feldspar up to 1mm in size) have been crudely pseudomorphed by quartz with variable amounts of sericite, chlorite and magnetite. Equant grains of inferred ilmenite or titaniferous magnetite (up to 0.3mm) have been replaced by aggregates of sphene and fine magnetite. Clasts of pumiceous style (up to 5mm) and smaller clasts of vitric style have been replaced by prominent chlorite with magnetite, sericite and quartz. Much of the rock consists of fine quartz, sericite and subordinate chlorite.

Pyrite occurs quite sparsely as subhedral grains (0.02 to 0.3mm) and small aggregates of grains. There is also a thin (0.1mm) mildly deformed fracture controlled vein carrying pyrite and minor quartz, partly of fissure style and partly of replacement style. There are several thinner, crenulated veins of quartz.

Incipient tectonic foliation is expressed as stretching within some clasts and development of a very few cleavage fractures.

An approximate mode is :

60-70%	sericite
20-30%	quartz
6-8%	chlorite
2-3%	magnetite
0.1-0.2%	sphene
tr	disseminated pyrite
0.1%	veins carrying pyrite and quartz

Comments and Interpretations :

This rock seems to have originated as unwelded tuff, or related immature sediment, composed of a few clasts of pumice and coarse vitric shards and a few feldspar phenoclasts scattered through a fine matrix. The primary composition may have been andesitic, since there are no quartz phenocrysts.

Pervasive hydrothermal alteration has destroyed all primary components and generated a sericite-quartz-chlorite-magnetite-sphene assemblage. Traces of pyrite developed as disseminated grains and within fracture controlled veins carrying quartz. Mild deformation has induced an incipient foliation after the veining.

077

Sample Number : T7923

Identification : Incipiently brecciated, pyritized and intensely sericitized and silicified quartz phyric rock with veins of pyrite-sericite-quartz

Description :

The sample is a slightly weathered, small specimen of moderately foliated, pale olive, finely sericitic, siliceous and pyritic rock. Sawn surfaces reveal subtle pinkish grey siliceous clasts, up to about 5mm, and demonstrate that pyrite occurs as both disseminations and veins.

In polished thin section the sample is seen to have been intensely altered to quartz, sericite, pyrite and sphene. There are indistinct remnant textures suggestive of a lithic tuff or texturally similar immature sediment.

Numerous quartz grains, about 0.5 to 1mm in size, have shapes consistent with phenocrysts and/or clasts of former β quartz. The more abundant groundmass quartz is anhedral, about 0.03 to 0.3mm in grainsize, and, in some cases, faintly pigmented by very fine hematite. Sericite is mainly quite fine and variations in its abundance suggest the existence of former coarse clasts. Aggregates of fine sphene occur pseudomorphing inferred ilmenite or titaniferous magnetite, about 0.2mm in size, and streaked along incipient cleavage.

Fine pyrite (cubes of 0.02 to 0.1mm) is disseminated unevenly through the rock. Additional coarser pyrite (0.1 to 0.5mm) occurs in irregular replacement veins (up to several millimetres thick) with associated coarse sericite. Similarly coarse pyrite also occurs in strained and disrupted fissure veins (up to several millimetres) with quartz and coarse sericite. The fissure and replacement styles of veining seem to be gradational variants.

An approximate mode is :

40-50%	fine sericite
35-45%	fine quartz
4-6%	disseminated pyrite
3-4%	quartz phenocrysts/clasts
4-6%	veins of relatively coarse pyrite-sericite-quartz

Comments and Interpretations :

It seems that this rock may have originated as a lithic tuff or volcanolithic sediment and its composition may have been dacitic (or at least quartz phyric).

Intense hydrothermal alteration has sericitized, silicified and pyritized the rock. Faint hematitic pigmentation of uncertain significance is preserved in the recrystallized quartz. Pyrite has also formed some replacement veins with sericite and some fissure veins with quartz and sericite : they have been disturbed by incipient tectonic brecciation.

The alteration and mineralization seems to be closely related to that seen in the other samples : differences are that sericite is developed to the exclusion of chlorite and that the parental rock was quartz phyric.

Sample Number : T7927

Identification : Brecciated, quartz-veined, magnetized, chloritized, sericitized, silicified rock with micaceous hematite and chalcopyrite in its chloritic matrix

Description :

The sample is a very slightly weathered hand specimen of moderately foliated, dark greenish grey rock. Sawn surfaces reveal finely siliceous patches or clasts (about 0.5 to 10mm in size) and irregular clasts or patches of dark chlorite. Very dusky red hematite occurs locally as a major matrix component with chlorite. There are some specks of chalcopyrite. Obvious weathering is confined to earthy brown iron oxides developed on several fracture surfaces.

In polished thin section the sample is seen to be intensely altered and brecciated. Obscured remnant textures are suggestive of an initially coarsely tuffaceous or volcanolithic rock with pumiceous clasts (now chloritic) and a few phenoclasts or phenocrysts (now silicified). Brecciation has generated equant cells of silicified rock with a matrix of deformed chloritic clasts.

The siliceous regimes consist of anhedral quartz (0.02 to 0.03mm), fine sericite, chlorite and subhedral to euhedral magnetite (0.01 to 0.1mm). The least disturbed chloritic clasts carry similar magnetite, but patches of obviously mobilized chlorite carry only micaceous hematite.

Numerous quartz fissure veins, up to 2mm wide, have been strained and disrupted.

A major concentration of micaceous hematite (0.05 to 0.5mm in grainsize) occurs in a matrix of chlorite within a curved, intensely brecciated zone, about 5mm wide. Anhedral chalcopyrite grains (0.01 to 0.5mm) and a single euhedral pyritohedron occur with the hematite and chlorite.

An approximate mode is :

50-60%	fine quartz
15-20%	chlorite
10-15%	sericite
3-4%	magnetite
4-5%	hematite
3-4%	vein quartz
0.1-0.2%	chalcopyrite
rare	pyrite

Comments and Interpretations :

It seems that this rock may have originated as a tuff or texturally similar sediment, perhaps of andesitic composition (in the absence of quartz phenocrysts).

2/...

Intense hydrothermal alteration is considered to account for conversion of the rock to a quartz-chlorite-sericite-magnetite assemblage (with no remnant primary minerals). Fissure veins of quartz were generated. The rock was subsequently brecciated without major translation (probably by tectonic processes) and micaceous hematite with accompanying chalcopyrite and rare pyrite developed within the mobilized chloritic matrix.

The hematite with accompanying chalcopyrite is regarded as a late event, probably unrelated to the alteration which gave the magnetite and other minerals.

080

APPENDIX D

SAMPLE DESCRIPTIONS

and

ASSAY RESULTS

081

ABBREVIATIONS USED IN SAMPLE IN SAMPLE DESCRIPTION LEDGER

LITHOLOGICAL UNITS

(See Figure 7 for full description)

Ɛsf	Felsic Schist
Ɛsi	Intermediate Schist
Ɛsm	Mafic Schist
Ɛsu	Undifferentiated Schist
Ɛcef	Fine-grained Epiclastics
Ɛcec	Coarse-grained Epiclastics
Ɛcf	Felsic Pyroclastics
Ɛcr	Rhyolitic Lavas
Ɛcd	Dacitic-Rhyolitic Lavas/Intrusives
Ɛca	Andesitic Intrusives
Ɛcm	Mafic-Intermediate Volcanics

ALTERATION/MINERALIZATION

carb	carbonate
chl	chlorite
cpy	chalcopyrite
epi	epidote
feld	feldspar
hem	hematite
mag	magnetite/magnetic
py	pyrite
qtz	quartz
ser	sericite
silif	silification
1°	primary
2°	secondary

ROCK DESCRIPTIONS

agglom	agglomerate
alt	altered/alteration
brn	brown
brx	breccia/brecciated
cg	coarse-grained
clvd	cleaved
detex	detextured
diss	disseminated
dk	dark
fg	fine-grained
frac	fracture
grn	green
ign	ignimbrite
lt	light
mass	massive
mg	medium-grained
mod	moderate
p&b	podded and banded
porph	porphyritic
pyrocl	pyroclastic
sandst	sandstone
sh	shale
siltst	siltstone
str	strong
text	texture
tr	trace
weath	weathered
wk	weak
xl	crystal
xlline	crystalline
yell	yellow

98 083

082

APPENDIX D.1

MT. LYELL AMG GRID

SYSTEMATIC ROCK CHIP SAMPLING

98 084

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY F.G. FitzGerald

PROJECT LINDA VALLEY PROSPECT LITTLE OWEN SAMPLE STORAGE REQ'D LABORATORY ANALABS, BURNIE DATE DISPATCHED

1:250.000 SHEET TYPE OF SAMPLE ROCK SAMPLE PREP REQ'D ANALYSIS REQ'D DATE RECEIVED OCT. 1986 003 A19962

SAMPLE NUMBER	LOCATION AMG MINE GRID		DESCRIPTION	ANALYSES (ppm) Au	Cu	Pb	Zn	Ag	As			
T2624	39665N	82355E	Gsm, str chl-FeOx, vein hem; chip over 0.5m	0.03	255	120	450	<0.5	40			
2625	39657N	82347E	Gsm, 20cm wide silif zone (vein?) with hem pods tpy	3.87	350	220	85	3.5	17			
2626	39600N	82225E	Gsf, m-cg bleached, qtz-ser	0.02	15	205	55	<0.5	11			
2627	39600N	82250E	Gsf, m-cg bleached, qtz-ser	<0.01	10	135	10	<0.5	5			
2628	39600N	82275E	Gsf, cg lithic, qtz veins to 10cm, minor Gsm lenses	0.02	45	70	20	<0.5	23			
2629	39600N	82300E	Gsf/Gsm, m-cg grey+grn, qtz-ser>chl(pods) minor py	0.02	25	65	30	<0.5	23			
2630	39600N	82305E	Gsi?, mg purple-grey, qtz-ser podded, silif, 1-2% py ± hem	0.03	25	105	10	<0.5	43			
2631	39600N	82325E	Gsv, f-mg grey/brn, str ser/clay, str chl	<0.01	15	20	10	<0.5	16			
2632	39610N	82345E	Gsv/Gsf f-m (cg) ser schist + grey-grn 2-5% py	0.03	15	60	75	<0.5	11			
2633	39610N	82375E	Gsf/Gsm f-m grey & grn ser-qtz>chl, minor diss py	0.07	40	70	45	<0.5	47			
2634	39615N	82375E	Gsf/Gsi? str qtz-ser, py bases-pods up to 10%	0.16	35	180	95	2.5	33			
2635	39600N	82400E	Gsm>Gsf, chl rich pods in qtz-ser mass, minor FeOx	0.02	35	65	70	0.5	43			
2636	39600N	82425E	Gsv fg grey ser schist, str chl, after Gcef?	<0.01	10	60	10	<0.5	12			
2637	39600N	82450E	Gcec (Gcv) grn-grey fg, qtz-ser schist, common FeOx	<0.01	25	35	50	<0.5	10			
2638	39600N	82475E	Gcec? cg grey-grn, relict feld xl, minor fg disrupted beds?	0.01	25	160	80	<0.5	10			
2639	39600N	82500E	Gcec/Gcef bedded fg mg minor xl rich beds, wkly alt	0.02	40	155	50	<0.5	12			
2640	39605N	82525E	Gsm after Gcef or Gef? mod chl, remnant bedding? ign foliation?	<0.01	70	60	195	<0.5	6			
2641			STANDARD 0.12g/t Au	0.14								
2642	39610N	82550E	Gef? grn-grey welded ign.?, fiamé?, wkly alt, wk mag	0.01	35	55	355	<0.5	7			
2643	39615N	82575E	Gcec? m-cg grn-grey, relict feld xl, 1° bedding?, wk alt	0.02	25	45	100	<0.5	5			
6244	39600N	82600E	Gcr? aphanitic blue-grey, flow banded, qtz veins	<0.01	15	65	20	<0.5	14			
			method:	324	101	101	101	101	114			

98 085

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY F.G. FITZGERALD

PROJECT: WNDA PROSPECT: WITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: AMDLABS DATE DISPATCHED: 0

250.000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: OCT '88

A19962

SAMPLE NUMBER	LOCATION AMG	LOCATION MINE GRID	DESCRIPTION	ANALYSES Au	Cu	Pb	Zn	Ag	As
T2645	39600N	82635E	Gcec? m-cg grey, feld xl, 1° banding?, wkly alt.	0.01	30	65	50	0.5	19
2646	39600N	82650E	Gcr? fg grey-blue, flow banded, feld xl, wkly alt	<0.01	20	70	15	<0.5	11
2647	39600N	82570E	Gcf? m-cg, bleached, qtz veins common	<0.01	20	20	15	<0.5	9
2648	39400N	82745E	Gcf? mg, weath. relict feld xl, pyrod text, mod chl	<0.01	20	45	45	<0.5	13
2649	39400N	82720E	Gcec or Gcf?, mg weath, pyrod text, mod chl, wk alt	<0.01	15	25	30	<0.5	10
2650	39400N	82700E	Gcec or Gcf? mg weath, uniform, str chl	<0.01	15	35	15	<0.5	6
2651	39400N	82675E	Gcec or Gcf? mg weath, ltgrey, mod chl	<0.01	10	5	15	<0.5	3
2652	39400N	82650E	Gcf cg, lithic rich - pink clasts to 3cm, mod chl - mag gdms	<0.01	55	70	515	<0.5	12
2653	39400N	82625E	Gcf > Gcec? cg lithic, feld xl, dkgrey-grn, wk chl, minor FeOx	0.01	20	45	240	<0.5	8
2654	39400N	82600E	Gcec or Gcf? mg grey-grn, feld xl, str chl, wk alt	<0.01	20	45	100	<0.5	7
2655	39405N	82580E	Gcef fg grey-grn, bedding?, wkly alt, FeOx chl	0.07	30	45	115	<0.5	5
2656	39390N	82550E	Gcec f-mg grey, str chl, clay > ser, mod FeOx	<0.01	20	40	55	<0.5	4
2657	39400N	82525E	Gcec f-mg grey, str chl, str clay > ser	<0.01	15	105	35	<0.5	4
2658	39400N	82500E	Gcec? mg pale grn, str chl, hem weath pods	<0.01	35	400	10	<0.5	22
2659	39400N	82475E	Gsi + Gsm cg bedded + fg, chl > ser-qtz	0.02	160	305	110	<0.5	41
2660	39405N	82450E	Gsm f-mg dkgrn-grey, xlline (lava?), massive	0.01	45	175	360	<0.5	14
2661	39400N	82420E	Gsm mg dkgrn, str chl, wk mag	0.10	190	80	490	<0.5	23
2662	39400N	82400E	Gsm mg dkgrn, str chl, mod mag	0.02	140	135	595	<0.5	33
2663	39400N	82375E	Gsi? mg gray, wk-mod ser, wk FeOx after chl?	<0.01	15	65	10	<0.5	18
2664	39400N	82350E	Gsi m-cg grn-grey, ser > chl, tr diss FeOx	<0.01	10	115	40	<0.5	7
2665			STANDARD 0.60 g/t Au	0.56					

98 086

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY F.G. FITZGERALD

PROJECT LINDA VALLEY PROSPECT LITTLE OWEN SAMPLE STORAGE REQ'D LABORATORY ANALABS DATE DISPATCHED

1:250.000 SHEET TYPE OF SAMPLE ROCK SAMPLE PREP REQ'D ANALYSIS REQ'D DATE RECEIVED OCT '88 A19962

SAMPLE NUMBER	LOCATION AMG	MINE GRID	DESCRIPTION	ANALYSES Au	Cu	Pb	Zn	Ag	As
T2666	39400N	82325E	Gsf cg pgb, mod ser-qtz, tr feox after py?	<0.01	10	40	70	<0.5	5
2667	39385N	82300E	Gcf/Gsf vcg agglom, wk ser-qtz	<0.01	10	130	15	<0.5	5
2668	39390N	82275E	Gsf m-cg pale grn, str ser-clay, tr FeOx	<0.01	10	40	15	<0.5	3
2669	39400N	82250E	Gsf m-cg pale grn, ser-qtz rich	<0.01	10	75	10	<0.5	9
2670	39400N	82225E	Gsf cg pgb, str qtz-ser	0.05	5	60	10	<0.5	2
2671	39210N	82950E	Gcd/Gcf? mg grn-grey, mass. feld xl, pyrod text, wk alt	<0.01	15	25	55	<0.5	8
2672	39200N	82915E	Gcd mg pinkish, mass, feld xl, wkly alt	<0.01	20	40	70	<0.5	4
2673	39210N	82900E	Gcd mg, mass-pyrod text, wkly alt, wk feox frac	0.01	20	35	90	<0.5	2
2674	39195N	82875E	Gcd f-mg weath, uniform, wk chl? hem-feox	<0.01	25	55	55	<0.5	4
2675	39200N	82845E	Gcd mg grn-grey, foliated, relict feld, wkly alt	<0.01	10	30	35	<0.5	3
2676	39200N	82825E	Gcef f-mg grey, feld flecks, mod clay>ser-qtz, wk feox	<0.01	10	15	40	<0.5	2
2677	39200N	82810E	Gcd/Gcf? mg bleached, foliated, clay>qtz-ser, str chl	<0.01	10	20	20	<0.5	3
2678	39200N	82780E	Gcd/Gcf? mg, feld xl, foliated, wkly alt	0.01	15	35	35	<0.5	9
2679	39200N	82725E	Soil, B horizon, lt grey, clay ē qtz grains	0.01	45	125	35	<0.5	6
2680	39190N	82700E	Gcef fg lt grey, clay>ser, str chl	<0.01	15	155	45	<0.5	8
2681	39180N	82675E	Gcec mg grey, feld xl rich, str chl, mod feox // clv	0.01	15	50	40	0.5	8
2682			STANDARDS 0.36 g/t Au	0.37					
2683	39200N	82650E	Gcec+Gcef f+m-cg, weath, clay>ser, mod chl, FeOx	0.03	30	110	255	<0.5	5
2684	39200N	82625E	Soil B horizon? yell-brn, clay+qtz grit	<0.01	30	35	35	<0.5	8
2685	39190N	82600E	Gcf m-cg dk grn feld xl rich, mod chl, FeOx common	0.03	35	50	195	<0.5	8
2686	39200N	82575E	Gcd mg mass, feld xl, foliated, wkly alt	<0.01	10	25	20	<0.5	5

98 087

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY F.G. FITZGERALD

PROJECT: WNDA VALLEY PROSPECT: WITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

250,000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: OCT '80 A19962

SAMPLE NUMBER	LOCATION AMG	MINE GRID	DESCRIPTION	ANALYSES Au	Cu	Pb	Zn	Ag	As
T2687	39200N	82550E	Gcf? mg grn-grey, feld x l, foliated clvd, wkly alt	<0.01	10	15	20	<0.5	5
2688	39195N	82530E	Gca? mfg dk grn, porph text, mod chl, str mag, qtz veins	0.01	35	50	230	<0.5	6
2689	39200N	82500E	Soil B horizon? transp?, yell (-grey) clay-qtz	0.02	10	15	15	<0.5	4
2690	39200N	82475E	Gcd? mg grn-grey, qtz-feld x l, pinkish, wkly alt, qtz vein	<0.01	15	25	75	<0.5	2
2691	39200N	82465E	Gcd mg grn-grey hard, pink feld, tr mag, wkly alt	<0.01	15	50	85	<0.5	9
2692	39200N	82445E	Gcf cg dk grn, lithic pink chips to 1cm, mod chl	0.02	35	40	530	<0.5	3
2693	39200N	82400E	Gcec > Gcef m-cg rfg bed grn-grey, feld x l rich, chl-FeOx	0.04	15	30	105	<0.5	5
2694	39205N	82375E	Gcec m-cg grey feld x l, wk ser, str clvd, bedding?	<0.01	10	30	35	<0.5	5
2695	39185N	82325E	Gcf cg lithic, feld x l, hard, wkly alt	<0.01	10	35	10	<0.5	5
2696	39215N	82295E	Gcu-Gcf? mg bleached, hard, mod silif	<0.01	10	40	5	<0.5	3
2697	39200N	82275E	Gsf mg bleached, clay > ser, minor silif, mod clvd	<0.01	10	75	10	<0.5	4
2698	39200N	82250E	Gsf f-mg pale grn, clay > ser wk alt, str clvd	0.01	5	5	10	<0.5	3
2699	39200N	82225E	Gsf/Gcf cg ptchy, pods 30cm, pale grn, clay > ser	<0.01	5	90	10	<0.5	4
2700	≈ 39360N	≈ 82800E	Gcf or Gcd? f-mg grn-grey, mass, pink feld, foliated, qtz veins	<0.01	30	60	30	<0.5	5
T5001	39015N	83030E	Gsu (Gsf?) mg grey, weath, str clvd, clay > ser, qtz veins	0.01	<5	375	40	<0.5	
5002	39005N	83000E	Gsf f-mg grey-grn mod ser, common qtz ± chl veins to 2cm	<0.01	<5	245	45	0.5	
5003	39015N	82975E	Gsi f-mg dk grn chl > ser pebble, qtz veins, str clvd	<0.01	15	10	65	<0.5	
5004	39000N	82950E	Gsf mg lt grn-grey mod ser-qtz, clvd	<0.01	<5	5	25	0.5	
5005	39005N	82930E	Gsu m-fg grey clay > ser-qtz, str weath.	<0.01	<5	<5	15	<0.5	
5006	38985N	82900E	Gcd fg grn (pinkish) mass, hard, wkly alt	<0.01	10	30	80	<0.5	
5007	39000N	82870E	Gcd mg grn-grey, porph feld x l, hard, wkly alt	<0.01	5	25	70	<0.5	

98 088

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: F.G. FITZGERALD

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED: 8 Oct

1:250.000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE PREP REQ'D: ANALYSIS REQ'D: DATE RECEIVED: Oct '86

