EM-16 & PROSPECTING

on the

BONNIE GROUP (Bonnie, Marwill No. 1 & 2, G and R 5-8, Dale 1-4, Speculator and Mt. Glen Mineral Claims)

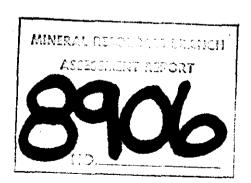
> Omineca Mining Division 93 M/5E

55° 19' N 127° 38' W (North of Hazelton, B.C.)

OWNER & OPERATOR: TRI-CON MINING LTD.

Writer: A.M. Homenuke, P. Eng (Geol.)

Submitted: March 5, 1981



Tri-con Mining Ltd.

CONTENTS

I.	INTRODUCTORY NOTES		
	Location and Access Physical Features Property Description History Economic Assessment Present Work and Distribution	1 3 3 6 6	
II.	GEOLOGY & ORE DEPOSITS AT THE SILVER STANDARD MIN	E 7	
III.	PROSPECTING	8	
IV.	ELECTROMAGNETIC SURVEY		
	Instrumentation and Procedure Survey Discussion of Results	10 10 11	
V.	AIRPHOTO INTERPRETATION	15	
VI.	GEOCHEMISTRY	15	
VII.	CONCLUSIONS		
	OPERATOR'S QUALIFICATIONS	18	
	AUTHOR'S QUALIFICATIONS	19	
	REFERENCES	20	
	COST STATEMENT	21	
TABLE	I. BONNIE GROUP (Claims)	3	
	ILLUSTRATIONS		
FIG. 1 FIG. 2 FIG. 3	CLAIM MAP PROSPECTING TRAVERSES	2 4 9	
FIG. 4		in pocket 12	
FIG. 6		13	
FIG. 7	INTERPRETATION MAP	16	

I. INTRODUCTORY NOTES

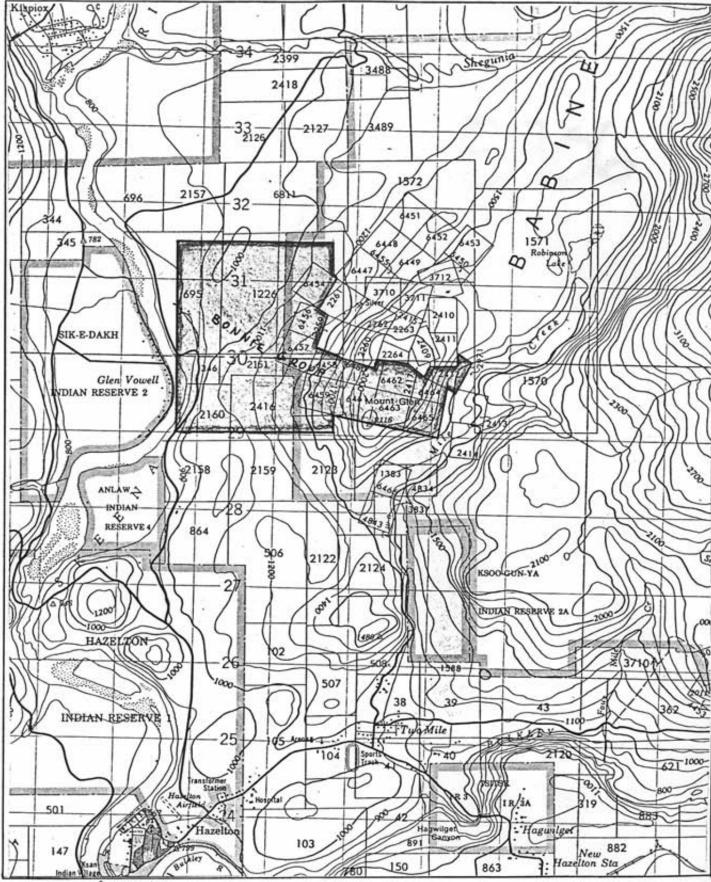
Location and Access

The Bonnie Claim Group is located on Mount Glen and the area west to the Skeena River, centered about 7km N.N.W. of Hazelton, B.C. (Fig. 1) The group adjoins the west and south sides of the Silver Standard Mine Claims. Access to the west side of the claims is provided by the Salmon River Road which branches off the Hazelton-Kispiox Road. The Silver Standard Mine Road passes through the centre of the claim group, and old mining and logging roads provide local, inpart 4-wheel drive, access.

Physical Features

Mount Glen, elevation 645 meters, is located on the south boundary of the claim group and towards the east side. The mountain has a relatively flat top about 700 meters wide, then drops steeply to Two Mile Creek on the east and the Silver Standard Mine Road on the west. The area between the Mine Road and the Skeena River on the west side of the claims is relatively flat in general aspect, but locally made up of abrupt ridges and gullies with swamps in many of the low areas. The river, where it cuts the claim block, is at an elevation of 230 meters. Outcrops are scarce to nonexistent except along the southern 500 meters of the claims and on the slopes of Mount Glen.

