REPORT ON
WARREN CREEK MINERAL CLAIMS

WARREN CREEK, B.C.

July, 1956

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50°, 116° N.W

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1264 West Pender Street,
Vancouver,B.C.,
July 11th,1956

Mr. Roger Lebeuf,
11949 Jasper Avenue,
Edmonton, Alberta.

Dear Sir:

Pursuant to your request, I have carefully examined the Warren Creek Mineral Claims spending five days, from June 27th to July 1st,1956, on the ground and submit herewith my report thereon.

Respectfully submitted,

H. H. Cohen

H. H. Cohen-P. Eng.

REPORT ON THE

WARREN CREEK MINERAL CLAIMS

WARREN CREEK,B.C.

To: Mr. R. Lebeuf,
Edmonton,Alta.

Harvey H. Cohen,P.Eng.
July,1956

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#1 Key map showing location of Warren Co. Mineral Claims 1" = 4 miles

#2 Warren Co. Mineral Claims

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ABSTRACT

The Warren Creek Mineral Claims, situated along the upper reaches of Warren Creek in the Purcell Range and held by Mr. R. Lebeuf of Edmonton, lies in close proximity to the Giant Mascot Mine, Tar Heel Mine, and several active prospects including the LaRoux property and the Ruth Vermont. With equipment available today for road construction, this area could not be classed as one that is handicapped for lack of transportation, and it is very well located with regard to timber and water supply. It is however, handicapped in that transportation costs of ore or concentrates to the smelter, together with handling, would be unusually high.

The ground was examined to determine its value and possibilities from a mining standpoint, and to gather information that would assist in planning a program of diamond drilling.

Results of the field work indicate the area to warrant surface trenching with diamond drilling to follow while, the Claxton and adjacent areas to the east lie in favorable areas to warrant exploration.

INTRODUCTION

(a) Location of Area

Warren Creek Mineral Claims are located on the East side of Warren Creek approximately 6 miles from the conflux of Warren Creek and Bobbie Burns Creek, the latter being a tributary of the Columbia River. The property is reached from Spillimacheen by a road along the Spillimacheen and Bobbie Burns Creeks for 18 miles. From there, a pack trail in only fair condition continues for a further 7 miles making a total of 25 miles to supplies.

Warren Creek is approximately 10 miles long flowing North-easterly into Bobbie Burns Creek, which in turn has its headwaters to the east of Bald Mountain and flows South-easterly to join the Columbia at a point 50 miles distant. The Columbia occupys its flood plain on the floor of a depression one mile wide and has an average gradient of 6 inches per mile.

Spillimacheen is located on the Golden-Cranbrook highway and has a population of approximately 500. There is also a Ranger Station, Post Office, C.P.R. railway station and daily service by stage and train.

Giant Mascot Mine is located along the East side

of the Spillimacheen River approximately 8 air miles from Warren Creek property.

Quebec Metallurgical Co. is installing a gravity concentration process at their Tar-Heel property on Bugaboo Creek some 5 miles from Warren Creek.

Other active areas (from a mining standpoint) are Ruth Vermont - some 12 miles northerly and the Lead Mountain property of Giant Mascot, 6 miles distant.

(b) Exposures

The principal showings, referred to as the "upper" tunnel is at an elevation of 6700 feet, or approximately 500 feet above creek bottom. A tunnel some 35 feet in length was driven here to develop ore.

Numerous small cuts, at approximately 50 foot intervals, expose ore between the upper tunnel and the second tunnel. The latter opening was driven 20 feet in quartz, and is 300 feet vertically below the main showing.

The mountain side below the workings and adjacent area is strewn with large boulders of an old slide, much of which is now covered with vegation.

Several of the test pits are now caved, but they

do expose mineralization and rock type to a lesser degree.

The writer is advised that there are at least two other exposures of good mineralization, near the headwaters of Warren Creek, but were not visible due to snow covering much of the area at this time.

(c) Size of Area

The surface of the mineralized outcrops covers an area of approximately 1000 square feet. This embraces only the main showings that were detailed.

(d) Purpose of Investigation

The Warren Group was examined to evaluate the ground from a mining standpoint and to determine the merits and possibilities of the area with a view to diamond drilling the areas of favorable geology.

