



IAD MINERAL CLAIM GROUP

REPORT ON BULLDOZER TRENCHING &
GEOLOGICAL MAPPING OF TRENCHES

Mayo Mining District
Yukon Territory

Longitude $132^{\circ}14'W$
Latitude $62^{\circ}57'N$

Field work done during period
March 1 - September 3, 1969

By:

Thomas J. Adamson

ATLAS EXPLORATIONS LIMITED

October, 1969

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LIST OF CLAIMS

| <u>Claim No.</u> | <u>Grant No.</u> | <u>Date Recorded</u> |
|------------------|------------------|----------------------|
| Lad 11-12 | Y14076-Y14077 | Oct. 11, 1967 |
| Lad 19-24 | Y14136-Y14141 | Nov. 3, 1967 |
| Lad 25-26 | Y14078-Y14079 | Oct. 11, 1967 |
| Lad 47-48 | Y14220-Y14221 | Nov. 6, 1967 |
| Lad 49-62 | Y14142-Y14155 | Nov. 3, 1967 |
| Lad 65-92 | Y31259-Y31286 | Sept. 10, 1968 |
| Lad 100 | Y31294 | Sept. 10, 1968 |
| Lad 102 | Y31296 | Sept. 10, 1968 |
| Lad 109-126 | Y31316-Y31333 | Sept. 17, 1968 |
| Lad 196 | Y31468 | Oct. 16, 1968 |
| Lad 198 | Y31470 | Oct. 16, 1968 |
| Lad 200 | Y31472 | Oct. 16, 1968 |
| Lad 202 | Y31474 | Oct. 16, 1968 |
| Lad 204 | Y31476 | Oct. 16, 1968 |

Total No. of Claims - 79

ATLAS EXPLORATIONS LIMITED

(N.P.L.)

330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.

LAD MINERAL CLAIM GROUP REPORT ON BULLDOZER TRENCHING & GEOLOGICAL MAPPING OF TRENCHES

INTRODUCTION

The original Lad Group mineral claims were staked September and October, 1967, to cover the area of three Cu, Pb, Zn and Ag mineral showings, a number of sulfide float occurrences, and high lead results from reconnaissance soil and gossan sampling.

During the 1968 field season, a property evaluation crew of from 5 to 15 men spent approximately two months (July 23-Sept. 28) on the Lad Group. The work done in this period consisted of line cutting, geological mapping and prospecting, geochemical surveying, geophysical surveying (ground and airborne), hand trenching and assay sampling. Claim staking in this period brought the total number of claims in the Lad Group to 208. As a result of the above work, a number of new sulfide showings were discovered and a large number of strong geochemical anomalies in soils were outlined. In almost every case, zones of anomalous soil results were found over the known sulfide mineral showings. Because of this excellent correlation, all of the strong geochemical anomalies in areas of overburden cover were thought to warrant further investigation.

The emphasis of work during the 1969 field season was on the bulldozer trenching and stripping of mineral showings and selected geochemical targets. For this work, a Caterpillar D-7E bulldozer equipped with an Ateco ripper was used. Additional line cutting, geochemical surveying and geophysical surveying were carried out, where necessary, to further define

targets. Some geological mapping, prospecting and soil and silt sampling was done - the Mt. Selous - Clearwater Creek area, off the claim group.

This report deals with the bulldozer trenching and geological mapping of the trenches during the period March 1st - Sept. 3, 1969.

LOCATION AND ACCESS

The Lad Group is located on the southeast slope of the Mt. Selous complex, in the north-central portion of claim sheet 105-K-16. Ross River, Y.T., the nearest settlement, is located about 65 air miles south of the claim group. The Canol Road, running to the northeast of Ross River, Y.T., comes to within 38 miles of the Lad Group, at the point where the road adjoins the southeast end of Dragon Lake.

A crude cat road, suitable for use only in winter by tracked vehicles, extends from the Canol Road at Dragon Lake to West Van Lake, about 7 miles east of the claim group. West Van Lake is marginally suitable for float equipped DHC Beaver aircraft except during periods of extremely low water. An airstrip 1300 ft. long has been cleared on the south shore of West Van Lake. A road, suitable in all weather for tracked vehicles extends from West Van Lake to the base camp on the Lad claims. A 1000 ft. long airstrip was cleared just south of Clearwater Creek on the claim group. The camp was serviced from this airstrip using Piper Super Cub, Cessna 180 and Helio Courier aircraft.

REGIONAL GEOLOGIC SETTING

The Lad Group lies northeast of a major northwest-southeast trending lineament along the South Macmillan River. This lineament resembles the Tintina Fault to the southwest. The area is underlain by northwesterly trending open to moderately tightly folded rocks.

A northwest-southeast trending intrusive belt consisting of two large granodiorite to quartz dioritic plutons (Mt. Armstrong and Mt. Selous) and numerous smaller marginal plutons is located just northeast and parallel to the South Macmillan lineament. The contact of the Mt. Selous pluton is about 2 miles west of the Lad Group.

Two major stratigraphic levels occur in the area: Proterozoic and Devonian-Mississippian. The Proterozoic rocks, mainly quartzites, phyllites and limestones occur in a Proterozoic arch trending along the Mt. Armstrong - Mt. Selous axis. The Devonian-Mississippian section is composed mainly of low grade, usually graphitic, metasediments. The most abundant rock types are graphitic cherts, shales and slates, and chert pebble conglomerate.

Table of Geologic Formations

Cretaceous

11 Granitic Intrusives

-----Intrusive Contact -----

Devonian-Mississippian (?)

| | | |
|---|----|---|
| 3 | 3h | Chert; finely laminated, green and white chert and associated slates, green chert (Upper Devonian?) |
| | 3g | Red and green slates |
| | 3f | Grey bedded chert (Upper Devonian?) |
| | 3e | Alkalic basalt (?) |
| | 3d | Chert-pebble conglomerate, minor quartzite (Upper Devonian?) |
| | 3c | Phyllite, grey to green, indurated slates |
| | 3b | Calcareous rocks; limestone, crystalline and argillaceous; calcareous argillite, chert-pebble limestone, minor dolomite. |
| | 3a | Carbonaceous rocks; graphitic slates; black chert; graphitic argillite; poorly sorted feldspathic quartzites (graphitic greywacke) (Mississippian (?) in part; clastic unit). |

----- Unconformity or Fault Contact -----

Proterozoic

| | | | |
|---------------|---|----|--|
| | 1 | le | Chloritic schists, biotite quartzite, phyllite with interbeds of buff sandstone and quartzite. |
| | | ld | Conglomerate; massive, quartz pebbles. |
| "Yukon Group" | | lc | Phyllite and sercitic schists; occasionally gritty. |
| *Bostock | | lb | Limestone; finely crystalline, banded to massive; minor quartz-pebble limestone. |
| | | la | Quartzite, feldspathic quartzite, minor sercitic schist, phyllite and slate. |

Note: Alphabetical designations ascribed to the various rock-units have no time or sequential significance.

BULLDOZER TRENCHING AND STRIPPING

A Caterpillar D-7E bulldozer equipped with an Ateco single shank ripper was used for trenching and stripping on the Lad Group during the period June - September, 1969. The bulldozer was moved to the property from Ross River during April, before break-up.

A total of 22 trenches were worked on. Fuel for the bulldozer was flown by fixed-wing aircraft from Ross River to the Van Lake airstrip, and then moved by helicopter or bombardier to the trench locations. The bulldozer worked a single shift which averaged about 10 - 14 hours per day. Permafrost was encountered in all trenches. In order to keep the ripping of permafrost to a minimum, a number of trenches were always kept in progress at one time, the bulldozer moving from one to another as the forst progressively melted.

Description of Trenches

* The dimensions of all trenches are as follows:

| <u>Trench No.</u> | <u>Claim Location</u> | <u>Dimensions (in ft.)</u> | <u>Volume (cu.ft.)</u> |
|-------------------|-----------------------|----------------------------|------------------------|
| #1 | Lad #29 | 300 'x15 'x8' | 36,000 ✓ |
| #2 | #29 | 340 'x15 'x8' | 40,800 ✓ |
| #3 | #29 | 280 'x20 'x12' | 67,200 ✓ |
| #4 | #21, #23 | 250 'x12 'x8' | 24,000 ✓ |
| #5 | #21, #23 | 600 'x20 'x6' | 72,000 ✓ |
| #6 | #21, #23 | 500 'x15 'x10' | 75,000 ✓ |
| #7 | #98 | 210 'x12 'x5' | 12,600 ✓ |
| #8 | #100 | 640 'x12 'x5' | 38,400 ✓ |
| #9 | #100 | 400? 900 'x15 'x6' | 36,000 |
| #10 | #100 | 280 'x15 'x6' | 25,200 ✓ |
| #11 | #100 | 410 'x15 'x8' | 49,200 ✓ |
| #12 | #102 | 360 'x12 'x4' | 17,280 ✓ |
| #13 | #30 | 300 'x15 'x6' | 27,000 ✓ |

| <u>Trench No.</u> | <u>Claim Location</u> | <u>Dimensions (in ft.)</u> | <u>Volume (in ft.)</u> |
|-------------------|-----------------------|--------------------------------|------------------------|
| #14 | Lad #52 | 200'x12'x6' | 14,400 ✓ |
| #15 | #68 | 200'x30'x4' | 24,000 ✓ |
| #16 | #68 | 160'x15'x5' + 480'x75'x3' | 120,000 ✓ |
| #17 | #73 | 120'x120'x6' | 86,400 ✓ |
| #18 | #73, #78 | 200'x20'x15' + 210'x20'x20' | 144,000 ✓ |
| #19 | #10 | 320'x15'x7' | 33,600 ✓ |
| #20 | #26 | 380'x12'x8' | 36,480 ✓ |
| #21 | #26 | 300'x12'x12' | 43,200 ✓ |
| #22 | #26 | 230'x12'x8' | 22,080 ✓ |
| | | | 1,044,840 ✓ |
| | | | = 38,698 cu. yds. ✓ |

1,044,840

Trenches #1, #2 (See Fig. 3)

These trenches were undertaken to investigate high lead geochemical values in soils, on the east flank of an aeromagnetic high. The trenching exposed Proterozoic quartzite, quartz-mica schist, and mica schist, in places quite sheared and fractured. Very minor pyrite, galena, and sphalerite were observed in shears and on fracture planes. Anomalous copper, lead and zinc results were obtained from rock geochemical determinations of samples taken in place from within the trench.

| i.e. | <u>Cu</u> (ppm) | <u>Pb</u> (ppm) | <u>Zn</u> (ppm) | |
|------|-----------------|-----------------|-----------------|--|
| | 90 | 1050 | 232 | - slightly rusty quartz-mica schist. No visible sulfides. |
| | 134 | 1250 | 4100 | - very fractured quartzite. Minor very fine grained visible pyrite. |
| | 190 | 850 | 3980 | - gänge from small shear zones cutting highly fractured, rusty quartz-mica schist. |

No mineralization of any economic significance was observed in either Trench #1 or Trench #2

Trench #3 (See Fig. 4)

The purpose of this trench was to try to intersect the on-strike continuation of Lad Showing B. Showing B consists of a shear zone, 3-5 ft. wide, well mineralized with chalcopyrite, pyrrhotite, galena, sphalerite and pyrite. A grab sample of the best mineralization assayed as follows:

Ag - 49.68 oz/T.
Pb - 15.3%
Zn - 3.1%
Cu - 4.4%

Trench #3 exposed only highly sheared and fractured Proterozoic quartzite, quartz-mica schist, and mica schist. No visible sulfides were encountered. A rock geochemical sample of rusty "gossany" material from a 4 ft. wide shear zone assayed as follows:

Cu - 1240 ppm
Pb - 1130 ppm
Zn - 272 ppm

No zone was found that could definitely be identified as the continuation of Showing B.

Trenches #4, #5, #6 (See Figs. 5, 6)

The purpose of trenches #4, #5 and #6 was to investigate an elongate zone of anomalous lead values in soils.

In trench #6, Proterozoic quartzite was exposed for 25 ft. at the upslope (SW) end of the trench. Below this, and for as far as bedrock is exposed in the trench, the rocks are Devonian-Mississippian slates and argillite. A wide zone of intense fracturing and shearing (trending approximately 130°) is centred about 300 ft. from the upslope end of the trench. A number of small randomly oriented quartz veinlets containing, in places, very minor pyrite and galena, were observed in this area. Two rock geochemical

samples of this rusty argillite and shale with small quartz veinlets ran as follows:

| | <u>Cu</u> (ppm) | <u>Pb</u> (ppm) | <u>Zn</u> (ppm) |
|-----|-----------------|-----------------|-----------------|
| (a) | 260 | 12,500 | 246 |
| (b) | 540 | 13,800 | 200 |

A narrow (1") highly oxidized vein of heavy, white, earthy material (anglesite?) intersected in the trench 350 ft. from its SW end assayed 12% lead.

The quartzite at the upper end of this trench is also laced with small quartz veinlets, but no visible sulfides were seen. A sample of this rock gave geochemical results as follows:

| | | |
|----|---|----------|
| Cu | - | 36 ppm |
| Pb | - | 1200 ppm |
| Zn | - | 50 ppm |

There is an abundance of minute quartz crystals in the soil at the upper end of the trench. Coupled with the high lead results from soil geochemistry at this location, this would suggest that perhaps somewhere upslope from the trench are some quartz veins containing galena. However, no mineralized float could be found. No trenching could be done upslope from the present trench because of the steepness of the slope.

