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

Latitude: 58⁰37'N Longitude: 132⁰38'W

ATLIN MINING DIVISION · B.C.

By

J.M. Pautler October, 1981

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

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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.

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(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 lithogeochemical 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 Tak μ 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

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

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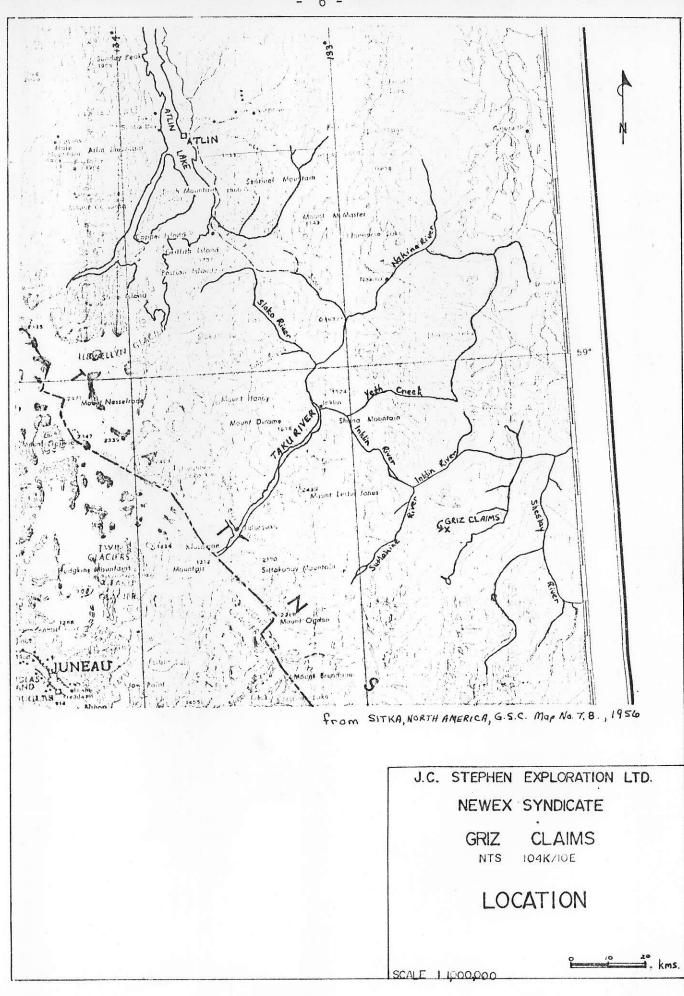
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LOCATION AND ACCESS

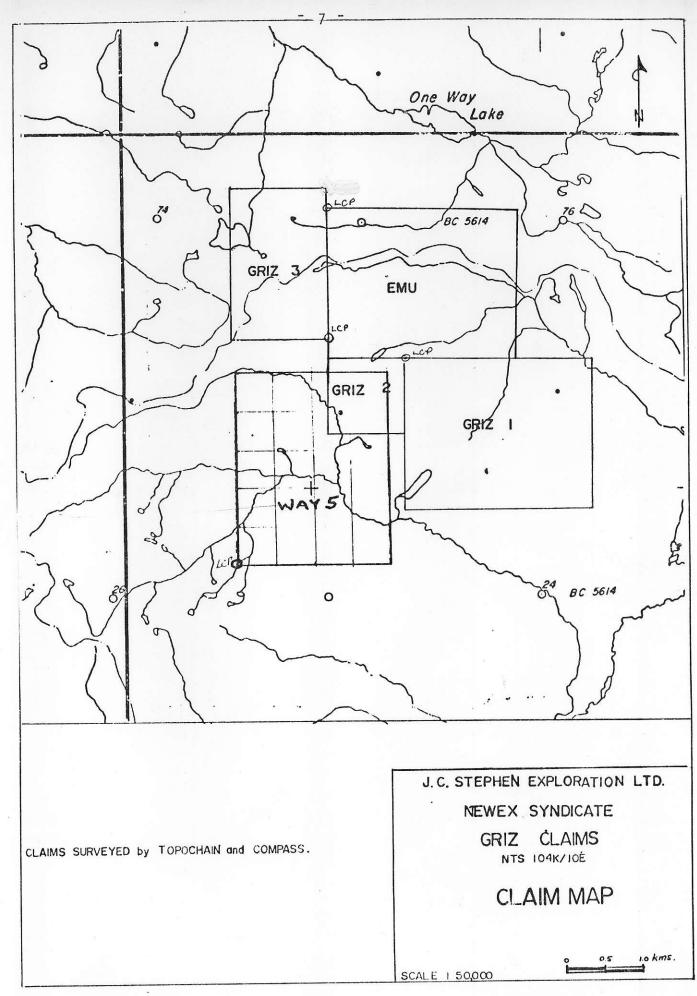
The GRIZ 3 claim, (Tulsequah-Juneau map sheet 104K/10E), is located approximately 15 kms north of Trapper Lake, which is 132 kms southeast of Atlin, B.C. (Refer to Figure 1). Latitude and longitude are $58^{O}37'N$ and $132^{O}38'W$.

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.



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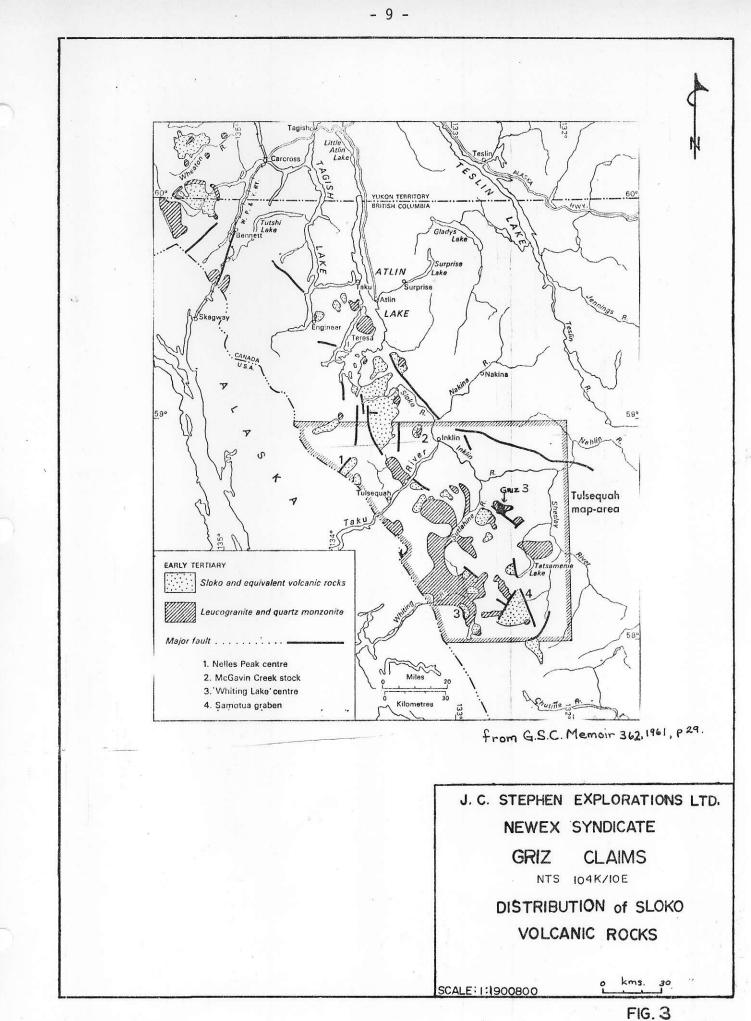


REGIONAL GEOLOGY

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.

