# EXPLORATION LICENCE 4635

(W Casey and E Brown 1:250,000 map sheet SD52-8)

## ANNUAL REPORT ON EXPLORATION

## 1 SEPTEMBER 1987 TO 31 AUGUST 1988

## NORGOLD ACTIVITY, JUNE 1988

M J Hughes and T C Bates
Norgold Limited (operator)
on behalf of the
Casey-Brown/Norgold
Joint Venture
15 August 1988

CONTENTS



TABLES



FIGURES



APPENDICES

## SUMMARY

Gold is the commodity sought in EL 4635. The exploration licence was geologically mapped at 1:10,000 scale and grab samples and BLEG samples were taken for gold analysis. Two grids, the west and central grid, were established in the two main target areas:

1 the Koolpin Formation of the west limb of the Howley anticline; and

2 the axial zone of the anticline (Wildman Siltstone).

These grids were geologically mapped at 1:5,000 and 1:2,500 scale. The west grid was costeaned at 200 m intervals along strike of the Koolpin Formation (514 samples), and minor costeans were dug on the central grid.

The maximum gold values obtained in channel samples of the above costeans were 0.6 ppm Au on the west grid and 0.4 ppm Au on the central grid. A small volume of gold, tin and tantalum-bearing gravel was located in the main drainage south from the Cosmopolitan Howley mine.

No further work is recommended.

# 1 INTRODUCTION

Exploration licence 4635 is within the Pine Creek 1:250,000 sheet (SD52-8) and Tipperary 1:100,000 (14/5) sheet (Fig 1). The licence was granted to W Casey and E Brown on 31 July 1987, subsequent to the Casey Brown Joint Venture Agreement with Norgold Limited dated 19 December 1986.

Norgold Limited conducted a brief programme of geological mapping and rock chip sampling in December 1987 (undertaken by geologist M Bennett). This was followed by trenching, mapping and sampling in June 1988 (by geologist T Bates).

The exploration target in the licence area is a gold deposit similar to that hosted by the Koolpin Formation in the nearby Cosmopolitan Howley ore body. Exploration has concentrated on Koolpin Formation stratigraphy on the western limb of the Howley anticline, and on older rocks within the axial zone.

## 2 EXPLORATION UNDERTAKEN

A 1:10,000 photogeological interpretation by consultant G Orrige was modified after field checking and rock sampling by staff of Norgold Limited (Fig 2), and 22 rock samples were collected and analysed (Table 2). Two main target areas were selected:

1 the Koolpin Formation, host to the Cosmopolitan Howley ore body (this formation is confined to the west limb of the anticline within EL 4635). CRA obtained some anomalous gold values in soil over this horizon in the 1970s (Swensson, 1979);

2 the Wildman Formation in the axial zone of the Howley anticline (the structural site of the Cosmopolitan Howley ore body and ore bodies farther north). Initial grab sampling gave some anomalous gold values in this structural position, immediately north of EL 4635.

CRA's grid was relocated, upgraded and extended southwards (the west grid; Figs 3 and 5, Table 1) and was also extended eastwards to include the axial zone of the anticline (the central grid; Fig 3). The west grid and central grid were then mapped geologically (Figs 4, 5 and 6). The prospective horizon on the west grid was trenched at 200 m traverse intervals and 514 chip samples were taken at 2-5 m intervals along the 12 trenches; 6 trenches were also sampled on the central grid (Figs 4, 5; Table 3). All trenches have since been rehabilitated. Costean geology and sample data are shown on Figs 7, 8 and 9. Ten BLEG samples were also taken from EL 4635 (Fig 2).

Samples were submitted to Amdel, Darwin for the following analyses (the trench samples were only analysed for gold):

| Element | Amdel Method | Detection Level (ppm) |
|---|---|---|
| Au | PM4/1 Fire assay with lead collection, furnace AAS, | 0.005 |
| | FA1 | 0.01 |
| Cu, Pb, Zn | A1, AAS after perchloric acid digestion | Cu 2, Pb 5, Zn 2 |
| Ag | A2, AAS after perchloric acid digestion | 0.1 |
| As, Sb, Mo, W | X1, XRF pressed powder technique | As 2, Sb 4, Mo 4, W 10 |

# 3 RESULTS

## 3.1 EL 4635 Geology, BLEG Sampling and Alluvial Sampling

EL 4635 contains the western limb and axial zone of the Howley anticline (Fig 2). The Wildman Siltstone (Mt Partridge Group) occupies the axial zone of the anticline in the eastern half of the exploration licence, and metasedimentary rocks of the South Alligator Group (Koolpin Formation, Gerowie Tuff and Mt Bonnie Formation) are exposed in the western limb. These formations are intruded by sills of Zamu Dolerite. The Howley anticline changes from a major tight fold in the north to a more open structure in the south, within which a number of tight, minor folds occur in the Wildman Siltstone. The Fenton Granite has intruded this sequence in the southeastern part of the exploration licence, where it outcrops as small rounded tors. Small pegmatite bodies, probably related to this granite, intrude the metasedimentary rocks and have been worked on a very small scale for tin and tantalum.

BLEG sample results are highly anomalous in gullies which drain the Cosmopolitan Howley mine area to the north (up to 83 ppb Au). Samples from minor gullies which only drain the licence area mostly contain less than 5 ppb Au, which is not considered anomalous for this area.

Buried stream channels were located in costeans at the south end of the western grid (Fig 8). Samples of gravel (5 kg) were panned from these, each sample representing a 10 m channel sample of gravel (Table 4). Results indicate some potential for a small gold-tin-tantalite resource in the main gully draining the Cosmopolitan Howley mine area.

## 3.2 West Grid Geology and Costean Sampling

The target zone within the Koolpin Formation contains two chert nodule horizons, a graphitic-hematitic horizon, and a chert band within the Koolpin Formation - a similar sequence to that present in the Cosmopolitan Howley mine to the north. Quartzite ("silicified dolomite") is more common in this formation than on the east limb of the fold. The metasedimentary rocks of the different formations grade from cleaved siltstone to knotted phyllite and mica schist. Pegmatite and dolerite intrude all units, particularly the Koolpin Formation between the two chert nodule bands. A large pegmatite body has intruded the Koolpin Formation in the south of the grid, dilating the sequence to give a greater apparent thickness to the formation.

The northern part of the grid was mapped prior to costeaning and the geology of Figure 4 has not been modified since (see Fig 7 for details), but final mapping of the southern part of the grid was completed after costeaning (Fig 5). Costean locations are shown on Figures 4 and 5, and costean geology and assays are given in Figures 7 and 8. Results were negative - of 514 channel samples the maximum value was 0.64 ppm Au and the mode 0.01 ppm Au.

## 3.3 Central Grid Geology and Costean Sampling

Phyllite and siltstone of the Wildman Siltstone is poorly exposed on the central grid, making geological interpretation difficult (Fig 6). Samples from six costeans located on the projected extension of the Howley anticline gave a maximum value of 0.38 ppm Au (Fig 9). Quartz veins in the costeans tend to concentrate at the interface of Zamu Dolerite and Wildman Siltstone.

## 4 EXPENDITURE

Norgold expenditure in EL 4635 in the period 1 August 1987 to 30 July 1988 totalled $38,232, as follows:

| | |
|---|---|
| Geologist Salaries | $4,126 |
| Field Assistants | 1,852 |
| Consultants | 1,285 |
| Travel | 1,195 |
| Meals/Accommodation | 2,150 |
| Vehicles | 2,858 |
| Survey and Gridding | 3,718 |
| Costeaning | 5,918 |
| Field Living and Supplies | 1,790 |
| Geology, Petrology | 393 |
| Geochemistry | 7,860 |
| General Expenses | 100 |
| Sub-total | 33,245 |
| 15% Overheads | 4,987 |
| TOTAL | $38,232 |

## 5 CONCLUSIONS AND RECOMMENDATIONS

Extensive costeaning at 200 m intervals along strike failed to reveal gold values greater than 0.6 ppm Au in that part of the sequence previously thought to be prospective (ie the Koolpin Formation). Also, there is no evidence of the tight folding and structural complexity thought to be a pre-requisite for gold mineralization of the type sought. Grab sampling and minor costeaning in the Wildman Siltstone in the vicinity of the axial zone of the Howley anticline gave a maximum value of 0.4 ppm Au. Anomalous gold, tin and tantalum was detected in a small volume of gravel from the main drainage which extends southwards from the Cosmopolitan Howley mine.

No further work is recommended.

Mark Hughes.

## REFERENCES

Swensson, C, 1979, Final Report EL 1072: CRA Exploration Ltd, Northern Territory Department of Mines and Energy report CR79/27

Table 1
Details of Chain and Compass Survey of Base-line EL 4635
(Re-establishment of CRA grid)

| Station | Magnetic Bearing | Distance (m) |
|---|---|---|
| Cnr Old Hwy & Fenton Rd | | |
| | 92° | 665 |
| Old Hwy | | |
| | 159° | 156.5 |
| BL 5000N 3000E | | |
| | 160° | 100.3 |
| BL 4900N 3000E | | |
| | 160° | 100.0 |
| BL 4800N 3000E | | |
| | 161° | 100.73 |
| BL 4700N 3000E | | |
| | 160° | 101.1 |
| BL 4600N 3000E | | |
| | 161° | 116.3 |
| BL 4500N 3000E | | |
| | 162° | 87.7 |
| BL 4400N 3000E | | |
| | 160° | 101.85 |
| BL 4300N 3000E | | |
| | 214° | 106.0 |
| BL 4200N 3000E | | |
| | 211°30° | 103.6 |
| BL 4100N 3000E | | |
| | 213°30' | 101.4 |
| BL 4000N 3000E | | |
| | 212°30' | 103.1 |
| BL 3900N 3000E | | |
| | 210°30' | 102.3 |
| BL 3800N 3000E | | |
| | 210°30' | 105.0 |
| BL 3700N 3000E | | |
| | 210° | 109.9 |
| BL 3600N 3000E | | |
| | 204°30' | 105.9 |
| BL 3500N 3000E | | |
| | 240°30' | 111.9 |
| BL 3400N 3000E | | |
| | 210° | 93.2 |
| BL 3300N 3000E | | |
| | 240° | 101.4 |
| BL 3200N 3000E | | |
| | 242° | 106.2 |
| BL 3100N 3000E | | |
| | 231° | 101.7 |
| BL 3000N 3000E | | |
| | 231°30' | 101.4 |
| BL 2900N 3000E | | |
| | 242° | 108.2 |
| BL 2800N 3000E | | |
| To BL 1300N 3000E | 211° (inclusive) | 100.0 (all same) |
| BL 4300N 3000E | | |
| | 71° | 606.75 |
| BL 4300N 3600E | | |
| To BL 3100N 3600E | 160° (inclusive) | 100.0 (all same) |
| BL 4300N 3600E | | |
| | 340° | 100.0 (all same) |
| BL 4500N 3600E | (inclusive) | |

