



Bergvesenet

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Rapportarkivet

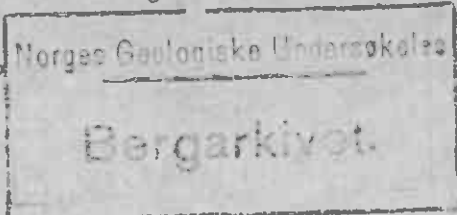
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REPORT

on

Ørsdalen Wolfram and Molybdenum Mines.

The Mining Journal has in March brought news about wolfram in Portugal and even Norway. The later country might perhaps be of some interests, why the writer of the present article will give only some informations and no details. I have for years back and with several intervals have the favour and honor to visit the mines reporting on them.

Situation:

The deposits are situated on the farm Hovland's ground in the mountain Gudlen in Ørsdalen in the district of Bjerkreim, Rogaland County.

Roads and Transport:

The nearest railway station is Klungland on the Flekkefjord-Stavanger line, 11 km. from Egersund, 65 km. to Flekkefjord and 87 km. to Stavanger. The distance from Klungland to Odlandsstø at the lower end of the Ørsdals lake is 14 km. and to here is a good driving road for automobiles. Across the lake, a distance of 17 km. there is a boat three times in the week in connection with the automobile traffic. At Vasbø on the other side of the Ørsdal lake where the telephone station is, there is a good driving road. From Vasbø it is 5 km. to Hovland and further a km. to the foot of the Gudlen mountain where a foot-path leads to the mines through a very steep and inaccessible part of the mountain. It takes about 2 1/2 hours to get up although the distance in a straight line from the valley measured by an old ropeway is not more than 2,2 km. The whole distance from Klungland to the foot of the mountain, where the mine is situated will thus not be more than 37 km. Adding the distance up the mountain, the total length will be about 39,2 km, and as compared with our other molybdenum mines, for instance Knaben this must be said to be favourable.

The height above the bottom of the valley calculated from the foot of the mountain, where the small brook is running, is 570 m. The valley is about 70 m. above the Ørsdal lake and which is about 70 m. above sea level. The total height will thus be about 650-700 m. above sea level, according to barometer measurements by me.

Height, climate, vegetation etc:

The bottom of the valley rises gradually upwards and it is wide to start with, but narrows considerably at Gudlen on its south eastern side where however there are still sites for constructions.

The mountain rise here almost perpendicular. There is not much forest in the valley, not even sufficient to meet the requirements of the population. Owing to the stoney and shallow soil the farming does not yield more than barely enough for the population. The climate is also very hard and windy. The mines are situated up on the very mountain and are exposed to all sorts of weather and wind and operating should be planned in such a way that work in open cast, as hitherto been the case, should be avoided as much as possible. I wish already here to mention my idea, namely, that future operating should be started in the valley and from there upwards and attacking at a height of about 200-300 m. The men told me, that ore has been found at the surface a little above the gravel-take in the slope of the mountain at this height. Because of lack of maps I am not able to state anything definite, and the first thing which will have to be done is to survey here and at the deposits.

Geology:

At the Örsdal lake and up through the Örsdal valley the mountain sides are very precipitous and rise from 650 to 700 m. The rock in the lower part of the valley and at the lake is norite or labrador rock and regular stratified gneiss. Further up in the valley it shows a distinct form as benches, gets foliated and has in some places a flat fall whereupon the gneiss layers become steeper and steeper and finally the layers are vertical. Up in the Sigdalknuden the main rock is a granite containing microperthitic feldspar, quartz and rhombic pyroxene which is called "Birkremite" according to professor Kolderup. Other kinds of rock to be mentioned are: ordinary granite, gneiss, or perhaps gneiss-granite, mica schist, schistous dark rock, mainly hornblende with garnet and above all quartz veins. We are meeting these rocks in alternating layers. When we meet the coarse crystalline pegmatite vein deposit or vein with prevalent quartz in the Birkremite, then the wolfram ore appears either by itself or together with scheelite, if it has a strongly schistous character in cracked shape as fissures one meets chiefly scheelite and also wolfram, but on a small scale. In the last mentioned case we also meet molybdenite, but rather scarce. It is strange that it is only in this kind of rock Birkremite that the wolfram ores are met in this country and the combination wolfram-molybdenite ore. When the schistous rock is impregnated with pyrites in the Birkremite and may be seen at a distance as gossan, this is the point where we discover the scheelite. Also wolfram appears here, but only as small grains whereas in the first mentioned case it is met in parts of the veins as pure crystals in the size of a walnut, a fist and in lumps of up to 40 kg. or more which was shown me. Similar to the here mentioned schistous rocks, we have also the more prominent quartz veins, one or more together, which then perhaps principally contain wolfram ores and less of molybdenum ore. This ore zone or vein zone, if I may call it so, appears in this way in the gneiss in the upper part with a general strike in a NW-SE direction and down towards the valley along the slope with a turn due West. All material in the way of maps is entirely lacking. The length of the zone from the wolfram shaft (wolframsynken) in NW towards the precipice is about 500 m. the width from a few m. to about 20 m and perhaps to about 40 m. along the slope. It is impossible to state any figures here since the hanging wall of the zone is eroded and decomposed.

