

223 7

REPORT ON
GEOLOGICAL, GEOCHEMICAL & MAGNETIC SURVEYS
PERFORMED
JULY 30 TO SEPTEMBER 4, 1969.

Q.C. CLAIMS

104G/16W

57° 45' N LATITUDE
130° 17' W LONGITUDE

CENTRAL QUASH CREEK AREA

LIARD MINING DIVISION

N.T.S. - 104.G.9 & 104.G.16

BY

MR. G. W. GRANT

COUNTERSIGNED BY

MR. TREVOR HORSLEY
P. ENG. (BRITISH COLUMBIA)
MANAGER OF EXPLORATION AND DEVELOPMENT

FOR

CONWEST EXPLORATION COMPANY LIMITED

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Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. **2237** MAP

INTRODUCTION:

The Q.C. Group copper occurrence was located by P. O. Hachey, A. E. Groat and A. John while prospecting for Conwest Exploration Company Ltd. in 1964.

72 Claims were staked in 1964 to cover the portion of a large iron-stained area where the copper content seemed highest.

That year stream sediment sampling was carried out along streams draining the gossan. A limited amount of magnetometer work and soil sampling were carried out on the portion of the gossan around the junction of claims Q.C. 41, 42, 43 and 44.

In 1965, 1.36 miles of Induced Potential survey, with 1.14 miles of magnetometer survey, was carried out by Hunttec. The location of this work, comprising two lines, is not definitely known. However, it is suggested by topography and the location of the east-west IP line may roughly correspond with the base line established for the 1969 work. The highest chargeability peaks obtained in this IP line are stated by P.O. Hachey to coincide with known mineralization, pyrite and chalcopyrite.

Since 1965 all but 16 of the original 72 claims have been permitted to lapse. Those in good standing are Q.C. 23, 25, 27, 29, 41, 42, 43, 44, 45, 46, 47, 48, 60, 62, 64 and 66.

The 1969 program was instituted in order to outline the area of most intense mineralization and alteration to control a possible drilling program. The streams of the area, silt sampled in 1964, were resampled with some extended coverage to check the apparently unexplainable results obtained in the previous program. The main body of this report deals with the detailed work done over the portion of the gossan where copper mineralization was known to be most intense.

LOCATION AND ACCESS:

The Q.C. Group of mineral claims is located about eight miles up Quash Creek from its junction with Kakiddi Creek. It is centered at $57^{\circ} 45'$ north, $130^{\circ} 16'$ west and lies about eight miles northwest of the north end of Kinaskan Lake.

Access to the group is presently restricted to helicopter transportation. The Stewart-Cassiar Highway passes some eleven miles to the east of the claims.

All men, equipment and groceries were flown in to the camp, by helicopters supplied by United Helicopters Limited and Frontier Helicopters Limited based at the south end of Dease Lake, some 48 miles north, northeast of the Q.C. Group.

SUMMARY:

Control was established by laying out a picketed and chained grid over the gossan stained area where topography made this possible. Horizontal control was established by the use of vertical angles with 0 + 00 on the base line given the arbitrary elevation of 0. This elevation is approximately 5100 feet.

Detailed mapping, silt sampling, soil sampling and magnetometer surveys were carried out over a copper-stained gossan zone. The magnetometer information was of no real value in outlining the mineralized area or intrusives. Soil samples gave good indications of existing mineralization where overburden was thin. Near the baseline there may be 200⁺ feet of overburden. Soils in this area were naturally low. Extremely high soil values in the order of 5000 - 6000 P.P.M. Cu were obtained from talus samples. The talus samples undoubtedly contained much copper stain so cannot be compared to the true soil sample. The soil survey in this case does not outline the mineralized area but indicates the nearness of bedrock to the surface.

A strong copper silt anomaly, with corresponding highs in molybdenum, was obtained from the creek draining the eastern boundary of the group. Silts from the main branch of Quash Creek are lower than expected, possibly because of dilution of sediment by thick sand and gravel bank deposits.

PHYSIOGRAPHY:

The area lies within the interior system of the Canadian Cordillera in the Stikine Plateau, a great area of plateaux drained largely by the Stikine and Taku Rivers and lying between the Cassiar Mountains to the northeast and the Coast Mountains to the southwest. The Q.C. Group is located within a part of the Klastline Plateau, a subdivision of the Stikine Plateau. The Q.C. Group lies near the dissected western edge of this part of the Klastline Plateau. The top of the Plateau here has an elevation of between six and seven thousand feet. The upper surface of the Plateau is gently undulating and has few outcrops, being covered with a thin layer of glacial detritus and soil. The Plateau is dissected by steep-walled major stream valleys, U-shaped or modified V-shaped, often with more or less well-developed cirques at their heads. Rock outcrops are well exposed on the upper walls of the major valleys and their tributaries, but the lower walls are covered by talus material and the bottoms of the valleys generally covered with morainal debris, except where steep gradients have allowed the streams to cut down to bedrock since the last glaciation. It is believed that most of the area was covered by Pleistocene glaciation to a height of about 6500 feet. A few wasting remnants of valley glaciers are found at the heads of north-facing cirques.

The Q.C. Group lies on the southwest side of the valley of Quash Creek which is a deeply-incised northwest striking valley. It is a modified U-shaped with the valley bottom filled with up to 100 feet of

cross-bedded gravels, with boulders up to several feet in diameter, sand and silt. The lower part of the valley is wooded and with primarily black spruce and balsam. The tree line on the Q.C. Group is approximately at 4500 feet. The highest elevation on the group is about 5600 feet with the lowest elevation, in the valley of Quash Creek about 3600 feet.

REGIONAL GEOLOGY:

The Q.C. Group lies within the area of the Tagish Belt of relatively unmetamorphosed stratified rocks principally of Mesozoic Age, as classified by Wheeler and Gabrielse. The Group lies near the southeast margin of the Tagish Belt where it adjoins the Bowser Basin, composed largely of Mesozoic sediments, to the southwest. While regional trends in both the Tagish Belt and the Bowser Basin are generally northwest-southeast, locally near their margins in this area they range from slightly north of east to slightly south of east. A major north-south trending belt of Tertiary to recent volcanics lies some six miles west of the centre of the Q.C. Group, on the west side of the major north-south valley in which lies Kakiddi Creek. Small areas of the top of the Klasline Plateau both north and south of the Q.C. Group are underlain by related flat-lying young volcanics.

The only previous mapping in the area of the Q.C. Group was carried out by the G.S.C. in "Operation Stikine" in 1956, a very large reconnaissance program. The preliminary map 9-1957 published as a result of this survey on a scale of 4 miles to the inch, shows the area of the Q.C. Group to be underlain by volcanics and minor sediments of Cretaceous age. However, J. G. Souther, doing detailed work on the recent volcanics to the west for the G.S.C., stated to the writer that much more detailed work would be required to substantiate the age classifications made. The preliminary map 9-1957 shows block faulting west of the group where Permian and/or Triassic rocks, mainly volcanic in nature, but with some interbedded sediments, have been brought to the surface.

The general trend of the volcanics in the general area of the Q.C. Group is southwest with dips about 45° to the southeast.