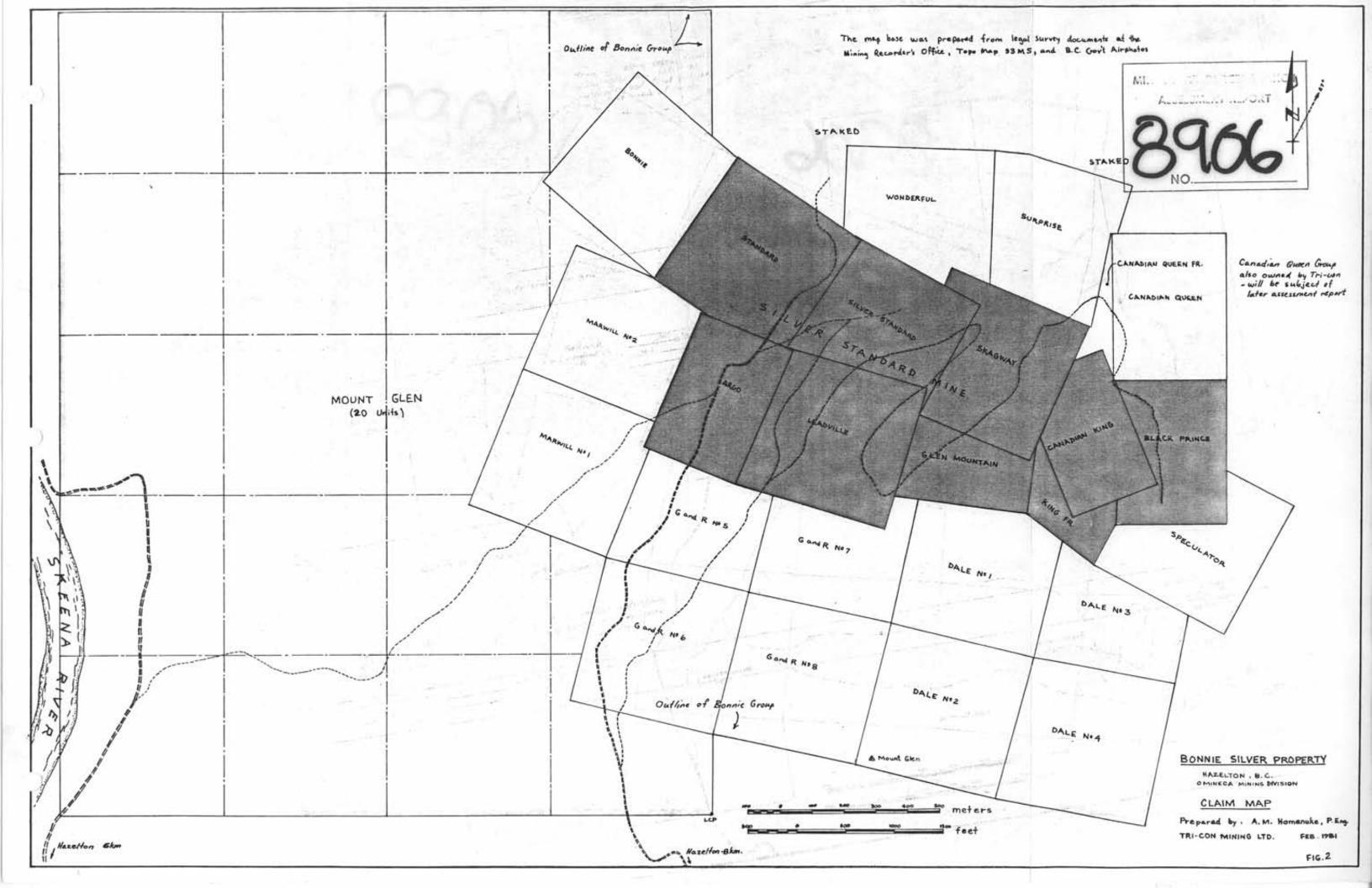
The area is covered by a mixed coniferous-deciduous forest, in part second growth after a fire at the turn of the century, except along the Skeena River where it is cleared for farming. Much of the area was selectively logged for cedar poles and there are marketable stands of spruce and cedar remaining. The deciduous growth consists of birch, poplar and alder and represents about 20% of the forest. Undergrowth is moderate and in general does not impede foot travel, however there are many small and a few large swamps which prohibit access to some degree. Running water is scarce except for two creeks which cross the northwest section of the claims.

