



# RAPPORTEN

DER

NEDERL. INDISCHE MIJNBOUW-MAATSCHAPPIJ.

Typ. en Lith. J. H. DE BUSSY, Amst.

## NEDERL. INDISCHE MIJNBOUW-1

Het bestuur deelt mede, dat de Heer T een goeden naam heeft op het gebied van m van den Heer VERMAES is opgetreden. Bij beheer werden vele moeilijkheden ondervon boeken werden aangehouden; een invent ontbrak ten eenemale. De Heer BOWER rapport, dat later gepubliceerd zal worden, dat hij zeer ingenomen is met de mijnen er van, doch hij -keurt af de wijze, waa bewerkt zijn. Hij betreurt de groote uit werken buiten de mijnen, die op het o geen nut zijn, terwijl de daaraan uitgegev zouden zijn geweest voor de ontwikkel reeds heel bevredigende resultaten hadt wanneer eene andere werkwijze ware gev berichten was men er middels eene pract geslaagd het water uit de mijnschachten den Heer VERMAES zooveel overlast had er dus op rekenen dat spoedig met het wi ertsen voortgang zal worden gemaakt. Een verwerking der minder rijke ertsen is daaraan zal verbonden worden een toes tailings te concentreeren van ertsen, d goudhoudend blijken te zijn. Het geha concentraties zal dan aanwijzen wat verder c nl. of het concentraat geschikt is voor lokaal moet worden verwerkt.

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1) Volgt hierachter.

## NEDERL. INDISCHE MIJNBOUW-MAATSCHAPPIJ.

Het bestuur deelt mede, dat de Heer T. BOWYER BOWER, die een goeden naam heeft op het gebied van mijnzaken, als vervanger van den Heer VERMAES is opgetreden. Bij de overname van het beheer werden vele moeilijkheden ondervonden, daar niet behoorlijk boeken werden aangehouden; een inventaris- of magazijnsboek ontbrak ten eenemale. De Heer BOWER heeft in een uitvoerig rapport, dat later gepubliceerd zal worden, <sup>1)</sup> te kennen gegeven, dat hij zeer ingenomen is met de mijnen wat betreft den rijkdom er van, doch hij keurt af de wijze, waarop deze aangelegd en bewerkt zijn. Hij betreurt de groote uitgaven voor aanleg van werken buiten de mijnen, die op het oogenblik van weinig of geen nut zijn, terwijl de daaraan uitgegeven gelden beter besteed zouden zijn geweest voor de ontwikkeling der mijnen, welke reeds heel bevredigende resultaten hadden kunnen opleveren, wanneer eene andere werkwijze ware gevolgd. Volgens de laatste berichten was men er middels eene practische drainage reeds in geslaagd het water uit de mijnschachten te verwijderen, hetwelk den Heer VERMAES zooveel overlast had bezorgd. Wij kunnen er dus op rekenen dat spoedig met het winnen van verscheepbare ertsen voortgang zal worden gemaakt. Een 10-stampbatterij voor verwerking der minder rijke ertsen is telegrafisch besteld en daaraan zal verbonden worden een toestel om hydraulisch de tailings te concentreren van ertsen, die na amalgamatie nog goudhoudend blijken te zijn. Het gehalte der aldus verkregen concentraties zal dan aanwijzen wat verder daarmede zal geschieden, nl. of het concentraat geschikt is voor afscheep dan wel later lokaal moet worden verwerkt.

*De Directeuren,*  
P. LANDBERG & ZOON.

<sup>1)</sup> Volgt hierachter.

## RAPPORTEN

DER

### Nederl. Indische Mijnbouw-Maatschappij.

PALELEH, 25 April 1899.

*To the Directors  
of the Ned. Ind. Mijnbouw Mv.*

*Gentlemen!*

On the 2<sup>d</sup> inst. Mr. WEBER and Dr. SIBER, members of your Board, asked me to take charge of your property at Paleleh which I have done from that date, having procured permission from the Mijnb. Mij. Bwool in whose employ I was at this date to relinquish my duties with them.

I beg you will accept my thanks for the honor you have conferred upon me.

Since my arrival on 3<sup>d</sup> inst. many delays have taken place, due to my having to rearrange the whole works.

In dealing with so large a proposition as your property I shall be obliged to confine myself in this report only to such points as where actual work is progressing. I will therefore divide this area in 4 districts viz.

Poeloe Jellesma, Paleleh, Lintido, Dopalak.

I will also avoid here to recapitulate the general position of these particular points as from past surveys and reports you are already well informed on this.