GEOLOGY OF THE Q.C. GROUP:

The rocks south of Quash Creek in a broader sense are primarily volcanics with minor interbedded and related sediments. On the north side of Quash Creek the rocks are interbedded sediments and volcanics with the sediments, apparently mainly argillites, predominating. No outcrops of these rocks are found on the minor portion of the Q.C. claims lying north of the creek. This leads to the suggestion that there may be a major northwest-southeast fault zone along Quash Creek. The linear aspect of Quash Creek valley also supports this idea. On the Q.C. claim group itself essentially three different groups of rocks are found. The central part of the claim group is underlain by a series of highly altered, sheared and faulted interbedded siltstones and volcanics. (Formation 1 on legend). These rocks are in turn intruded by irregular bodies of feldspar, biotite and feldspar, hornblende porphyry. This group of volcanics and the intruding porphyries lie in a major east-west striking fault and shear zone. These rocks are throughout impregnated with sparse fine sulphides primarily pyrite, much of which has been leached and converted to limonitic ironoxides. The series of volcanics is exposed across a width of up to 2000 feet. On the north side the interrelationships of these rocks are obscured by overburden, talus and glacial deposits which extend north to Quash Creek. To the south the rocks appear to be fault contact with a second series of relatively unaltered grey volcanics (Formation 2 on legend). The altered volcanics and the intruding porphyries form a prominent gossan zone. This gossan zone appears to narrow to the west where it continues for some distance but does not appear to contain significant amounts of copper. At the eastern boundary of the claim group the gossan is considerably weaker with only minor amounts of pyrite

and is possibly controlled by north-south faulting. To the south the series of relatively fresh unshered grey volcanics, tuffs and basalts occupy the higher ground in the southern portion of the property and are apparently in fault contact with the altered volcanics to the north. A five foot thick bed of conglomerate (Formation 4 on geological plan) overlies portions of the gossan zone containing the altered volcanics and porphyries. This is probably representative of pre-glacial erosion surface and is in turn overlain by glacial overburden.

Volcanics and Siltstones: This formation labelled one on the geological map on the scale of 1" = 200', consists of intermittent, interbedded volcanics and siltstones with the volcanics predominating. These rocks are so highly altered, fractured and sheared, and with considerable leaching evident, that it is extremely difficult to identify the original rock, but the volcanics appear to be basaltic to andesitic composition. They are usually aphanitic to fine-grained but in areas where they are intruded by porphyry bodies some recrystallization appears to have taken place and they can range up to medium-grained. They vary in colour from brownish to occasionally dark green where alteration has not been too intense. The siltstones are very fine-grained and only occasionally can their fragmental nature be determined under a hand lens. The alteration, fracturing and shearing appears to have destroyed any primary structures which may have existed and no place could any reliable attitudes of definite primary structures be obtained. Brecciation is common throughout these volcanics lending support to the idea they lie in a strong fault zone.

Porphyry: (Formation 3 on legend) - A feldspar-biotite porphyry, occasionally feldspar-hornblende porphyry, intrudes the altered volcanics on the group in irregular bodies, some of which are dyke-like features.

The largest individual exposure extends from approximately 27 + 00 E, 14 N to 23 E, 10 + 50 N. The widest exposed portion of this body is about 150 feet but the total width is not exposed as the southeast side of the exposure is covered by overburden. This rock is generally grey to slightly pinkish. Megascopically it appears to have about 50% 2-3mm. phenocrysts of euhedral to subhedral white feldspars. The aphanitic ground mass appears mainly feldspathic. The rock generally contains 10 - 15% mafic grains or aggregates up to 3mm. which are often difficult to identify but are primarily biotite with occasionally hornblende and some chlorite presumably as a second mineral. A thin section of the porphyry taken in 1964 indicated that the rock was a feldspar biotite porphyry consisting of phenocrysts of orthoclase 25%, albite 25%, 15% of mafic relics made up mainly of chlorite, a few remnants of biotite, 30% ground mass consisting of 10% quartz, 20% orthoclase, 1% plagioclase. There was 2% opaque minerals, 5% white mica, and 1% apatite. The feldspars were found to be strongly altered to fine-grained white mica and a very fine-grained dusty mineral. All the exposures of this porphyry were found north of the baseline with the westernmost outcrop falling between 0 and 2 west near the baseline and the easternmost outcrop was found at about 27 east, 14 north. Alteration including pyritization and presence of copper stain in the volcanics is most intense near these porphyry bodies and it is quite probable that a large mass of porphyry underlies most of the area of the iron stained stained volcanics in the gossan area.

Grey Volcanics: The grey volcanics (marked 2 on the legend) consists mainly of massive, medium to fine-grained basalts with subordinate amounts of fine-grained massive grey tuffs. They are relatively fresh, unshered and contain fresh hematite veinlets. No primary structures were noted where a reliable attitude could be obtained. Weak pyritization with no copper staining was noted in the outcrop marked 2(a).

Conglomerate: The conglomerate (4 on legend) consists of rounded to sub-rounded pebbles and cobbles up to 3" of altered volcanics in a fine matrix and is fairly well consolidated. It is found between 12 E and 18 E north of the baseline as a regular bed some 5 feet thick overlying altered volcanics and in turn overlain by glacial overburden. Two further outcrops of this conglomerate lie in the dry watercourse between 12 E and 14 E at elevations of from 500 to 900 feet lower than the upper outcrop. This conglomerate is believed to represent a pre-glacial erosion surface.

The interpreted relationships of the various rocks is shown on the section accompanying the geological plan.

MAGNETOMETER SURVEY:

This survey was carried out to determine whether there was any recognizable magnetic gradient between the areas of porphyry intrusives and the altered volcanics or between areas of more intense copper mineralization and those where mineralization was sparse. The survey was carried out using a Sharpe MF 1 Fluxgate Magnetometer. The Sharpe MF 1 Fluxgate magnetometer has a maximum sensitivity of 20 gammas per scale division and a readability of approximately 5 gammas. Readings at 100 foot intervals were taken along the lines established for the control of the geological mapping.

These readings were plotted in the form of profiles after reduction to a common base using base stations along the baseline which were checked at approximately one hour intervals. On the accompanying magnetic map, 747.1.3 the corrected values in gammas are plotted on a scale of one inch equals 500 gammas with the picket line used as a base of 0 with positive values plotted on the right of the line and negative values plotted left of the line, looking north.

4.1 miles of picket lines were read with a total of 232 readings taken, the part of the grid surveyed indicated a maximum gradient of approximately 1000 gammas. There is no apparant magnetic variation across contacts of the various rock types mapped nor any apparant relationship of anomalous magnetic values of any significance over areas of more intense mineralization.

GEOCHEMISTRY:

A total of 153 stream sediments were taken from the active creeks draining the area of the zone of mineralization and the surrounding creeks including Quash Creek. All stream sediment samples were taken from active sediment and none from dry watercourses. The minus 80 mesh fraction of these stream sediments were analyzed for Cu and Mo at the laboratory of Barringer Research in Whitehorse, using hot acid extraction. Locations and values of stream sediment samples were plotted on Figure 1.

A total of 262 soil samples were taken on the grid on the Q.C. Group at 100 foot intervals where feasible and where some soil appeared to have developed. The soil samples were taken at an average depth of 6 inches which appeared to be the depth of the B horizon where it was developed. These samples were analyzed for Cu using hot acid extraction at the Laboratory of Barringer Research in Whitehorse. These samples were run only for copper.