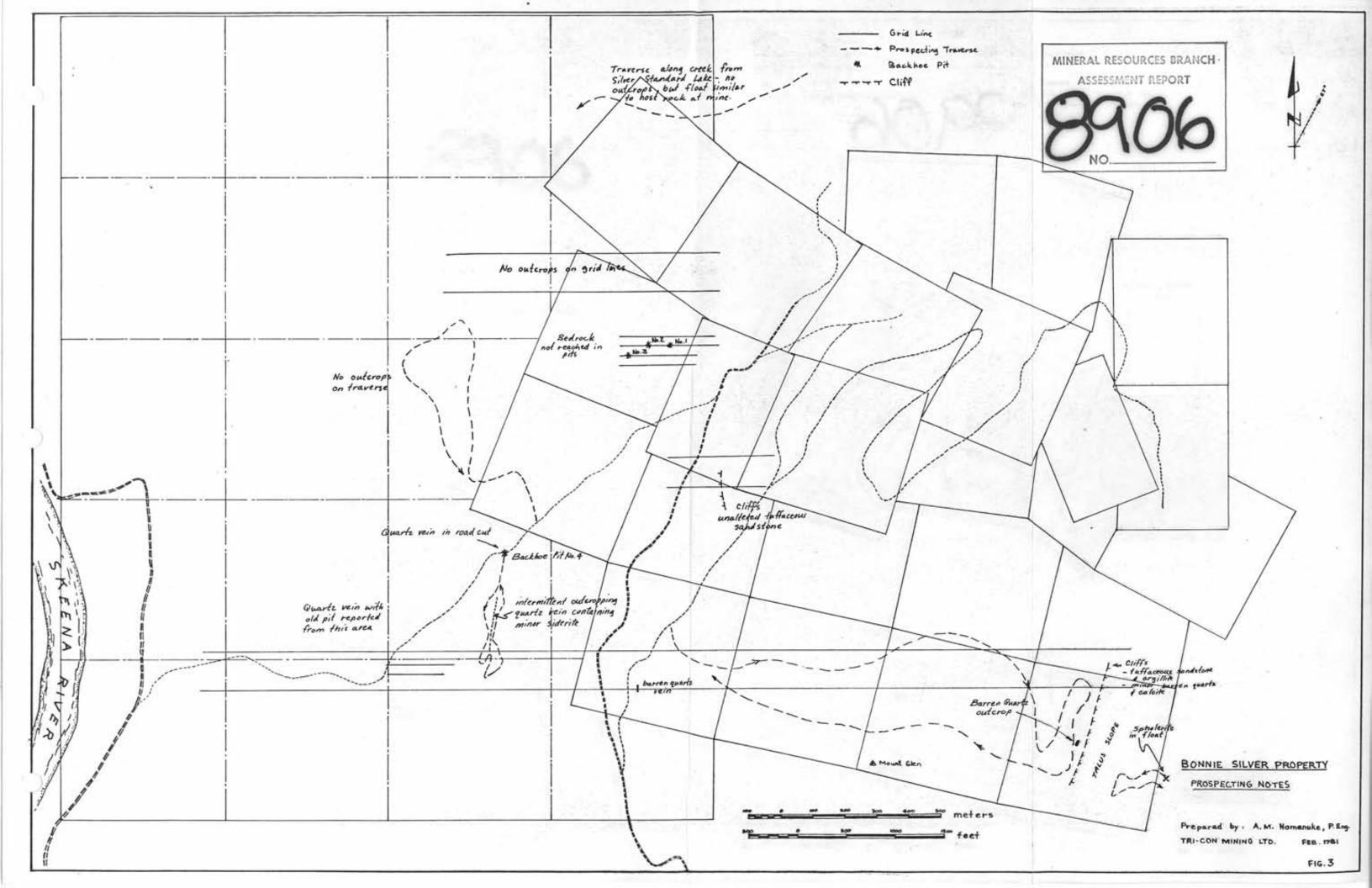


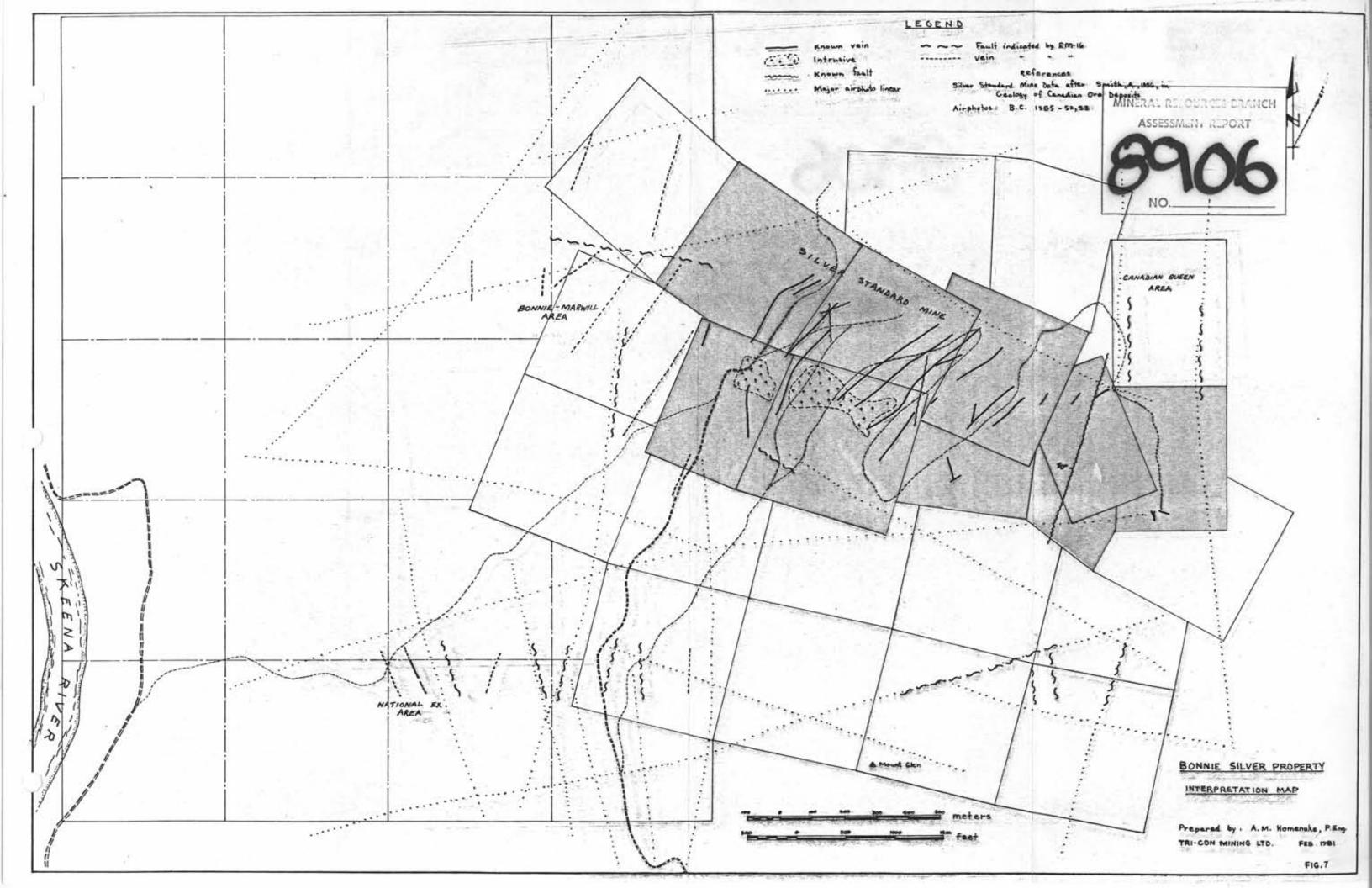
Part of 93M/5

BONNIE PROPERTY

LOCATION MAP







Property Description

The Bonnie Group consists of 12 reverted crown grants, which were formerly part of the Silver Standard Mine holdings, and a 20-unit location claim. Also part of the group are 6, 2-post claims, J.B. 1-6, which are not shown on the claim map (Fig. 2) These are covered by the newer Mount Glen claim and will be allowed to lapse. Table I below summarizes the claim data.

TABLE I. BONNIE GROUP

				Year	
Name	Lot No.	Record No.	Units	Acquired	Record Date
Bonnie	6454	305	1	1976	June 3
Marwill No.1	6457	306	1	1976	June 3
Marwill No.2	6456	307	1	1976	June 3
G & R Nô.5	6458	2468	1	1980	Feb. 15
G & R No.6	6459	2469	1	1980	Feb. 15
G & R No.7	6460	2470	1	1980	Feb. 15
G & R No.8	6461	2471	1	1980	Feb. 15
Dale No.1	6462	2472	1	1980	Feb. 15
Dale No.2	6463	2473	1	1980	Feb. 15
Dale No.3	6464	2474	1	1980	Feb. 15
Dale No.4	6465	2475	1	1980	Feb. 15
Speculator	2412	2476	1	1980	Feb. 15
Mt. Glen	-	2490	20	1980	Feb. 25

Owner and operator is Tri-Con Mining Ltd. of Vancouver, B.C.

History

Silver Standard Mine

The first deposits were found in 1910 after construction of the railway through New Hazelton. Early shipments of crude ore were made, followed by construction of a 50 ton per day gravity mill. The mill operated from 1918 to 1922. Production to the end of this period totalled 14,338 tons containing:

gold, 1118 ounces lead, 1,208,792 pounds silver, 595,668 ounces zinc, 1,640,768 pounds

Silver Standard Mines Ltd. reopened the mine in 1947 and constructed a 50-ton per day flotation mill. Until the mine closed

History - Con't.

again in 1958 production totalled 182,989 tons yielding:

gold 13,672 ounces lead 16,258,914 pounds copper 464,489 pounds* silver 6,986,332 ounces zinc 25,678,825 pounds cadmium 327,765 pounds *copper not reported prior to 1953