A19962

SAMPLE NUMBER	LOCATION AMG	LOCATION MINE GRID	DESCRIPTION	ANALYSES Au	Cu	Pb	Zn	Ag
T5008	39005N	82850E	Gcd fg grey blue (pinkish), hard, wkly alt	<0.01	5	10	85	<0.5
5009	39010N	82825E	Gcd f-mg grey-fawn, weath, hard, wkly alt	<0.01	5	5	120	<0.5
5010	38990N	82800E	Gcd f-mg grey-fawn, porph, mass, wkly alt, feld(x)	<0.01	10	10	90	0.5
5011	39005N	82770E	Gcd f-mg grey (pinkish) hard, porph feld x1, wk alt	<0.01	10	15	85	<0.5
5012	38990N	82745E	Gcf fg dk grey shale, wk ser, minor FeOx	<0.01	65	540	165	<0.5
5013	39000N	82725E	Gcf fg grey sillst, wk alt, minor Fe/MnOx	<0.01	35	395	105	<0.5
5014	39000N	82680E	Gcef fg grey sh-sillst, str clvd, wk alt	<0.01	15	40	30	<0.5
5015	38995N	82650E	Gcf mg grey, feld x1 rich, wk-mod ser, FeOx, clvd	<0.01	10	15	45	<0.5
5016	39000N	82615E	Gcef? fg grey mod weath, clay > ser, str clvd	<0.01	45	25	10	<0.5
5017	39000N	82590E	Gcec/Gcf? mixed mg clvd grey clay + mg grey hard x1 tuff	0.57	35	790	75	<0.5
5018	39000N	82575E	Gcf/Gcd mixed lava brx str clvd + chl ± hem pods	0.01	55	25	70	<0.5
5019	38990N	82575E	Gcf/Gcd? mg grn-brn, hard, wkly alt, dis + pods FeOx	<0.01	40	455	195	<0.5
5020			STANDARD 0.36g/t Au	0.33				
5021	39000N	82545E	Gca? m-cg brn xlline mass, feld x1, weath, FeOx	<0.01	85	210	320	<0.5
5022	38995N	82525E	Gcd/Gcf? mixed clvd + mass lenses, feld x1, ser, FeOx	<0.01	55	15	275	<0.5
5023	38995N	82500E	Gsf after Gcd? m-fg grey, str ser, FeOx(chl) ± wkly alt	<0.01	50	30	220	<0.5
5024	39000N	82475E	Gcf f-mg grey, clvd + mass, mod ser, FeOx stain	<0.01	30	25	160	<0.5
5025	39000N	82440E	Gcf/Gcd? f-mg grey mixed clvd + mass, wkly alt, mod ser	<0.01	155	20	300	<0.5
5026	39000N	82425E	Gca m-fg red-brn, uniform, deep weath, minor frac	<0.01	80	15	275	<0.5
5027	38990N	82400E	Gca mg red-brn, weath, porph text	<0.01	160	5	200	<0.5
5028	39000N	82400E? Correct peg?	Gsm f-mg dk grn, str chl, qtz veins, minor hem, no mag	<0.01	610	20	415	<0.5

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY F.G. FITZGERALD

PROJECT LINDA VALLEY PROSPECT LITTLE OWEN SAMPLE STORAGE REQ'D LABORATORY ANALABS DATE DISPATCHED 0 8 8

1:250.000 SHEET TYPE OF SAMPLE ROCK SAMPLE PREP. REQ'D ANALYSIS REQ'D DATE RECEIVED OCT '86 8 8 A19962

SAMPLE NUMBER	LOCATION AMG	LOCATION MINE GRID	DESCRIPTION	ANALYSES (ppm) Au	Cu	Pb	Zn	Ag
T5029	39000N	82375E	Gsm + Gcd? mixed dk grn chl schist + grey/buff mass kaol	1.91	545	4050	455	<0.5
5030	39010N	82350E	Gcd? f-mg grey mass, wk ser, qtz ± hem veinlets	0.01	50	700	205	18.5
5031	39000N	82325E	Gcf m-cg grn-grey lithics, feld x1, clvd, wkly alt	<0.01	15	20	90	<0.5
5032	39000N	82300E	Gcf cg grn, lithic feld x1, chl fiamé, wkly alt	<0.01	15	25	60	<0.5
5033	39010N	82245E	Gcf mg grey-grn, feld x1?, clay > ser, clvd	<0.01	10	5	45	<0.5
5034	38800N	83200E	Gsf f-mg grey, ser-qtz, lithics, clvd	<0.01	5	130	40	<0.5
5035	38800N	83175E	Gcd mg porph text, feld x1, str chl matrix, wk mag	0.02	30	515	95	<0.5
5036	38800N	83175E	Gcd, mass hem ± barite veins in m-cg porph bnd	<0.01	5	20	20	<0.5
5037	38825N	83165E	Gsm f-mg dk grn chl schist lenses in Gcd, diss py	<0.01	5	20	95	<0.5
5038	38800N	83150E	Gcd m-cg porph text feld x1, chl gdmass, hem veins	<0.01	15	250	125	<0.5
5039	38805N	83125E	Gcd/Gsm mg pinkish, feld x1, chl gdmass, hem/feox	<0.01	5	35	115	<0.5
5040			STANDARD 0.12 g/t Au	0.08				
5041	38815N	83125E	Gsm fg chl schist lenses in Gcd, <0.5% diss py ± hem	0.06	125	30	325	<0.5
5042	38800N	83100E	Gsf mg grey weath, clvd, ser > clay?	<0.01	<5	40	45	<0.5
5043	38800N	83075E	Gsf (after Gcd?) mg pale grn, str ser-qtz, clvd	0.01	10	40	50	<0.5
5044	38800N	83030E	Gsf pale grn qtz-ser ± py? (feox) schist lenses	0.12	75	15	30	<0.5
5045	38800N	83025E	Gsf f-mg pale grn, ser > clay, str clvd	0.05	30	20	95	<0.5
5046	38800N	83000E	Gsf f-mg pale grn, ser-qtz ± py 2%, str clvd	0.03	25	1150	3400	1.0
5047	38800N	82980E	Gsf fg pale grn, str ser-qtz schist	<0.01	<5	10	25	<0.5
5048	38800N	82940E	Gcd mg grey-grn, porph text, feld x1, wkly alt	<0.01	15	35	85	<0.5
5049	38800N	82920E	Gcd mg bleached, weath, mass, clay > ser	0.08	30	35	45	<0.5

93 090

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY F.G. FITZGERALD

PROJECT: WNDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: OCT '80

A1996

SAMPLE NUMBER	LOCATION	AMG MINE GRID	DESCRIPTION	ANALYSES (ppm) Au	Cu	Pb	Zn	Ag
T5050	38800N	82900E	Gcd mg bleached weath, moss uniform, wk FeOx	0.05	15	<5	40	<0.5
5051	38800N	82770E	Gcd/Gcf? mg grey-grn (garkosh) feldxl, hard, wkly alt	<0.01	15	30	210	<0.5
5052	38805N	82750E	Gcef fg ltgrey sdt-siltst, str clvd, wk ser	0.03	10	380	65	<0.5
5053	38800N	82725E	Gcec/Gcf? mg grn-grey feldxl, clvd, wkly alt	0.01	10	5	90	<0.5
5054	38792N	82700E	Gcef f-mg sh-siltst, str clvd, ser-silif in pt, FeOx st	0.03	5	20	10	0.5
5055	≈38760N	≈82670E	Gsm/Gcd lenses chl schist 3-5m in mg porph, hem veins	<0.01	40	20	260	<0.5
5056	38785N	82600E	Gcd? deep weath yell ored/brn, moss, Fe/MnOx	<0.01	100	25	265	<0.5
5057	38800N	82570E	Soil B/c horizon yell-brn, clay + MnOx	0.04	75	15	105	<0.5
5058	38800N	82530E	Gcd/Gsm mg porph, chl ± lenses chl schist	0.07	85	30	350	<0.5
5059	38800N	82505E	Gcd grey-yell/brn, str weath, feldxl?, Fe/MnOx	<0.01	110	525	440	<0.5
5060			STANDARD 0.36g/t Au	0.31				
5061	38800N	82475E	Gcd? mg dk grey-grn, hard, wk mag, wk alt, FeOx ft	0.01	55	35	300	<0.5
5062	38800N	82455E	Gcd mg grey, moss, wk ser, wk FeOx after mag?	<0.01	55	35	230	<0.5
5063	38790N	82410E	Gcf c-mg grey, lithic + feldxl, str clvd, clay > ser	0.04	35	255	95	<0.5
5064	38800N	82375E	Gcf mg grey, feldxl, str clvd, clay > ser, FeOx ft	<0.01	15	10	70	<0.5
5065	39800N	82200E	Gsf cg peb, silif knobs in ser matrix	<0.01	5	70	10	<0.5
5066	39800N	82225E	Gsf cg peb, ser-silif, agglom text, MnOx ch	<0.01	20	115	115	<0.5
5067	39805N	82250E	Gsf mg pale grn, str ser-silif, yell after diss py?	<0.01	5	15	15	<0.5
5068	39810N	82275E	Gsf m-cg str ser-qtz, much yell (after py) stain	<0.01	15	45	10	<0.5
5069	39785N	82300E	Gcef fg grey sh, str clvd, ser < clay?	<0.01	10	20	15	<0.5
5070	39785N	82310E	Gcef fg grey sh, str clvd, yell FeOx st, qtz veins	<0.01	10	15	25	<0.5

98 091

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY F.G. FITZGERALD

PROJECT: WNDA VALLEY PROSPECT: WTTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

250.000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE PREP REQ'D: ANALYSIS REQ'D: DATE RECEIVED: OCT '86 090 A19962

SAMPLE NUMBER	LOCATION AMG	LOCATION MINE GRID	DESCRIPTION	ANALYSES (ppm) Au	Cu	Pb	Zn	Ag				
T5071	39750N	82325E	Gec cg blue-grey, weath, foliated, clay>ser	<0.01	35	10	210	<0.5				
5072	39795N	82350E	Gef f-mg blue-grey sh-siltst, str chl, clay>ser, MnOx	<0.01	105	35	10	<0.5				
5073	39800N	82375E	Gec m-cg blue-grey weath, str chl, clay>ser	<0.01	20	20	40	<0.5				
5074	39800N	82400E	Gef lt grey weath silt-sandst, chl, clay>ser	<0.01	15	35	25	<0.5				
5075	39800N	82425E	Gec mg grey weath + pale grn fg ser>clay? MnOx	<0.01	45	35	20	<0.5				
5076	39800N	82450E	Gef lt grey laminated silt, weath, clay>ser	<0.01	25	320	15	<0.5				
5077	39800N	82550E	Gec mg blue-grey, felt flecks, str chl, clay>ser	<0.01	35	130	80	<0.5				
5078	39800N	82575E	Gec mg grey, felds, str chl, wk ser	<0.01	20	5	90	<0.5				
5079	39800N	82600E	Gcd mg grey, mass feld x/l porph, wkly alt	<0.01	15	20	30	<0.5				
5080	-		STANDARD 0.12g/t Au	0.11	-							
5081	38600N	83175E	Gsf f-mg pale grn, weath, str chl, ser>clay	<0.01	5	45	265	<0.5				
5082	38600N	83150E	Gsf cg pale grn psb, ser>clay, minor dissem	<0.01	65	210	895	<0.5				
5083	38600N	83125E	Gsf m-cg pale grn ser>clay, str chl	<0.01	5	5	20	<0.5				
5084	38600N	83100E	Gsf mixed f-mg pale grn ser + pods str silt ± py	<0.01	310	310	105	4.5				
5085	38600N	83100E	Gsf mg grn silt pods up to 5% py	<0.01	665	640	330	8.5				
5086	38600N	83075E	Gsf cg pale grn lithic text, ser, FeOx-t	<0.01	5	35	50	<0.5				
5087	38600N	83050E	Gcd mg grey-grn, porph mass, wkly alt, qtz veins	<0.01	10	<5	55	<0.5				
5088	38610N	83025E	Gcd mg grey-grn porph mass, wkly alt	<0.01	10	5	40	<0.5				
5089	38590N	82970E	Gef grey sh-siltst, mod chl, wk alt	<0.01	40	5	125	<0.5				
5090	38600N	82950E	Gef mg grey silt-sandst, bedded, minor FeOx	<0.01	40	160	105	<0.5				
5091	38595N	82920E	Gef f-mg grey sh-sandst (qtz rich), Mnn qtz veins	<0.01	10	5	60	<0.5				

88 092

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: F.G. FITZGERALD

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED

1:250.000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: OCT '88 A19962

SAMPLE NUMBER	LOCATION AMG	MINE GRID	DESCRIPTION	ANALYSES (ppm) Au	Cu	Pb	Zn	Ag				
T5092	38600N	82900E	Gcef+Gcec mg, deep wkath, clay, mod chl	<0.01	45	25	135	<0.5				
5093	38590N	82840E	Gcef f-mg grey (blue) sh-s/hst bedded, wkly alt	<0.01	20	25	65	<0.5				
5094	38600N	82525E	Gcf cg gdn+pmk lithics to 1cm, wk chl, FeOx	<0.01	5	15	90	<0.5				
5095	38600N	82500E	Gcf/Gcl cg dkgrn+pmk feld x/lithics hard, wk alt	<0.01	5	10	70	<0.5				
5096	38600N	82775E	Gcef fg grey sh, str clvd, clay>ser?	<0.01	<5	20	20	<0.5				
5097	38600N	82750E	Gcec/Gcf? cg grn-brn, feld x/, str clvd, ser?	<0.01	<5	10	30	<0.5				
5098	38600N	82715E	Gca (float) mg, hard porph feld x/, mag	<0.01	15	10	85	<0.5				
5099	38590N	82685E	Gca mg, pmk feld x/, porph, hard, mag, Veins px	<0.01	15	30	70	<0.5				
5100			STANDARD 0.36 g/t Au Qtz Ithem vein	0.25								
5201	38600N	82650E	Gca mg porph, feld+matic x/, mod mag, wk alt	<0.01	50	20	45	<0.5				
5202	38600N	82605E	Gca/Gcm f-mg porph, chilled x/ rich, str mag wk alt	<0.01	40	10	65	<0.5				
5203	38600N	82575E	Gca mg porph, weath, relict feld x/	<0.01	30	45	335	<0.5				
5204	38590N	82545E	Gsf? fg blue/grey hard (silif?), minor diss py (Old trench)	<0.01	25	200	185	<0.5				
5205	38600N	82550E	Gcd? f-mg grey mass-clvd, relict feld x/, wk alt	<0.01	10	40	50	<0.5				
5206	38600N	82525E	Gcd mg grey-grn hard, wk alt, qtz veins common	0.01	15	225	45	<0.5				
5207	40000N	82575E	Gcef f-mg grey, str clvd, clay>ser (+matic dyke)	<0.01	20	100	55	<0.5				
5208	40000N	82550E	Gcef mg grey s/s, weath, clvd, FeOx stain	<0.01	10	245	15	<0.5				
5209	40000N	82500E	Gcef f-mg grey s/hst, clvd, clay>ser, FeOx stain	<0.01	30	195	60	<0.5				
5210	40000N	82475E	Gcec/Gcf? cg grn-grey str clvd, feld x/+lithics, wk alt	<0.01	20	40	85	<0.5				
5211	40000N	82450E	Gsm m-fg str weath yell/brn - x/line?	<0.01	265	240	250	<0.5				
5212	39995N	82420E	Gcef? f-mg str weath grey, clvd, clay >> ser	<0.01	30	30	30	<0.5				

98 093

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY F.G. FITZGERALD

PROJECT LINDA VALLEY PROSPECT LITTLE OWEN SAMPLE STORAGE REQ'D LABORATORY ANALABS DATE DISPATCHED

1:250.000 SHEET TYPE OF SAMPLE ROCK SAMPLE PREP. REQ'D ANALYSIS REQ'D DATE RECEIVED OCT '88

A19962

SAMPLE NUMBER	LOCATION AMG	AMG MINE GRID	DESCRIPTION	ANALYSES (ppm) Au	Cu	Pb	Zn	Ag
T5213	39990N	82400E	Gcef? f-mg grey-brn, str weath, ±xlline?	<0.01	55	80	120	<0.5
5214	40000N	82380E	Gcef fg pale grn, str clvd, weath, ser>clay?	<0.01	10	15	20	<0.5
5215	40000N	82350E	Gcef fg str weath, grey, str clvd, clay>ser	<0.01	5	135	10	<0.5
5216	40010N	82325E	Gcef fg grey weath, str clvd, ser>clay?	<0.01	5	255	25	<0.5
5217	40005N	82300E	Gcef fg grey weath, str clvd, clay>ser	<0.01	5	80	25	<0.5
5218	40000N	82275E	Gsf after Gcef? fg grey clvd + pod mg silif grn ser rich	<0.01	5	165	10	<0.5
5219	40000N	82250E	Gsf f-mg grey weath, str clvd ± pale grn ser	<0.01	5	10	10	<0.5
5220			STANDARD 0.36g/t Au	0.23				
5221	40000N	82225E	Gsi cg peb str clvd, + lenses Gsm to 50cm	<0.01	165	95	185	<0.5
5222	40000N	82200E	Gsf m-cg pale grn, weath, clvd, ser; minor py lenses	<0.01	25	10	15	<0.5
5223	39990N	82190E	Gsf, leached pyritic lenses 10-50cm (high graded)	0.02	20	40	10	<0.5
5224	40000N	82150E	Gsf cg, weath, yell stain, str qtz-ser, dekzt	<0.01	5	10	5	<0.5
5225	40200N	82175E	Gsf cg, pale grn, str qtz-ser	0.03	20	30	5	<0.5
5226	40200N	82200E	Gsf m-cg weath, str clvd, str ser-silif qtz veins	<0.01	30	<5	10	<0.5
5227	40200N	82225E	Gsf m-cg weath, str clvd, ser-qtz, FeOx, qtz veins	<0.01	20	<5	10	<0.5
5228	40200N	82250E	Gsf-Gsi f-mg str clvd + Gsm pods to 3m, ser>chl, FeOx	0.01	25	10	35	<0.5
5229	40200N	82275E	Gsi-Gsm f-mg str clvd, grn, str chl, FeOx common	<0.01	50	25	380	<0.5
5230	40200N	82300E	Gsi-Gsm mg peb dk grn, str chl, pods Gsm 50cm	<0.01	75	45	1900	0.5
5231	40200N	82325E	Gsf cg grey, str clvd + Gsi pods (chl) · FeOx (py)	<0.01	20	40	65	<0.5
5232	40200N	82350E	Gsi-Gsf cg peb, ser>chl matrix, str clvd	<0.01	15	100	85	<0.5
5233	40200N	82375E	Gsm/Gcm m-fg grn, weath, str chl, xlline?	<0.01	45	65	260	<0.5

98 094

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: F.G. FITZGERALD

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED: 03 OCT '86

1:250.000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: A1996

SAMPLE NUMBER	LOCATION AMG	LOCATION MINE GRID	DESCRIPTION	ANALYSES (ppm) Au	Cu	Pb	Zn	Ag
T5234	40200N	82400E	Gcef fg grey, weath, str clvd, ser, FeOx	<0.01	40	175	25	<0.5
5235	40200N	82425E	Gcef fg grey bedded, mod ser>clay, str clvd	<0.01	30	35	50	<0.5
5236	40205N	82445E	Gcef-Gcec mg grey-dkgrn, weath, str clvd, chl/ser, FeOx	<0.01	25	155	130	<0.5
5237	40200N	82490E	Gcef f-mg blue-grey bedded, clvd, ser>clay, wk FeOx	<0.01	50	160	75	<0.5
5238	40200N	82530E	Gsm? m-fg grey-grn, clvd, clay/ser>chl	<0.01	15	35	45	<0.5
5239	40215N	82600E	Gf (Gcec?) mg grn meas, welded ign?, wk alt	<0.01	10	5	45	<0.5
5240			STANDARD 0.36 g/t Au	0.28				
5241	40200N	82630E	Gcef? f-mg ltgrey, str weath/clvd, clay>ser	<0.01	5	<5	25	<0.5
5242	40210N	82650E	Gsf m-cg, clvd, str ser-qtz, FeOx st, qtz veins	<0.01	5	50	85	<0.5
5243	40200N	82675E	Gsf/Gsi cg peb, str clvd, grn, chl, qtz vnms	<0.01	40	225	120	<0.5
5244	40200N	82700E	Gsf/Gsi m-cg grn & grey, weath, str clvd, FeOx	<0.01	20	35	120	<0.5
5245	40200N	82725E	Gsi mg grn-grey str weath/clvd, ser>clay?	<0.01	15	30	30	<0.5
5246	40200N	82750E	Gsf/Gsi m-cg weath, clvd, gray	<0.01	20	60	40	<0.5
5247	40200N	82775E	Gsf f-mg grey-grn str clvd, weath	<0.01	5	<5	25	<0.5
5248	40400N	82800E	Gsm f-mg grn, str weath, clvd, clay>chl-ser	<0.01	20	5	150	<0.5
5249	40405N	82775E	Gsf cg peb grey, str qtz-ser, FeOx st	0.03	20	15	5	0.5
5250	40400N	82755E	Gsf mg peb str silif, 10-15% py + pods>chl<py	0.05	125	<5	30	<0.5
5251	40400N	82725E	Gsf m-cg peb str silif-ser, 5% py	0.04	30	<5	<5	<0.5
5252	40400N	82700E	Gsf vcg peb, lithics, str silif-ser, ≤5% py	0.16	40	25	<5	1.0
5253	40400N	82675E	Gsf cg peb, str clvd, str ser-qtz, FeOx st	0.01	65	735	690	1.5
5254	40400N	82850E	Gsi cg peb, mod chl-silif (pods Gsm), qtz veins	<0.01	90	135	290	0.5

98 095

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY F.G. FITZGERALD

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: OCT '86 094 A1996

SAMPLE NUMBER	LOCATION	AMG MINE GRID	DESCRIPTION	ANALYSES (ppm) Au	Cu	Pb	Zn	Ag				
T5255	40405N	82845E	Gsm (host) qtz-chl-hem-py-cpy vein 10-20cm wide	0.03	11500	115	650	3.0				
5256	40400N	82825E	Gsm/Gcd mg dkgrn xlline c̄ pink speckles, wk alt	<0.01	105	45	145	<0.5				
5257	40400N	82675E	Gsf vcg p&b, str qtz-ser, ≤5% py	0.05	35	<5	5	<0.5				
5258	40400N	82650E	Gsf vcg p&b, str qtz-ser ≤ 5% py	0.02	10	40	5	<0.5				
5259	40400N	82625E	Gsf vcg p&b str qtz-ser ≃10% py (mass lens)	0.07	30	<5	10	2.5				
5260	L		STANDARD 1.70 g/t Au	1.40								
5261	40400N	82590E	Gcu grey str silif detex, common FeOx	0.01	30	10	10	<0.5				
5262	40400N	82575E	Gcu grey, str silif detex, common FeOx	0.01	30	5	5	<0.5				
5263	40405N	82540E	Gcu grey, str silif detex, gritty, common FeOx	0.04	15	5	5	0.5				
5264	40400N	82525E	Gsf cg p&b grey-grn, str silif	<0.01	30	45	245	0.5				
5265	40400N	82500E	Gsf? mg weath str silif±ser qtz veins, FeOx	0.01	70	25	20	<0.5				
5266	40400N	82475E	Gsi? fg khaki, clvd, str ser/clay?, qtz veins	<0.01	20	30	20	0.5				
5267	40400N	82450E	Gsf cg grey, weath. str ser-qtz, ≤5% py	0.01	530	65	70	0.5				
5268	40400N	82425E	Gcef dkgrn f-mg, bedded, str clvd, FeOx	0.01	40	40	185	0.5				
5269	40400N	82375E	Gcef dk grey sh-siltst, bedded, clvd, FeOx (qtz/py)	0.01	950	170	220	1.5				
5270	40400N	82350E	Gcef grey sh-siltst., bedded, wk alt	<0.01	55	100	155	0.5				
5271	40400N	82325E	Gcef/Gcec dkgrn & grey sh-xl tuff, chl-ser, qtz veins	0.01	45	65	190	<0.5				
5272	40400N	82320E	Gsm dk grn-purple, str clvd, str chl/hem, 5% py Creek Adit	0.01	1150	15	850	<0.5				
5273	40400N	82300E	Gsm/Gsi f-mg dkgrn-grey, clvd, mod chl-silif, FeOx	0.01	130	45	100	<0.5				
5274	40400N	82275E	Gsi mg p&b dk grn, clvd, mod chl, FeOx	<0.01	30	30	135	0.5				
5275	40400N	82250E	Gsf+Gsm m-cg pale + fg dkgrn, str qtz-ser+chl, FeOx	0.13	85	80	5	<0.5				