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PROPERTY GEOLOGY

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

Rock Types

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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 compostion. It is finegrained 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.

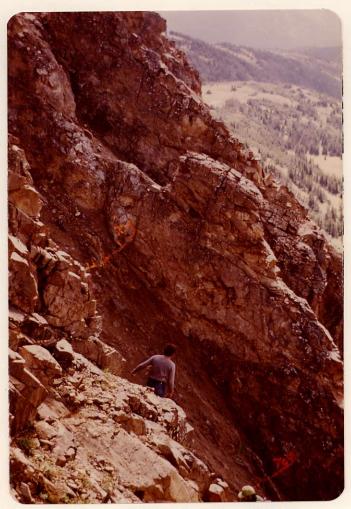


PHOTO 1: GRIZ 3 CLAIM ZONE 5

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 beyong 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 $85^{\circ}S$ to $85^{\circ}N$. 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 calcarious alteration. Plagioclase biotite and amphibole

- 13 -

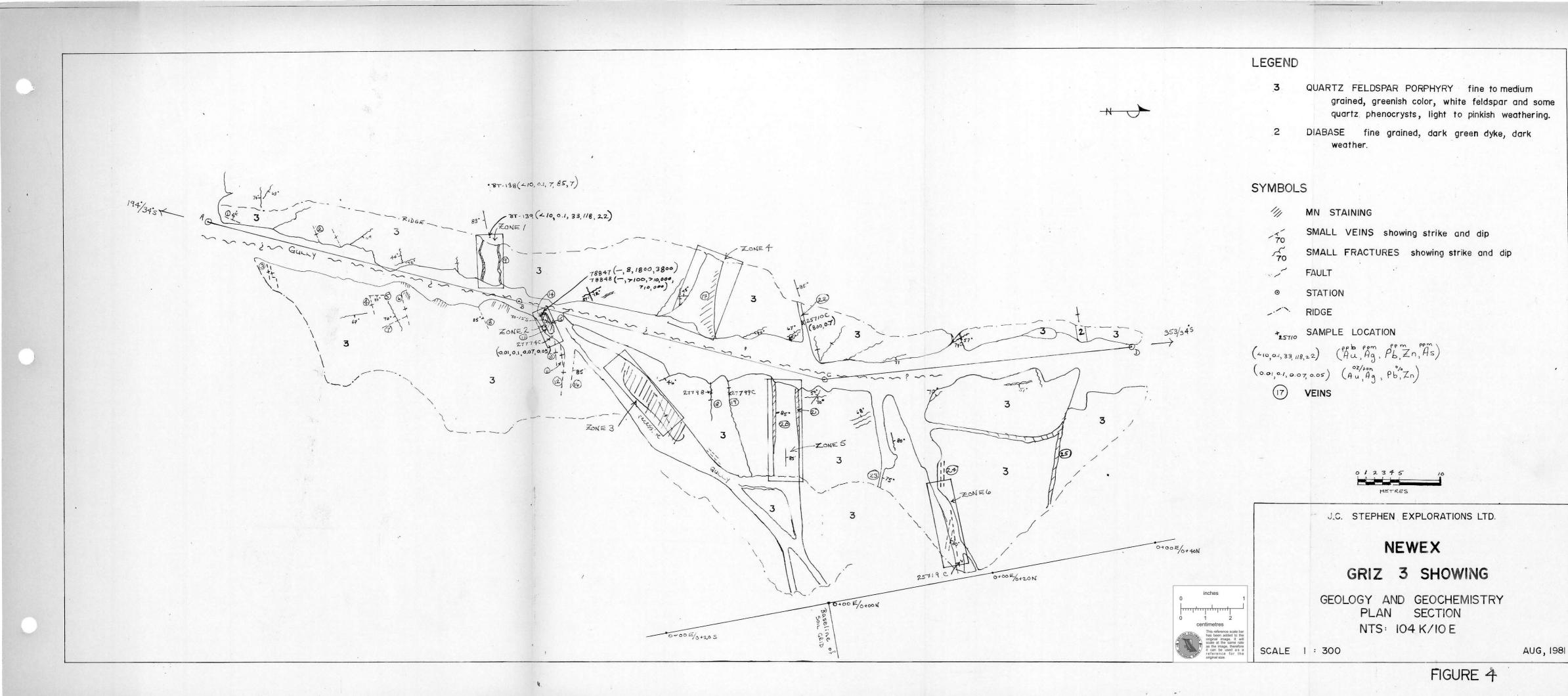
phenocrysts have been altered to clay minerals, white mica, limonitic calcite and opaque minerals. A petrographic description of this rock (JP-3) is provided in Appendix II.

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:

- early quartz veining and probably silicification as well as introduction of ore minerals
- 2. calcite veinlets which remobilized some of ore minerals
- 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 calcitesphalerite 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 guartz 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)

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- 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

Vuartz Feldspar Porphyry

Mn staining

Silicification

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vein with rusty quartz feldspar porphyry fragments



galena, sphalerite mineralization

calcite stingers

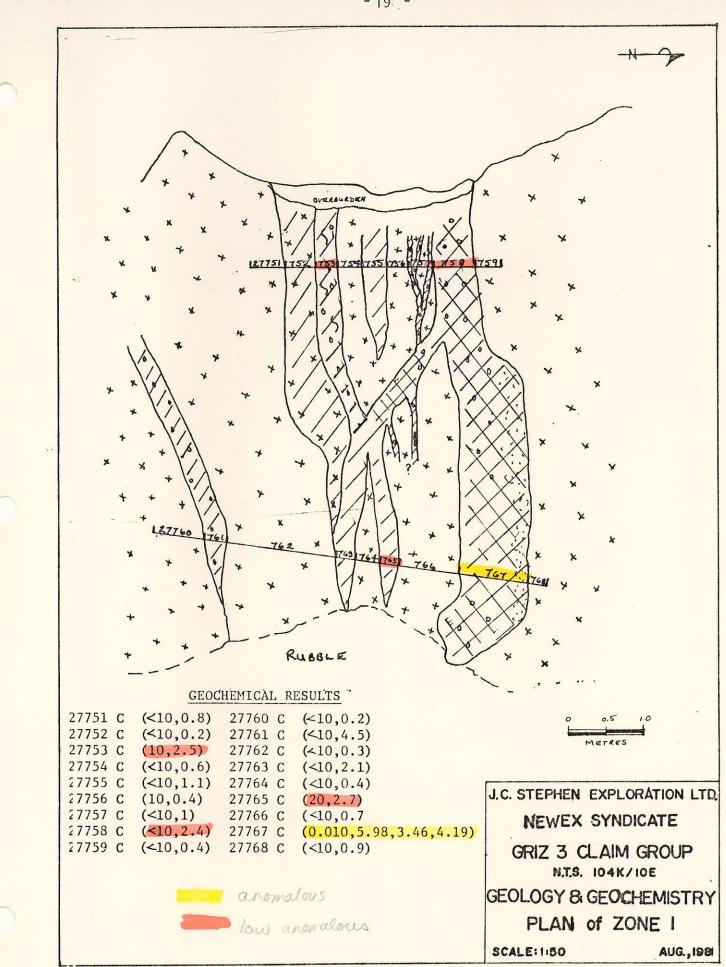
Symbols

1.