Since 1958, the property has been continuously leased with shipments made each year of one or more rail carloads of crude ore. The present lessor is in the process of re-establishing a flotation mill on the property. Much ore remains in veins which were not mined, and in veins which were mined, due to a relatively high cut-off grade (by today's standards) necessitated by silver prices under a dollar an ounce. Present economics are favourable due to higher silver prices and the extensive underground development from previous operations.

Bonnie Group

The Bonnie Group consists in part of reverted crown grants which once belonged to the Silver Standard Mine holdings. On these claims there are old cat trenches and cut lines, however there is no published record of the results of work done. Much of the remainder of the group was held in the early 1950's by National Explorations Limited. An assessment report (Oates and Mandy, 1951) containing the results of an electromagnetic survey will be discussed later. One sulfide-bearing vein on the southwest part of the present claims (National Ex Area) was trenched and apparently diamond drilled. S. Homenuke also drilled a hole in this area in the early 1970's.

Tri-Con and its affiliated personnel started acquiring ground in this area in 1976. A VLF-EM survey and prospecting were carried out in 1978 in the Bonnie-Marwill Area (this area adjoins the mine property and is immediately west of the zone of parallel veins which make up the mine) The following year the claim group was expanded to include the National Ex Area. Trenches were dug on some of the EM conductors and on the National Ex showing. A new vein was found on the eastern margin of the claims. Sulfide mineralization was present but not extensive. Unfortunately a survey done last season showed the vein to be just inside the

History - Con't.

boundary of the Silver Standard claims.