In trench #5, bedrock could be exposed for only 200 ft. at the SW end of the trench because of the thickness of overburden cover. The rocks that were exposed were Devonian-Mississippian grey to black shales and greywacke. No sulfide mineralization was observed.

Trench #4 was abandoned before any bedrock was reached. This was done because of the thickness of overburden cover at this location and because of the unfavourable results obtained from trenches #5 and #6, across the same geochemical anomaly.

Trench #7 (See Fig. 7)

The purpose of trench #7 was to expose bedrock in the area of a lead geochemical anomaly in soils. Only Proterozoic quartzite, quartz-mica schist and mica schist were encountered in the trench. The only sulfide mineralization seen was very minor small pyrite cubes disseminated in a narrow quartzite unit. A rock geochemical sample of this material ran:

Cu - 30 ppm
Pb - 40 ppm
Zn - 120 ppm

A unit of rusty weathering quartzite, but with no visible sulfide ran:

Cu - 20 ppm
Pb - 70 ppm
Zn - 70 ppm

The only anomalous rock geochemical values obtained from samples from this trench were from a clean, not rusty, coarse grained mica schist that contained no visible sulfides. The geochemical values from this unit were:

Cu - 280 ppm
Pb - 90 ppm
Zn - 3000 ppm

No pronounced shearing or fracturing was observed in this trench.

Trench #8 (See Fig. 8)

Trench #8 was to investigate a zone of coincident copper, lead and zinc geochemical anomalies in soils. Quartzite was the main rock type exposed, with lesser amounts of quartz-mica schist, and mica schist. A highly oxidized 2 ft. wide shear zone, mineralized with quartz and minor galena, black sphalerite, chalcopyrite,

and pyrite was exposed near the upslope margin of the geochemical anomalies. Further upslope a rusty weathering quartzite unit was exposed. This unit contains a few widely spaced, randomly oriented quartz veinlets with very minor pyrite. Approximately 250 ft. from the downslope (SE) end of the trench a very quartzose, rusty weathering quartz-mica schist unit (20 ft. thick) gave highly anomalous rock geochemical values, as follows:

Cu - 360 ppm
Pb - 2150 ppm
Zn - 2070 ppm

No sulfides were observed in this unit.

Some very minor malachite stain was seen on the weathered surface of a quartz-mica schist unit about 150 ft. from the S.E. end of the trench. Again, no visible sulfides could be found.

Trench #9 (See Fig. 9)

Trench #9 was spotted on a zone of anomalous copper-zinc values in soils. The rock types exposed in this trench are primarily Proterozoic quartzite, and a lesser amount of very quartzose quartz-mica schist. Some minor pyrite and rust staining is associated with a number of small shears. A unit of very quartzose quartz-mica schist, exposed at the S.W. end of the trench, contained minor visible pyrite in quartz veinlets and was slightly stained with malachite on weathered surfaces.

Trench #10 (See Fig. 10)

The purpose of trench #10 was to investigate a copper geochemical anomaly in soils. The entire trench is in quartzite with the exception of two narrow quartz-mica schist units. Two zones (30 ft. wide and 10 ft. wide)

of rusty weathering quartzite having very minor amounts of pyrite and chalcopyrite on fracture planes were discovered. A rock geochemical sample of the material gave the following values:

Cu - 400 ppm
Pb - 10 ppm
Zn - 68 ppm

A sample of massive rusty quartzite having no visible sulfides ran:

Cu - 160 ppm
Pb - 20 ppm
Zn - 110 ppm

A sample from this trench of clean, blocky, not rusty, non-mineralized quartzite gave the following values:

Cu - 44 ppm
Pb - 10 ppm
Zn - 92 ppm

Trench #11 (See Fig. 11)

This trench was spotted in the area of a lead-copper soil anomaly coincident with a small, low magnitude ground magnetic high. Clean blocky quartzite is by far the most abundant rock unit seen in this trench, with a much smaller percentage of quartz-mica schist and mica schist. The S.W. end of the trench is in rusty weathering quartzite containing minor disseminated pyrite. A rock geochemical sample of this material ran (28;10;880). At 150 ft. from its N.E. end, the trench intersects a 3" wide quartz-galena-arsenopyrite vein. This vein is exposed for 15 ft. along strike. A grab sample of the best mineralized material assay as follows:

Au - Tr.
Ag - 5.96 oz/Ton

A rusty "gossany" shear zone containing minor pyrite, galena and sphalerite was seen at the extreme N.E. end of the trench.

Trench #12 (See Fig. 12)

The purpose of trench #12 was to investigate a lead-copper geochemical anomaly in soil adjacent to a small low magnitude ground magnetic anomaly. The rocks exposed were a quite closely interbedded sequence of quartzite, quartz-mica schist, and mica schist. Minor disseminated pyrite was seen in some quartzite sections. A 6" wide barren quartz lens parallel with bedding was found in a quartz-mica schist unit. The best rock geochemical values from this trench were as follows:

| <u>Cu</u> | <u>Pb</u> | <u>Zn</u> | |
|-----------|-----------|-----------|---|
| 149 | 1150 | 74 | - a rusty weathering quartz-mica schist containing no visible sulfides |
| 80 | 190 | 360 | - slightly micaceous foliated quartzite with minor disseminated pyrite |
| 100 | 40 | 74 | - quartz-mica schist with numerous small randomly oriented quartz veinlets, no visible sulfides |

Trench #13 (See Fig. 13)

Trench #13 is on the northwest extension of the same zone of anomalous lead values in soils that was investigated by trenches #1 and #2. The anomalous soil results are on the east flank of an aeromagnetic high. The rock types exposed were Proterozoic quartzite and mica schist. Very minor disseminated pyrite was found in a narrow quartzite unit at about the middle of the trench. The quartzite exposed at the southwest end of the trench contained very minor pyrite and galena, disseminated and along fracture planes. This unit is fine grained, slightly colour banded and has numerous thin micaceous sections. A rock geochemical sample of this material gave the following values:

| | | |
|----|---|---------|
| Cu | - | 56 ppm |
| Pb | - | 130 ppm |
| Zn | - | 209 ppm |

The highest rock geochemical values obtained from this trench were from a dark, coarse grained, convoluted, non-rusty mica schist that contains no visible sulfides. A sample of this material assayed as follows:

Cu - 120 ppm

Pb - 450 ppm

Zn - 266 ppm

A number of conformable non-mineralized bull quartz veins were observed in this trench.

Trench #14 (See Fig. 14)

Trench #14 was put down on a gossan zone in which galena mineralization had been found as float. The gossan was coincident with a larger lead-zinc geochemical anomaly in soils. The peak values of the soil anomaly were over the gossan. Proterozoic quartzite, phyllite and limestone were exposed in the trench. A 15 ft. wide zone of intense shearing and fracturing, trending roughly parallel to bedding, cuts across the trench at the limestone-phyllite contact. Minor galena and sphalerite are disseminated in rusty "gossan-like" material in the shear zone. Prospecting along the strike of the above shear turned up no further sulfide mineralization, either as float or in place, nor any more gossan or rust zones.

Trench #15 (See Fig. 15)

The purpose of trench #15 was to determine the extent of the mineralization discovered during the 1968 field season and referred to as Lad Showing K. After exposure, it was seen that the sulfide mineralization was restricted to the contact of a narrow limestone unit with a small fault zone. The surface area of the zone of sulfide mineralization was about 10 ft. by 15 ft. Two chip samples, across the best mineralization, taken in 1968 assayed as follows:

| | | | | |
|----|---|-----------|---|--------------|
| Ag | - | 0.44 oz/T |) | |
| Pb | - | 2.57% |) | |
| Zn | - | 1.01% |) | across 4 ft. |
| Cu | - | .07% |) | |

| | | | | |
|----|---|-----------|---|--------------|
| Ag | - | 0.53 oz/T |) | |
| Pb | - | 5.01% |) | |
| Zn | - | .28% |) | across 5 ft. |
| Cu | - | .07% |) | |

The above showing has no economic potential.

Trench #16 (See Fig. 15)

Trench #16 was spotted to investigate a strong lead anomaly in soils, coincident with lower magnitude Cu-Zn anomalies. Trenching exposed a body of near massive sulfides (referred to as Showing L) with a surface exposure of about 100 ft. by 20 ft. and apparently steeply dipping. The sulfide mineralization is generally fine to medium grained, consisting mainly of pyrrhotite, galena and sphalerite with lesser amounts of chalcopyrite and pyrite. The sulfides are thought to be a replacement of a limestone unit. However, the only limestones now observed in the showing area are a few small black limestone remnant inclusions within the sulfide body. The massive sulfides occur in a wide shear zone (approximately 75 ft. wide, trending 165/90, and cutting quartzite and quartz-mica schist), just where this shear zone is cut by a fault trending 135/90. The mineralization occurs immediately northeast of this fault.

Numerous small blebs of sulfide mineralization occur along fracture and shears within the above wide shear zone, but nothing of any size to be of economic interest.

Two chip samples were taken across representative sections of Showing L, and assayed as follows:

| | | <u>Au</u> | <u>Ag</u> | <u>Pb</u> | <u>Zn</u> | <u>Cu</u> |
|------------|---------|-----------|-----------|-----------|-----------|-----------|
| Sample L-1 | 1'-10' | Tr | 5.36 oz/T | 5.40% | 5.16% | .24% |
| Sample L-2 | 1'-10' | Tr | 8.20 oz/T | 8.85% | 8.28% | .17% |
| | 10'-20' | Tr | 6.48 oz/T | 3.30% | 5.40% | .24% |

A number of grab samples were also taken from this area:

| | | | | | |
|---|-----|-----------|-------|--------|------|
| Grab #1 - very fine grained massive sulfides | Tr. | 11.4 oz/T | 7.35% | 13.64% | .18% |
| Grab #2 - very coarse grained massive sulfides | Tr. | 9.68 oz/T | 2.15% | 11.52% | .23% |
| Grab #3 - the best mineralized mat- erial in the showing | Tr. | 15.2 oz/T | 26.8% | 6.7% | .19% |

The results of subsequent geochemical sampling, a magnetic survey, and a gravity survey, indicate that the total extent of the sulfide mineralization in this zone has been exposed and that no further work is warranted in this area.

Trench #17 (See Fig. 16)

Trench #17 involved stripping an average of about 6 ft. of overburden from an area of 120 ft. by 120 ft. The purpose of the trench was to further expose Lad Showing G mineralization. This showing consisted of an exposure in a small creek cut of sheared, skarny, siliceous limestone, with sulfide mineralization. A 10 ft. chip sample across the best section of mineralization assayed as follows:

| | | |
|----|---|----------|
| Ag | - | 6.3 oz/T |
| Pb | - | .54% |
| Zn | - | 9.31% |
| Cu | - | 3.49% |

Trenching showed the zone of mineralization to be of such a small size as to hold no economic potential. The area is complexly faulted. The mineralization is restricted to a narrow limy unit that pinches out against a northwest trending vertical fault in one direction along strike and is cut by a northeast trending vertical fault in the other direction along strike. (See fig.)

Trench #18 (See Fig. 17)

Trench #18 was undertaken to determine the extent of the sulfide mineralization referred to as Lad Showing F. Showing F consisted of two closely spaced vein systems with skarn-type mineralization. These veins are within a narrow (approximately 35 ft. thick) limestone unit which is bordered on both sides by quartzite. The exposed sulfide zones varied in width from about 1 ft. to 10 ft., but averaged about 5 ft. The average assay across each of them was about:

Ag - 6 oz.T
Pb - 6%
Zn - 3%
Cu - 2%

Prior to trenching this year, this structure was open to the west. Trenching revealed the bedrock surface in this location to be dipping downwards at an angle approaching vertical. At a depth of over 20 ft. in the trench, but only a few feet along strike from the original exposure, the sulfides were cut off by a strong wide fault zone trending 010/80E. The sense of movement of this fault could not be determined.

Towards Clearwater Creek, trenching revealed that here too, the bedrock surface was dipping almost vertically and continued to do so down to below creek level. The

width of the mineralized zone along this face is very variable, up to a maximum of about 10 ft. A chip sample across the zone (10 ft.) close to the creek level assayed as follows:

Ag - 4.20 oz./T

Pb - .3%

Zn - 4.8%

Cu - 1.23%

There is no sign of the mineralized zone across Clearwater Creek, and it is thought that it is also probably terminated by faulting in this direction.

Trenches #19 - #22 (See Fig. 2)

Trenches #19 - #22 located east of Clearwater Creek and immediately east of the Lad Group base camp, were started to investigate a number of second order lead geochemical anomalies found by soil sampling. There is no outcrop in this area. All of these trenches were abandoned at depths of 8 ft. - 12 ft. before any bedrock was reached. Even at these depths, there was every indication that the bottom of the trenches was still many feet from bedrock. Severe slumping and mud problems were encountered in Trenches 19 - 21. No mineralized float or rust zones were observed in these trenches. Because of all the above factors, it was decided that further trenching in this area was impractical and not warranted.

CONCLUSIONS AND RECOMMENDATIONS.

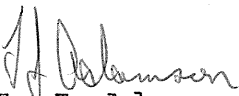
Bulldozer trenching was carried out on the Lad Mineral Claim Group on mineral showings and geochemical anomalies that, on the basis of results obtained during the 1968 field season, warranted a closer examination.