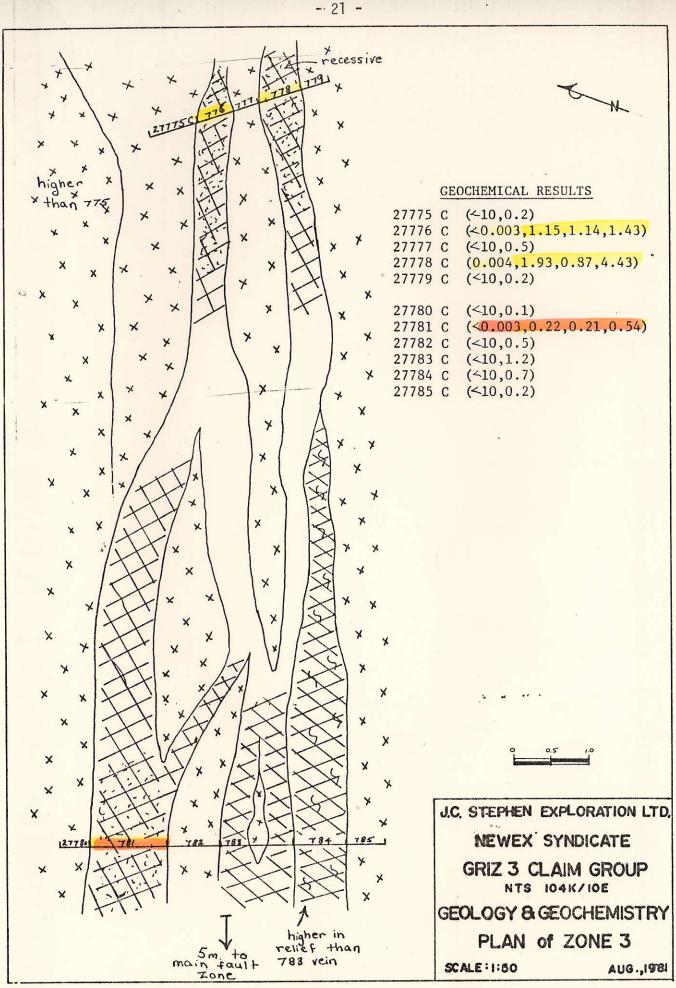
27760, 761 - chip sample locations
(<10,8.1) - Au ppb, Ag ppm, rock geochemistry results</pre>

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(0.010, 1.46, 0.54, 1.22) (Au, Ag oz/ton; Pb,Zn%) assay results

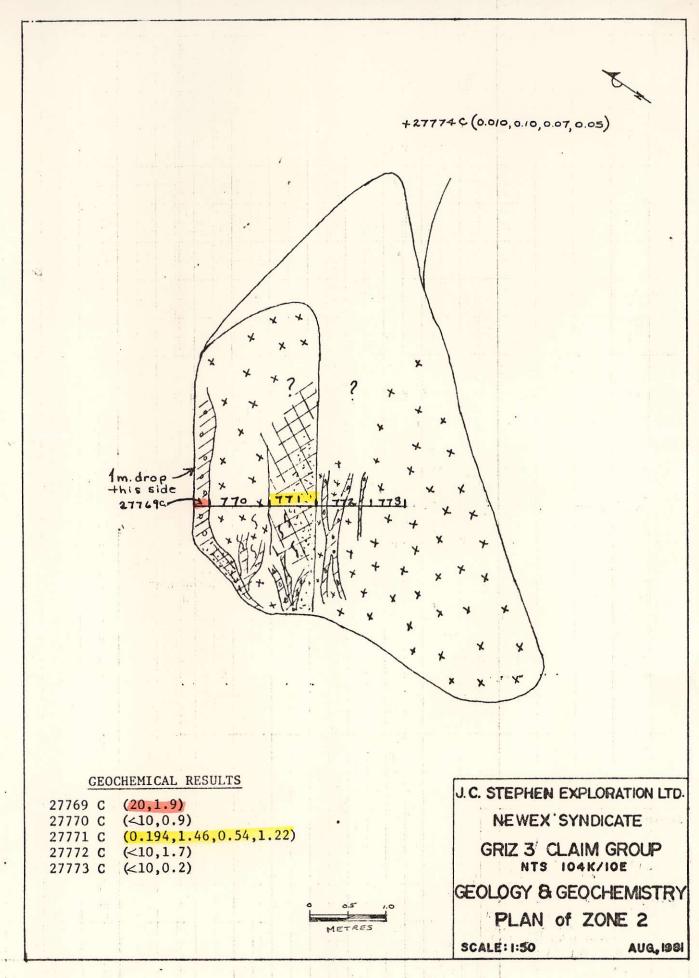


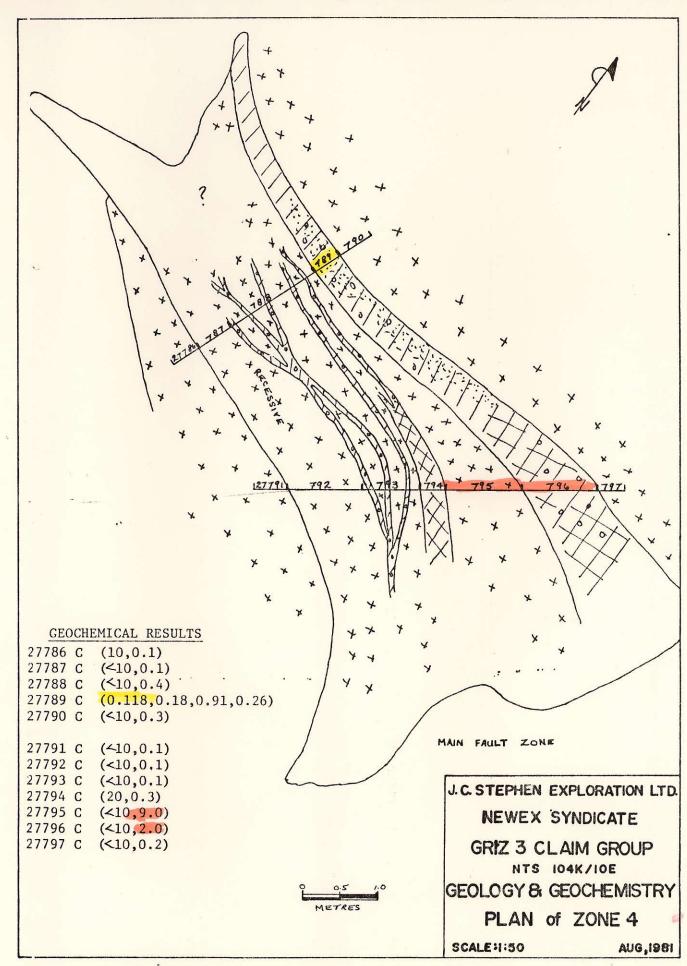
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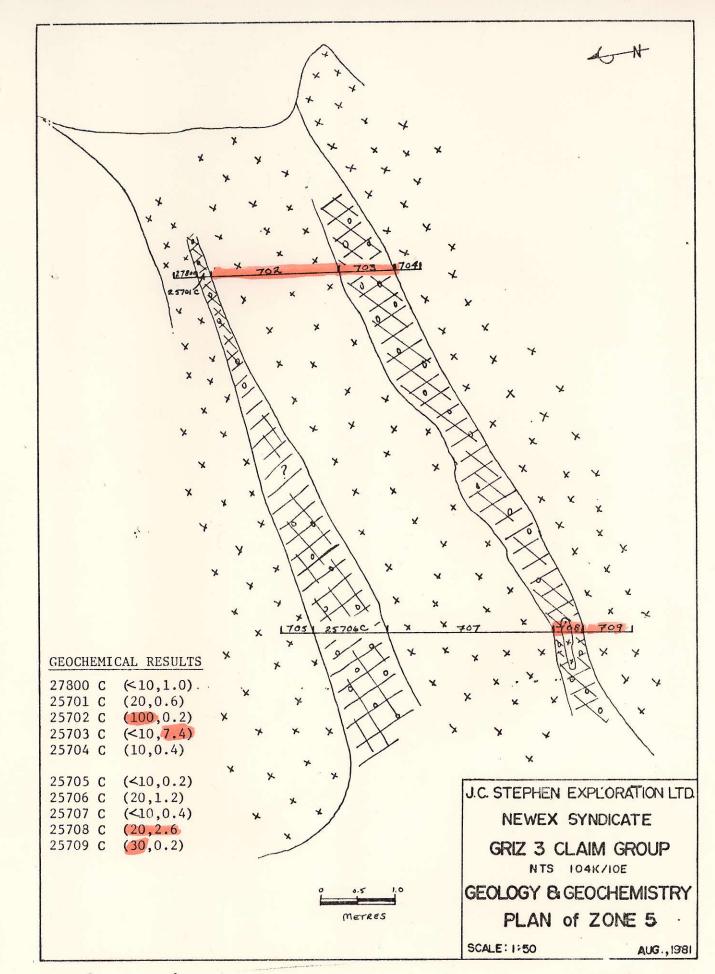