Further claims were added to the group in 1980 and prospecting, EM-16 surveying and trenching were continued.

Economic Assessment

The Silver Standard Mine produced about 200,000 tons of ore yielding over 7.5 million ounces of silver, almost 15,000 ounces of gold and having a value, at todays metal prices, well in excess of 100 million dollars. The westerly limit of the known veins is also the point at which glacial overburden becomes substantially deeper. There is no concrete reason to believe that there are no more veins to the west, and in fact there is a vein with sulfide mineralization 1200 meteres southwest of the Silver Standard Mine (National Ex area). At present, the property is a "proximity" prospect, but it is hoped that with modern exploration techniques further mineralization similar to the above will be found.

Present Work and Distribution

The present program consisted of prospecting, grid establishment, EM-16 surveying, backhoe pits, minor geochemical sampling and general interpretation and correlation of data in relation to the known deposits at the Silver Standard Mine.

The prospecting consisted of reconnaissance traverses on the new claims of the group. Any outcrops of interest were also noted during grid establishment and EM-16 surveying. To date, no outcrops have been found north of a 1000 meter band along the south part of the claim block. The general area of coverage was about 200 hectares with 6km of traverses plus observations along the grid lines. The work was concentrated on G and R 5-8, Dale 1-4 and along the south part of the Mt. Glen claim.

9.5km of grid were established (flagging only) using a chaining machine. Most of this was done during the course of the EM-16 survey which covered the same area. Two reconnaissance lines were run across the south part of the claim block on the Mt. Glen, G and R 6 & 8, Dale 2 & 4. Detailed work was done on the National Ex area showings and on the Bonnie and Marwill No. 2 claims.

Present Work and Distribution - Con't.

Three backhoe pits were dug on Em-16 conductors on the Marwill No. 2 claim and one pit was dug on a quartz vein exposed in a road out. Bedrock was not reached in the first three so a sample of soil was taken from each of these pits for geochemical analysis.

Following the field work, all data gathered to date, including previous Em-16 surveying were correlated and interpreted in relation to the known deposits at the Silver Standard Mine. Airphotos were used to aid this evaluation.

II. GEOLOGY & ORE DEPOSITS AT THE SILVER STANDARD MINE

No attempt has het been made by the operator to do any geological mapping. This is partly due to the fact that there is little or no outcrop in the major areas of interest on the property. It will eventually be necessary to map the general area with special attention to structural detail in order to more confidently understand the controls on ore mineralization. Once this is done, it is hoped that it will be possible to predict favourable areas for detailed exploration based on electromagnetic surveying.

Some general geologic information is available in the literature. Black (1950) mapped the area around Mount Glen and divided the rocks into 3 main groups. The oldest division, exposed on Mount Glen and in the upper workings of the Silver Standard Mine, consists chiefly of tuffaceous sandstone and greywacke. The middle division, exposed around Mount Glen, contains a greater proportion of dark shaly beds and numerous coal beds. The youngest division, exposed on the slope of Nine Mile Mountain to the east, includes mostly sandy beds, less tuffaceous than the above and a small proportion of shaly beds. Other than at the mine, no further detailed mapping has been published.

Richards (1980) on G.S.C. Open File Map 720 has placed the rocks in the Bowser Lake Group of Upper Jurassic to Lower Cretaceous Age. He shows the formations to be block faulted with the major

Geology & Ore Deposits at the Silver Standard Mine - Con't.

trends being northerly, northwesterly and northeasterly. He indicates the intrusives in the general area (two small ones are exposed south of the Silver Standard veins (Fig. 7)) to be part of the Babine Intrusives of Tertiary Age.

Black (op.cit) and Smith (1957) indicate the rocks on Mount Glen to be folded into a series of north to northwesterly trending anticlines and synclines. Smith also indicates the pressence of a broader anticline with a more westerly strike making Mount Glen somewhat of a structural dome. Only one fault of any consequence has been mapped in the mine area. It is shown on Fig. 7 and Smith states that it has a normal displacement of about 250 feet (76 m).

Base metal-silver mineralization occurs in at least 12 subparallel and cross veins at the Silver Standard Mine. Smith shows
the ore mineralization to be related in varying degrees to folding,
the major fault, alteration zones, the intrusives, the bedrock
surface at time of emplacement and the tuffaceous horizon of Black's
oldest subdivision. The ore producing veins were brecciated at
their southern ends. The sub-parallel vein set strikes northeast
and dips southeast; the cross veins strike northwest and dip northeast. Ore minerals include sphalerite, galena, tetrahedrite,
chalcopyrite and minor ruby silvers. Ganque minerals include
quartz, sidente, calcite, pyrite, pyrrhotite and arsenopyrite.

III. PROSPECTING

The prospecting traverses and notes of significant observations are shown on Fig. 3. The only sulfide mineralization noted was an occurence of sphalerite in a talus slide below the Dale No. 4 claim. This was in a stringer a few millemeters wide in a fragment of altered tuffaceous sandstone similar to the host rock at the mine. Prospecting in the area above the slide failed to show a mineralized source. However, an outcrop of barren quartz was located. A barren quartz vein was also noted above the upper mine road on the G and R No. 6 claim.

Prospecting - Con't.

