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MAPS AND SECTIONS:

Section X - X₁

Geology of Spotted Fawn Canyon in Little Twelve Mile
River Valley

Geology of Upper Part of Little Twelve Mile River

THE YUKON CONSOLIDATED GOLD CORPORATION, LIMITED

WORK COMPLETED ON SNOW CLAIM GROUP
AND CROWN GRANTED CLAIMS GALENA FARM AND MELVILLE
IN THE DAWSON MINING DIVISION DURING 1962

LOCATION:

The group consists of eleven unsurveyed mineral claims and two surveyed, crown granted mineral claims, along the course of Spotted Fawn Creek, which empties into the head of the Little Twelve-mile River in the Ogilvie Mountains. This is within the boundaries of the Dawson Mining Division, at a latitude of about 64 22N and a longitude of about 138 40W. Dawson City is 32 miles to the south-west.

ACCESS:

The most convenient access to the property is by helicopter, chartered in Dawson City. By this means the property may be reached in about 30 minutes. Trails to the property existed 45 years ago. These are now largely overgrown and disused, but could be rehabilitated without much expense. The property lies only 8 miles west of the recently constructed Fort McPherson Highway.

OWNERSHIP:

The Snow mineral claims, Nos. 1 - 11, are registered in the name of "Brian W. Hester, in trust". The two Crown granted claims, Galena Farm and Melville, are in the name of The Yukon Consolidated Gold Corporation, Limited. Work was conducted on these thirteen claims and on the area immediately surrounding them. At the time the work was completed there were no other claims staked or held in the area.

PREVIOUS WORK:

There is little evidence of further work being completed on the claim area since the report by W. E. Cockfield, entitled "The silver-lead deposits of the Twelvemile area, Yukon" in Summary Report of the Geological Survey, 1918, Part B. The principal showing of mineralization examined by Cockfield lies on the Snow No. 1 claim. A short adit has been crosscut through the veins he describes.

The general geology of the area was mapped in 1961 by Green and Roddick, G.S.C. Paper 62-7, "Dawson, Nash and Larsen Creek map areas, Yukon Territory", 1962. Claims have been staked at several periods in the area since Cockfield's visit, but no work appears to have been carried out on them.

PRESENT WORK:

A geological study was carried out to investigate the structural control of the known mineralization and prospect for further occurrences. One such occurrence is mentioned briefly by Cockfield. A study of the aerial photographs of the area was made in the office. Two men were employed in the field for 28 days. During the course of this time the Snow group of claims was staked.

Silver bearing galena veins are associated with faulting parallel to Spotted Fawn Creek. Towards the head of the creek, the character of the mineralization changes from silver bearing galena to an assemblage of sphalerite-chalcopryrite-arsenopyrite with minor gold values.

What appears to be a large gossan with fragments of galena and lead oxidation minerals was found 3,000 feet upstream from the adit. Low silver values were obtained from this material. The outcrop was partly covered with snow, so the occurrence could not be investigated fully. Further sampling and trenching is to be done during 1963.

GENERAL GEOLOGY:

According to Roddick and Green, the series of quartzites and silicicous sediments, which underlies much of the claim area, occupies the same stratigraphic position as the quartzites in which lead-silver mineralization occurs at Keno and Galena Hills in the Mayo area. The quartzites strike westerly and dip southwards for the greater part of their known outcrop length. In the area of the claims, however, they swing sharply southwards to intersect the Tintina Valley structure twenty miles to the south. The dominant structure in the immediate area is, therefore, synclinal with southeasterly plunge.

One of the several small plugs of syenite which occur in this part of the Ogilvie Mountains lies at the head of Spotted Fawn Creek, where it forms the core of Tombstone Mountain. This prominent peak is one of the highest in the Ogilvie Mountains.

Exposure of bedrock in the area is generally very good. Numerous cliffs occur in the steeper ground. Rock on most of the hillsides has been disturbed by frost heaving, so orientations are hard to determine. Spotted Fawn Creek is incised into bedrock along much of its course. The floor of the valley is covered with a veneer of glacial debris and is devoid of outcrop.

