

GEOLOGICAL AND GEOCHEMICAL REPORT
on the
GRIZ 3 MINERAL CLAIM
Map Sheet 104K/10E
Record No. 1413

Latitude: 58°37'N Longitude: 132°38'W

ATLIN MINING DIVISION
B.C.

By

J.M. Pautler
October, 1981

MINERAL RESOURCES BRANCH ASSESSMENT REPORT 9824 NO. _____
--

Work done: August 1-15, 1981
By: J.C. STEPHEN EXPLORATIONS LTD.
Funded by: Newex Syndicate

part 2
of 2

TABLE OF CONTENTS

	<u>PAGE</u>
SUMMARY AND CONCLUSIONS	1
INTRODUCTION	3
CLAIM REGISTER	4
LOCATION AND ACCESS	5
REGIONAL GEOLOGY	8
PROPERTY GEOLOGY	10
ROCK TYPES	10
STRUCTURE	11
MINERALIZATION	11
ALTERATION	13
DESCRIPTION OF VEINS GRIZ 3 SHOWING	16
LEGEND FOR FIGURES 5 - 10	18
GEOCHEMISTRY	25
SOIL AND TALUS	25
ROCK	29
CONCLUSIONS AND RECOMMENDATIONS	31
STATEMENT OF EXPENDITURES	32
APPENDIX I	SAMPLE DATA SHEETS
APPENDIX II	PETROGRAPHIC DESCRIPTIONS
APPENDIX III	STATEMENT OF QUALIFICATIONS

LIST OF ILLUSTRATIONS

<u>FIGURE</u>	<u>TITLE</u>	<u>PAGE</u>
1	LOCATION MAP 1:1,000,000	6
2	CLAIM MAP 1:50,000	7
3	DISTRIBUTION OF SLOKO VOLCANIC ROCKS	9
4	DETAIL OF GRIZ 3 SHOWING 1:300	15
5	DETAIL OF ZONE 1 1:50	19
6	DETAIL OF ZONE 2 1:50	20
7	DETAIL OF ZONE 3 1:50	21
8	DETAIL OF ZONE 4 1:50	22
9	DETAIL OF ZONE 5 1:50	23
10	DETAIL OF ZONE 6 1:50	24
11	ARSENIC HISTOGRAM	27
12	ZINC HISTOGRAM	28
PHOTO 1	GRIZ 3 CLAIM - ZONE 5	12
MAP I	GRIZ 3 CLAIM GEOLOGY AND GEOCHEMISTRY 1:2500	In Pocket

SUMMARY AND CONCLUSIONS

- (1) The GRIZ 3 claim consists of 12 units and is located 120 kms southeast of Atlin, B.C.
- (2) The claim was staked this year to cover galena-sphalerite mineralization found in silicious veins. Gold and silver values were associated with the Pb-Zn veins.
- (3) A crew of two to four people spent 25 man days on the property between July 30 and August 15, 1981.
- (4) The claim consists of a large Tertiary quartz feldspar porphyry body which intrudes sediments of Jurassic age. The property has been mapped at a scale of 1:31,680 on an air photo.
- (5) Detailed mapping of the mineralized outcrop was conducted at a scale of 1:300 and individual vein zones were mapped at 1:50.
- (6) A total of 69 chip samples were taken across the zones and all were analyzed for Au and Ag and also for Pb and Zn where galena and sphalerite were visible. Anomalous results ranging up to 0.194 oz/ton Au, 16.97 oz/ton Ag, 8.29% Pb and 6.72% Zn were obtained.
- (7) A soil/talus grid consisting of 41 samples was established to trace the extent of the veins. Two anomalous samples were returned. A talus line at the base of the showing and adjacent outcrop area returned no significant values.

- (8) The prospecting and reconnaissance sampling program was limited this year and was so far unsuccessful. The only even slightly anomalous sample was from the far west part of the same northwest striking ridge which contains the mineralization. A total of 6 soils and 3 rocks were collected in this program.
- (9) Enlargement of the present soil/talus grid and an E.M.-16 survey on this grid is proposed for the 1982 program in an attempt to determine the actual extent of the veins. Additional talus lines at the base of the ridge are also recommended. Detailed mapping of the property at 1:2500 and additional prospecting and sampling should be conducted. Trenching of the highly anomalous soil sample at 2+00E,0+20S. is warranted.

INTRODUCTION

The GRIZ 3 claim consists of 12 units. It was staked in July, 1981 on the basis of anomalous silver, lead and zinc lithochemical results in samples taken earlier in the season. The silver results were obtained from galena-sphalerite veins in a large outcrop in the southeast section of the property. Thus, subsequent field work, carried out in August, 1981, involved detailed geological mapping of the outcrop and veins, at a scale of 1:300 and 1:50 respectively. Geological mapping of the property at a scale of 1:31,680 was also conducted and further prospecting was carried out on the entire property. A total of 42 soil, 23 talus, and 72 rock samples were collected for geochemical analysis.

The claim is immediately south of the Taku Plateau within the Coast Mountains.

The topography of the claims themselves consists of a large plateau area with scattered outcrop at an elevation of approximately 5,000 feet. Three steep ridges and a large cirque, on the property, provide good rock exposure. A northwest trending valley cuts the southwest portion of the claim.

Vegetation is sparse on the plateau region and consists entirely of grass and moss. The southwest corner is covered by patches of thick balsam trees and shrubs.

Drainage on the claim is generally poor. The northwest trending valley is extremely swampy and is fed by a few small creeks. Small snow-fed creeks and ponds on the plateau dry up in mid-summer. There are two well developed easterly draining creeks that drain this area.

CLAIMS REGISTER

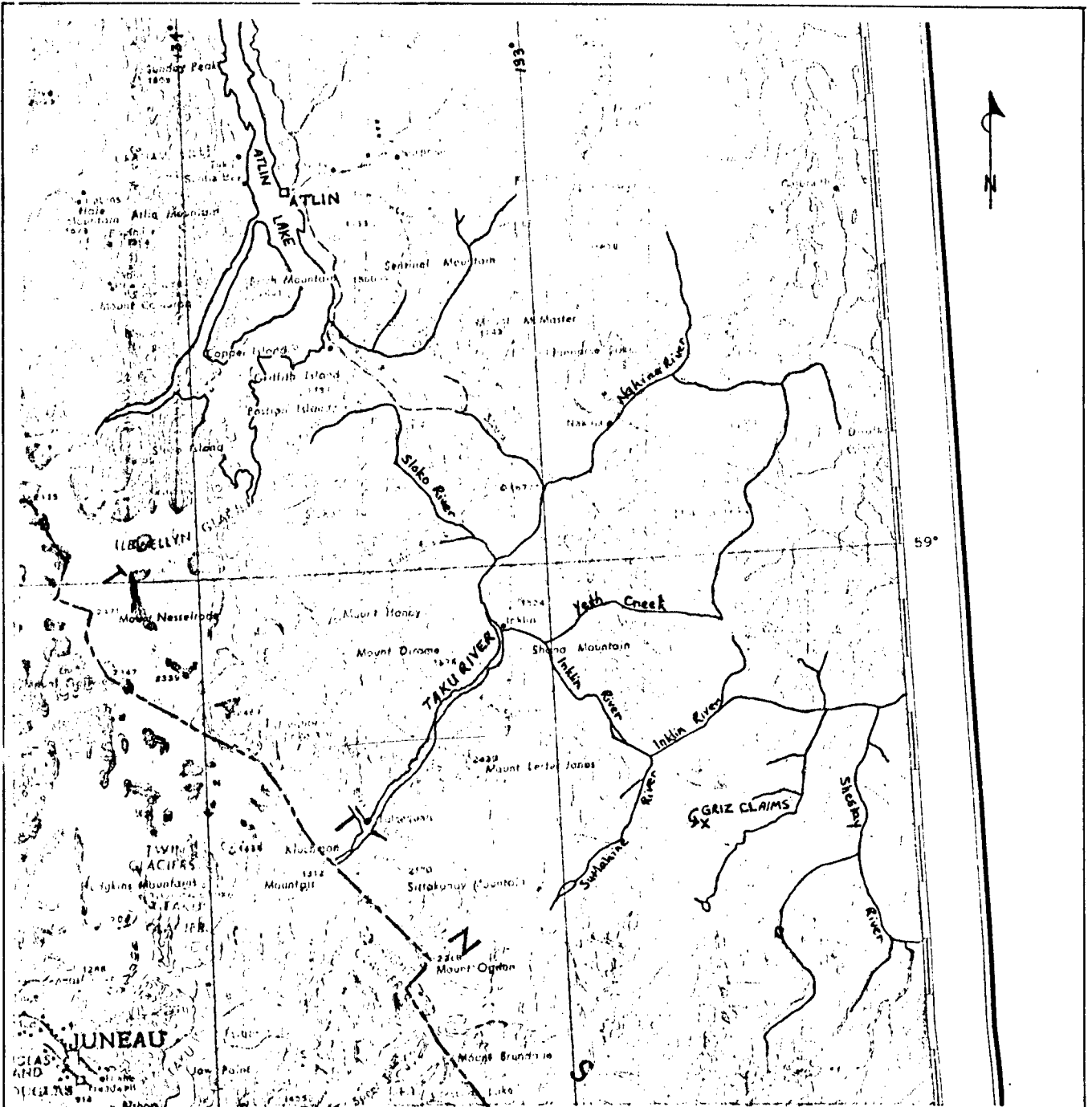
<u>Claim</u>	<u>Record Number</u>	<u>Record Date</u>
GRIZ 3	1413	Aug. 14, 1981

LOCATION AND ACCESS

The GRIZ 3 claim, (Tulsequah-Juneau map sheet 104K/10E), is located approximately 15 kms north of Trapper Lake, which is 132 kms southeast of Atlin, B.C. (Refer to Figure 1). Latitude and longitude are $58^{\circ}37'N$ and $132^{\circ}38'W$.

Adjoining the GRIZ 3 claim on the east side is Chevron's 20 unit EMU claim which was staked two weeks prior to GRIZ 3. (Figure 2).

Access to the property is by helicopter from Atlin or Dease Lake.



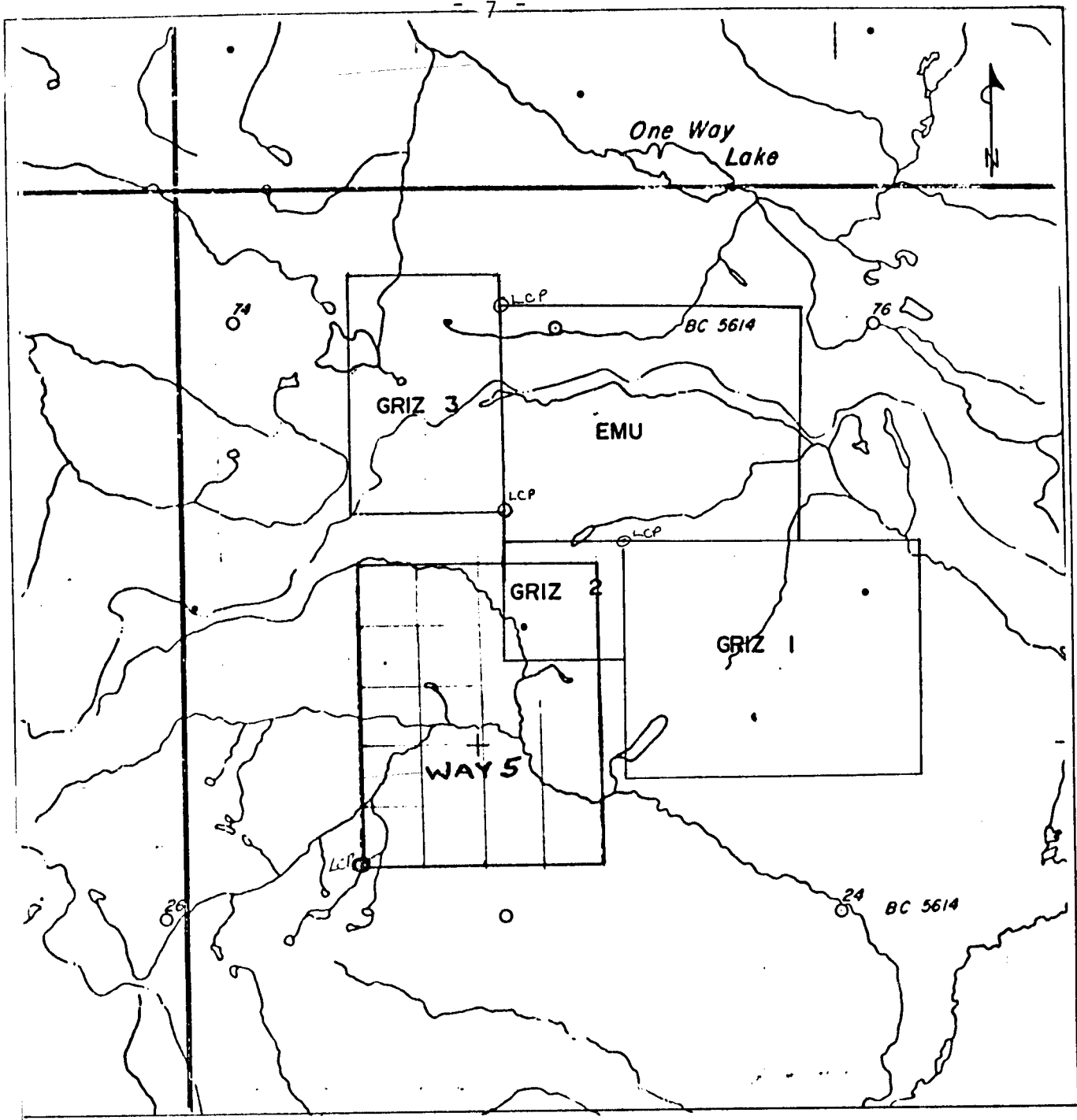
From SITKA, NORTH AMERICA, G.S.C. Map No. 7.B., 1956

J.C. STEPHEN EXPLORATION LTD.
 NEWEX SYNDICATE
 GRIZ CLAIMS
 NTS 104K/10E
 LOCATION

SCALE 1:1,000,000

0 10 20 kms.

