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NOTES ON THE OCCURRENCE OF SCHEELITE AT HATCHES CREEK AND WAUCHOPE  
WOLFRAM FIELDS

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by

C.L. Knight

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NOTES ON THE OCCURRENCE OF SCHEELITE AT HATCHES CREEK  
AND VAUCHOPE WOLFRAM FIELDS.

Report No. 1943/36.

A Mineralight examination of scheelite occurrences at Hatches Creek and Vauchope was carried out by Mr. C. J. Sullivan and myself.

Hatches Creek Field: The Pioneer reefs contain noteworthy amounts of scheelite. At the Scheelite Show specimens of <sup>carrying scheelite</sup> quartz can be picked up on the outcrop. The Hit and Miss reef and the Treasure reef where exposed in the workings carry only minor amounts.

At the Pioneer Mine -

1. The scheelite occurs only in the quartz reefs - not in the country rock.
2. The scheelite - wolfram ratio is greater than 1.
3. The bulk of it occurs in coarse crystallizations.
4. A considerable amount of the scheelite occurs as a partial replacement of wolfram.

A common occurrence of the scheelite is <sup>as</sup> a replacement of wolfram along cleavages, fractures and crystal boundaries and all gradations from incipient replacement to blade-shaped pseudomorphs were noted.

Apart from obvious replacements of wolfram there are irregular lumps from a fraction of a square inch up to 30 square inches in cross-section which show no obvious wolfram origin although wolfram is frequently enclosed within the masses.

No octahedral crystals of scheelite were observed.

Mr. C. J. Sullivan's sampling of the Pioneer reefs gave lower  $WO_3$  values for the 135 ft. <sup>and 140 ft.</sup> levels than for the 88 ft. levels in both No. 1 and No. 2 reefs. He considered the possibility of secondary enrichment resulting from deposition of secondary scheelite above the primary sulphide zone, i.e. above the 135 ft. levels.

To test this we carried out a quantitative estimation of the amount of scheelite in the main shoot of the No. 2 reef at the 88 ft. and 135 ft. levels. Direct measurements of the areas of scheelite were made, or estimations of areas were made by comparison with a standard square inch. We found it necessary to include in the scheelite count small residual areas of unreplaced wolfram.

In both levels only approximately 50 per cent. of the length of the reef, left as pillars, was available for examination.

Results, owing to inexperience in the method used, are probably only very approximate, but will serve for comparison between the two levels.

88 ft. Level, overall length reef - 207 ft.

WO<sub>3</sub> (as scheelite chiefly) - 2.5 per cent.

135 ft. Level, overall length reef - 200 ft.

WO<sub>3</sub> (as scheelite chiefly) - 2.8 per cent.

Examination of the No.1 reef did not reveal any significant difference in the scheelite content at the two levels. Although not conclusive, results suggest that the scheelite content has not decreased at the 135 ft. level.

#### Wauchope Wolfram Field:

The recent Mineralight examination did not throw much fresh light on the origin of the scheelite.

Four generalisations hold -

1. The scheelite occurs only in the quartz reefs - not in the country rock.
2. The ratio of scheelite to wolfram is small.
3. Most of the scheelite occurs as thin, glossy, crystalline encrustations on the walls of cavities, fractures etc.
4. The scheelite is invariably associated with wolfram (though wolfram does not always have associated scheelite) but the films may extend outwards into the surrounding quartz for several inches.

An examination of the mill in operation and of the tailings dumps confirmed the suspicion that scheelite was being lost in milling. In the jig tailings the scheelite is for the most part attached as films to quartz etc. The amount of scheelite in the tails could not be gauged by inspection and Mr. Sullivan will be going into this matter more fully.

*C. L. Knight*

(C. L. Knight)  
GEOLOGIST.