GEOLOGY OF THE CLAIM GROUP:

The larger part of the claim group is underlain by quartzites and silicicous phyllitic rocks of pre-middle Jurassic age. These strike northeastwards and dip southeasterly at forty-five degrees and steeper. Excellent exposures indicate overturning on both minor and major scale to be important. Lack of suitable marker horizons does not allow a complete interpretation of this folding. Further work might show a red slate horizon within the quartzite band to be sufficiently extensively developed to fill

GEOLOGY OF CLAIM GROUP (Cont'd.):

this role. A number of small bodies of diabase intrude the quartzite. Some are irregular in form, while others, such as the one in which the mineralization occurs, on which the adit has been driven, are dykes about 200 feet wide.

A circular intrusive of intermediate rocks about two miles in diameter lies at the head of Spotted Fawn Creek. It lies entirely within the quartzites, which are $2\frac{1}{2}$ miles wide at outcrop. The rocks display a wide variety of textures and composition, but can be classified generally as syenites. Large feldspars have developed in the sediments within the aureole of metamorphism around this intrusive. The intrusive appears to be one of a line of similar rocks which occurs in this part of the Ogilvie Mountains and extends southeastwards towards Mayo.

The claim group lies over a series of northeast striking shears with which mineralization is associated. At the head of Spotted Fawn Creek these shears are exposed where they cut the syenite intrusive. The fractures dip northwesterly at steep angles and are weakly mineralized with copper, zinc, and iron sulphides. No other faulting of importance was noted.

MINERALIZATION:

Several veins and stringers of calcite, with more or less argentiferous galena, were described by Cockfield from the vicinity of the old adit. The galena samples taken by Cockfield showed a fairly uniform silver to lead ratio of roughly three ounces of silver to two percent lead. During the present work a number of samples were taken, the locations of which are shown on the attached maps, and which substantiated the results obtained by Cockfield. The veins around and in the adit are up to twelve inches wide, but are all lenticular and of no apparent economic significance. They are probably of tensional origin and related to movement along the contact of the diabase dyke, close to which they occur.

MINERALIZATION (Cont'd.):

Cockfield mentioned briefly an occurrence of galena further upstream in the Spotted Fawn Creek valley, but he did not give the precise location. Prospecting has located an extensive gossan area which may be the one referred to by Cockfield. Within it, glacial till and galena bearing vein fragments are cemented with limonite. A sample of this material assayed 4.76 ounces silver per ton and 5.4% lead. Very little galena was visible and it is supposed that oxidation minerals are responsible for most of these values. Trenching this occurrence of gossan in a search for the vein is very difficult. Although the till is probably not more than three feet thick, it is composed mostly of large flags in frozen soil. No sign of the outcrop of the vein responsible for the gossan could be found, and it is supposed that it must strike roughly parallel to the creek and lie on the left bank.

Finely disseminated pyrrhotite occurs extensively in some of the quartzite horizons. Extensive gossans are associated with these occurrences. A number in the general area of the claim group were prospected and found to be caused by this type of mineralization. Several days were also spent on an investigation of a number of very large gossan areas in the Tombstone River valley, which lies north of Tombstone Mountain. All were found to be due to this same cause.

On the height of land between the head of Spotted Fawn Creek and Tombstone River, just outside the claim group, a zone of mineralized veins about one hundred feet wide was investigated. These veins all strike northeastwards, parallel to the continuation of the Spotted Fawn Valley. Veins up to one foot wide occur, but the majority are much narrower. Vein filling consists of chalcopyrite, arsenopyrite, sphalerite and pyrite. Several grab samples were taken. Values obtained are shown on the maps enclosed with this report. None is considered of any economic merit, although it is interesting to note the low gold assay obtained from one sample. Gold

MINERALIZATION (Cont'd.):

mineralization is very rare in the rocks of the Ogilvie Mountains.

