

C E R T I F I C A T E

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I, Jack A. Milliean, Professional Engineer,  
of the City of Grand Forks in the Province of British  
Columbia do hereby certify:

1. I am a registered Professional Engineer in the  
Province of British Columbia, and my address is  
Box 720, Grand Forks, B.C.

2. I attended the University of British Columbia for  
one year and Queen's University, Kingston, Ontario for  
three years.

3. I have had some fifteen years professional  
experience in mines in British Columbia and other parts  
of Canada.

4. My report on Mineral Claims Chip #1 and Chip #2  
dated September 8, 1959, is based upon personal examination  
of the property in September 1959.

5. I have no personal interest, direct or indirect,  
in the property covered by the said report, nor do I expect  
to receive any.

DATED at Grand Forks, B.C.

this 8th day of September, 1959.

*J. A. Milliean*

**GEOLOGICAL REPORT ON  
MINING CLAIMS CHIP #1 & CHIP #2**

**PART OF OLD  
KENMALLAN MOLYBDENITE PROPERTY  
NEAR WESTWOLD 50 119 SW  
KAMLOOPS AREA, B. C.**

**Holder of Claims - Mr. P. Gouthro**

**Dates of Work - Sept. 4 and 5, 1959.**

**by**

**Jack A. Millioan, P.Eng.**

**Grand Forks, B.C.**

**September 8, 1959**

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Geological Report on  
Mining Claims Chip #1 and Chip #2  
Part of old Kennallan Molybdenite Property  
near Westwold, Kamloops Area, British Columbia.

Mining Claims Chip #1 and Chip #2 were examined by the writer in September, 1959. These claims comprise part of what was previously known as the "Kennallan Molybdenite Property", <sup>(1)</sup> and lie approximately 3.5 miles south-west of the village of Westwold, which is 36 miles east of Kamloops on the Kamloops-Vernon highway No.97W. The property can be reached by driving 3.5 miles south-west from Westwold on the Douglas Lake Road and then approximately a mile north-west on an old logging road.

Most of the workings are on the top of a long ridge running approximately north and south and rising from 50 feet to 100 feet above the gulleys on either side. The ridge and surrounding country are openly wooded with ample timber for mining purposes. There is a slough (dry in September) to the east of the ridge and a creek to the north. Local information indicates that there is a sufficient water supply.

SUMMARY

This deposit appears to consist of 4 zones which vary in width from 4 feet to 40 feet and cover a total width of over 400 feet. The westerly zone (no. 1) has been exposed by workings for a length of approximately 1,200 feet and No. 4 zone for about 200 feet. Samples taken by government engineers assayed as high as 3.61% molybdenite and "several excavations have been made from which 50 to 75 tons of <sup>(2)</sup> 1 to 2 per cent ore has been taken".

## RECOMMENDATIONS

It is recommended that this property be drilled by one or both of two methods:

1. diamond drill - for structure and sampling
2. churn drill - 3" to 4" diameter - to obtain a larger cross-section for sampling.

## GEOLOGY (see figure 3)

"The Kenallan is a high-temperature replacement deposit in which the original lime and argillaceous sediments have been replaced by lime-silicate minerals and by molybdenite. The molybdenite occurs as a minor constituent in beds of lime-silicate rock."<sup>(1)</sup>

Although B.C. Department of Mines Bulletin No. 9 "Molybdenum Deposits of British Columbia" by John S. Stevenson mentions only two mineralized zones, the Report of the Minister of Mines (B.C.) 1915 and Federal Mines Branch Report 592 "Molybdenum" by Eardley-Wilmot indicate that there are four well defined ore zones extending over a width of 400 to 500 feet.

Generally the hanging wall appears to be crystalline limestone underlain by an ore-zone of altered lime-silicates and skarn. The skarn consists of garnet and epidote and, under ultra-violet light, tungsten was indicated. The footwall consists of greenish diabase and granite which is well mineralized in places with both flakes and lumps of molybdenite. The granite in the northern part of the area shown on the map (Figure 3) is pegmatized in places. Also in the northern part of the map area the sediments have been intruded by diorite sills which pre-date the lime-silicate alteration.