In the cases where mineral showings were trenched (Trenches #3, #14, #15, #17, #18) the extent of the sulfide mineralization was shown, in every case, to be much too limited to have any economic potential.

The trenches on geochemical anomalies in soils were successful, in every case where bedrock was reached, in exposing a plausible explanation for the geochemical anomaly (visible sulfides or very high metal values obtained from bedrock geochemical sampling). All sulfide occurrences exposed were of a very minor nature, with the exception of Showing L (trench #16). However, subsequent work (geochemical and geophysical surveys) has shown that the total extent of mineralization in this area has been exposed and that this showing is also of too small a size to be of economic interest.

On the basis of the foregoing results, no further trenching is warranted in this immediate area.

Respectfully submitted,


T. J. Adamson

November 13, 1969


M. Coates P. Eng.

ATLAS EXPLORATIONS LIMITED
YEAR TO DATE EXPENDITURES 1969
BUDGET

PROJECT NUMBER: 103
NAME: LAD

| | JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV |
|-------------------------------|-------|-------|-------|--------|--------|--------|---------|---------|---------|-----|-----|
| 01 Property Examination * | | | | | | | | | | | |
| 02 Prospecting * | | | | | | 1 826 | 4 073 | 6 069 | 5 793 | | |
| 03 Staking * | | | | | | | | | | | |
| 04 Airborn Surveys * | 281 | 328 | 607 | 778 | 916 | 1 131 | 942 | 956 | 953 | | |
| 05 Linecutting * | | | | | 28 | 28 | 4 074 | 5 108 | 5 089 | | |
| 06 Geology * | 803 | 1 503 | 3 071 | 3 102 | 7 023 | 16 884 | 20 094 | 25 527 | 26 273 | | |
| 07 Geophysics * | 233 | 338 | 591 | 579 | 740 | 889 | 1 437 | 2 776 | 5 276 | | |
| 08 Geochemistry * | 318 | 675 | 1 184 | 1 162 | 1 479 | 2 540 | 2 998 | 6 761 | 7 516 | | |
| 09 Diamond Drilling * | | | | | | | | | | | |
| 10 Physical Work * | | 108 | 918 | 9 344 | 11 836 | 39 831 | 54 902 | 61 139 | 61 003 | | |
| 11 Access Roads * | | | | | 1 722 | 11 582 | 4 583 | 4 610 | 4 603 | | |
| 31 Prop. Acq. & Option Paymts | | | | | | | | | | | |
| 32 Participations | | | | | | | | | | | |
| 33 Property Maintenance | | 1 346 | 1 346 | 1 346 | 1 346 | 1 346 | 1 346 | 1 346 | 1 346 | | |
| 41 Expediting | 412 | 813 | 968 | 2 330 | 3 050 | 4 389 | 6 363 | 7 690 | 7 803 | | |
| 43 Government Grant | | | | | | | | | | | |
| | 2 056 | 5 111 | 8 685 | 18 641 | 28 140 | 80 446 | 100 812 | 121 982 | 125 655 | | |

Account #10 can be broken down as follows:

DESCRIPTION:

ATLAS EXPLORATIONS LIMITED
1969
YEAR TO DATE EXPENDITURES
BUDGET

PROJECT NUMBER: 10
NAME: LAD

| | JAN | FEB | MAR | APR | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV |
|--|-----|-----|-----|-------|-------|--------|--------|--------|--------|-----|-----|
| 10 PHYSICAL WORK (Bulldozer Trenching) | | | | | | | | | | | |
| -1 Salaries & Wages | | 108 | 431 | 4 821 | 5 233 | 5 326 | 5 647 | 5 818 | 5 777 | | |
| -2 Contract Payments | | | | | | 25 016 | 41 824 | 47 411 | 47 411 | | |
| -3 Field Expenses | | | 114 | 540 | 569 | 639 | 639 | 648 | 653 | | |
| -4 Assays | | | | | | | | | | | |
| -5 Camp Operation | | | 132 | 539 | 1 229 | 1 491 | 1 617 | 1 791 | 1 730 | | |
| -6 Freight & Transprtn | | | 241 | 3 444 | 4 805 | 7 359 | 5 175 | 5 471 | 5 432 | | |
| | | | | | | 39 831 | 54 902 | 61 139 | 61 003 | | |

SUMMARY OF COSTS OF LAD GROUP TRENCHING
AS APPLIED AS REPRESENTATION WORK

Total volume of Trenching : 38,698 cu. yds.

Total cost of Trenching : \$61,003.00

| <u>Trench</u> | <u>Claim</u> | <u>% of Total Volume</u> | <u>Cost(not sub- mitted as rep.work</u> | <u>Cost(sub. as rep. work</u> |
|---------------|--------------|------------------------------|---|-----------------------------------|
| 1 | Lad #29 | 3.4% | 2,074.00 | |
| 2 | #29 | 3.9% | 2,379.00 | |
| 3 | #29 | 6.4% | 3,904.00 | |
| 4 | #21,#23 | 2.3% | | 1,403.00 |
| 5 | #21,#23 | 6.9% | | 4,209.00 |
| 6 | #21,#23 | 7.3% | | 4,453.00 |
| 7 | #98 | 1.2% | 732.00 | |
| 8 | #100 | 3.8% | | 2,318.00 |
| 9 | #100 | 3.4% | | 2,074.00 |
| 10 | #100 | 2.4% | | 1,464.00 |
| 11 | #100 | 4.7% | | 2,867.00 |
| 12 | #102 | 1.6% | | 976.00 |
| 13 | #30 | 2.6% | 1,586.00 | |
| 14 | #52 | 1.4% | | 854.00 |
| 15 | #68 | 2.4% | | 1,464.00 |
| 16 | #68 | 11.4% | | 6,954.00 |
| 17 | #73 | 8.3% | | 5,063.00 |
| 18 | #73 #88 | 13.7 | | 8,357.00 |
| 19 | #10 | 3.2% | 1,952.00 | |
| 20 | #26 | 3.5% | | 2,135.00 |
| 21 | #26 | 4.1% | | 2,501.00 |
| 22 | #26 | 2.1% | | 1,281.00 |
| | | 100 % | \$12,627.00 | \$48,373.00 |

The total cost of work done to be applied as representation work is \$48,373.00.

TELEPHONE 685-4331

ATLAS EXPLORATIONS LIMITED
(N.P.L.)330 MARINE BUILDING
355 BURRARD STREET
VANCOUVER 1, B.C.AFFIDAVIT SUPPORTING SUMMARY OF COSTS

I, THOMAS J. ADAMSON, Geologist, Atlas Explorations Limited, of Vancouver, British Columbia, do hereby state that, to the best of my knowledge and belief, the statement of cost presented in this report ("Lad Mineral Claim Group - Report on Bulldozer Trenching and Geological Mapping of Trenches," Appendix I) is both correct and true.

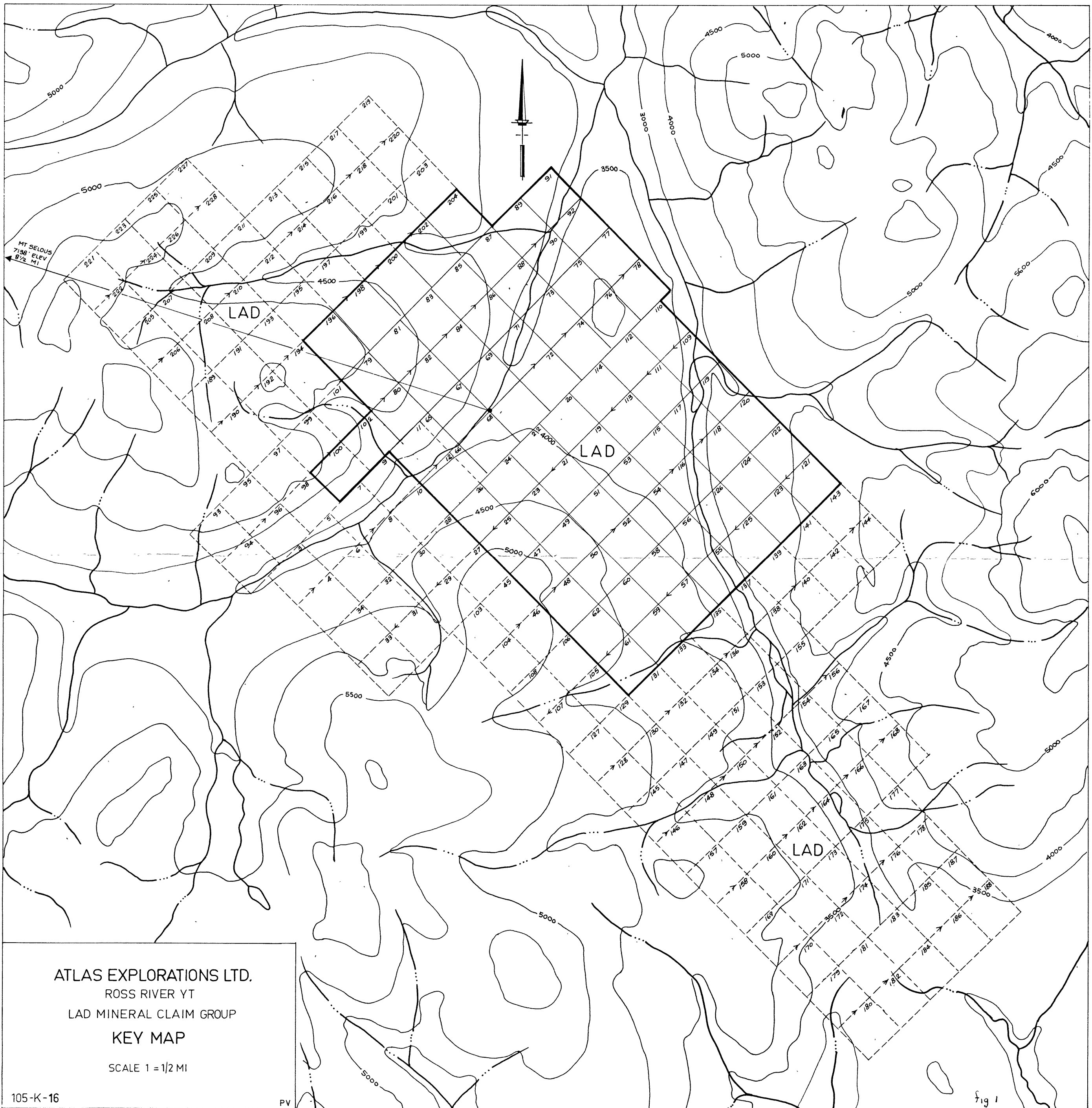
T. J. Adamson
T. J. Adamson

Nov. 19, 1969.
Date

John S. Brook JP2
Commissioner of Oaths in and
for the Yukon Territory

LIST OF PERSONNEL
LAD TRENCHING
June 1 - Sept.30, 1969

| | | |
|------------|----------------------------|----------------------|
| T. Adamson | Geologist | Vancouver, B.C. |
| T. Brock | Geological Assistant | West Vancouver, B.C. |
| F. Drociuk | H.D. Operator | Dawson Creek, B.C. |
| R. Fooks | Bombardier driver-mechanic | Whitehorse, Y.T. |
| B. Olson | Bombardier driver-mechanic | Whitehorse, Y.T. |
| L. Sumner | Bombardier driver-mechanic | Calgary, Alberta |
| G. Mandell | Cook | Whitehorse, Y.T. |
| A. DeGrace | Cook | Whitehorse, Y.T. |



ATLAS EXPLORATIONS LTD.
ROSS RIVER YT
LAD MINERAL CLAIM GROUP
KEY MAP
SCALE 1 = 1/2 MI

62° 56'

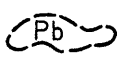




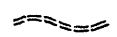
62° 56'