FIGURE 1



CLAIMS SURVEYED by TOPOCHAIN and COMPASS.

J.C. STEPHEN EXPLORATION LTD.
 NEWEX SYNDICATE
 GRIZ CLAIMS
 NTS 104K/10E
 CLAIM MAP

SCALE 1 50,000

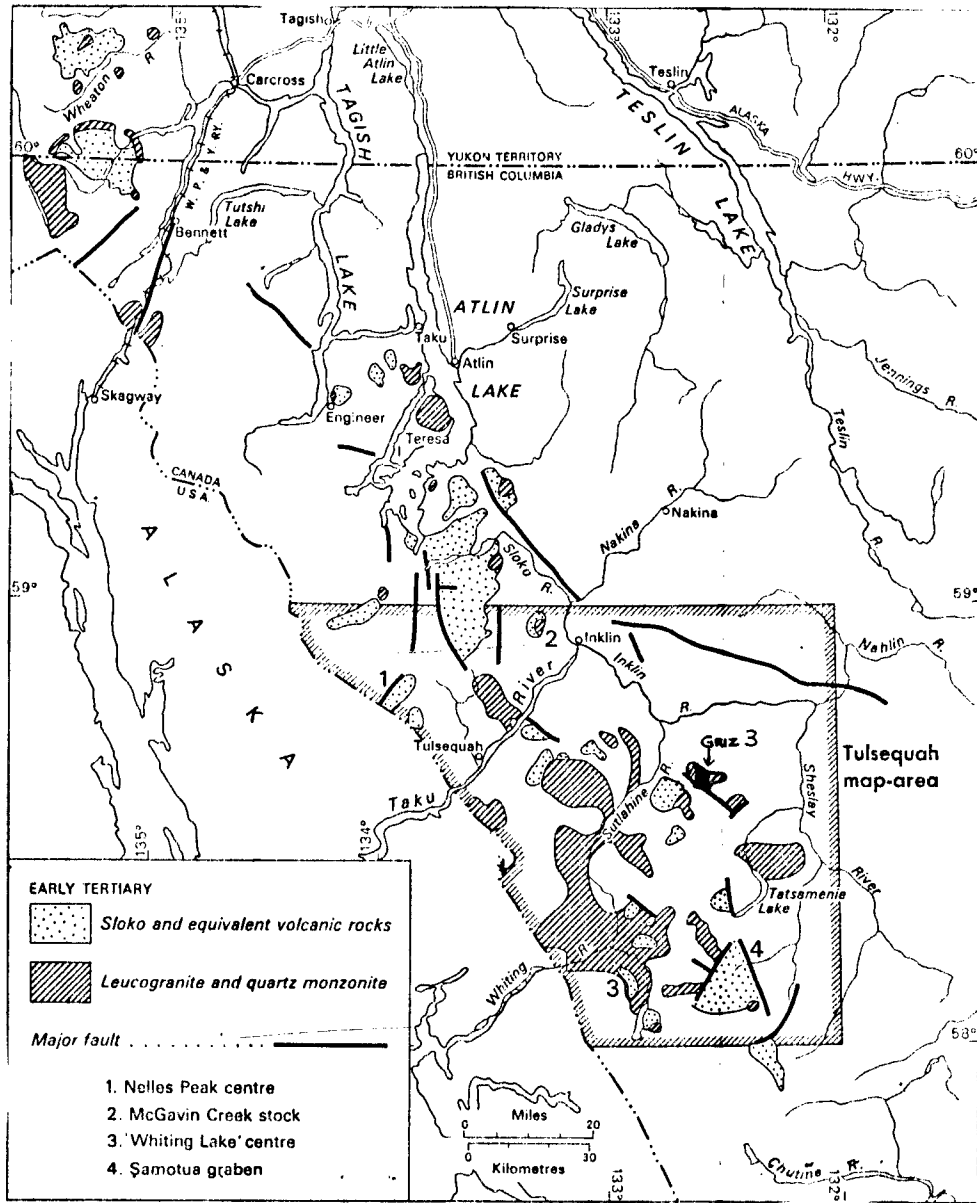
0 0.5 1.0 kms.

FIGURE 2

REGIONAL GEOLOGY

The Geological Survey of Canada has mapped the geology of the Tulsequah area at a scale of 1:250,000. This mapping is published as Map 1262 A, Tulsequah and Juneau map sheet 104K.

The GRIZ 3 claim is situated in an area of a late Cretaceous to early Tertiary quartz feldspar porphyry intrusion which is one of many that form a west-northwesterly trending belt extending from Trapper Lake to Yonakina Mountain. These intrusive bodies are in close spatial association with the Sloko volcanic rocks of the same age, which are limited to a larger northwesterly trending belt along the eastern edge of the Coast Mountains. Figure 3 shows the distribution of the Sloko volcanic rocks and related intrusions within the Tulsequah map area. The Sloko Group volcanic rocks are of interest due to the number of Au occurrences found associated with them. Of additional interest is the major fault which truncates the southwestern part of the GRIZ 3 intrusion.



from G.S.C. Memoir 362, 1961, p 29.

J. C. STEPHEN EXPLORATIONS LTD.
 NEWEX SYNDICATE
 GRIZ CLAIMS
 NTS 104K/10E
 DISTRIBUTION of SLOKO
 VOLCANIC ROCKS

SCALE: 1:1900800

0 kms. 30

FIG. 3

PROPERTY GEOLOGY

Geological mapping of the GRIZ 3 property, shown in the back pocket on Map I, revealed three rock units.

Rock Types

Unit 3 - Quartz Feldspar Porphyry

Almost the entire property consists of the late Cretaceous to early Tertiary quartz feldspar porphyry body which is extremely variable in composition. It is fine-grained to aphanitic, porphyritic with mainly plagioclase phenocrysts and less commonly quartz phenocrysts and occurs with or without biotite and hornblende. On the GRIZ 3 property, the quartz feldspar porphyry would be more properly designated a feldspar porphyry. The colour varies from light grey to mauve and pink, but is most commonly green. Minor pyrite is common.

A thin section of the quartz feldspar porphyry was prepared and petrographically analyzed by Vancouver Petrographics Ltd., Fort Langley, B.C. The specimen, (JP-2), was found to be of trachyandesitic composition and of effusive nature, although field relationships suggest a hypabyssal origin. The petrographic description is provided in Appendix II.

Unit 2 - Diabase Dykes

Diabase dykes up to a few metres across cut the feldspar porphyry. The diabase is fine grained and green in colour. Minor pyrite is sometimes present.

Unit 1 - Sedimentary Rocks

The southwestern part of the intrusion appears to be in fault contact with a chert pebble conglomerate of the lower and/or middle Jurassic Takwahoni Formation. The conglomerate is green, chloritic and has chert pebbles from a few millimetres to 10 millimetres in size. A small outcrop of Takwahoni Formation black, rusty shale is also present in the centre of the claim.

Structure

As already mentioned, a major northwest trending fault truncates the southwestern edge of the quartz feldspar porphyry. Three sets of air photo linears, which trend northerly, northwesterly and easterly, are also evident throughout the intrusion and may represent minor fault and fracture systems. A fault, represented by a northerly striking gully, appears to offset the mineralized veins which trend easterly to northeasterly.

Mineralization

As illustrated in Figure 4, six vein zones have been outlined that contain veins of galena-sphalerite mineralization. The zones are defined by an altered recessive area, containing mineralized veins, between relatively unaltered walls of the feldspar porphyry host rock. This is illustrated in Photo 1 which shows part of Zone 5.



PHOTO 1: GRIZ 3 CLAIM ZONE 5

The zones appear to be offset by a left-lateral fault. However, since it is difficult to directly correlate them, each will be referred to as a distinct zone.

The outcrop in which the veins occur is strongly fractured with many faults and joints. (Photo 1) The feldspar porphyry is rusty in the general area of mineralization but is altered almost beyond recognition within the vein zones themselves. Sphalerite-calcite veins are abundant throughout the outcrop, especially in the vicinity of the mineralized zones.

Generally, the zones trend $75 - 90^{\circ}$ and dip 85°S to 85°N . On the west side of the gully, they extend for approximately 5-8 m before being covered by overburden after which the veins could not be traced despite good rock exposure less than 20 m away. On the east side of the fault gully, the veins continue for about 20 m before they disappear beneath overburden. Although the zones do not entirely match, minor vertical displacement along the fault would account for any discrepancies. The left-lateral movement appears to be approximately 12 m.

Each zone contains at least one larger vein, usually on the hanging wall side, and often another vein along the footwall side. Smaller veins and veinlets, from a few millimetres to 10 cms cut the very altered quartz feldspar porphyry that lies in the centre of the zone. The galena-sphalerite mineralization occurs as bands and disseminations and is generally restricted to that part of the vein immediately adjacent to the wall of the zone. Minor pyrite and arsenopyrite are also present and are spatially associated with the galena and sphalerite.

Alteration

Most of the rock within the zones is Mn stained. The veins themselves exhibit more intense Mn staining and the smaller veins and veinlets in the central region of the zones are so extensively altered and Mn stained that only a black, extremely soft 'clayey' material remains. Rusty remnant fragments of quartz feldspar porphyry are contained within this black material.

The altered feldspar porphyry exhibits limonitic and calcareous alteration. Plagioclase biotite and amphibole

phenocrysts have been altered to clay minerals, white mica, limonitic calcite and opaque minerals. A petrographic description of this rock (JP-3) is provided in Appendix II.

The veins themselves also show limonitic and calcareous alteration and silicification. Remnants of an original porphyritic texture are evident in thin section. Several stages of deformation have occurred which include an early stage of brecciation and mylonitization followed by several periods of fracturing. The petrographic analysis outlined the following events:

1. early quartz veining and probably silicification as well as introduction of ore minerals
2. calcite veinlets which remobilized some of ore minerals
3. late chalcedony veinlets and some brecciation and fracturing resulting in an almost cataclastic fabric
4. late fracturing offsetting stage 3 structures.

From field observation as well as petrographic analysis, it appears that the sphalerite was commonly remobilized in stage 2 resulting in the abundant calcite-sphalerite veins proximal to the vein zones and mineralization.

The petrographic descriptions of the vein material is outlined in Appendix II. Specimen numbers are JP-5, JP-6, G-1, G-2. Both G-1 and G-2 are highly mineralized samples.







Description of Veins - GRIZ 3 Showing

The following is a description of individual veins as numbered in Figure 4:

1. barren coarse-grained calcite vein - 1 cm wide
2. barren coarse-grained calcite vein - 2 cm wide
3. barren coarse-grained calcite vein - 3 cm wide
4. barren coarse-grained calcite vein - 3.5 cm wide
5. calcite vein 1/4 cm wide
6. calcite vein 2 cm wide, 3-4' long
7. Calcite vein, exact orientation unknown
8. rusty calcite vein 1 cm wide
9. vein Zone 1; 75-90 cm wide; 20 cm of abundant galena on footwall side with minor sphalerite, silicification, followed by 50 cm of highly altered 'gungy' black Mn stained and rusty orange vein material towards hanging wall side; last rock adjacent to footwall of vein is slightly Mn stained and rusty quartz feldspar porphyry fragments
10. quartz-calcite vein 1 cm wide
11. silicious vein material, some calcite, Mn stained, rusty quartz-feldspar porphyry fragments, 30 cm wide
12. Mn-quartz feldspar porphyry breccia vein 15 to 18 cm wide with small calcite vein in centre; maximum width of vein 40 cm with less Mn breccia and more calcite
13. same as 12. only 15 cm wide
14. vein material with heavy Mn staining, rusty quartz feldspar porphyry fragments, associated with silicification, some irregular calcite veins
15. same as 14., 50 cm wide
16. 3 cm wide calcite vein surrounded by silicified, Mn stained, rusty vein material
17. footwall vein in vein Zone 4; 30 cm wide, very silicious, Mn stained, rusty quartz feldspar porphyry fragments
18. rusty sphalerite vein 2 cm wide
19. sphal-calcite vein 3 cm wide
20. vein zone about 3 m wide (refer to sketch of Zone 5)

21. hanging wall vein of Zone 5; 40-45 cm wide at base, heavily Mn stained, rusty quartz feldspar porphyry fragments, 2.5 cm of quartz rich vein material towards centre; minor quartz-carbonate veining, calcite veins
22. vein from footwall to hanging wall; 15 cm of black Mn stained breccia, rusty quartz feldspar porphyry fragments, very altered followed by 30 cm quartz-calcite vein, heavily Mn stained, buff weathering, resistant, with 5 cm quartz feldspar porphyry in centre of vein, followed by 5 cm of black Mn stained breccia
23. rusty calcite vein 15 cm wide with Mn-silica vein material
24. two veins; north vein 4 cm wide surrounded by Mn staining; south vein 15 cm wide Mn-silica, minor calcite in centre
25. rusty, Mn-breccia veins.