Results: Values less than 100 PPM Cu and approx. 4 PPM Mo in the stream sediment samples were not considered anomalous. Silt samples in Quash Creek below the gossan zone do not give essentially any anomaly in copper or moly. The main reason for this appears to be the thich deposits of waterlain glaciofluvial gravels and silts in the valley of Quash Creek. The margins of the present braided stream channels in Quash Creek Valley form 50 - 100 foot banks. These banks are continually sloughing into the

course and apparently have so diluted the flow from the area of the copper stained gossan that any anomaly is effectively masked. It is also probable that some of the flow from the tributaries coming into Quash Creek may be escaping down through the valley gravels before they reach the creek itself. On the 200 foot to the inch geochemical plan it is notable that in the creek immediately east of the gossan area the values in copper rise to about 1000 PPM Cu and PPM Mo., immediately above its junction with Quash Creek. Cu values coming upstream towards the baseline are continuously higher than 1000 PPM., with a peak value in Sample W-14, 2340 PPM Cu, 100 PPM Mo. Upstream from W-14 which lies approximately 800 feet north of the baseline values drop off rapidly although Sample X-73 at the head of the Creek has 900 PPM Cu. and 20 PPM Mo., 300 feet north of the baseline. Values in the creek draining the western portion of the gossan zone are notably lower. Starting at the mouth of this creek the first sample immediately above Quash Creek ran 135 PPM Cu and increased gradually coming upstream. They reach a peak of 780 parts per million copper, 6 PPM Molybdenum in sample W-70 near the junction of the claims Q.C. 43, 44, 45 and 46. Upstream from this, the values drop off again but W-67 taken at the head of the creek at approximately 4 + 50 N on line 4 E copper has risen again to 500 PPM copper.

The results of the soil sampling over areas of the grid where this was feasible and where soils were developed essentially shows high values up to 6000 parts per million Cu only near mineralized outcrops where overburden was thin. In the area between 20 E and 2 E where soil cover appears to be up to 250 feet, values are generally less than 100 parts per million. Therefore, it appears that the soil sampling did not effectively reflect mineralization except close to areas of outcrop where overburden is extremely thin. In the south western portion of the grid closer examination of the location of soil samples with apparently high values in copper showed

that the soil was mixed with slumping talus and cannot be considered true soils.

MINERALIZATION AND ECONOMIC GEOLOGY:

Representative grab samples each approximately 15 lbs. per location were taken from the areas of outcrop showing significant amounts of copper mineralization. These samples were taken at the point of the outcrop closest to control points previously established for mapping in order to give a relatively unbiased selection of the point of sampling of the outcrop. A total of 30 samples were taken. These samples were assayed for total copper and oxide copper at the Laboratories of Whitehorse, Assay Labs, Whitehorse, Yukon Territory. Results, sample numbers, and locations of samples are plotted on the accompanying geological plan 747.1.1 on a scale of 200 feet to 1 inch. The results are detailed in the appendix accompanying the report with a general description of the rock types.

Copper mineralization occurs in the altered volcanics, sediments, and the porphyry bodies along an east-west striking zone approximately 3400 feet long and 1200 feet wide between 30+00 east and 2+00 west. The most intense mineralization is usually found in the porphyry bodies themselves, where the mafics of the porphyry have been altered to chlorite and epidote and appear to be replaced by pyrite and chalcopyrite. Some copper mineralization occurs as hairline fractures in the porphyry. Fractures in the upper volcanics and sediments are often mineralized in the vicinity of porphyry and occasionally where no porphyry bodies are observed within several hundred feet. The pyrite to chalcopyrite ratio is usually in the order of 20 to 1. Chalcopyrite is the main primary copper mineral although occasionally fine specks of bornite could be noted. Oxidation products of

the copper sulphides primarily azurite with some malachite. Molybdenite occurring with fine quartz stringers were observed in float reported found in 1964 down slopes from the mineralized area but no molybdenite was noted in place during the 1969 program. No assays were run for molybdenite.

The values for total copper range from 1.13% to .04%. The values assumed for sulphide copper, obtained by subtracting the value for oxide copper from total copper, range from a high of .36% to .04%. Within these ranges the values for total copper and oxide copper are erratic but in general it can be stated that higher values came from within porphyry bodies or from volcanics in close proximity to the porphyrys. An arithmetical average for the percent total copper of all thirty grab samples was .229, for the calculated total copper, the arithmetical average of all thirty samples is .151%.

CONCLUSIONS:

The copper stained gossan on the QC claims is exposed over a length of approximately 3400 feet and a minimum width of 1200 feet. This gossan is due to disseminated pyrite and considerably lesser amounts of chalcopyrite and minor bornite, much of which apparently has been oxidized to malachite and azurite. The mineralization is primarily associated with small porphyry bodies intruding highly altered series of volcanics with minor associated sediments. The intrusion of the porphyry seems to have been controlled by a strong east-west shear and fault structure in which the altered volcanics are found.

There appears to have been another period of intense local faulting and shearing, after intrusion of the porphyry. Copper mineralization has apparently originated with the porphyry intrusion. Alteration of the porphyry itself is quite intense and consists of chloritization,

epidotization and sericization. The average values for copper obtained in the grab samples are much too low to be economic under foreseeable economic conditions. The intensity of pyritization in the volcanics and sediments has conceivably provided through oxidation considerable amounts of acid solutions that are capable of leaching the primary copper mineralization. There is a good possibility that the entire area of altered volcanics may be underlain by a large mass of porphyry at shallow depth. The Q.C. copper occurrence has therefore many of the characteristics of porphyry type copper orebodies and there is certainly a fair possibility that higher copper values may be found at reasonably shallow depths.

BIBLIOGRAPHY

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- GABRIELISE, H. AND WHEELER, J.O. G.S.C. Paper 60-24, Tectonic Framework of Southern Yukon and Northwestern British Columbia, 1961.
- GEOLOGICAL SURVEY OF CANADA Map 9-1957, Stikine River Area.
- HACHEY, P. O. Report on the Q.C. Group, November 19, 1964.
- MacDONALD, D. R. Report on the Q.C. Group, September, 1969.

APPENDIX I PAGE I

Q.C. GROUP
(EXCLUDING WEST CIRQUE)
1969

STATEMENT OF EXPLORATION EXPENDITURES AND PERSONNEL

	<u>DATES</u>	<u>DAYS MOVING</u>	<u>DAYS MAPPING</u>	<u>MAG. SURVEY</u>	<u>GEOCHEM SURVEY</u>	<u>REPT. PREP.</u>	<u>TOTAL DAYS</u>
D. MacDonald, Geologist, Canning, N.S.	July 30	1					
	Sept. 1	1					
	Aug. 1-31		31				
	Sept. 3-4					2	35
G. Willock, Student Geologist, Sudbury, Ontario.	July 30	1					
	Sept. 1	1					
	Aug. 1-31		31				33
J. Wright, 85 Richmond St. W., Toronto 1, Ontario.	July 30	1					
	Sept. 1	1			31		33
	Aug. 1-31						
M. Horsley, 85 Richmond St. W., Toronto 1, Ontario.	July 30	1					
	Aug. 25	1					
	Aug. 1-4			4			
	Aug. 5-24				20		27
<hr/>							
	July 30 - Sept. 4	8	62	4	51	2	127 dys.
<hr/>							
LESS TIME ON QCA CLAIM AREA							
D. MacDonald	15th & 23rd		2				2
G. Willock	Aug. 23rd		1				1
J. Wright	8th & 23rd				2		2
<hr/>							
TOTAL QCA TIME			3		2		5
TOTAL QC TIME = 96% of Total Time							122 dys.