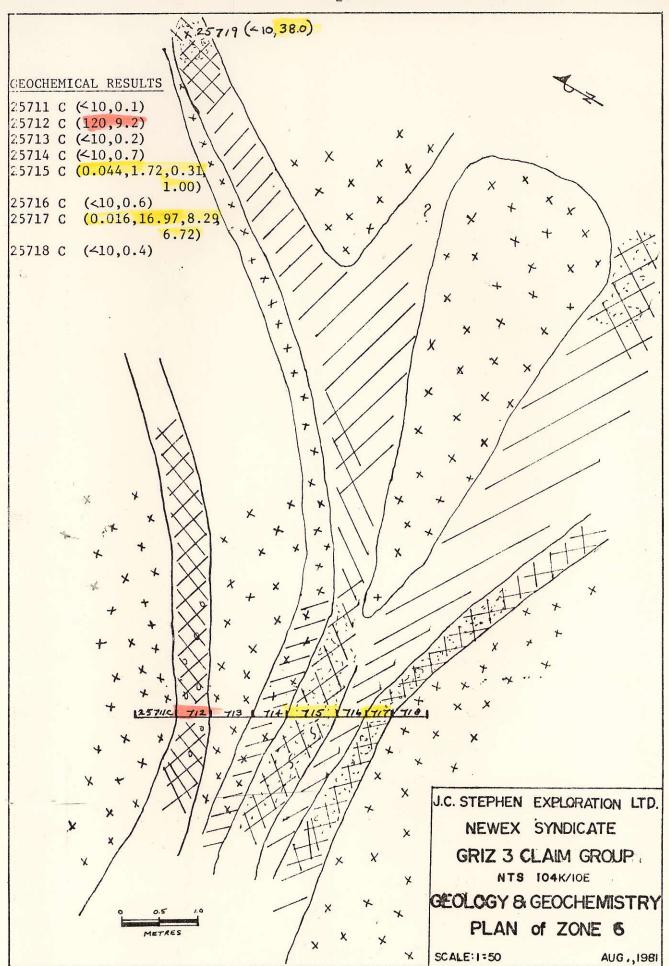
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GEOCHEMISTRY

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.

<u>Results</u>

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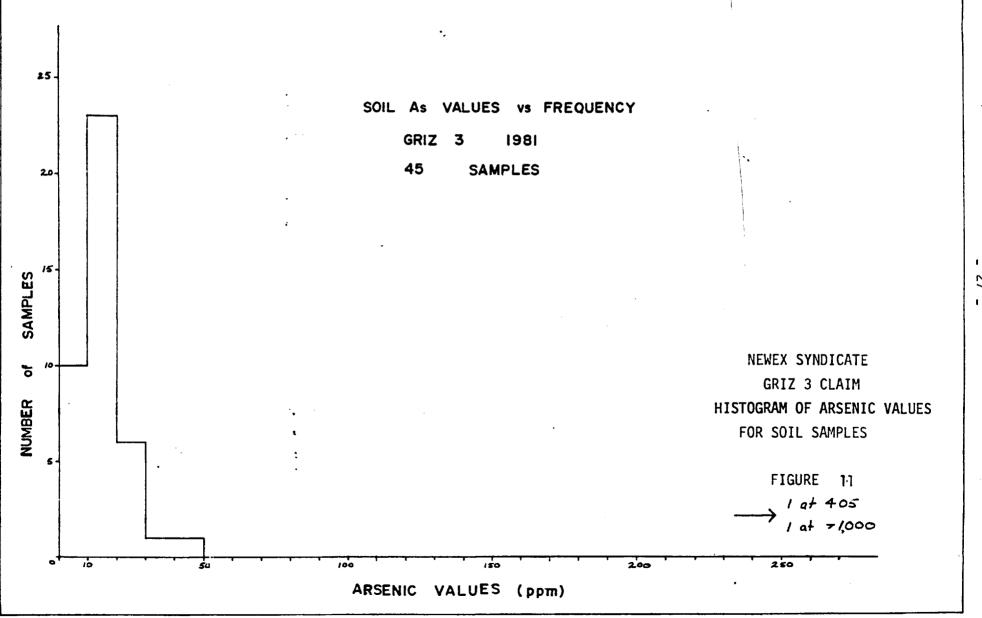
One highly anomalous soil result was obtained from the soil/talus grid east of the showing. The results were 80 ppb Au, 42.0 ppm Ag, >1000 ppm As, 3000 ppm Pb and 1900 ppm Zn. The sample is 200 m east of the showing along the trend of the exposed veins. No other Au results greater than 20 ppb were returned 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.

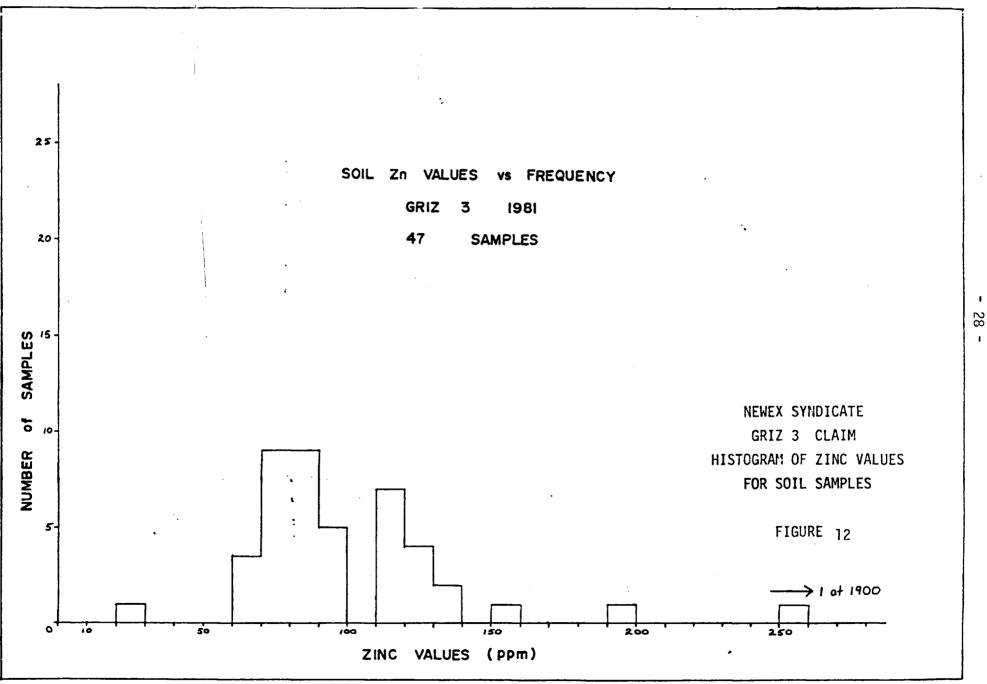
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Rock

