



Bergvesenet

Postboks 3021, N-7441 Trondheim

Rapportarkivet

Bergvesenet rapport nr	Intern Journal nr	Internt arkiv nr	Rapport lokalisering	Gradering
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5373

Kommer fra ..arkiv
Killingdal Gruber

Ekstern rapport nr

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Tittel

Report on Rødhammer Mine

Forfatter

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Holtålen

Sør-Trøndelag

Trondheimske

17204

Røros

Fagområde

Dokument type

Forekomster (forekomst, gruvefelt, undersøkelsesfelt)

Gruveteknisk
Økonomisk

Rauhammer

Råstoffgruppe

Råstofftype

Malm/metall

Kis

Sammendrag, innholdsfortegnelse eller innholdsbeskrivelse

Salvø 19-1926

Report on Rødhovner Mine -

As requested I have paid a visit to this mine.

As for the situation of the mine, geology, ore-quantity, analysis etc., I may refer to enclosure nr. 1, which is a translated copy of technical report on the mine by Mr. Jacob Schetelig, professor in Geology at the Royal University in Oslo.

I have personally seen Mr. Schetelig and personally examined the drillcores from which I have taken samples, which will follow this report.

As the assays given in Mr. Schetelig's report only refers to Copper and Sulphur I have found it necessary to make general assays as well on the copperiferous as copperfree pyrites to make sure, that neither of the ores contains detrimental elements, which might reduce the value of the ore. The general assays are made by the Technical Highschool in Trondheim and are given in copies as enclosures 2 & 3.

Mr. Schetelig's report refers to a sketch showing horizontal plan of the deposit and crosssections through drillholes I, II & III. This sketch and these sections are shown in enclosure 4, 5, 6 & 7.

As enclosure 8 follows a map, showing the site of the mine and railroad between Oslo and Trondheim (Horsbøen).

Annual extraction.

As will be seen from Mr. Schuster's report he concludes with an actual exporture of 24.000 tons down to 35 m. along the dip. He says, however, on page 11, that the quantity undoubtedly is twice as much, and I agree with him. I consider it therefore as wrong to scheme for less than abt. 50.000 tons exporture down to 35 m. level. In the same way I would count with abt. 100.000 tons concentrates to the same level. I would not be surprised if there is even more.

By 20 m. annual extraction the mine would consequently deliver abt. 100.000 tons per annum when as well exporture, as millore is extracted. The plant therefore should be planned with this extraction in view. But as customers for such comparatively large tonnage only may be found gradually it is recommended for a start not to touch the millore and only extract the exporture at a rate of say 50.000 tons per year, thus avoiding erection of a mill.

The following scheme is based on this supposition, but the plant will admit an export of 100.000 tons without alterations, only by additional equipment.

Mine equipment.

Referring to enclosure 9 the extraction is thought effected through an incline twocompartment shaft 2 x 3,5 m. which is supposed to follow the northern boundary of the orebody. Above this shaft is another 2 x 2 shaft for ventilation and entrance to the slopes.

The stopes are arranged as overheadstopes with magazines underneath. By the extremely fortunate dip of the mine it is possible to avoid any tramping in the mine. All ore will by gravity run down to the loading-place at the shaft. At this place an arrangement should be done, allowing blasting of big blocks and quick loading of the shafttracks. The stoping commences at point B and when the work has reached level A, all ore is mined, but half of it remains as magazin and may be extracted at liberty. A pumpstation should be arranged at the bottom of the shaft, and telephone signal line and compressed ^{pressure} airpipe installed.

Plant at Surface.

A double drummed electric hoist will lift the ore from the mine up to an cabin for 600 tons (see enclosure IO & II). From this the ore will be drawn into ropeway-buckets (see enclosure I3) and run to Drola, where the crushingplant will be erected (see enclosure I3) and later the mill. At Drola there already exist a siding, where the railroacars are to be loaded.

The ropeway will be constructed to carry 120.000 tons grade ore, allowing an export of 100.000 tons. But for a start there will not be bought buckets for more than 50.000 tons grade ore.