Generally the ore-zone appears to strike north and south and dips  $45^{\circ}$  to the west. The individual beds within the ore-zone vary in width from a few inches to about four feet but in the immediate area of the underhand stope (shown on Figure 3) the ore-zone appears to be over 40 feet wide. The ore-zone is mineralized with lumps and disseminated flakes of molybdenite (1% to 2%) and a minor amount of chalcopyrite. Most of the dumps contained appreciable amount of molybdenite, to such an extent that it was considered that a sample for assay could be taken to show anything from 0 to 50%  $\text{MoS}_2$ . Bulk sampling appears to be the only way of obtaining conclusive assays in this case.

The ore-zone can be traced in the workings from a pit 200 feet north of Chip #1 Initial post north for over 1,200 feet.

The geology and details of the workings of the Kennallan Property are given in Bulletin No. 9, Molybdenum Deposits of British Columbia by John S. Stevenson, 1940, B.C. Department of Mines.

#### CONCLUSION

This is a promising looking property and deserves more development.

It now consists of the following ten claims:

1. Chip #1 and Chip #2 which cover practically all the workings examined by the writer.
2. Claims GUS 1, 2, 3, and 4 extending 3,000 feet south of Chip 1 and 2 (see Figure 1).
3. Claims GUS 5, 6, 7, and 8 extending 3,000 feet north of Chip 1 and 2 (see Figure 1).

It is recommended that a series of holes be diamond drilled as follows (see Figure 2):

1. to be collared 100 feet west of the main line of workings and drilled east at an angle of  $45^{\circ}$ . No. 1 ore-zone should be encountered at 70 feet and No. 4 at approximately 350 feet.
2. Most of the holes could be drilled as far as No. 1 ore-zone with alternate holes drilled to No. 4 zone or approximately 400 feet if necessary.

Assuming that all the holes encountered ore, mining could commence in the gulley to the west. A cross-cut adit could be driven to the footwall of No. 1 ore zone and a raise driven along the footwall to the surface. The ore would then be benched to the hanging wall resulting in the following advantages:

1. gravity delivery of ore to the haulage level
2. natural ventilation (sunshine mining).

If work on this property does proceed to the mining stage the following is suggested:

1. House and feed the crew in Westvold or Falkland to eliminate the time and money wasted in a camp.
2. Use a small portable mill which can be moved when the mine is worked out or becomes unprofitable.

**Footnotes and Bibliography:**

- (1) "Molybdenum Deposits of British Columbia" by John S. Stevenson  
Bulletin No. 9, B.C. Department of Mines, 1940.
- (2) Excerpt from Federal Mines Branch Report 592 "Molybdenum"  
by Eardley-Wilmet.
- (3) Report of the Minister of Mines (B.C.) 1915 -  
Pages 217-219.



**Jack A. Milliean, P.Eng.**

**September 8, 1959.**



Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 282-MAP

N O R T H

GUS 7 Tag 366770	GUS 8 Tag 366767
GUS 6 Tag 366768	GUS 5 Tag 366767
Record No. 30749 CHIP #2 Tag 286723	Record No. 30748 CHIP #1 Tag 286722
GUS 1 Tag 366763	GUS 2 Tag 366764
GUS 3 Tag 366765	GUS 4 Tag 366766