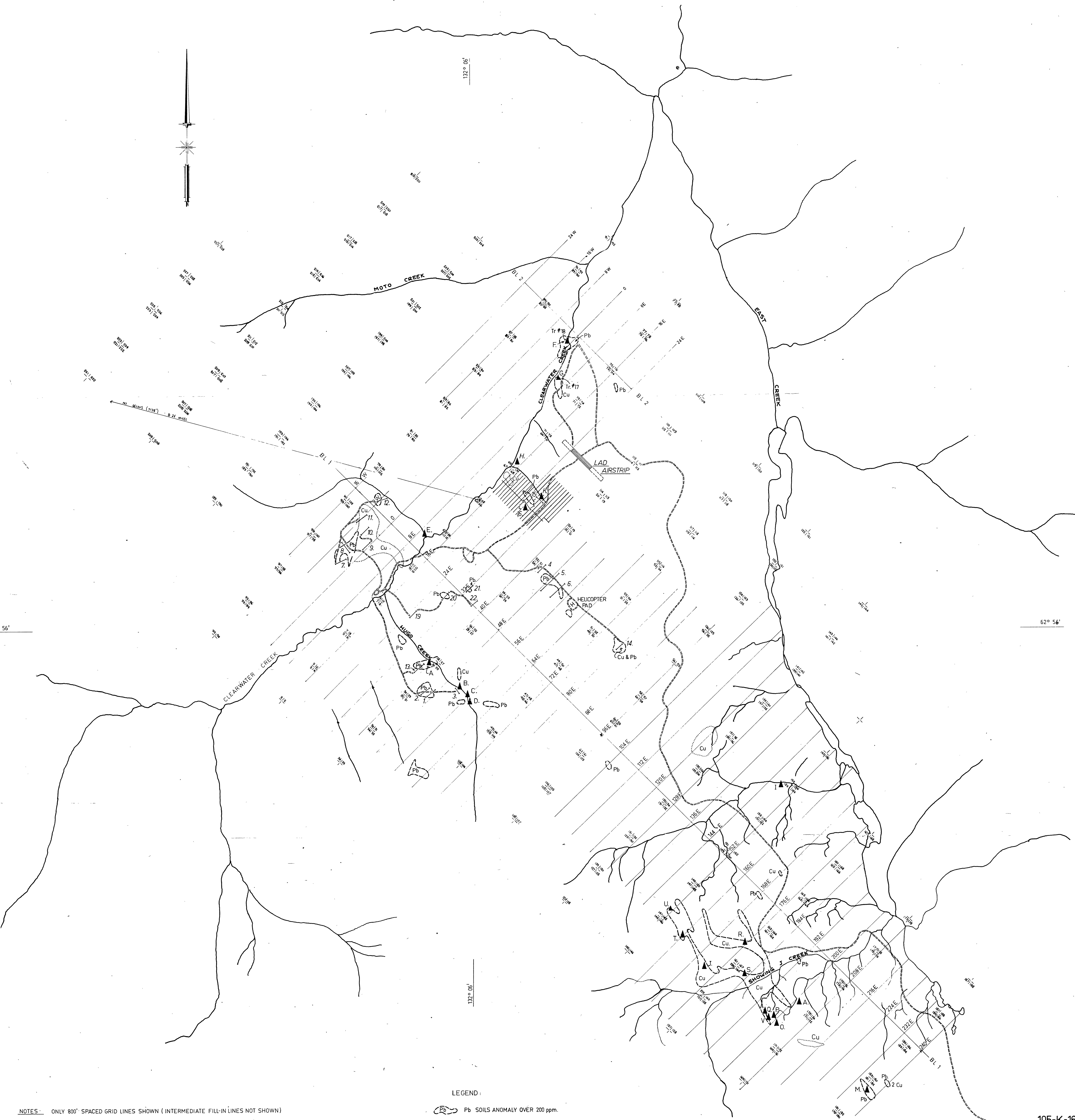
132° 06'

132° 06'

NOTES: ONLY 800' SPACED GRID LINES SHOWN (INTERMEDIATE FILL-IN LINES NOT SHOWN)
 LAD # 1 GRID AREA LINE 16W TO 96E, 55S TO 50N
 LAD EAST GRID AREA LINE 104E TO 240E
 LAD NORTH GRID AREA LINE 24W TO 24E, 40N TO 105N

LEGEND:

-  Pb SOILS ANOMALY OVER 200 ppm.
-  Cu SOILS ANOMALY OVER 150 ppm.
-  COINCIDENT Cu AND Pb ANOMALY
-  MINERAL OCCURRENCE
-  BULLDOZER TRENCH
-  ROAD



105-K-16

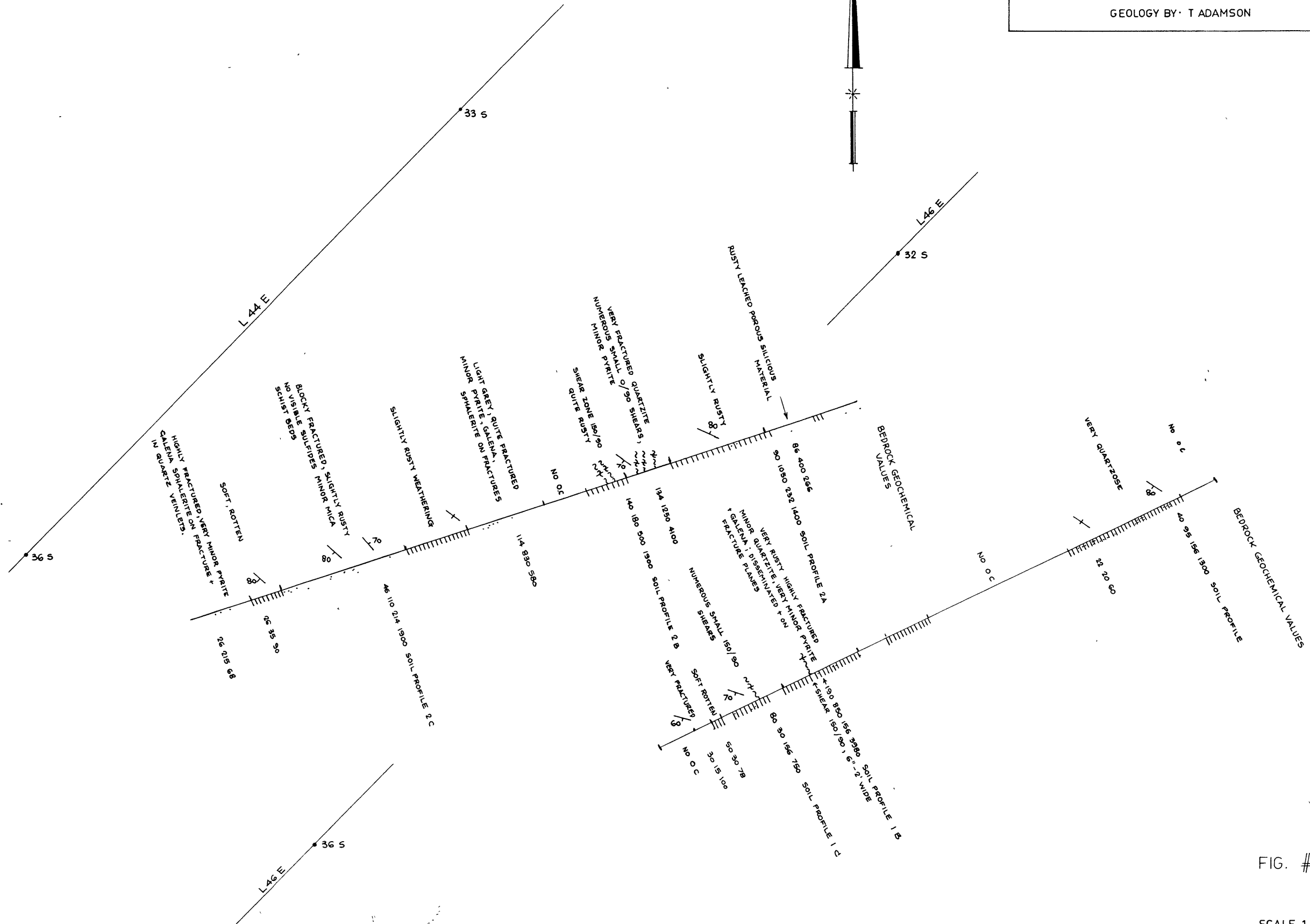
ATLAS EXPLORATIONS LIMITED
 ROSS RIVER (Y.T.)
 HESS REGION
 LAD MINERAL CLAIM GROUP
 KEY MAP OF CLAIMS, GRID, ROADS, TRENCH AND
 SHOWINGS LOCATIONS

PARTY CHIEF: T ADAMSON
 DRAWN BY: T A & P V
 DATE: DEC. 4/1968

SCALE IN FEET
 0 1200 2400

fig. 2

ATLAS EXPLORATIONS LIMITED
 ROSS RIVER YT
 HESS REGION
 LAD MINERAL CLAIM GROUP
 TRENCH 1+2
 GEOLOGY AND ROCK GEOCHEMICAL VALUES
 GEOLOGY BY: T ADAMSON



LEGEND.

- QUARTZITE
- QUARTZ-MICA SCHIST
- MICA SCHIST

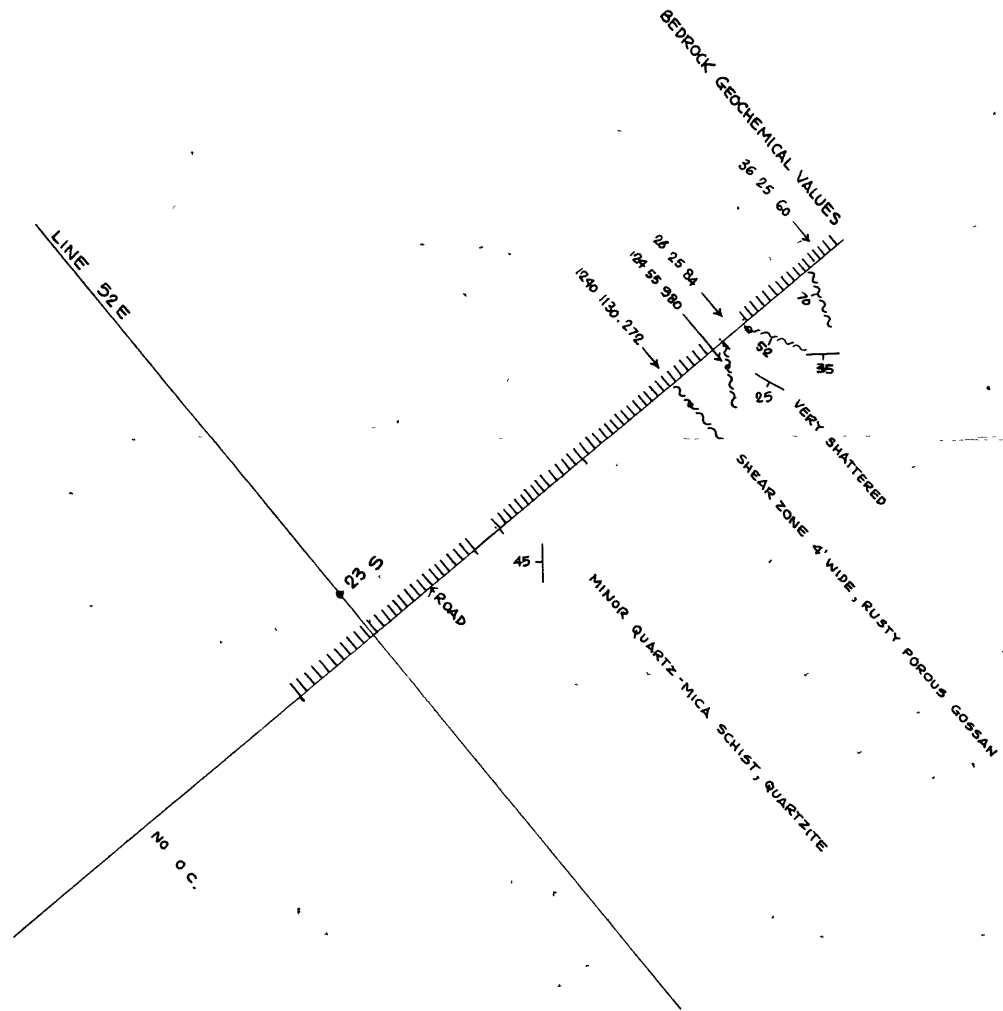
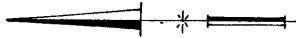
20 15 100 BEDROCK GEOCHEMICAL VALUES (Cu, Pb, Zn ppm)

FIG. # 3




SCALE 1=50'

ATLAS EXPLORATIONS LIMITED
 ROSS RIVER YT
 HESS REGION
 LAD MINERAL CLAIM GROUP
 TRENCH-3
 GEOLOGY AND ROCK GEOCHEMICAL VALUES
 GEOLOGY BY T ADAMSON

Fig 4



LEGEND

-  QUARTZITE
-  QUARTZ MICA SCHIST
-  MICA SCHIST

36 25 60 BEDROCK GEOCHEMICAL VALUES (Cu, Pb Zn p.p.m)

SCALE 1 = 50'

LEGEND:

- QUARTZITE
- QUARTZ-MICA SCHIST
- MICA SCHIST

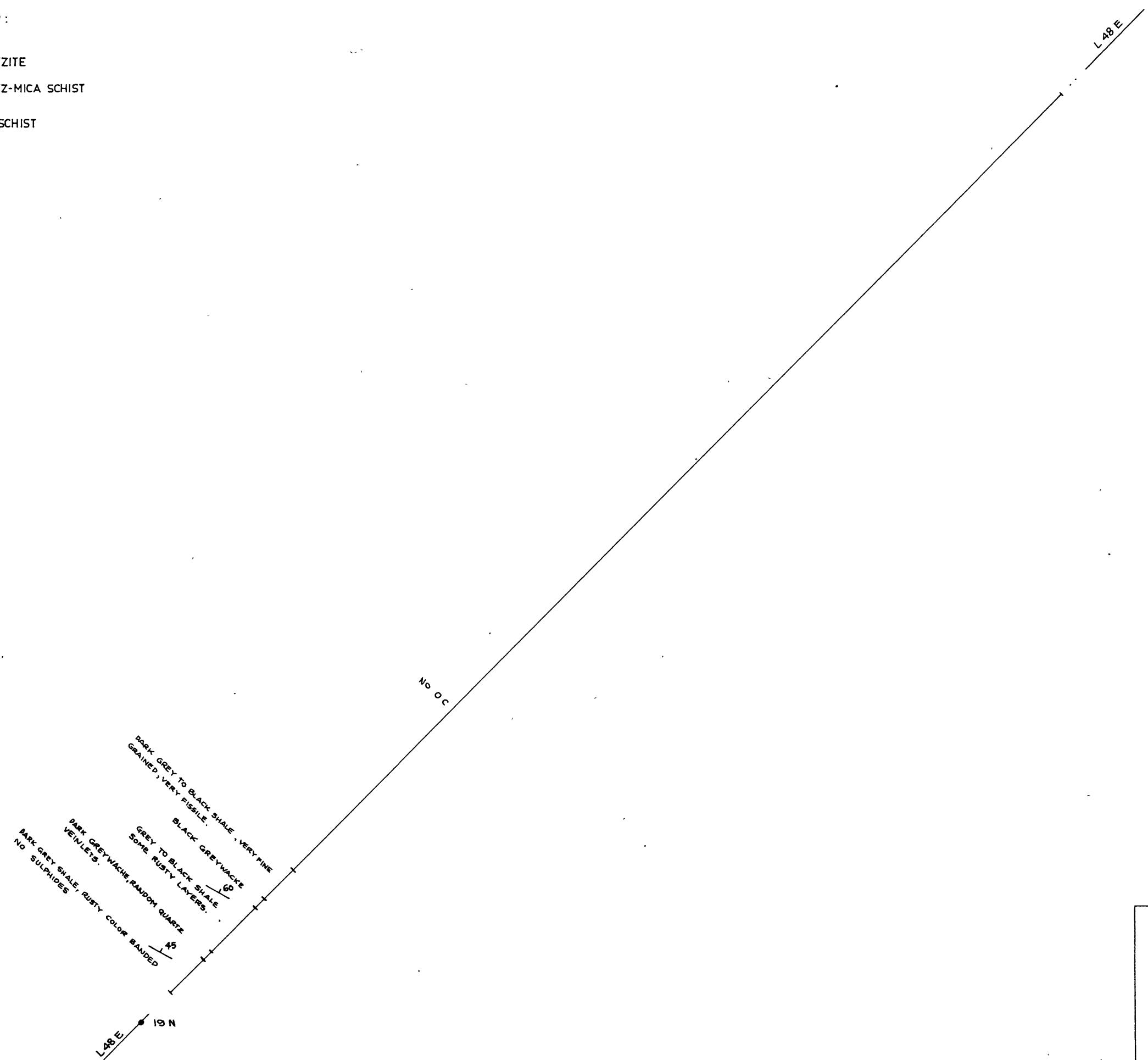
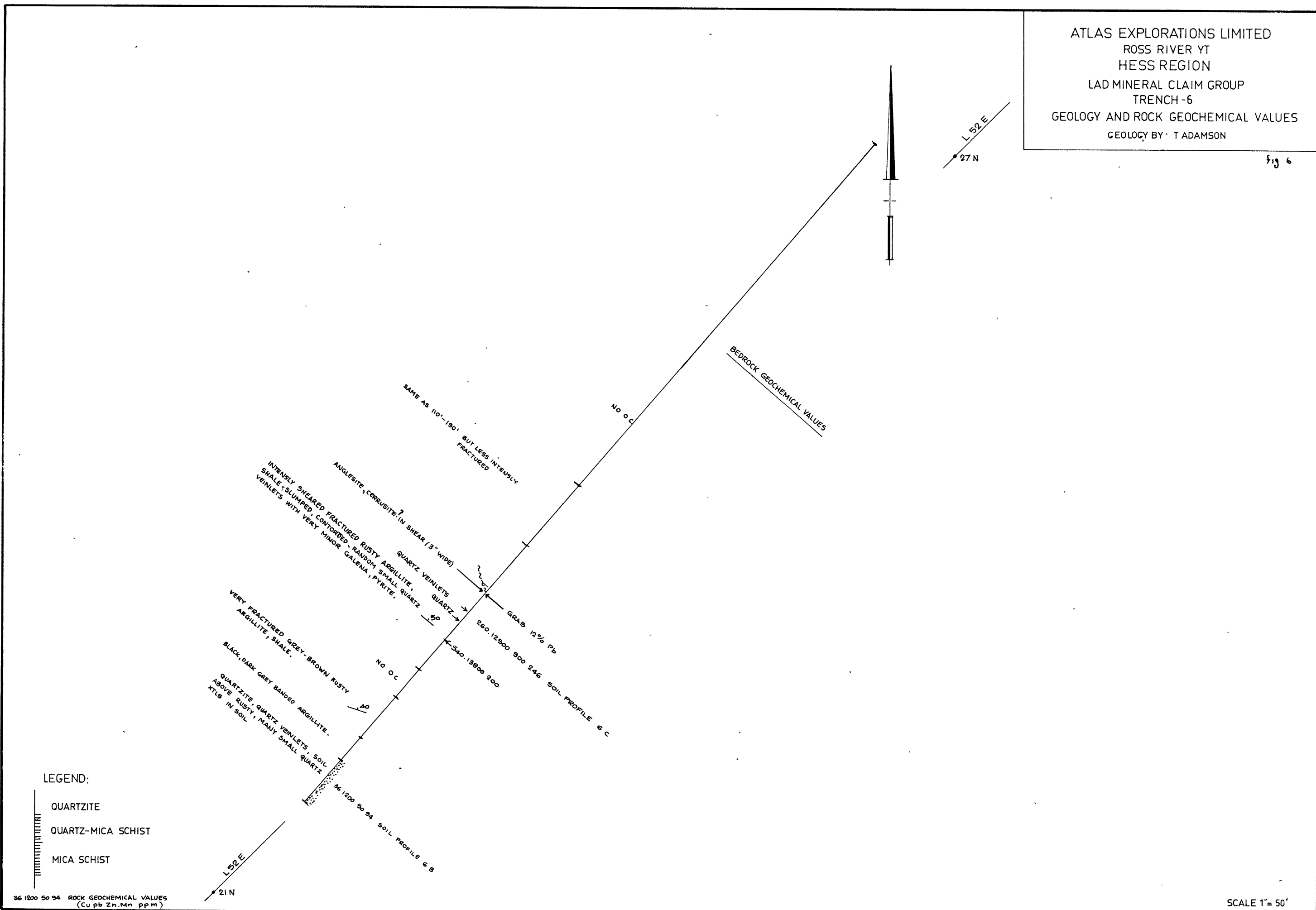


Fig 5

ATLAS EXPLORATIONS LIMITED
ROSS RIVER YT
HESS REGION
LAD MINERAL CLAIM GROUP
TRENCH-5
GEOLOGY AND ROCK GEOCHEMICAL VALUES
GEOLOGY BY: T.ADAMSON

SCALE 1 = 50'



LEGEND:

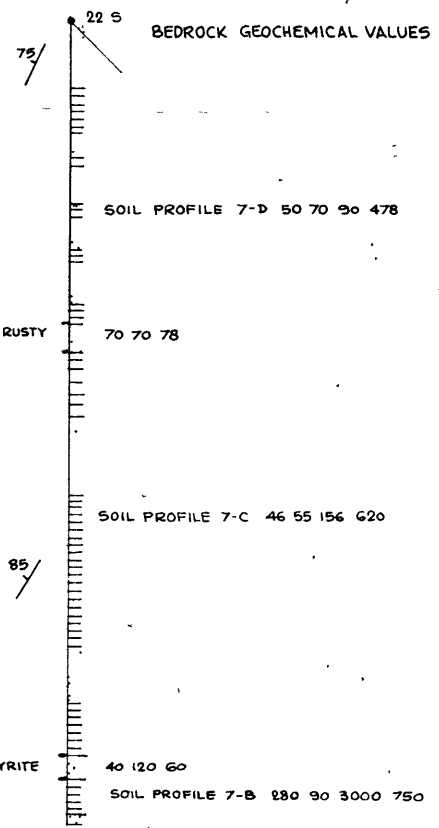
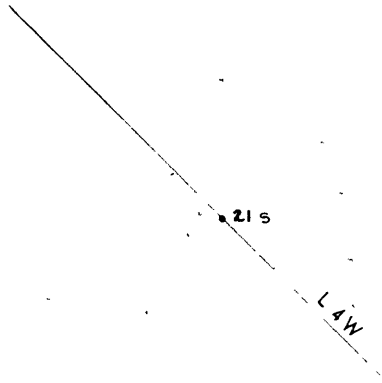
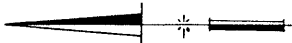
- ▬ QUARTZITE
- ▬ QUARTZ-MICA SCHIST
- ▬ MICA SCHIST

36 1200 50 94 ROCK GEOCHEMICAL VALUES
 (Cu pb Zn Mn ppm)

SCALE 1" = 50'

ATLAS EXPLORATIONS LIMITED
 ROSS RIVER YT
 HESS REGION
 LAD MINERAL CLAIM GROUP
 TRENCH-7
 GEOLOGY AND ROCK GEOCHEMICAL VALUES
 GEOLOGY BY T. ADAMSON

fig 7

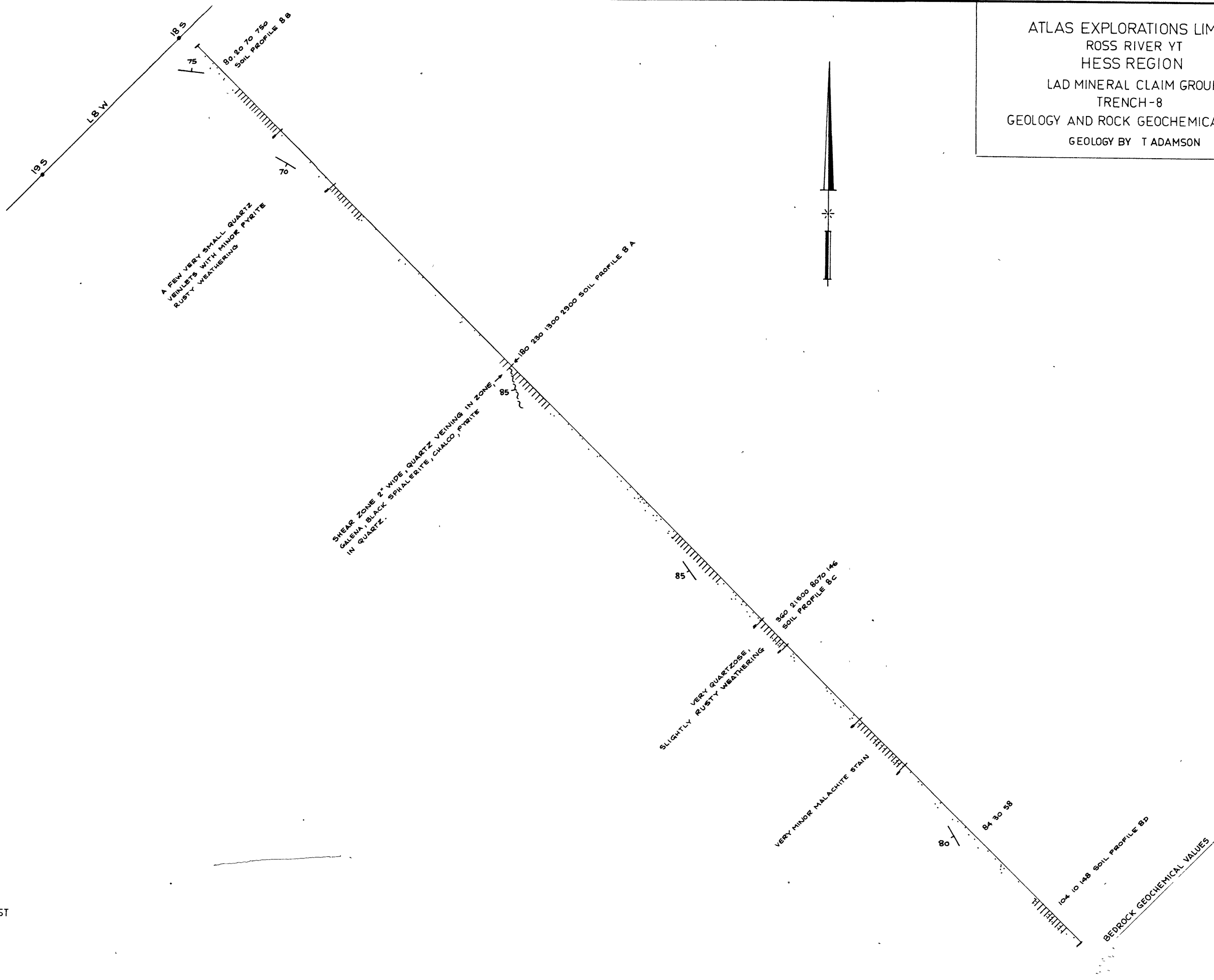


LEGEND :

- QUARTZITE
- QUARTZ-MICA SCHIST
- MICA SCHIST

50 70 90 478 BEDROCK GEOCHEMICAL VALUES (Cu, Pb, Zn, Mn ppm)

SCALE 1 = 50'



LEGEND:

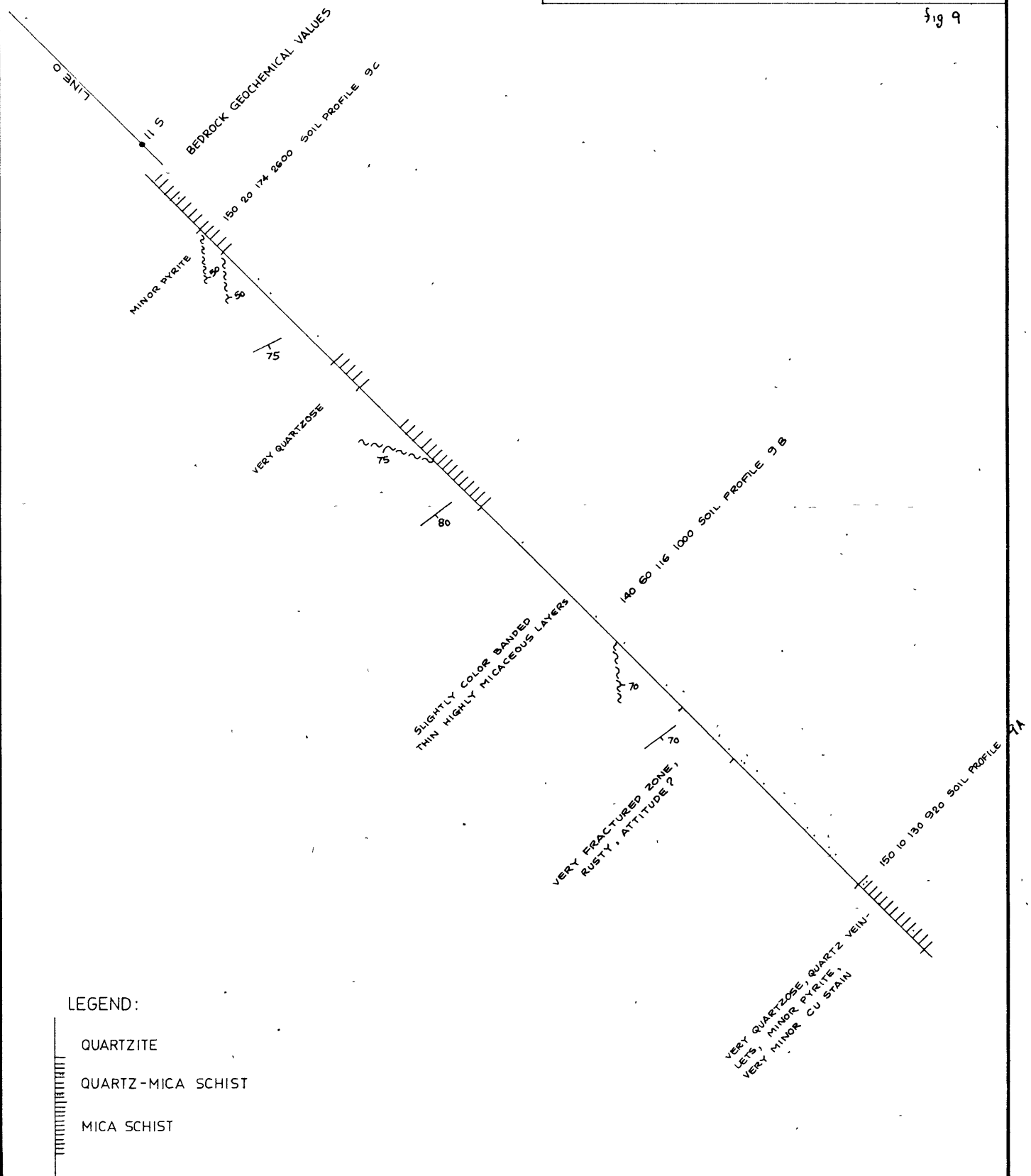
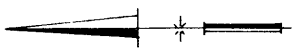
- QUARTZITE
- QUARTZ-MICA SCHIST
- MICA SCHIST

84 30.58.750 ROCK GEOCHEMICAL VALUES (Cu, Pb, Zn, Mn, ppm)




SCALE 1 = 50'

ATLAS EXPLORATIONS LIMITED
 ROSS RIVER Y.T.
 HESS REGION
 LAD MINERAL CLAIM GROUP
 TRENCH-9
 GEOLOGY AND ROCK GEOCHEMICAL VALUES
 GEOLOGY BY · T ADAMSON

Fig 9



LEGEND:

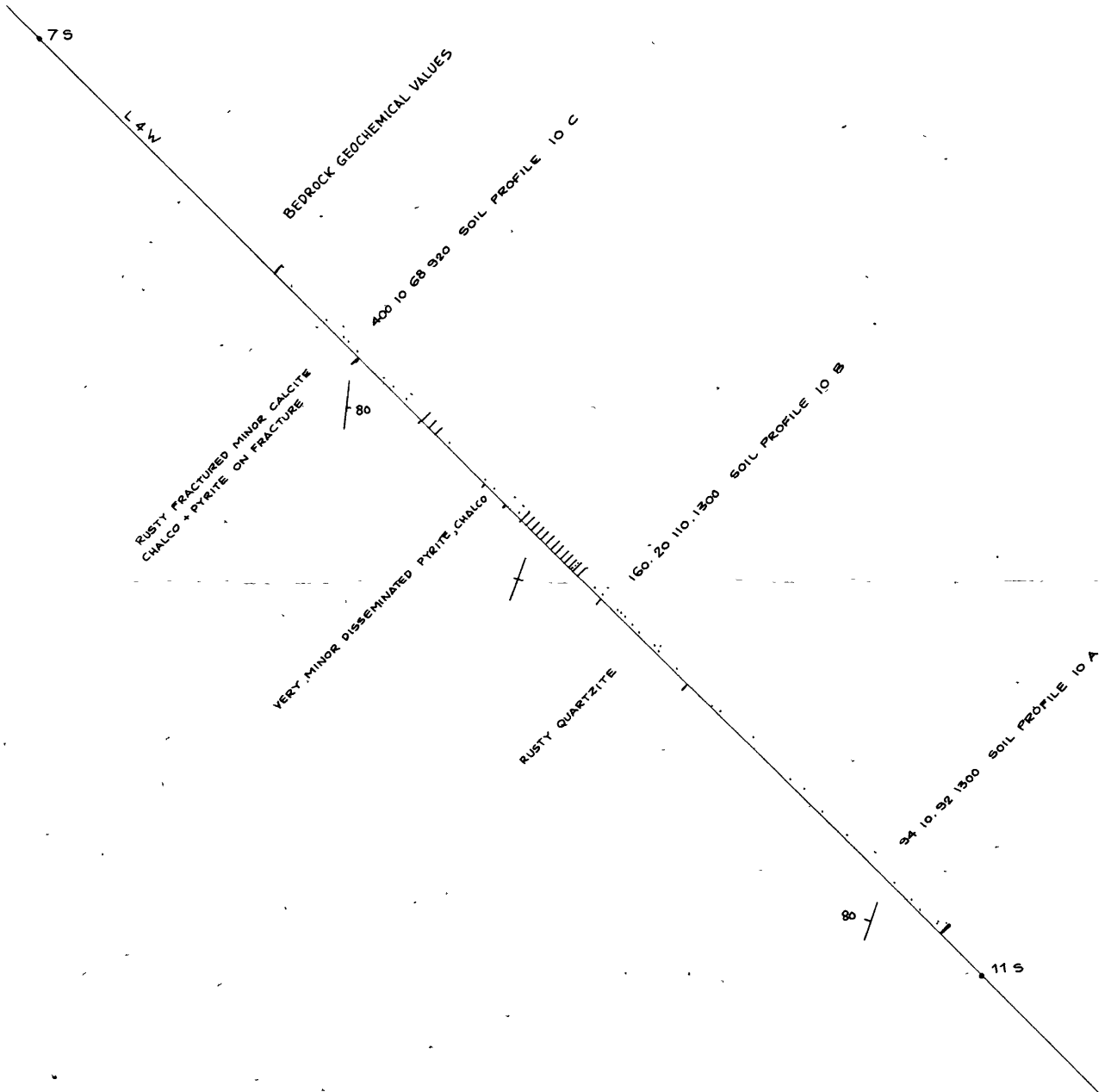
-  QUARTZITE
-  QUARTZ-MICA SCHIST
-  MICA SCHIST

150 20 174 2600 BEDROCK GEOCHEMICAL VALUES (Cu,Pb,Zn,Mn PPM)

SCALE 1" = 50'

ATLAS EXPLORATIONS LIMITED
 ROSS RIVER YT
 HESS REGION
 LAD MINERAL CLAIM GROUP
 TRENCH 10
 GEOLOGY AND ROCK GEOCHEMICAL VALUES
 GEOLOGY BY T ADAMSON

Fig 10



LEGEND

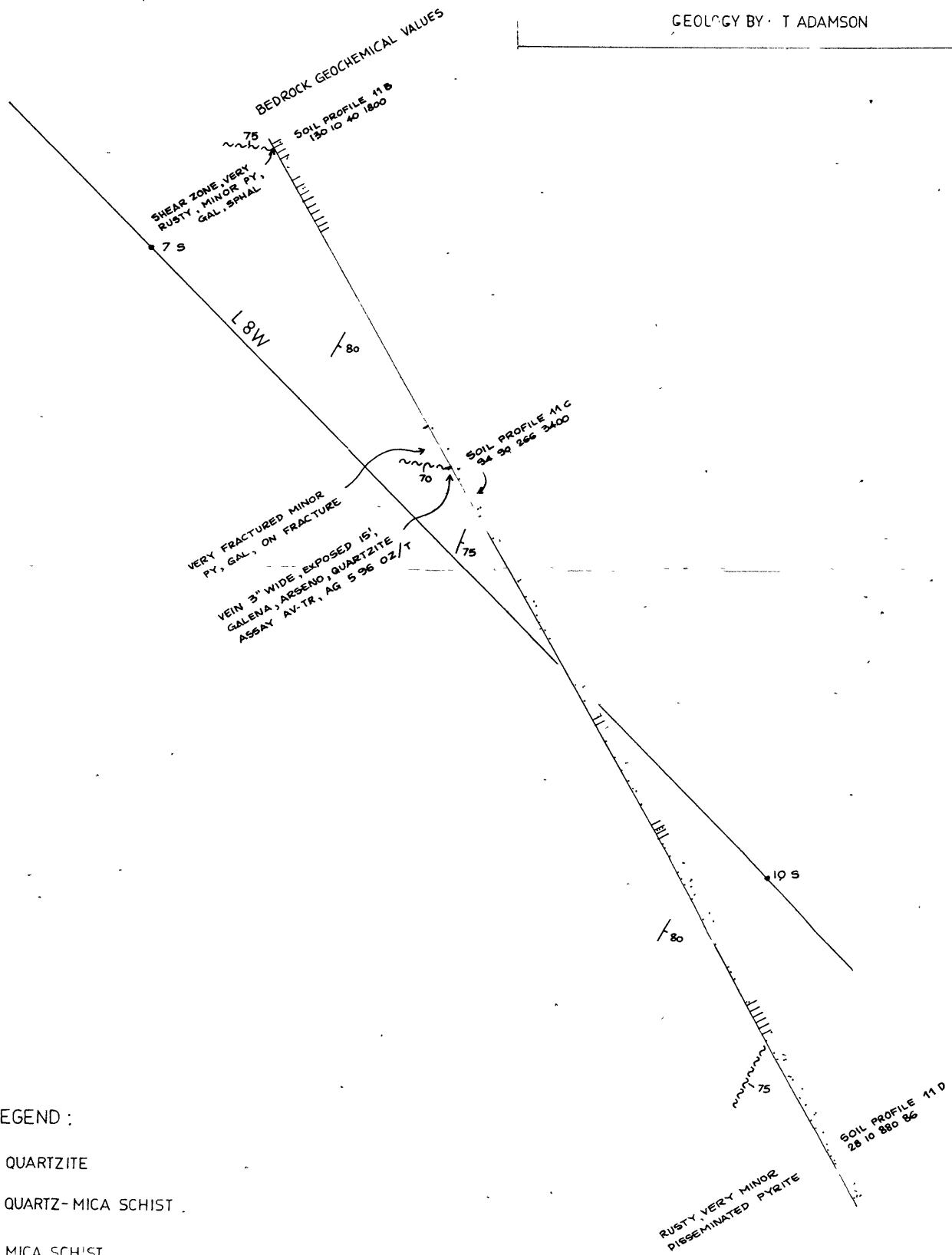
- QUARTZITE
- ||||| QUARTZ-MICA SCHIST
- ||||| MICA SCHIST

160 20 110 1300 BEDROCK GEOCHEMICAL VALUES (Cu,Pb,Zn,Mn PPM)




SCALE 1 = 50'

ATLAS EXPLORATIONS LIMITED
 ROSS RIVER YT
 HESS REGION
 LAD MINERAL CLAIM GROUP
 TRENCH-11
 GEOLOGY AND ROCK GEOCHEMICAL VALUES
 GEOLOGY BY: T ADAMSON