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 0.010oz/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:

	Au	Ag	РЬ	Zn
Sample	<u>(oz/ton)</u>	(oz/ton)	<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:

Sample	Ag	Pb	Zn
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.

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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 spil grid is also recommended. Detailed mapping of the property should be conducted at a scale of 1:2500. Additional prospecting and so 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> J.M. Pautler	<u>Date</u> July 30,31 Aug 6-12,15	<u>Rate</u> \$1,950/m+15%	<u>Amount</u> \$ 747.50	<u>Total</u>
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	\$1,4 00/m+15%	53.67	
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 . Aù, Ag, As, Pb, Zn @ \$11.00/sample	396.00	
18113051-4 rock samples analyzed for Au, Ag, 18113350 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 TOTAL	220.50	1,314.00

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

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339.00

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Transportation

Keystone Helicopters, Atlin B.C.

Flight Ticket

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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	190.40

TOTAL

TOTAL EXPENDITURE

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\$5,266.91

1,550.40

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Respectfully submitted, J.C. Stephen Explorations Ltd.

jn pantler.

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J.M. PAUTLER, GEOLOGIST.

APPENDIX I

SAMPLE DATA SHEETS

J.C. STEPHEN GEOCHEMICAL DATA SHEET - ROCK GEOCHEM SAMPLING

B.C. GOLD SYNDICATE

SAMPLE	LOCATION	ROCK	ALTERATION	MINERALIZATION	STRIKE	ADDITIONAL	APPARE WIDTH	ENT	AS	SAYS	All and a second	
NUMBER	LOCATION	TYPE	ALTERATION	,	DIP	REMARKS		TRUE WIDTH	Au.	Ag	£6	Z
27751 C	Zone 1 linel 0-45 cm	9 f. P. llrk							10	0.8		
27752	45-87 cm	8fp	Mr altered.						210	0.2		
27753	1	black is ith rusty gfp hags.	Mn staining cte cog ting	V. minor sphal.					. 10	2.5		
27754	114 - 147cm	gtp.otw veins			· · · · · · · · · · · · · · · · · · ·				210	0.6		
27755	147-180an	afferred ven	Leavily mn stanks, che coating						210	1.1		
27756	180 - 208cm	8fp	thin the coating						10	0.4		
27757	208-241	gfp with s	in places Simale +- 2 cm A stained veinte	ts with che XLS in G	ntre				410	1		
27758	241 cm - 2950	vein	Min stained Billicified			ectette blebs apto Son rusty patenas of altered gep			~10	2.4		
27759	295cm - 333cm	2.5p we lirock							210	0.4		
27760	linez Zonel 0-66 cm	25p wallrock							210	0.2		
27761	66cm - Stern	vein	ma stained			culcite xenoliths rusty gfp	1.2		210	4.5		
27762	96cm - 243cm	gfp host rock .							210	0.3		
27763	293 cm - 268 cm	vein	black win stained						<10	2.1		
27764	268cm-303cm	afp host	:						210	0.4		
27765	303 cm - 328 cm	vein asin	•				1		20	2.7		•
27766	328cm-409cm	q &p host					1		210	0,7		
27767	Adgent Soden	vein	Min stained silicified	gaiena		assay			0.010	5.98	3.46	4.K
07768	500cm - 533cm	gep host							210	0.2		
27769	20ne 2 0 - 20 cm	vein	mn stained silicified			rusty gap fragments			20	1.9		
27770	20cm - 10Pcm	gsp with calculate vers	statinea		T.I.		1.1.1.1			0.9		

GEOCHEMICAL DATA SHEET - ROCK GEOCHEM SAMPLING

B.C. GOLD SYNDICATE

SAMPLER (P+ES

Newey

PROJECT

LINE Grit 3 showing

NTS

DATE Aug 11, 12/81

AIR PHOTO No. BC 5614 075

ſ	SAMPLE	LOCATION	ROCK	ALTERATION	MINERALIZATION	STRIKE	ADDITIONAL	APPARE WIDTH	NT	AS	SAYS		
	NUMBER	Locarion	TYPE			DIP	REMARKS		WIDTH	Au.	Ag	Rb Gut	Zn
. (1)	27771 C	Zone 2 contol 100 cm - 160 cm	vain	Siliceous Mn Stained	galena sphakerite		assay			0.194	1.46	0.54	1.22
(2)	, 27772	160cm-233cm	gfp with vein nuterial	my stand			veins from tew cms to 10 cm will			<10	1.7		
(3)	27773	233cm-279cm	2 Cp wallrock							410	0.2		
(4)	27774	vein above zonez	vein	ma stamed	some galana		Rosay rusty zones			0.010	0.10	0.07	0.05
(5)	27775	Zone @3fine1 0-66cm	gfP wallrock							210	0.2		
(6.)	27776	66cm-116cm	vein	Min Stained	galenc sphalerite		assay			40.003	1.15	1.14	1.43
(7)	27778	116cm - 196cm	267	•						210	0.5		
(8)	27778	146 cm = 259 cm	vein	Min stained	galena sphaler-te		assay			0.004	1.93	0.87	4,43
(9)	27779	209cm-249cm	2fp well rock							<10	0.2		
(10)	27780	20ne3 & line Z 0. ADEm	g fp weilrock	M. Stranger			very crumbly			210	0.1		
(1)	27781	40cm-140cm	vein	Mr Steined	garena sphelarite		assey			<0.003	0.22	0.21	0.54
(12)	27782	140cm - Zosen	ato			(Color-series				410	0.5	444	
(13)	27783	209-309cm	vein with qSP	•						410	1.2		
(14)	27784	309cm - 379cm	vein	stricted Min Stained			eclipte veines			210	0,7		
(15)	27785	379-430cm	2.9 p weilwock	•						410	0.2		
(16)	27786	2012 \$ 11121 0-38cm	2 fp wallrock							/0	0.1		
(17)	27787	38cm - 88cm	watered							210	0,1		
(18)	2773B	88. 220cm	altered	Min Stermed			rusty gep Fragments in poorly defined dens			210	0.4		
(19)	27789	gaven-256im	Dein	mu stained	minor galance sphaler. re		assay			0.118	0.18	0.91	0.26
(20)	27790	256em-Jobim	9.50 Wallrock			T.				210	0.3		
- u	L .				and the second se								