Legend for Figures 5 to 10

-  Quartz Feldspar Porphyry
-  Mn staining
-  Silicification
-  vein with rusty quartz feldspar porphyry fragments
-  galena, sphalerite mineralization
-  calcite stringers

Symbols

- 27760, 761, - chip sample locations
- (<10, 8.1) - Au ppb, Ag ppm, rock geochemistry results
- (0.010, 1.46, 0.54, 1.22) (Au, Ag oz/ton; Pb, Zn%)
assay results

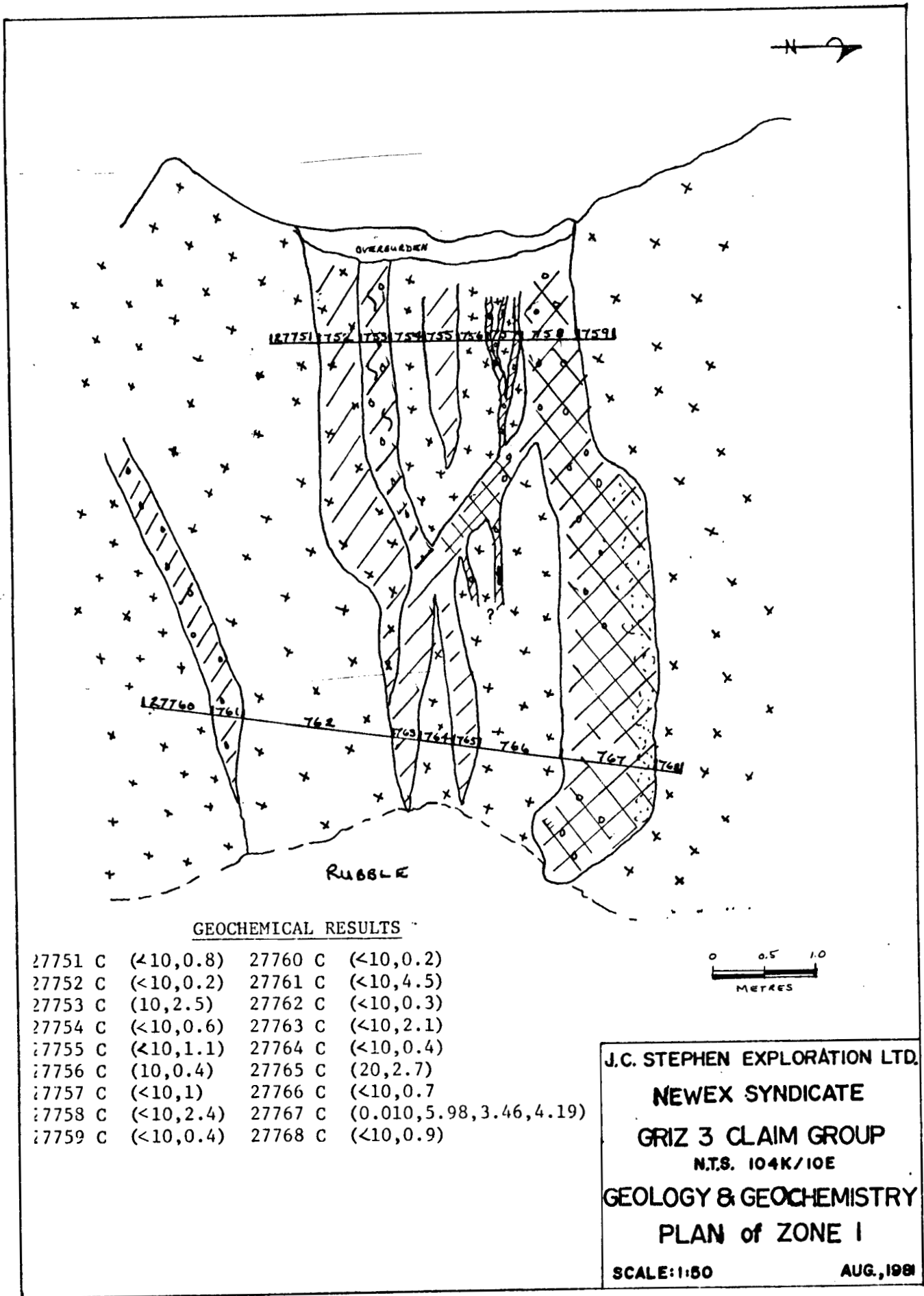
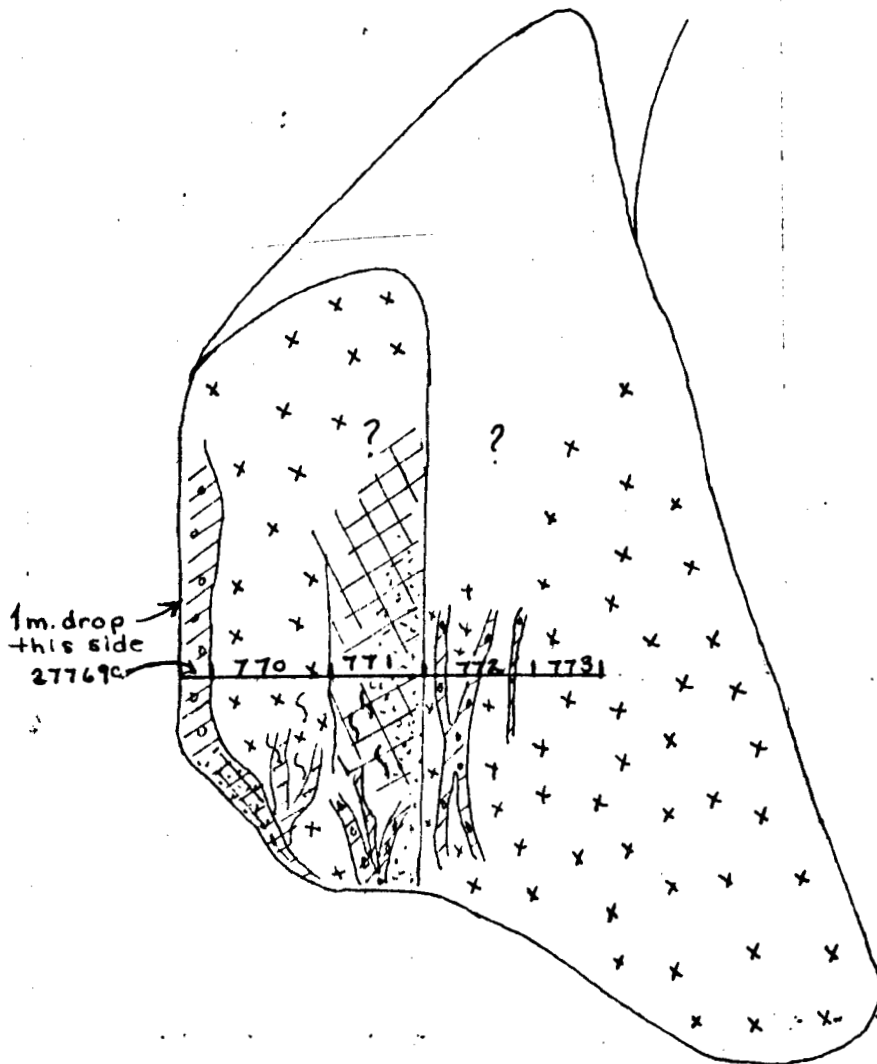


FIGURE 5



+27774C (0.010, 0.10, 0.07, 0.05)



GEOCHEMICAL RESULTS

27769 C	(20, 1.9)
27770 C	(<10, 0.9)
27771 C	(0.194, 1.46, 0.54, 1.22)
27772 C	(<10, 1.7)
27773 C	(<10, 0.2)



J.C. STEPHEN EXPLORATION LTD.

NEWEX SYNDICATE

GRIZ 3' CLAIM GROUP

NTS 104K/10E

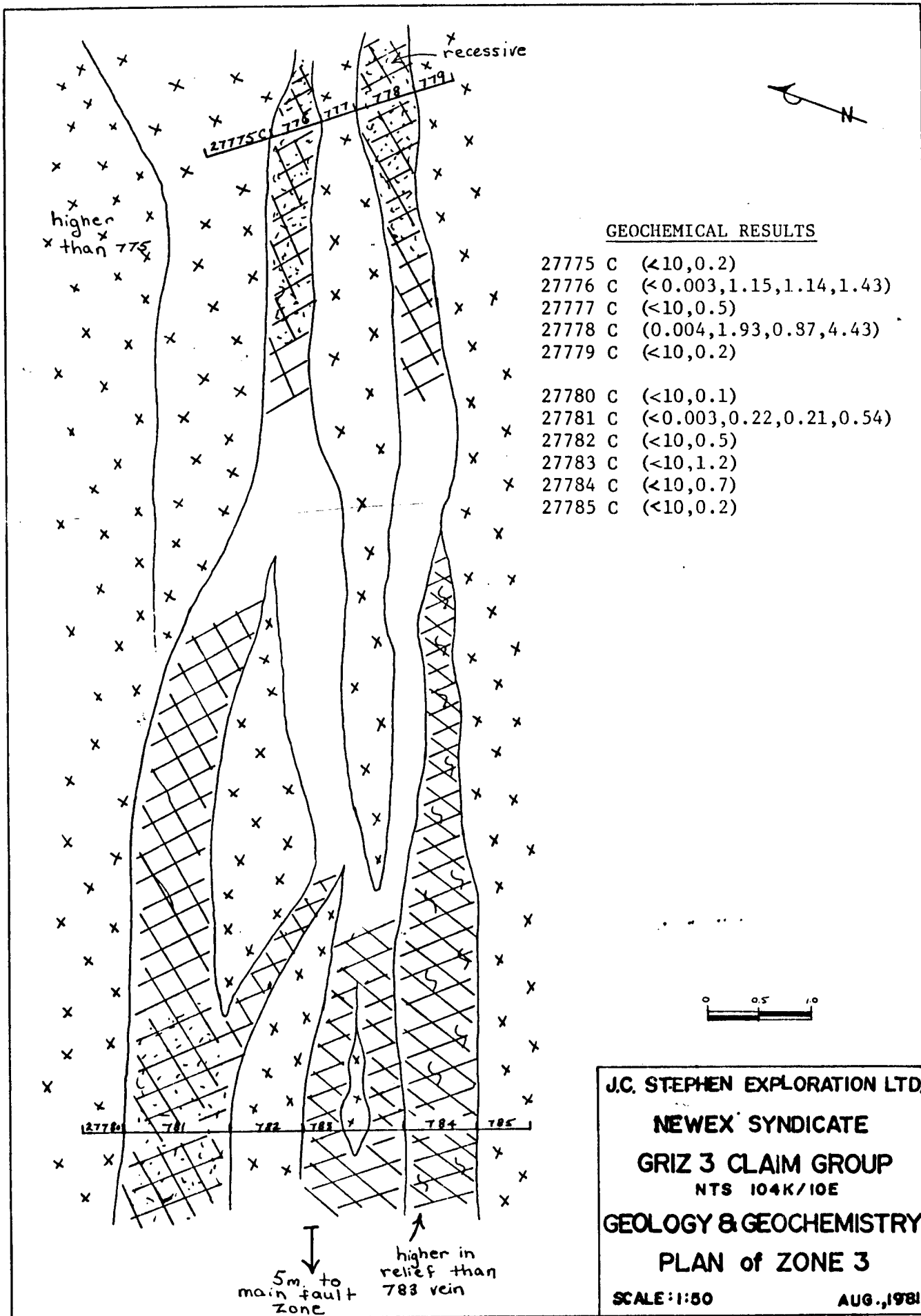
GEOLOGY & GEOCHEMISTRY

PLAN of ZONE 2

SCALE: 1:50

AUG, 1981

FIGURE 6



GEOCHEMICAL RESULTS

27775 C	(<10,0.2)
27776 C	(<0.003,1.15,1.14,1.43)
27777 C	(<10,0.5)
27778 C	(0.004,1.93,0.87,4.43)
27779 C	(<10,0.2)
27780 C	(<10,0.1)
27781 C	(<0.003,0.22,0.21,0.54)
27782 C	(<10,0.5)
27783 C	(<10,1.2)
27784 C	(<10,0.7)
27785 C	(<10,0.2)