Fig 11

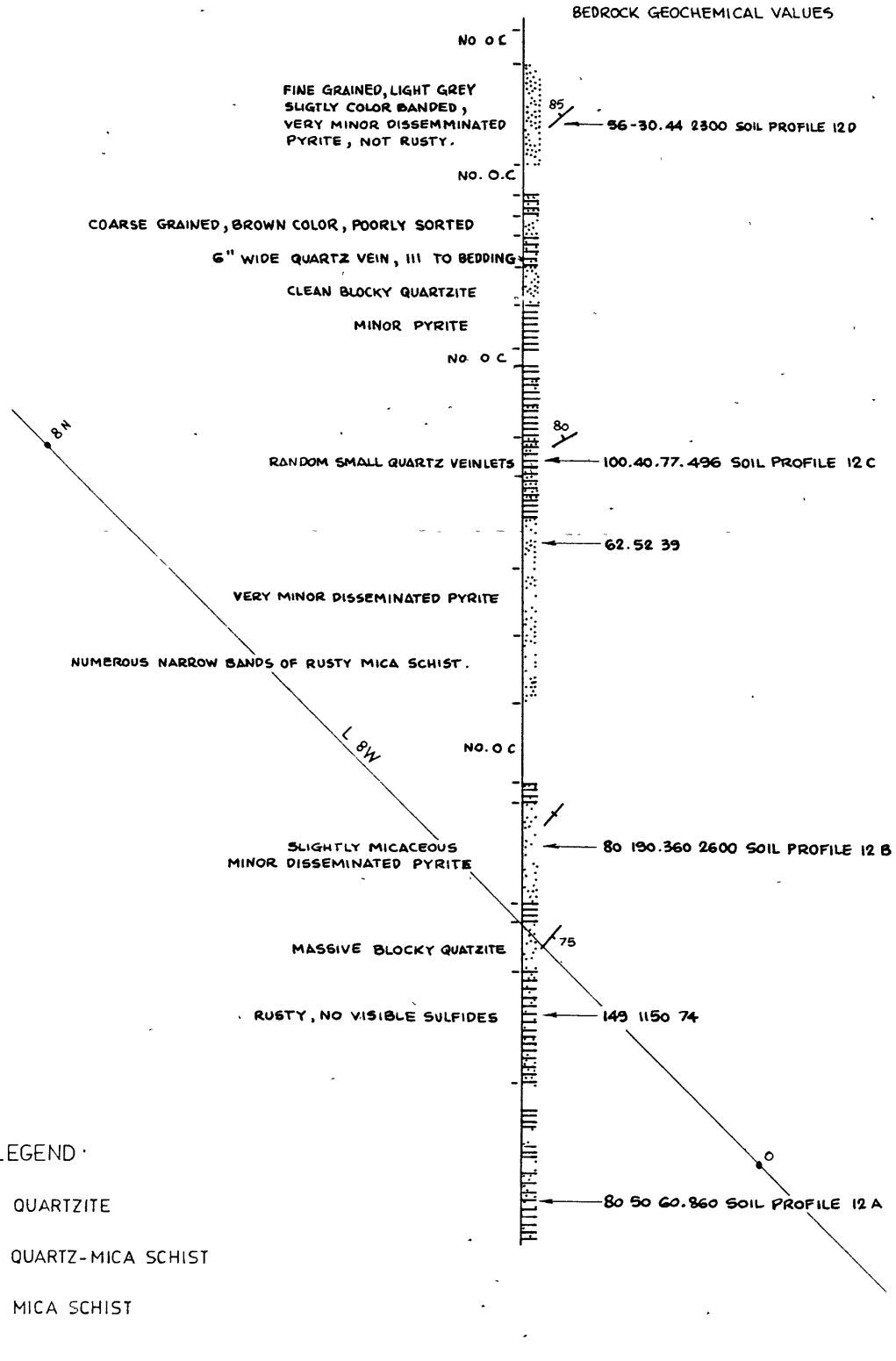


LEGEND :

-  QUARTZITE
-  QUARTZ-MICA SCHIST
-  MICA SCHIST

ATLAS EXPLORATIONS LIMITED
 ROSS RIVER YT
 HESS REGION
 LAD MINERAL CLAIM GROUP
 TRENCH - 12
 GEOLOGY AND ROCK GEOCHEMICAL VALUES
 GEOLOGY BY : T ADAMSON

Fig 12

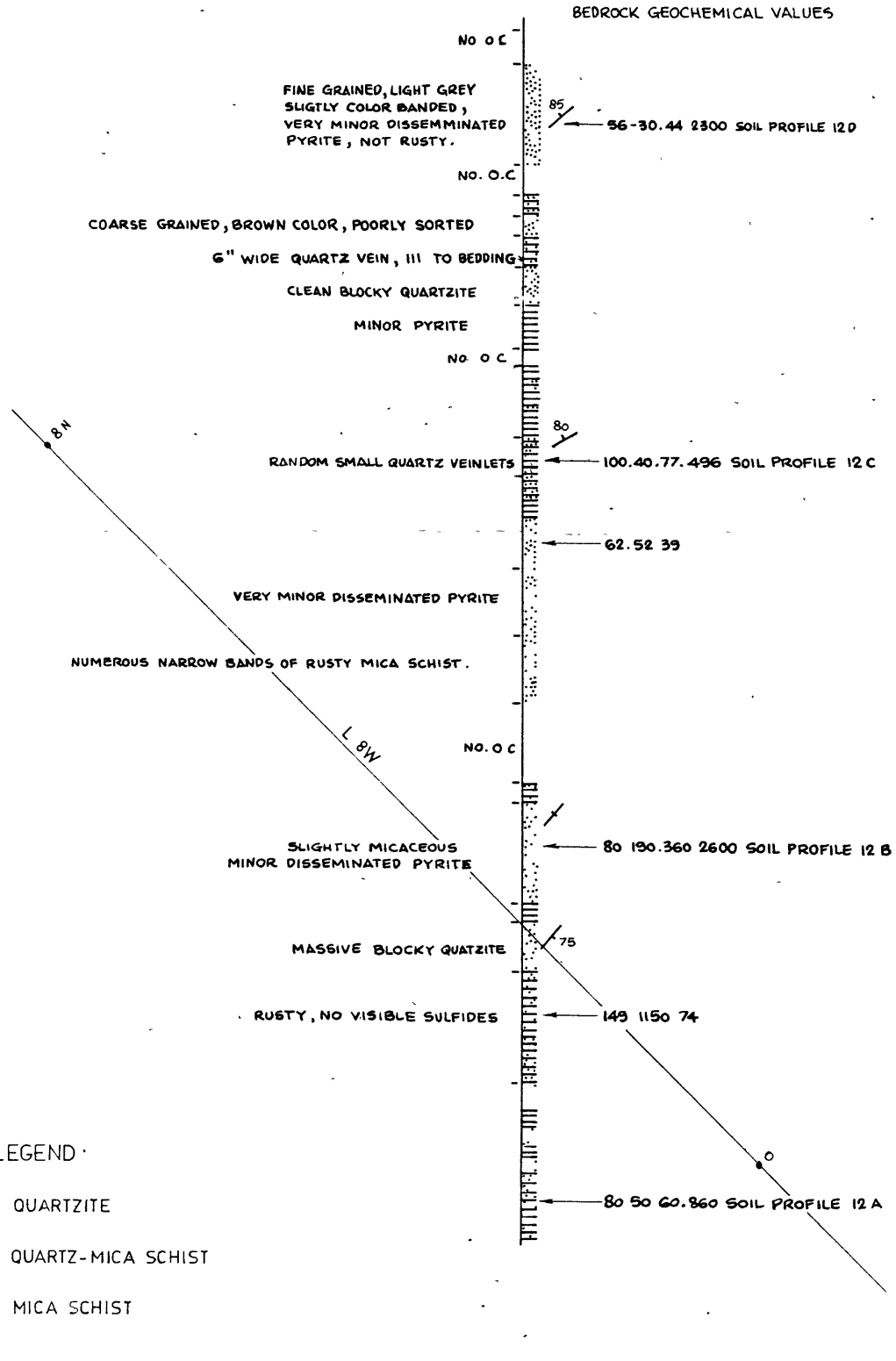


LEGEND

- QUARTZITE
- QUARTZ-MICA SCHIST
- MICA SCHIST

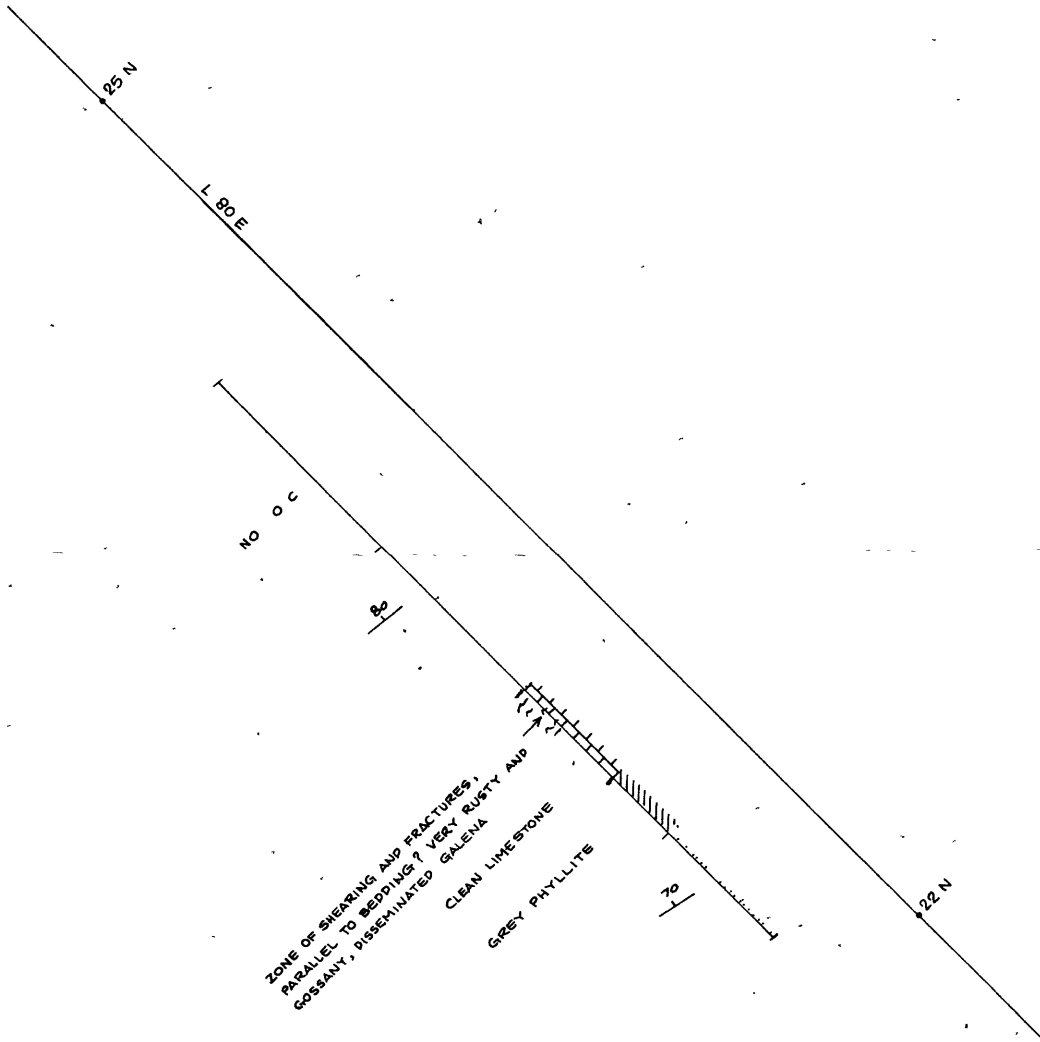
ATLAS EXPLORATIONS LIMITED
 ROSS RIVER YT
 HESS REGION
 LAD MINERAL CLAIM GROUP
 TRENCH - 12
 GEOLOGY AND ROCK GEOCHEMICAL VALUES
 GEOLOGY BY : T ADAMSON

Fig 12






ATLAS EXPLORATIONS LIMITED
ROSS RIVER YT
HESS REGION
LAD MINERAL CLAIM GROUP
TRENCH - 14
GEOLOGY AND ROCK GEOCHEMICAL VALUES
GEOLOGY BY T ADAMSON