(e) Methods of Investigation

The field trip to the Warren Creek property commenced June 27th and continued until July 1st, 1956. A small tent camp had been established earlier at elevation 6225 on Warren Creek, some 500 feet below the main showing. Access to the camp was gained by driving along the logging

road (Crestbrook Logging Co) which follows Bobbie Burns Creek to 16 mile cabin. From here pack horses were used to the field camp.

Briefly, the work included general reconnaisance of the area, tape and compass traverse, detailing and sampling of the main showings.

The party consisted of the writer; Mr. R. Lebeuf of Edmonton; Mr. H. Sykes of Spillimacheen; and Mr. H. Lee of Idaho.

(f) Acknowledgments

The writer wishes to express his gratitude to Mr. Roger Lebeuf of Edmonton; Mr. Harry Sykes of Spillimacheen; and Mr. Hyram Lee of Idaho, for their hospitality, assistance and co-operation in the field and for the opportunity to investigate the Warren Creek copper showings.

SUMMARY AND CONCLUSIONS

It is the writer's opinion that the Warren Creek copper showing is of limited valuation, but with further exploration and available custom milling facilities in the vicinity, could result in a small producer. This is based not on a result of mathematical calculation, but on judgment.

1. Consistant structure between the outcrops shows mineralization over an area of 1000/sq. feet.

2. It is possible that the mineralized vein is a limb of a fold and a trough-like deposit does exist at depth. 2000 feet of diamond drilling of the main showing at a cost of approximately $10,000 may conceivably increase the value in ore reserves many times the amount spent. This would normally follow systematic prospecting and re-opening of the trenches along the strike of the mineralized zone. The trenches could be re-opened at a cost of $1,500.00

3. Due to the fact that a copper property does exist across the divide between Warren

Creek and Bugaboo Creek and from which some 3 carloads of ore was shipped in 1920, it would be advisable to systematically prospect the Claxton 1 - 10 and in an easterly direction. An expenditure of $1,500 would permit a thorough investigation of this ground.

4. Geological limitation of the main showing are the siliceous limestone and schists, which place a horizontal extent of 60 feet to the zone at the upper tunnel horizon.

5. On the basis of an indicated mineral content of some 2500 tons valued at $35,000.= gross (35% copper), it would appear that without further additional tonnage, the property has very limited valuation. Funds provided for further exploration could, as stated previously, add considerably to assured mineral content and thus result in a small producer shipping to a custom mill in the vicinity. (There is the possibility of copper recovery circuit being installed

in a mill nearby). However, these funds should be provided only on the basis of a limited valuation of the property and as a speculation.

6. Minimum grade of minable ore at the present copper prices of required to cover costs of mining, shipping to custom mill, milling, handling, shipping of concentrates, smelting, marketing, smelter losses, milling losses is 3.2% Cu. In addition to this there should be additional grade sufficient to yield returns and a reasonable profit on investment.

7. Minimum grade of mineable ore at present copper price of 35¢ required for direct shipping to smelter is 6.2% to cover mining, handling, shipping, smelting, marketing plus reasonable profit on investment.

RECOMMENDATIONS

1. Re-opening of surface trenches to expose full width of the siliceous mineralized zones.

2. Systematic prospecting of the Claxton claims and the area east toward the showings on Bugaboo Creek.

This work would investigate the property with a view to diamond drilling to ascertain the ore possibilities. If surface indications below the main showings are improved then:

3. Diamond drilling is recommended for the upper workings. As the two headings driven at the upper showings have not intersected the ore zone, valuable information could be obtained by core drilling from a point approximately 75 feet below and to the north of the main showings, flat or slightly inclined holes to determine the presence of ore bodies. This drilling could be accomplished by using a small X-ray drill adequate for holes of approximately 125 feet in length. The core size EX is approximately 7/8" diamter.

The drilling program however, could be postponed in favor of items 1 and 2 for the present

GEOGRAPHY

(a) Relief and Elevation

The Warren Creek Mineral Claims occupy a wooded, steep-sided valley on the eastern slopes of the Purcell Mountain Range and west of the Rock Mountain Trench. The mountains rise to 8000'-9000' in elevation between the creeks.

The numerous streams and creeks, and Warren Creek itself provides an abundance of water both for mining purposes and potential power supply.