APPENDIX I PAGE 2

Q.C. Group
1969

STATEMENT OF EXPLORATION EXPENDITURES AND PERSONNEL

SALARIES:

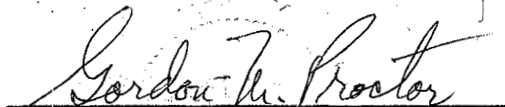
Mr. D. MacDonald	-	\$1,149.79	
Mr. G. Willock	-	\$721.98	
Mr. J. Wright	-	\$554.40	
Mr. M. Horsley	-	<u>\$495.81</u>	\$2,921.98
Camp and Cookery			\$1,288.74
Miscellaneous Supplies			\$30.24
Transport and Travel			\$3,514.85
Miscellaneous Expense			\$43.45
Assays (only geochem)			<u>\$798.55</u>
Total on Q.C. and Q.C.A. Area			\$8,597.81
Total on Q.C. = 96% (based on man days)			\$8,253.90

I, Bruce W. Pope, Claims Secretary for Conwest Exploration Company Limited hereby make oath and say that Conwest Exploration Company Limited, did spend at least \$ 8,597.81 in performing geological, geochemical and magnetometer surveys on and in the vicinity of the Q.C. Claims on Quash Creek, British Columbia during the period July 30 to September 4, 1969, and did employ D. MacDonald, G. Willock, J. Wright and M. Horsley to perform the said work, and approximately 96% of the working time of these men was spent on the Q.C. Group.



Bruce W. Pope,
Claims Secretary.

Sworn and Subscribed to at the City of Toronto, in the County of York, in the Province of Ontario, this 3rd day of February 70 before me,



NOTARY PUBLIC, YORK COUNTY, FOR
CONWEST EXPLORATION CO. LTD. AND
ITS RELATED COMPANIES.
EXPIRY, MARCH 31, 1970.

APPENDIX II PAGE 1

QC GROUP
1969

ASSAYS OF GRAB SAMPLES
(approximately 15 lbs. each)

<u>Sample No.</u>	<u>Total Cu</u>	<u>Oxide Cu</u>	<u>Location</u>	<u>Description</u>
12251	.24	.01	13E/9+50N	Altered volcanics
12252	.47	.15	13E/11+50N	Altered volcanics, Cu stain
12253	.04	.005	30+50E/8N	Porphyry, Fe stain
12254	.09	.02	12E/5S	Sediment (gossan) trace of fresh Cpy & stain
12255	.08	.007	12E/6N	Porphyry (est. 2% Cu)
67426	.10	.005	Stn.5	Cu stained porphyry
67427	.04	Tr.	" 2	Volcanic (tuff?)(sediment?) sheared, rust stained
67428	.21	.12	" 11	Highly sheared volcanics, copper stained
67429	.09	Tr.	" 1	Grey volcanic mineralization with 1% Py (Cpy?)
67430	.60	.43	6+50E/13N	Copper stained porphyry & volcanics
67431	.10	.035	25'S of Stn.2	Copper stained shear zone
67432	.08	Tr.	Stn. 3	sheared volcanic (some Py)
67433	.08	.01	" 4	sheared volcanic (rust stained)
67434	.12	.05	" 10	Porphyry, Cu stained, iron stained
67435	.39	.07	" 12	Volcanics, Cu stained
67436	.20	.06	" 9	Porphyry with abundant Cu stain
67437	.06	Tr.	" 6	Mixed volcanic & porphyry, minor Cu stain
67438	.21	.06	" 7	Mixed volcanic & porphyry, shear zone, abundant Py
67439	.21	.06	" 8	80% porphyry - 20% volcanics representing Cu stain zone
67440	.28	.15	29+25E/9+50N	Fe stained volcanics

APPENDIX II PAGE 2

<u>Sample No.</u>	<u>Total Cu</u>	<u>Oxide Cu</u>	<u>Location</u>	<u>Description</u>
67441	.48	.16	Stn. A	Cu stained sediments
67442	.39	.11	" B	Cu stained mixed porphyry & volcanics
67443	.04	.005	" C	Sediments, slight Cu stain
67444	.16	.05	8E/9N	Mixed porphyry & volcanics, Cu stained
67445	.20	.04	8E/10N	As above, traces Cpy
67446	.23	.05	8E/11N	Porphyry & volcanics, some Cu stain
67447	1.13	.90	8E/13N	Highly leached sediments containing abundant Cu stain
67448	.58	.21	6+50E/12N	Cu stained porphyry
67449	.29	.08	6+50E/11N	Cu stained porphyry and volcanics
67450	.22	.02	10+50E/10+75N	Altered volcanics

Stream Sediment Samples

BARRINGER RESEARCH

BARRINGER RESEARCH LIMITED
 304 CARLINGVIEW DRIVE
 REXDALE, ONTARIO, CANADA
 PHONE: 416-677-2491
 CABLE: BARESEARCH

GEOCHEMICAL LABORATORY REPORT NO. 50-A

DATE 8/8/89

SAMPLE NO.	TSS	PTM						
	81	4						
	93	4						
	118	6						
	166	2						
	161	2						
	171	2						
	109	3						
	145	3						
	900	6		✓				
	429	8		✓				
	1060	8		✓				
31	ISS.	ISS.						
	346	4		✓				
39	401	4		✓				
	234	4		✓				
1-11	346	4		✓				
X-1	5-6	3						
2	5-3	3						
9	5-3	3						
X-4	48	2						

M.E. Fullatt

Stream Sediment Samples

BARRINGER RESEARCH

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 REXDALE, ONTARIO, CANADA
 PHONE: 416-677-2491
 CABLE: BARESEARCH

GEOCHEMICAL LABORATORY REPORT NO. *65-A* DATE *25/8/69*

SAMPLE NO.	Tr. M.	PPM							
X-34	# 2	218							
X-35	# 2	214							
X-36	# 2	292							
X-37	# 2	278							
X-38	# 2	81							
X-39	# 3	100							
X-40	# 3	106							
X-41	2	103							
X-42	2	100							
X-43	2	115							
X-44	3	81							
X-45	2	87							
X-46	2	121							
X-47	2	93							
X-48	2	72							
X-49	2	42							
X-50	8	53							
X-51	2	75							
X-52	2	77							
X-53	2	77							
									<i>ml. Fillet</i>

Soil Samples



BARRINGER RESEARCH

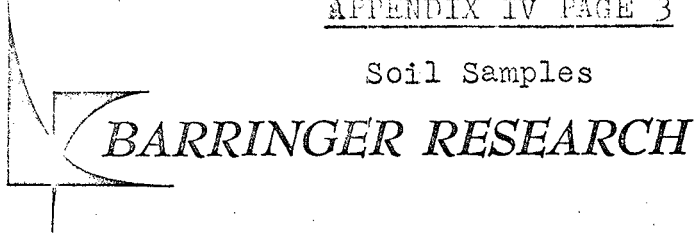
BARRINGER RESEARCH LIMITED
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 PHONE: 416-677-2491
 CABLE: BARESEARCH

GEOCHEMICAL LABORATORY REPORT NO. 65-A DATE 25/8/68

SAMPLE NO.									
		707							
Talcs		200							
2DE 3S		182							
2DE 6S		415							
2DE 7S		176							
2DE 4S		156							
2+75W 1S		5000							
2+75W 2S		2220							
3+75W 3S		1560							
3+75W 5S		690							
2+75W 6S		2180							
0400 6W		1060							
4E 3W		171							
6E 4W		100							
6+50E 12W		2440							
6+50E 13W		3060							
7E 6W		485							
8E 3W		3460							
11+50E 7W		1210							
12E 4W		161							
12E 6W		1970							
12+50E 6W		1560							