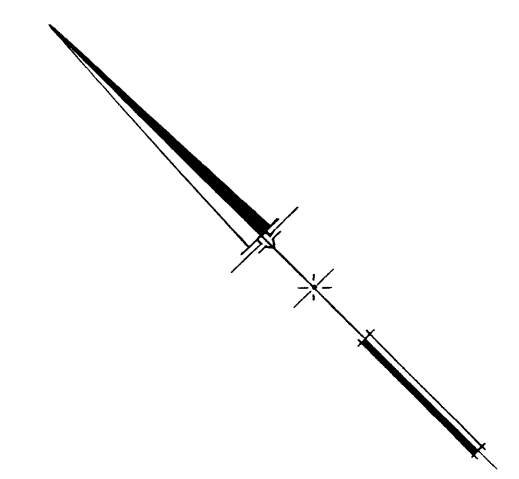
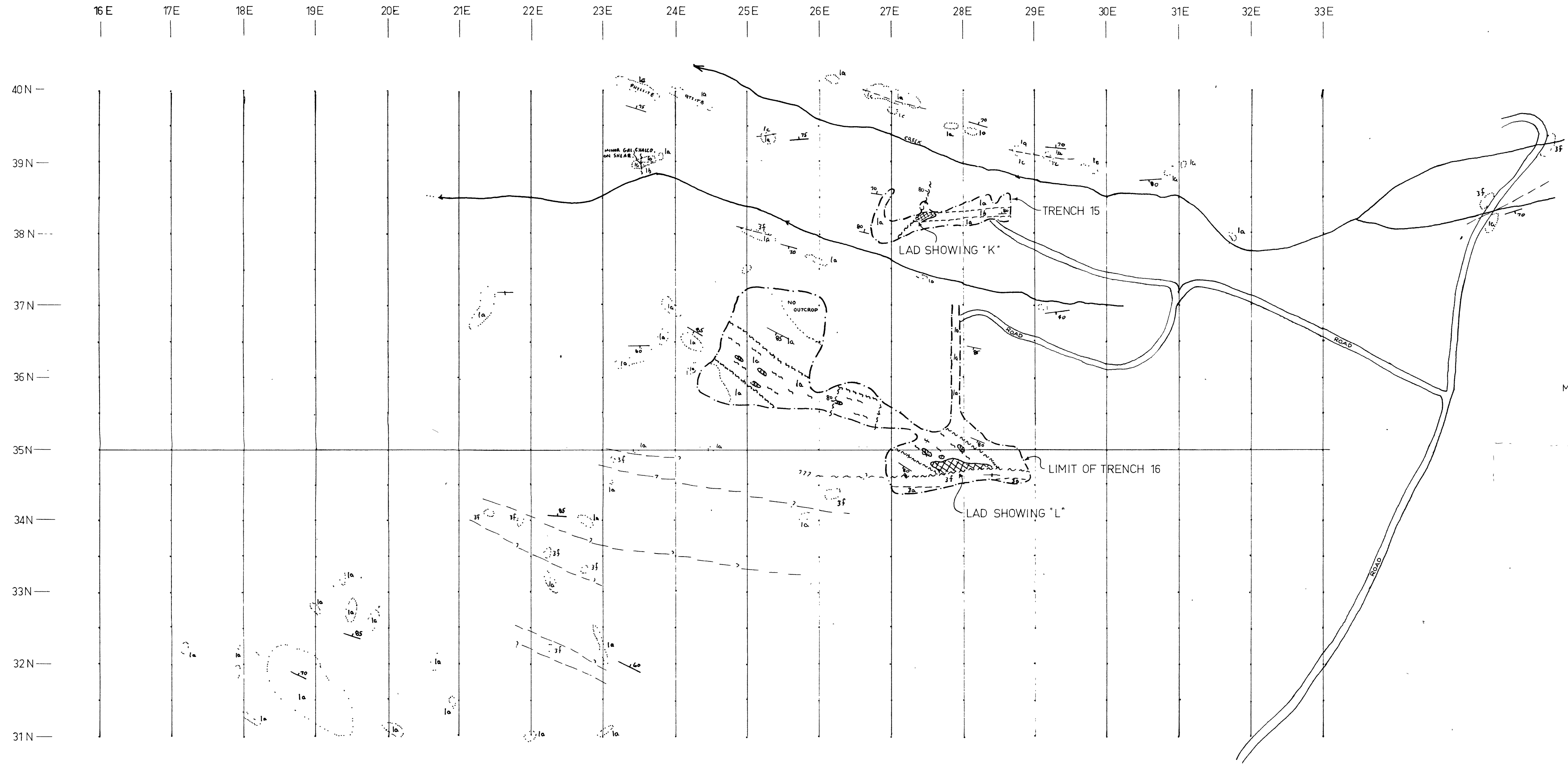
Fig 14



LEGEND :

-  QUARTZITE
-  PHYLLITE
-  LIMESTONE

SCALE 1 = 50'



- LEGEND
- | | | |
|------------------------|----|---|
| DEVONIAN MISSISSIPPIAN | 3f | GREY BEDDED CHERT |
| | 3a | GRAPHITIC SHALES, CHERT, GRAYWACHE |
| PROTEROZOIC | 1c | PHYLLITE, GREY TO BUFF |
| | 1b | LIMESTONE |
| | 1a | QUARTZITE, MICACEOUS QUARTZITE, QUARTZ-SERICIT SCHIST |

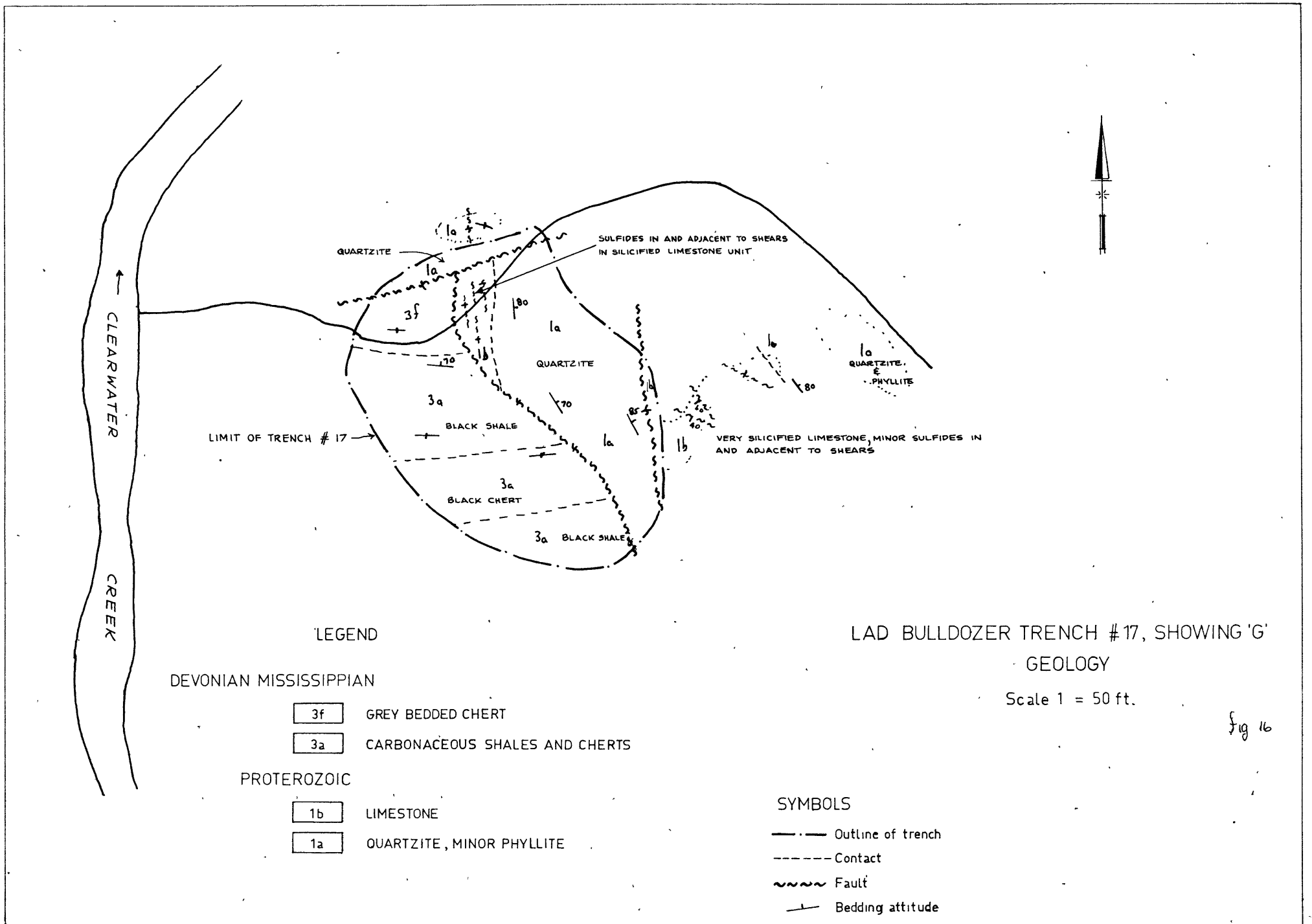
- SYMBOLS
- CONTACTS
 - - - - - OUTCROP LIMIT
 - ↙ BEDDING ATTITUDE
 - ~ ~ ~ ~ ~ FAULT OR SHEAR
 - ▨ MASSIVE SULFIDES
 - - - - - TRENCH AREA
- GEOLOGY BY: L. KOPUNEC
1969

Fig. 15

ATLAS EXPLORATIONS LIMITED
 HESS PROJECT
LAD MINERAL CLAIMS
 105-K-16
 LAD SHOWINGS 'K' and 'L'
GEOLOGY TRENCH 15 & 16

FIG No

100 0 100 200
 SCALE IN FEET
 TO ACCOMPANY REPORT:



LEGEND

DEVONIAN MISSISSIPPIAN

- 3f GREY BEDDED CHERT
- 3a CARBONACEOUS SHALES AND CHERTS

PROTEROZOIC

- 1b LIMESTONE
- 1a QUARTZITE, MINOR PHYLLITE

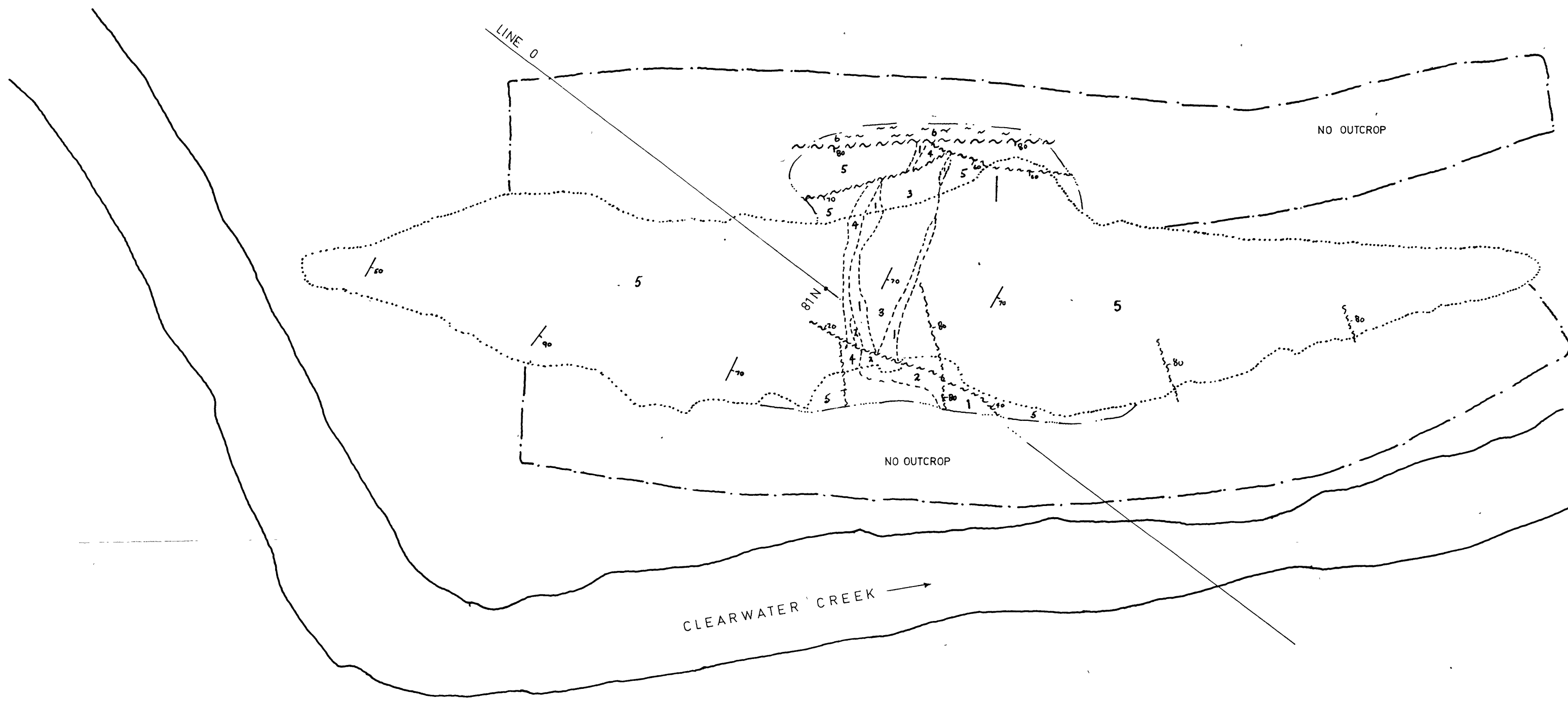
LAD BULLDOZER TRENCH #17, SHOWING 'G' GEOLOGY

Scale 1 = 50 ft.

SYMBOLS

- Outline of trench
- Contact
- Fault
- Bedding attitude

Fig 16



LEGEND:

- 6 GREY CHERT, ARGILLITE (DEVONIAN MISSISSIPPIAN)?
- 5 QUARTZITE, CLEAN (PROTEROZOIC)
- 4 QUARTZITE, HEAVY MALACHITE STAIN (PROTEROZOIC)
- 3 GREY LIMESTONE, MINOR MALACHITE (PROTEROZOIC)
- 2 LOWER GRADE SKARNY ZONES (MINOR SULFIDES, MALACHITE)
- 1 HIGH GRADE SKARNY SULFIDE VEIN (CHALCOPYRITE, GALENA, SPHALERITE)

SYMBOLS

- -- --- OUTLINE OF TRENCHES
- - - - - LIMIT OF BEDROCK EXPOSED BY TRENCHING
- OUTCROP LIMIT
- CONTACT
- ~~~~~ SHEARS, FAULT
- |— BEDDING ATTITUDE



ATLAS EXPLORATIONS LIMITED
 ROSS RIVER YT
 LAD MINERAL CLAIM GROUP
 BULLDOZER TRENCH #18 - SHOWING 'F'
 GEOLOGY BY: K HEINANEN/T ADAMSON