Although there by full production are 20.000 tons more ropewaytransport if the crushingplant and mill is erected at the railroad, instead of at the mine, I give this scheme the preference because it is very much more convenient to have as little as possible up in the moun-

lains and collect as much as possible in the valley.

If the crushing plant and mill are erected at the railroad the running of the mine itself will be very simple and the daily administration may be effected by a mineforeman.

As will be seen from enclosure 10 there are projected smithy, mechanic shop, compressor plant, transformer, stores for feed and mine material, mine office, shop for provisions etc. for the mines and room for foreman (at top floor also for inspection visitors) in close connection with the ropeway, thus doing away with any transport at the mine and allowing an easy administration.

The mine is projected covered by a roof and walled in at the front as protection against the snow.

At the mine will be built a workmens dwelling for 75 men, which is sufficient for extraction of 50,000 tons crude ore. At Drola no dwellings neither for workmen or staff is necessary, because there are plenty of farmers in the vicinity.

As for office building and managers house the idea is, that the mine shall be managed by the same staff and office as the Killingsdal mine, thus doing away with any buildings of administrative character at the same time as the administration itself will be very much cheaper.

Power question.

For an extraction of 50,000 tons the following motors will be necessary at the mine:

Mine-moist	abt.	50 H.P.	
Compressor	"	100 " "	
Pump	"	10 " "	
Popway (only for storing during winter)	"	20 " "	
Smithy & shop, light etc.	10 " "	200 H.P.	

These motor will never run at full load at the same time and if 150 H.P. is at disposal, it will be sufficient.

The crushingplant at Droia will require a motor of abt. 75 H.P. To this should be added abt. 25 H.P. for sundry lifts, mechanic shop etc. As the motors will not run at full load at the same time I believe 75 H.P. will do for Droia.

The total requirement of power will in this way run to abt. 225 H.P. whereof 150 at the mine and 75 at Droia.

This power may be derived in three different ways:

1. The power may be bought from Gaula Kraftanlegg as electric power.
2. Or from Holtalen community.
3. Dieselmotor may be erected.

As Killbuckdal mine might use her spare power in Gaula Kraftanlegg herself, and Holtalen community has her power-rights and schemes ready for construction of a hydraulic powerplant at Redberget in Holtalen, it is thought the most natural procedure to lease the power from Holtalen, delivered at the mine and Droia.

Necessary ground.

The ground at the mine is quite barren and may be bought for next to nothing. The same applies to most of the

ground along the ropeway. Only where the ropeway approaches Dröia it has to pass through forest.

I am of the opinion, that the ground may be bought just for the timber value, so I do not count anything for the ground for the ropeway.

The ropeway station, crushing plant and siding at Dröia will be situated at railroad property where the necessary ground beyond doubt may be leased for free of any rent.

For detailed information re construction of plant, see calculation enclosure 13

Purchase of right.

According to Norwegian law, dated 14/9-1917, paragraph II, a foreign company can not purchase any mining-right or property without concession. If a foreign company would purchase mining-right without concession, there had to be formed a Norse company, in which the shares could be owned by the foreign company, but the company must be domiciled in Norway and the Board consist of Norwegian citizens. The Board may consist of one or more members, who must possess atleast one share each.

But even if the foreign company arranged to purchase the mining rights in this way without concession, they must in any case ask for concession to run the mine; such concession can be granted according to paragraph 13 in above mentioned law.

According to paragraph 13 a foreign company may be granted concession as well to purchase as to run mining properties.

As this paragraph contains the usual rules, which shall serve as a guide for the government in granting a concession, I will give it in translation enclosure nr. 14.

As will be seen from this it is not absolutely demanded, that the foreign company shall be domiciled in Norway or that the Board shall consist of norwegian citizens, but according to clause 1 it is considered as desirable. Under the circumstances in Norway today I believe, that concession will be granted even if the company is not domiciled in Norway and the Board is foreign.

Clause 2 - 5 are of little or no consequence.

Clause 6, 7 & 8 may in most cases result in monetary expenses. But in the case of this mine one may wave at extra expenses, because the miners employed will be from the valley itself and return to their homes every weekend. There is already a doctor and midstral in the district, and a sickhouse is not far away and the miners have their own house in the valley.