Note: All bearings and distances approximate

Table 2
Rock Chip Samples - EL 4635

| Field No | Sample No | ppb Au | ppm Cu | Pb | Zn | Ag | As | Sb | Mo | W | Lithology | Other Details |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 75509 | 12 | 335 | <5 | 28 | <0.1 | 22 | 10 | 4 | 20 | Channel sample across mullock dump | |
| 2 | 75510 | 5 | 125 | 265 | 100 | 0.7 | 105 | 6 | 12 | 25 | Silstone with chert nodules and pegmatite | Rock chip sample along costean |
| 3 | 75511 | <1 | 17 | <5 | 18 | 0.5 | 220 | 18 | 20 | 35 | Hematitic siltstone and quartzite | Between lines 2800N and 2900N |
| 4 | 75512 | <1 | 15 | <5 | 16 | 0.5 | 140 | <4 | 8 | 45 | Various lithologies | 3000N - An across strike rock chip sample |
| 5 | 75513 | <1 | 305 | 135 | 12 | 0.7 | 72 | 18 | 22 | <10 | Various lithologies | 3200N - An across strike rock chip sample |
| 6 | 75514 | <1 | 105 | <5 | 26 | 0.3 | 155 | 6 | 9 | 35 | Various lithologies | 3400N - An across strike rock chip sample |
| 7 | 75515 | <1 | 76 | <5 | 20 | 0.4 | 80 | 6 | 9 | 30 | Various lithologies | 3600N - An across strike rock chip sample |
| 8 | 75516 | <1 | 7 | <5 | 54 | 0.1 | 80 | 10 | 4 | 55 | Various lithologies | 3800N - An across strike rock chip sample |
| 9 | 75517 | 40 | 175 | <5 | 35 | 0.1 | 210 | 16 | 32 | <10 | Various lithologies | 4000N - An across strike rock chip sample |
| 10 | 75518 | 10 | 34 | <5 | 15 | 0.8 | 50 | 6 | 15 | 15 | Quartz and phyllite | Near 4000N - old diggings |
| 11 | 75519 | <1 | 5 | <5 | 8 | <0.1 | 15 | <4 | 5 | <10 | Various lithologies | 4200N - An across strike rock chip sample |
| 12 | 75520 | 1 | 8 | <5 | 44 | 0.3 | 72 | 6 | 13 | 25 | Pegmatite | 4300N - Old diggings on pegmatite |
| 13 | 75521 | <1 | 23 | <5 | 29 | <0.1 | <2 | <4 | 5 | <10 | Various lithologies | 4400N - An across strike rock chip sample |
| 14 | 75522 | 5 | 87 | 13 | 13 | 0.3 | 58 | 18 | 10 | 20 | Various lithologies | 4600N - An across strike rock chip sample |
| 15 | 75523 | <1 | 96 | <5 | 42 | 0.2 | 46 | 20 | 14 | <10 | Various lithologies | 4800N - An across strike rock chip sample |
| 16 | 75524 | <1 | 10 | <5 | 8 | <0.1 | 110 | 6 | 4 | <10 | Various lithologies | 5000N - An across strike rock chip sample |
| 17 | 75525 | 120 | 210 | 30 | 29 | <0.1 | 185 | 10 | 15 | <10 | Siltstones and quartz | Rock chip sample from close to anticlinal axis |
| 18 | 75526 | 50 | 9 | 24 | 19 | <0.1 | 440 | 18 | 6 | 60 | Ferruginous quartz | Rock chip sample from close to anticlinal axis |
| 19 | 75527 | 1,430 | 39 | <5 | 27 | <0.1 | 125 | 6 | 4 | <10 | Channel sample across mullock dump | Channel sample from pits along anticlinal axis |
| 20 | 75528 | 210 | 12 | <5 | 9 | <0.1 | 150 | 4 | 7 | 20 | Quartz float | South of pits in (20) |
| 21 | 75529 | 1,030 | 205 | <5 | 42 | <0.1 | 290 | 8 | 2 | <10 | Siltstones and quartz | Old pits and scrapes in creek (alluvials?) |
| 22 | 75530 | 150 | 48 | <5 | 29 | 0.4 | 240 | 10 | 15 | 10 | Ironstone and quartz | West of anticlinal axis |

Table 3
Trench Samples - West Grid

| Trench | Length (m) | Sampled Length (m) | Samples | |
|---|---|---|---|---|
| 4500N | 278 | 250 | 65 | |
| 4300N | 250 | 218 | 65 | |
| 4100N | 102 | 102 | 39 | |
| 3900N | 121 | 121 | 43 | |
| 3700N | 160 | 136 | 47 | |
| 3500N | 127 | 96 | 33 | |
| 3300N | 200 | 161 | 52 | |
| 3100N | 206 | 171 | 60 | |
| 2900N | 218 | 201 | 49 | |
| 2700N | 301 | 99 | 24 | |
| 2500N | 333 | 85 | 17 | |
| 2300N | 131 | 84 | 20 | |
| 12 trenches | 2,427 | 1,724 | 514 | 56½ hours excavator |

Table 4
Alluvial Sampling, 2300N and 2500N
(5 kg panned samples)

| Traverse | Sample | Gold Colours | Comments |
|---|---|---|---|
| 2300N | A3 | 1 med-fine | |
| | A4 | 1 med, 4 fine | 1 bright red garnet |
| 2500N | A5 | 2 med-fine | |
| | A6 | | 1 well-formed tantalite crystal |
| | A7 | | |
| | A8 | 1 fine | |
| | A9 | 1 med-coarse, 2 med, 10 fine | abundant cassiterite, tantalite |
| | A10 | 1 coarse | cassiterite |
| | A11 | 5 fine | 2 coarse cassiterite |
| | A12 | 4 med, 10 fine | |
| | A13 | 3 fine | tourmaline |
| | A14 | 2 fine | |

CLASSIC COMLABS LTD

Analysis code FA1 | Report D1506/88 | Page G1

Order No. MA 5434 | Results in ppm

| Sample | Au |
|---|---|
| 46601 | 0.01 |
| 46602 | 0.02 |
| 46603 | 0.01 |
| 46604 | 0.02 |
| 46605 | 0.02 |
| 46606 | 0.03 |
| 46607 | 0.04 |
| 46608 | <0.01 |
| 46609 | 0.02 |
| 46610 | 0.01 |
| 46611 | <0.01 |
| 46612 | 0.01 |
| 46613 | <0.01 |
| 46614 | 0.01 |
| 46615 | 0.02 |
| 46616 | <0.01 |
| 46617 | 0.01 |
| 46618 | 0.01 |
| 46619 | <0.01 |
| 46620 | 0.01 |
| 46621 | 0.02 |
| 46622 | 0.02 |
| 46623 | 0.02 |
| 46624 | 0.01 |
| 46625 | 0.02 |
| 46626 | <0.01 |
| 46627 | <0.01 |
| 46628 | <0.01 |
| 46629 | <0.01 |
| 46630 | <0.01 |
| 46631 | <0.01 |
| 46632 | <0.01 |
| 46633 | <0.01 |
| 46634 | <0.01 |
| 46635 | <0.01 |
| 46636 | <0.01 |
| 46637 | 0.01 |
| 46638 | 0.01 |
| 46639 | 0.01 |
| 46640 | <0.01 |
| Detn limit | (0.01) |

CLASSIC COMLABS LTD

Analysis code FA1 | Report D1506/88 | Page G2

Order No. MA 5434 | Results in ppm

| Sample | Au |
|---|---|
| 46641 | 0.01 |
| 46642 | <0.01 |
| 46643 | 0.01 |
| 46644 | <0.01 |
| 46645 | <0.01 |
| 46646 | <0.01 |
| 46647 | <0.01 |
| 46648 | 0.01 |
| 46649 | <0.01 |
| 46650 | 0.04 |
| 46651 | 0.01 |
| 46652 | <0.01 |
| 46653 | <0.01 |
| 46654 | 0.02 |
| 46655 | 0.01 |
| 46656 | 0.01 |
| 46657 | 0.03 |
| 46658 | 0.02 |
| 46659 | 0.02 |
| 46660 | <0.01 |
| 46661 | <0.01 |
| 46662 | <0.01 |
| 46663 | <0.01 |
| 46664 | <0.01 |
| 46665 | <0.01 |
| 46666 | 0.04 |
| 46667 | 0.03 |
| 46668 | 0.02 |
| 46669 | <0.01 |
| 46670 | <0.01 |
| 46671 | 0.02 |
| 46672 | 0.01 |
| 46673 | <0.01 |
| 46674 | 0.01 |
| 46675 | 0.02 |
| 46676 | <0.01 |
| 46677 | 0.01 |
| 46678 | 0.01 |
| 46679 | <0.01 |
| 46680 | 0.02 |
| Detn limit | (0.01) |

CLASSIC COMLABS LTD

Analysis code FA1 | Report D1506/88 | Page G3

Order No. MA 5434 | Results in ppm

| Sample | Au |
|---|---|
| 46681 | <0.01 |
| 46682 | 0.01 |
| 46683 | 0.02 |
| 46684 | 0.01 |
| 46685 | 0.08 |
| 46686 | 0.01 |
| 46687 | <0.01 |
| 46688 | <0.01 |
| 46689 | <0.01 |
| 46690 | 0.02 |
| 46691 | 0.02 |
| 46692 | 0.06 |
| 46693 | 0.04 |
| 46694 | 0.02 |
| 46695 | 0.02 |
| 46696 | 0.01 |
| 46697 | 0.02 |
| 46698 | <0.01 |
| 46699 | <0.01 |
| 46700 | <0.01 |
| 47401 | <0.01 |
| 47402 | <0.01 |
| 47403 | <0.01 |
| 47404 | <0.01 |
| 47405 | <0.01 |
| 47406 | <0.01 |
| 47407 | <0.01 |
| 47408 | <0.01 |
| 47409 | <0.01 |
| 47410 | <0.01 |
| 47411 | Listed Not Received |
| 47412 | 0.09 |
| 47413 | 0.16 |
| 47414 | 0.08 |
| 47415 | 0.11 |
| 47416 | 0.06 |
| 47417 | 0.06 |
| 47418 | 0.23 |
| 47419 | 0.13 |
| 47420 | 0.05 |
| Detn limit | (0.01) |

CLASSIC COMLABS LTD

Analysis code FA1 | Report D1506/88 | Page G4

Order No. MA 5434 | Results in ppm

| Sample | Au |
|---|---|
| 47421 | 0.07 |
| 47422 | 0.03 |
| 47423 | <0.01 |
| 47424 | <0.01 |
| 47425 | 0.02 |
| 47426 | 0.06 |
| 47427 | <0.01 |
| 47428 | <0.01 |
| 47429 | <0.01 |
| 47430 | <0.01 |
| 47431 | <0.01 |
| 47432 | <0.01 |
| 47433 | 0.02 |
| 47434 | <0.01 |
| 47435 | 0.03 |
| 47436 | 0.04 |
| 47437 | 0.01 |
| 47438 | <0.01 |
| 47439 | <0.01 |
| 47440 | 0.08 |
| 47441 | <0.01 |
| 47442 | <0.01 |
| 47443 | <0.01 |
| 47444 | <0.01 |
| 47445 | <0.01 |
| 47446 | <0.01 |
| 47447 | <0.01 |
| 46438 | 0.04 |
| 46439 | 0.05 |
| 46440 | 0.03 |
| 46441 | 0.02 |
| 46442 | 0.02 |
| 46443 | 0.03 |
| 46444 | 0.02 |
| 46445 | 0.01 |
| 46446 | 0.01 |
| 46447 | 0.01 |
| 46448 | 0.03 |
| 46449 | 0.02 |
| 46450 | 0.03 |
| Detn limit | (0.01) |

CLASSIC COMLABS LTD

Analysis code FA1 | Report D1506/88 | Page G5

Order No. MA 5434 | Results in ppm

| Sample | Au |
|---|---|
| 46451 | 0.07 |
| 46452 | 0.09 |
| 46453 | 0.06 |
| 46454 | 0.04 |
| 46455 | 0.04 |
| 46456 | 0.04 |
| 46457 | 0.03 |
| 46458 | 0.04 |
| 46459 | 0.06 |
| 46460 | 0.05 |
| 46461 | 0.05 |
| 46462 | <0.01 |
| 46463 | 0.01 |
| 46464 | 0.03 |
| 46465 | <0.01 |
| 46466 | <0.01 |
| 46467 | <0.01 |
| 46468 | <0.01 |
| 46469 | <0.01 |
| 46470 | <0.01 |
| 46471 | <0.01 |
| 46472 | <0.01 |
| 46473 | <0.01 |
| 46474 | 0.02 |
| 46475 | 0.03 |
| 46476 | 0.04 |
| 46477 | 0.04 |
| 46478 | 0.04 |
| 46479 | 0.01 |
| 46480 | 0.03 |
| 46481 | 0.01 |
| 46482 | 0.04 |
| 46483 | <0.01 |
| 46484 | <0.01 |
| 46485 | 0.05 |
| 46486 | 0.05 |
| 46487 | 0.01 |
| 46488 | 0.06 |
| 46489 | 0.02 |
| 46490 | 0.01 |
| 46491 | <0.01 |
| 46492 | 0.01 |
| 46493 | <0.01 |
| 46494 | 0.01 |
| Detn limit | (0.01) |

CLASSIC COMLABS LTD

Analysis code FA1 | Report D1506/88 | Page G6

Order No. MA 5434 | Results in ppm

| Sample | Au |
|---|---|
| 46495 | <0.01 |
| 46496 | <0.01 |
| 46497 | <0.01 |
| 46498 | <0.01 |
| 46499 | 0.01 |
| 46500 | <0.01 |
| 76657 | <0.01 |
| 76658 | <0.01 |
| 76706 | <0.01 |
| Detn limit | (0.01) |