98 096

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: F.G. FITZGERALD

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D LABORATORY: ANALABS DATE DISPATCHED

1:250.000 SHEET: TYPE OF SAMPLE: ROCK SAMPLE PREP. REQ'D ANALYSIS REQ'D DATE RECEIVED: OCT '86 05 SA19962

SAMPLE NUMBER	LOCATION AMG MINE GRID		DESCRIPTION	ANALYSES (ppm)								
				Au	Cu	Pb	Zn	Ag				
T5276	40400N	82250E	Esf str hem /qtz shears 20-30cm thick	0.01	15	20	5	<0.5				
5277	40400N	82225E	Esf mg grey mod weath, str ser-silif, str chl	0.01	30	50	40	<0.5				
5278	40400N	82200E	Esi/Esm vcg lithic dk grn str chl, silif lnebs, some hem	<0.01	40	70	350	<0.5				
5279	40400N	82175E	Esf? mg deep weath, grey str FeOx, qtz veins	0.03	205	65	10	0.5				
5280			STANDARD 0.60 g/t Au	0.45								
5281	40400N	82150E	Esf/Esi cg pleb grn-grey, relict chl, mod qtz ser, FeOx	0.01	35	70	230	0.5				
5282	40600N	82150E	Gcef grn-brn f-mg mod ser-clay, str chl, FeOx	0.02	80	495	550	<0.5				
5283	40600N	82175E	Gcef grn-brn f-mg str-silist. mod clay/ser > chl, str chl	0.01	95	1800	750	0.5				
5284	40600N	82190E	Gcel? mg mottled pink & dk grn, deep with, mod ser	<0.01	95	210	90	<0.5				
5285	40605N	82225E	Esf/Gcel? mg grey with, some pinkish silif, mod rel FeOx	<0.01	45	280	185	0.5				
5286	40600N	82250E	Gcel?/Esf mg grey with, pink rel FeOx, str ser-silif	<0.01	55	250	35	<0.5				
5287	40600N	82260E	gossan. Mn/FeOx boxwork(?), str leached volc	0.02	440	1950	2800	4.0				
5288	40600N	82275E	Gcel?/Esf m-cg pink & dk grn blobby (welded grn) wk ser	0.02	80	180	225	<0.5				
5289	40600N	82300E	Gcec mg grn-grey mod ser, str clvd, some FeOx	<0.01	40	245	55	0.5				
5290	40600N	82325E	Gcec/Esf? cg Esf with pleb, mod ser, mod FeOx	<0.01	45	170	20	<0.5				
5291	40600N	82350E	Esf cg str with pleb, mod ser-silif & FeOx	<0.01	55	35	35	0.5				
5292	40600N	82375E	Esf/Esi vcg pleb grn, mod-str qtz-ser ± chl, minor FeOx	<0.01	40	335	600	0.5				
5293	40600N	82400E	Esf cg pleb grey, str silif-ser, leaves py ≤ 2%, clvd	0.03	140	70	110	0.5				
5294	40600N	82425E	Esf cg pleb, str with, str silif, minor FeOx	0.01	10	10	<5	0.5				
5295	40600N	82530E	Esm dk grn fg str chl, mottled, wk FeOx	<0.01	40	75	480	<0.5				
5296	40600N	82550E	Esm f-mg dk grn str chl, minor qtz-py veins	0.08	125	65	330	0.5				

98 097

GOLD FIELDS EXPLORATION PTY. LTD. — SAMPLE RECORD AND ANALYTICAL DATA SHEET

PROJECT: LINDA VALLEY | PROSPECT: LITTLE OWEN | SAMPLE STORAGE REQ'D: | LABORATORY: ANALABS | DATE DISPATCHED:
250.000 SHEET: | TYPE OF SAMPLE: ROCK | SAMPLE PREP. REQ'D: | ANALYSIS REQ'D: | DATE RECEIVED: OCT '88

COLLECTED BY: F.G FITZGERALD

A19962

SAMPLE NUMBER	LOCATION	AMG MINE GRID	DESCRIPTION	ANALYSES (ppm) Au	Cu	Pb	Zn	Ag
5297	40610N	82575E	Gsf m-cg grey wth, str silif-ser, FeOx common	0.01	75	45	<5	<0.5
5298	40600N	82625E!	Gsm f-mg dk grn str chl mod diss py ≤2%	0.03	210	80	160	1.0
5299	40608N	82650E (big error)	Gsf cg peb str ser-silif dissem py ≤5%	0.11	30	55	<5	0.5
5300			STANDARD 2.90 g/t Au	2.26				
5401	40600N	82675E	Gsf cg peb, str silif-ser, dissem py ≤2%, much FeOx	0.03	40	25	<5	0.5
5402	40600N	82700E	Gsf cg peb lithics, str silif>ser, dissem py ≤2%, much FeOx	0.01	25	30	<5	0.5
5403	40600N	82725E	Gsf mg grey, str ser>silif, str chl, dissem py ≤10%	0.06	90	20	5	<0.5
5404	40600N	82750E	Gsf cg peb, str silif>ser, dissem py ≤5%, str clvd with	0.06	50	20	<5	<0.5
5405	40600N	82775E	Gsf m-cg str wth, str ser>silif, FeOx after py	0.01	15	5	<5	<0.5
5406	40600N	82800E	Gsm>Gsf, dk grn & grey, str wth, chl, ser q/z, str clvd	0.03	25	35	110	<0.5
5407	40600N	82825E	Gsf cg peb str silif-ser, dissem py ≤5%, much FeOx	0.03	20	25	<5	<0.5
5408	40600N	82850E	Gsi mg peb text, grn feld flecks, silif pods, clay ser, no FeOx	<0.01	10	15	430	<0.5
5409	40600N	82875E	Gsi cg peb grn, silif pods, clay>ser, str wth	<0.01	10	30	685	<0.5
5410	40600N	82900E	Gsf cg peb, str silif>ser, dissem py ≤2%, much FeOx	0.10	20	30	<5	<0.5
5411	40800N	82675E	Gsf vcg peb, str silif>>ser, str wth, minor FeOx	0.03	55	55	<5	<0.5
5412	40800N	82650E	Gsf vcg peb, str silif>>ser, str wth, mod FeOx after py	<0.01	35	100	<5	<0.5
5413	40800N	82625E	Gsf cg peb, str silif>>ser, qtz veins, mod FeOx, str wth	0.01	25	75	<5	<0.5
5414	40800N	82600E	Gsf cg peb, str silif>>ser, str wth, mod FeOx	0.01	35	100	<5	<0.5
5415	40800N	82575E	Gsf cg peb, silif>>ser, str wth, mod FeOx	0.01	35	80	<5	<0.5
5416	40800N	82550E	Gsf cg peb str silif>ser, mod wth, mod FeOx	0.09	70	60	<5	<0.5
5417	40800N	82525E	Gsf cg peb silif>ser, mod wth, mod FeOx	0.04	115	75	<5	<0.5

88 093

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY F.G. FITZGERALD

PROJECT LINDA VALLEY PROSPECT LITTLE OWEN SAMPLE STORAGE REQ'D LABORATORY ANALABS DATE DISPATCHED 0

1:250.000 SHEET TYPE OF SAMPLE ROCK SAMPLE PREP REQ'D ANALYSIS REQ'D DATE RECEIVED OCT '88 1

A19962

SAMPLE NUMBER	LOCATION AMG MINE GRID		DESCRIPTION	ANALYSES (ppm) Au	Cu	Pb	Zn	Ag
T5418	40800N	82500E	Gsf vcg pph, mod wth, silif>ser, mod FeOx	0.20	110	60	<5	<0.5
5419	40800N	82475E	Gsf vcg pph, wk wth, silif>ser, disseminpy ≤2%	0.42	180	100	5	<0.5
5420			STANDARDS 1.70g/t Au	1.35				
5421	40800N	82450E	Gsf cg str wth, silif>ser, lenses semi mass py	0.05	130	10	5	1.0
5422	40800N	82425E	Gsi cg pph lens, grn, mod chl silif pods, mod FeOx	<0.01	30	95	550	<0.5
5423	40800N	82400E	Gca? mg grn-grey, blocky brx, mod chl/FeOx	<0.01	60	890	250	<0.5
5424	40800N	82375E	Gsf cg & fg, str wth, str silif-ser, ≤10% disseminpy	<0.01	100	250	20	3.5
5425	40800N	82350E	Gsi mg grn-grey, mod ser-chl, mod clad, wk FeOx	<0.01	165	755	310	<0.5
5426	40800N	82325E	Gsf mg grey wth, str ser>silif, mod FeOx	0.03	220	430	130	3.0
5427	40800N	82300E	Gca? mg grn feld xl?, mod chl & clay, mod clad	<0.01	50	155	350	<0.5

APPENDIX D.2

LITTLE OWEN ADIT CHANNEL SAMPLING

LITTLE OWEN NO. 1, NO. 2 AND SOUTH ADITS

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** 98 100

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS COLLECTED BY: F.G. FITZGERALD

250.000 SHEET TYPE OF SAMPLE: CHANNEL SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE DISPATCHED: DATE RECEIVED: DEC '86 A19962

SAMPLE NUMBER	LOCATION LITTLE OWEN ADITS		DESCRIPTION	ANALYSES (ppm) Au(AAS)
5428	No. 1 MAIN DRIVE	6-8m North	Gsm, chl, wk with	<0.01
5429		8-10m	Gsm, chl, wk with	<0.01
5430		10-12m	Gsm, chl	<0.01
5431		12-14m	Gsm/Gsi, ser>chl, some qtz veins, 6.75kg	0.01
5432		14-16m	Gsi grey schist, ser>chl, 4.75kg	<0.01
5433		16-18m	Gsm, chl>ser, diss py <1%, 5.25kg	0.04
5434		18-20m	Gsm, str chl, diss + vein py 1-3%, Fe/Mn oxt, 6.75kg	0.02
5435		20-22m	Gsm+Gsi, mixed chl-ser, minor py, 7.0kg	<0.01
5436		22-24m	Gsm<Gsi, chl-ser-qtz, zones diss py to 2%, 5.0kg	0.01
5437		24-26m	Gsi, ser-qtz>chl, diss py <1% 5.0kg	<0.01
5438		26-28m	Gsm, chl>ser, no S^{2-} 4.0kg	<0.01
5439		28-30m	Gsi, ser-qtz>chl, qtz<chl veins 1-10cm, 5.0kg	0.01
5440		30-32m	Gsi/Gsm, qtz-ser=chl, qtz±chl veins to 50cm, 3.75kg	<0.01
5441		32-34m	Gsm, chl, qtz-chl veins abundant, 4.75kg	0.03
5442		34-36m	Gsm, chl>ser, ≤% qtz±chl veins, 4.5kg	<0.01
5443		36-38m	Gsi/Gsm, qtz-ser≥chl, minor diss py, 3.75kg	<0.01
5444		38-40m	Gsi, qtz-ser>chl, 4.75kg	<0.01
5445		40-42m	Gsi/Gsm, chl≥ser, diss mg py 1-2% 3.75kg	<0.01
5446		42-44m	Gsi/Gsm, chl≥ser, 1-2% diss py 4.25kg	<0.01
5447		44-46m	Gsm, chl>ser, diss py ≤1% 3.25kg	<0.01
5448			STANDARD 0.6g/t Au	0.54

98 101

GOLD FIELDS EXPLORATION PTY. LTD. — **SAMPLE RECORD AND ANALYTICAL DATA SHEET** — COLLECTED BY: F.G. FITZGERALD

PROJECT: LINDA VALLEY | PROSPECT: LITTLE OWEN | SAMPLE STORAGE REQ'D: | LABORATORY: ANALABS | DATE DISPATCHED: 100

250,000 SHEET: | TYPE OF SAMPLE: CHANNEL | SAMPLE PREP. REQ'D: | ANALYSIS REQ'D: | DATE RECEIVED: DEC '87 A19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (ppm) Au(AAS)	Au(FA)	Cu	Pb	Zn	Ag	As	Bi	Fe%
T5449	LITTLE OWEN ADITS No.1 MAIN DRIVE	46-48m N wall	Gsi, ser>chl, wk py <0.5%, FeOxtrac, 3.5kg	<0.01								
5450		48-50m	Gsi, ser>chl, v.minor py	0.01								
5451		50-52m	Gsf, ser-qtz, 2-5% diss py 2.5kg T4.25kg	<0.01								
5452		52-54m	Gsf, ser-qtz, 2-4% diss py, comm. qtz chl veins 650cm	<0.01								
5453		54-56m	Gsf, qtz-ser, <1% py, 75% vol. qtz±chl veins	<0.01								
5454		56-58m	Gsf, str ser-qtz, 1-2% py 25% qtz-chl veins 5.0kg	<0.01								
5455		58-60m	Gsf, str qtz-ser, 2% py, qtz leaves, 5.0kg	0.01								
5456		60-62m	Gsf, grey qtz-ser, 1-2% py, qtz augen 1-2cm, 5.5kg	0.12		35	35	25	<0.5			
5457		62-64m	Gsf>>Gsm, ser-qtz>chl (25%), py<1%, qtz-chl vein	0.35		55	45	85	0.5			
5458		64-66m	Gsf>Gsm(10%). qtz-ser>chl, 2-5% py 5.0kg T5.75kg	0.18		55	25	50	<0.5			
5459		66-68m	Gsf, str silif-ser, 1-2% py, 3.25kg	0.07		60	25	20	<0.5			
5460		68-70m	Gsf, str qtz-ser, 2-4% py, 3.5kg	0.07		65	50	45	<0.5			
5461		70-72m	Gsm, chl>qtz-ser, 2-4% py±cpy.?, 3.5kg	0.26		110	70	210	<0.5			
5462		72-74m	Gsi, chl>ser-qtz, 3-5% py, 5.75kg	0.73		265	75	195	1.0			
5463		74-76m	Gsf, silif-ser>chl, 1-3% py, 5.0kg	0.12	0.20	250	215	165	1.0			
5464*		76-78m	Gsi, qtz-ser=chl, 2-4% py, 5.25kg	8.40	9.33	400	620	280	1.0	25	1950	4.60
5465*		78-80m S wall	Gsm, chl>qtz-ser, 2-4% py, 4.5kg	1.17	0.60	360	120	230	<0.5	33	1650	5.00
5466*		80-82m	Gsm, chl>qtz-ser, 5-7% py, 4.75kg	0.39	0.35	145	35	205	<0.5	10	13500	3.85
5467*		82-84m N wall	Gsm, chl>ser, 2-5% py + hem veins, 3.5kg	0.98	1.00	10500	40	455	2.5	3	6350	9.25
5468			STANDARD 2.9g/t Au	2.62	2.92							
5469*†		84-86m	Gsm chl>qtz-ser, 2-4% py +hem	20.00	19.30	640	30	855	3.5	6	1150	8.90
			Method:	329	309	101	101	101	101	114	401	101

*: All assays <10 ppm Bi (101), <30 ppm Mo (101), <20 ppm W (401) except † (100ppm W)

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GOLD FIELDS EXPLORATION PTY. LTD. — **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: F.G. FITZGERALD

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED: 10/1

250,000 SHEET: TYPE OF SAMPLE: CHANNEL SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: DEC '86 A19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (ppm) Au(AAS)	Au(FA)	Cu	Pb	Zn	Ag	As	Bi	Fe %
5470	LITTLE OWEN ADITS No1. MAIN DRIVE	86-88m N wall	Gsi, qtz-ser >chl, 2-5% py, locally 10%, 3.5kg	0.10		130	40	130	<0.5			
5471		88-90m	Gsf, qtz-ser, 3-5% py, 4.0kg	<0.01								
5472		90-92m	Gsf, ser-qtz, ≤ 1% opy, 5.25kg	0.01								
5473		92-94m	Gsi, wk qtz-ser > chl, feld x1, <1% opy, 4.0kg	0.02								
5474		94-96 m	Gsi, wk ser-qtz, feld x1, tr py, 4.9kg	0.01								
5475		96-98 m	Gsi, wk ser-qtz, wk-tr py, feld x1, 3.75kg	<0.01								
5476		98-100 m	Gsi/Gsm, ? ser-qtz > chl, minor py 4.5kg	<0.01								
5477		100-102m	Gsi, wk ser-qtz > chl, feld x1, minor py <0.5% 3.5kg	<0.01								
5478		102-104m	Gsi, wk ser-qtz > chl, feld x1, tr py, 3.75kg/4.5kg	<0.01								
5479		104-106 m	Gsi, mod qtz-ser-chl, <0.5% py, qtz-chl vein 2%	0.01								
5480		106-108 m	Gsi, mod qtz-ser-chl, minor py, 3.75kg	<0.01								
5481		108-110 m	Gsf, mod ser-qtz, tr py, 3.75kg	<0.01								
5482		110-112 m	Gsm, mod chl > qtz-ser, 4.75kg 4.75kg	<0.01								
5483		112-114m	Gsf, str qtz ser, 3-5% locally 10% py, Fe ooze	0.01								
5484		114-116m	Gsf > Gsm, ser-qtz > chl, 1-2% py, Fe ooze, 3.75kg	<0.01								
5485		116-118 m	Gsi, qtz ser-chl, minor py, 3.5kg	<0.01								
5486		118-120 m	Gsf/Gsm, chl-qtz-ser, 2-5% py, 3.25kg	0.02								
5487		120-122m	Gsm, chl > ser, 3-5% py, 4.75kg	0.04								
5488			STANDARD (blank) 0.0g/t Au	<0.01								
5489		122-124m	Gsm, str chl, 1-3% py, 4.75kg	0.02								
5490		124-126m	Gsm, str chl, 3-5% py, locally 7-8%, 5.0kg	<0.01								
			Method	329	309	101	101	101	101	114	401	101

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: F.G. FITZGERALD

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

250,000 SHEET: TYPE OF SAMPLE: CHANNEL SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: DEC '86 A19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (ppm)								
	LITTLE OWEN ADITS			Au(AAS)	Au(FA)	Cu	Pb	Zn	Ag	As	Bi	Fe%
5491	No1 MAIN DRIVE	126-128m N wall	Gsm, s/tr chl, 1-3% py, 4.5 kg	<0.01								
5492		128-130 m	Gsm, s/tr chl, ≤ 1% py, FeOx ooze, 4.25kg	0.01								
5493		130-132m	Gsm, s/tr chl, 1-3% py, FeOx ooze, 4.5kg	0.01								
5494		132-134 m	Gsm, s/tr chl, 1-3% py, 4.0kg	0.06								
5495		134-136m	Gsm, s/tr chl, 1-2% py, FeOx ooze, 5.5kg	0.09								
5496		136-138 m	Gsm, s/tr chl, 2-4% py, FeOx ooze, 3.5kg	0.04								
5497		138-140 m	Gsm, s/tr chl, 2-4% py, 4.75kg	0.02								
5498		140-142m	Gsm, v/tr chl, 1-3% py, locally 5%, FeOx ooze, 4.5kg	0.03								
5499		142-144m	Gsm, v/tr chl, 1-3% py, FeOx ooze, 5.0kg	<0.01								
5500		144-146m	Gsm, chl, ≤ 1% py, FeOx ooze, 4.75kg	0.01								
5701		146-148m	Gsm, chl > ser-qtz, <1% py, qtz-chl veins 10% 4.5kg	0.34								
5702		148-150m	Gsm, s/tr chl, 2-3% py, FeOx ooze, 4.75kg	0.01								
5703		150-152 m	Gsm, s/tr chl, 1-2% py, FeOx ooze, 4.25kg	<0.01								
5704		152-154m	Gsm, chl, ≤ 1% py, qtz-chl veins, 4.0kg	<0.01								
5705		154-156m	Gsm, mod chl, <1% py, FeOx ooze coating 4.5kg	<0.01								
5706		156-158m	Gsi, chl-ser-qtz, <1% py much FeOx ooze, 5.0kg	<0.01								
5707		158-160 m	Gsi?, chl = ser, <1% py, much FeOx ooze, 3.5kg	<0.01								
5708		160-162m	Gsi?, chl-ser-silif?, minor py, 4.0 kg	<0.01								
5709		162-163m+1m	Weak drive Gsi? ser > chl, tr py 4.0kg	<0.01								
5710			STANDARD 2.9 g/t Au	2.39	2.64							
5711 *	No1 NW DRIVE	0-2m SE wall	Gsi, chl-qtz-ser, 2-4% py, 3.0 kg	1.05	1.26	5500	45	385	1.0	7	1600	7.80
			Method	329	309	101	101	101	101	114	401	101