If any expenses might arise, it should be from Clause 9, but this will in any case be neglectible.

Clause 9 This means, that competition is free in Norway.

Clause 10 & 11 Do not apply to this mine.

Clause 12 Of no consequence.

Clause 13 I am a afraid, that it is impossible to avoid, that the mine is to be transferred to the State after the course of 60 years, but I point out, that amongst other things the main item - the ropeway - is to be paid for by the State, if it is wanted.

Clause 14. I believe that in this case the Government will be only to pleased by establishment of extraction, so any royalty will never be claimed, atleast not before years ahead, say 10 years for a start.

Clause 15. The mine can not be sublet except by permission from the Government.

Clause 16 & 17. Of no importance.

The last section of paragraph 15 is meant to facilitate for the company to borrow money.

The bank in question may on beforehand be allowed to continue the extraction, if its lien is not cleared by the mineowner.

Calculated cost of equipment.

As will be seen from enclosure 15 the total cost, if new machines etc. are bought, will amount to Krs. 637.000,00.

There is, however, in Norway at present a very good opportunity of buying second hand machinery, which are very little or perhaps not at all used.

This machinery may be bought at a very moderate price and I will recommend that such machinery is bought.

On the last page of enclosure 15 I have given the approximative sums, which may be saved in this way and my conclusion is, that the purchasesum for the miningrights plus equipment of every description will amount to Krs. 635.000.-.

To this should be added Krs. 65.000,00 as running capital, bringing the total amount to be secured up to Krs. 700.000,00.

According to the concessionalaw art. 1/2 of Krs. 635.000,00 or say Krs. 200.000,00 should be secured as sharecapital.

Cost pr ton & recovery.

From enclosure 15 will be seen, that I calculate with a total expense of Krs. 16,00 pr ton for Ironanjen.

As the value of the ore according to the same enclosure is calculated to Krs. 16,90, the surplus pr ton is Krs. 0,90.

By 40.000 tons export pr annum the total profit therefore should be Krs. 36.000,00.

If the sharecapital is Krs. 200.000,00 this means 18% profit on top of those 5% already brought into account in the calculation of overheadexpenses in enclosure 16.

It is expressly stated, that this report is based on the supposition, that the money for purchase and construction can be secured at 5% interest and that the operation is performed in cooperation with Killingdal. It is further supposed, that arrangement on beforehand is made with the government as regards railroadfreight and concession-conditions.

It should also be remembered, that any calculation in connection with a mine is more or less liable to be incorrect.

The profit may be less, than calculated but may also be greater.

As a miningenterprise Roudhammer do not appear to be a sterling affair, but on the other hand the hazardous element seems of little consequence.

Killingdal 1/9-1926

[Signature]

Calculated cost of equipment

or

SEA HAMMER LINE

Retraction 100.000 tons.
 Export 80.000 "

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I. Accession.

Improvement of road Tromsund-Aunevold	kr 500,00	
Improvement of road Aunevold-Holtdalsvold (2 km. x 1,00)	" 2.000,00	
New road Holtdalsvold-Hine 1.700 m. x 1,50	" 2.200,00	11.000,00

II. Line.

Ventilation fl with cross- cuts to 50 m. level 70 m. 1,8 x 1,8 m. " 200,00	" 14.000,00	
<u>2 CROSSLINGS</u>		
For Accession - 9 m. " 100,00	1.000,00	
Main shaft 2 x 3,5 m. run upward 80 m. x 5,00	" 24.000,00	
520 m. 10 x 10 rails 4800 "		
2' 0,30	1.440,00	
520 m. 6 x 6 sleepers		
2' 2,20	704,00	
80 m. 4" iron- pipe x 6,00	840,00	
Erection	1.000,00	
Telephone & signalequip- ment	1.000,00	
Loading arrange- ment at level 20	1.000,00	
Sumaries	1.416,00	" 31.200,00 "
Carried forward	" 47.000,00	" 11.000,00

Brought forward

kr 47.000,00- kr 11.000,00

Pump & piping.