CLASSIC COMLABS LTD

Analysis code FA1 | Report D1579/88 | Page G1

Order No. MA 5438 | Results in ppm

| Sample | Au |
|---|---|
| 47470 | <0.01 |
| 47471 | 0.12 |
| 47472 | 0.30 |
| 47473 | 0.18 |
| 47474 | 0.24 |
| 47475 | 0.03 |
| 47476 | 0.02 |
| 47477 | 0.02 |
| 47478 | 0.06 |
| 47479 | 0.09 |
| 47480 | 0.04 |
| 47481 | 0.06 |
| 47482 | 0.03 |
| 47483 | 0.01 |
| 47484 | 0.02 |
| 47485 | <0.01 |
| 47486 | 0.01 |
| 47487 | 0.02 |
| 47488 | 0.07 |
| 47489 | 0.05 |
| 47490 | 0.03 |
| 47491 | <0.01 |
| 47492 | <0.01 |
| 47493 | <0.01 |
| 47494 | <0.01 |
| 47495 | <0.01 |
| 47496 | 0.01 |
| 47497 | 0.05 |
| 47498 | 0.02 |
| 47499 | 0.03 |
| 47500 | 0.03 |
| 49501 | 0.01 |
| 49502 | 0.09 |
| 49503 | 0.07 |
| 49504 | 0.01 |
| 49505 | 0.01 |
| 49506 | <0.01 |
| 49507 | 0.02 |
| 49508 | 0.03 |
| 49509 | 0.02 |
| Detn limit | (0.01) |

Analysis code FA1 | Report D1579/88 | Page G2

Order No. MA 5438 | Results in ppm

| Sample | Au |
|---|---|
| 49510 | 0.02 |
| 49511 | 0.04 |
| 49512 | 0.12 |
| 49513 | 0.09 |
| 49514 | 0.05 |
| 49515 | 0.38 |
| 49516 | 0.03 |
| 49517 | 0.02 |
| 49518 | <0.01 |
| 49519 | <0.01 |
| 49520 | <0.01 |
| 49521 | 0.03 |
| 49522 | 0.04 |
| 49523 | 0.04 |
| 49524 | 0.02 |
| 49525 | 0.02 |
| 49526 | 0.03 |
| 49527 | 0.02 |
| 49528 | 0.01 |
| 49529 | <0.01 |
| 49530 | <0.01 |
| 72725 | <0.01 |
| Detn limit | (0.01) |

Analysis code PM3/2 Report D1401/88 Page G1

Order No. MA 5423 Results in ppm

| Sample | Au |
|---|---|
| 72601 | 0.04 |
| 72602 | 0.04 |
| 72603 | 0.04 |
| 72604 | 0.06 |
| 72605 | 0.06 |
| 72606 | 0.08 |
| 72607 | 0.07 |
| 72608 | 0.18 |
| 72609 | 0.14 |
| 72610 | 0.04 |
| 72611 | 0.03 |
| 72612 | 0.02 |
| 72613 | 0.03 |
| 72614 | 0.01 |
| 72615 | 0.01 |
| 72616 | 0.01 |
| 72617 | 0.02 |
| 72618 | 0.02 |
| 72619 | 0.02 |
| 72620 | 0.01 |
| 72621 | 0.01 |
| 72622 | 0.01 |
| 72623 | 0.01 |
| 72624 | 0.01 |
| 72625 | <0.01 |
| 72626 | 0.02 |
| 72627 | 0.02 |
| 72628 | 0.01 |
| 72629 | 0.04 |
| 72630 | 0.01 |
| 72631 | 0.05 |
| 72632 | 0.02 |
| 72633 | 0.02 |
| 72634 | 0.02 |
| 72635 | 0.02 |
| 72636 | 0.10 |
| 72637 | 0.03 |
| 72638 | 0.01 |
| 72639 | 0.07 |
| 72640 | 0.01 |
| Detn limit | (0.01) |

mdel

Analysis code PM3/2 Report D1401/88 Page G2

Order No. MA 5423 Results in ppm

| Sample | Au |
|---|---|
| 72641 | 0.02 |
| 72642 | 0.02 |
| 72643 | 0.02 |
| 72644 | <0.01 |
| 72645 | 0.01 |
| 72646 | 0.14 |
| 72647 | 0.07 |
| 72648 | 0.02 |
| 72649 | 0.02 |
| 72650 | <0.01 |
| 72651 | <0.01 |
| 72652 | <0.01 |
| 72653 | <0.01 |
| 72654 | <0.01 |
| 72655 | <0.01 |
| 72656 | <0.01 |
| 72657 | <0.01 |
| 72658 | 0.01 |
| 72659 | <0.01 |
| 72660 | <0.01 |
| 72661 | 0.02 |
| 72662 | <0.01 |
| 72663 | <0.01 |
| 72664 | 0.03 |
| 72665 | 0.01 |
| 72666 | 0.02 |
| 72667 | 0.01 |
| 72668 | 0.02 |
| 72669 | <0.01 |
| 72670 | 0.01 |
| 72671 | 0.01 |
| 72672 | <0.01 |
| 72673 | 0.02 |
| 72674 | 0.03 |
| 72675 | <0.01 |
| 72676 | 0.01 |
| 72677 | 0.05 |
| 72678 | 0.02 |
| 72679 | 0.04 |
| 72680 | 0.04 |
| 72681 | 0.03 |
| 72682 | 0.02 |
| 72683 | 0.05 |
| 72501 | <0.01 |
| Detn limit | (0.01) |

Analysis code PM3/2 Report D1434/88 Page G1

Order No. MA 5427 Results in ppm

| Sample | Au |
|---|---|
| 72701 | 0.04 |
| 72702 | 0.02 |
| 72703 | 0.01 |
| 72704 | 0.01 |
| 72705 | 0.01 |
| 72706 | 0.01 |
| 72707 | 0.01 |
| 72708 | <0.01 |
| 72709 | <0.01 |
| 72711 | <0.01 |
| 72712 | 0.01 |
| 72713 | <0.01 |
| 72714A | <0.01 |
| 72714B | 0.01 |
| 72715 | <0.01 |
| 72716 | <0.01 |
| 72717 | <0.01 |
| 72718 | <0.01 |
| 72719 | <0.01 |
| 72720 | <0.01 |
| 72721 | 0.01 |
| 72722 | 0.01 |
| 72723 | <0.01 |
| 72724 | <0.01 |
| 72725 | Listed Not Received |
| 72726 | <0.01 |
| 72727 | 0.01 |
| 72728 | <0.01 |
| 72729 | <0.01 |
| 72730 | <0.01 |
| 72731 | <0.01 |
| 72732 | <0.01 |
| 72733 | <0.01 |
| 72734 | <0.01 |
| 72735 | <0.01 |
| 72736 | <0.01 |
| 72737 | <0.01 |
| 72738 | 0.01 |
| 72739 | <0.01 |
| 72740 | <0.01 |
| 72741 | <0.01 |
| Detn limit | (0.01) |

Two samples marked 72714 received,now marked A & B

Analysis code PM3/2 Report D1434/88 Page G2

Order No. MA 5427 Results in ppm

| Sample | Au |
|---|---|
| 72742 | <0.01 |
| 72743 | <0.01 |
| 72744 | <0.01 |
| 72745 | <0.01 |
| 72746 | <0.01 |
| 72747 | <0.01 |
| 72748 | <0.01 |
| 72749 | <0.01 |
| 72750 | 0.01 |
| 72751 | <0.01 |
| 72752 | <0.01 |
| 72753 | <0.01 |
| 72754 | 0.01 |
| 72755 | 0.02 |
| 72756 | <0.01 |
| 72757 | <0.01 |
| 72758 | 0.06 |
| 72759 | 0.03 |
| 72760 | 0.01 |
| 72761 | 0.02 |
| 72762 | 0.02 |
| 72763 | 0.01 |
| 72764 | 0.01 |
| 72765 | 0.01 |
| 72766 | 0.03 |
| 72767 | Listed Not Received |
| 72768 | <0.01 |
| 72769 | <0.01 |
| 72770 | <0.01 |
| 72771 | <0.01 |
| 72772 | <0.01 |
| 72773 | <0.01 |
| 72774 | <0.01 |
| 72775 | <0.01 |
| 72776 | 0.01 |
| 72777 | 0.01 |
| 72778 | 0.01 |
| 72779 | 0.01 |
| 72780 | 0.01 |
| 72781 | <0.01 |
| Detn limit | (0.01) |

mdel

Analysis code PM3/2 | Report D1434/88 | Page G3

Order No. MA 5427 | Results in ppm

| Sample | Au |
|---|---|
| 72782 | <0.01 |
| 72783 | <0.01 |
| 72784 | <0.01 |
| 72785 | <0.01 |
| 72786 | <0.01 |
| 72787 | <0.01 |
| 72788 | <0.01 |
| 72789 | <0.01 |
| 72790 | <0.01 |
| 76659 | <0.01 |
| 76660 | 0.01 |
| 76661 | <0.01 |
| 76662 | <0.01 |
| 76664 | <0.01 |
| 76665 | <0.01 |
| 76666 | <0.01 |
| 76667 | <0.01 |
| 76668 | <0.01 |
| 76669 | 0.01 |
| 76670 | <0.01 |
| 76671 | <0.01 |
| 76672 | <0.01 |
| 76673 | <0.01 |
| 76674 | <0.01 |
| 76675 | <0.01 |
| 76676 | <0.01 |
| 76677 | <0.01 |
| 76678 | <0.01 |
| 76679 | <0.01 |
| 76680 | <0.01 |
| 76681 | <0.01 |
| 76682 | <0.01 |
| 76683 | <0.01 |
| 76684 | 0.01 |
| 76685 | <0.01 |
| 76686 | <0.01 |
| 76687 | <0.01 |
| 76688 | <0.01 |
| 76689 | <0.01 |
| 76690 | 0.01 |
| Detn limit | (0.01) |

Analysis code PM3/2 | Report D1434/88 | Page G4

Order No. MA 5427 | Results in ppm

| Sample | Au |
|---|---|
| 76691 | <0.01 |
| 76692 | 0.04 |
| 76693 | 0.02 |
| 76694 | 0.01 |
| 76695 | 0.01 |
| 76696 | 0.02 |
| 76697 | 0.12 |
| 76698 | 0.28 |
| 76699 | 0.32 |
| 76700 | 0.24 |
| Detn limit | (0.01) |

ANALYSIS

| SAMPLE MARK | Au ppm |
|---|---|
| 76530 | 0.01 |
| 76531 | <0.01 |
| 76532 | 0.01 |
| 76533 | 0.04 |
| 76534 | 0.05 |
| 76535 | 0.02 |
| 76536 | 0.01 |
| 76537 | 0.04 |
| 76538 | 0.04 |
| 76539 | 0.02 |
| 76540 | 0.01 |
| 76541 | 0.04 |
| 76542 | 0.02 |
| 76543 | 0.01 |

METHOD : FA1

ANALYSIS

| SAMPLE MARK | Au ppb | Au(ppb) Repeats |
|---|---|---|
| 49958 | 1.61 | |
| 49959 | 1.43 | |
| 49960 | 1.29 | |
| 49961 | 1.19 | |
| 49962 | 1.00 | |
| 49963 | 1.35 | |
| 49964 | 1.37 | |
| 49965 | 3.53 | |
| 49966 | 1.25 | |
| 49967 | 1.06 | |
| 49968 | 1.69 | |
| 49969 | 0.60 | 0.74 |
| 49970 | 83 | 90 |
| 49971 | 2.38 | 3.34 |
| 49972 | 68 | 78 |
| 49973 | 0.86 | |
| 49974 | 0.96 | |
| 49975 | 31 | 26 |
| 49976 | 5.36 | |
| 49977 | 4.00 | 5.32 |
| 49978 | 2.24 | |
| 49979 | 1.47 | |
| 49980 | 1.60 | |
| 49981 | 3.54 | |
| 49982 | 0.87 | |

METHOD : BLEG 2

ANALYSIS

| SAMPLE MARK | Au ppb |
|---|---|
| 49983 | 0.79 |
| 49984 | 1.51 |
| 49985 | 0.75 |
| 49986 | 1.69 |
| 49987 | 1.40 |
| 49988 | 3.75 |
| 49989 | 1.12 |
| 49990 | 1.33 |
| 76544 | 0.49 |
| 76545 | 0.24 |