* Assays: < 10 ppm Bi, < 30 ppm Mo, < 20 ppm W

98 104

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: F. G. FITZGERALD

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

250,000 SHEET: TYPE OF SAMPLE: CHANNEL SAMPLE PREP REQ'D: ANALYSIS REQ'D: DATE RECEIVED: DEC '88 A19962

SAMPLE NUMBER	LOCATION LITTLE OWEN ADITS		DESCRIPTION	ANALYSES (ppm) Au(AAS)	Au(FA)	Cu	Pb	Zn	Ag	As	Bi	Fe%
T5712 *	No1 NW DRIVE	2-4m NEwall	Gsm? chl > ser-qtz, 3-5%py, 4.0kg	1.33	2.00	2700	15	370	<0.5	3	1500	7.30
5713 *		4-6m	Gsm? chl > qtz-ser, 3-5%py +cpy, 3.5kg	2.03	2.08	8050	15	410	1.5	2	2950	8.25
5714 *		6-8m	Gsm, chl >> ser, 3-5%py +cpy veinlets, 4.75kg	15.10	16.60	8100	35	320	2.5	3	1200	8.55
5715		8-10m	Gsm/Gsi, mod chl > ser-silif 2-4%py, hem, 2.75kg	0.47	0.60	410	85	465	<0.5			
5716		10-12m	Gsi, chl-qtz-ser, 1-2%py I'hem, 3.25kg	0.20	0.35	190	35	340	<0.5			
5717		12-13m + 1m NEend	Gsi/Gsm, mod chl-qtz-ser, 2-4%py, +fault gouge	0.85	1.60	325	45	330	<0.5			
5718	No1 SE DRIVE	0-2m W wall	Gsi? chl-qtz-ser, 3-5%py, 2.75kg [4.5kg]	0.28	0.36	275	70	270	1.0			
5719		2-4m (winze)	Gsi? qtz-ser > chl, 1-2%py, locally 5%, hem, 3.75kg	8.30	8.00	100	105	540	0.5			
5720		4-6m (winze)	Gsi, ser-qtz > chl, 2-4%py, ser±py shears, 3.75kg	1.63	2.67	300	195	290	1.0			
5721		6-8m	Gsi, qtz-ser (silif) > chl, feld x1? 2-4%py, 4.5kg	0.22	0.52	190	100	280	0.5			
5722 *		8-10m	Gsi, ser-qtz > chl (silif), 2-4%py ± hem, 3.0kg	2.63	1.25	1500	80	270	1.5	5	1900	3.35
5723 *		10-12m	Gsi, ser qtz > chl, 3-5%py, locally 10% ± hem 3.5kg	6.71	7.17	8400	80	415	3.5	10	1500	7.35
5724 *		12-14m	Gsi, qtz-ser-chl (silif?), 3-5%py, locally 10% ± hem ± cpy	2.14	2.83	6400	25	405	3.5	4	2300	7.00
5725		14-16m	Gsi, qtz-ser-chl (silif?) 2-4%py I hem, 5.0kg [3.25kg]	0.35		295	45	285	2.0			
5726		16-17.5m SEend	Gsi qtz-ser-chl (silif?), 3-5%py ± cpy veins	0.17		350	170	400	1.0			
5727			STANDARD blank 0.0g/t Au [3.5kg]	<0.01								
5728	No2 MAIN DRIVE	2-4m S wall	Gcf? wk ser, weath, feld x1, FeO x frac, 3.25kg	0.01								
5729		4-6m	Gcf? grey feld x1 tuff, wk ser, rel massive, 3.75kg	0.01								
5730		6-8m	Gccf/Gdec, grey sh-x1 tuff, wk ser, hem, qtz vein 4m 5kg	0.01								
5731		8-10m	Gcec/Gccf, grey sh/s-x1 tuff, wk ser, qtz vein 5% [4.75kg]	0.01								

* All assays < 10 ppm Bi, < 30 ppm Mo, < 20 ppm W

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** 98 105

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS COLLECTED BY: F.G. FITZGERALD

1:250.000 SHEET: TYPE OF SAMPLE: SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE DISPATCHED: DATE RECEIVED: DEC '86 TOP A19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (ppm) Au (ANAL)
T5732	N°2 MAIN DRIVE	10-12m S wall	Gcec, xl tuff - Sh/s, wk ser, feld xl, minor FeOx,	<0.01
5733		12-14m N wall	Gcef > Gsi, Sh-Sh/s, wk ser, minor py, q/z-ch/ veins 4.5kg	<0.01
5734		14-16m	Gsec/Gsi? grey feld xl, Sh/s-xl tuff, mod ser-q/z, tr py	<0.01
5735		16-18m	Gsi grey mod q/z-ser, minor py, Fe/MnOx frac, 5.0kg	0.01
5736		18-20m	Gsi? feld flecks, wk q/z-ser, py <0.5% 5.0kg	<0.01
5737		20-22m	Gsi?, feld xl, wk ser-q/z, minor FeOx frac, 4.0kg	<0.01
5738		22-24m	Gsi, feld xl, wk q/z-ser, minor py, locally 2-4%, 4.5kg	<0.01
5739		24-26m	Gsi/Gsf mod-Str q/z-ser, 1-2% diss py, 4.0kg	0.02
5740		26-28m	Gsf? grey, q/z-ser, 1-2% py, FeOx frac, 4.0kg	<0.01
5741		28-30m	Gsi/Gcf feld xl, wk ser > chl, minor py, FeOx, 3.5kg	<0.01
5742		30-32m	Gcf? feld xl, lithics, wk ser > chl, FeOx frac, 4.0kg	0.01
5743		32-34m	Gcf? feld xl, wk ser > chl, FeOx frac 3.75kg	<0.01
5744		34-36m	Gsi?/Gcf feld xl, wk q/z-ser > chl, FeOx, 4.25kg	<0.01
5745		36-38m	Gsi? mod ser-q/z > chl, feld flecks, FeOx, 4.25kg	0.01
5746		38-40m	Gsf - mod-Str q/z-ser, 2-4% py locally,	0.05
5747			STANDARD blank 0.0g/tAu 4.5kg	<0.01
5748		40-42m	Gsf+Gsi, q/z/ser > chl, 2-4% py, locally 8% q/z vein 20%	0.10
5749		42-44m	Gsi mod ser/q/z > chl, minor py, 3.75kg	<0.01
5750		44-46m	Gsf phyllite + feld xl, Str-mod ser, clvd, 4.5kg	<0.01
5751		46-48m	Gsf, phyllite + Silif-ser, 2-3% py, q/z-ch/ vein 20% 3.5kg	<0.01
5752		48-50m	Gsf, Str q/z-ser (silif), 2-4% py, q/z veins 20% 4.75kg	<0.01
			Method 329	

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GOLD FIELDS EXPLORATION PTY. LTD. — **SAMPLE RECORD AND ANALYTICAL DATA SHEET** — COLLECTED BY F.G. FITZGERALD

PROJECT: LINDA VALLEY — PROSPECT: LITTLE OWEN — SAMPLE STORAGE REQ'D: — LABORATORY: ANALABS — DATE DISPATCHED: — 10/1

1:250.000 SHEET: — TYPE OF SAMPLE: CHANNEL — SAMPLE PREP REQ'D: — ANALYSIS REQ'D: — DATE RECEIVED: DEC '86 — A19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (ppm) Au(AAS)
T5753	N°2 MAIN DRIVE	50-52m N wall	Gsf, str q/z-ser, 2-4% py, 10% q/z Vein, 4.5kg	<0.01
5754		52-54m	Gsf, mod q/z-ser, minor py, 5.0kg Tq/z-chl vein 20%	<0.01
5755		54-56m	Gsf, mixed q/z-ser +40cm silic-fg, 1-3% py ave, 3.5kg	<0.01
5756		56-58m	Gsf, str ser-q/z, 1-2% py, q/z-chl vein 50%, 3.75kg	<0.01
5757			STANDARD 2.9g/t Au	2.07
5758		58-60m	Gsf, str q/z-ser, 2-4% py, q/z-chl vein 50%, 3.25kg	0.01
5759		60-62m	Gsf, str q/z-ser, 3-5% py, q/z-chl vein 10%, 3.75kg	0.01
5760		62-64m	Gsf, str q/z-ser, 3-5% py, q/z-chl veins 20%, 3.0kg	<0.01
5761		64-66m	Gsf, str q/z-ser, 2-4% py, q/z chl veins 20%, 3.5kg	<0.01
5762		66-68m	Gsf, str q/z-ser, 1-3% py, 3.5kg	0.01
5763		68-70m	Gsf fg, str q/z-ser, 3-5% py, 2.75kg	0.01
5764		70-72m	Gsf/Gsm, str q/z-ser & chl, 1-3% py, 4.0kg	0.05
5765		72-74m	Gsm, mod-str chl, 1% py, 3.5kg	<0.01
5766		74-76m	Gsm, str chl, ≈1% py, 3.5kg	0.03
5767		76-78m	Gsm, mod-str chl, ≤1% py, 4.25kg	0.01
5768		78-80m	Gsm + Gsi, fault zone, str chl-clay/ser, wkpy, 3.75kg	0.01
5769		80-82m	Gsi, fault zone clay-ser + q/z chl-carb vein, trS, 3.25kg	0.01
5770		82-84m	Gsi, lithic, mod chl ≥ ser, tr py, FeOx ooze, 3.5kg	<0.01
5771		84-86m	Gsi? feld x1? chl > q/z-ser, tr py, FeOx ooze, 3.5kg	<0.01
5772		86-88m	Gsm, mod chl, 2-4% py, FeOx frac, 3.75kg	0.01
5773		88-90m	Gsi/Gsm, mod chl > q/z-ser, ≈1% py FeOx, 2.5kg	<0.01

Method: 329

98 107

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY F.G. FITZGERALD

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

250.000 SHEET: TYPE OF SAMPLE: CHANNEL SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: DEC '86 A19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (ppm) Au (AAS)
T5774	LITTLE OWEN ADITS N°2 MAIN DRIVE	90-92m N wall	C-sm mod chl > qtz-ser, minor py, 3.5kg	<0.01
5775		92-94m	C-sm? mod chl > qtz-ser, ≤1% py, FeOx ciy, 3.5kg	<0.01
5776		94-96m	C-sm mod-str chl, 2-4% py, 2.5kg	0.01
5777		96-98m	C-sm str chl 2-4% py rVein cpy Theim, 3.25kg	0.17
5778		98-100m	C-sm, str chl > qtz, 1-3% py, 2.75kg	<0.01
5779		100-102m	C-si? chl-qtz-ser (silic) 1-3% py, FeOx ooze, 3.0kg	<0.01
5780		102-104m	C-si, chl-qtz-ser, 2-4% py, FeOx ooze, 3.5kg	<0.01
5781		104-106m	C-sm, str chl, minor py, FeOx ooze, 3.75kg	0.02
5782		106-108m	C-sm, str-mod chl, ≤1% py, FeOx ooze, 3.5kg	<0.01
5783		108-110m	C-sm, m-str chl, minor py, FeOx ooze, 3.25kg	0.01
5784		110-112m	C-sm, str chl, ≤0.5% py, FeOx ooze, 3.5kg	<0.01
5785		112-114m	C-sm, str chl, 1-3% diss rVein py, FeOx ooze, 3.25kg	0.02
5786		114-116m	C-sm, str chl > ser 2-4% py FeOx ooze, 3.25kg	0.02
5787		116-118m	C-sm, mod chl > ser, 2-4% py, FeOx ooze, 4.0kg	<0.01
5788		118-120m	C-si, str chl-qtz-ser, 3-5% py, FeOx ooze, 3.0kg	0.03
5789			STANDARD blank 0.0g/t Au	<0.01
5790		120-122m	C-sf str qtz-ser, 3-5% py, wk FeOx, 3.0kg	0.02
5791		122-124m	C-si str qtz-ser > chl, 3-5% py, 4.75kg	0.09
5792		124-126m	C-sf str qtz-ser, 3-5% py, FeOx ooze, 3.75kg	0.02
5793		126-128m	C-sf str ser-qtz 3-5% py, FeOx ooze, 4.0kg	<0.01
5794		128-130m	C-sf str ser-qtz, 3-5% py, FeOx ooze	<0.01
			Method	309

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: F. G. FITZGERALD

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: DEC '86 A19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (ppm) Au(AAS)	Cu	Pb	Zn	Ag	As	Ba	Fe%	Mo
T5795	LITTLE OWEN ADITS	N°2 MAIN DRIVE 130-132m N wall	Csf str ser-qtz, 3-5% py, FeOx coze, 4.0kg	<0.01								
5796		132-134m	Csi/Csf str qtz-ser >chl, 2-4% py FeOx, 3.75kg	<0.01								
5797		134-136m	Csf str ser-qtz, 2-4% py, FeOx 3.75kg	<0.01								
5798		136-138m	Csf str ser-qtz (silif) 3-5% py, FeOx 3.5kg	<0.01								
5799		138-140m	Csf str ser-qtz (silif) 3-5% py, FeOx 4.75kg	0.01								
5800		140-142m	Csf str ser-qtz; 3-5% py ± cpy? 3.0kg	<0.01								
5801		142-144m	Csf str qtz-ser (silif) 1-2% py 3.25kg	<0.01								
5802		144-146m	Csf str qtz-ser (silif) 3-5% py ± cpy? 3.25kg	<0.01								
5803		146-148m	Csi, chl-qtz-ser <1% py minor FeOx 3.5kg	<0.01								
5804		148-150m	Csm, mod chl>qtz-ser, minor py, 4.25kg	<0.01								
5805		150-152m	Csm, mod-str chl, py <0.5% FeOx, 3.5kg	<0.01								
5806		152-154m	Csm, str chl, py <0.5%, FeOx coze, 4.5kg	<0.01								
5807		154-156m	Csm, mod chl>ser, ≤1% py, FeOx crust, 3.5kg	0.08	110	85	230	<0.5				
5808			STANDARD blank 0.0g/t Au	0.01								
5809		156-158m	Csm, str chl>>silif(?) py <0.5% FeOx	0.08	1250	120	230	<0.5				
5810		158-160m	Csm? mod chl>qtz-ser, minor py, FeOx 3.25kg	0.03	185	270	185	<0.5				
5811		160-162m	Csi, mod chl-qtz-ser (silif), minor py, FeOx, 3.5kg	0.13	190	390	145	0.5				
5812 *		162-164m	Csi, mod qtz-ser-chl, minor py, FeOx, 3.75kg	0.63	180	180	1400	0.5	5	2350	3.10	20
5813 *		164-166m	Csi, mod chl-qtz-ser, minor py, qtz-chl veins 3.75kg	0.45	200	255	345	0.5	2	2950	5.55	20
5814 *		166-168m	Csm/Csi, chl>qtz-ser, 1-3% py 3.5kg	0.04	935	150	490	0.5	2	2900	8.30	20
5815 *		168-170m	Csi? wk chl-ser, feld X, py ≤0.5% FeOx 5.0kg	0.83	1025	145	370	0.5	3	2250	7.50	10
				329	101	101	101	101	114	401	101	101

*: All assays <10 ppm Bi, <25 ppm W except + 90ppm W

98 109

GOLD FIELDS EXPLORATION PTY. LTD. — **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: F.G. FITZGERALD / G. JACKMAN

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED: DEC '86 / 10

250.000 SHEET: TYPE OF SAMPLE: CHANNEL SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: A19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (ppm) Au(AAS)	Au(FA)	Cu	Pb	Zn	Ag	As	Bi	Fe%
5816	LITTLE OWEN ADITS No. 2 MAIN DRIVE	170-172m N wall	Esi? wk chl-qtz-ser, feld xl, minor py, FeOx 2.75kg	0.03		120	35	425	<0.5			
5817		172-174m	Esi? wk chl > qtz-ser, tr py, FeOx 2.5kg	0.03		345	95	500	<0.5			
5818		174-176m	Esm? mod chl > qtz-ser, minor py + cpy veins? 5kg	0.44		4050	125	445	1.0			
5819		176-178m	Esm mod chl > silic, py <0.5%, qtz-chl veins 5% 3.5kg	0.42		630	240	595	<0.5			
5820		178-180m	Esm mod chl > silic tr py qtz-chl veins 10% 3.5kg	0.05		160	100	600	<0.5			
5821		180-182m	Esm mod-str chl > qtz-ser 1-2% py I hem, qtz-chl vein 3%	0.29		320	105	505	<0.5			
5822		182-184m	Esi Esf? mod chl-qtz-ser, 1-3% py FeOx 3.75kg / 3.5kg	0.50		240	365	240	<0.5			
5823		184-186m	Esi, mod chl > qtz-ser, 1-3% py, FeOx crust, 3.25kg	<0.01		40	50	210	<0.5			
5824		186-188m	Esi, chl-qtz-ser, <1% py, FeOx crust, 4.0kg	<0.01		25	50	195	<0.5			
5825		188-190m	Esi, chl > qtz-ser 1-2% py FeOx 3.25kg	<0.01		20	105	210	0.5			
5826		190-192m	Esi, chl > qtz-ser, <0.5% py FeOx 3.75kg	0.27		15	65	245	<0.5			
5827		192-194m	Esi-Esf qtz-ser > chl, ~1% py FeOx 5.0kg	<0.01								
5828			STANDARD 2.9g/t Au	3.09								
5829		194-196m	Esf qtz-ser (minor chl), 1-5% py I hem, 3.75kg	0.03								
5830		196 across W end	Esf str qtz-ser 2-4% py I cpy > hem, 3.25kg	0.10								
5831	No. 2 SE DRIVE	0-2m S wall	Esi qtz-ser-chl, <0.5% py, 2.25kg	0.28		145	90	375	<0.5			
5832*		2-4m	Esm str chl-ser, 1-3% py I cpy? I hem, 2.5kg	1.11	1.03	2750	120	575	1.0	5	2600	8.25
5833*		4-6m	Esm str chl > ser, <1% py I cpy?, qtz-chl vein 50%	1.44†	0.39	2450	4950	495	6.5	5	3350	5.65
5834		6-8m	Esm mod chl-ser, ~1% py I cpy I hem, 3.0kg / 3.25kg	0.10†	<0.01	850	120	305	0.5			
5835		8 across SE end	Esi chl > qtz-ser, minor py, FeOx 2.25kg	<0.01	0.35	215	155	190	0.5			
-	† preliminary assays with AAS(329) checks											
	* : All assays ≤ 10 ppm Bi, 10 to 40 ppm Mo ≤ 10 ppm W		Method	329	309	101	101	101	101	114	401	101

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY G. JACKMAN

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

250.000 SHEET: TYPE OF SAMPLE: CHANNEL SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: DEC '86 10

19962

SAMPLE NUMBER	LOCATION LITTLE OWEN SOUTH ADIT		DESCRIPTION	ANALYSES (ppm) Au(AAS)	Cu	Pb	Zn	Ag				
T5836	MAIN DRIVE	4-6m nwall	Gcf? with m-cg 2.5kg	<0.01								
5837		6-8m	Gcf/dwk alt, with, 3.0kg	<0.01								
5838		8-10m	Gcd wk alt, with, 2.75kg	<0.01								
5839		10-12m	Gcd? str with, 3.0kg	<0.01*	195	25	630	<0.5				
5840		12-14m	Gcd? str with, 2.75kg	<0.01								
5841		14-16m	Gcd? with, minor qtz veins, 3.75kg	<0.01								
5842		16-18m	Gcd? with, FeOx?, qtz veins 10% 4.5kg	<0.01								
5843		18-20m	Gcd? with, qtz veins 25% 3.75kg	<0.01								
5844		20-22m	Gcd? str with, minor qtz veins 3.5kg	<0.01								
5845		22-24m	Gcd, with, Hpy? minor qtz veins 4.5kg	<0.01								
5846		24-26m	Gcd? str with, qtz veins 10%, 4.75kg	<0.01								
5847		26-28m	Gcd/Gcf with, qtz veins 10%, 5.0kg	<0.01								
5848			STANDARD blank 0.0g/Mn	<0.01								
5849		28-30m	Gcf-Gcd, str with, FeOx, 4.5kg	<0.01								
5850		30-32m	Gcf? with, qtz veins, 3.75kg	<0.01								
5851		32-34m	Gcd-Gcf with, qtz veins 10% 3.75kg	<0.01								
5852		34-36m	Gcd-Gcf mod with, chl-ser, qtz veins 25% 5.0kg	0.14								
5853		36-38m	Gcf fault zone, with, qtz veins 5%, 4.75kg	<0.01								
5854		38-40m	Gcf-Gcd, with, qtz veins 15%	<0.01								
5855		40-42m	Gcd/Gsi, mod chl-ser, with, 4.25kg	<0.01								
5856		42-44m	Gcd/Gsi, mod chl, 4.5kg	<0.01								
				Method:	329	10A	10I	10I	10I			

* preliminary 0.16g/Mn

98 111

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY: G. JACKMAN

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: DATE DISPATCHED:

1:250,000 SHEET: TYPE OF SAMPLE: CHANNEL SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: DEC '86

A19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (ppm)								
				Au(AAS)	Au(FA)	Cu	Pb	Zn	Ag	As	Ba	Fe%
T5857	LITTLE OWEN MAIN DRIVE	44-46m NW wall	Gcd-Gsi mod-str chl, feld x/, q/z chl veins 3.75kg	<0.01								
5858		46-48m	Gcd/Gsi feld x/, mod chl-ser, q/z chl veins 15% 4.0kg	<0.01								
5859		48-50m	Gcd/Gsi feld x/, mod chl-ser, 4.5kg	<0.01								
5860	SW DRIVE	0-2m NW wall	Gcd-Gcf? with, q/z veins 50% 4.25kg	0.01								
5861		2-4m	Gcd-Gcf? str wth, 4.0kg	<0.01								
5862		4-6m	Gcd, mod chl>ser, 4.0kg	<0.01								
5863		6-8m	Gcd/Gsi, mod chl>ser, tr feld x/ 4.5kg	<0.01								
5864			STANDARD 2.9g/t Au	2.35								
5865		8-10m	Gcd, mod chl>ser ± hem (Gsi), 4.25kg	0.01								
5866		10-12m	Gcd, chl-ser ± hem, 4.5kg	<0.01								
5867		12-14m	Gsi?, chl-ser, minor py, ± hem, 5.0kg	<0.01								
5868		14-16m	Gsi? mod-str chl-ser, minor py ± hem, 4.0kg	0.01								
5869		16-18m	Gsi mod-str chl>ser (silif) py ≤0.5% ± hem. 4.25kg	0.01								
5870*		18-20m	Gsi/Gcm, mod-str chl>ser (silif) py ≤1% ± hem. 8.0kg	2.13	2.08	2500	660	2500	6.5	5	88000	4.90
5871		20-22m	Gsi (Gcd) wk-mod chl-ser (silif), minor FeOx 5.5kg	0.02								
			* Assays: 30ppm Bi (101), 10ppm Mo (101), <10ppm W (401)	Method	329	309	101	101	101	101	114	401	101

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APPENDIX D.3

LITTLE OWEN ADITS GRID

SURFACE CHANNEL SAMPLING

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** 98 113 COLLECTED BY F.G. FITZGERALD

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: ROCK CHIP SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: FEB '87