Pump chamber kr 100,00

Centrifugal pump
2" x 150 m. lift 1.000,00

Motor 1.000,00

80 m. 2" strong
steam piping
kr 5,00 400,00Erection & sundries 500,00 " 5.000,00- " 50.000,00III. Compressor Plant.Compressor for 15
drills 10.000,00Motor 125 HP incl.
app. 5.000,00

Receiver 2.000,00

Drillsharpening 2.000,00

5 stoper 2.500,00

5 Jackhammer 1.750,00

10 2" hoses & 10 m. 500,00

Transportation 500,00

Foundation 500,00

Sundries 2.250,00 " 27.000,00(Piping included
in shift.)(House included
in buildings)IV. Hoisting plant.Hoist with motor incl. cars
and ropes bought from Kil-
linen delivered free on
railroadcar stored
10.000,00Transportation,
erection & founda-
tion 4.000,00

Carried forward 14.000,00

" 33.000,00

Brought forward	15.000,00	52.000,00
Reinforcing plant coal.:		
Smartt tower pulleys	2.000,00	
Summaries	<u>5.000,00</u>	20.000,00
(House incl. in building at mine)		
(Pails incl. in smartt)		

V. Smitty.

House included in building at mine.

Tools & equipment incl. motor. 5.000,00

VI. Electric power.

As Bethlehem Community is going to construct a powerplant the first scheme is to lease the power from them, which is supposed to cost abt. \$rs. 0,75 per ton ore exported.

Any amount for powerplant is therefore not brought into account. Siders are included in the amount for each item.

VII. Reopen station at mine.

Timber according to list:

2 1/2" x 5" - 154 m.	<u>0/30</u>	80,00
4 " x 5" - 20 m.	<u>0/72</u>	12,00
5 " x 5" - 408 m.	<u>1/01</u>	448,00
5 " x 6" - 592 m.	<u>1/20</u>	480,00
5 " x 7" - 55 m.	<u>1/50</u>	50,00
6 " x 6" - 5 m.	<u>1/42</u>	7,00
6 " x 8" - 17 m.	<u>2/20</u>	<u>38,00</u>

or 1.118,00

Planned wood:

1" x 4" Plank		
2500 m.	<u>0/20</u>	400,00
1" x 4" Roof		
2400 m.	<u>0/20</u>	<u>480,00</u>

ries form.: Total for wood 2.000,00

115.000,00

Brought forward	2.023,00	113.000,00
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Ropewayst.cont.:

Felt for roof 240 m ²	240,00	
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14 windows krs 420 +		
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1 door krs 25,-		
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together	445,00	
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Sundry bolts, nails etc.	500,00	
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Contract price for erection	2.000,00	
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Extra for frame for ropeway machinery from Killiney	500,00	
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Transportation	1.000,00	
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Foundation	1.500,00	
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Sundries	<u>1.727,00</u>	10.000,00
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VIII. Ordnance 500 tons.

Timber according to list:

2" x 3" 1640 m. <u>0/42</u>	740,00	
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3" x 6" 25 m. <u>1/20</u>	50,00	
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3" x 5" 30 m. <u>1/0</u>	30,00	
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3" x 6" 98 m. <u>1/20</u>	120,00	
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3" x 6" 55 m. <u>1/72</u>	97,00	
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6" x 6" 125 m. <u>2/20</u>	275,00	
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7" x 8" 27 m. <u>2/60</u>	71,00	
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8" x 8" 172 m. <u>5/00</u>	520,00	
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8" x 10" 25 m. <u>3/72</u>	<u>92,00</u>	
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	1.778,00	
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Planned wood for

roof 1" x 4"

750 m. <u>0/20</u>	<u>150,00</u>	
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Total for wood:	1.928,00	
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Ironstake 2 pieces

2" x 6 m. =

12 m. <u>8/00</u>	<u>96,00</u>	
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Carried forward	2.024,00	
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		123.000,00
--	--	------------

Brought forward	2.024,00	123.000,00
Machine 600 l. cont.:		
Sundry ironbolts & nails	500,00	
Felt for roofing 12 sq. m. 1,00	75,00	
Ironplates, " 170 sq. m. 3.500 sq. m. 0,40	3.400,00	
Contract price for erection	2.000,00	
Foundation	1.000,00	
Transportation	2.000,00	
Sundries	<u>2.001,00</u>	16.000,00