708 F11104

Soil Samples



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GEOCHEMICAL LABORATORY REPORT NO. 85-A DATE 25/8/69

SAMPLE NO.	TOTAL								
Talus	PPM								
14E 3N	172								
14E 4N	145								
14E 5N	171								
14E 6N	5000								
8E 4N	500								
8E 5N	346								
8E 6N	2080								
8E 7N	1760								
8E 8N	1760								
8E 9N	4150								
8E 10N	5000								
8E 11N	3190								
8E 12N	6300								
8E 13N	6600								
8E 14N	5000								
9E 10+14N	900								
9E 11N	3330								
9E 12N	4710								
10E 10+13+15N	4290								
10E 11N	4850								

M. O. Felt

Soil Samples

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 CABLE: BARESEARCH

GEOCHEMICAL LABORATORY REPORT NO. *65-A* DATE *25/8/69*

SAMPLE NO.									
			<i>TOT</i>						
			<i>PPM</i>						
<i>8E 1N</i>			<i>135</i>						
<i>6E 2N</i>			<i>42</i>						
<i>10E 5+00</i>			<i>46</i>						
<i>9E 6+00</i>			<i>61</i>						
<i>10E 1N</i>			<i>58</i>						
<i>10E 2N</i>			<i>429</i>						
<i>4E 4N</i>			<i>90</i>						
<i>4E 5N</i>			<i>171</i>						
<i>4E 6N</i>			<i>81</i>						
<i>4E 7N</i>			<i>69</i>						
<i>6E 5N</i>			<i>96</i>						
<i>6E 6N</i>			<i>218</i>						
<i>6+50E 1N</i>			<i>1870</i>						
<i>6+50E 9N</i>			<i>333</i>						
<i>6+50E 10N</i>			<i>457</i>						
<i>7E 7N</i>			<i>223</i>						
<i>7E 7N</i>			<i>244</i>						
<i>7E 8N</i>			<i>415</i>						
<i>7E 9N</i>			<i>485</i>						
<i>12E 2N</i>			<i>27</i>						
									<i>M.B. Fallot</i>

Soil Samples

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GEOCHEMICAL LABORATORY REPORT NO. 65-A DATE 28/8/69

SAMPLE NO.	T ₄₀₀								
	PPM								
20 E 4N	58								
20 E 5N	121								
20 E 6N	292								
20 E 7 N	292								
20 E 9N	415								
20 E 10N	1000								
20 E 11N	457								
20 F 12N	840								
20 F 13N	780								
20 E 14N	750								
14 E 0+00	400								
10 E 1S	61								
10 E 4S	46								
12 E 0+00	28								
14 E 1S	40								
14 E 2S	47								
14 F 3S	42								
16 E 1S	63								
16 E 2S	42								
16 E 3S	72								

Handwritten signature/initials

Soil Samples

BARRINGER RESEARCH

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 REXDALE, ONTARIO, CANADA
 PHONE: 416-677-2491
 CABLE: BARESEARCH

GEOCHEMICAL LABORATORY REPORT NO.

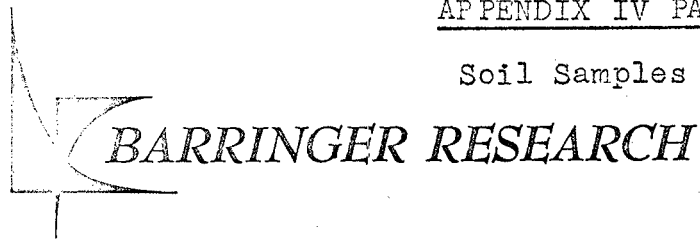
75-A

DATE

25/8/69

SAMPLE NO.	Total								
		1771							
16E 4S		1415							
16E 5S		87							
17E 0+00		109							
17E 0+00		472							
20E 5S		103							
2W 1S		150							
2W 2S		140							
2 W 3S		333							
2 W 4S		244							
2 W 5S		239							
2 W 6S		150							
2 W 7S		471							
2 W 8S		415							
2 W 9S		457							
2 W 10S		415							
2 W 11S		485							
3+75W 4S		1120							
3+75W 7S		333							
3+75W 8S		1000							
3+75W 9S		380							
									<i>M.A.F. [Signature]</i>

Soil Samples



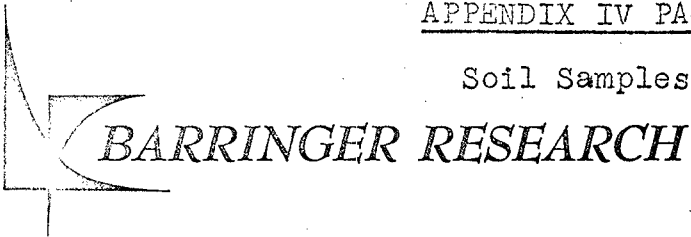
BARRINGER RESEARCH LIMITED
 304 CARLINGVIEW DRIVE
 REXDALE, ONTARIO, CANADA
 PHONE: 416-677-2491
 CABLE: BARESEARCH

GEOCHEMICAL LABORATORY REPORT NO. 65-A DATE 25/8/69

SAMPLE NO.	T ₆ T ₁ , PPM									
32E 4N	177									
33E 0+00	35									
34E 0+00	44									
34E 1N	53									
34E 2N	66									
34E 3N	130									
34E 4N	182									
0+00 8E	46									
4E 0+00	75									
4E 1S	42									
4E 2S	48									
4E 4S	84									
4E 5S	471									
4E 6S	333									
4E 7S	213									
4E 8S	443									
6E 0+00	50									
8E 1S	48									
7E 2S	38									
8E 3S	28									

W.B. Fallis

Soil Samples



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 PHONE: 416-677-2491
 CABLE: BARESEARCH

GEOCHEMICAL LABORATORY REPORT NO. *65-A* DATE *25/8/69*

SAMPLE NO.									
			75						
			81						
9E 4S			46						
8E 5S			90						
8E 6S			125						
9+10E 7S			42						
0+00 0+00			75						
0+00 1S			78						
0+00 2S			87						
0+00 3S			118						
0+00 4S			150						
0+00 5S			118						
0+00 6S			228						
0+00 11S			415						
4E 3S			121						
10E 3S			388						
10E 5S ^a			56						
10E 5S ^b			457						
11E 0+00			40						
12E 1S			42						
12E 2S			58						
12E 3S			48						

M.A. [Signature]

APPENDIX

This is to certify that I, Gerald W. Grant, resident of Whitehorse, in the Yukon Territory have the following academic background. I attended McGill University in Montreal, in the years 1950 to 1953 where I was enrolled in the course BSc. in Geology. I transferred to Michigan College Mining and Technology and attended that Institute, at Houghton, Michigan, during the years 1954 to 1956. At Houghton, I had completed all the undergraduate geological courses required for the BSc. Degree in Geology, but had not completed all other course requirements and did not obtain a degree. During the summer field season from 1950 to 1956, I was employed in various capacities from prospectors assistant to student geologist for the Quebec Department of Mines and various mining companies in Quebec, Ontario, Saskatchewan and British Columbia.

Since 1957 I have been employed full time in the capacity of Exploration Geologist with various mining companies and obtained extensive experience in geological mapping, supervision and operation of ground geophysical surveys, supervision of diamond drilling and general exploration programs throughout Canada and in Ireland. I previously carried out a mapping and diamond drilling programs on the Klastline Plateau in 1965.