RECOMMENDATIONS:

Further sampling of the gossan area should be carried out in the 1963 season and, if encouraging, the location of the vein be sought by either geophysical means or short diamond drill holes.

B. W. Hester

B. W. Hester,
Registered Professional Engineer
in the Yukon Territory and Ontario

BWH:rw

DAWSON, Y. T.
AUGUST 13TH, 1963.

STATEMENT OF QUALIFICATIONS

The work described in this report was conducted
under my supervision by:

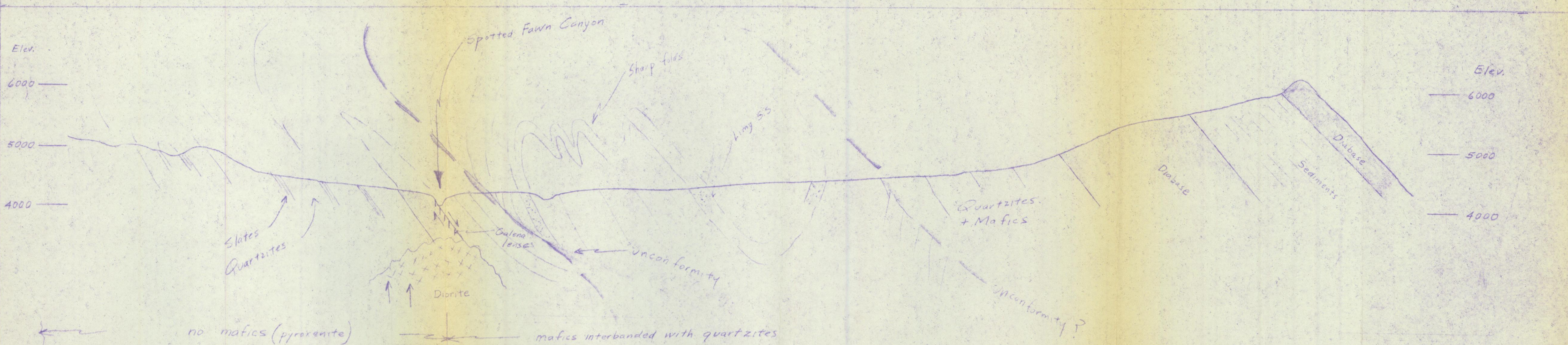
Murray A. Nichol, Graduate in Geology
from the University
of Saskatchewan.

Wilfred M. Parker, Graduate in Geology
from the University
of New Brunswick.

I am a graduate in Mining Geology from the
Royal School of Mines, London, and a Registered Professional
Engineer in the Yukon Territory and Ontario.