J.C. STEPHEN GEOCHEMICAL DATA SHEET - ROCK GEOCHEM SAMPLING

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B.C. GOLD SYNDICATE

800

0.7

							NTS IC		'		<u> </u>	
	5 Pautler + ES,		PROJECT	Newex	****	ų. –	_INE		33			5-
DATE SAMPLE	Aug 12/8	ROCK	ALTERATION	MINERALIZATION	STRIKE	ADDITIONAL	APPARI WIDTH		000000000000000000000000000000000000000	SAYS	75	X
NUMBER	-	TYPE		•	DIP	REMARKS		WIDTH	Au.	Asy	S b.	
チフフらしく	20ne \$ 11ne 2 0 - 45 cm	2+p we wrock							~ 10	0.1		
, 27792	45cm - 144cm	offp from vein zone							210	0.1		
27793	144cm- 220cm	minor veining eltered gep							410	0.1		
27794	220cm - 255cm	vein	inn stained Silicified	pyrite					20	0.3		
27795	255 cm - 355 cm	altered gip between veing							210	9.0		
27796	355 cm - 454 cm		heavy mustaining	5		rusty 2413 fragments	•		210	2.0		
27797	A59cm-492cm	gfp weilrock	•						10	0.2		
27198		vein	mn staining	spharente					10	1.4		
27799		vein of caleit	e min stained	spha lerite					~10	9.8		
27 800	20ne 5 linel 0-30cm	of to we work							~10	1.0		
35701C	Zone 633cm- line1 49cm	silicified zone with offp V fragments	rusty 2FD some min staining						20	0.6		
25702	49cm - 219cm	The second set have a second second second to be a second se							100	0.2		
27503	219 cm - 289 cm	silicified vein	Min staining rusty qfp Fragments						<10	7.4		
3704	289cm- 325cm	9 f P wallrock							10	0.4		
27505	zone 5 linez 0-43cm	q fp wallrock	*					•	-10	0.2		
57 06	43 cm - 143 cm	vein material	Min Stained Pusty glp						20	1.2		
57 07	143cm - 361cm	large gfp Zone							=10	0.4		
37508	36 km - 401 cm	vein zone	min stained rusti gitz fragments			some afp interstitial			20	2.6		
2709	401cm - 46500	2 fp well rock							30	0.2		
27510		vein	min stained rusty gep		- 7.X	7 cm wide dein .			800	0.7		

J.C. ST_HEN GEOCHEMICAL DATA SET - ROCK GEOCHEM SAMPLING

Newex

PROJECT

B.C. GOLD SYNDICATE

CANDIED T D +E < ...

104K/10E NTS

6

DATE August 12

Griz 3 showing LINE

AIR PHOTO No. BC 5614 075

ſ	SAMPLE	LOCATION	ROCK	ALTERATION	MINERALIZ ATION	STRIKE	ADDITIONAL	APPARI WIDTH		AS	SAYS		
	NUMBER		туре			DIP	REMARKS		WIDTH	Au, .	ASY	Pb	Zn
(1)	25711C	20ne & line 0-55cm	gfp we lirock		•					<10	0.1		
(2)	, 25712	55cm-100cm	vein material	Min staining Silicification			rusty gep fragments			120	9.2		·
(3)	25713	100cm - 155cm	eltered gfp between veins							<10	0.2		
(4)	25714	155cm-220cm	rusta geria Veria	wery altered Weethered Mustaned			verd grungy			<10	0.7		
(5)	25715	220cm-268cm	Veinwith Some g.f.p.	Silicified Mn stained	galena, sphelerite		assay			0.044	1.72	0.31	1.00
(6.)	25716	JuBin - 307cm	vein material	Win stained weathered			grungy material			<10	0.6		
(7)	25717	30 7cm - 3 40cm	Vein Hirgradet	mn staining silicified	gatena sphelerite		assay			0.016	16.97	8.29	6.72
(8)	25718	340cm - 388cm	altered wall rock offp							<10	0.4		
(9)	25719	20ne \$ 12m above line 1	vein	silicities rustig gebfragment	minor galena					-10	38.0		
· (10)	257207	1		rusty surfaces	Pyrite 1	1	adaniticy /	+		, (passing)			
(1)	25721	B-127	quente yein	1 1			10 cm wide line expresed 67%/E			49			
(12)	65722		quarte vein fxoat	few/rustu spots			taius/siope/with/qfp						
(13)	25723	west side of 60121		striceous fusty			vech aitered						
(14)	25/24	<u> </u>	armey quertz		sperite speritarite		drauter filet from						
(15)	25735	large gung near top	afp with atzveins	silvertied		trend 92° N	verts smy wide crosscutting	Y					
(16)	25726	Amabove 357250	atz veins within gep			769/90	off preferiated						
(17)	25727	in Stream in large guily near	atzvein "	/	pyrite /	1	rusty gellow beathored surface						
(18,)							l						
(19)													
(20)						TP.							

GEOCHEMICAL DATA SHEET - ROCK GEOCHEM SAMPLING

B.C. GOLD SYNDICATE

	1. Paytler 19 5- Au		PROJECT	Newey			OTO No. E		and 17 0	73
<u>DATE</u> SAMPLE NUMBER	LOCATION	ROCK	ALTERATION	MINERALIZATION	STRIKE	ADDITIONAL REMARKS	APPARENT WIDTH	A	SSAYS	A
-		TYPE	cte vernine		· · · · · ·		WI	AU.	As	-515
77493B	rusty cirgue GRIZ3		Silicification Fusty weath.					210	0.3	6
77494	NE side of FrozenLgke	zone in off	. rusty V. rusty	1-1-1-		GRIZ3		410	0.1	7
77495	NW of Griz's	article 27 p.	silicification	abundant py especially on forct	ine			410	0.1	\$50
77496	Rear 15 on GRIZI	9 fp.	V. rusty	dieben . py				<10	0.1	
77497	just east of 15, GRI71	veinbx - fre	ruoty Sor gfp					110	0.2	
77498	900 m. Sog LCP GRIZZ	altered "	rusty	PY				<10	0.1	
77499	50m W 00 0+00E/0t 005 GR12 3		silicious, lt.	Mn starring				<10	0.4	
f7 500 B	GEIZ 1 4005/100E	altered interac	- minor silicitic.	Mn starning				20	0.6	
15720C	GRIZI	(usty e	aphanitic,	PY				-10	0.7	30
15771	GRIEI	gtz vein	Pusty weath		67%E	10 m above B-127 10 cm unde, 1 m exposure		20	0.4	11
25722	GRIZI	wilky gtz	few mosty spots			ploat in falus angular with gfp + rusty gfp blas		210	0.1	5
25723	GRIZI, W Side,	silicor, cte Veins	rusty					50	0.1	6
25724	GRIZI	ofp, drusy	V. rusty altered	abundant py	hardness	5 fired st -> specularite	abour.	50	0.5	- 7
25725	GRIZI Near topofise gully	Sil. The sing 5m	V. rusty		9 2°/80 N			-10	0.1	22
25726	4m. " Boue 25725	latevens +	V. moty		76/900			210	0.1	7
25727	GRIZI	Blue-all gthe Jein all gthe	rusty-yellow Surgace	lofs py		floot, angular in stream	726.	0</td <td>0.1</td> <td>15</td>	0.1	15
•	insteam in 19e guildy					in the grand the state of the				
					1					1-