W E S T

E A S T

S O U T H

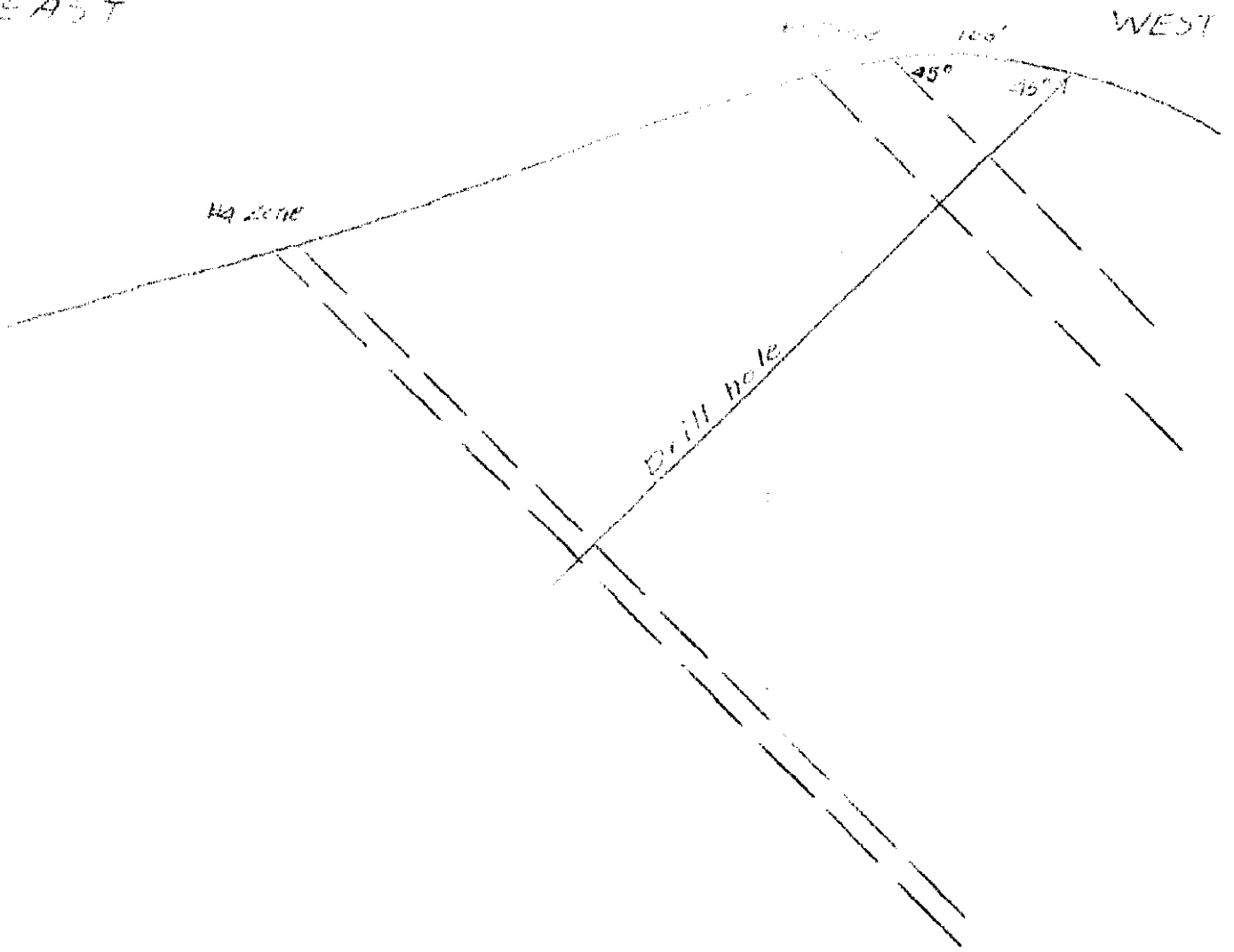
SCALE 1"=1000'

Chip #1 and #2 staked by Pat Gauthro Oct. 1958  
GUS 1 to 8 (incl) staked by A.F.H. Mills (license 65876) 5 Sept. 1959