A19962

SAMPLE NUMBER	LITTLE OWEN ADIT GRID LOCATION (LOCATION) CHANNEL LENGTH	DESCRIPTION	ANALYSES (ppm) Au(AAS)	Au(FA)	Cu
T5885	1005N, 995E 5-5mN, 5-6mW	Esm/Esi? rare qtz pheno, mod wth, mod chl ± hem, clvd	<0.01		120
5886	1003N, 992E 3-7mN, 8-10mW	Esm? str hem (brick red), relict ser "flecks"	<0.01		155
5887	1008N, 986E 8-8mN, 14-16mW	Esi, mod wth, relict pink feld ± qtz xl, mod chl, clvd	<0.01		30
5888	1008N, 982E 8-9mN, 18-20mW	Esi? mod wth, relict feld xl, wk-mod chl >> ser, str clvd	<0.01		30
5889	1002N, 981E 2-1mN, 19-20W	Ecr? grn qtz porph. str wth, mass, unmin.?	<0.01		20
5890	1001N, 979E 1-2mN, 21-24W	Esf > Esm, qtz-ser, minor chl pods, disem py <1% minor hem	<0.01		15
5891	1001N, 976E 2mN, 24m W	Esm (host): qtz-hem-py sheets 2-5cm thick, ≤5% py, minor hem. [silif pods	0.10		55
5892	1000N, 976E 1-0mN, 24-26W	Esm > Esf: str chl & qtz-ser, mod hem, 2-4% py, str clvd	0.02		35
5893	1003N, 972E 3-0mN, 28-30W	Esi, some Esm pods, str wth, relict chl > ser, str clvd	<0.01		15
5894	1000N, 967E 0-0mN, 33-36W	Esm > Esf mixed chl > ser, pink feld ± qtz xl, 1-3% py, mag	<0.01		15
5895	1003N, 964E 3-2mN, 36-37W	Esf > Esm, str chl/qtz-ser, some pink feld	<0.01		25
5896	1000N, 961E 1-0mN, 39-42W	Esm/Esi pale text, mod-str chl, qtz "eyes", much hem pods	<0.01		45
5897	1000N, 958E 0-1mN, 42-45W	Esi? mod chl-silif pod, hem frac, + FeOx after py?	<0.01		35
5898	1000N, 955E 0-0mN, 45-48W	Esm mod-str chl-silif, common hem frac, wk wth	<0.01		35
5899	1000N, 952E 0-0mN, 48-51W	Esm mod-str chl, qtz pods, minor hem frac	<0.01		35
5900	1000N, 949E 0-1mN, 51-54W	Esm mod-str chl, qtz pods + qtz xl, hem flecks, bedded (?)	<0.01		90
* 7014	947N, 1035E 3-4mS, 35-38.5E	Esm mod-str chl, some silif, 5% cg disem py, some hem wth	0.20		175
7015	998N, 1003E 2-1mS, 3-5m E	Esm mod chl, minor hem frac, mod clvd	0.13		80
7016	998N, 1007E 2-1mS, 7-8.5mE	Esi wk chl-ser, feld xl, mod wth, qtz xl	<0.01		10
7017	1004N, 1012E 4-1mN, 12-15E	Esf str wth, cg silif pods, str clvd, relict py stain	<0.01		15
7018	1000N, 1015E 0-0mN, 15-18E	Esf mod wth, str qtz-ser, FeOx stain, mod clvd	<0.01		30

* Chip sample prospect trench

method: 329 309 101

98 114

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY F.G. FITZGERALD

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: ROCK CHIP SAMPLE PREP REQ'D: ANALYSIS REQ'D: DATE RECEIVED: FEB. '87 13 A19962

SAMPLE NUMBER	LITTLE OWEN ADIT GRID: LOCATION ~~LOCATION~~	CHANNEL LENGTH	DESCRIPTION	ANALYSES (ppm) Au(AAS)	Au(FA)	Cu						
7019	1000N, 1018E	0-1mN, 18-19.5E	Gsf mod wtk, str qtz-ser, FeOx stain, str clvd	<0.01		25						
7020			STANDARD 0.64 g/t Au	0.58		5						
7021	1006N, 1020E	5-3mN, 20.5-22.5E	Gsf str wtk, qtz-ser, FeOx stain, str clvd	<0.01		35						
7022	1002N, 1025E	2.5-0N, 24.5-27E	Gsf mod wtk, pale grn str ser-qtz, pods 1-3% py, clvd	<0.01		20						
7023	1002N, 1027E	2-1mN 27.5-30E	Gsf mod wtk, str qtz-ser, pale grn, minor disem py	<0.01		20						
7024	990N, 1029E	10-7mS, 29-30.5E	Gsf? pods Gsm, mod wtk, str qtz>ser, relict py <1%, hem pods	0.11		20						
7025	999N, 1036E	1-1mS, 36.5-37E	Gsf? str wtk, clay + qtz-ser, str clvd, minor chl	<0.01		45						
7026	1010N, 1039E	10-6mN, 39-42E	Gcc? / Gsf? wk hem chl + mod silif-ser, ≤0.5% py, clvd	<0.01		30						
7027	1004N, 1043E	4-1N, 43-46E	Gsf mod wtk, str ser-qtz, FeOx stain	<0.01		50						
7028	1001N, 1046E	1-1N, 46-50E	Gsf/Gsi vcg str wtk, wk chl, str qtz-ser, FeOx, str clvd	0.01		95						
7029	998N, 1047E	1-2S, 47-50E	Gsi/Gsm vcg, pods chl in qtz-ser ± chl, mod wtk, FeOx	0.01		60						
7030	950N, 1000E	0-0N, 0-2E	Gsi/Gsf mixed, mod chl, + str ser-qtz 1-5% py, wk wtk	0.79	0.917	35						
7031	950N, 1002E	1-1N, 2-4E	Gsi/Gsf mixed str ser-qtz ± pods str chl, ≤5% py, minor hem	0.22		55						
7032	950N, 1005E	5-1N, 5-7E	Gsi/Gsf mod chl, str qtz-ser, 1-2% py, wk wtk	0.03		35						
7033	950N, 1007E	0-0N, 7-9E	Gsi/Gsf mod chl, str qtz-ser, 1-3% py, wk wtk	0.03		75						
7034	950N, 1010E	0-0N 10-12E	Gsi/Gsm, mod-str chl (silif?), mod qtz-ser, +3% py wk wtk	0.16		80						
7035	950N, 1012E	0-0N, 12-14E	Gsi/Gsm, mod-str chl (silif?) mod qtz-ser ≤ 1% py ± hem	0.03		115						
7036	950N, 1014E	0-1N, 14-16E	Gsi/Gsf, mod-str qtz-ser, wk chl, mod wtk, minor py	0.01		75						
7037	949N, 1016E	1-2S, 16-19E	Gsm>Gsi mod-str chl > ser, 1-3% py	<0.01		25						
7038	955N, 1019E	5-5N, 19-20.5E	Gsm mod-str chl > silif, 3-5% cg py in bands	<0.01		55						
7039			STANDARD 0.64 g/t Au	0.47	0.633	5						

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: F.G. FITZGERALD

PROJECT: LINDA VALLEY | PROSPECT: LITTLE OWEN | SAMPLE STORAGE REQ'D: | LABORATORY: ANALABS | DATE DISPATCHED:

250,000 SHEET: | TYPE OF SAMPLE: ROCK CHIP | SAMPLE PREP. REQ'D: | ANALYSIS REQ'D: | DATE RECEIVED: FEB '87

A19962

SAMPLE NUMBER	LITTLE OWEN ADIT GRID LOCATION	CHANNEL LENGTH	DESCRIPTION	ANALYSES (ppm) Au(AAS)	Au(FA)	Cu
T7040	954N, 1023E	4-3N, 23-25E	Gsm > Gsi, mod-str chl, some ser; 3-10% py ± cpy, hem	0.11		265
7041	950N, 1025E	0-0N, 25-27E	Gsm, mod-str chl, silif, 1-3% py	0.01		25
7042	949N, 1027E	1-1S, 27-29E	Gsm, str-mod chl, 3-5% py, minor cpy, hem veins // clv	0.02		170
7043	950N, 1029E	0-0N, 29-31E	Gsm/Gsi qtz phenos, mod chl > ser, ≤1% py, common hem blebs	1.21	1.720	130
7044	951N, 1031E	1-1N, 31-33E	Gsi mod-str ser >> chl, carb?, minor chl, hem blebs + frac + frac	0.03		45
7045	952N, 1033E	2-5N, 33-35E	Gsi mod-str ser/qtz > chl, minor py, common hem pods	0.01		270
7046	949N, 1036E	1S-0N, 35-37E	Gsi/Gsm mixed: str chl + 5% py; hem-silif lens 50cm thick	0.01		225
7047	950N, 1037E	0-1S, 37-39E	Gsm, str chl, 1-5% py, major qtz-chl vein 50cm thick	0.34		105
7048	950N, 1039E	0-1N, 39-41E	Gcef?/Gsi fg wk chl > ser, str clvd, qtz-chl veins 50cm	0.01		45
7049	950N, 1042E	0-0N, 42-44E	Gsf > Gsm + Gcef mixed; fg shale; qtz-ser-py + chl-py + hem-silif pods	0.01		30
7050	950N, 1044E	0-1N, 44-46E	Gsi/Gsm mod chl = qtz/ser, f-mg minor py	<0.01		25
7051	951N, 1046E	1-2N, 46-48E	Gsi mod chl = qtz/ser, some str ser, minor py, hem-FeOx	<0.01		170
7052	950N, 1048E	0-0N, 48-51E	Gsi/Gsf mod ser-qtz > chl, wk py (FeOx), brk with	<0.01		140
7053	951N, 1000E	1-2N, 0-2W	Gsi/Gsf mod-str qtz-ser > chl, 3-5% py, str clvd	0.04		85
7054	949N, 997E	1-2S, 3.5-6W	Gsi/Gsm mod chl = qtz/ser 3-5% py, mod clvd	0.13		25
7055	947N, 994E	3-3S, 6-8W	Gsi/Gsf minor Gsm, str qtz/ser/py > chl, 3-5% py, clvd	0.01		35
7056	950N, 992E	0-0N, 8-10W	Gsm fg uniform, mod chl, 1-2% py, wk wk	0.01		75
7057	950N, 990E	3-2N, 8-10W	Gsm/Gsi qtz phenos, mod-str chl > > qtz-ser, 3-5% py ± cpy	0.18		1050
7058	952N, 989E	2-3N, 11-13W	Gsm/Gsf mixed str chl-qtz/ser, silif 3-5% py 1% cpy + cc	0.42	0.342 0.39	1750
7059	960N, 987E	0-2N, 13-15W	Gcef deep wth, pnt feld porph, wkly alt. in mineralized shear 30cm wide	0.01		60
7060	960N, 978E	10-10N, 22-24W	Gsm/Gsi, mod wth, chl > ser, 1-3% py str clvd	0.05		20

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GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

COLLECTED BY: F.G. FITZGERALD

PROJECT: LINDA VALLEY | PROSPECT: LITTLE OWEN | SAMPLE STORAGE REQ'D: | LABORATORY: ANALABS | DATE DISPATCHED:

250,000 SHEET: | TYPE OF SAMPLE: ROCK CHIP | SAMPLE PREP. REQ'D: | ANALYSIS REQ'D: | DATE RECEIVED: FEB. '87

A19962

SAMPLE NUMBER	LOCATION	LITTLE OWEN ADIT GRID LOCATION CHANNEL LENGTH	DESCRIPTION	ANALYSES (ppm) Au(AAS)	Au(FA)	Cu						
T7061			STANDARD 1.51g/t Au	1.37	1.400	55						
T7062	960N, 962E	10-10N, 35-40W	Gsf mod wth, qfz-ser, minor py str clvd	0.02		15						
T7063	1050N, 1000E	0.5-0N, 0-2W	Gsm/Gcm m-cg xlline?, chl, much hem (after chl?)	<0.01		30						
T7064	1050N, 998E	0-0N, 2-4W	Gsm? f-mg mod chl, qfz-chl veins 75cm thick	<0.01		60						
T7065	1050N, 996E	0-0N, 4-6W	Gsf? mg mod wth, pale grn ser? str clvd	<0.01		15						
T7066	1050N, 994E	0-0N, 6-8W	Gsi? v str wth, remnant chl, str clvd, MnOx	<0.01		25						
T7067	1050N, 992E	1-0N, 8-10W	Gsi? v str wth, remnant chl, mod ser/clay, much MnOx	<0.01		20						
T7068	1050N, 990E	0-0N, 10-12W	Gsi? v str wth, remnant chl-ser, common MnOx, str clvd	<0.01		20						
T7069	1050N, 988E	1-0S, 12-14W	Gsu str wth, remnant chl-ser, common MnOx str clvd	<0.01		15						
T7070	1051N, 986E	1-1N, 14-16W	Gsu str wth, remnant chl > ser, Fe & Mn Ox	<0.01		35						
T7071	1049N, 984E	1-2S, 16-18W	Gsf > Gsm, mod wth, str qfz-ser, pods chl, rare py, FeOx	0.01		50						
T7072	1052N, 980E	2-1N, 19.5-21W	Gsu str wth, relict chl > ser, FeOx, str clvd	<0.01		40						
T7073	1049N, 979E	1-1S, 21-23W	Gsu str wth, relict chl-ser, Fe/MnOx, str clvd	<0.01		20						
T7074	1050N, 977E	1S-1N, 23-25W	Gsu str wth clay, relict chl-ser, minor FeOx, str clvd	<0.01		10						
T7075	1053N, 975E	3-3N, 25-27W	Gsf mod wth, str ser-qfz, mod clvd	<0.01		5						
T7076	1047N, 973E	3-0S, 27-30W	Gsf? str wth, relict ser, str clvd	<0.01		10						
T7077	1049N, 970E	1-0S, 30-35W	Gsf?/Gcef? str wth, str clay >> ser, str clvd	<0.01		10						
T7078	1049N, 967E	1S-1N, 33-36W	Gsf? v str wth, mg clastic, clay >> ser, str clvd	<0.01		10						
T7079	1051N, 964E	1-1S, 36-39W	Gsf? v str wth, clay >> ser, minor FeOx, str clvd	<0.01		10						
T7080			STANDARD 0.13 g/t Au	0.12		5						
T7081	1050N, 961E	0-1N, 39-42W	Gsf? str wth, clay > ser, str clvd	<0.01		15						

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GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: F.G. FITZGERALD

PROJECT: LINDA VALLEY | PROSPECT: LITTLE OWEN | SAMPLE STORAGE REQ'D: | LABORATORY: ANALABS | DATE DISPATCHED:

250.000 SHEET: | TYPE OF SAMPLE: ROCK CHIP | SAMPLE PREP REQ'D: | ANALYSIS REQ'D: | DATE RECEIVED: FEB '87

A19962

SAMPLE NUMBER	LITTLE OWEN ADIT GRID LOCATION	CHANNEL LENGTH	DESCRIPTION	ANALYSES (ppm) Au(AAS)	Au(FA)	Cu
7082	1054N 958E	4-4N, 42-45W	Gsf str with, relict ser, FeOx, 1° banding, clvd	0.02		20
7083	1054N, 954E	2-0S, 46-49W	Gsf? str with, clay > ser, str clvd	<0.01		5
7084	1050N, 1000E	0-0N, 0-3E	Gsm? v str with, chl + clay-ser, tr py	0.02		25
7085	1050N, 1003E	0-2N, 3-6E	Gsv, v str with clay, qtz-chl vein 1m wide	0.02		20
7086	1050N, 1006E	0-0N, 6-9E	Gsi, str with, clay > chl, FeOx, str clvd	0.62	0.317	50
7087	1050N, 1009E	0-1N, 9-11E	Gsi/Gcef? fg str with, clay > chl, tr FeOx, str clvd	0.08		30
7088	1049N, 1010E	1-3S, 10-12E	Gsi? v str with, relict chl, FeOx, str clvd	0.02		50
7089	1050N, 1012E	0-0N, 12.5-15E	Gsf, mod with, str qtz-ser, 5% py, FeOx, mod clvd	0.01		10
7090	1050N, 1015E	0-0N, 15-17E	Gsf, mod with, str qtz-ser ≤5% py, FeOx, mod clvd	0.01		15
7091	1051N, 1017E	1-2N, 17-19E	Gsf mod with, str qtz-ser ≤5% py FeOx str clvd	0.02		10
7092	1051N, 1019E	1-1N, 19-21E	Gsf str with relict str qtz-ser-py, much FeOx, str clvd	0.04		20
7093	1050N, 1021E	0-0N, 21-23E	Gsf, v str with, relict qtz-ser, FeOx, str clvd	0.07		15
7094	1051N, 1023E	1-1N, 23-25E	Gsf mod with, str qtz-ser, ≤5% py FeOx, str clvd	0.05		5
7095	1050N, 1026E	0-0N, 25-27E	Gsf mod with, str qtz-ser-py, much FeOx, str clvd	0.03		10
7096	1050N, 1027E	0.5-0S, 27-29E	Gsf str with, relict qtz-ser ≤5% py, much FeOx	0.03		15
7097	1050N, 1030E	0-0N, 29.5-31E	Gsf str with, str qtz-ser-py, common FeOx, str clvd	0.05		15
7098	1050N, 1031E	0.5-0S, 31-33E	Gsf v str with, clay > ser qtz, much FeOx, str clvd	0.01		5
7099	1049N, 1033E	1-1S, 33-35E	Gsf str with, relict qtz-ser-py, much FeOx, str clvd	0.01		5
7100	1049N, 1035E	1.5-1S, 35-37E	Gsi/Gsm? mod with, mod chl, hard, 2-4% py, clvd	0.03		25
7911	1048N, 1037E	2-1S, 37-39E	Gsi > Gsf mod with, chl-clay > qtz-ser, 2-3% py, clvd	0.02		20
7912	1049N, 1039E	1-1S, 39-41E	Gsi? mod with, mod chl-clay, fg. str clvd, no S²⁻	0.03		5

98 118

GOLD FIELDS EXPLORATION PTY. LTD.

SAMPLE RECORD AND ANALYTICAL DATA SHEET

COLLECTED BY: F.G. FITZGERALD

ROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS DATE DISPATCHED:

250.000 SHEET: TYPE OF SAMPLE: ROCK CHIP SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: FEB '87

A19962

SAMPLE NUMBER	LOCATION (LITTLE OWEN MNT GRID)	CHANNEL LENGTH	DESCRIPTION	ANALYSES (ppm) Au(AAS)	Au(FA)	Cu						
T7913	1049N, 1041E	1-1S, 41-43E	Gsi ? mod wth, chl-clay, feld+qtz xl, str clvd	0.10		5						
7914	1049N, 1043E	1-1S, 43-45E	Gsi str wth, clay-chl, wk FeOx, str clvd	0.02		5						
7915	1048N, 1045E	2-1.5S, 45-47E	Gsi>Gsf mod wth, chl-clay>qtz-ser, 2-3% py str clvd	0.02		15						
7916	1047N, 1048E	2.5-3S, 48-58E	Gsf>Gsm, str qtz-ser-py, pods chl-py, 3-5% py clvd	0.07		20						

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APPENDIX D.4

LITTLE OWEN AREA

MISCELLANEOUS ROCK CHIP SAMPLES

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** 98 120

COLLECTED BY: F.G. FITZGERALD

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D LABORATORY: ANALABS DATE DISPATCHED

1:250,000 SHEET TYPE OF SAMPLE: ROCK SAMPLE PREP. REQ'D ANALYSIS REQ'D DATE RECEIVED: MAY '86 LTS

A19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (ppm)								
				Au	Cu	Pb	Zn	Ag				
T7929	4-3mE Hematite Trench		Eca, str ser-hem, minor chl, mod FeOx	<0.01	930	110	195	<0.5				
7930	3-2mE Hematite Trench		Eca, mod-str ser/chl-hem, mod FeOx, qtz-hem veins	<0.01	710	60	270	<0.5				
7931	2-1mE Hematite Trench		Eca, qtz-hem vein (2/3) + wk chl-ser altered HR	<0.01	530	40	320	<0.5				
7932	1-0mE Hematite Trench		Vein qtz + specularite ±chl, mod FeOx	<0.01	940	35	90	<0.5				
7933	39100N	82560E	Esm/Ecd, mod chl, silif, qtz-marg-Fe/Mn Ox veins	<0.01	240	40	255	<0.5				
7934	39000N	82590E	Ecd? mod-str ser + pink (hem?) blebbes, much qtz	0.30	50	1100*	105	<0.5	repeat of T5017		0.57g/t Au	
7935	38995N	82580E	Eef str ser-hem, locally "iron blow", isolated kunk	<0.01	205	110	60	<0.5				
7936	38920N	82600E	Ecd?, wk-mod ser > chl, FeOx veinlets.	<0.01	20	20	200	<0.5				
7937	39005N	82580E	Ecd, mod ser, str hem + FeOx	<0.01	40	30	50	<0.5				
7938	39000N	82375E	Ecd, mod-str chl-ser, much 2° hem, minor qtz	0.13	675	3200*	830	<0.5	repeat of T5029		1.90g/t Au	
7939	39015N	82370E	Ecd, str chl-hem, 2° hem, FeOx, qtz veins common	<0.01	575	45	310	<0.5				
7940	39030N	82450E	gossan, in situ?, Mn > FeOx	<0.01	4550	25	600	<0.5				
7941	39030N	82450E	Ecd, str chl > ser, much 2° hem clots, silif?	<0.01	190	35	265	<0.5				
7942	39060N	82370E	Ecd, mod chl-hem (1°), much 2° hem, weath.	<0.01	65	135	85	<0.5				
7943	39405N	82405E	0-2mE trench Esi > Esm, mod chl > ser, ≤1% disseim py	<0.01	160	60	630	<0.5				
7944	39405N	82407E	2-4mE trench Esi > Esm, mod chl > ser, minor py, weath	<0.01	110	50	545	<0.5				
7945	39405N	82409E	4-6mE trench Esm, str chl, 2-5% diss py	0.15	635	130	405	<0.5				
7946			Standard 0.64g/t Au	0.51	5	10	65	<0.5				
7947	39420N	82425E	1-3mE S side trench Ecc, mod ser-chl, tr py-hem	<0.01	70	40	265	<0.5				
7948	39420N	82425E	1-1mE S&N side trench Esi, silif-ser-chl, vein cpy/cc loc	<0.01	105	70	320	<0.5				
7949	39420N	82425E	1-3mE N side trench Esi/Esv, mod qtz-ser > chl, tr py	<0.01	230	50	215	<0.5				
			Analytical method:	329	101	101 *103	101	101				

98 121

GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET** COLLECTED BY F.G. FITZGERALD

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: DATE DISPATCHED:

1:250.000 SHEET: TYPE OF SAMPLE: ROCK CHIP SAMPLE PREP REQ'D: ANALYSIS REQ'D: DATE RECEIVED: MARCH '87 19962

SAMPLE NUMBER	LOCATION		DESCRIPTION	ANALYSES (ppm) Au(AAS)	Au(FA)	Cu
T7910	N°1 ADIT MAIN DR	76-78m	Gsf, str qtz-ser, brx, 5-10% py, hem ckeds	0.33		375
7917	39612N 32400E MLGrid	dump	Gsm, feld x1, mod chl 1-3% py, FeOx	<0.01		25
7918	39612N 32400E MLGrid	dump	Gsm, wth, str chl, hem frac, <1% py	<0.01		80
7919	39612N 32400E MLGrid	dump	Gsi, str qtz-ser-chl, 3-5% py wth,	<0.01		500
7920	N°2 SE DRIVE	4-6m	fault/vein's qtz-chl, minor py	<001		35
7922	N°2 MAIN DRIVE	176m w wall	fault qtz-chl-clay-ser, mod FeOx, no S^{2-}	0.39		110
7924	N°2 MAIN DRIVE	180.8-181.6m	Gsi/vein qtz-chl vein, minor FeOx, no S^{2-}	<0.01		75
7925	N°1 SE DRIVE	16m (50cm back)	fault (Gsi/Gsm) clay py brx, qtz-chl, minor py	1.33	0.75	1250
7926	N°1 SE DRIVE	14.6m (back)	Gsi/Gsm str chl > qtz-ser, 5-10% py: cpy then	1.17	1.33	11500
7928			STANDARD 2.9g/t Au	2.16		15
7905	N°1 NW DRIVE	13.2-13.5m	fault 2cm thick clay gouge with qtz chl, no S^{2-}	0.15		65
7907	N°1 SE DRIVE	11.2m W wall	Gsm/fault 3-4cm thick, chl-clay-qtz, <0.5% py, brx	0.34		425
7908	N°1 SE DRIVE	16.0m E wall	Gsm/fault str chl > ser/clay, FeOx +2-4% py, brx	0.06		170
7909	N°1 SE DRIVE	2.2m W wall	fault gouge - clay/ser no S^{2-}, zone 5-10cm thick.	0.05		50
			Method:	329	309	101