METHOD : BLEG 2

amdel

Analysis code PM3/2 Report D1459/88 Page G1

Order No. MA 5429 Results in ppm

| Sample | Au |
|---|---|
| 76601 | 0.04 |
| 76602 | <0.01 |
| 76603 | 0.02 |
| 76604 | 0.03 |
| 76605 | 0.01 |
| 76606 | <0.01 |
| 76607 | 0.02 |
| 76608 | <0.01 |
| 76609 | <0.01 |
| 76610 | <0.01 |
| 76611 | <0.01 |
| 76612 | <0.01 |
| 76613 | <0.01 |
| 76614 | <0.01 |
| 76615 | 0.02 |
| 76616 | 0.04 |
| 76617 | 0.02 |
| 76618 | <0.01 |
| 76619 | <0.01 |
| 76620 | <0.01 |
| 76621 | <0.01 |
| 76622 | <0.01 |
| 76623 | <0.01 |
| 76624 | <0.01 |
| 76625 | 0.01 |
| 76626 | 0.01 |
| 76627 | <0.01 |
| 76628 | 0.01 |
| 76629 | 0.01 |
| 76630 | <0.01 |
| 76631 | <0.01 |
| 76632 | <0.01 |
| 76633 | <0.01 |
| 76634 | <0.01 |
| 76635 | <0.01 |
| 76636 | <0.01 |
| 76637 | <0.01 |
| 76638 | <0.01 |
| 76639 | 0.05 |
| 76640 | <0.01 |
| Detn limit | (0.01) |

amdel

Analysis code PM3/2 | Report D1459/88 | Page G2

Order No. MA 5429 | Results in ppm

| Sample | Au |
|---|---|
| 76641 | <0.01 |
| 76642 | <0.01 |
| 76643 | <0.01 |
| 76644 | <0.01 |
| 76645 | <0.01 |
| 76646 | <0.01 |
| 76647 | <0.01 |
| 76648 | <0.01 |
| 76649 | <0.01 |
| 76650 | <0.01 |
| 76651 | <0.01 |
| 76652 | <0.01 |
| 76653 | <0.01 |
| 76654 | <0.01 |
| 76655 | <0.01 |
| 76656 | <0.01 |
| 76701 | <0.01 |
| 76702 | <0.01 |
| 76703 | <0.01 |
| 76704 | <0.01 |
| 76705 | <0.01 |
| 76706 | <0.01 |
| 76707 | <0.01 |
| 76708 | 0.01 |
| 76709 | <0.01 |
| 76710 | 0.01 |
| 76711 | 0.03 |
| 76712 | 0.01 |
| 76713 | 0.32 |
| 76714 | 0.06 |
| 76715 | 0.06 |
| 76716 | 0.05 |
| 76717 | 0.03 |
| 76718 | 0.04 |
| 76719 | 0.05 |
| 76720 | 0.08 |
| 76721 | 0.04 |
| 76722 | 0.05 |
| 76723 | 0.03 |
| 76724 | 0.05 |
| Detn limit | (0.01) |

amdel

Analysis code PM3/2 Report D1459/88 Page G3

Order No. MA 5429 Results in ppm

| Sample | Au |
|---|---|
| 76725 | 0.06 |
| 76726 | 0.07 |
| 76727 | 0.26 |
| 76728 | 0.05 |
| 76729 | 0.09 |
| 76730 | 0.03 |
| 76731 | <0.01 |
| 76732 | 0.09 |
| 76733 | 0.06 |
| 76734 | 0.06 |
| 76735 | 0.10 |
| 76736 | 0.14 |
| 76737 | 0.64 |
| 76738 | 0.16 |
| 76739 | 0.20 |
| 76740 | 0.16 |
| 76741 | <0.01 |
| 76742 | 0.22 |
| 76743 | 0.14 |
| 76744 | 0.18 |
| 76745 | 0.08 |
| 76772 | 0.14 |
| 76773 | 0.28 |
| 76774 | <0.01 |
| 76775 | <0.01 |
| 76776 | 0.02 |
| 76777 | 0.02 |
| 76778 | 0.04 |
| 76779 | 0.03 |
| 76780 | 0.03 |
| 76781 | 0.04 |
| 76782 | 0.12 |
| 76783 | 0.05 |
| 76784 | 0.03 |
| 76785 | 0.38 |
| 76786 | 0.02 |
| 76787 | 0.03 |
| 76788 | 0.06 |
| 76789 | 0.02 |
| 76790 | 0.01 |
| Detn limit | (0.01) |

amdel

Analysis code PM3/2 Report D1459/88 Page G4

Order No. MA 5429 Results in ppm

| Sample | Au |
|---|---|
| 76791 | 0.18 |
| 76792 | 0.06 |
| 76793 | 0.02 |
| 76794 | 0.03 |
| 76795 | 0.04 |
| 76796 | 0.05 |
| 76797 | 0.64 |
| 76798 | 0.10 |
| 76799 | 0.05 |
| 76800 | 0.04 |
| 72684 | 0.28 |
| 72685 | 0.10 |
| 72686 | 0.05 |
| 72687 | 0.10 |
| 72688 | 0.07 |
| 72689 | 0.07 |
| 72690 | 0.05 |
| 72691 | 0.12 |
| 72692 | 0.14 |
| 72693 | 0.04 |
| 72694 | 0.02 |
| 72695 | 0.05 |
| 72696 | 0.03 |
| 72697 | 0.03 |
| 72698 | 0.02 |
| 72699 | 0.03 |
| 72700 | 0.02 |
| 72791 | 0.01 |
| 72792 | 0.03 |
| 72793 | <0.01 |
| 72794 | <0.01 |
| 72795 | 0.01 |
| 72796 | <0.01 |
| 72797 | 0.03 |
| 72798 | 0.01 |
| 72799 | 0.02 |
| 72800 | 0.01 |
| 72801 | 0.01 |
| 72802 | <0.01 |
| 72803 | 0.01 |
| Detn limit | (0.01) |

amdel

Analysis code PM3/2 Report D1459/88 Page G5

Order No. MA 5429 Results in ppm

| Sample | Au |
|---|---|
| 72804 | <0.01 |
| 72805 | <0.01 |
| 72806 | <0.01 |
| 72767 | 0.04 |
| 72710 | <0.01 |
| 76663 | <0.01 |
| 76502 | <0.01 |
| 76503 | 0.03 |
| 76504 | 0.04 |
| Detn limit | (0.01) |

amdel

×B

Analysis code PM3/2 | Report AC D1491/88 | Page G1

Order No. MA5432 | Results in ppm

| Sample | Au |
|---|---|
| 72901 | <0.01 |
| 72902 | 0.02 |
| 72903 | 0.01 |
| 72904 | <0.01 |
| 72905 | 0.05 |
| 72906 | <0.01 |
| 72907 | <0.01 |
| 72908 | <0.01 |
| 72909 | 0.02 |
| 72910 | <0.01 |
| 72911 | <0.01 |
| 72912 | 0.02 |
| 72913 | 0.01 |
| 72914 | 0.01 |
| 72915 | 0.01 |
| 72916 | <0.01 |
| 72917 | 0.04 |
| 72918 | <0.01 |
| 72919 | 0.01 |
| 72920 | 0.01 |
| 72921 | 0.02 |
| 72922 | <0.01 |
| 72923 | 0.02 |
| 72924 | <0.01 |
| 72925 | 0.01 |
| 72926 | <0.01 |
| 72927 | <0.01 |
| 72928 | <0.01 |
| 72929 | 0.01 |
| 72930 | <0.01 |
| 72931 | <0.01 |
| 72932 | <0.01 |
| 72933 | <0.01 |
| 72934 | <0.01 |
| 72935 | <0.01 |
| 72936 | <0.01 |
| 72937 | <0.01 |
| 72938 | <0.01 |
| 72939 | <0.01 |
| 72940 | <0.01 |
| Detn limit | (0.01) |

amdel

× B

Analysis code PM3/2 Report AC D1491/88 Page G3

Order No. MA5432 Results in ppm

| Sample | Au |
|---|---|
| 72981 | <0.01 |
| 72982 | <0.01 |
| 72983 | <0.01 |
| 72984 | <0.01 |
| 72985 | <0.01 |
| 72986 | <0.01 |
| 72987 | 0.01 |
| 72988 | 0.03 |
| 72989 | 0.01 |
| 72990 | 0.01 |
| 72991 | 0.03 |
| 72992 | 0.01 |
| 72993 | 0.01 |
| 72994 | <0.01 |
| 72995 | <0.01 |
| 72996 | 0.01 |
| 72997 | 0.01 |
| 72998 | 0.01 |
| 72999 | 0.01 |
| 73000 | 0.01 |
| 72807 | 0.02 |
| 72808 | 0.03 |
| 72809 | 0.01 |
| 72810 | 0.02 |
| 72811 | 0.01 |
| 72812 | <0.01 |
| 72813 | 0.02 |
| 72814 | <0.01 |
| 72815 | 0.02 |
| 72816 | 0.01 |
| 72817 | <0.01 |
| 72818 | 0.04 |
| 72819 | <0.01 |
| 72820 | <0.01 |
| 72821 | <0.01 |
| 72822 | <0.01 |
| 72823 | <0.01 |
| 72824 | <0.01 |
| 72825 | <0.01 |
| 72826 | <0.01 |
| Detn limit | (0.01) |

amdel

Analysis code PM3/2 | Report AC D1491/88 | Page G4

Order No. MA5432 | Results in ppm

| Sample | Au |
|---|---|
| 72827 | <0.01 |
| 72828 | <0.01 |
| 72829 | <0.01 |
| 72830 | <0.01 |
| 72831 | <0.01 |
| 72832 | <0.01 |
| 72833 | 0.03 |
| 72834 | 0.03 |
| 72835 | 0.02 |
| 72836 | 0.02 |
| 72837 | 0.01 |
| 72838 | 0.01 |
| 72839 | <0.01 |
| 72840 | <0.01 |
| 72841 | <0.01 |
| 72842 | <0.01 |
| 72843 | <0.01 |
| 72844 | <0.01 |
| 72845 | <0.01 |
| 72846 | <0.01 |
| 72847 | <0.01 |
| 72848 | <0.01 |
| 72849 | <0.01 |
| 72850 | <0.01 |
| 72851 | 0.02 |
| 72852 | 0.01 |
| 72853 | <0.01 |
| 72854 | 0.01 |
| 72855 | <0.01 |
| 72856 | 0.01 |
| 72857 | 0.02 |
| 72858 | 0.01 |
| 72859 | 0.02 |
| 72860 | 0.02 |
| 72861 | 0.01 |
| 72862 | 0.02 |
| 72863 | 0.06 |
| 72864 | 0.02 |
| 72865 | 0.03 |
| 72866 | 0.02 |
| Detn limit | (0.01) |

amdel

Analysis code PM3/2 | Report AC D1491/88 | Page G5

Order No. MA5432 | Results in ppm

| Sample | Au |
|---|---|
| 72867 | 0.01 |
| 72868 | 0.01 |
| 72869 | 0.02 |
| 72870 | 0.02 |
| 72871 | 0.02 |
| 72872 | 0.01 |
| 72873 | 0.01 |
| 72874 | 0.01 |
| 72875 | 0.02 |
| 72876 | <0.01 |
| 72877 | <0.01 |
| 72878 | 0.01 |
| 72879 | <0.01 |
| 72880 | <0.01 |
| 72881 | <0.01 |
| 72882 | 0.01 |
| 72883 | <0.01 |
| 72884 | <0.01 |
| 72885 | <0.01 |
| 72886 | <0.01 |
| 72887 | <0.01 |
| 72888 | <0.01 |
| 72889 | <0.01 |
| 72890 | <0.01 |
| 72891 | <0.01 |
| 72892 | <0.01 |
| 72893 | <0.01 |
| 72894 | 0.01 |
| 72895 | <0.01 |
| 72896 | 0.01 |
| 72897 | <0.01 |
| 72898 | 0.01 |
| 72899 | 0.02 |
| 72900 | 0.01 |
| 76746 | 0.02 |
| 76747 | 0.01 |
| 76748 | 0.03 |
| 76749 | 0.01 |
| 76750 | 0.02 |
| 76751 | 0.01 |
| Detn limit | (0.01) |

amdel

x 5

Analysis code PM3/2 | Report AC D1491/88 | Page G6

Order No. MA5432 | Results in ppm

| Sample | Au |
|---|---|
| 76752 | 0.01 |
| 76753 | 0.01 |
| 76754 | <0.01 |
| 76755 | <0.01 |
| 76756 | 0.01 |
| 76757 | 0.01 |
| 76758 | <0.01 |
| 76759 | 0.01 |
| 76760 | 0.01 |
| 76761 | 0.01 |
| 76762 | 0.01 |
| 76763 | <0.01 |
| 76764 | <0.01 |
| 76765 | 0.06 |
| 76766 | 0.01 |
| 76767 | 0.01 |
| 76768 | <0.01 |
| 76769 | <0.01 |
| 76770 | <0.01 |
| 76771 | <0.01 |
| 46401 | 0.01 |
| 46402 | <0.01 |
| 46403 | <0.01 |
| 46404 | <0.01 |
| 46405 | <0.01 |
| 46406 | <0.01 |
| 46407 | <0.01 |
| 46408 | <0.01 |
| 46409 | <0.01 |
| 46410 | <0.01 |
| 46411 | <0.01 |
| 46412 | <0.01 |
| 46413 | 0.01 |
| 46414 | <0.01 |
| 46415 | 0.01 |
| 46416 | <0.01 |
| 46417 | <0.01 |
| 46418 | <0.01 |
| 46419 | 0.01 |
| 46420 | 0.01 |
| Detn limit | (0.01) |