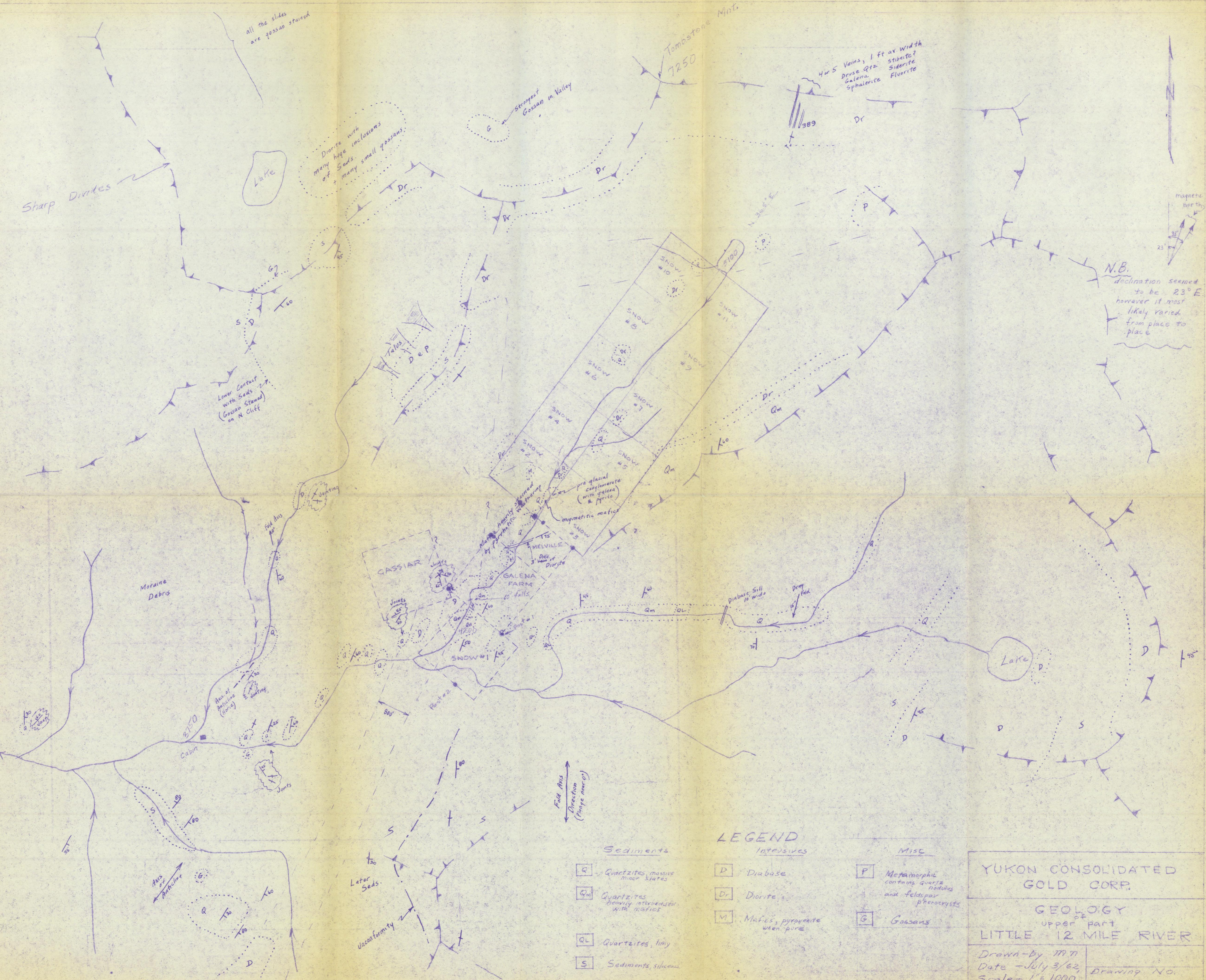


Brian W. Hester



Scale 1" = 1000' (Vert. & Horiz)

Y. C. G. C. Dawson Y.T.	
SECTION X-X ₁	
Drawn by m.n.	Drawing No.



all the slides are gossan stained

Tomastone Mnt.
7250

4 or 5 Veins, 1 ft av. width
Druse Qtz
Galena
Sphalerite
Fluorite

Diorite with many huge inclusions of Seds. & many small gossans.

Sharp Divides

Lower Contact with Seds (Gossan Stained) on N. Cliff

Moraine Debris

CASSIAR

GALENA FARM

MELVILLE

Cabin

Lake

N.B. declination seemed to be 23° E. however it most likely varied from place to place

LEGEND

- | | | |
|---|--------------------------------|--|
| Sediments | Intrusives | Misc |
| Q Quartzites, massive | D Diabase | P Metamorphic contains quartz nodules and feldspar phenocrysts |
| Qm Quartzites heavily interbedded with mafics | Dr Diorite | G Gossans |
| QL Quartzites, limy | M Mafics, pyroxenite when pure | |
| S Sediments, siliceous | | |

YUKON CONSOLIDATED GOLD CORP.
GEOLOGY
 upper part
LITTLE 12 MILE RIVER
 Drawn by M.N.
 Date - July 3/62
 Scale - 1" = 1000
 Drawing No.