A quartz vein with some siderite was found on the south central part of the Mt. Glen claim. It was less than a foot wide and appeared to be intermittent along strike. On projection north to an old road some quartz was noted in the road cut. A backhoe pit was dug but the vein proved discontinuous. The presence of siderite is considered to be a positive sign as it is a gangue mineral in all the veins at the mine. The total strike length of exposures found to date is over 400 meters. The vein requires further investigation.

No outcrop was found in traversing the central part of the Mt. Glen claim, however a quartz vein with an old pit was found on the southwest part of the claim. It has yet to be located accurately on the map.

A traverse down a creek on the north part of the claims did not find any outcrops, however the float in the creek bed was similar to the host rock at the mine.

IV. ELECTROMAGNETIC SURVEY

Instrumentation and Procedure

The survey was conducted with a Geonics "Ronka EM-16" which is a VLF-EM receiver using submarine communications stations as transmitter source. The station for this survey was Seattle, Washington. Readings were taken at 50 foot (15m) intervals along the grid lines facing east. This allows the actual dipmeter angle to be recorded in the correct sign for reading the profile from left to right. In areas where sufficient detail was available the Fraser Filter Method was used to allow contouring of the data.

Survey (Fig. 4)

Reconnaissance lines were run most of the way across the south part of the claims. This was the start of total property coverage,

Survey - Con't.

the purpose of which is to determine the overall structural pattern for the area and find locations for more detailed followup surveying.

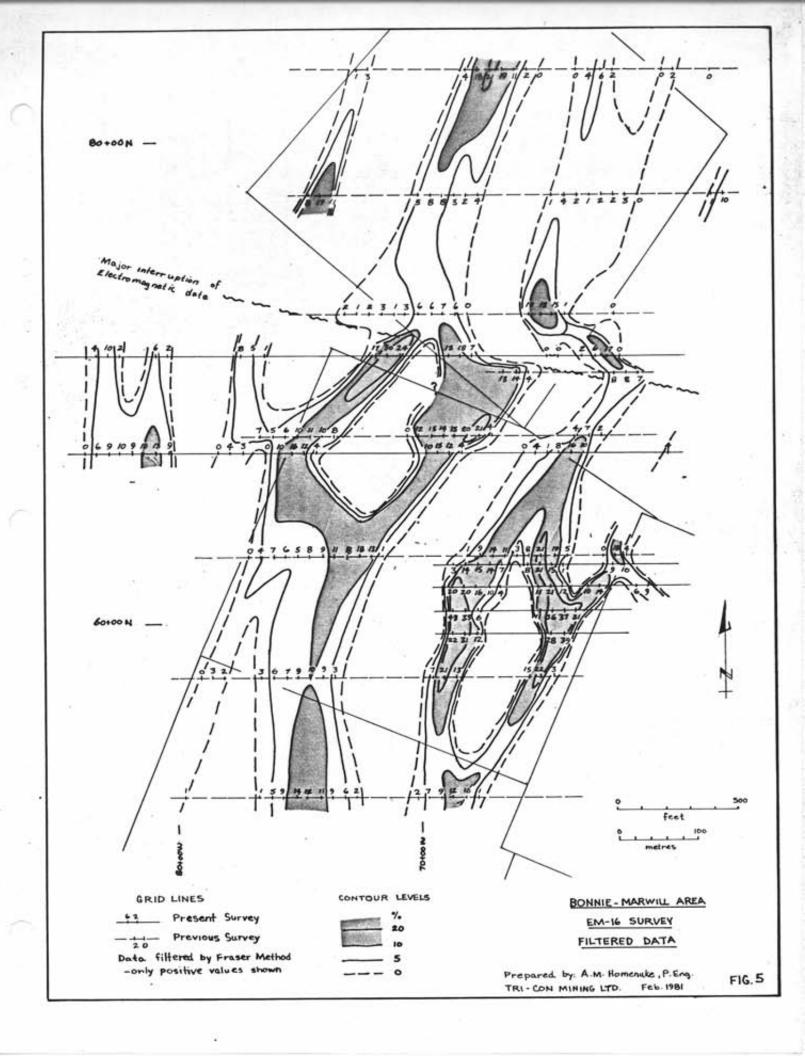
More closely spaced lines were run on the Bonnie-Marwill Area immediately west of the mine. Data gathered from a previous EM-16 survey (Homenuke, 1978) together with the latest results are shown in filtered form on Fig. 5. A small amount of detailed surveying was also done on the National Ex Area (Fig. 6) where a known sulfide-bearing vein has been exposed by trenching.