IX. Shafttower.

Timber according to list:

6" top 8 x 26 m. =	
200 m. <u>3/00</u>	600,00
2" x 5" 1250 m. <u>0/45</u>	500,00
3" x 6" 890 m. <u>0/85</u>	760,00
4" x 5" 224 m. <u>0/72</u>	170,00
5" x 5" 140 m. <u>1/00</u>	140,00
6" x 7" 224 m. <u>1,50</u>	340,00
6" x 6" 212 m. <u>1/15</u>	310,00
6" x 8" <u>212 m. 2/20</u>	<u>424,00</u>
3146 m.	2.930,00

Planned wood

1" x 4" 1250 m. <u>1/20</u>	300,00
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Windows 5 pieces

1,0 x 0,50 <u>20/00</u>	60,00
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Corrugated ironroof,

900 kg <u>0/50</u>	<u>450,00</u>
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Carried forward 3.740,00

159.000,00

Brought forward 3.740,00 139.000,00

Sharttower cont.:

Walls 120 m. 15 Kms
1800 Kms 0/50 540,00

Ironbolts, nails etc.
1.000,00

Transportation 2.000,00

Contract price for
erection 5.000,00

Foundation 1.460,00

Sundries 1.260,00 15.000,00

X. Smithy & Compressorhouse.

Timber according to list:

2" x 5" 100 m. 0/40 40,00

4" x 4" 321 m 0/60 200,00

4" x 5" 160 m 0/70 120,00

5" x 5" 190 m 1/40 230,00
771 m 592,00

Planned wood:

1" x 4 1/2" 2600 "0/20 520,00

1" x 4 1/2" 1800 0/10 270,00

1 1/2" x 4 1/2" 600 0/30 180,00

13 windows 1' 30/00 390,00

1 single door, 20,00

3 double doors 120,00

Felt for walls - 5
rolls @ 20 m2 50,00

Corrugated sheet -
iron 1900 Kms 5/20 500,00

1 ironbolt 1" x
3,25 m., nails
etc. 100,00

Foundation 50 m2. 500,00

Transportation 750,00

Carried forward 5.980,00 154.000,00

Brought forward	5.980,00	154.000,00
Smithy & Compressorhouse cont.:		
Contractorice for erection	1.500,00	
Sundries	<u>1.020,00</u>	6.500,00

XI. Store & office building.

Timber according to list:

2" x 3" 150 m. a' 0,45	70,00
4" x 4" 396 m. " 0,60	240,00
4" x 5" 194 m. " 0,75	150,00
5" x 6" <u>141 m. " 1,20</u>	<u>125,00</u>
841 m.	585,00

Planned wood 1" x 4 1/2":	
3500 m. a' 0,20	700,00
" " " x 4 1/2":	
9000 m. a' 0,15	1.350,00
" " 1" x 4 1/2":	
900 m. a' 0,30	270,00

Felt 15 rolls a' 20 m2 90,00

Corrugated sheetiron
1000 Kg. 300,00

12 windows a' 30,00 360,00

11 doors a' 25,00 275,00

Foundation
20 m3 single walls 200,-
60 m3 double " " 600,- 1.000,00

5 Stoves 200,00

Fumespipes & firewalls 250,00

Transportation 1.500,00

Sundries 1.620,00

Carried forward 159.500,00

Brought forward

169,500,00

XII. Transformerhouse and roof over Mine yard.

Transformer house walls

136 m2 a' 10,00 1.360,00

--- windows

4 a' 30,00 120,00

--- doors

2 a' 25,00 50,00

Foundation

500,00

Sundries

470,00
 2.500,00

Roof over Mine yard

incl. over transfer-

merhouse and frontwall

300 m2 roof 3.000,00

120 " walls 720,00

Sundries 780,00 4.500,00

7.000,00

XIII. House for winding engine.

Walls 60 m2 a' 10,00

600,00

Roof 120 m2 " "

1.200,00

Foundation

500,00

Windows 5 " 30,00

150,00

Doors 1 "