98 122

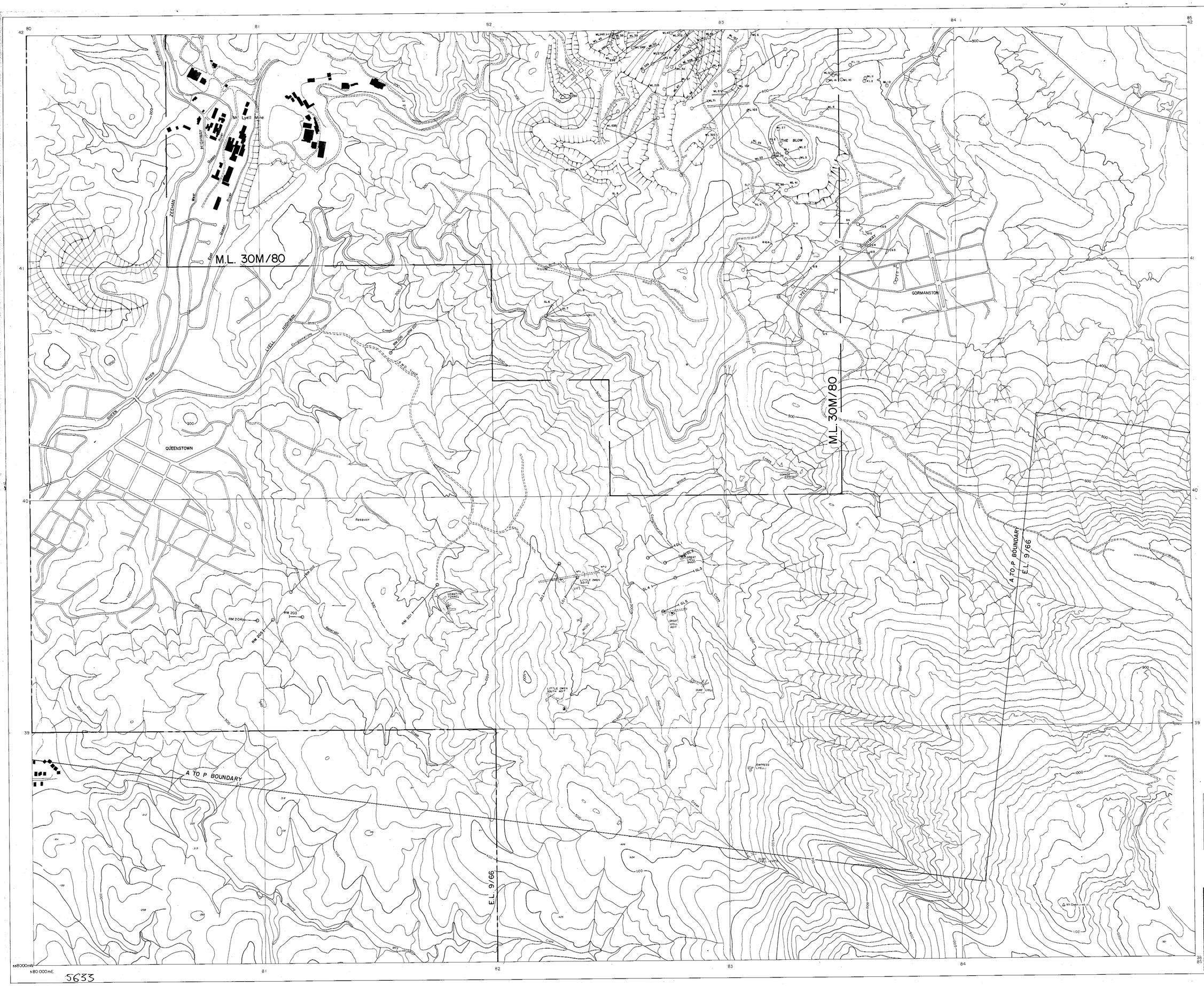
GOLD FIELDS EXPLORATION PTY. LTD. **SAMPLE RECORD AND ANALYTICAL DATA SHEET**

PROJECT: LINDA VALLEY PROSPECT: LITTLE OWEN SAMPLE STORAGE REQ'D: LABORATORY: ANALABS COLLECTED BY: PAR/RW

1:250.000 SHEET: TYPE OF SAMPLE: ROCK CHIP SAMPLE PREP. REQ'D: ANALYSIS REQ'D: DATE RECEIVED: DATE DISPATCHED: 15/5/87. TL2

A19962

SAMPLE NUMBER	LOCATION	DESCRIPTION	ANALYSES Au(FA) Analabs 309	Au(FA) Analabs 310	Au (previous sampling results)					
	Little Owen Upper Adit.	Samples taken to check highly anomalous gold values obtained in initial channel sampling phase - has some surface enrichment occurred on adit walls (which are thinly coated with limonite)?								
T4942	Adit, N. wall, 83-84m	Pyritic chloritic schist	5.25	4.93	?	(½ of 82-84m, originally				1.0g/t Au)
T4943	Adit, N. wall, 84-86m	Pyritic chloritic schist, locally with disseminations and "impregnations" of hematite.	21.53	22.57	20.0					
T4944	N. cross cut, E. wall, 6-8m	As above (T4943)	6.34	5.93	15.1					
T4945	Both T4943 + 4944 sites.	Pieces of pyritic chloritic schist containing disseminations and "impregnations" of grey, partly specular hematite.	20.87	22.53	—					



SHEET INDEX

Diamond	Mine	Lyell
Airport	TOWNSHIP	Princess
Lynchford	Owen	Tofft

GRID CONVERGENCE 0°59'

GRID MAGNETIC ANGLE 12°

The relationship between True North Grid North and Magnetic North is shown diagrammatically. Magnetic value is correct for 1980. Annual change is 0° 10' (Decreasing)

98 123

5 cm

87-2676

GOLD FIELDS EXPLORATION PTY. LIMITED

MT. LYELL AREA

TOWNSHIP SHEET

LOCATION OF PROSPECTS AND DRILL HOLES

DRAWN BY: F.G.F.

DRAFTSMAN: T.G.D.S.

DATE: May 1986

REVISIONS:

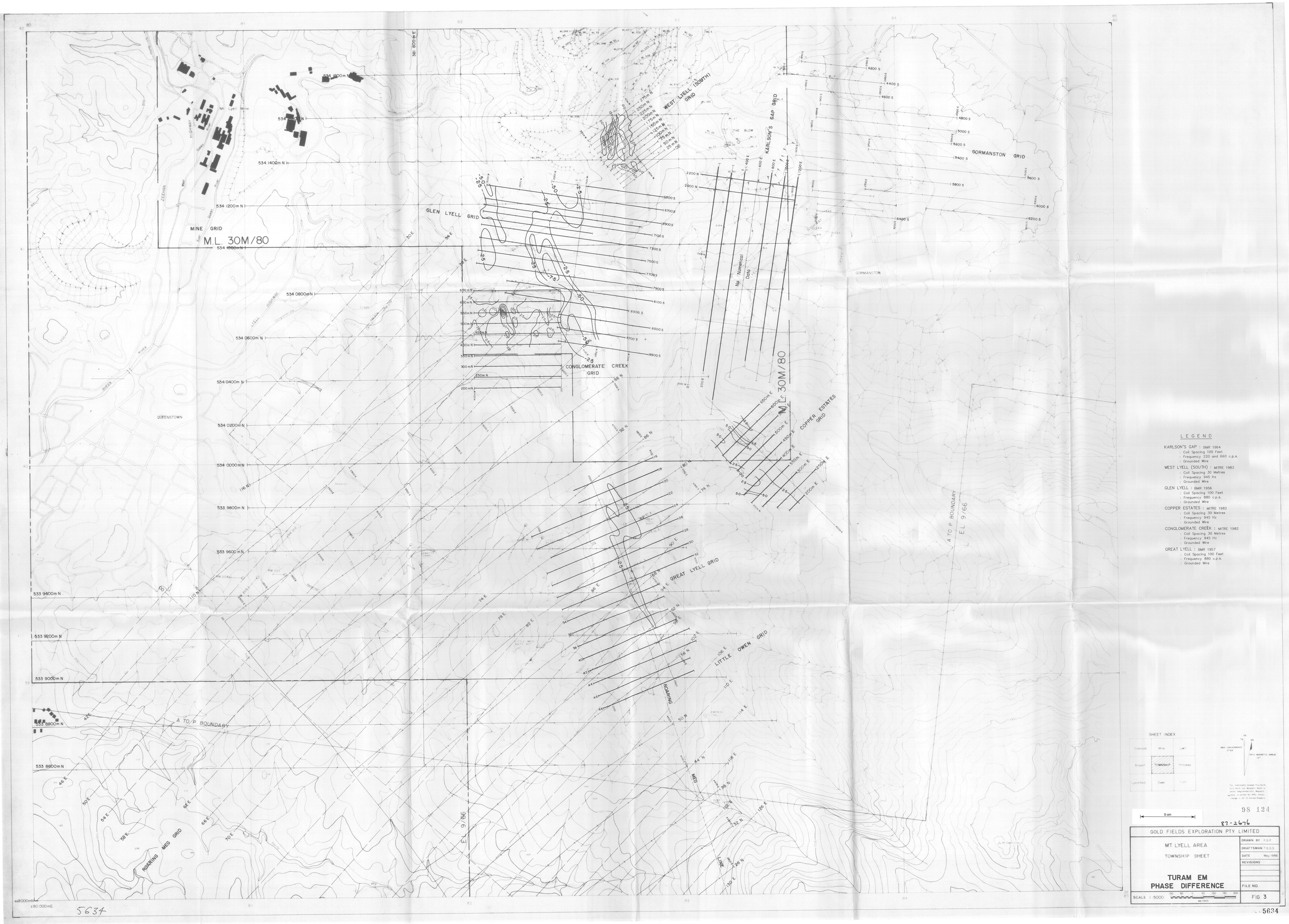
FILE NO.

SCALE 1:5000 — 100 50 0 50 100 150 200 METRES

FIG 2

5633

5633



MINE GRID
M.L. 30M/80
GLEN LYELL GRID
WEST LYELL (SOUTH) GRID
KARLSON'S GAP GRID
GORMANSTON GRID
CONGLOMERATE CREEK GRID
COPPER ESTATES GRID
GREAT LYELL GRID
LITTLE OWEN GRID
ROARING MEG GRID
A TO P BOUNDARY
E.L. 9/66
QUEENSTOWN
GORMANSTON
Mt Lyell Mine
No Numerical Data
LEGEND
KARLSON'S GAP : BMR 1964
: Coil Spacing 100 Feet
: Frequency 220 and 660 c.p.s.
: Grounded Wire
WEST LYELL (SOUTH) : MITRE 1982
: Coil Spacing 30 Metres
: Frequency 945 Hz
: Grounded Wire
GLEN LYELL : BMR 1956
: Coil Spacing 100 Feet
: Frequency 880 c.p.s.
: Grounded Wire
COPPER ESTATES : MITRE 1982
: Coil Spacing 30 Metres
: Frequency 945 Hz
: Grounded Wire
CONGLOMERATE CREEK : MITRE 1982
: Coil Spacing 30 Metres
: Frequency 945 Hz
: Grounded Wire
GREAT LYELL : BMR 1957
: Coil Spacing 100 Feet
: Frequency 880 c.p.s.
: Grounded Wire
SHEET INDEX
Diamond
Mine
Lyell
Airport
TOWNSHIP
Princess
Lynchford
Owen
Tatti
5 cm
98 124
87-2676
GOLD FIELDS EXPLORATION PTY LIMITED
MT LYELL AREA
TOWNSHIP SHEET
TURAM EM
PHASE DIFFERENCE
DRAWN BY F.G.F.
DRAFTSMAN T.G.D.S.
DATE May 1986
REVISIONS
FILE NO.
SCALE 1:5000
METRES
FIG 3
5634

MINE GRID

M.L. 30M/80

WEST LYELL (SOUTH) GRID

KARLSON'S GAP GRID

GORMANSTON GRID

GLEN LYELL GRID

CONGLOMERATE CREEK GRID

M.L. 30M/80

COPPER ESTATES GRID

A TO P BOUNDARY

EL 9/66

GREAT LYELL GRID

LITTLE OWEN GRID

ROARING MEG GRID

A TO P BOUNDARY

LEGEND

LITTLE OWEN GRID (chargeability in msec)

Surveys by: Scintrex, Nov. 1973 — Mar. 1974 and Dec. 1974 — Feb. 1975
Receiver: IPR-7 (IPR-8 for Schlumberger Array)
References: A.W. Howland — Rose 1974 and 1975

MINE GRID (chargeability in mv/v)

Survey by: Scintrex, Nov. 1980 — May 1981
Receiver: IPR-8 and IPR-10
Reference: G.L. Street, 1981

SHEET INDEX

Diamond	Mine	Lyell
Airport	TOWNSHIP	Princess
Lynchford	Owen	Tullah

GRID CONVERSION 0°44'

GRID MAGNETIC ANGLE 13°

The relationship between True North and Grid North and Magnetic North is shown diagrammatically. Magnetic variation is correct for 1982. Annual change is 0.0° E (Harland Geometry)

5 cm

88 125

87-2676

GOLD FIELDS EXPLORATION PTY LIMITED

MT LYELL AREA

TOWNSHIP SHEET

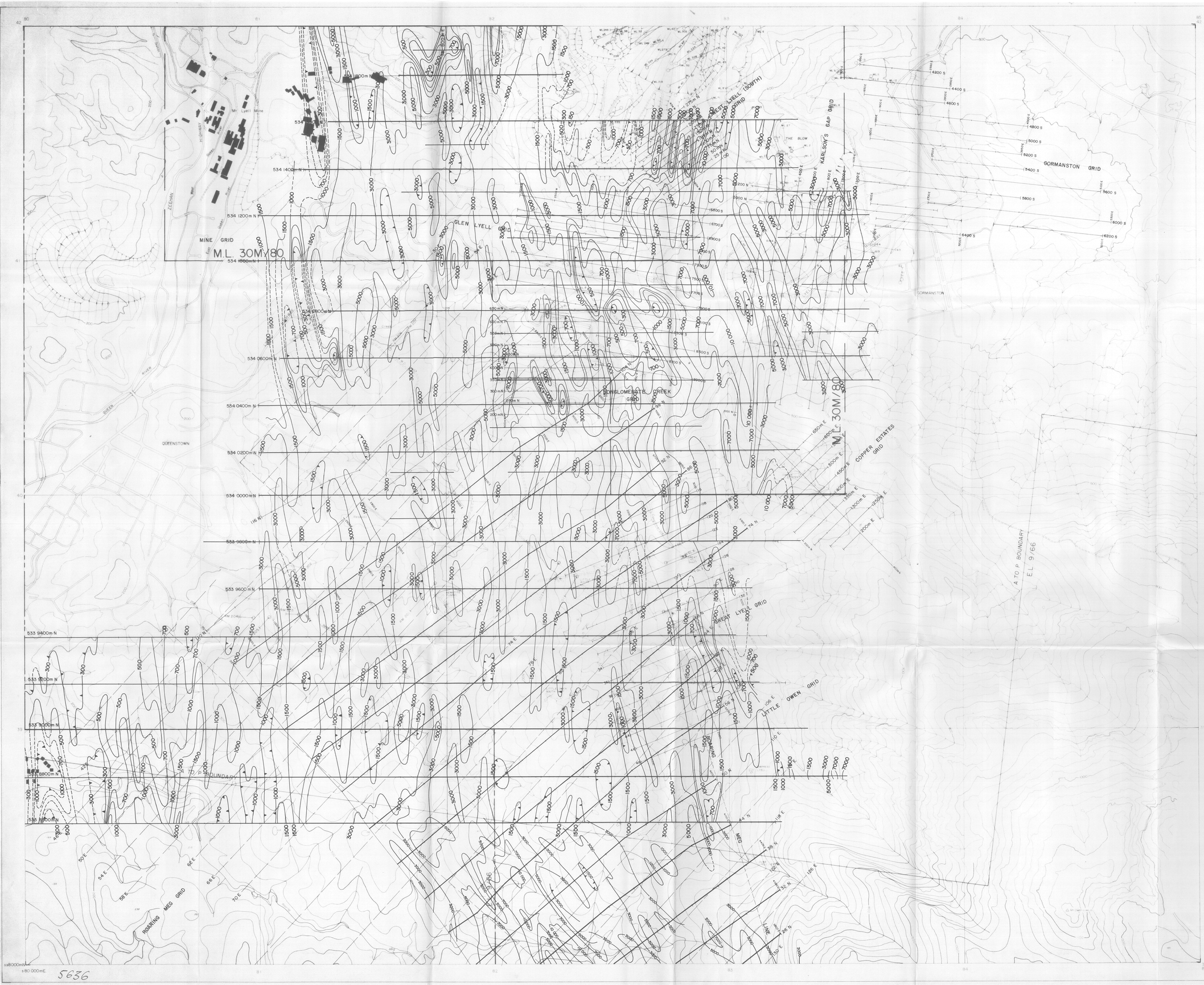
GRADIENT ARRAY IP CHARGEABILITY

DRAWN BY FGF
DRAFTSMAN T&DS
DATE May 1986
REVISIONS
FILE NO.
FIG 4

SCALE 1:5000 METRES

5635

5635



LEGEND

LITTLE OWEN GRID (resistivity in ohm-m)

Surveys by: Scintrex, Nov. 1973 – Mar. 1974 and Dec. 1974 – Feb. 1975
Receiver: IPR-7 (IPR-8 for Schlumberger Array)
References: A.W. Howland – Rose 1974 and 1975

MINE GRID (resistivity in ohm-m)

Survey by: Scintrex, Nov. 1980 – May 1981
Receiver: IPR-8 and IPR-10
Reference: G.L. Street, 1981

SHEET INDEX

Diamond	Mine	Lyell
Airport	TOWNSHIP	Princess
Lynchford	Owen	Tutti

5 cm

98 126

87-2676

GOLD FIELDS EXPLORATION PTY LIMITED

MT LYELL AREA

TOWNSHIP SHEET

GRADIENT ARRAY IP RESISTIVITY

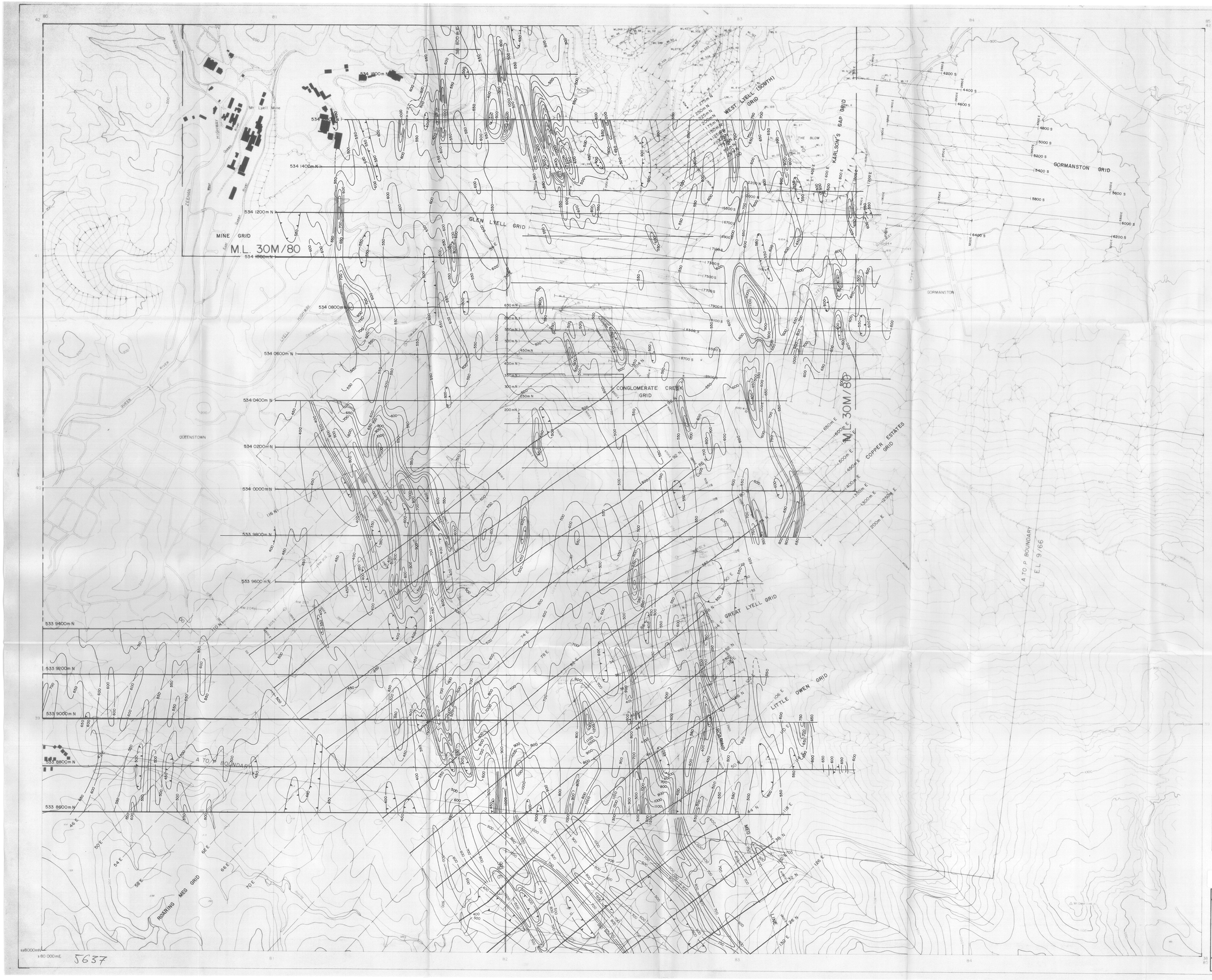
DRAWN BY	F.G.F.
DRAFTSMAN	T.G.D.S.
DATE	May 1986
REVISIONS	
FILE NO.	

SCALE 1:5000 — 100 50 0 50 100 150 200 METRES

FIG 5

5636

5636



LEGEND

NOTE: Each survey has a separate and arbitrary base station. For total magnetic field add 62,000 gammas to all values.

REFERENCES:
Mine Grid: Scintrex, 1981. G.L. Street, 1981.
Little Owen Grid: Scintrex, 1974. A.W. Howland – Rose, 1974.