J.C. STEPHEN EXPLORATION LTD.
 NEWEX SYNDICATE
 GRIZ 3 CLAIM GROUP
 NTS 104K/10E
 GEOLOGY & GEOCHEMISTRY
 PLAN of ZONE 3
 SCALE:1:50
 AUG.,1981

FIGURE 7

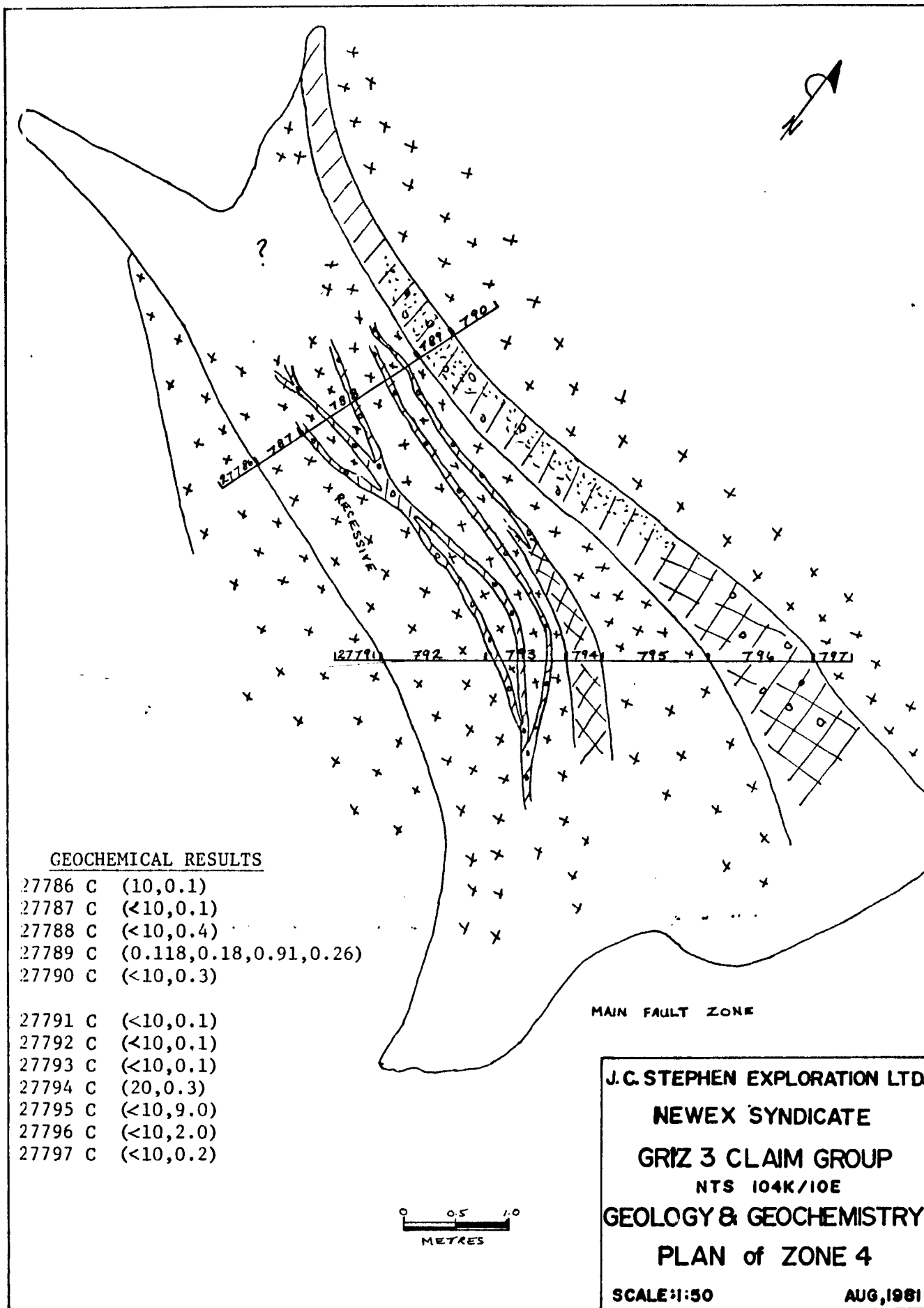


FIGURE 8

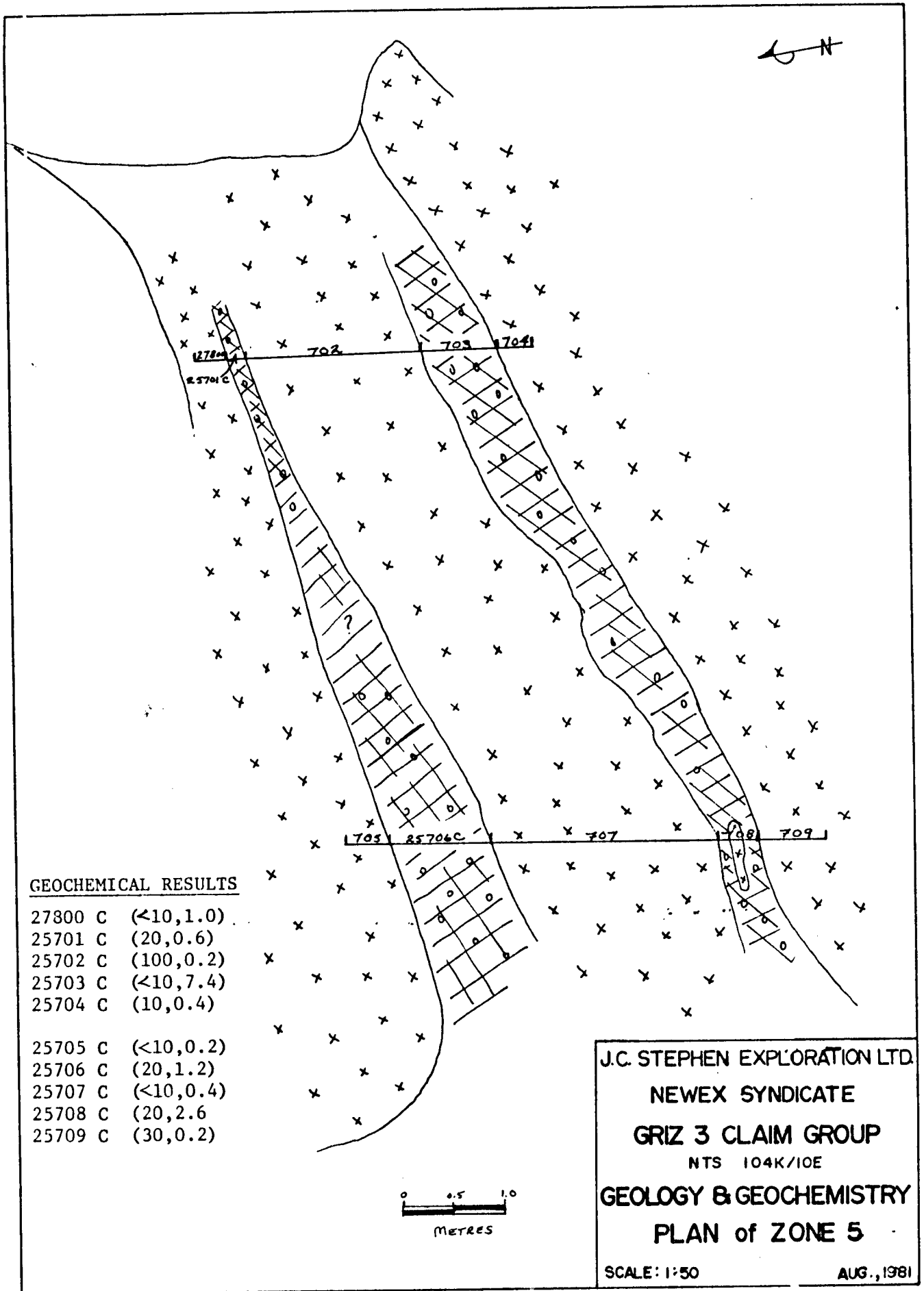
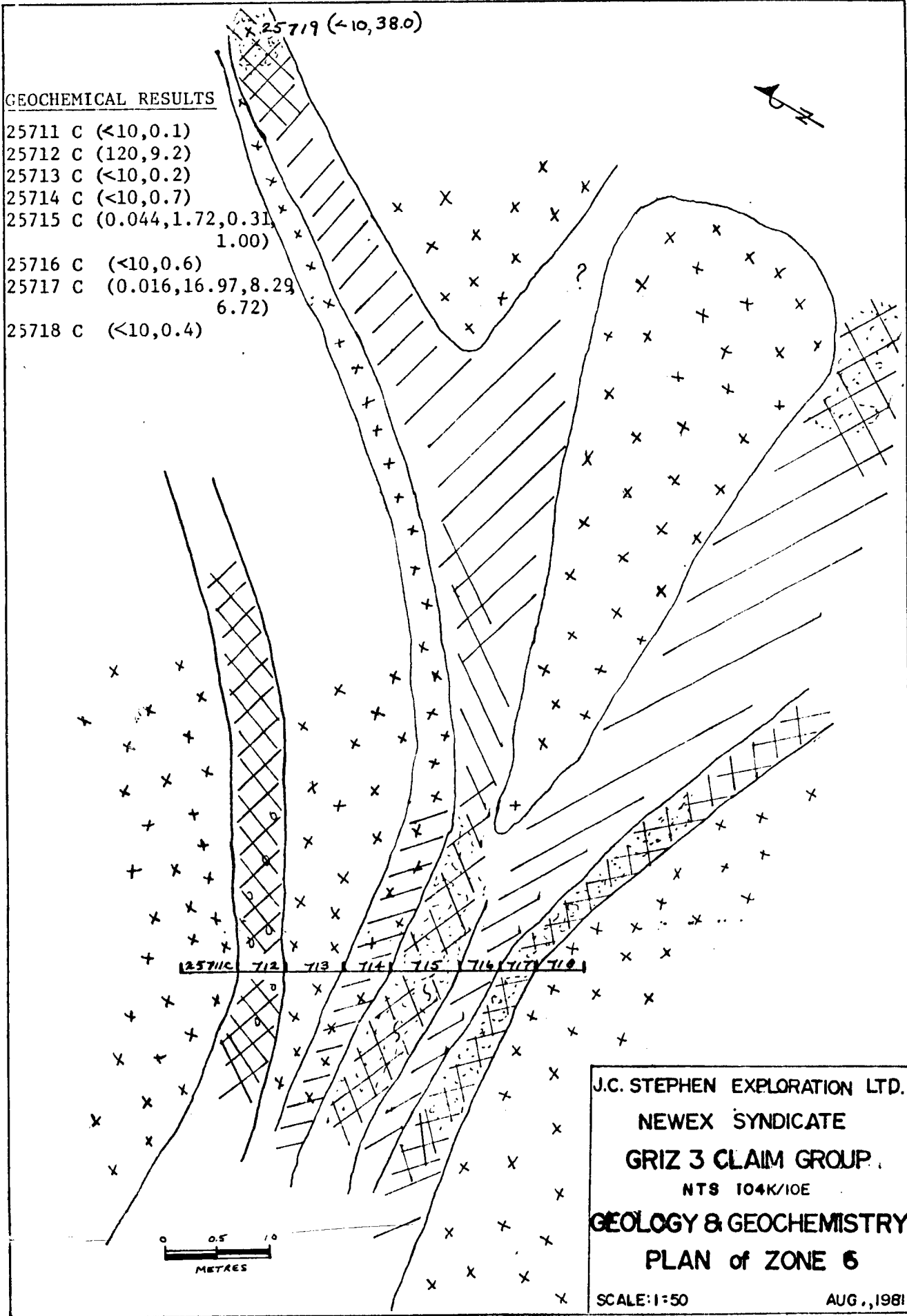


FIGURE 9



GEOCHEMICAL RESULTS

- 25711 C (<10, 0.1)
- 25712 C (120, 9.2)
- 25713 C (<10, 0.2)
- 25714 C (<10, 0.7)
- 25715 C (0.044, 1.72, 0.31, 1.00)
- 25716 C (<10, 0.6)
- 25717 C (0.016, 16.97, 8.29, 6.72)
- 25718 C (<10, 0.4)

J.C. STEPHEN EXPLORATION LTD.
 NEWEX SYNDICATE
 GRIZ 3 CLAIM GROUP
 NTS 104K/10E
GEOLOGY & GEOCHEMISTRY
PLAN of ZONE 6
 SCALE: 1:50
 AUG., 1981

FIGURE 10

GEOCHEMISTRY

Soil and Talus:

A topochain and compass grid was established on the east side of the showing in an attempt to determine the extent of the mineralized veins. The baseline was run parallel to the majority of the veins. Samples were taken at 20 m intervals along crosslines 100 m apart. A total of 36 soil samples and 5 talus samples were collected on the grid. All samples were analyzed for Au, Ag, As and Zn and some were also analyzed for Pb.