In the same zone but in SE direction there appears mainly molybdenite, and also some wolfram and scheelite have been found. The area extends in length about 400-450 m. from wolframsynken without stating any width, but I should think it is some m. wide. The molybdenite is met with in fissures along the schist and in stripes of gneiss, less as impregnations but chiefly as roses, lumps and scale-like fillings, along the fissures in the schist it also appears as rich impregnation and in the shape of scales and leaves. To the West the

molybdenite appears in a similar way and it has also been found in the lower levels of the recently mentioned big ore zone along the slope, and only to the west and north-west of same. I wish to repeat that here the molybdenite appears first and foremost together with the scheelite and some wolfram.

In the eradicated remining area down the valley and on the foot-wall where the working has now taken place, irregular greater and smaller lumps of wolfram were shown to me everywhere at the surface and also scheelite which, however, was not so prominent. I may perhaps classify the mode as irregular segregation of ore if they are not remnants of the previously stated pegmatite-quartz segregations.

In our other molybdenite deposits pneumatolytic minerals have been found and it is therefore thought that they have been formed by pneumatolytic processes during the crystallization of the magma, and the same is the case here. I should think, so much the more so as the wolfram ore is considered to be of pneumatolytic formation in the same way may as tin with which it is met as a rule although not with us.

History:

780 to 800 m.

The first mining at the top of the high mountain Gudlen was started at the end of the year of 1904 for the account of the British Molybdenite Comp. Ltd. where on several places small accumulations were found of molybdenite and wolfram. Work was stopped 1909. During this period greater constructions were made down in the valley to concentrate the ore and at the foot of the mountain in 170 to 200 m. at the same time an adit 274 m. long was driven. No particularly quantities of molybdenite or wolfram were struck. In 1907 an Elmore dressing plant was established, but work was already stopped in 1908. Some mining was also done in the mountain.

In the years 1911, 1912, 1913, 1914 and further including the year 1917 work was started by A/S. Christiania Minekompani with a modest number of men and a small production of both wolfram, scheelite and molybdenite. In 1917 the mines were taken over by a company organised under the name of Örsdalen Wolfram og Molybdängruber. At the end of 1917 a further company was formed for mining at Mjaavasknuden, namely A/S. Hovland Molybdän & Wolframgruber, but the operations lasted only a short time and the production was insignificant. The working was stopped in 1918. In the autumn of 1918 the solicister H.K. Schaanning made some investigations in the Khausi mine and Tollrvaara V. in Gudlen in the open field field of the farm Hovland in Örsdalen. The results were however all the time negative.

Output of Ore:

The stage of output is never reached. The work done by a few men during a few years was only on a very small scale. The output of these mines both of wolfram and of molybdenite, sometimes the content stating and sometimes not, will appear from the statistics and for this reason the statistics give only an idea of the output. From 1905 to 1920, during which period the operating was discontinued for several years, the statistics gives the total output of wolfram to be 30,667 kg. containing 40,58, 60 and up to 75 per cent WO₃. Mr Schaanning gives the following figures of output in his time:

1925	gross	1,450 kg.	net	1,381,5	Analysis	68,3 %	WO ₃
1930	"	883	"	756	"	55,1 %	"
1937	" about	754	"	685,4	"	51,9 %	"
	about	22022					

5,109 kg.

From the start and up to the present date there has thus been produced a total quantity of about 35,776 kg. wolfram ore. There has also of course, been some molybdenite, but the figures are

far too misleading, with respect to content, so I will not mention them here.

A/S. Det norske Bergselskap took over in 1940 the mining rights to the Orsdals deposits from the solicitor H.K. Schaanning, Egersund. It was then built power station in Høilandvassdraget of 400 kw. a compressor plant and a trial dressing plant, that however not was ready mounted. The bottom adit was driven further in to 390 m.

In the innermost part of the bottom adit and for a length of about 50 m. there was by cross-cuts proved an ore carrying part (with scheelite as the most important ore mineral) and with an ore area of about 750 m.². The average of 600 assay samples at hand showed 0,18 % WO₃. From another time before samples were taken and the assays gave approximately 1,50 % - 2,0% WO₃ with about 0,25 % MoS₂. Here the ore carrying zone is very good. As to the first mentioned part, the conditions of this mentioned ore carrying zone as well upwards as well as downwards are however all together unknown.

It will be required much detailed exploration works to get at a sufficient statement of the Orsdals deposits ore reserves. Should such works be carried out altogether satisfactorily, they will no doubt become very expensively. As to the Orsdals deposits future views nothing can therefore at the present moment be said positively.

The field is considered to be well protected by about 60 claims, kept by the State.

At a taxation the realization tax is considered to amount to in all 178900 kr. which are proposed being ~~taken over to the State's Mining Company~~ carried over to the State's Mining Company. The company is managed by the department.