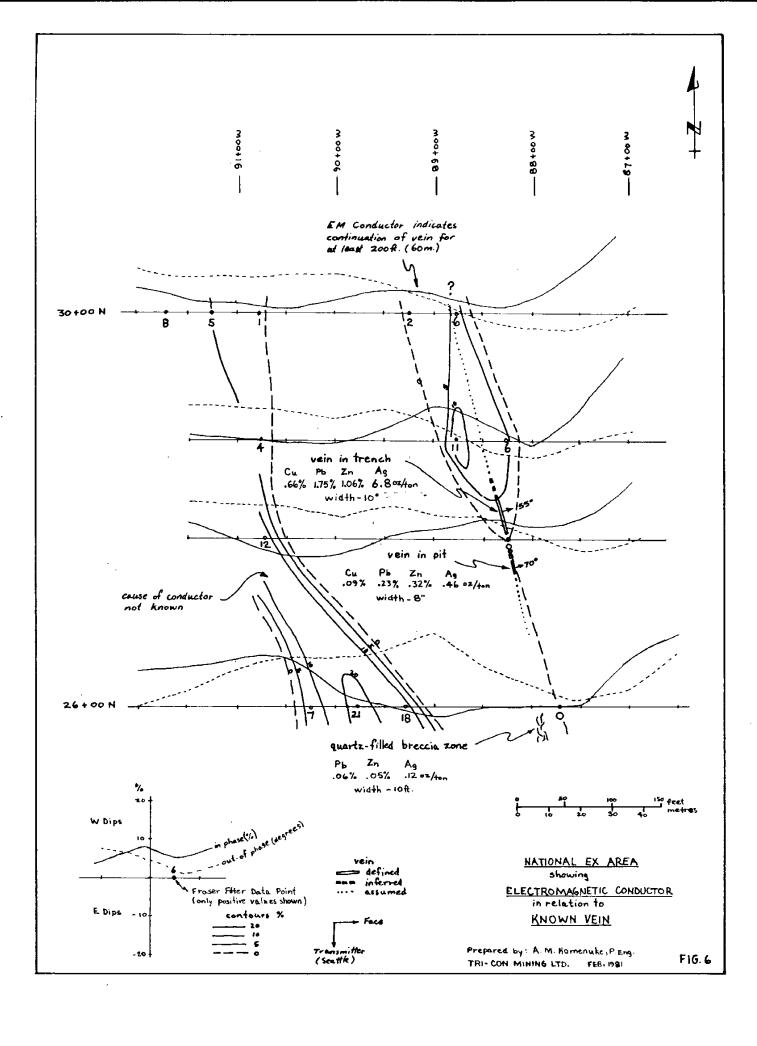
Discussion of Results

EM-16 conductors may be produced from a great variety of geologic conditions. Most of the conductors in the project area are thought to be produced by major faults, lesser faults (which may be occupied by veins) and argillaceous beds. Certain overburden conditions may also have led to some of the conductors. An airphoto interpretation (see next section) was done to aid in interpretation of results.

Reconnaissance Survey (Fig. 4)

The two lines across the southern part of the claims showed many conductors. Those coincident with major airphoto linears (Fig. 7) are most likely caused by major faults. Narrower, less intense conductors provide targets for vein exploration. Geologic mapping will be required for final interpretation, but broader conductors of moderate intensity are probably related to argillite beds. Two conductors with major photolinear features are shown in the Canadian Queen Area. These were derived from a previous survey (Homenuke, 1978) The primary significance of the results is that there appears to be considerably more faulting than previously indicated and that the genetic history and structural setting may require changes in interpretation.





Discussion of Results - Con't.

Bonnie - Marwill Area (Fig. 5)

The results of surveying in this area show a series of north to northeasterly trending conductors with some indication of a less prominent northwest trend. An interruption of trends is interpreted as a fault across the centre of the area.

Several of these conductors are interpreted as being possible vein targets. The prime targets are narrow well defined trends which parallel the Silver Standard veins. Two of these were tested with backhoe pits but bedrock was not reached. It will be necessary to develop some method for choosing drilling targets, whether it be interpretive, such as structural geology, or physical, such as deep overburden testing. The results have shown that anomalies should be defined by a maximum 200-foot (60m) grid-line spacing and preferably a 100-foot (30m) spacing. Those conductors inferred to be possible veins are shown on Fig. 7 and the location of the pits on Fig. 3.

National Ex Area (Fig. 6)

A couple of short lines were run over a known sulfide-bearing vein. In addition the reconnaissance lines passed to the north and south of the above. A moderate conductor was found to be coincident with the trend of the vein and indicated that the vein continues at least 60 meters to the north. The cause of a stronger conductor to the west is not known, but is presently inferred to be a possible vein-fault.

Other Surveys

A copy was obtained of an assessment report covering much of the Bonnie Group (Oates and Mandy, 1951). It reported on a geophysical survey using an electromagnetic technique at a frequency of 55kHz. In areas of overlapping coverage with the present survey many of the conductors coincided, however the key maps were poorly prepared and much of the data could not be correlated.

V. AIRPHOTO INTERPRETATION

Several series of airphotos are available for the project area dating from the early 1950's to the mid 1970's. These photos are studied at various times to correlate field work. To aid in interpreting the EM-16 data, the earliest series of photos was chosen so that ground disturbance by trenching a roads would be at a minimum. Major photolinear features were traced and transferred to the base map (Fig. 7) for correlation with EM-16 conductors. Where these coincided major faults were inferred. The area was shown to be much more structurally complex than previously thought.

VI. GEOCHEMISTRY

Three pits were dug with a John Deere 350 backhoe on EM-16 conductors in the Bonnie-Marwill Area (Fig. 3) These pits did not reach bedrock at the limit of the bucket's reach (about 5m). The upper 2-4m consisted of a loosely consolidated, poorly sorted gravel till; the bottoms of the holes were in a very compact blue-grey basal till. A sample was taken from the bottom of each hole and analyzed at Chemex Labs. The results were as follows:

	Cu(ppm)	Zn(ppm)	Ag(ppm)	As(ppm)	Hg(ppb)
Pit No.1	42	80	0.1	29	40
Pit No.2	48	98	0.1	25	50
Pit No.3	44	82	0.1	24	40

None of the results are considered significant and they indicate that a method of sampling which penetrates the basal till will have to be found.