CR88/284A

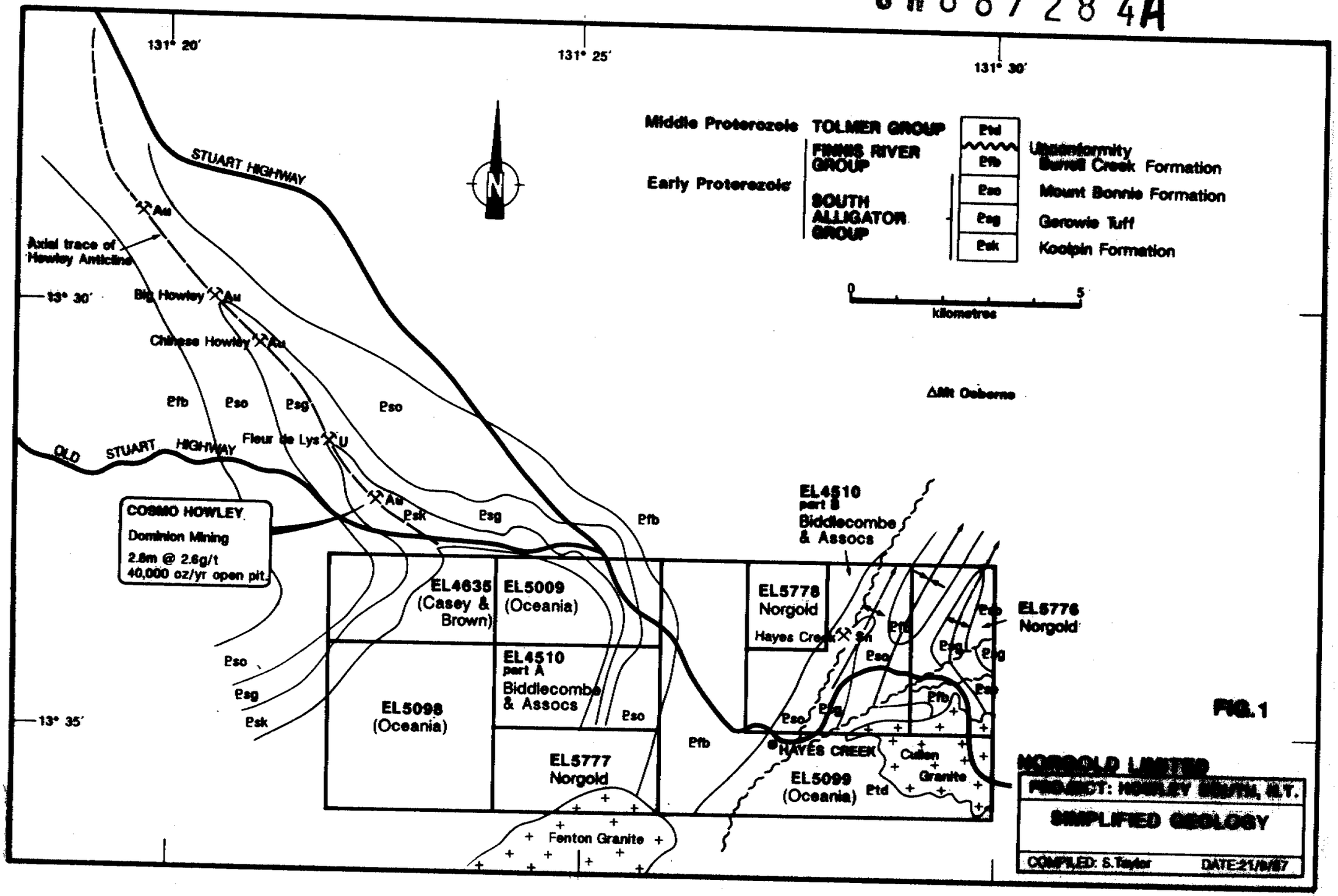



FIG. 1

NORGOLD LIMITED

PROJECT: HOWLEY REGION, N.T.

SIMPLIFIED GEOLOGY

COMPILED: S.Taylor DATE:21/8/87

TRUE NORTH

131° 22'E

131° 24'E

13° 33'S

13° 34'S

COSMO HOWLEY MINE

Cosmo Howley Camp

Anticlinal Axis

Koolpin

Siltstone & Phyllite

Track

OLD

STUART HIGHWAY

Quartz & Ironstone

Dolerite

Union Oil Costeans

Siltstone 107/70°W

140/50°W

108/70°W

Drill hole in Silicified Tuff

Graphitic / Hematitic Siltstone

Quartz float Sulphidic?

Pit

Pit in Pegmatite

Pink & Grey Phyllite & Siltstone

Mine Anticlinal Axis

Purple & Grey Siltstone

WESTERN GRID

CENTRAL GRID

Gerowie Tuff

Mt Bonnie Formation

Purple Phyllite

Quartz

Costean Pegmatites

Scraped Area

Purple Siltstones & Quartz float

Pegmatite float

Purple spotted Phyllite

Wildman Siltstone

Koolpin Formation

49970 (83·0)

49969 (0·60)

49971 (2·38)

49972 (68·0)

49974 (0·96)

49975 (31·0)

49976 (5·36)

49977 (4·00)

49978 (2·24)

49979 (1·47)

Cz

Qa

Psk

Psg

Pso

Ppw

Pdz

€o

q

## LEGEND

| | | |
|---|---|---|
| CAINOZOIC | Qa | Quaternary Alluvium |
| | Cz | Soils |
| PALEOZOIC | €o | Cambro-Ordovician |
| EARLY PROTEROZOIC | Pdz | Zamu Dolerite |
| | Pso | Mt. Bonny Formation |
| | Psg | Gerowie Tuff |
| | Psk | Koolpin Formation |
| | Ppw | Wildman Siltstone |

Interpreted Geological Boundary

Airphoto Outcrop Boundary

Airphoto Lineament

Fenton Granite

Fence Line

Shaft

Quartz Vein

Sample Site

Bleg Sample

49972 –number

(68·0) –ppb Au

0 1

KILOMETRES

Prepared from 1:10000 scale enlargements of N.T. Government air photography, MRB 15/2323 1983. TIPPERARY Run 2, 112 & 114.

Drawn by Geo Drafting

**NORGOLD LIMITED**

PROJECT: CASEY-BROWN JOINT VENTURE

E.L. 4635

HAYES CREEK

# GROUND CHECKED GEOLOGICAL INTERPRETATION & BLEG SAMPLING

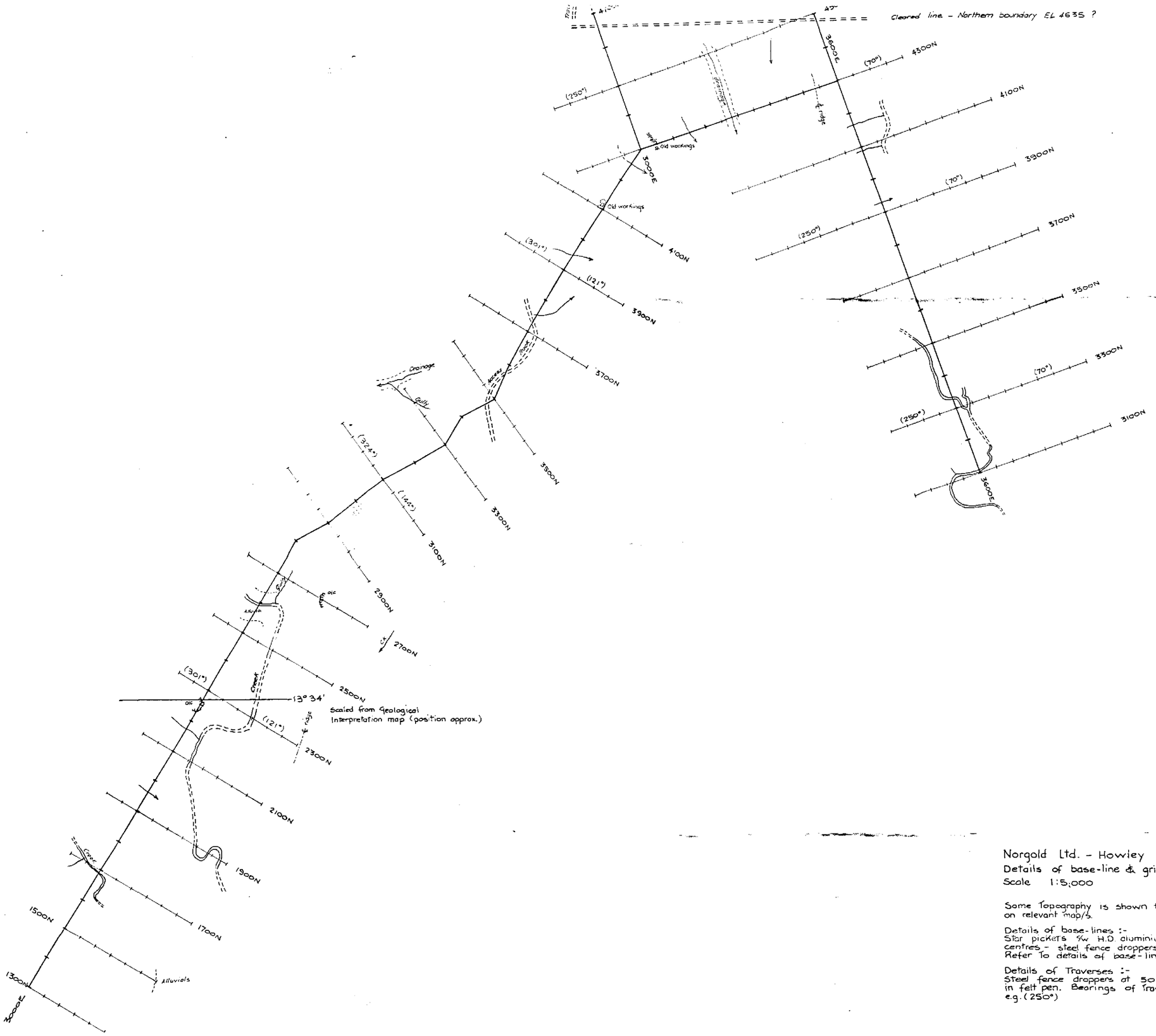
A

| | |
|---|---|
| Date: 11 DEC. 1987 | Revised: M.Bennett Feb. 1988 |
| Geologist: G.ORRIDGE | Scale: 1:10000 |