The main timber growths along the upper slopes are spruce, some tamarac, pine and balsam-these are classed as "non-commercial". The undergrowth, which is light consists of blueberry and vine maple.

Rock exposures at the main showing are limited to a few short drifts and several open cuts partly caved, as well as two bare rock bluffs. The surrounding area is covered by old rock slides at the lower regions and in the draws, while, at higher elevations, exposures amount to approximately 20% of the area. The upper tunnel appears to have turned too far into the footwall in an attempt to

intersect mineralization, and thus failed to develop any ore.

(b) Climate

The climate of the Warren Creek area is relatively dry with an annual precipitation of approximately 18". The valley itself receives 80 inches of snow annually, while, at the upper reaches, the freezing level drops down to 7000 ft. elevation in July. A few small glaciers still persist. Generally, the Rocky Mountain Trench is typical range country.

STRATIGRAPHY and PETROGRAPHY

This area is situated within the Purcell Range which consists of sediments of the Precambrian age. The sediments, which are separated by a marked unconformity belong to the Upper Purcell and Windermere Series. The series lying between the Bobbie Burns Creek and the Bugaboo Creek plunges to the north beneath the Windermere Series.

The typical rock of this area is a magnesian limestone, quartzite, slate, belonging to the Mt. Nelson formation, and having a thickness of some 3000 feet. The weathered surfaces are a rusty brown, the fresh surfaces are multi-colored. Many variations and alterations of the typical rock exist - slight to extreme varieties, with crushing, shearing and folding very evident.

The slates are mostly grey and fine-grained to massive.

The conglomerate is made up of angular fragments of limestone, quartzite, and slate in a calcareous or siliceous matrix.

The Greenstone dykes, quite common are altered chlorite schists - possibly Pre-Cambrian.

GEOLOGY

The mineralization at the Warren Creek copper showings is carried in a siliceous, light colored, medium grained rock of a fissured zone approximately 40 feet wide. The chalcopyrite occurs as a massive deposition along the footwall side adjacent to sheared siliceous limestones, slates, and sericite schists.

The best showing of ore is at the upper tunnel workings where a brand of ore consisting of massive chalcopyrite in a siliceous matrix is exposed. The width of this mineralization varies from 16 inches to 2 feet on two distinct veins. The assay results of a sample taken at a point 30 feet west of the tunnel is as follows: Cu-11.5%, Ag-Tr, over a width of 2 feet, and Cu-3.8%, Ag-0.4 over a width of 18 inches. A sample taken just above the tunnel on an extension of No. 1 vein assayed Cu-5.5%, Ag-1.1 over a width of 2 feet. The predominating strike of the structure is 295°, and the dip is 68° southerly. The siliceous zone is bounded by dark grey slates and siliceous limestones.

The tunnel itself was started just north of the mineralized veins and it appears to have turned too far into the footwall to develop any ore.

Another showing 80 feet westerly exposes a vein approximately 24 inches wide. Here the chalcopyrite is more spotty than massive, abundant quartz, with darker inclusions of sheared slates assaying Cu-5.1%, Ag-Tr, over a width of 24 inches. To the north, and for a distance of 5 feet, is the siliceous zone showing some pyritization, but no visible chalcopyrite. To the south is a 2 foot zone of sheared black slates and limestone, abundant calcite, pyrite, and malachite in fine fissures. Further south is exposed 30 feet of a highly sheared, slightly pyritized, siliceous zone with a few seams of malachite. These seams appear at the face of No. 2 tunnel and are not continuous. The vein itself at this exposure is a continuation of those appearing at the upper tunnel; and they are contained in the same siliceous zone. The sheared slates continue southerly for some distance and contains no mineralization.

A small open cut 30 feet below the showing described, reveals a similar condition, i.e. a highly siliceous vein approximately 24 inches wide, slightly sheared and carrying abundant pyrite, disseminated to massive chalcopyrite with a predominating strike of 97° with a dip of 73° southerly, and as shown on the survey plot, this vein is a direct

continuation of the vein of No. 2 showing. It also is in the same silicified zone. Average assay results over a 24 inch width show: Cu-5.1%, Ag-Tr.