SHEET INDEX

Diamond	Mine	Lyell
Airport	TOWNSHIP	Princess
Lynchford	Owen	Tofft

GRID CONVERGENCE 0°54'
GRID MAGNETIC ANGLE 12°

The relationship between True North and Mean Magnetic North is shown diagrammatically. Magnetic variation is derived by GMD Annual Change is 0° 20' (Werner) Easterly

5 cm

98 127

87-2676

GOLD FIELDS EXPLORATION PTY. LIMITED

MT LYELL AREA

TOWNSHIP SHEET

TOTAL FIELD MAGNETICS

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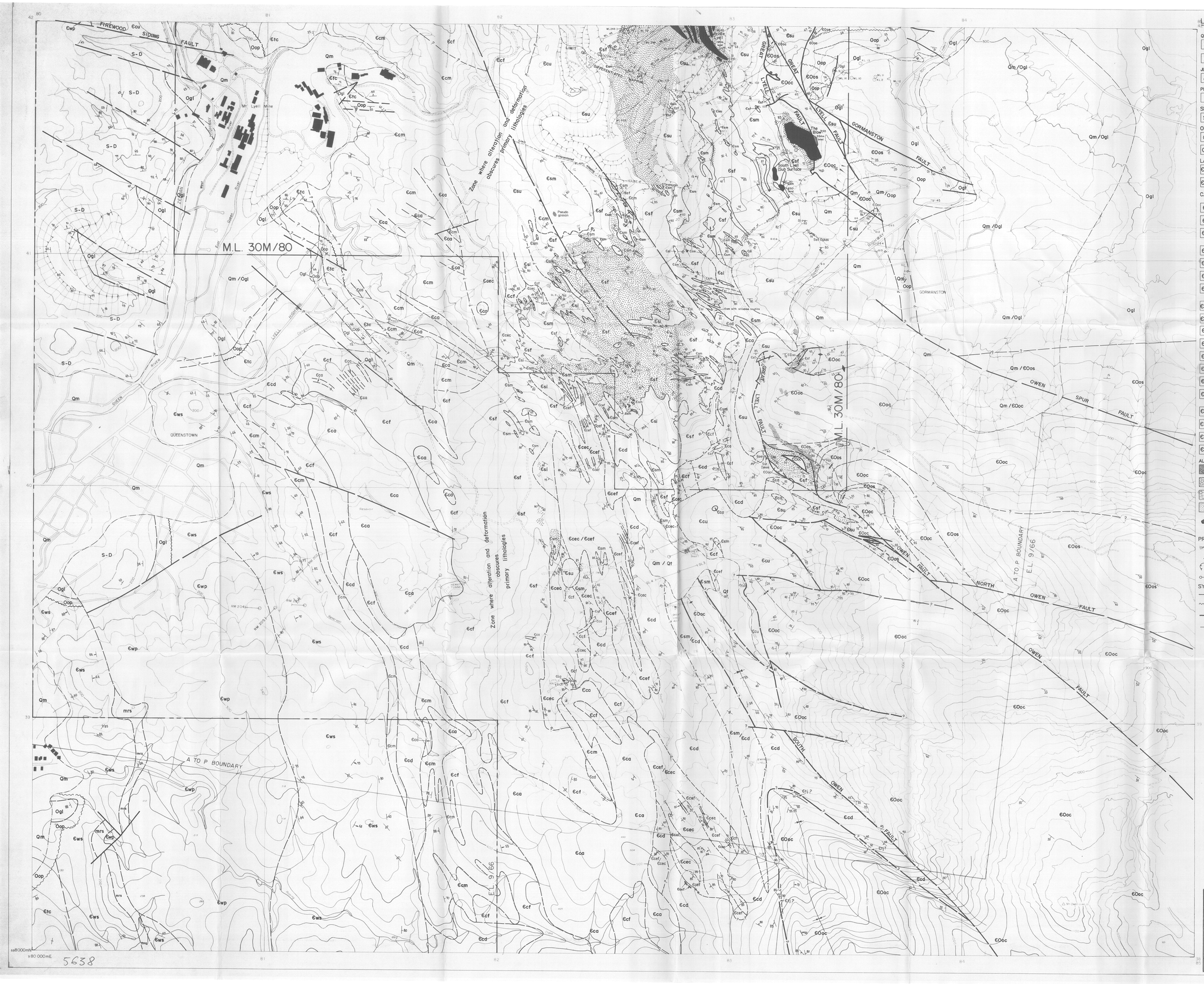
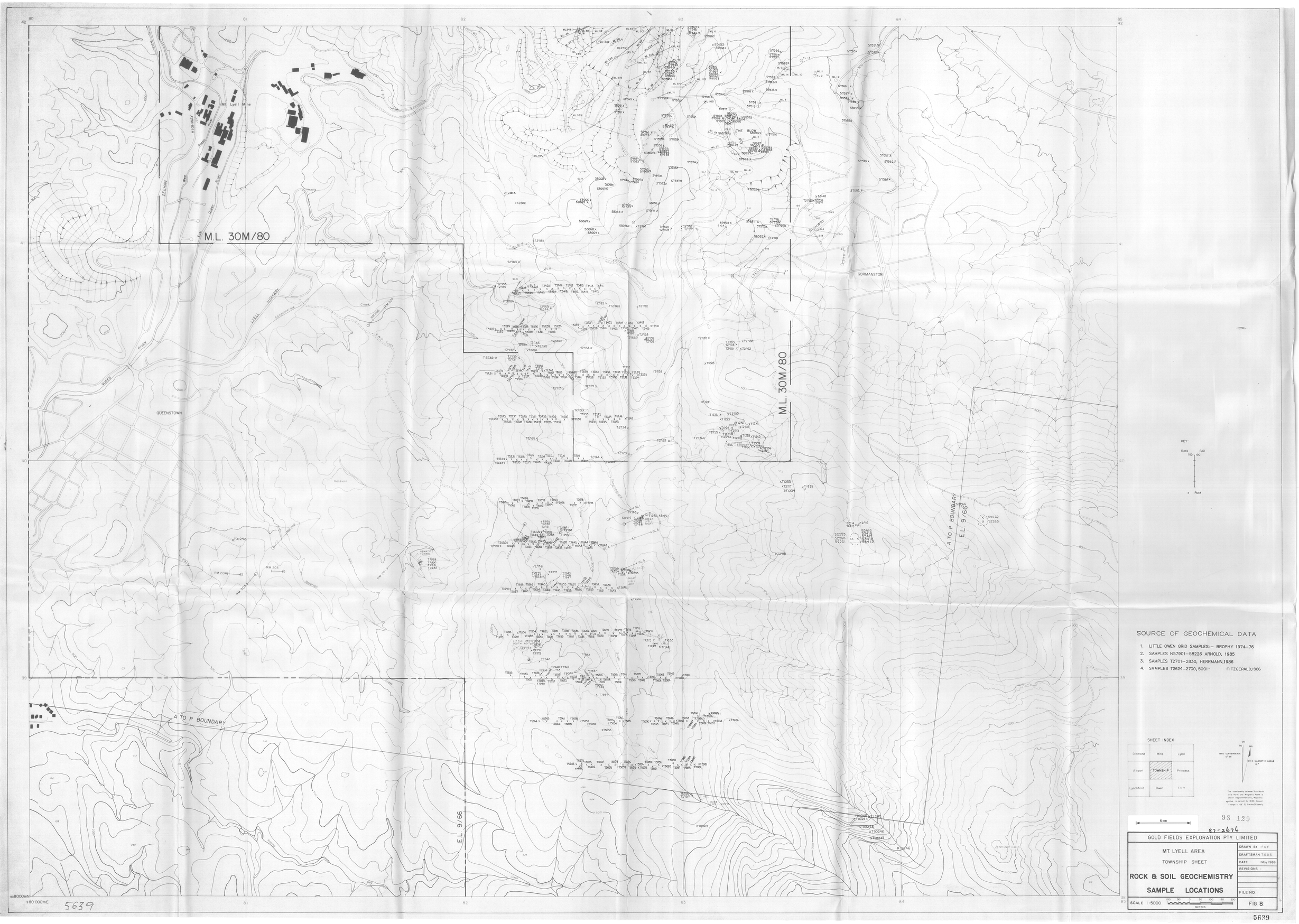
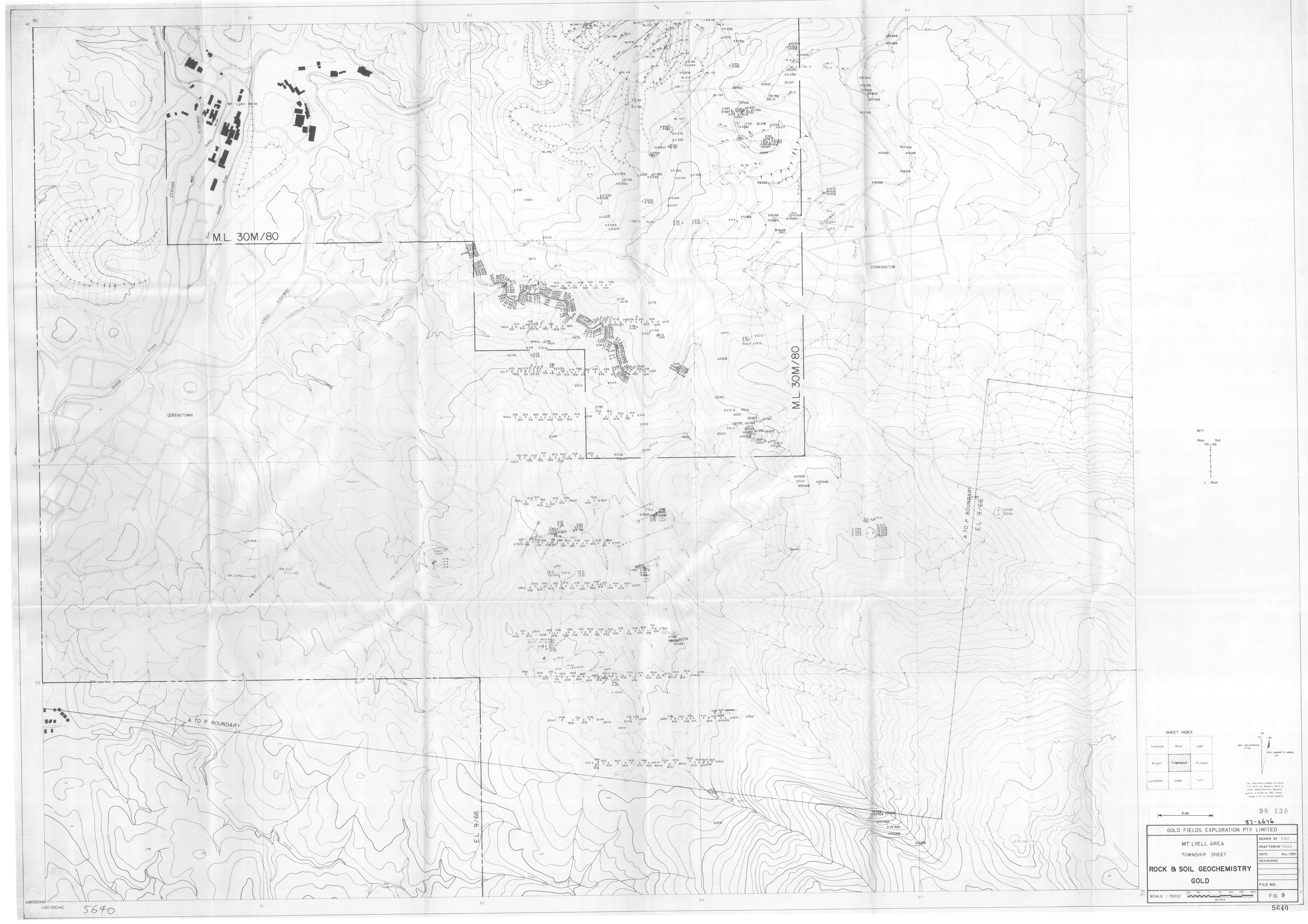
DRAFTSMAN	T.G.D.S.
DATE	May 1986
REVISIONS	
FILE NO.	
SCALE 1:5000	FIG 6

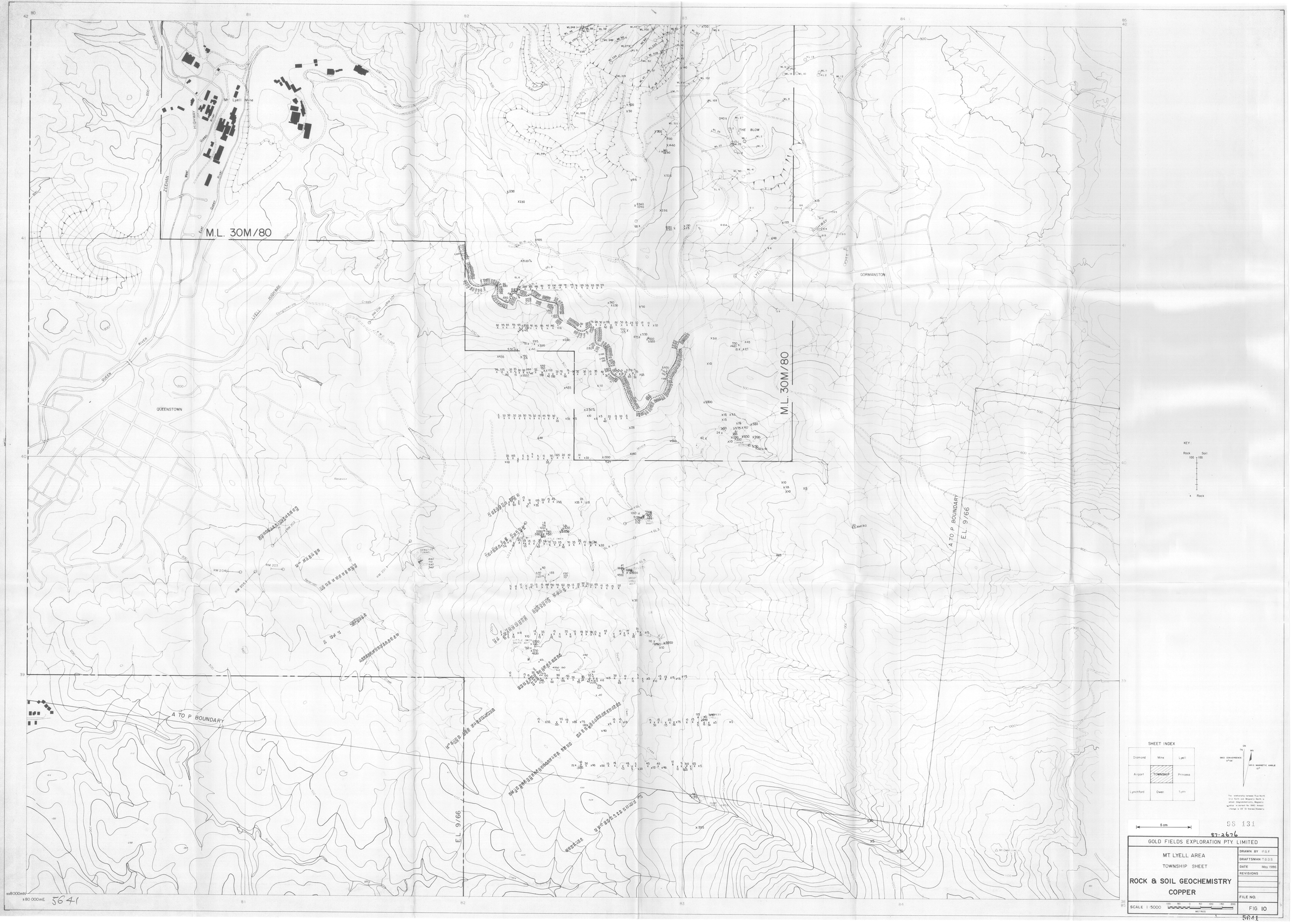
5637

5637


FIREWOOD SIDING FAULT
M.L. 30M/80
M.L. 30M/80
GREAT LYELL FAULT
GORMANSTON FAULT
OWEN SPUR FAULT
NORTH OWEN FAULT
SOUTH OWEN FAULT
A TO P BOUNDARY
E.L. 9/66
Zone where alteration and deformation obscures primary lithologies
Mt Lyell Mine
QUEENSTOWN
Pseudo gossan
South Lyell Sub Surface
The Blowers Lode
Sat Dykes
Reservoir
LIMIT OF DIFFERENTIATED MAPPING
Ccm with siliceous bodies
Ccm with abundant sulphides
Ccm with abundant sulphides and siliceous bodies
Ccm with abundant sulphides and siliceous bodies
Ccm with abundant sulphides and siliceous bodies


M.L. 30M/80
M.L. 30M/80
Mt Lyell Mine
QUEENSTOWN
GORMANSTON
A TO P BOUNDARY
A TO P BOUNDARY
E.L. 9/66
E.L. 9/66
KEY
Rock
Soil
Rock
SOURCE OF GEOCHEMICAL DATA
1. LITTLE OWEN GRID SAMPLES:- BROPHY 1974-76
2. SAMPLES N57901-58226 ARNOLD, 1985
3. SAMPLES T2701-2830, HERRMANN,1986
4. SAMPLES T2624-2700, 5001- FITZGERALD,1986
SHEET INDEX
Diamond
Mine
Lyell
Airport
TOWNSHIP
Princess
Lynchford
Owen
Tofft
GN
TN
MN
GRID CONVERGENCE 0°54'
GRID MAGNETIC ANGLE 12°
The relationship between True North and North and Magnetic North is shown diagrammatically. Magnetic variation is derived for 1980 Annual change is 0°E 10 Minutes Easterly
5 cm
98 129
87-2676
GOLD FIELDS EXPLORATION PTY. LIMITED
MT. LYELL AREA
TOWNSHIP SHEET
ROCK & SOIL GEOCHEMISTRY
SAMPLE LOCATIONS
DRAWN BY F.G.F.
DRAFTSMAN T.G.D.S.
DATE May 1986
REVISIONS
FILE NO.
SCALE 1:5000
METRES
FIG 8
5639


M.L. 30M/80
M.L. 30M/80
E.L. 9/66
E.L. 9/66
A TO P BOUNDARY
A TO P BOUNDARY
QUEENSTOWN
GORMANSTON
Mt Lyell Mine
THE BLOW
LYELL HIGHWAY
ZEEHAN HIGHWAY
QUEEN RIVER
KEY:
Rock Soil
100 100
x Rock
SHEET INDEX
Diamond
Mine
Lyell
Airport
TOWNSHIP
Princess
Lynchford
Owen
Tofft
GRID CONVERGENCE 0° 58'
GRID MAGNETIC ANGLE 12°
The relationship between True North Grid North and Magnetic North is shown diagrammatically. Magnetic variation is correct for 1980. Annual change is 0° 10' (Decreasing)
5 cm
98 130
87-2676
GOLD FIELDS EXPLORATION PTY. LIMITED
MT. LYELL AREA
TOWNSHIP SHEET
ROCK & SOIL GEOCHEMISTRY
GOLD
DRAWN BY F.G.F.
DRAFTSMAN T.G.D.S.
DATE May 1986
REVISIONS
FILE NO.
SCALE 1:5000
METRES
FIG 9
5640
5640


M.L. 30M/80
M.L. 30M/80
Mt Lyell Mine
ZEEHAN HIGHWAY
LYELL HIGHWAY
QUEEN RIVER
QUEENSTOWN
GORMANSTON
THE BLOW
A TO P BOUNDARY
E.L. 9/66
A TO P BOUNDARY
E.L. 9/66
KEY:
Rock
Soil
Rock
SHEET INDEX
Diamond
Mine
Lyell
Airport
TOWNSHIP
Princess
Lynchford
Owen
Toffi
GRID CONVERGENCE 0° 54'
GRID MAGNETIC ANGLE 12°
The relationship between True North Grid North and Magnetic North is shown diagrammatically. Magnetic value is correct for 1980. Annual change is 0.5° (0 Decimal Elsewhere)
5 cm
98 131
87-2676
GOLD FIELDS EXPLORATION PTY. LIMITED
MT. LYELL AREA
TOWNSHIP SHEET
ROCK & SOIL GEOCHEMISTRY
COPPER
DRAWN BY F.G.F.
DRAFTSMAN T.G.D.S.
DATE May 1986
REVISIONS
FILE NO.
SCALE 1:5000
METRES
FIG 10
5641

5642

LEGEND

- Surface channel sample
- Adit wall channel sample (N°·1 Adit)
- Adit wall channel sample (N°·2 Adit)
- x Rock outcrop sample
- Rock float or dump sample

SHEET REFERENCE

1:5000 TOWNSHIP SHEET

1:500 LITTLE OWEN SHEETS

6 cm

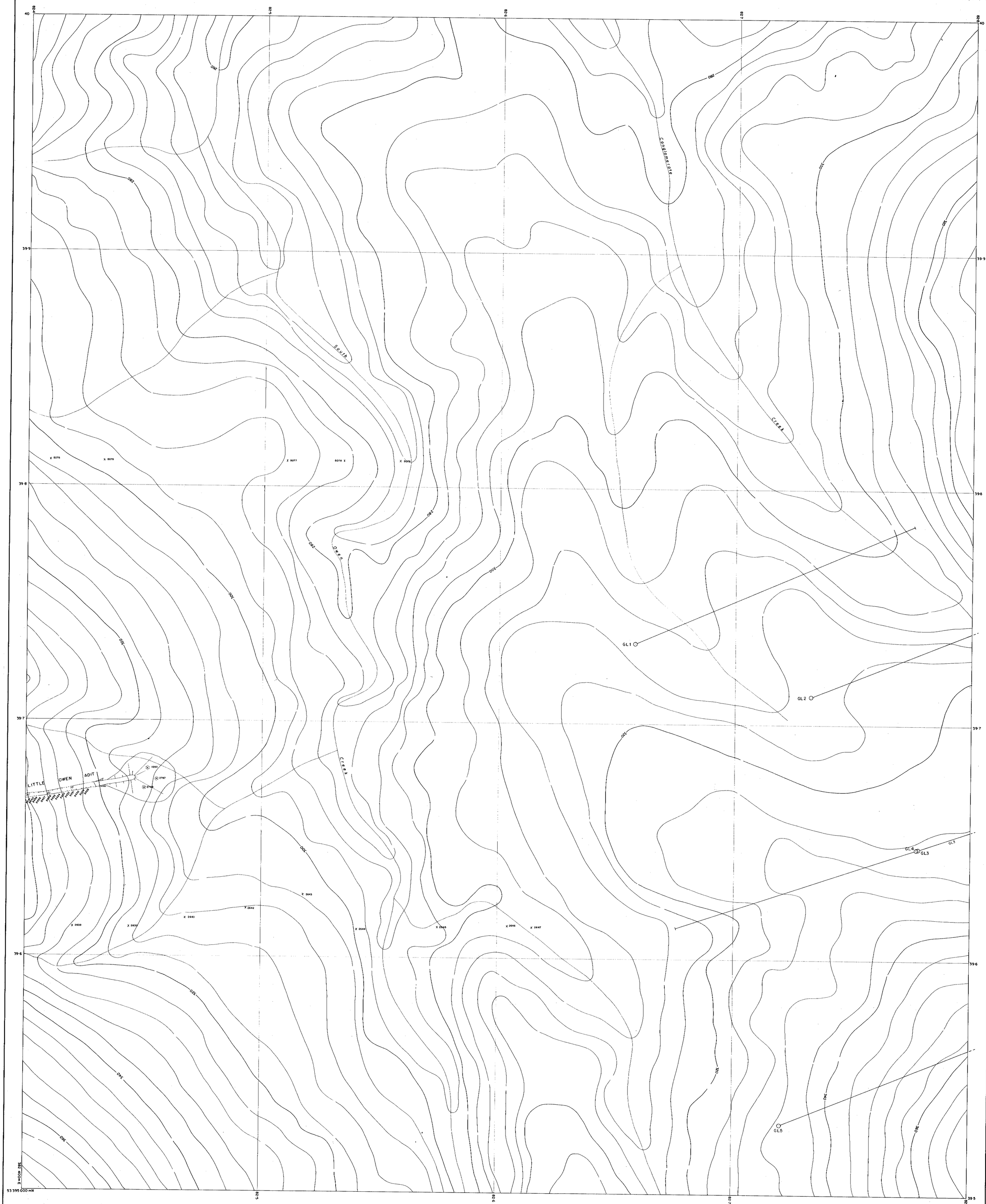
87-2676

GOLD FIELDS EXPLORATION PTY. LIMITED	
LINDA VALLEY A to P LITTLE OWEN **SAMPLE LOCATIONS**	DRAWN BY : F.G.F. DRAFTSMAN: G.M.B. DATE : June '87 REVISIONS : FILE NO.
SCALE 1:500 METRES	FIG. 11

98 132

5642

5643



SHEET REFERENCE

1:5000 TOWNSHIP SHEET

1:500 LITTLE OWEN SHEETS

5 cm

LEGEND

Adit wall channel sample

x Rock outcrop sample

⊗ Rock float or dump sample

87·2676

GOLD FIELDS EXPLORATION PTY. LIMITED

LINDA. VALLEY A to P

LITTLE OWEN

SAMPLE LOCATIONS

DRAWN BY	F.G.F.
DRAFTSMAN	G.M.B.
DATE	June '87
REVISIONS	
FILE NO.	