50,00

Sundries

500,00

3.000,00

XIV. Dwellings at Mine.

1 building for 72 men 25.000,00

1 foremans dwelling 2.000,00

27.000,00

XV. Fresh water supply.

2.000,00

XVI. Painting of total complex.

1.500,00

Carried forward

216.000,00

Brought forward

216.000,00

XVII. Rodeway Mine-Railroad.

Mechanical parts acc. to tender
dated 3/8-26 from Penlig alt. I,
including 10% duty and freight
abt. Krs. 220.000,00

Sundry iron parts for
frames not included
in tender from Mr.
Gildseth 5.000,00

120 frames acc. to
tender from Mr.
Gildseth 25.000,00

2 tightening stations
of Wold 10.000,00

11 counterweights 2.000,00

abt. 300 m3 foundations
Krs. 25,- 7.500,00

Erection 20% Krs.
200.000,00 40.000,00

motor 20 H.P. 1.000,00

Unloading station at
railroad excl. cabin 10.000,00

Sundries 19.500,00 555.000,00

XVIII. Crushing Plant at Railroad.

1 Hadfield's breaker
15" x 24" 15.000,00

1 ---"--- trommel 9.000,00

1 ---"--- disc crusher
24" 20.000,00

1 ---"--- elevator 24" 7.000,00

1 Wilfley rolls
14" x 36" 20.000,00

1 picking belt 5 m. 2.000,00

Foundation for machinery
50 m3 at Krs 50,- 2.500,00

Carried forward 75.500,00

551.000,00

Brought forward	75.000,00	551.000,00
Crash.pl. cont.:		
Foundation for building 20 m3 4'30,00	600,00	
Excavation	1.900,00	
Building abt. 700 m2 walls & roof	7.000,00	
Erection, shafting, motor etc.	10.000,00	
Sumaries	<u>2.000,00</u>	100.000,00
<u>XIX. Loadingarrangement.</u>		
conveyor from storing-place incl. trench under Storerroom		5.000,00
<u>XX. Diamonddrilling.</u>		
200 m. according to tender abt.		11.000,00
<u>XI. Purchaseaum for mine.</u>		100.000,00
<u>XXII. Interest during time of construction.</u>		20.000,00
<u>XXI. Administration.</u>		<u>50.000,00</u>
	<u>Total Krs.</u>	<u>657.000,00</u>
Running capital	Krs.	<u>75.000,00</u>

If second hand material is bought one may count with following reduction:

I.	Accommodation.	Krs.	0,00
II.	Mine (rails, piping & pump).	"	1.000,00
III.	Compressorplant.	"	10.000,00
IV.	Hoistplant.	"	0,00
V.	Smithy.	"	0,00
VI.	Electric power.	"	0,00
VII.	Ropewaystation.	"	0,00
VIII.	Orebin.	"	0,00
IX.	Shafttower.	"	0,00
X.	Smithy & compressorhouse.	"	0,00
XI.	Store & officebuilding.	"	0,00
XII.	Transformerhouse and roof over mineyard.	"	0,00
XIII.	House for winding engine.	"	0,00
XIV.	Dwellings at Mine.	"	0,00
XV.	Freshwatersupply.	"	0,00
XVI.	Painting.	"	0,00
XVII.	Ropeway.	"	100.000,00
XVIII.	Crushing plant.	"	25.000,00
XIX.	Loadingarrangement.	"	0,00
XX.	Diamonddrilling may be saved.	"	11.000,00
XI.	Purchase sum for mine may be reduced by"	"	50.000,00
XXII.	Interest during time of construction.	"	5.000,00
XXIII.	Administration.	"	0,00
<u>Total</u>		<u>Krs.</u>	<u>202.000,00</u>
Total cost accordingly reduced to		Krs.	652.000,00
+ minimum running capital		"	<u>62.000,00</u>
<u>Total money to be secured</u>		<u>Krs.</u>	<u>709.000,00</u>

Calculation of cost and recovery or loss expected
from

Redhammer Mine -

Overhead expenses.

Interest & depreciations.