A talus line was run at the base of the outcrop in which the showing is located. Eighteen samples were taken at intervals of 25 m, where possible, and analyzed for Au, Ag, As, Pb and Zn.

Reconnaissance soil and talus samples were collected throughout the claims.

Method

The soil samples were collected from the 'B' horizon at depths of 3 to 32 cm, using a grubhoe or rock hammer. Samples were placed in waterproof Kraft bags and sent to base camp where they were dried and sifted to 35 mesh. The samples were then sent to Chemex Labs, 212 Brooksbank Avenue, North Vancouver, B.C. for analysis. In the lab, the soils were first pulverized to 100 mesh. The gold content in ppb was determined by aquaregia digestion and chemical extraction followed by atomic absorption. Ppm, Ag and As were determined by perchloricnitric acid digestion and atomic absorption analyses.

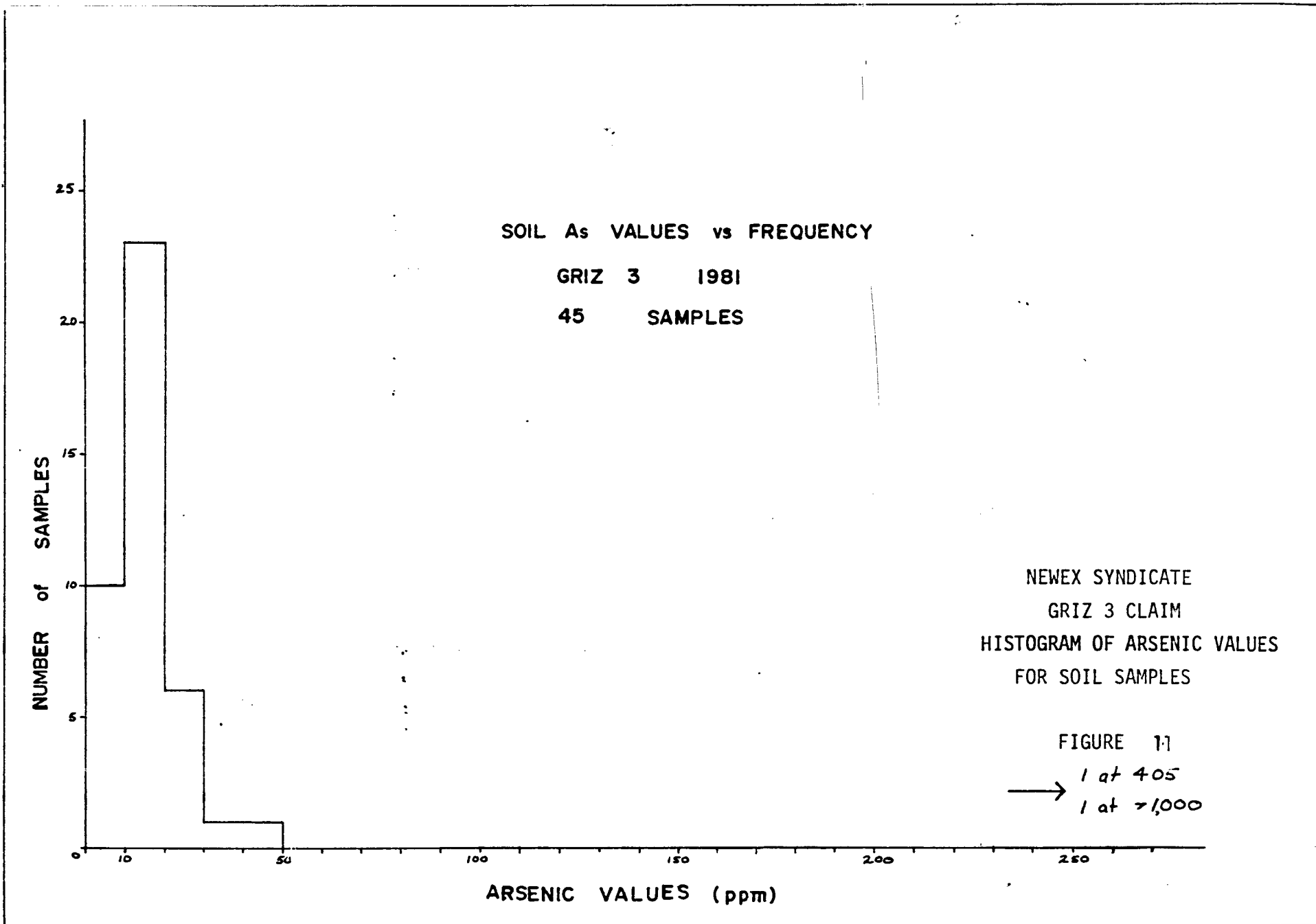
Results

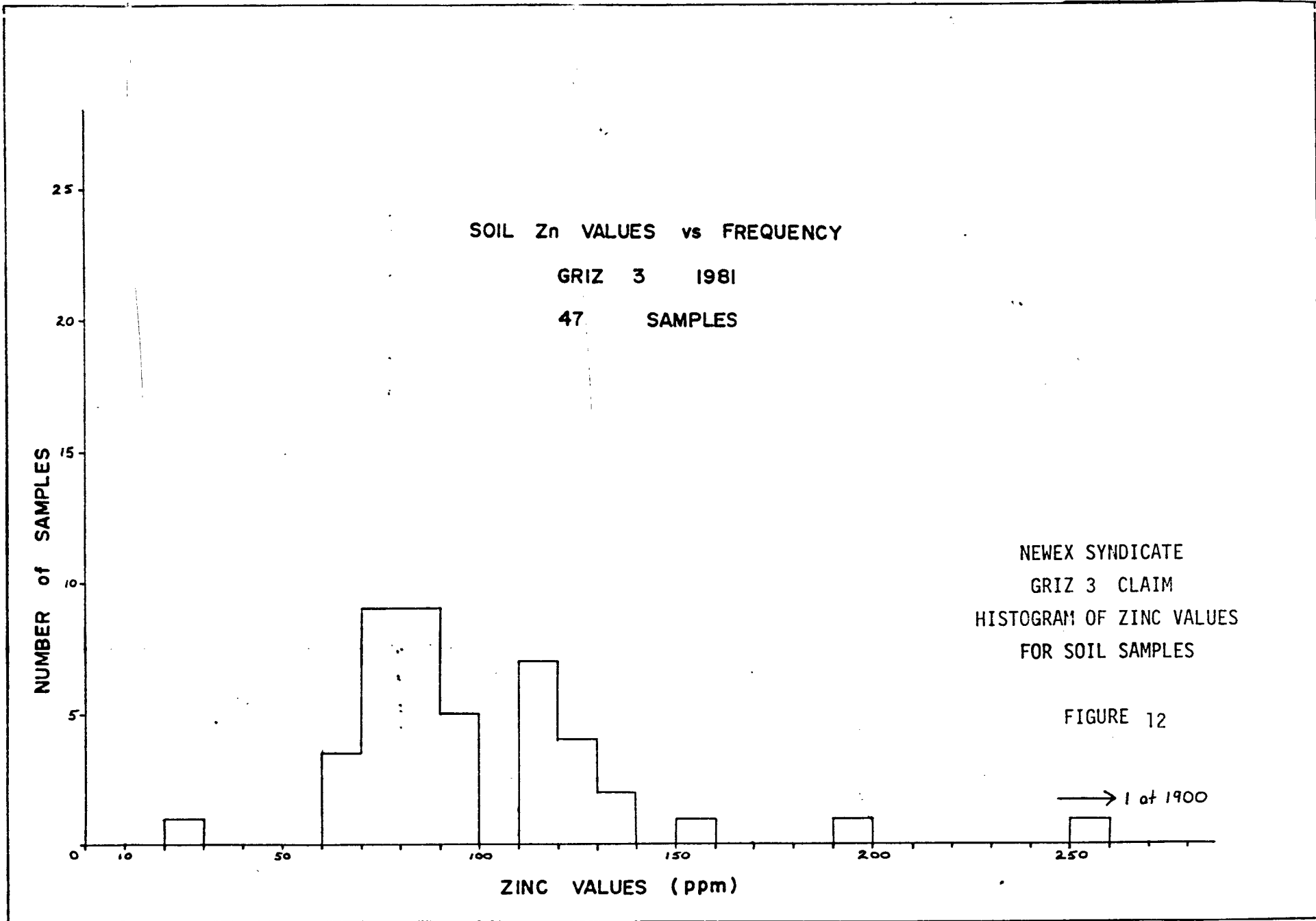
One highly anomalous soil result was obtained from the soil/talus grid east of the showing. The results were 80 ppb Au, 42.0 ppm Ag, >1000 ppm As, 3000 ppm Pb and 1900 ppm Zn. The sample is 200 m east of the showing along the trend of the exposed veins. No other Au results greater than 20 ppb were returned from the grid. A 250 ppm Zn value was associated with a high As value of 405 ppm. This sample was taken at 0+00E/0+20N on the soil/talus grid and is directly above the galena-sphalerite veins in the showing.

A histogram of As results is illustrated in Figure 11. The distribution does not indicate any further anomalous values.

The distribution of Zn results in the histogram shown in Figure 12, indicates another anomalous Zn value. The sample ran 198 ppm Zn, 21 ppm Pb and 25 ppm As and was taken below the rock exposure on the far west part of the northwest striking ridge which contains the mineral showing.

No anomalous results were obtained from the talus line. All sample results are plotted on Map I in the back pocket of this report.





Rock

A total of 69 chip samples were taken across the galena-sphalerite veins in the showing. The samples included the relatively fresh wallrock, the altered host rock and the vein material. The sample locations and geochemistry and assay results are shown in Figures 5 to 10. Chip samples, showing no mineralization, were geochemically analyzed for Au and Ag. Those which showed galena-sphalerite mineralization were assayed for Au, Ag, Pb and Zn.

Results

There were six samples that ran 0.010 oz /ton Au or greater. These values were 0.194, 0.118, 0.044, 0.016 and two 0.010 oz/ton Au, and were restricted to the vein material with visible galena-sphalerite mineralization.

The highest Au values correspond to high Ag results, but a direct correlation does not seem to exist. The 0.016 oz/ton Au assay was associated with 16.97 oz/ton Ag, 8.29% Pb and 6.72% Zn, whereas the sample that ran 0.194 oz/ton Au ran 1.46 oz/ton Ag, 0.54% Pb and 1.22% An. Some of the high Ag values did not have anomalous Au values associated with them at all.

The assay results from the veins are tabulated below:

<u>Sample</u>	<u>Au</u> <u>(oz/ton)</u>	<u>Ag</u> <u>(oz/ton)</u>	<u>Pb</u> <u>(%)</u>	<u>Zn</u> <u>(%)</u>
27767 C	0.010	5.98	3.46	4.19
27771 C	0.194	1.46	0.54	1.22
27774 C	0.010	0.10	0.07	0.05
27776 C	0.003	1.15	1.14	1.43
27778 C	0.004	1.93	0.87	4.43
27781 C	0.003	0.22	0.21	0.54
27789 C	0.118	0.18	0.91	0.26
25715 C	0.044	1.72	0.31	1.00
25717 C	0.016	16.97	8.29	6.72

Initial grab samples from the showing returned the following results:

<u>Sample</u>	<u>Ag</u>	<u>Pb</u>	<u>Zn</u>
73845 B	14.62 oz/ton	5.64%	6.72%
78848 B	100 ppm	>10,000 ppm	>10,000 ppm
78847 B	8 ppm	1,800 ppm	3,800 ppm

The Au and Ag values are closely related to the Pb-Zn mineralization. The chip samples which were geochemically analyzed, (ie. had no evident galena-sphalerite mineralization), did not return any highly anomalous results. There were three anomalous gold results which were 800, 120, and 100 ppb. Ag values of 38.0, 9.8, 9.2, 9.0, 7.4, 4.5, 2.7 and 2.6 ppm include all those above 2.5 ppm. All the above samples except the 9.0 ppm Ag, were from the highly altered, Mn stained vein material with rusty quartz feldspar porphyry fragments.

No anomalous rock geochemical results were obtained from the reconnaissance sampling program.