SCALE 1:500 — 10 5 0 10 20 METRES

FIG. 12

98 133

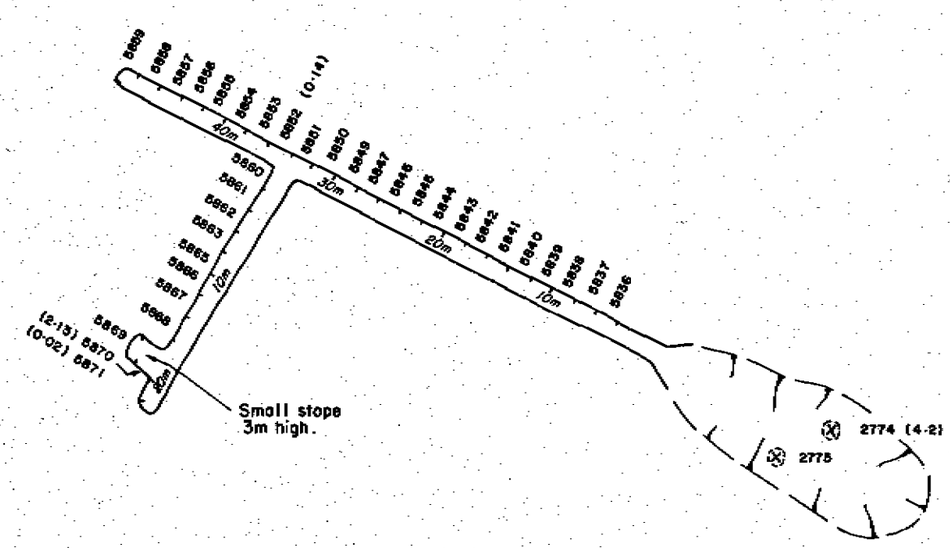
5643

122

s 339 200mN

382 200mE

382 300mE



98 134

5 cm

87-2676

s 339 100mN

LEGEND

5842/5843 Adit channel sample N°

⊗ Dump sample

(4·2) Gold assays > 0·01 g/t Au

GOLD FIELDS EXPLORATION PTY. LIMITED

A to P, QUEENSTOWN

LITTLE OWEN SOUTH ADIT

SAMPLE LOCATIONS AND GOLD GEOCHEMISTRY

DRAWN BY : F.G.F.

DRAFTSMAN: G.M.B.

DATE : June '87

REVISIONS :

FILE NO.

SCALE 1: 500

10 5 0 10 20
METRES

FIG. 13

5644



LEGEND

- Surface channel sample — Only those assays > 0·01 g/t Au shown
- Adit wall channel sample (N°·1 Adit) — Only those assays > 0·05 g/t Au shown
- Adit wall channel sample (N°·2 Adit)
- Rock outcrop sample
- Rock float or dump sample

87-2676

GOLD FIELDS EXPLORATION PTY LIMITED

LINDA VALLEY A to P
LITTLE OWEN
GOLD GEOCHEMISTRY

DRAWN BY: F.G.F
DRAFTSMAN: G.M.B.
DATE: May '87
REVISIONS:
FILE NO.

SCALE 1:500 (METRES)

FIG 14

98 135

5644

SW

382 200mE

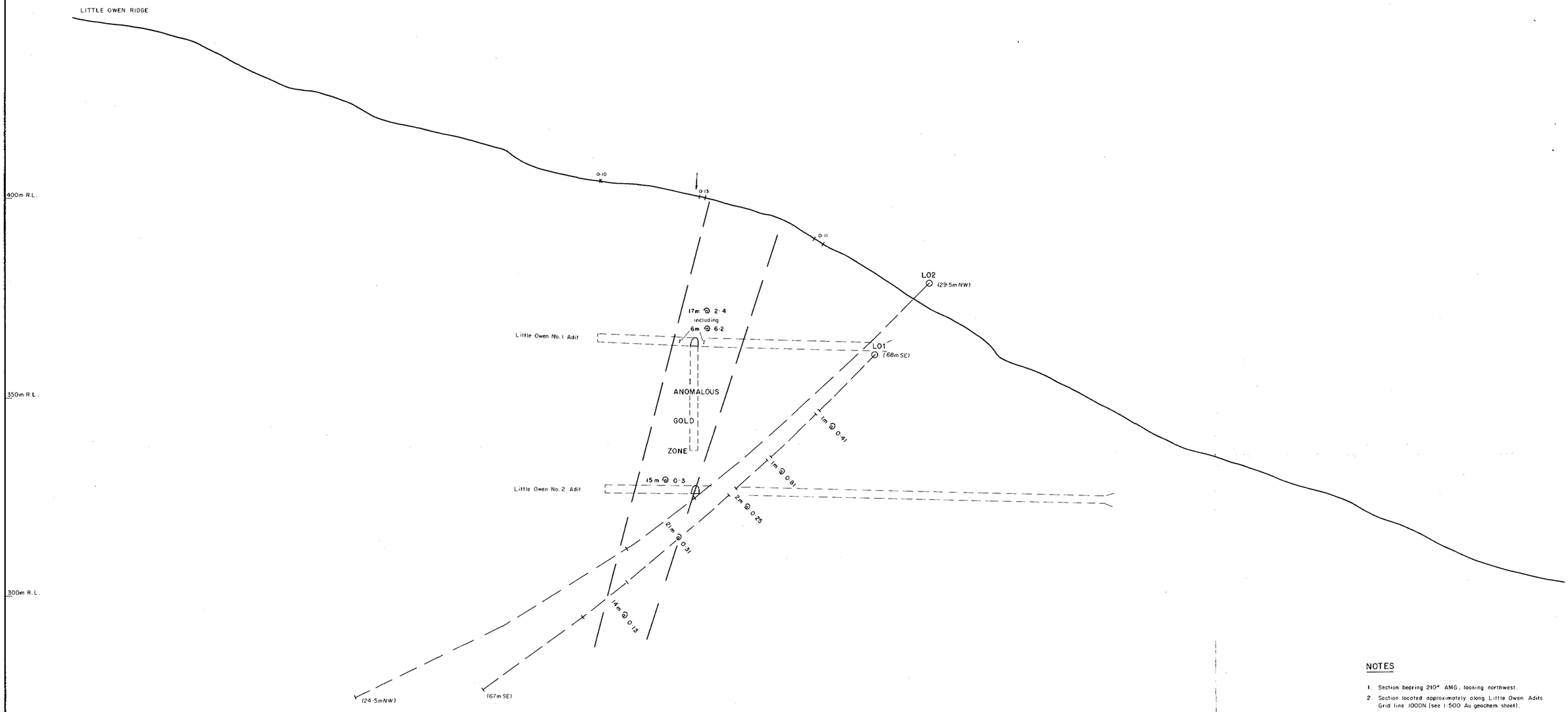
5339 600mN

382 300mE

5339 700mN

5339 800mN

NE



NOTES

1. Section bearing 210° AMG, looking northwest.
2. Section located approximately along Little Owen Adits Grid line 10000N (see 1:500 Au geochem sheet).
3. All gold assays are in g/t Au.
4. Gold anomalous zone defined by cut off grade of 0·1 g/t Au.
5. DRILL HOLES ARE PROJECTED ONTO SECTION Distance of projection is shown in brackets.

5cm

87-2676

GOLD FIELDS EXPLORATION PTY. LIMITED

LINDA VALLEY A to P
LITTLE OWEN

TRUE SECTION

GOLD ANOMALOUS ZONE
LITTLE OWEN ADITS

DRAWN BY : F.G.F.
DRAFTSMAN: G.M.B.
DATE : May '87
REVISIONS :

FILE NO.

SCALE 1:500 — 10 5 0 10 20 METRES

FIG. 15

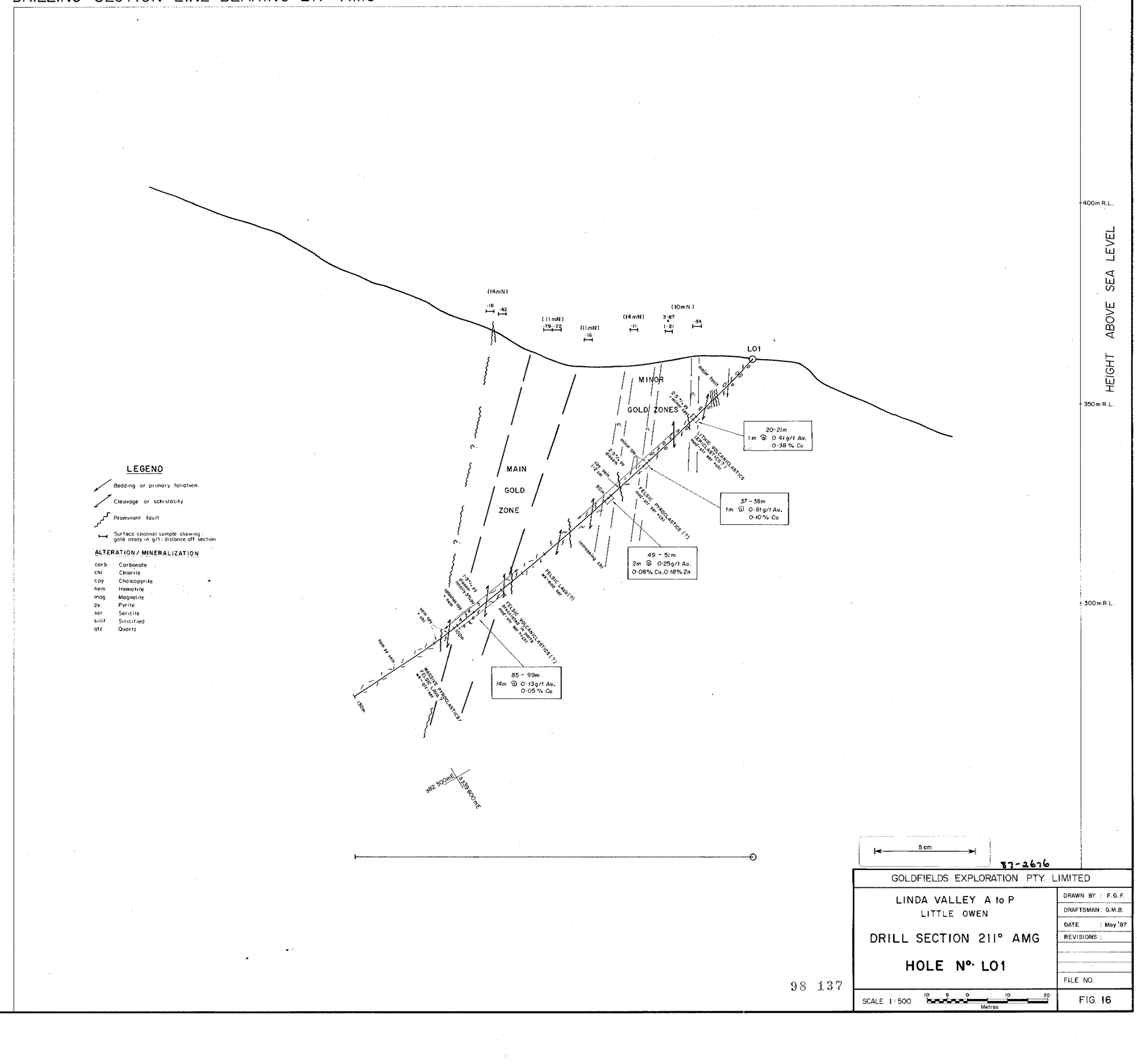
98 136

5645

5646

DRILLING SECTION LINE BEARING 211° AMG

HEIGHT ABOVE SEA LEVEL



LEGEND

- Bedding or primary foliation
- Cleavage or schistosity
- Prominent fault
- Surface channel sample showing: gold assay in g/t: distance off section

ALTERATION / MINERALIZATION

carb	Carbonate
chl	Chlorite
cpy	Chalcopyrite
hem	Hematite
mag	Magnetite
py	Pyrite
ser	Sericite
silif	Silicified
qtz	Quartz

5 cm

87-2676

GOLDFIELDS EXPLORATION PTY. LIMITED

LINDA VALLEY A to P
LITTLE OWEN

DRILL SECTION 211° AMG

HOLE N°. LO1

DRAWN BY	F.G.F.
DRAFTSMAN	G.M.B.
DATE	May '87
REVISIONS	
FILE NO.	

SCALE 1:500 (10 5 0 10 20 Metres)

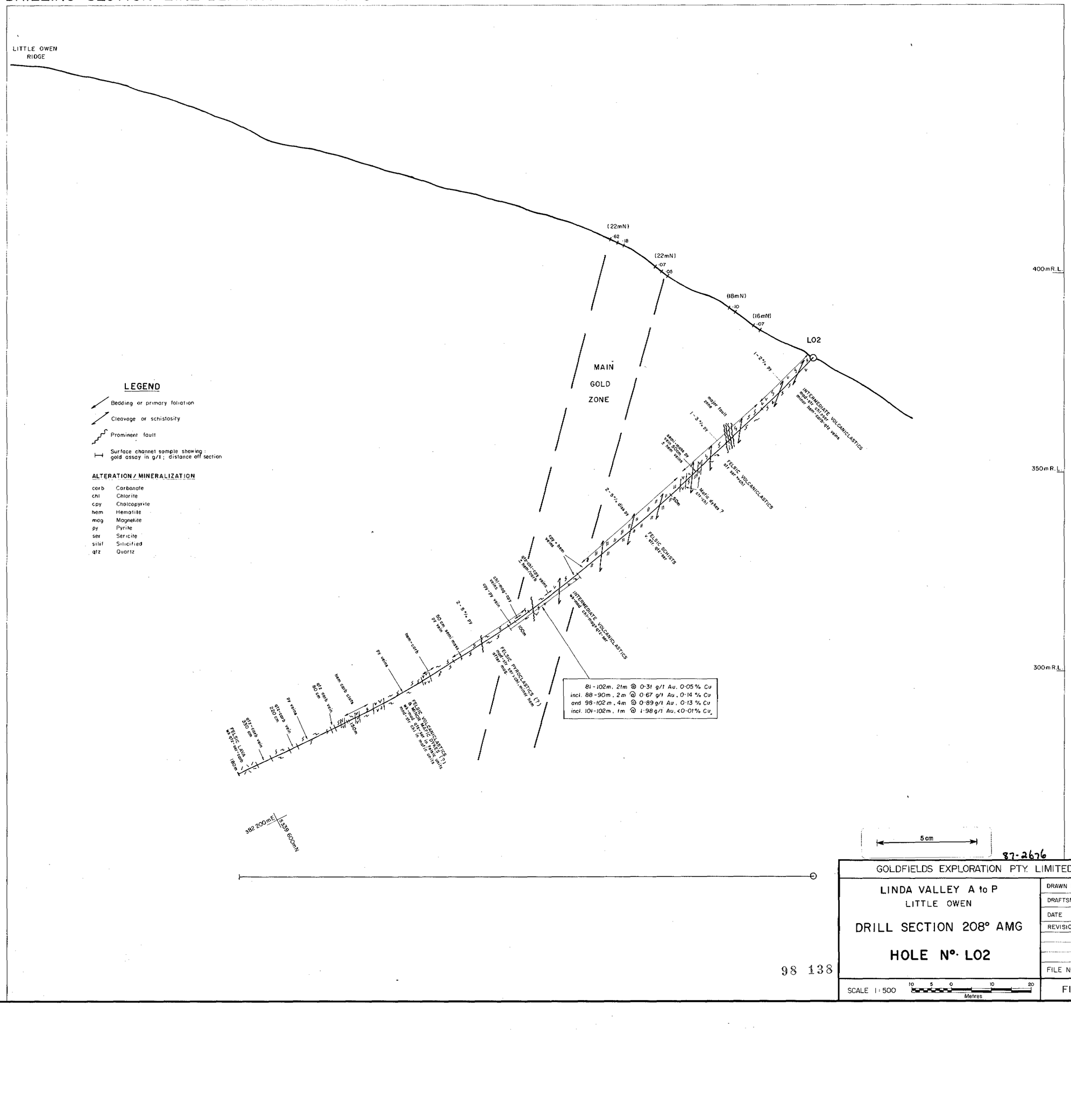
FIG. 16

98 137

5647

DRILLING SECTION LINE BEARING 208° AMG

HEIGHT ABOVE SEA LEVEL



HEIGHT ABOVE SEA LEVEL

LEGEND

- Bedding or primary foliation
- Cleavage or schistosity
- Prominent fault
- Surface channel sample showing : gold assay in g/t ; distance off section

ALTERATION / MINERALIZATION

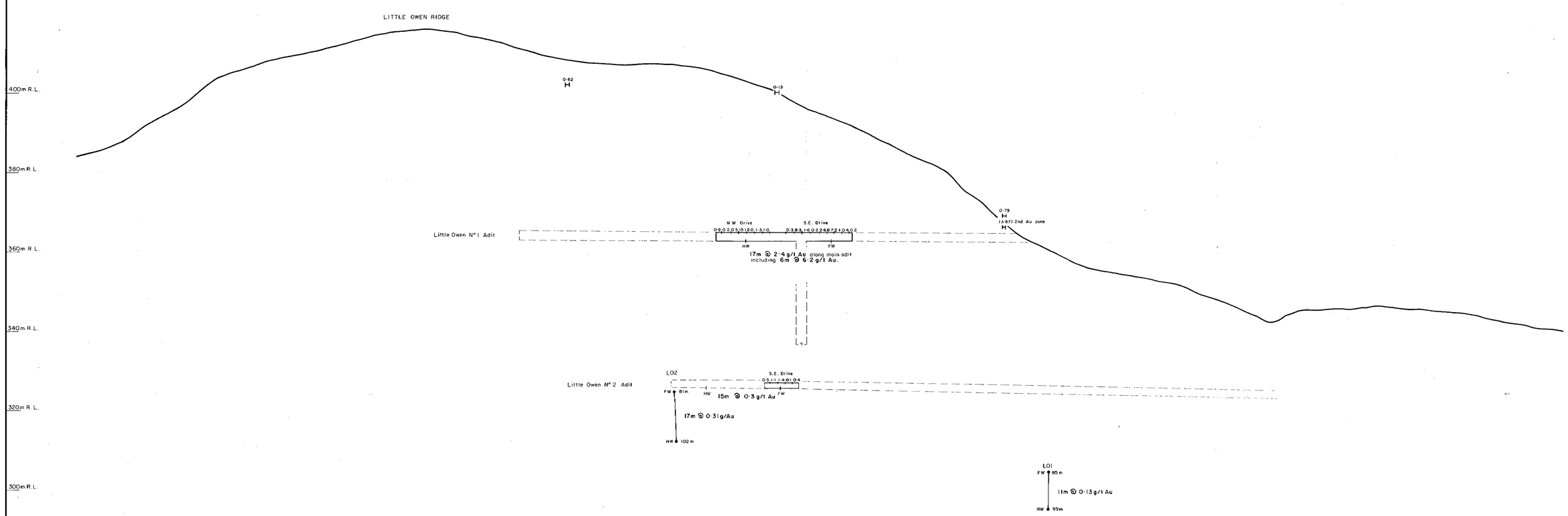
carb	Carbonate
chl	Chlorite
cpy	Chalcopyrite
hem	Hematite
mag	Magnetite
py	Pyrite
ser	Sericite
silif	Silicified
qtz	Quartz

5 cm

87-2676

98 138

GOLDFIELDS EXPLORATION PTY. LIMITED	
LINDA VALLEY A to P LITTLE OWEN DRILL SECTION 208° AMG HOLE N°. L02	DRAWN BY : F.G.F. DRAFTSMAN : G.M.B. DATE : May '87 REVISIONS : FILE NO.
SCALE 1 : 500 (10 5 0 10 20 Metres)	FIG. 17



NOTES

1. Average thicknesses of both drill intersections and main adits through the mineralized zone are true horizontal widths.
2. Assays shown along drives are from channel samples taken from one wall of the drive only, all in g/t Au.
3. Surface samples show highest assay from the gold zone.
4. The limits of the anomalous gold zone are defined by a cut off grade of 0·1 g/t Au.
5. Surface trace is along the projection reference line which is approximately mid way through the gold mineralized zone. (see 1:500 Au geochem. plan for location)
6. The longitudinal projection bearing is 300° AMG.

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GOLD FIELDS EXPLORATION PTY. LIMITED	
LINDA VALLEY A to P LITTLE OWEN **LONGITUDINAL PROJECTION** **GOLD MINERALIZED ZONE** **LITTLE OWEN ADITS**	DRAWN BY : F.G.F. DRAFTSMAN : G.M.B. DATE : May '87 REVISIONS : FILE NO.
SCALE 1: 500 (10 5 0 10 20 METRES)	FIG. 18

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5 cm

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