*FIG. 2*

A

FIG. 3




MN

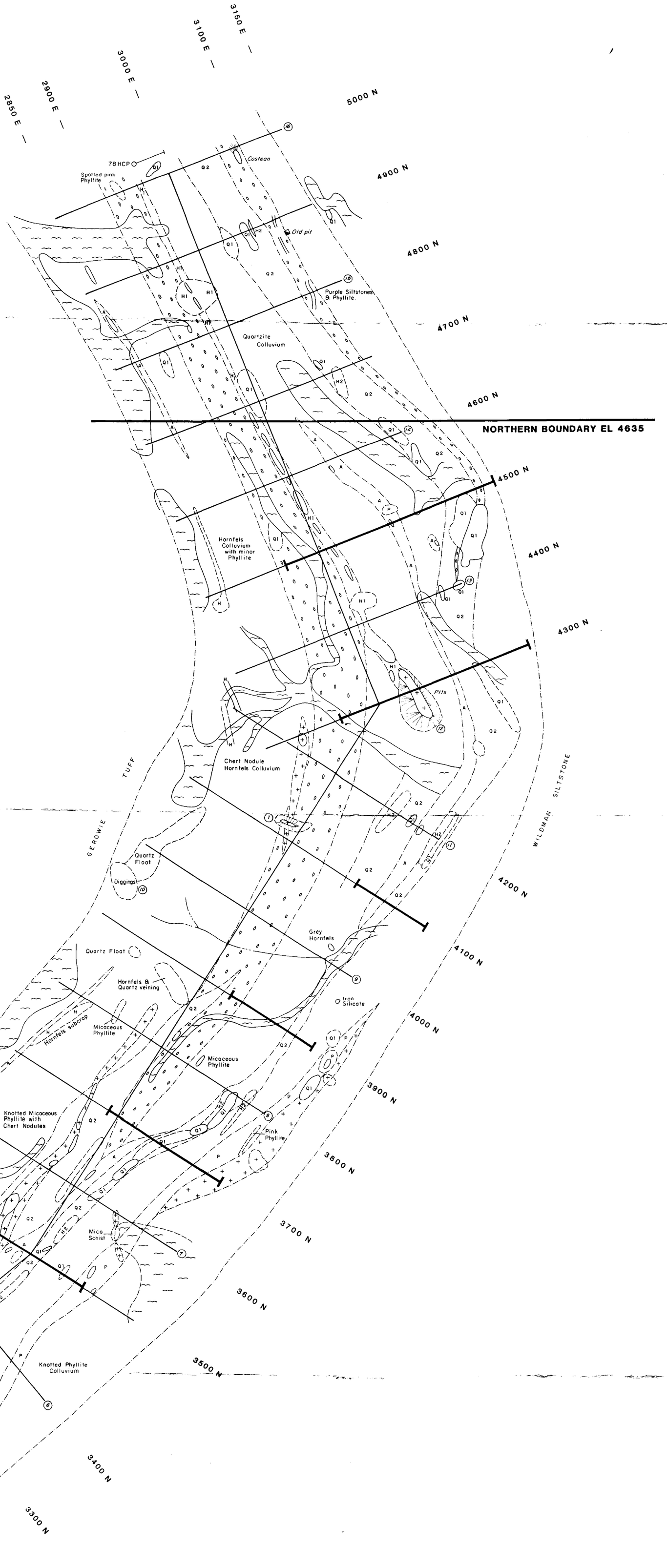
Norgold Ltd. - Howley South, N.T.
Details of base-line & grid located by chain & compass survey
Scale 1:5,000 May, 1988

Some Topography is shown to enable base-lines to be plotted on relevant map/s.

Details of base-lines :-
Star pickets ¾w H.D. aluminium identification tags at approx. 100 metre centres.- steel fence droppers at 50 metre centres.
Refer to details of base-line survey for bearings & distances.

Details of Traverses :-
Steel fence droppers at 50 metre centres, co-ordinate written in felt pen. Bearings of traverses shown on this map in brackets. e.g. (250°)

MAGNETIC NORTH




## LEGEND

**CAINOZOIC**

- Podzolic soil & Alluvium

**LOWER PROTEROZOIC**

- Carbonaceous Shale/Siltstone with Chert Nodules
- Q2 — Quartzite (Silicified Dolomite) & Hematitic Siltstone
- H2 — Hematitic Siltstone/Ironstone
- H1 — Hematitic/Graphitic Siltstone
- Q1 — Quartzite (Silicified Dolomite)
- P — Knotted Phyllite
- H — Hornfels
- A — Amphibolite
- Pegmatite

- Outcrop
- Subcrop or Float
- Interpreted Geological Boundary
- (10) Sample Site
- Costeans

SCALE 1:2500

0 100 200

METRES

Drawn by Geo Drafting

**NORGOLD LIMITED**

PROJECT: CASEY-BROWN JOINT VENTURE

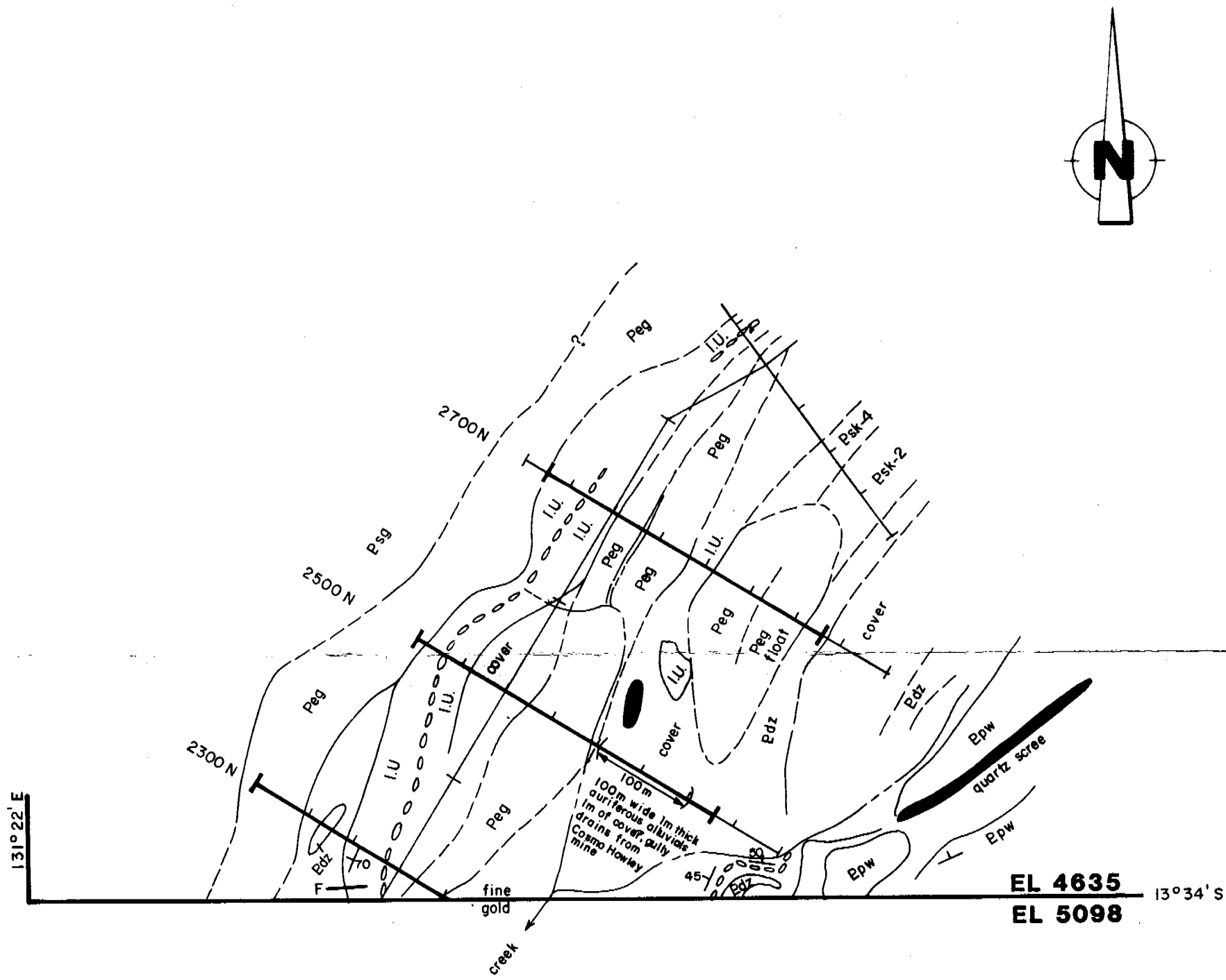
E.L. 4635
HAYES CREEK

# WESTERN GRID
# INTERPRETED GEOLOGY
# MODIFIED FROM CRA MAPPING

Compiled: M.BENNET | Date: APRIL, 1988

A

FIG. 4




## LEGEND

| | | | |
|---|---|---|---|
| ZAMU DOLERITE | Pdz | Dolerite | LOWER PROTEROZOIC |
| SOUTH ALLIGATOR GROUP — GEROWIE TUFF | Psg | Chert / tuff | |
| | Psg | Chert / shale | |
| SOUTH ALLIGATOR GROUP — KOOLPIN FM. | Psk-1 | Quartzite | |
| | Psk-2 | Graphitic hematitic siltstone | |
| | Psk-3 | Chert nodule beds | |
| | Psk-4 | Chert | |
| | Psk-5 | Phyllite | |
| MOUNT PARTRIDGE GROUP — WILDMAN SILTSTONE | Ppw | Schist / phyllite, slightly graphitic | |
| | Peg | Pegmatite | |
| | I.U. | Iron rich unit in Koolpin Fm. | |
| | | Quartz | |
| | $\diagdown^{20}$ | Dip | |
| | | Costean | |

Scale 1:5000

0 100 200 300

METRES

**NORGOLD LIMITED**

PROJECT: CASEY-BROWN JOINT VENTURE

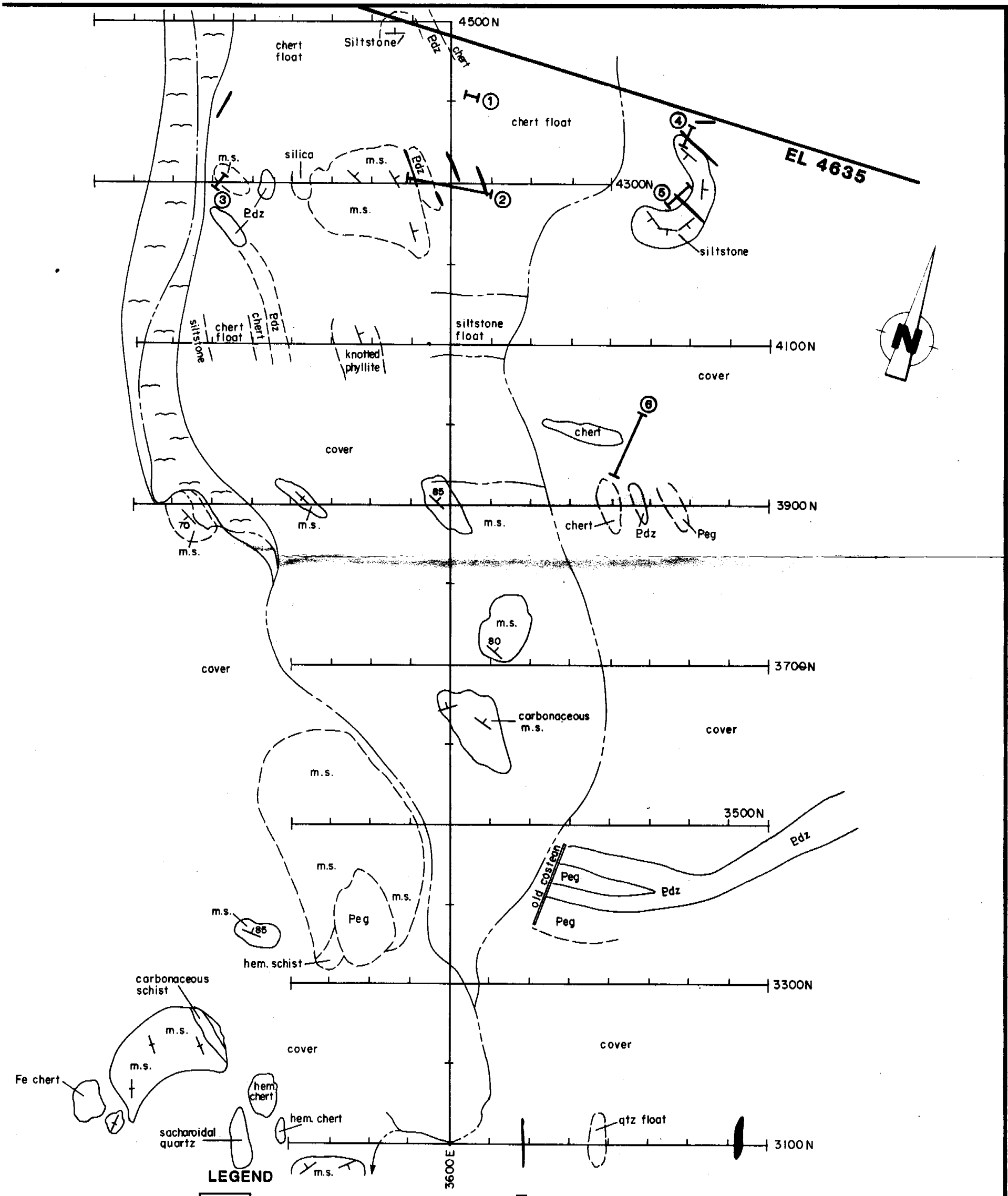
EL 4635
HAYES CREEK

# GEOLOGY - WEST GRID
## STH. EXTENSION OF CRA GRID

**CR88/284A**

Compiled: | Date: August 1988

*FIG. 5*




**NORGOLD LIMITED**

PROJECT: CASEY-BROWN JOINT VENTURE

EL 4635
HAYES CREEK

# GEOLOGY - CENTRAL GRID
## EAST EXTENSION OF CRA GRID

Compiled:

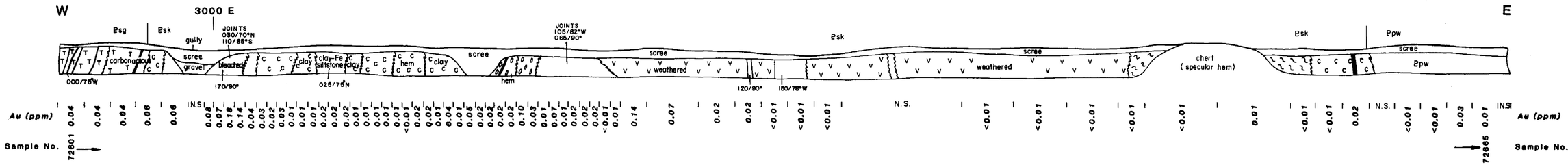
Date: August 1988

*FIG. 6*

CR88/284A

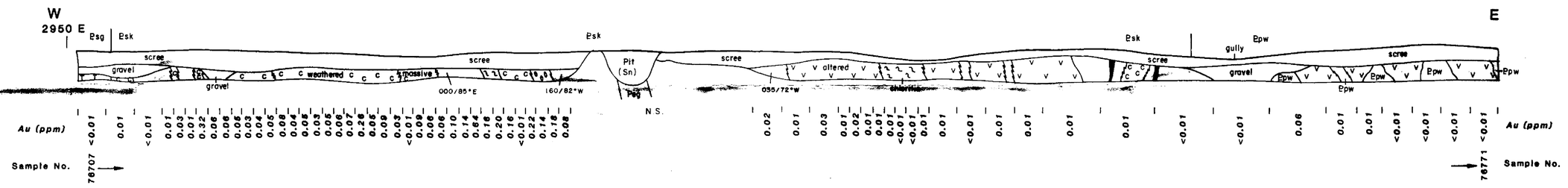
## SECTION 4500 N

278m Long, 245m Sampled, 65 Samples.



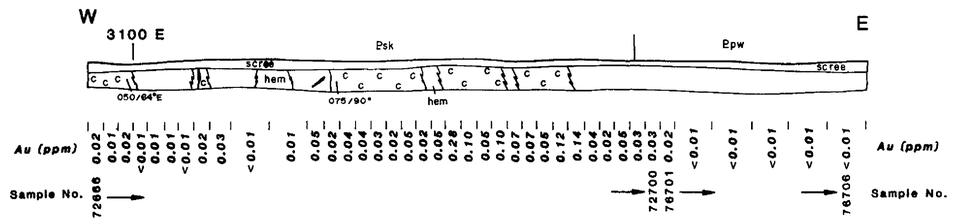

## SECTION 4300 N

250m Long, 218m Sampled, 65 Samples.



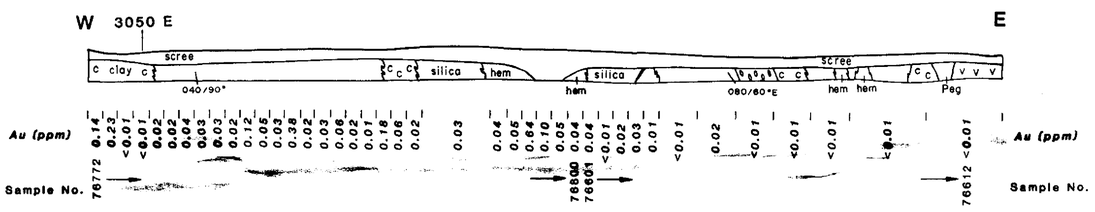

## SECTION 4100 N

102m Long, 102m Sampled, 39 Samples.



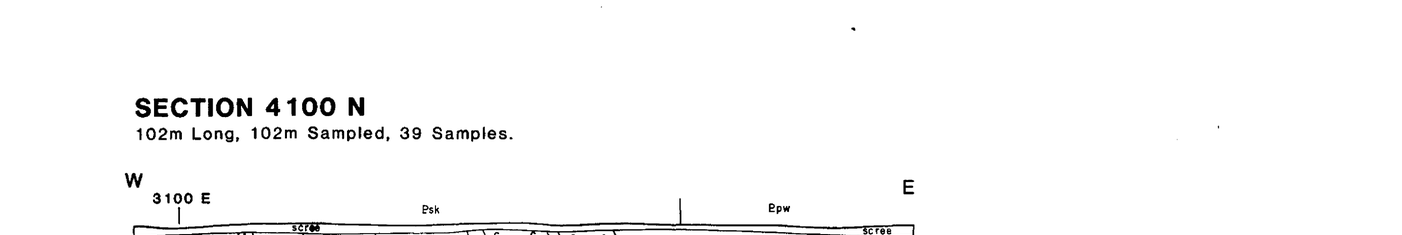

## SECTION 3900 N

121m Long, 121m Sampled, 43 Samples.



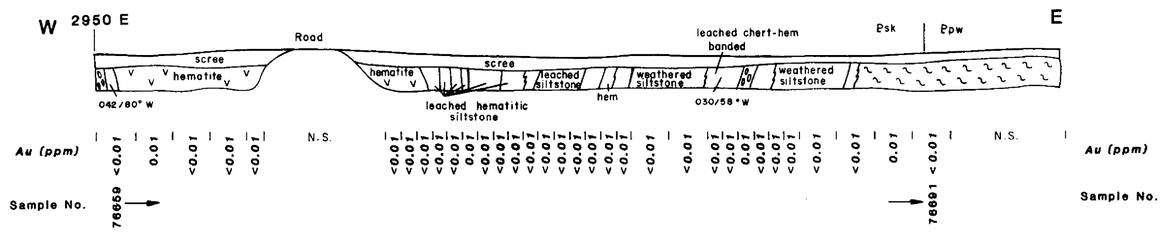

## SECTION 3700 N

160m Long, 136m Sampled, 47 Samples.




## SECTION 3500 N

127m Long, 96m Sampled, 33 Samples.




### LEGEND

| | | | |
|---|---|---|---|
| | Peg | PEGMATITE (Quartz–muscovite± tourmaline, cassiterite) | |
| ZAMU DOLERITE (Pdz) | | DOLERITE (Mainly altered to amphibolite or weathered to clay) | |
| SOUTH ALLIGATOR GROUP | GEROWIE TUFF (Psg) | Undifferentiated siltstone, minor phyllite, tuff and chert | |
| | KOOLPIN FM. (Psk) | SILTSTONE (Massive, blocky siltstone to well cleaved siltstone) | |
| | | PHYLLITE, MICA SCHIST (Crenulated phyllite, muscovite schist, rare knotted phyllite (andalusite?)) | |
| | | GRAPHITIC SILTSTONE (Often friable, clay rich and pronounced cleavage) | |
| | | CHERT NODULE BEDS (Chert nodules in silicified siltstone?) | |
| | Hem | MASSIVE HEMATITE (Porous, hard or friable hematite) | |
| | chert | CHERT (Massive± specular hematite in vughs, occasionally saccharoidal) | |
| MOUNT PARTRIDGE GROUP | WILDMAN SILTSTONE Ppw | Undifferentiated phyllite, mica schist (muscovite), knotted phyllite | |
| | | Quartz vein | clay Clay infill on joints & bedding |
| | 053/45W | Strike & dip | silica Silica infill on joints & bedding |
| | 76510 | Special rock chip sample | N.S. No sample |
| | 72923 0.01 | Au (ppm) / Sample No. | |

VERTICAL SCALE 1:100
0 2 4 6 8 10 metres
0 10 20 30 40 50 metres
HORIZONTAL SCALE 1:500

**NORGOLD LIMITED**

PROJECT : CASEY-BROWN JOINT VENTURE

EL 4635-HAYES CREEK
WEST GRID (NTH. SHEET)

COSTEAN GEOLOGY
& SAMPLE RESULTS

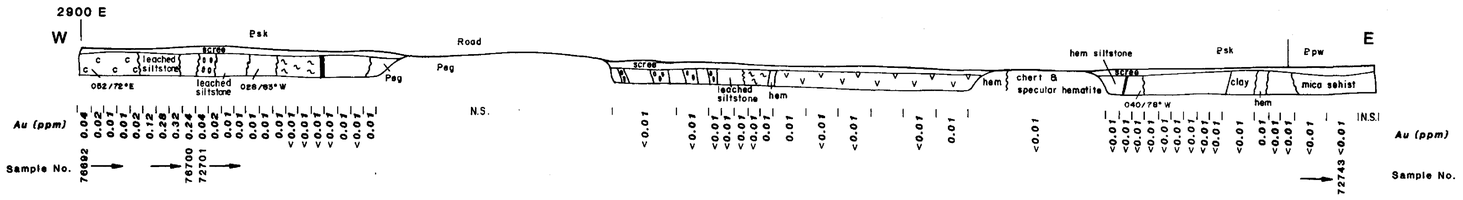
Compiled: | Date: August, 1988

*FIG. 7*

4A

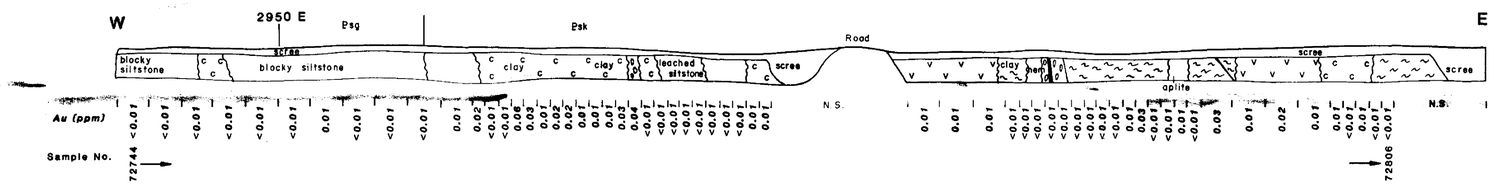
## SECTION 3300 N

200m Long, 161m Sampled, 52 Samples.



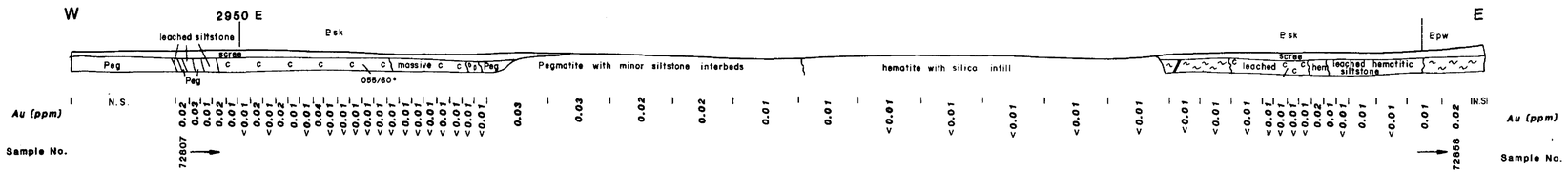

## SECTION 3100 N

206m Long, 171m Sampled, 60 Samples.



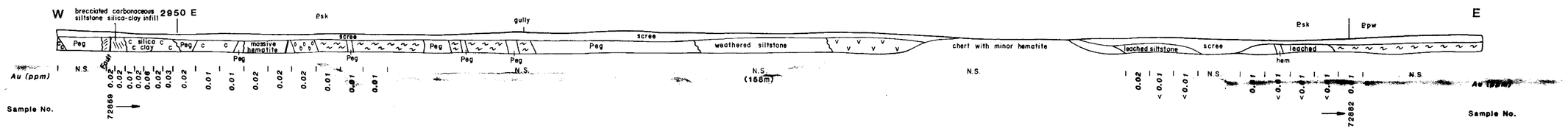

## SECTION 2900 N

218m Long, 201m Sampled, 49 Samples.