CONCLUSIONS AND RECOMMENDATIONS

Property and detailed geological mapping of the showing, chip sampling of the veins and general prospecting and sampling were carried out in 1981. A total of \$5,266 was spent on this program, \$2,400 of which has been applied for 2 years assessment work on the GRIZ 3 claim. The remainder has been credited to a portable assessment credit account. Significant results were returned from chip samples of the galena-sphalerite bearing veins. A few soil samples along the covered possible extent of the veins were also anomalous. Future work should involve further tracing of the veins to determine extent. This can be done by increasing the size of the present soil/talus grid and by running additional talus lines below the northwest striking ridge which contains the showing. An E.M. 16 survey on the soil grid is also recommended. Detailed mapping of the property should be conducted at a scale of 1:2500. Additional prospecting and sampling both on the property and around the property to investigate air photo linears would be beneficial.

Trenching of the high geochemical value at 2+00E, 0+20S. is warranted.

STATEMENT OF EXPENDITURES

Wages and Benefits

<u>Name</u>	<u>Date</u>	<u>Rate</u>	<u>Amount</u>	<u>Total</u>
J.M. Pautler	July 30,31 Aug 6-12,15	\$1,950/m+15%	\$ 747.50	
M. Hughes	July 30,31 Aug 6,8-12	\$1,750/m+15%	536.67	
D. Guglielmin	Aug 6,7	\$1,750/m+15%	134.17	
E. Sidey	Aug 11,12	\$1,750/m+15%	134.17	
D. Kapicki	Aug 11,12	\$1,400/m+15%	107.33	
R. Campbell	Aug 6	\$1,400/m+15%	<u>53.67</u>	
TOTAL: 25 man days				\$1,713.51

Food and Camp Supplies

25 man days @ \$14.00 per man 350.00

Geochemistry

Invoice

18113299-27 soil/talus samples analyzed for Au, Ag, As, Zn @ \$10.25/sample	\$ 276.75	
2 soil samples analyzed for Au, Ag, Zn, @ \$7.00/ sample	14.00	
18113581-36 soil/talus amples analyzed for Au, Ag, As, Pb, Zn @ \$11.00/sample	396.00	
18113051-4 rock samples analyzed for Au, Ag, As @ \$9.50/sample	38.00	
18113350-59 rock samples analyzed for Au, Ag, @ \$6.25/sample	368.75	
1811351 -9 rock samples assayed for Au, Ag, Pb, Zn @ \$24.50/sample	<u>220.50</u>	
TOTAL		1,314.00

Petrographic Analysis

Invoice

2857 - 3 polished sections @ \$16.00 ea.	\$ 48.00
3 thin sections @ \$6.00 ea.	18.00
6 reject slices @ \$.75 ea.	3.00
6 K-spar stains @ \$1.00 ea.	6.00
Petrographic report (6/10X440.00)	<u>264.00</u>

339.00

Transportation

Keystone Helicopters, Atlin B.C.

Flight Ticket

003540	0.5 hrs	Aug 10
003528	1.0 hrs	Aug 7
003513	1.2 hrs	Aug 3
003561	0.7 hrs	Aug 16

Flying:	3.4 hrs @ \$400/hr	\$1,360.00
Fuel:	3.4 hrs @ \$56.00/hr	<u>190.40</u>

TOTAL 1,550.40

TOTAL EXPENDITURE \$5,266.91

Respectfully submitted,
J.C. Stephen Explorations Ltd.

J. M. Pautler

J.M. PAUTLER, GEOLOGIST.

APPENDIX I

SAMPLE DATA SHEETS

NTS 104K/10E

SAMPLER J. Pautler - Eleanor Sidney

PROJECT

Newex

LINE G R I Z 3 Slowing

DATE Aug 11/1981

AIR PHOTO No. BC 5614 075

SAMPLE NUMBER	LOCATION	ROCK TYPE	ALTERATION	MINERALIZATION	STRIKE / DIP	ADDITIONAL REMARKS	WIDTH		ASSAYS				
							APPARENT	TRUE	Au.	Ag	Pb	Zn	
(1) 27751 C	Zone 1 line 1 0-45cm	gfp wallrock							<10	0.8			
(2) 27752	45-87cm	gfp	Mn altered.						<10	0.2			
(3) 27753	87-114cm	black with rusty gfp frags.	Mn staining cte coating.	v minor sphal.					10	2.5			
(4) 27754	114-147cm	gfp btw veins							<10	0.6			
(5) 27755	147-180cm	altered vein material	heavily Mn stained cte coating						<10	1.1			
(6) 27756	180-208cm	gfp	thin cte coating in places						10	0.4			
(7) 27757	208-241	gfp with small f-2cm wide bl. Mn stained veinlets		ts with cte xls in centre					<10	1			
(8) 27758	241cm-295cm	vein	Mn stained silicified			calcite blebs up to 5cm rusty patches of altered gfp			<10	2.4			
(9) 27759	295cm-333cm	gfp wallrock							<10	0.4			
(10) 27760	line 2 Zone 1 0-66cm	gfp wallrock							<10	0.2			
(11) 27761	66cm-96cm	vein	Mn stained			calcite xenoliths rusty gfp			<10	4.5			
(12) 27762	96cm-243cm	gfp host rock.							<10	0.3			
(13) 27763	243cm-268cm	vein	black Mn stained						<10	2.1			
(14) 27764	268cm-303cm	gfp host rock							<10	0.4			
(15) 27765	303cm-328cm	vein as in 27763							20	2.7			
(16) 27766	328cm-409cm	gfp host							<10	0.7			
(17) 27767	409cm-500cm	vein	Mn stained silicified	galena		assay			0-010	5.98	3.46	4.19	
(18) 27768	500cm-533cm	gfp host rock							<10	0.2			
(19) 27769	Zone 2 0-20cm	vein	Mn stained silicified			rusty gfp fragments			20	1.9			
(20) 27770	20cm-100cm	gfp with calcite veins							<10	0.9			

NTS 104 K/10E

LINE Griz 3 showing

AIR PHOTO No. BC 5014 075

SCALE 1 P + ES

PROJECT Newey

DATE Aug 11, 12/81

SAMPLE NUMBER	LOCATION	ROCK TYPE	ALTERATION	MINERALIZATION	STRIKE / DIP	ADDITIONAL REMARKS	APPARENT WIDTH	TRUE WIDTH	ASSAYS			
									Au.	Ag	Pb	Zn
(1) 27771 C	Zone 2 contd 100cm - 160cm	vein	siliceous Mn stained	galena sphalerite		assay			0.194	1.46	0.54	1.22
(2) 27772	160cm - 233cm	qfp with vein material	Mn stained			veins from few cms to 10 cm wide			<10	1.7		
(3) 27773	233cm - 279cm	qfp wallrock							<10	0.2		
(4) 27774	Zone 2 vein above zone 2	vein calcite	Mn stained	some galena		assay rusty zones			0.010	0.10	0.07	0.05
(5) 27775	Zone 3 line 1 0 - 66cm	qfp wallrock							<10	0.2		
(6) 27776	66cm - 116cm	vein	Mn stained	galena sphalerite		assay			<0.003	1.15	1.14	1.43
(7) 27777	116cm - 146cm	qfp							<10	0.5		
(8) 27778	146cm - 209cm	vein	Mn stained	galena sphalerite		assay			0.004	1.93	0.87	4.43
(9) 27779	209cm - 249cm	qfp wallrock							<10	0.2		
(10) 27780	Zone 3 line 2 0 - 40cm	qfp wallrock				very crumbly			<10	0.1		
(11) 27781	40cm - 140cm	vein	Mn stained	galena sphalerite		assay			<0.003	0.22	0.21	0.54
(12) 27782	140cm - 209cm	qfp							<10	0.5		
(13) 27783	209 - 309cm	vein with qfp							<10	1.2		
(14) 27784	309cm - 379cm	vein	silicified Mn stained			calcite veins			<10	0.7		
(15) 27785	379 - 430cm	qfp wallrock							<10	0.2		
(16) 27786	Zone 4 line 1 0 - 38cm	qfp wallrock							10	0.1		
(17) 27787	38cm - 88cm	altered wallrock							<10	0.1		
(18) 27788	88 - 220cm	altered wallrock	Mn stained			rusty qfp fragments in poorly defined veins			<10	0.4		
(19) 27789	220cm - 256cm	vein	Mn stained	minor galena sphalerite		assay			0.118	0.18	0.91	0.26
(20) 27790	256cm - 306cm	qfp wallrock							<10	0.3		

NTS 107 K/10E

SAMPLER J Pautler + E. S. day

PROJECT Newex

LIVE Curig 3 showing

DATE Aug 12/81

AIR PHOTO No. BC 5614 075

SAMPLE NUMBER	LOCATION	ROCK TYPE	ALTERATION	MINERALIZATION	STRIKE / DIP	ADDITIONAL REMARKS	APPARENT WIDTH		ASSAYS			
							APPARENT WIDTH	TRUE WIDTH	Au.	Ag	Sb.	
(1) 27791C	Zone 4 line 2 0-45cm	gfp wallrock							<10	0.1		
(2) 27792	45cm-144cm	gfp from open zone							<10	0.1		
(3) 27793	144cm-220cm	minor veining altered gfp							<10	0.1		
(4) 27794	220cm-255cm	vein	Mn stained silicified	pyrite					20	0.3		
(5) 27795	255cm-355cm	altered gfp between veins							<10	9.0		
(6) 27796	355cm-454cm	vein zone	heavy Mn staining silicified			rusty gfp fragments			<10	2.0		
(7) 27797	454cm-492cm	gfp wallrock							10	0.2		
(8) 27798		vein	Mn staining	sphalerite					10	1.4		
(9) 27799		vein of calcite	Mn stained	sphalerite					<10	9.8		
(10) 27800	Zone 5 line 1 0-30cm	gfp wallrock							<10	1.0		
(11) 25701C	Zone 6 33cm- line 1 49cm	silicified zone with gfp fragments	rusty gfp some Mn staining						20	0.6		
(12) 25702	49cm-219cm	gfp between veins							100	0.2		
(13) 27503	219cm-289cm	silicified vein	Mn staining rusty gfp fragments						<10	7.4		
(14) 27504	289cm-325cm	gfp wallrock							10	0.4		
(15) 27505	Zone 5 line 2 0-43cm	gfp wallrock							<10	0.2		
(16) 27506	43cm-143cm	vein material	Mn stained rusty gfp silicified						20	1.2		
(17) 27507	143cm-361cm	large gfp zone							<10	0.4		
(18) 27508	361cm-401cm	vein zone	Mn stained rusty gfp fragments			some gfp interstitial			20	2.6		
(19) 27509	401cm-465cm	gfp wallrock							30	0.2		
(20) 27510		vein	Mn stained rusty gfp fragments			7cm wide vein			800	0.7		

SAMPLER J. Pautler + Don G.

DATE Aug 6 - 7 / 81

PROJECT Newex

NTS 104 K/10E

LINE GRIZ 3

AIR PHOTO NO. BC 5614 075

SAMPLE NO.	LOCATION	Depth cm	Horiz	DESCRIPTION				SLOPE	VEG.	ADDITIONAL OBSERVATIONS OR REMARKS	ASSAYS				
				Colour	Part Size	% ORG.	Ph				Au	Ag	As	Pb	Zn
81-N 26-B 0+00N/0+00E		6"	B	dark br.	clayey silt	mod.		gentle	grass	edge of soil / talus above galena vein trending 260°	410	0.1	46		130
0+00N/1+00E		5"	B	med br.	pebbly clayey silt	mod		"	"		<10	0.1	25		88
0+00N/2+00E		4"	B	"	fine	"		mod.	"	on top of gfp etc	10	0.1	19		72
0+00E/1+20N		32 cm	AB	dk. med br.	pebbly silt	"		gentle	"	30cm of A. above gfp etc	<10	0.1	11		70
0+00E/1+40N		10 cm	A+C	dk br	pebbly clay	"		flat	grass moss	angular float of gfp	<10	0.1	10		75
0+00E/1+60N		8"	B	"	pebbly silt	low		"	"	near etc of gfp. some gfp float.	<10	0.1	9		72
0+00E/1+80N		10"	B	med-dk br	pebbly silt	mod		"	"	gfp angular float	<10	0.1	10		70
0+00E/0+30N		7"	B	med br	fine silty	low		mod-steep	some grass	above gfp etc, near + above galena veins	410	0.1	405		250
0+00E/0+40N		8"	B	"	pebbly clayey sand	mod		gentle	moss grass	near gfp etc	20	0.1	14		84
0+00E/0+60N		12"	B	dk br.	v. fine sandy silt	mod-hi		"	"	near gfp etc + talus	<10	0.1	17		127
0+00E/0+80N		5"	B	light cr-br	pebbly clayey silt	mod		mod	some grass	above gfp etc.	<10	0.1	7		98
1+00E/0+30N		25"	B	light cr-br	v. pebbly silt	few		mod-steep	grass	lots angular gfp	<10	0.1	5		62
1+00E/0+40N		10"	B	slightly med br	sandy pebbly silt	few		gentle	grass moss	some gfp float.	<10	0.1	6		66
1+00E/0+60N		15"	B	med br	pebbly silt	mod		mod	"	ang. gfp float, above gfp etc	<10	0.1	10		72
1+00E/0+80N		15"	B	dk br	"	"		flat	"	near gfp etc	<10	0.1	11		62
1+00E/1+00N		7"	B?	med br	"	few		"	"	directly on top of gfp etc	<10	0.1	15		85
1+00E/1+20N		15"	B?	"	"	few		gentle	moss	in crevices of gfp etc	<10	0.1	16		110
1+00E/1+40N		20"	B	"	pebbly clayey silt	mod		"	-	gfp etc in area	20	0.1	12		77
1+00E/1+60N		24"	B	"	pebbly silt	"		"	grass moss	no float in hole, near gfp etc	<10	0.1	11		76
BT-1+00E/1+80N		5"	B	dk br.	fine pebbly silt	mod.		mod.	none	below gfp etc	<10	0.1	3		57

SAMPLER J. Putter & Son G.