I first visited the Q.C. Group in 1964 and during the past field season was responsible for supervising operations on the Q.C. Group, which were carried out by Mr. D. R. MacDonald, P. Geol., Alberta. I visited the Q.C. Group on three separate occasions, and during the course of this seasons work spending a total of four days on the property.

G. W. Grant

CERTIFICATE

I, Trevor Lorne Horsley, of 73 Cameron Crescent, in the city of Toronto, in the Province of British Columbia, Do hereby certify:

- 1.) That I am a Mining Engineer.
- 2.) That I graduated from the University of British Columbia in 1952 with the degree of Bachelor of Applied Science.
- 3.) That I am a registered Professional Engineer in the Provinces of British Columbia and Ontario.
- 4.) That I have been continuously engaged in my profession for 17 years.
- 5.) That I have not visited the Q.C. Claims. That I have studied the data in Mr. Grants' report on the Q.C. Claims and previous data on the claims. That as exploration manager for Conwest Exploration Company Limited, I assisted in planning the work supervised by Mr. Grant on the Q.C. Claims. That I have continuously directed Mr. Grants' work since 1965 and know him to be a competent Geologist.
- 6.) That I have no interest, nor do I expect to receive any interest, directly or indirectly in the Q.C. Claims.

Toronto, Ontario,
March 9, 1970.



T. L. Horsley,
B. A.Sc., P.Eng.

RECOMMENDATIONS:

No further surface work including geophysics is recommended as little useful additional information could be obtained.

A drilling program is necessary to further test the copper bearing gossan. Feasible locations for drill holes with adequate water available within reasonable pumping distances and lift are as follows:

- 1.) 24 + 00 E 10 + 11 N
- 2.) 12 + 00 E 6 + 00 S
- 3.) 2 + 00 W 5 + 00 S

Holes should be drilled to cross-section the whole width of the altered volcanics at least as far south as the assumed fault separating them from the unaltered grey volcanics.

Respectfully submitted,



G. W. Grant.

And

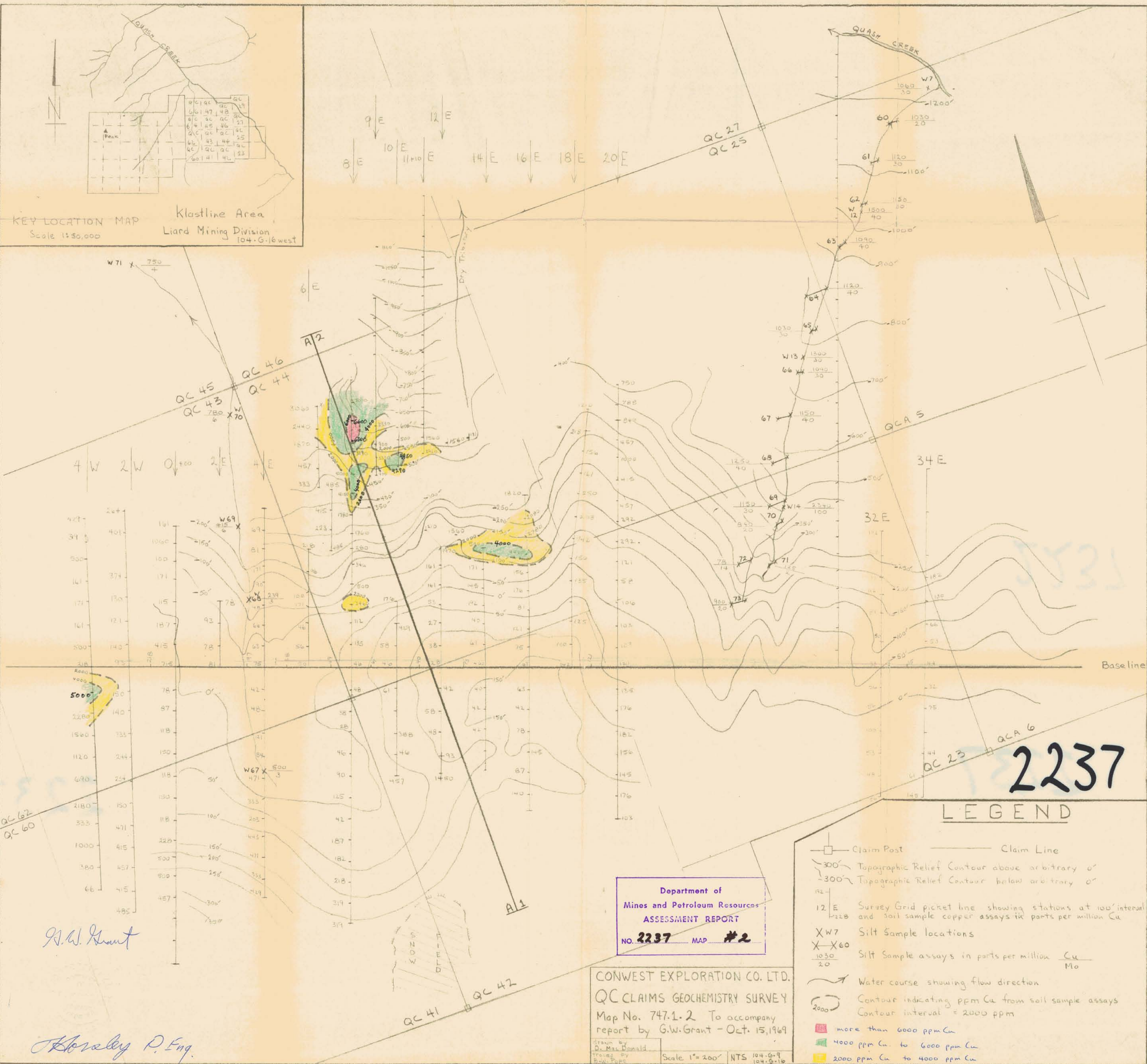


Mr. T. L. Horsley,
Manager of Exploration and Development.

APPENDIX "A"

APPENDIX "B"

APPENDIX "C"



KEY LOCATION MAP
Scale 1:50,000
Klastline Area
Liard Mining Division
104-G-16 west