A 25 foot trench No. 4 showing at A10 is 15 feet below No. 3 showing and although partly caved, was cut in the siliceous zone, and reveals a sheared quartz porphry interspersed with sheared limestone and contains abundant disseminated pyrite throughout. The vein containing higher grade chalcopyrite was not exposed at this horizon, which may seem to indicate a discontinuity.

The 30 foot open cut between A 10 and A11 was driven on the strike of the better No. 3 showings some 40 feet easterly. This cut revealed a 4 foot width of siliceous quartz porphyry containing some pyrite. No other mineralization was observed. To the south of this zone is a narrow band of sericite schist followed by a 4 foot width of sheared slates. Minor chalcopyrite was noticed adjacent to the band of slates, but overburden prevented any further inspection.

At A11 + 42 feet (approximately 50 feet west of the 30 foot open cut) a vein 18 inches of well mineralized quartz again appears, striking at 125° and dipping 73° south.

This vein averages: 5.3 Cu, 0.5 Ag and is bounded on the north by a band of slates, and on the south by a narrow 6 inch sheared dyke followed by highly siliceous alteration rocks, characteristic of this zone.

Contuinuing westerly for 25 feet to a point A12 + 20 feet, a trench shows 6 feet of highly siliceous altered rocks with fine disseminated pyrite and some blebs of chalcopyrite in a very irregular mass. This 6 foot width is broken by a light colored, fine grained barren greenstone dyke. Strong shearing and faulting is evident in the adjacent quartz-sericite schists. There appears to be a change of strike to a more northerly direction here, but, this is only local.

Brief mention will be made of several mineralized occurrences in this area. Large blocks of float with fair chalcopyrite mineralization were picked up intermittently in the creek and slide approximately 1200 feet to the north of the main showing, and higher in elevation than the main tunnel. This strongly indicates another mineralized zone or vein, however brief reconnaisance failed to reveal any new outcrops.

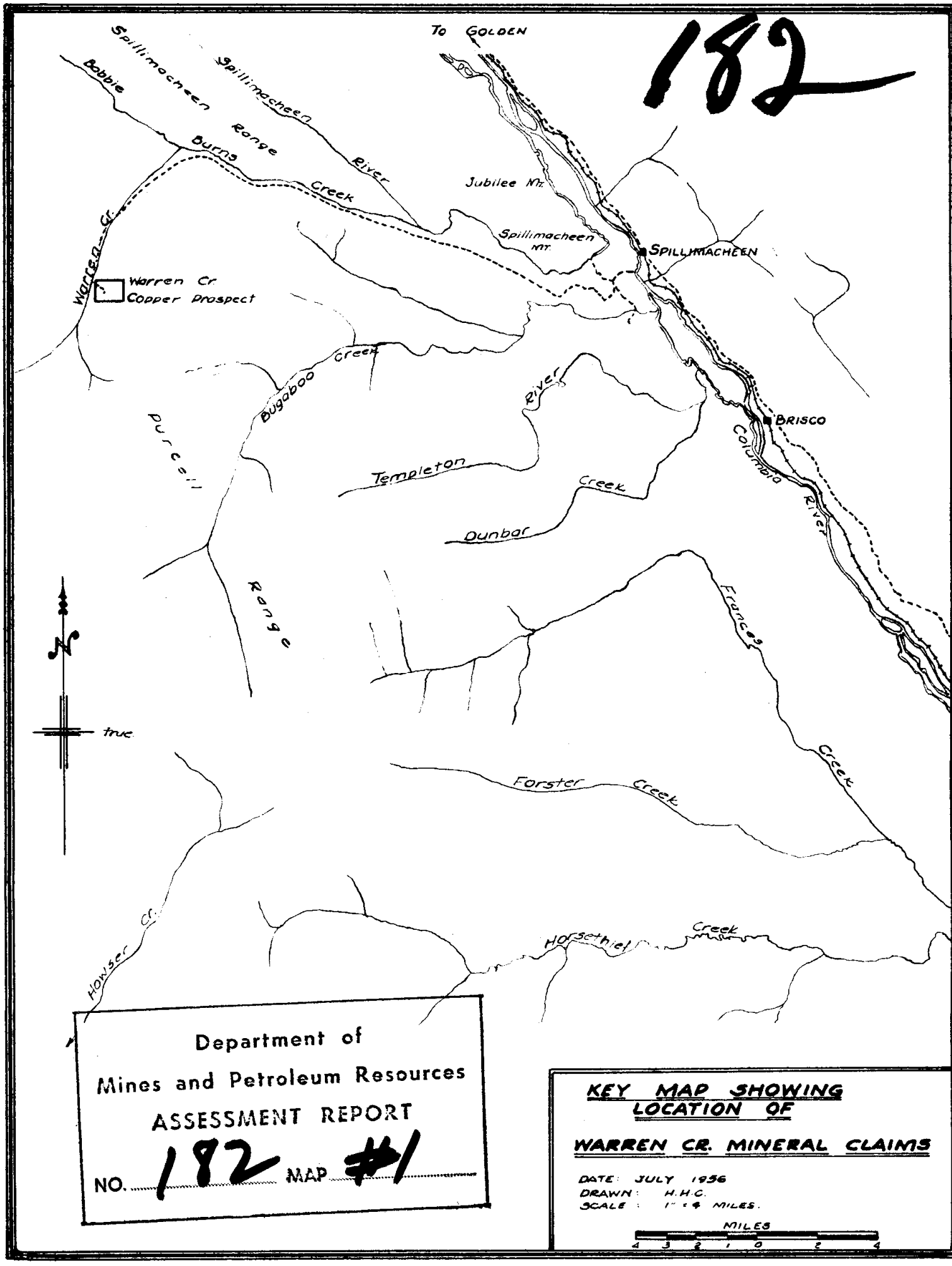
The writer is advised by H. Sykes of several