PROJECT Newex

DATE August 7/81

NTS 104K/10E

LINE 6R23

AIR PHOTO NO. BC 5614 075

SAMPLE NO.	LOCATION	Depth cm	Horiz	DESCRIPTION				SLOPE	VEG.	ADDITIONAL OBSERVATIONS OR REMARKS	ASSAYS					
				Colour	Part Size	% ORG.	Ph				Au	Ag	As	Pb	Zn	
81NXB	0+00E 0+20N	3		dark brown	pebbly clay silty	mod.		flat	grass moss	near qfp outcrop, many pebbles of qfp	<10	0.1	14		88	
	2+00E 0+40N	10	B+C	dark brown	pebbly silty	mod.		flat	moss	directly over qfp outcrop	<10	0.1	15		84	
	2+00E 0+60N	20	B	medium brown	pebbly clay silty	low		flat	grass moss	no rock in hole, near qfp outcrop	20	0.1	12		83	
	2+00E 0+80N			No Sample							no sample due to snow	<10	0.1	12		95
	2+00E 1+00N			No Sample							no sample due to snow					
	3+00E 1+20N	3						gentle		below snow, qfp outcrop and float, very muddy						
	3+00E 1+40N	3		medium brown	pebbly silty sand	none		gentle		usually covered in snow-glacial, qfp outcrop	10	0.1	14		118	
	3+00E 1+60N	18		medium brown	pebbly silty sand	low		flat	grass moss	thin A horizon qfp float around	<10	0.1	16		110	
	2+00E 1+80N	20	B	medium brown	pebbly clay silty	mod.		flat	grass moss	rootlets present, qfp float in region	20	0.1	14		110	
	0+00E 0+20S	35	A	dark brown	very fine silty	high		moderate	grass	intrusive float in hole	<10	0.4	20	22	85	
	0+00E 0+40S	10	B	orange brown	fine silty sand	high		moderate	grass	few pebbles near intrusive outcrop	<10	0.1	12	10	98	
81NXBT	0+00E 0+60S	10	B	orange brown	pebbly silty	high mod.		moderate	grass	talus, below qfp outcrop	10	0.1	9	22	92	
	0+00E 0+80S	10	B	orange brown	fine silty sand	mod.		moderate	grass		<10	0.1	20	19	145	
	0+00E 1+00S	3	B	orange brown	fine sand	few			grass moss	above qfp outcrop	<10	0.1	12	14	88	
81NXB	1+00E 0+20S	10	B	medium brown	fine silty sand	mod.		gentle	moss grass		10	0.1	16	8	112	
81NXBT	1+00E 0+40S	10	B	medium brown	coarse to fine talus	mod.		moderate	grass moss brush	talus sample	<10	0.1	5	10	80	
81NXB	1+00E 0+60S	8	B	medium dark brown	silty pebbly sand	few		gentle	grass moss	qfp float	<10	0.1	9	6	120	
	1+00E 0+80S	5	B	medium brown	fine sandy silty	few		flat	moss	slightly rusty	40	0.1	22	6	80	
	1+00E 1+00S	3	B	medium brown	fine sandy silty	few		flat	shrubs grass	slightly rusty	<10	0.1	14	5	130	
	2+00E 0+20S	10	B	orange brown	fine silty sand	few		gentle	brush grass	somewhat rusty taken 7m east of station	80	42.0	1000	3000	190	

SAMPLER J. Butler

PROJECT Noway

DATE August 7/81

NTS 104 K/10E

LINE Griz 3

AIR PHOTO NO. BC 5614 075

SAMPLE NO.	LOCATION	Depth cm	Horiz	DESCRIPTION				SLOPE	VEG.	ADDITIONAL OBSERVATIONS OR REMARKS	ASSAYS					
				Colour	Part Size	% ORG.	Ph				Au	Ag	As	Pb	Zn	
81 NXB	2+00E 0+40S	—	A-B	dark brown	med silty pebbles	few		moderate	grass		<10	0.7	39	20	151	
	2+00E 0+60S	—	No	sample						No sample						
	2+00E 0+80S	10	B	dark brown	fine silty sand	few		gentle	grass		<10	0.1	12	12	63	
	2+00E 1+00S	7	B	med br.	silty sand	few		gentle	moss grass		<10	0.1	9	4	48	
GRIZ 3 - Aug 15/81																
BT-138	The showing	—	B	lt. br. rusty br.	med- coarse	mod		gentle	—	7 m w. of top of zone 1, at showing.	<10	0.1	7	7	85	
BT-139	The showing	—	B	rusty lt br.	fine pebbly	few		mod	—	1 m w. of top of vein in zone 1	<10	0.1	22	33	118	
BT-140	w of showing	3	B	lt or br.	med	mod		gentle	grass moss	- above steep gully in oppote	<10	0.1	14	4	72	

200

----- am

SAMPLER J. Pantler
DATE July 30 - Aug 8/81

PROJECT Newey

NTS 104K/10E
LINE Gritz claims + area
AIR PHOTO NO. BC 5614 073
075
075

BC 5614 073

SAMPLE NO.	LOCATION	Depth (cm)	Horiz	DESCRIPTION				SLOPE	VEG.	ADDITIONAL OBSERVATIONS OR REMARKS	ASSAYS				
				Colour	Part Size	% ORG.	Ph				Au	Ag	Pb	Zn	
B-105	Frozen Lake	5	B	rusty dk bl.	fine	3	dry	flat	grass moss	gfp ok in area, altered	<10	0.1			90
B-106	GRIZ 3	5	B	rusty or bl	"	5	"	"	"	gfp ok in area	<10	0.1			70
B-107	GRIZ 3	2	B	"	med	<2	"	mod.	—	gfp ok.	<10	0.1			96
B-108	Frozen L.	—	B	v. rusty bl.	fine	2		flat	grass moss	gfp float.	<10	0.1			100
BT-109	end ridge NW of Frozen	5	B	rusty lt bl	med	2		"	grass	on top of gfp ok, E side of steep ridge.	<10	0.1	12		100
BT-110	"	5	B	"	"	4		"	"	above gfp ok in contact w/ sed. near middle of top of same ridge	<10	0.1	73		210
BT-111	"	1	B	"	"	2		"	grass shrubs	near + above gfp/sed contact.	<10	0.1	73		188
BT-112	"	—	B	rusty or-bl.	med	<2		steep	—	on v pyritic ok of gfp.	10	0.1	225		155
BT-113	GRIZ 3 I&N/3W	2	B	or-bl rusty	med-coarse	2		gentle	—	below cliff of gfp.	10	0.1	6		124
B-114	GRIZ 1 near IS	—	B	"	med	2		"	grass	with gfp float, some v. rusty with py.	<10	0.1	9		85
B-115	"	2	B	dk or-bl	fine	4		flat	grass moss	rusty gfp float w/ py + slightly sil gfp.	<10	0.1	22		75
BT-116	GRIZ 2	6	B	dk or-bl	coarse	5		gentle	"	rusty + non rusty gfp float	20	0.1	12		105

SAMPLER D. Kępiński / M. HUGHES

DATE AUGUST 12 / 81

PROJECT TALUS SAMPLES NX

NTS 104 K/10E

LINE GRIZ 3

AIR PHOTO NO. BC 5614 075

SAMPLE NO.	LOCATION	Depth	Horiz	DESCRIPTION				SLOPE	VEG.	ADDITIONAL OBSERVATIONS OR REMARKS	ASSAYS				
				Colour	Part Size	% ORG.	Ph				Au	Ag	As	Pb	Zn
81-NXG-BT 81-NXG-BT	0+00E	1cm		talus, brown surface, rusty	fine			37°+	oaksum low brush	furthest cliff outcrop, directly bottom face cliff wall. From QFP rock	<10	0.1	4	6	66
81-NXG-BT	0+20E	5cm		"	"			"	grassy	talus begins in sample location from QFP cliff.	<10	0.1	5	15	100
81-NXG-BT	0+35E	5cm		"	"			"	"	down slope 15 m.					
81-NXG-BT	0+50E	10cm	A	"	"			"	—	just below Mn staining on cliff	<10	0.1	5	7	90
81-NXG-BT	0+75E	2cm		talus	"			"	grassy	QFP cliffs directly above	<10	0.1	4	5	78
81-NXG-BT	1+00E	2cm		"	"	slight		"	grassy	next major talus flow eastward	20 <10	0.1 0.1	5 5	8 3	76 83
81-NXG-BT	1+25E	2cm		"	"	"		"	spruce 4ft. trees	25ft. below QFP o/c cliff.	<10	0.1	4	5	72
81-NXG-BT	1+50E	5cm		"	"	"		"	flowering spruce	Major talus flow	10	0.1	4	5	73
81-NXG-BT	2+00E	5cm		"	"	"		"	sparse	"	<10	0.1	15	24	83
81-NXG-BT	2+25E	?		"	"	"		"	trees	taken from small gully, top of flow	<10 20	0.1 0.1	5 5	12 8	85 73
81-NXG-BT	2+75E	5cm		"	"	mod.		"	trees						
81-NXG-BT	5+00E	10cm		"	"	mod		"	heavily treed	following edge of cliff bottom.	10	0.1	7	16	83
81-NXG-BT	3+50E	20 cm	A	"	"	mod		"	"	between 2 QFP cliffs	<10	0.1	7	9	75
81-NXG-BT	4+00E	5cm		talus	"	slight		"	"	well sorted medium grade	10	0.1	25	33	126
81-NXG-BT	4+50E	15cm		"	"	"		"	"	major talus flow from gully	<10	0.1	19	20	102
81-NXG-BT	4+75E	10cm		"	"	"		"	"	major talus flow from another gully	<10	0.1	4	7	75
81-NXG-BT	4+90E	12cm		"	"	"		"	"	further up from last	<10	0.1	17	23	112
81-NXG-BT	5+25E	5cm		"	"	"		"	"	"	<10	0.1	7	21	98

APPENDIX II

PETROGRAPHIC DESCRIPTIONS

Specimen : JP-2 FELDSPAR PORPHYRY - GRIZ 3 SHOWING

Classification : Trachyandesite (volcanic)

Mode :	Plagioclase	35-40%
	K-spar	40%
	Calcite & other secondary minrls.	10%
	Biotite	5%
	Quartz	<5%
	Accessories	1%
	Opagues	1%

Handspecimen : Grey, massive volcanic rock containing phenocrysts of plagioclase, altered (calcareous) amphibole and biotite. The matrix is very rich in K-spar, as indicated by the yellow colour in the stained block.

Thin section : Texture : porphyritic, holocrystalline; most likely a effusive rock.

Plagioclase occurs as euhedral and subhedral phenocrysts ranging up to 5 mms. in size. Although finely developed oscillatory zoning is present in many of the laths, the average composition appears to be An-40, andesine. (Determined by combined carlsbad/albite method). Carlsbad, albite and pericline twinning are all present. All grains contain small patches and thin veinlets of secondary carbonate.

Biotite forms brown pleochroic phenocrysts up to 2 mms. in size. These are frequently somewhat corroded and locally intergrown with plagioclase phenocrysts. Most grains are surrounded by thin rims of granular opaques. Calcite occurs in granular aggregates up to 2 mms. in size, which are clearly pseudomorphous after a ferro-magnesian phenocrystic phase. Frequently the carbonate surrounds cores composed of fine grained, aggregate clayminerals, white mica and feldspar. In turn, they are rimmed by fine granular opaques. Calcite occurs furthermore as irregular secondary patches throughout the remainder of the rock.

K-spar forms the bulk of the fine grained groundmass. together with lesser plagioclase and probably some quartz, secondary minerals, apatite, opaques etc.

Apatite occurs as euhedral and subhedral accessory crystals up to .25 mms. in size, scattered throughout the groundmass. A few grains of subhedral zircon are present as well.

Opagues occur as fine disseminated granular material. The coarser grains (up to .5 mm.) are subidiomorphic and tend to form aggregates.

Note : possibly this specimen is a effusive variety of spec. JP-1.