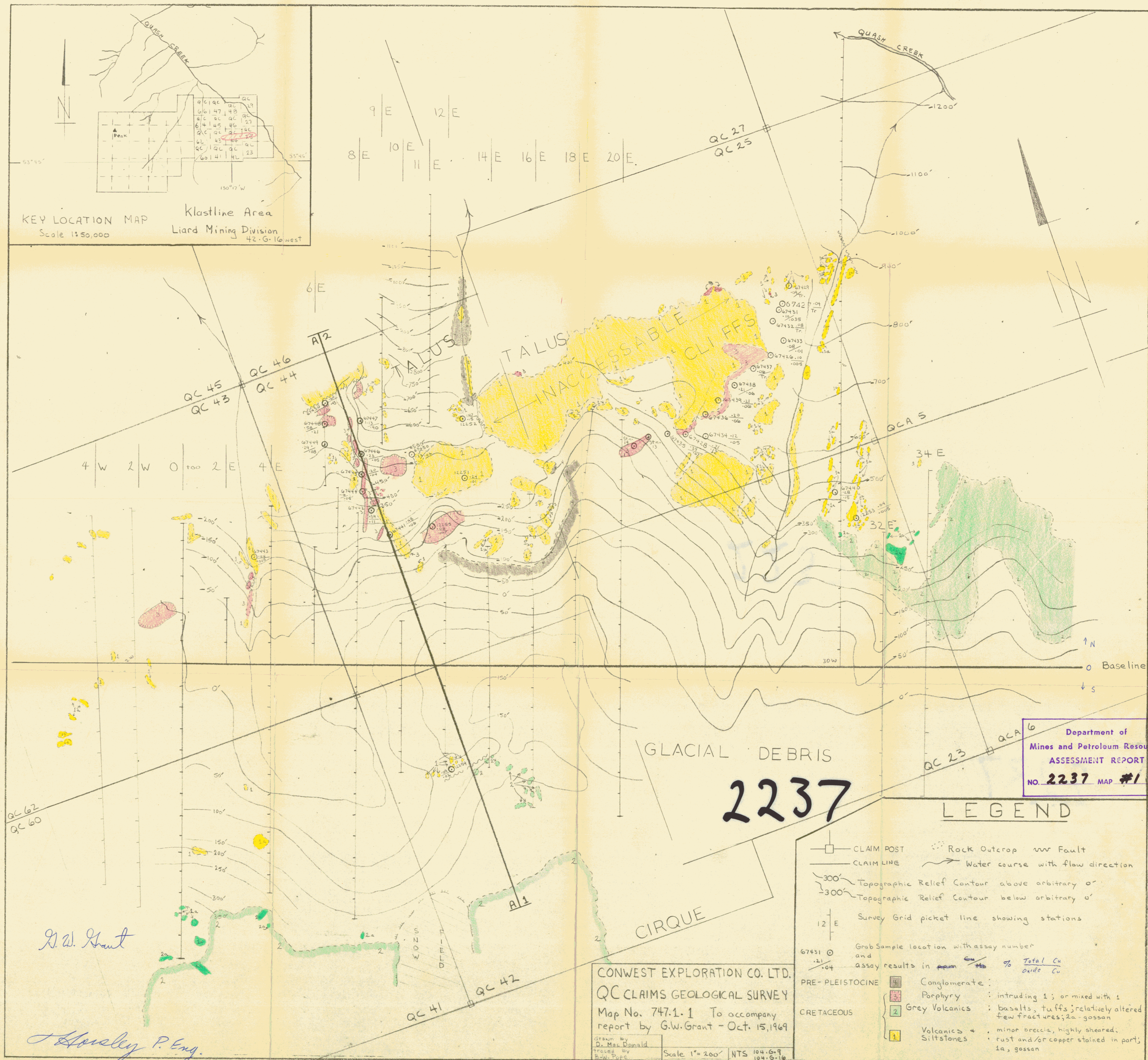
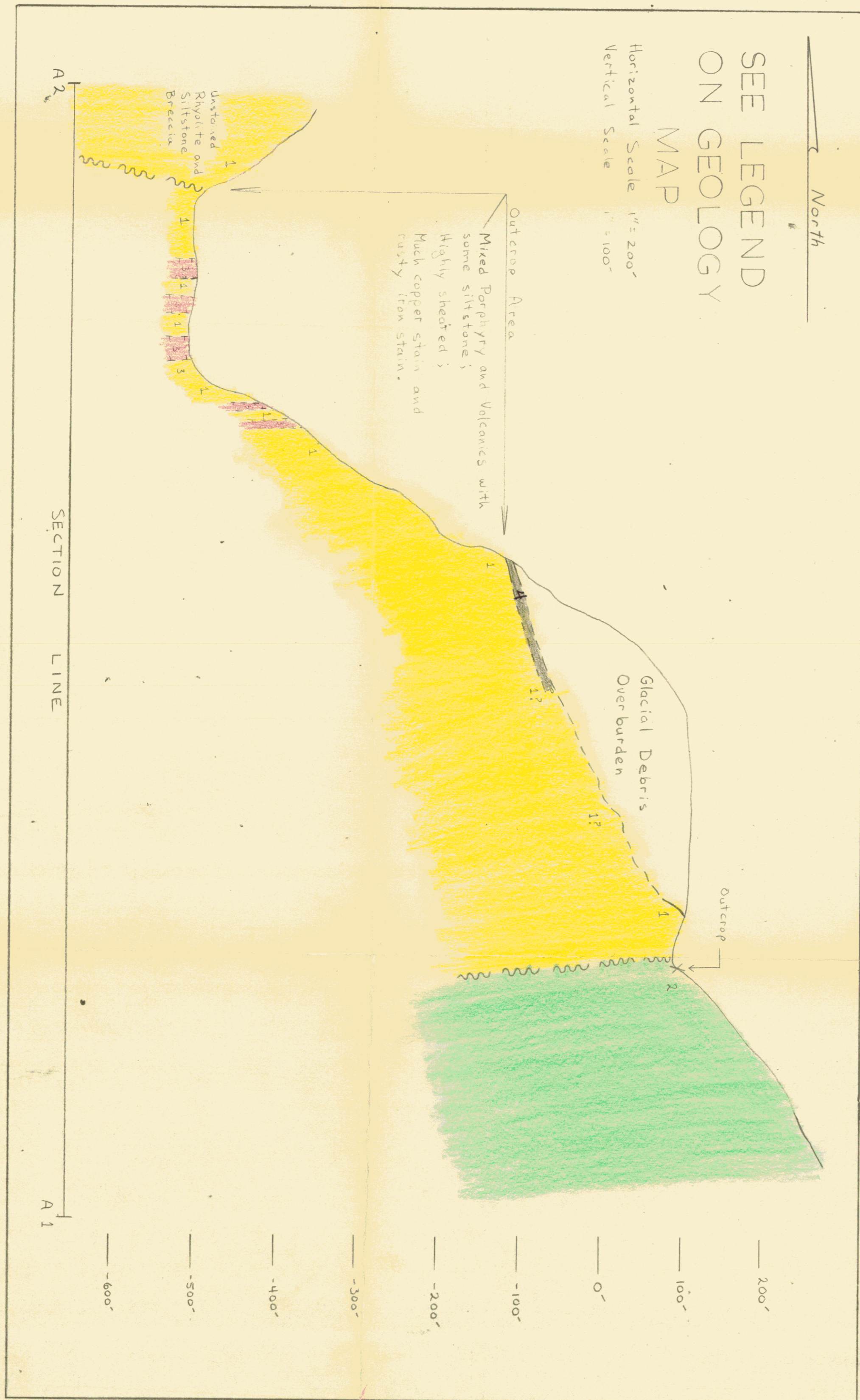
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2237 MAP #2