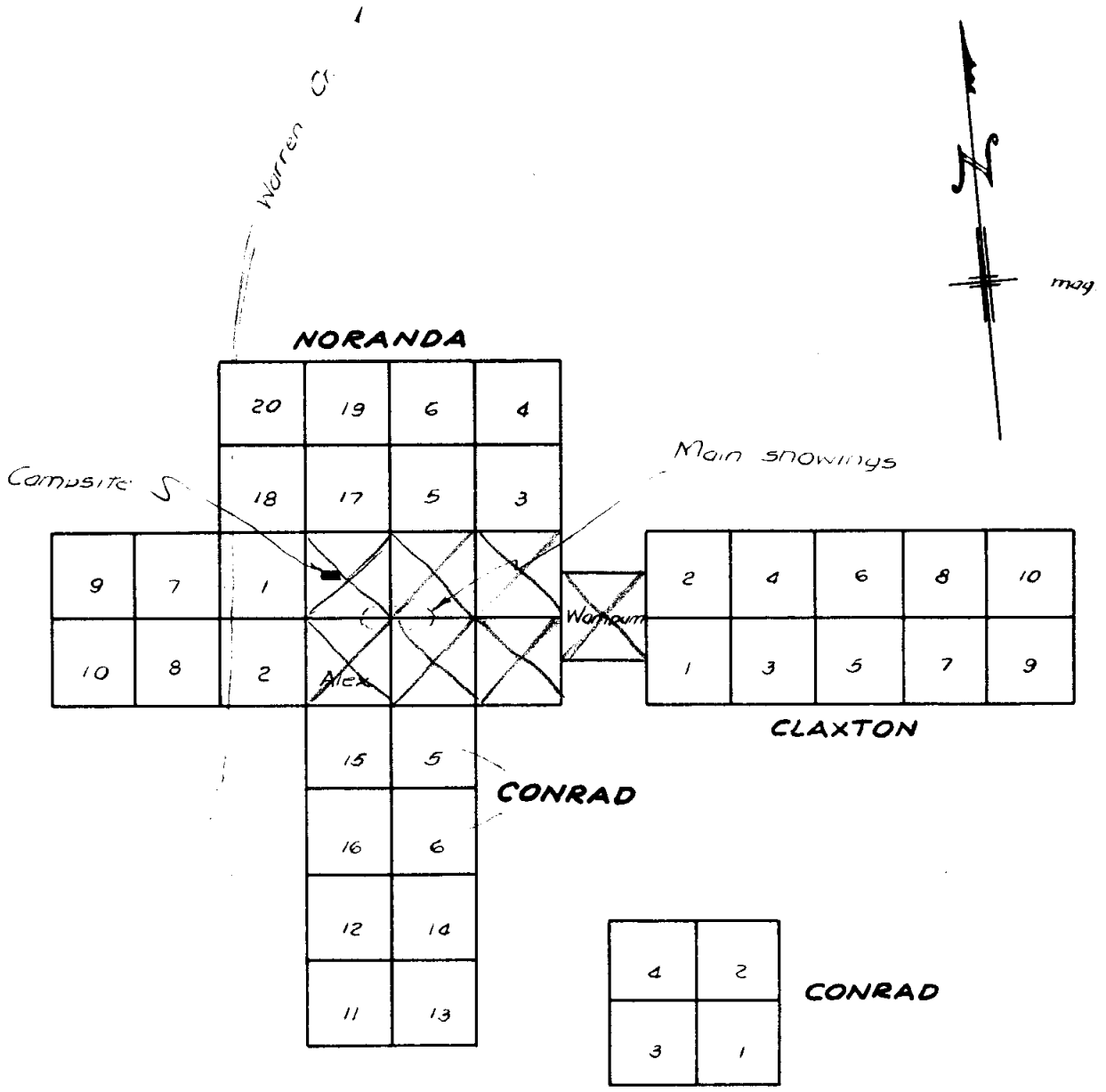
well mineralized showings at the upper reaches of Warren Creek, (northerly) and also showings almost 1½ miles south-westerly. This ground was, at the time, covered by late snows, and was not visible for inspection.