SKETCH OF CLAIMS

EAST

WEST



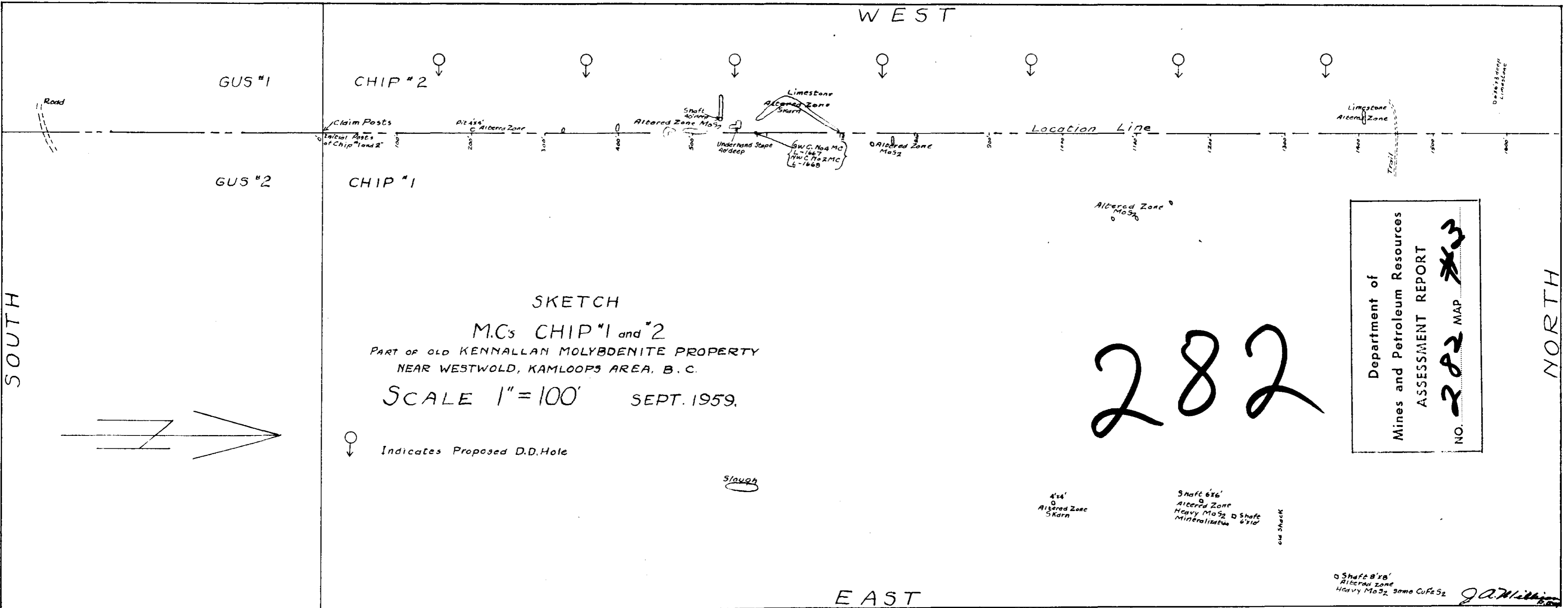
IDEAL CROSS-SECTION

SCALE 1"=100'

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ASSESSMENT REPORT	
NO. 282	MAP #2

FIG. 3

WEST

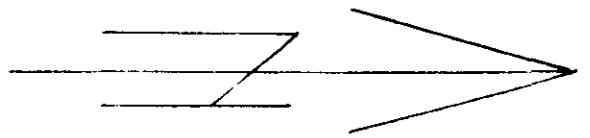


SKETCH  
 M.C's CHIP #1 and #2  
 PART OF OLD KENALLAN MOLYBDENITE PROPERTY  
 NEAR WESTWOLD, KAMLOOPS AREA, B.C.  
 SCALE 1" = 100' SEPT. 1959.

⊙ Indicates Proposed D.D.Hole

Department of  
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 ASSESSMENT REPORT  
 NO. 282 MAP #3

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EAST

⊙ Shaft 8'x8'  
 Altered Zone  
 Heavy MoS2 some CuFeS2  
 J.A. Williams