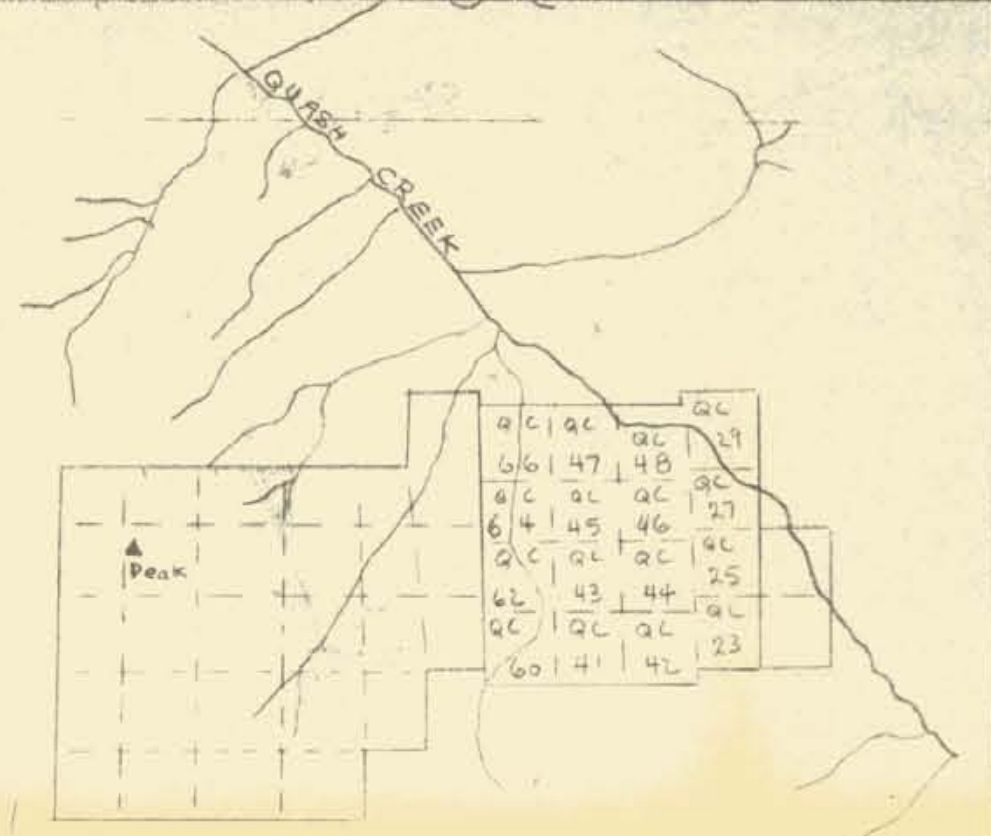
CONWEST EXPLORATION CO. LTD.
QC CLAIMS GEOCHEMISTRY SURVEY
Map No. 747.1-2 To accompany
report by G.W. Grant - Oct. 15, 1969
Scale 1" = 200' NTS 104-G-9
104-G-10

- LEGEND**
- Claim Post
 - Claim Line
 - 300 Topographic Relief Contour above arbitrary 0'
 - 300 Topographic Relief Contour below arbitrary 0'
 - 12 E Survey Grid picket line showing stations at 100' interval and soil sample copper assays in parts per million Cu
 - XW7 Silt Sample locations
 - X-X60 Silt Sample assays in parts per million Cu Mo
 - ↗ Water course showing flow direction
 - 2000 Contour indicating ppm Cu from soil sample assays Contour interval = 2000 ppm
 - more than 6000 ppm Cu
 - 4000 ppm Cu to 6000 ppm Cu
 - 2000 ppm Cu to 4000 ppm Cu

G.W. Grant

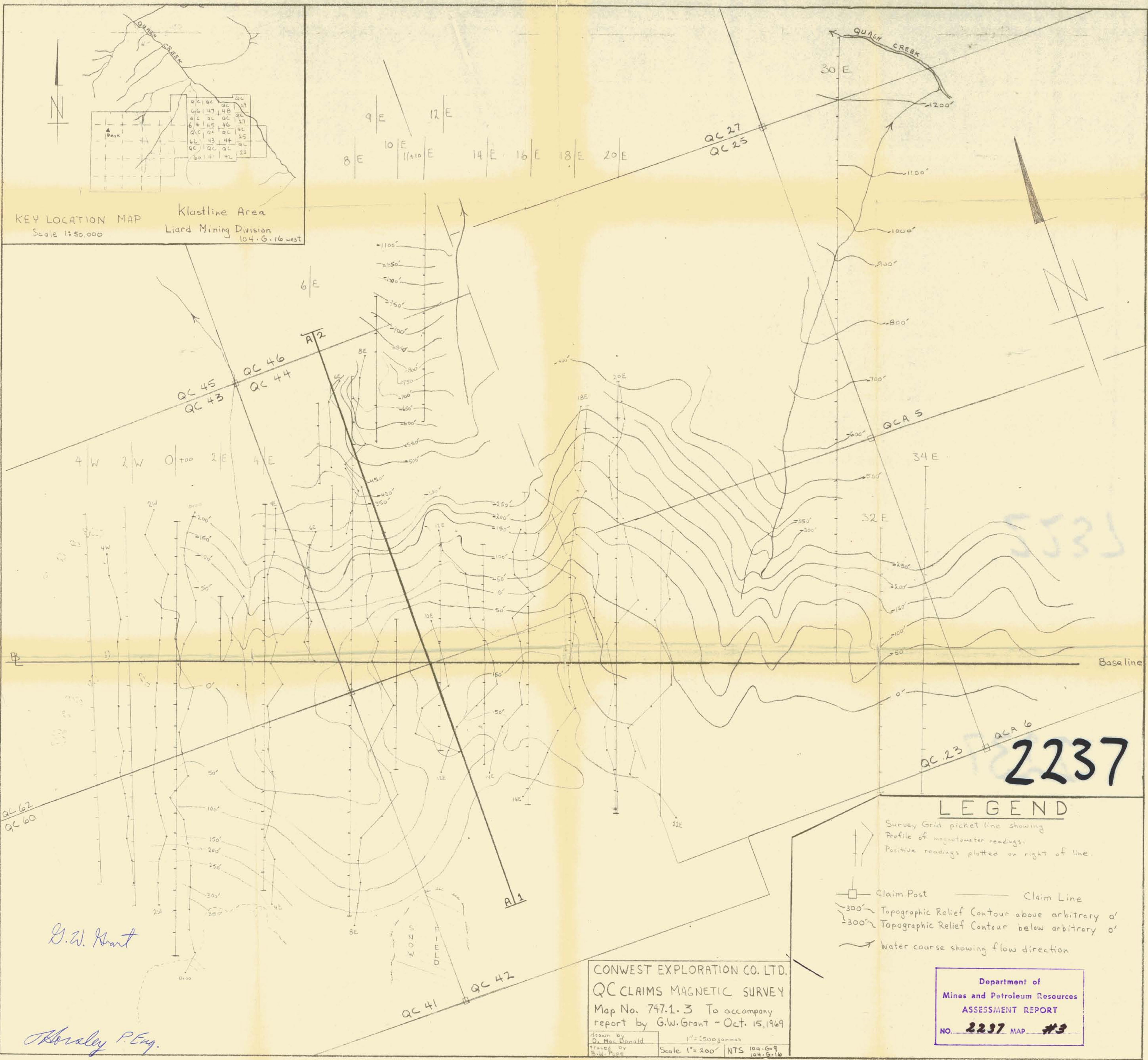
Horsley P. Eng.





KEY LOCATION MAP
Scale 1:50,000

Klastline Area
Liard Mining Division
104.6.16 west



5535

2237

LEGEND

- Survey Grid picket line showing Profile of magnetometer readings. Positive readings plotted on right of line.
- Claim Post
- Claim Line
- Topographic Relief Contour above arbitrary 0'
- Topographic Relief Contour below arbitrary 0'
- Water course showing flow direction

G.W. Grant

Thorley P. Eng.

CONWEST EXPLORATION CO. LTD.
QC CLAIMS MAGNETIC SURVEY
Map No. 747.1.3 To accompany
report by G.W. Grant - Oct. 15, 1969

Drawn by
D. Mac Donald
Traced by
B.W. Papp

Scale 1" = 200' NTS 104.6.9
104.6.16

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 2237 MAP #3