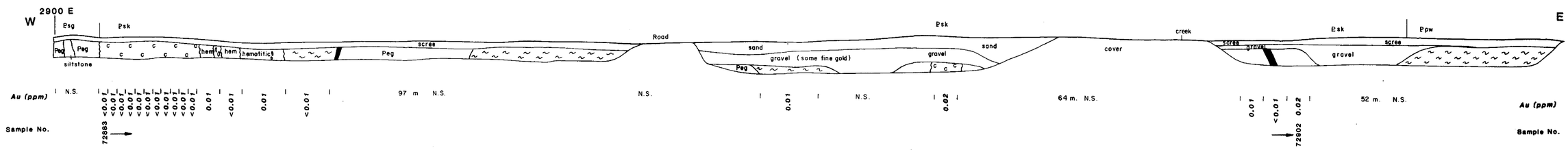

## SECTION 2700 N

301m Long, 99m Sampled, 24 Samples.



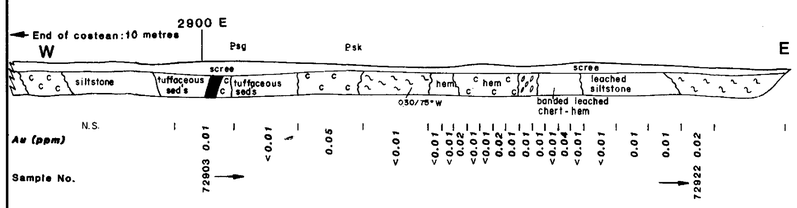

## SECTION 2500 N

333m Long, 85m Sampled, 17 Samples.




## SECTION 2300 N

131m Long, 84m Sampled, 20 Samples.




## LEGEND

- Peg — PEGMATITE (Quartz-muscovite± tourmaline, cassiterite)
- ZAMU DOLERITE (Pdz) — DOLERITE (Mainly altered to amphibolite or weathered to clay)
- GEROWIE TUFF (Psg) — Undifferentiated siltstone, minor phyllite, tuff and chert
- SOUTH ALLIGATOR GROUP — KOOLPIN FM. (Psk):
  - SILTSTONE (Massive, blocky siltstone to well cleaved siltstone)
  - PHYLLITE, MICA SCHIST (Crenulated phyllite, muscovite schist, rare knotted phyllite (andalusite?))
  - GRAPHITIC SILTSTONE (Often friable, clay rich and pronounced cleavage)
  - CHERT NODULE BEDS (Chert nodules in silicified siltstone?)
  - Hem — MASSIVE HEMATITE (Porous, hard or friable hematite)
  - chert — CHERT (Massive± specular hematite in vughs, occasionally saccharoidal)
- MOUNT PARTRIDGE GROUP — WILDMAN SILTSTONE — Ppw — Undifferentiated phyllite, mica schist (muscovite), knotted phyllite
- Quartz vein
- 053/45W — Strike & dip
- 765/0 — Special rock chip sample
- 0.0 / 72923 — Au (ppm) / Sample No.
- clay — Clay infill on joints & bedding
- silica — Silica infill on joints & bedding
- N.S. — No sample

VERTICAL SCALE 1:100

0 2 4 6 8 10 metres

HORIZONTAL SCALE 1:500

0 10 20 30 40 50 metres

**NORGOLD LIMITED**

PROJECT : CASEY-BROWN JOINT VENTURE

EL 4635-HAYES CREEK
WEST GRID (STH. SHEET)

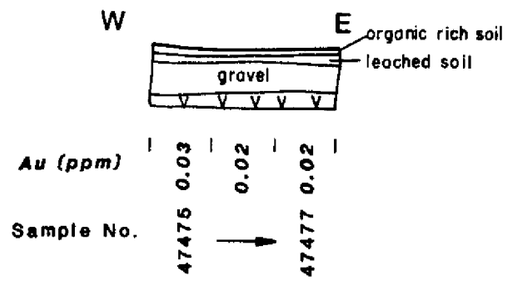
COSTEAN GEOLOGY
& SAMPLE RESULTS

CR88/284A

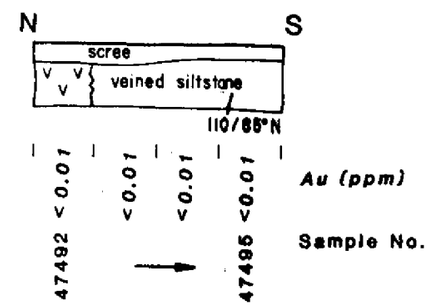
Compiled: | Date: August, 1988

FIG. 8

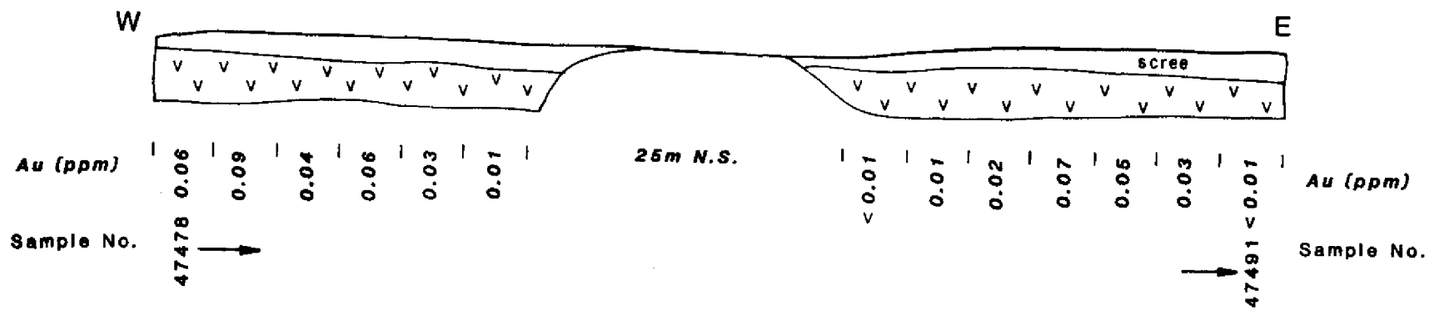
**1** 15m Long, 15m Sampled, 3 Samples.



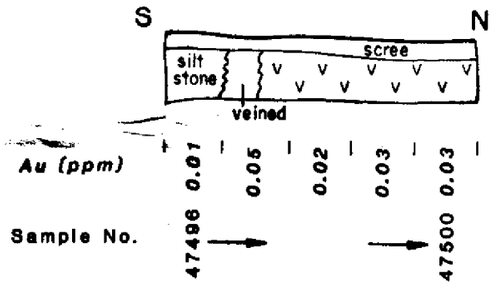

**3** 20m Long, 20m Sampled, 4 Samples.



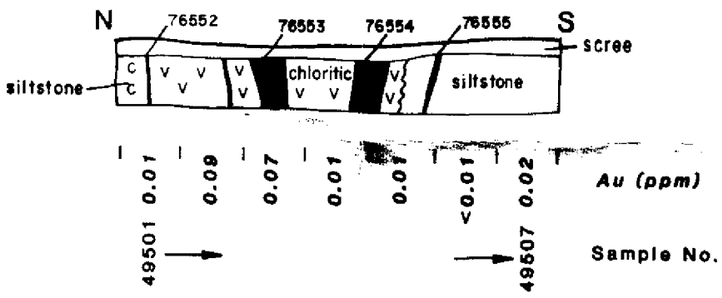

**2** 90m Long, 65m Sampled, 13 Samples.



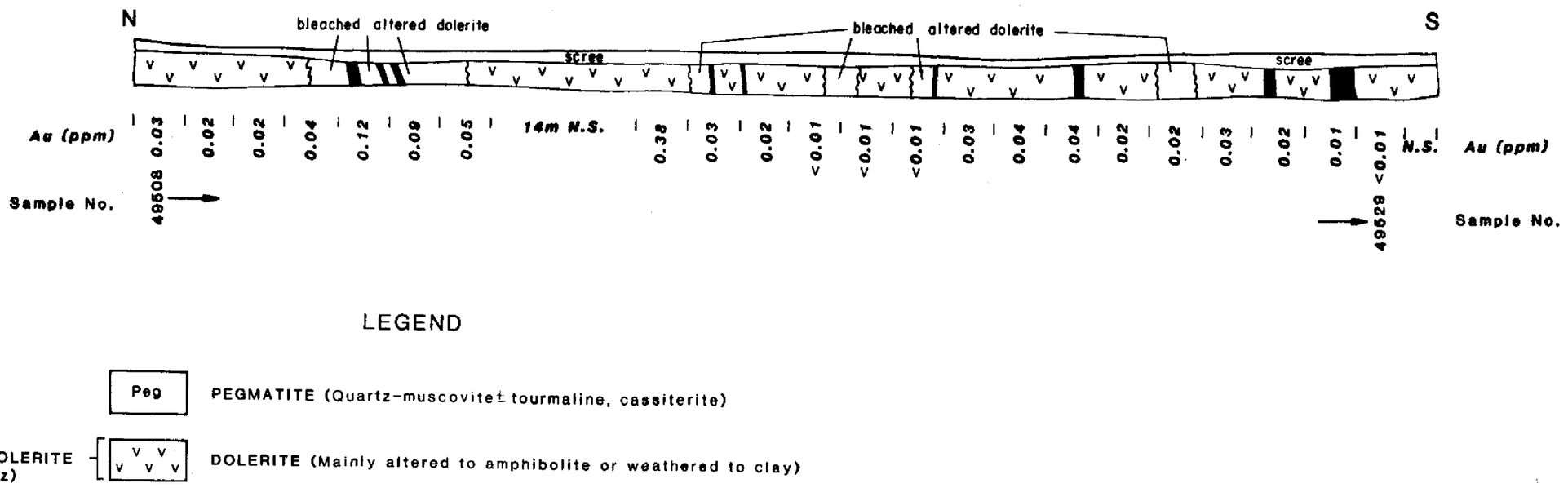

**4** 25m Long, 25m Sampled, 5 Samples.




**5** 35m Long, 35m Sampled, 7 Samples.




**6** 127m Long, 110m Sampled, 23 Samples.




## LEGEND

| | | |
|---|---|---|
| | Peg | PEGMATITE (Quartz-muscovite ± tourmaline, cassiterite) |
| | ZAMU DOLERITE (Pdz) | DOLERITE (Mainly altered to amphibolite or weathered to clay) |
| SOUTH ALLIGATOR GROUP | GEROWIE TUFF (Psg) | Undifferentiated siltstone, minor phyllite, tuff and chert |
| | KOOLPIN FM. (Psk) | SILTSTONE (Massive, blocky siltstone to well cleaved siltstone) |
| | | PHYLLITE, MICA SCHIST (Crenulated phyllite, muscovite schist, rare knotted phyllite (andalusite?)) |
| | | GRAPHITIC SILTSTONE (Often friable, clay rich and pronounced cleavage) |
| | | CHERT NODULE BEDS (Chert nodules in silicified siltstone?) |
| | Hem | MASSIVE HEMATITE (Porous, hard or friable hematite) |
| | chert | CHERT (Massive ± specular hematite in vughs, occasionally saccharoidal) |
| MOUNT PARTRIDGE GROUP | WILDMAN SILTSTONE (Ppw) | Undifferentiated phyllite, mica schist (muscovite), knotted phyllite |

| | | | |
|---|---|---|---|
| | Quartz vein | clay | Clay infill on joints & bedding |
| 053/45W | Strike & dip | silica | Silica infill on joints & bedding |
| 76510 | Special rock chip sample | 72923 0.01 | Au (ppm) |
| N.S. | No sample | | Sample No. |

VERTICAL SCALE 1:100

0 2 4 6 8 10 metres

0 10 20 30 40 50 metres

HORIZONTAL SCALE 1:500

**NORGOLD LIMITED**

PROJECT : CASEY-BROWN JOINT VENTURE

EL 4635-HAYES CREEK
CENTRAL GRID

COSTEAN GEOLOGY
& SAMPLE RESULTS

GR 88/284A

Compiled: | Date: August, 1988

*FIG. 9*