Minor pods of chalcopyrite occur rather inconsistently at the lower tunnel,120 feet west of No. 7 showing. Here the rock exposed is chiefly siliceous chloritic schists, some sericite and minor quantities of tourmaline accessory mineral. The area shows a high degree of brecciation and cross fracturing especially in the dark grey slates.

A series of small pits, partly caved, along the westerly strike of this zone exposes quartz-chlorite schists with abundant pyrites. These schists have a consistent strike of 100° and dip of 90°southerly. The quartz included is in an altered state.

LIST OF ILLUSTRATIONS


182
To GOLDEN
Spillimacheen
Spillimacheen River
Range
Bobbie Burns Creek
Warren Cr.
Jubilee Mt.
Spillimacheen Mt.
SPILLIMACHEEN
Warren Cr
Copper Prospect
Bugaboo Creek
Purcell
Templeton Creek
River
BRISCO
Columbia River
Dunbar Creek
Range
France Creek
true
Forster Creek
Howser Cr.
Horsethief Creek
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 182 MAP #1
KEY MAP SHOWING
LOCATION OF
WARREN CR. MINERAL CLAIMS
DATE: JULY 1956
DRAWN: H.H.C.
SCALE: 1" = 4 MILES.
MILES
4 3 2 1 0 2 4



Department of
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ASSESSMENT REPORT
NO. 182 MAP #2

WARREN CREEK MINERAL CLAIMS

WARREN CR. B.C.

Date July 1956

Scale: NONE
Drawn: H H C

N

mag

To I.P. Bl.4425
790'.

A16 A15 A14 A13 A12 A11 A10 A9 A8 A7 A6 A1 A2

Lower tunnel
№ 8 showing

№ 7 № 6 № 5 showing

Sheared shales

№ 4 № 3

Sample 3
Width 18"
Cu 3.8 %
Ag 0.4 %

Sample 2
Width 2'-0"
Cu 5.5 %
Ag 1.1 %

Sample 1
Width 2'-0"
Cu 11.5 %
Ag Tr

Overburden

highly sheared some py

№ 2 tunnel

Upper tunnel (№1 showing)

Sample 4
Width 2'-0"
Cu 5.1 %
Ag Tr

Overburden

Sheared

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LEGEND —.

5 MASSIVE CHALCOPYRITE IN SIL. RX.
4 DISSEM. MIN. (CHALCO OR PY)
3 SLATES & LIMESTONE
2 DYKES
1 SILICEOUS RX. - QTZ.

182
MAP 3

SKETCH OF
MAIN SHOWINGS AT
WARREN CREEK MINERAL CLAIMS
WARREN CR. B.C.

DATE JULY 1956 SCALE 1" = 40'
DRAWN H.H.C