Specimen : JP-3 ALTERED FELDSPAR PORPHYRY - GRIZ 3 SHOWING

Classification : Altered feldspar porphyry

Mode :	Quartz	40-50%
	Clayminerals	30-40%
	Limonitic calcite	10%
	White mica	5%
	Accessories	1%
	Opagues	1%

Handspecimen : Strongly altered (limonitic & calcareous), porphyritic volcanic rock. Altered feldspar (plagioclase) and amphibole(?) phenocrysts are macroscopically visible. The vague primary texture somewhat resembles that of specimen JP-2.

Thin section : The groundmass of this specimen appears to be composed predominantly of fine grained, granular quartz (av. size .18 mm.), clouded by dusty secondary minerals, probably mostly clayminerals. Scattered through this matrix are abundant, irregular secondary patches of limonitic calcite, clayminerals and a bit of white mica. Probably the quartz itself is of secondary origin, having replaced a primary volcanic groundmass. This throws considerable doubt on a rhyolitic classification for this specimen. It may be a silicified and altered version of JP-2, but is here classified as a altered feldspar porphyry.

Scattered throughout the groundmass are accessory amounts of euhedral apatite (up to .25 mm.) and subhedral zircon.

Original phenocrysts of plagioclase, amphibole and biotite are represented by pseudomorphs composed of clayminerals, white mica, limonitic calcite and opaques. These range up to 4 mms. in size and resemble those of spec. JP-2 in being frequently surrounded by rims of fine granular opaques, which are mostly altered to limonite.

Small grains of subidiomorphic opaques are scattered throughout.

Specimen : JP-5 GRIZ 3 SHOWING

Classification : Galena & sphalerite bearing cataclastic rock

Mode :	Quartz	60-70%
	Clayminerals & white mica	10%
	Calcite & limonite	10%
	Galena & sphalerite	10%
	Apatite & zircon	tr

Handspecimen : Limonitic and calcareous banded breccia/protomylonite containig lenticular domains rich in galena and sphalerite. The rock is crosscut by post mylonitic fractures, some of which have been healed by carbonate.

Thin section : Irregular to lenticular, nebulous domains of very fine grained to aphanitic material (rich in clayminerals but otherwise silicified) are the only indicators of a primary lithology. Locally a faint suggestion of a original porphyritic texture is present as well, with claymineral aggregates resembling altered phenocrysts set in a fine grained, siliceous matrix. These are visible in the lower part of the section.

The remainder of the specimen is composed of secondary minerals, mainly quartz carbonate, limonite, galena and sphalerite, with lesser clayminerals and white mica. Some of the quartz forms granular textures masses rather similar to the groundmass quartz in spec. JP-3. Small, irregular patches and veinlets of limonitic calcite and clayminerals are everywhere present. Relict zircon, apatite and altered biotite are present within these domains.

The rest of the quartz is clearly of hydrothermal origin, replacing the earlier lithologys along veinlets and lenticular domains generally parallel to the cataclastic fabric. Grainsize ranges from extremely fine grained to approx. .5 mms.

Calcite forms lenticular bodies up to 3 mms. thick, parallel to the cataclastic fabric. It is also present in irregular secondary patches and in veinlets along late fractures. Cross cutting relations suggest several episodes of remobilization.

Sphalerite occurs as subhedral crystals, often faintly zoned, up to 1 mm. in size. It is clearly associated with galena within the relatively coarser grained quartz domains. Minor amounts of pyrite are present as well.

Specimen : JP-6 GRIZ 3 SHOWING

Classification : Silicified, veined and altered trachyandesite

Mode :	Quartz	30-45%
	Clayminerals	25%
	Calcite	30-40%
	Zircon & apatite	tr
	Sphalerite	<5%
	Other opaques	1%

Handspecimen : Light grey, siliceous and calcareous vein breccia. Angular fragments with a original porphyritic texture, very similar to spec. JP-2, are clearly visible in cut surface. This spec. is most likely a altered, silicified and veined version of JP-5. Rare, small specks of galena are visible in handspecimen.

Thin section : The above view is conclusively verified by thin section examination. The pre vein texture is identical to that in spec. JP-3. Abundant carbonate occurs in small secondary patches, as larger granular masses and in veinlets. As tiny euhedral crystals it is associated with chalcedony veins, which run along the length of the section and crosscut all other fabrics. Locally these veins are a bit vuggy.

Clayminerals occur as very fine grained aggregates associated with granular quartz (as in JP-3). A few relict zircon and apatite, crystals remind one of the original nature of this rock. Relict phenocrysts are not very well visible in thin section but are clearly present in handspecimen.

Opaques occur as scattered, small grains and aggregates. A few small grains of sphalerite (av. size .25 mms.) are clearly associated with galena and secondary granular quartz.

Specimen : G-1 GRIZ 3 SHOWING

Classification : Siliceous and calcareous vein-breccia + ore minerals

Mode :	Quartz	40-50%
	Calcite	40%
	Clayminerals	10%
	Opagues	5-10%

Handspecimen : Siliceous and calcareous vein-breccia containing galena and sphalerite. Light coloured siliceous fragments are set in a dark, aphanitic siliceous vein network. Some of the veins are a bit hematitic. A few dark areas (fragments?) contain fine, yellow metallic needles.

Thin section : Texturally and mineralogically this specimen is somewhat similar to the previous two samples, combining elements of both. However, original (porphyritic?) textures are only very poorly preserved among some of the finer grained siliceous, claymineral rich domains. These are here interpreted as remnants of the primary, albeit altered, lithology. Only a few of these are present, the remainder of the sample being composed of a complex multistage vein network. The pattern of veining is as follows:

stage 1 : Early quartz veining, probably synchronous with silicification.

Relatively coarse grained quartz, locally spheroidal and radiating. Average size .5 mms. It is evidently this phase

during which the ore minerals were introduced.

stage 2 : Crosscutting calcite veinlets. These are locally a bit hematitic and appear to have remobilized some of the ore minerals.

stage 3 : Late, very fine grained silica (chalcedony) veinlets, cross-cutting the previous two stages. This stage includes some brecciation and fracturing. The resulting fabric is in part cataclastic. At least some late stage movement along fractures has occurred after injection of these fine grained silica veins, juxtaposing them against earlier stage domains.

The fine grained euhedral, yellow sulfide needles are ^{arsenopyrite.} ~~composed of pyrite.~~ They are up to 1 mm. long and have a rhombic cross-section. Locally it is intergrown with galena. Galena locally forms feathery, anisotropic aggregates, probably due to cataclastic deformation. Sphalerite is associated with the galena and pyrite, and forms zoned, subhedral crystals up to 1 mm. in size.

Specimen : G-2 GRIZ 3 SHOWING

Classification : Siliceous and calcareous vein-breccia.

Mode :	Quartz	30%
	Calcite	40%
	Clayminerals/white mica	10%
	Opagues	20%

Handspecimen : Galena and sphalerite bearing vein-breccia. A distinct anisotropic fabric is probably the main difference with spec. G-1. Both calcite and silica veinlets are present, and any remaining original lithology is likely highly silicified and altered. Late fractures have slightly offset some of the catclastic fabric, and hence are younger in age.

Thin section : In thin section this specimen is not significantly different from spec. G-1, at least mineralogically. Fine grained, silicified domains rich in clayminerals and a bit of white mica, probably represent the oldest phase in this rock. A crosscutting sequence of veins appears to be similar to that in spec. G-1. Spalerite occurs mainly in calcite veinlets and may have been remobilized from a original association with early quartzveins. It forms grains up to 5 mms. in size. Very fine grained siliceous veins (stage 3) which locally crosscut calcite veins, contain abundant euhedral calcite crystals, probably due to remobilization from the earlier calcite veinlets. The coarser grained calcite crystals (up to 3.5 mm.) are a bit bent, lending support to the notion of late stage cataclastic deformation as advertized under G-1. Subsequent fractures have offset the stage 3 structures somewhat. Galena, associated with spalerite, ranges up to 1 mm. in size.

APPENDIX III

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, Jean Pautler, am a graduate of the Honours Bachelor of Science program at Laurentian University, Sudbury, Ontario, 1980.

I have the following employment experience:-

April 1981 to present Geologist with J.C. Stephen Explorations Ltd.
North Vancouver, B.C.

May to October 1980 Geologist with J.C. Stephen Explorations Ltd.

May to August 1979 Assistant geologist with Kelvin Energy Ltd.
Calgary Alberta.

May to September 1978 Assistant geologist with the Ontario
Geological Survey, Toronto, Ontario

NOVEMBER 1981

Jean Pautler
JEAN PAUTLER

LEGEND

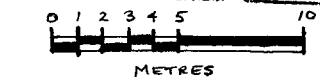
- 3 QUARTZ FELDSPAR PORPHYRY fine to medium grained, greenish color, white feldspar and some quartz phenocrysts, light to pinkish weathering.
- 2 DIABASE fine grained, dark green dyke, dark weather.

SYMBOLS

- /// MN STAINING
- 70 SMALL VEINS showing strike and dip
- 70 SMALL FRACTURES showing strike and dip
- FAULT
- o STATION
- RIDGE
- +25710 SAMPLE LOCATION
- (410,01,33,118,22) (ppb ppm ppm ppm)
(Au, Ag, Pb, Zn, As)
- (001,01,007,005) (oz/ton %)
(Au, Ag, Pb, Zn)
- (17) VEINS

part 2
of 2

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
9824
NO.



J.C. STEPHEN EXPLORATIONS LTD.

NEWEX

GRIZ 3 SHOWING

GEOLOGY AND GEOCHEMISTRY
PLAN SECTION
NTS: 104 K/10 E

SCALE 1 : 300

AUG, 1981

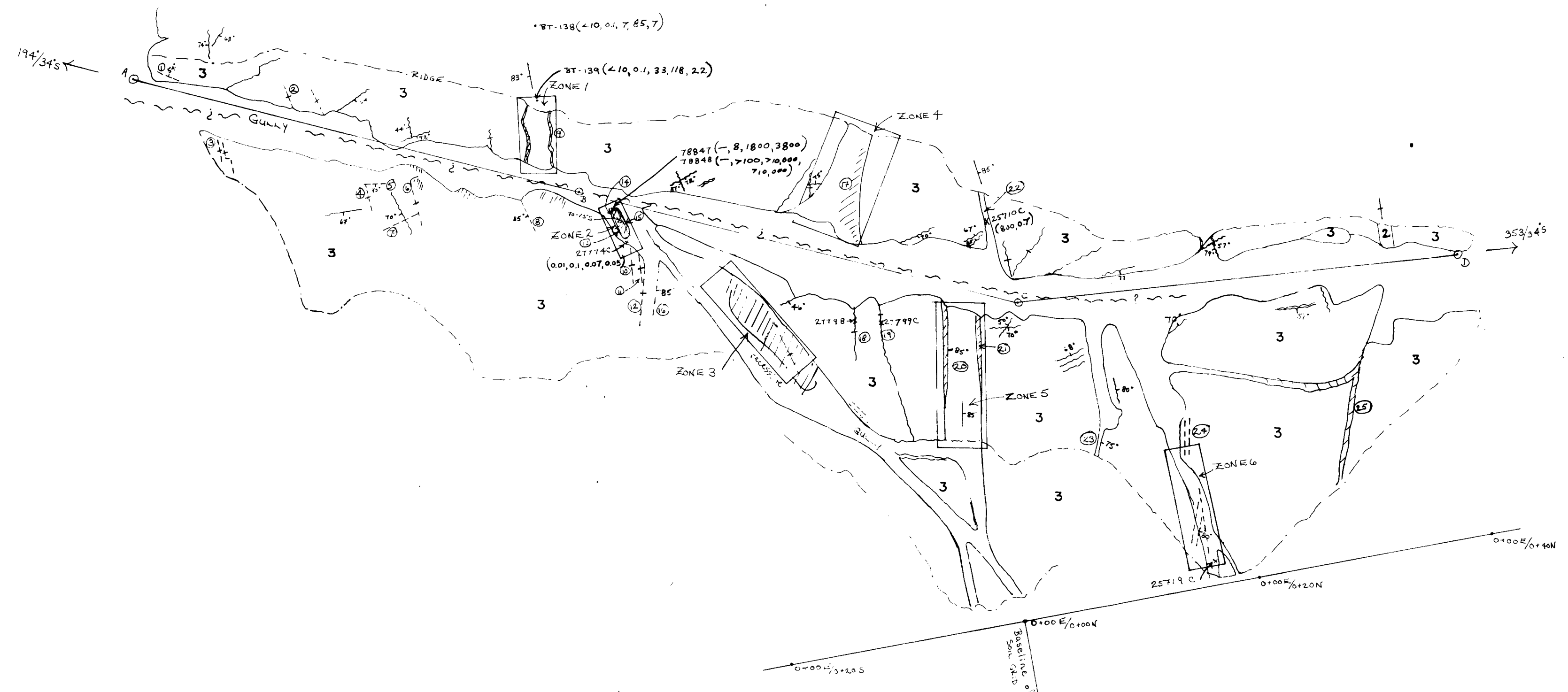


FIGURE 4