GEOCHEMICAL DATA SHEET - SOIL SAMPLING

B.C. GOLD SYNDICATE

SAMPLER J. Pautler + Don G. Aug 6 - 7 (81 DATE

PROJECT Heures

NTS INE LINE

AIR PHOTO NO. BC 5614 075

SAMPLE					DESCRIPT	TION				ADDITIONAL OBSERVATIONS OR REMARKS		ASS	AYS	
NO.	LOCATION	Depth	Horiz	Colour	Part Size	% ORG.	Ph	SLOPE .	VEG.		Au	Ag	As	Pb
CG-B QtOON/	10 +00E	6"	B	dark pr.	clayey sitt	med.		gentle	grass	- edge of soil / talus - above galena vein trending 2000	410	0-1		
0+00 N/1		5"	B	prid	perper clayey silf	mod		μ	13		=10	0.1	25	
0 +00 N/	2 +00 E	4"	в	ji.	fire	11		mod.	H	on top of gpp ote.	10	0.1	19	
0+06E/1-	+ZON	32 cm	A-B	dk-med br.	peppely silt	1)		gertle	1	above of pote	210	0.1	11	-
0+00E/1	+ 40 N	0m 10	A+C	dk br	clay	<i>c</i>)		flat	gass	angular ploat of grp	410	0.1	10	
0+00E/1	1	8 "	B	1	pebbly silt	10ω		u.	11	rear ste of glp, some ofp float.	-10	0.1	9	
0+00E/		10"	B	med-dk br	pebbly Silt	mod		11	11	8 fp angular plant	410	0.1	10	
0+00E/	0+26N	7	B	med	fine Silty	low		nod- steep	some	above glp ote, near + above galene veins	410	0.1	405	
0+00E/C	0+40N	8	в	11	Fistibly Clayery Sand	mod		gentle	grass	mar 86p ote	1	0-1	14	
0+00E/01		12	ß	dk kr.	sandy silf	mod- hi		11	buckbian	near gfp ote + takus	210	01	17	
0+00E/0	1 +00 N	5	B	light Or-bi	Rephly clayer	mod		mod	some	above gfp ote.	10	01	7	
	-													
1+00E/0	VI OGY	25	B	light or Br	v. pebbly silf	few		mod - steep	grass	lots argular gfp	<10	0.1	5	
1400E/0	0+40N	10	ß	alightly	sandy , sebbly			gentle	mass	Some My float.	<10	0.1	6	
1 too E/0	+ 60 N	15	B	med	silt	mod		mod	10	ang. gop float, above gop de	=10	0.1	10	
1+00E/0	HBON	15	B	dk bi	- il :	1		flat	11	Near off ote	10	0.1	11	
1+00E/1	+ 00 N	7	B?	med bi	- 11	few		1;	11	directly on top of the ote	10	0.1	15	
1 too E/1+	raon	15	ß?	H e	P 11	few		gentle	moss	in crevices of ofp ote	410	0.1	16	
1+00E/	+ 40N	20	B	15	septer clayer	mod		il	-	glp ote in area	20	0.1	12	
1+00E/	1+60N	24	B	- 11	pebbly	it		11	mass	No float in hole i near gop ote	410	0.1	11	
1+00E	ElitBON	YI	5B	ult. br.	fine pebbly			mod.	prene	below of p ote	410	0.1	3	

GEOCHEMICAL DATA SHEET - SOIL SAMPLING

B.C. GOLD SYNDICATE

SAMPLER J. Pautler & Don G.

PROJECT Newsex

BRIZ 3 LINE

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NTS

August 7/81 DATE

BC 5614 075 AIR PHOTO NO.

104K/10E

SAMPLE					DESCRIPT	TION				ADDITIONAL OBSERVATIONS OF REMARKS		ASS	AYS		
NO.	LOCATION	Depth	Horiz	Colour	Part Size	% ORG.	Ph	SLOPE ,	VEG.	ADDITIONAL OBJETTVATIONS ON NEWARKS	Au	Ag	As	Pb	Z
SINXE	2+00E D+20N	300		dark brown	Perbley examples	mod.		flet	grass	near gfp outcrop, many pebbles of gfp.	-10	0.1	14		8
,	2+00E 0+40N	10	B+c	dark brown	pebbley silt	mod.		flat	moss	directly over gfp outcrop	-10	0.1	15		8
	2+00E 0+60N	20	B	brown	perobley clay silt	١٥ω		flet	gress	no rock in hole , near ofp outerop	20	0.1	12		8
	D+COE	N								no sample due to snow Check	10	0.1	12		9
-	2+00E 1+00N	10		amp	re.					NO sample due to snow					
-	3+00E 1+20N	3000						gentle		below snow. gsp outerop and float lick &					
	3+00 E 1+40 N	R		brown	pobbly sulty sand	hone		gentle		asually covered in snow glacial,	10	0.1	14		112
	0+00E 1+60N	18		brown	pagoly silty sound	100		flat	grass	thin Anorizon 940 float around	<10	0.1	16		11
	2+00E ITBON	20	В	brown	Pebbley elay suff	mod.		flat	grass	rootlets present, offp float in region	20	0.1	14		11
	0+00E 0+205	35	A	brown	Sind	high		moderate	grass	intrusive flyat in hole :	×10	0.4	20	22	8
	O+ODE 07405	10	В	brown	fine silter	high		moderate	grass	rear intrusive outcrop	10	0.1	12	10	92
TEXN 18	CHOOE OF605	10	Ъ	brown	pobbly	mod.		nisders te	grass	talus, below of p outcrop	10	0.1	9	22	9.
	0+805	10	B	brown	Sine Silty Sand	mod.		monorate	ļ		10	0.1	20	19	14
	0+002 1+005	3	B	brown	Sine : scharg	Sew			moss	above deb outerob	40	0.1	12	14	8
BINXB	1+00F 0+205	10	В	brown	fine . surry source	mod.		gentle	moss grass	4	10	0.1	16	8	11
SINXBT	1+00 E 0+405	10	B	medium	coarse to Since terms	med		moderate	gruss Buck brush	tains sample	10	0.1	5	10	8
BINXB	1+00 E 0+605	8	В	Medicam Ocark DEDWA	perobly Sand	Few		gentle	grass moss	gfp floct	10	0.1	9	6	1.
	04805	5	В	brown	Sundy	few		flat	moss	slightly rusty	10	0.1	22	6	8
	1+00E 1+005	3	B	brown	fine sundy	few		flat	grass	slightly rusty	10	0.1	14	5	13
	2+00E 0+205	10	B	brown	Fine Silty Sand	Few		gentle	brush	somewhat musty taken Am east of station	80	42.0	71000	3000	19.

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GEOCHEMICAL DATA SHEET - SOIL SAMPLING

B.C. GOLD SYNDICATE

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SAMPLER] Butler .