Capital invested Krs. 700.000,00

If this capital is supposed depreciated at expiration of concession (50 years) and in the meanwhile interest to be paid at a rate of 5% on the amount remaining at any time, there must for this purpose be reserved an annual amount of Krs. 37.800,00. As there is reason to depreciate at a quicker rate I reckon with an annual amount of Krs. 50.000,00 Krs. 50.000,00

Salaries.

The management is supposed to be effected by the Killingsdal staff, only by complementing this with ordinary clerks plus an engineer. The extended expenses is in this way thought to be Krs. 20.000,00

Taxes, insurances, sick insurances, State health insurance.

These items have at Killingsdal averaged to amt. Krs. 17.995,00 during the last 5 years. As number of miners employed at Redhammer will not be greater than at Killingsdal and the plant is similar it is reason to believe that the same amount may be taken into account also for Redhammer.

I therefore put up a round figure of Krs. 20.000,00

Carried forward

Krs. 90.000,00

Brought forward

Krs. 90.000,00

Stationery, lowyer, travelling expenses.

What is said about taxes etc. also applies to these items. During last 5 years at Killingdøl, Stationery etc. have run to krs. 6.650,00 an average and for Rodhammer is put up an amount of

" 10.000,00

Total Krs. 100.000,00

By 40.000 tons export this means Krs. 2,50 pr ton.

Running Expenses.

As mentioned above, the conditions at Killingdøl and Rodhammer are very much the same; but while Killingdøl with 75 miners gives 50.000 tons pr year, Rodhammer will give 40.000 tons.

As the running expenses pr ton are very nearly in proportion to number of hands employed, it should be fairly correct to reckon running expenses pr ton at Rodhammer to $\frac{4}{5}$ of the same expenses at Killingdøl.

The running expenses at Killingdøl free on rail-roadcar and including power, pumping, foreman, maintenance etc., goes to abt. krs. 12,20 as average for the two last years.

Consequently the same expenses at Rodhammer should run to krs. 9,15.

When it is remembered, that the two last years at Killingdøl have been extremely difficult for several reasons, and that the wages are on the decline, one should

be allowed to believe, that the expenses pr ton at
Rindhammer atleast will not be higher than krs. 9,15,
but for securities sake I reckon krs. 10,00
free car Dnsia.

Railroadfreight & loading into ship.

The railroadfreight from Storvold to Trond-
hjem is krs. 3,30 pr ton for 130 km. As the distance
from Dnsia is but 114 km. the freight accordingly
should be abt. krs. 3,00.

I feel positive, however, that it will be pos-
sible to get this freight reduced to krs. 2,50.

The storing and loadingexpenses in Trondhjem
will amount to abt.

krs. 0,50

Sum krs. 3,00

Commission for Agency, Directors fee etc. 0,50

Summary:

Overheadexpenses pr ton	krs 2,50
Running exp. till free on railroadcar(harbour)	" 10,00
Railroadfreight & harbourexp."	3,00
Commission etc.	" <u>0,50</u>
Total expenses for. Thjm.	<u>krs. 16,00</u>

Recovery.

Without any mill the product from the mine
can not be expected to contain more than 43% of
sulphur. There is reason to believe that some ore
with 1,6% copper may be picked, but the great bulk
of ore will contain no copper. In this calculation
is therefore supposed that the total production is
copperfree ore.

This ore should be delivered to inland burners, who as a rule must pay a certain overprice for the sulphur on account of the long transport of cinders to extraction work, which usually is situated at the sea.

In the case of Bodnhammer ore there will be no transport to copperworks, as the cinders are derived direct from the burner as purpleore, which may be sold to Ironworks.

Everything taken into consideration, I should think, that the sulphur will be paid with 40 n.ers pr ton for Trendhjem and that the iron will give a nett profit of krs. 1,00 pr ton greenore. For securitys sake however I will only reckon 37 ers pr unit 3.

Based on these figures the recovery will be:

43% S. d' krs. 0,37 = krs. 15,90

Derived from purpleore " 1,00 Total krs. 16,90

As the expenses pr ton were.....krs 16,00

The nett profit will be.....krs. 0,90
pr ton.

By an export of 40.000 tons the total profit pr year for shareholders pocket will be krs. 36.000,00.