VII. CONCLUSIONS

- The area around the Silver Standard Mine, expecially to the west, is considered favourable for the presence of further high-grade veins because.....
 - a) The western limit of known veins is also the eastern limit of substantially deeper glacial overburden. No trenching by Silver Standard or by this operator has yet reached bedrock.
 - b) The favourable host-rock unit at the mine appears to project under the surface rock to the west.

Conclusions - con't.

- 2. EM-16 surveying has shown several conductors inferred to be possible vein-faults.
- 3. The EM-16 survey has shown the probable continuation under overburden of a known sulfide-bearing vein. A small amount of work here will enable drill holes to be spotted.
- 4. Much further exploratory work is necessary to choose drill sites on the rest of the area, although some drilling may be done earlier to enhance overall interpretation.

Respectfully submitted,

Tri-Con Mining Ltd.

A.M. Homenuke, P.Eng.

OPERATORS QUALIFICATIONS

- I, Clarence Cameron Lee, hereby state:
- 1. THAT I received a Diploma of Technology in Mining from the B.C. Institute of Technology in 1971.
- 2. THAT I have been employed in the Mineral exploration Industry for 11 years with Geophysical Engineering and Surveys, Leitch Gold Mines, Mastadon Highland Bell, Noranda Exploration, Cry Lake Jade Mines.
- 3. THAT I am presently employed by Tri-Con Mining Ltd. of Vancouver, B.C. and reside at 4290 272nd street, Aldergrove, B.C.

Dated at Vancouver, B.C., this 5th day of March, 1981.

C. Cameron Lee, Dipl. T. Mining Technologist

Can Lu

CERTIFICATE OF QUALIFICATION

- I, ALEXANDER M. HOMENUKE, DO HEREBY CERTIFY:
- 1. THAT I am a member in good standing of the Association of Professional Engineers of British Columbia.
- 2. THAT I received the Degree of Bachelor of Science in Geological Engineering from the Colorado School of Mines in 1974.
- 3. THAT I received a Diploma of Technology in Mining from the B.C. Institute of Technology in 1969.
- 4. THAT I have been employed in various aspects of mining exploration for 12 years and am presently employed by Tri-Con Mining Ltd. of 2580 1066 West Hastings Street, Vancouver, B.C.
- 5. THAT I presently reside at 29825 Harris Road, Mt. Lehman, British Columbia.
- 6. THAT this report is based on work supervised or conducted by myself.

Dated at Vancouver, B.C. this 5th day of March, 1981.

A.M. HOMENUKE, P. ENG. Geological Engineer

REFERENCES

- Black, J.M., 1950, Glen and Nine Mile Mountains Area, B.C., B.C. Minister of Mines, Ann. Report 1950.
- Oates, G.L., and J. T. Mandy, 1951, Geophysical Survey on the property of National Explorations Limited Asst. Rep. No. 58.
- Kindle, E.D., 1954, Mineral Resources, Hazelton and Smithers Areas, Geol. Survey of Can., Memoir 223.
- Smith, Alexander, 1957, Silver Standard Mine, in Structural Geology of Canadian Ore Deposits, Congress Volume, C.I.M. Special Publication.
- B.C. Minister of Mines, various Annual Reports.
- Homenuke, A.M., 1978, EM-16 and Prospecting Report on the Canadian Queen and Bonnie Groups.
- Richards, T.A., 1978 Geology of Hazelton (West Half) Map Area, British Columbia; Current Research, Part A, Geol. Surv. Can., Paper 78-1A, 1980, G.S.C. Open File Map 720, Geology of Hazelton Map Area.
- Personal Communications, S. Homenuke and G. Braun.

COST STATEMENT

A. Homenuke, P.Eng.		
Oct. 28, 29, Nov. 5,6 4 days @ \$250	\$1,000.00	
Aug. 3,4,12, Nov. 5,6 Prospecting & supervision of trenching		
5 days @ \$150	750.00	
Oct. 31 - Nov. 6		
EM-16 1 grid establishment & prospecting	•	
7 days @ \$150	1,050.00	
Room and board required 11 man days @ \$35	385.00	
EM-16 Rental 9 days @ \$10/day	90.00	
Vehicle (4 x 4) . 16 days @ \$40	640.00	
Trenching, per contractors invoice 3 days @ \$200/day	600.00	+
Geochemical Analysis 3 samples for Cu, Zn, Ag, As, Hg @ \$10.05	30.15	
* Photointerpretation, Maps, and Report		
3 1/2 days @ \$250	875.00	
Secretarial 4 hrs. @ \$15	60.00	
Miscellaneous supplies (flagging, string, etc.)	25.00	
TOTAL	\$5,505.15	

^{*} The maps and report took longer to prepare, however this figure is the estimate used for the Statement of Exploration and Development.

Note: A fair apportionment of value including report preparation is \$900 for prospecting; \$4,000 for EM-16, minor geochem, photointerpretation and overall interpretation.