Newex

PROJECT

104 K/10E

Griz 3 LINE

NTS

August 7/81 DATE

AIR PHOTO NO. BC 5614

SAMPLE				2	DESCRIPT	TION				ADDITIONAL OBSERVATIONS OR REMARKS		ASS	AYC		
NO.	LOCATION	Depth	Horiz	Colour	Concernance	% ORG.	Ph	SLOPE .	VEG.		Au	Aq	As	Pb	Z
81 NXB	2+00E 0+405	-	A-B	brown	pebbly	few		moderate	grass			0	39		
,	2+00E 0+605		No	Som	ple.			- 2 - 1		No somple					
	8+00E 0+805	10	B	dark brown	fine : silty sand	Few		gentle	grass		<10	0.1	12	12	6
	2+00E 1+00S	7	B	meel br.	silty. sand	few		genfle	grass		<10	0.1	9	4	4
GRIE	3 -	Ai		15/81											
BT -138	showing		B	lt. bi- rusty be		mod		gentle		7 m w. of top of zone 1. at showing. im w. of top of veri in zone 1 - above steep gully in off ote	410	0.1	7	7	83
BT - 139	The Showing W of	-	B	lt br.	fine petito hy	few		mod		in W. of top of vein in Fone 1	×10	0.1	22	33	112
BT-140	Showing	3	B	ruoty be ruoty lt be. elt.or- be.	med	mod		gentle	moss	- above steep gully in ofpote	×10	0.1	14	4	7
					·.										
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	L	<u> </u>	<u> </u>		I		<u> </u>	<u> </u>							

GEOCHEMICAL DATA SHEET - SOIL SAMPLING

B.C. GOLD SYNDICATE

104K/IDE NTS

	APLE	uly30:				DESCRIPT	10N			-	AIR PHOTO NO. BC 5	1	contractor and	25 AYS	
	10.	LOCATION	Depth (Cm)	Horiz	Colour	Part Size	% ORG.	Ph	SLOPE .	VEG.	ADDITIONAL OBSERVATIONS OR REMARKS	Au	Àq	As	PЬ
B-	105	Frozen Lake	5	B	dk br.	fire	13	dry	flat	gress moss	gfp ok in ana, altered	<10	0.1		
B-1	06	GRIZ3	5	B	or the	и.	5.	ч	1/	11	Stp ote in area.	<10	0.1		
B-1	07	GRIZ3	2	B		med	42	ц	mod.		gfp otc.	<10	0.1		
B -		Frozen L.	-	в	V. rusty	fine	a		flat	grass	All float.	<10	0.1		
BT-	-109	Rod ridge NW of Frozen	5	B	lt. br.	med	2		u	grass.	on top of 36p ote. E side of above Up ote in confact of sector. Near middle of top of same noder man + as over of p/sel contact.	10	0.1	12	
BT -	-110	ų	5	B	ч		4		1/	11	above the ote in confect of sease ridge	<10	0.1	73	
BAR	-111	"(ł	B	11	:	2		"	Shubs	they affer of p/sel contact?	×10	0.1	73	
BT.	-112	h 		B	or-bi.	med	22		Steep		on v. pyritic ote of gfp.	.10	0.1	225	
BT.	-115	GRIZ 3 1.8N/3W	2	B	Or-Br rusty	med - coarse	R		gentle		below cliff of HP.	10	0.1	6	
в-	114	GRIZI Nar 15	~	B	11	med	2		11	grass	with gfp float, some v. rusty with by:	10	0.1	9	
B-1	15		2	B	ak on- Br	fine	4		flat	grass	with gfp float, some v. nusty with by rusty of p float w/ py + slightly sill gfp rusty + non nusty gfp float	410	0.1	22	
BT.	-116	GRIZ2	6	B	gk or -Bi	Coarse	5		gentle	11	rusty - non rusty gfp float	20	0.1	12	
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-							_					_	•		
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GEOCHEMICAL DATA SHEET - SOIL SAMPLING

B.C. GOLD SYNDICATE

104 K 10E NTS

SAMPLER D. Kapicki M. HUGHES DATE <u>AUGUST 12 /81</u>

PROJECT TALUS SAMPES NX

LINE GRIZ 3 AIR PHOTO NO. BC 5614 075

SAMPLE	100170		oth Horiz	DESCRIPTION							ASSAYS			
NO.	LOCATION	Depth		Colour	Part Size	% ORG.	Ph	SLOPE .	VEG.	ADDITIONAL OBSERVATIONS OR REMARKS		As	As.	Pb
81-NXG- Officiat	Otooe	/cm	tulo,		fine			37°+	low piush	furthest cliff outcoop, directly bottom face cliff wall From OFP rock	<10	0.1	4	4
BI-NXC BT	OtZOE	Scm	"	"	"			et	grassy	Galas begins in sample location from	10	0.1	5	15
BI-NXG BT	0+35E	5cm	"	ti.	11 -			"	PI	down slope 15 m.				
BI-WKG- BT	0+50E	10 cm	A	11	".			"	-	just below Mn staining on cliff	-10	0.1	5	7
81-NXC. BÍ	0+75E	Lern	talus		~				grassy	QFD cliffs directly above	1	0.1	4	5
BI-NXG BT	ItOOE	2cm	"	**	"	slight			grassy	next major talas flow clasticard B	20	0.1	5	83
BI-WXG BF	11255	2cm	- 11	11	";	11		Í	sprace 4ft.tree	2561. below QFP ole cliff.	410	0.1	4	5
BT BT	ItSOE	5cm	"	"	<i>n</i> –	"		"	flowery-	Major talus flow	10		4	5
BT BT	2+005	Scim	u	11	"	(1)		11	spaise	N 15	=10	0.1	15	24
BINKG	2+25E 2+75E	5cm	11		11	mod.		11	trees	taken from small gully, itop of flow	10	0-1	5	12
Br	5+00E	10cm	u	1	K	inod.		PC PC	treed	following edge of cliff bottom.		0.1	7	16
BT BT	3+505	20 cm.	A	"	11	mod.		11	11	between 2 QFP cliffs.		0.1	7	9
BT	4+005	5cm.	talus	11	· · ·	slight		te	11	well sorted smedium grade		0.1	25	33
BT BT	4+50E	15cm	et .	10	11	*1		1	1	major talus flow from gally	10		19	20
BT-NIXC BT	4+75E	locm	1)	n	ı(: ,	15			11	major talus flow from another guely	10		4	7
BT BT	4+90E	12 cm	il	u.	ix	11		1("	further up from last	10		17	23
BI-WKG BT	5+256	Scm	- 11	"	a	It.		u.	.(er er	410		7	21
Law	-	There									1			

APPENDIX II

PETROGRAPHIC DESCRIPTIONS

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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%
		Opaques	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.

Plaghoclase occurs as euhedral and subhedral phenocrysts ranging up to 5 mms. in size. Although finely developped 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 periodine 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 sfter 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.

Opaques 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.

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

Classification : Altered feldspar porphyry

Mode	:	Quartz	40-50%
		Clayminerals	30-40%
		Limonitic calcite	10%
		White mica	5%
		Accessories	1%
		Opaques	18

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

Thin section : The groundmass of this specimen appears to be composed predeminantly of fine grained, granular quartz (av. size .18 mm.), clouded by disty secondary minerals, probably mostly clayminerals. Scattered through this matrix are abundant, irregular secondary patches of limonitic calcite, clayminerlas 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.

Scathered 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 containing 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, apathe and altered biotite are present within these domains. The mest 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 episedes 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 3	0-45%
		Clayminerals	25%
		Calcite 3	0-40%
		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 conclusvely verified by thin section examination. The pre vein texture is identical to thatin 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 SHOWNG

Classification : Siliceous and calcareous vein-breccia + ore minerals

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Mode :	Quartz	40-50%
	Calcite	40%
	Clayminerals	10%
	Opaques	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 cf 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 speroidal 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, crosscutting 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 occured after injection of these fine grained silica veins, juxtaposing them against earlier stage domains.

arsenopyrite. The fine grained euhedral, yellow sulfide needles are 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%
		Opaques		20%

Handspecimen : Galena and sphalerite bearing vein-breccia. A distinct anisotrop.c fabric is probably the main difference with spec. G-l. 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.

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APPENDIX III

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STATEMENT OF QUALIFICATIONS

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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

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JEAN PAUTLER

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