**Poeloe Jellesma.** This island is a landing wharf for all material arriving by pany. The accomodation for the pany is an amount of general stores which is restricted and totally inadequate.

The greater portion of the ground is that at high water the sea washes some of the heavy machinery etc., rolling-stock, pipes etc. are under water.

This is very detrimental to any heavy material is stocked in the open action of sea air and the weather, being three small iron buildings in fittings of machinery, rice etc. are p

There is an unusually large supply far more than is required for the si

As no stock-book has ever been what amount is on hand and to mixed up in such hopeless confusion of time and money.

As soon as I can get more settled I will finish this work, but I fear there will be. Most of the stock on hand will be and is more suitable to a railway from roughly running over the machinery may be turned to account.

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**Paleleh.** This is the centre of the former management arranged this erection of the whole reduction works railway was commenced and some from Europe purchased. Two only some have the frames erected and on the ground.

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— 3 —

**Poeloe Jellesma.** This island is the main supply shore and landing wharf for all material arriving by steamer for the company. The accomodation for the proper protection of so large an amount of general stores which are here on hand is very restricted and totally inadequate.

The greater portion of the ground, used as a wharf, is so low, that at high water the sea washes over it and in consequence some of the heavy machinery etc., such as locomotives, railway rolling-stock, pipes etc. are under water at every high tide.

This is very detrimental to any iron or steel goods; all other heavy material is stocked in the open and thus exposed to the action of sea air and the weather, the only closed accomodation being three small iron buildings in which all the small tools, fittings of machinery, rice etc. are put away.

There is an unusually large supply of stock at this point and far more than is required for the size of the mine.

As no stock-book has ever been kept, it is impossible to say what amount is on hand and to take stock, with everything mixed up in such hopeless confusion, would mean a great expense of time and money.

As soon as I can get more settled, I hope to try and accomplish this work, but I fear there will be many articles missing. Most of the stock on hand will be utterly useless for goldmining and is more suitable to a railway company than a mine but from roughly running over the goods I fancy some of the machinery may be turned to account.

With the exception of a few articles there is enough stock on hand for some years so that in the future all that will be required is actual maintenance-materials for mine and reduction works i.e. after the attached order has been executed.

**Paleleh.** This is the centre of the administrative office. The former management arranged this spot to be the centre for the erection of the whole reduction works; with this end in view a railway was commenced and some costly iron-framed buildings from Europe purchased. Two only of these buildings are finished, some have the frames erected and others are laying scattered on the ground.

On my arrival I found a large number of labourers employed on these works. These works have now all been stopped and the labour sent to Lintido and the mine at Dopalak. On account of so much work going on, a large amount of material and tools were in use; these are scattered all over the full area of the camp stretching from the beach to 1 kilometer inland.

To collect this material will mean further time and expense and even then I doubt very much if half of it is ever found as no one seems to be responsible or to know what there is or where it came from. I feel bound to say the way the stock of valuable material has been allowed to be thrown about regardless of the consequences is not far short of disgraceful.

I am dismantling the old houses and using as much of this material as possible for house building at Lintido and Dopalak.

The iron framed houses sent from Europe I am leaving intact as they stand or lay on the ground as at some future time they may pay to remove to the central works or the mines. The administrative offices will remain here for the present as also the hospital with the resident doctor.

**Lintido.** This is the point on the coast where you were recommended to erect the reduction works. It is situated some 3 miles N. W. along the coast from Paleleh and is the bottom terminus of the present cable rope way.

There are no buildings to speak of, so I am at present erecting houses to accomodate 100 natives and the necessary houses for overseers who will look after the work in connection with the erection of the Battery.

I have selected a site for the battery and have had the same surveyed. Enclosed is a plan and sections of the ground from which you will see the site is an ideal one.

The work to be carried out here will take some 3 months viz:

The erection of buildings for natives, overseers etc.

The excavations for battery and ore bin-foundations and settling Dams.

The excavation for foundation of 30 H. P. Engine and boilers.

The Building of a small dam in cement to supply battery and Engine with water.

The laying of about 600 m line from the beach to the b permanent and used for hauling the battery and after for b tido and Dopalak, the supply then forwarded direct by cable.

I have secured the right of a la for the erection of machinery h surface for tailing heaps and dams this site for a 60 head mill and co of goods from the steamer will Poeloe Jellesma and from there launch and lighters.

The advantage of having the b favour as the height of the mi supply brings Lintido within reason whereas the lower Dopalak site w transport the ore which is expens.

The upper site at Dopalak w to the mine but a very expens would have to be erected and expense would be also necessary b conveyed there. At Lintido there

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water.

The laying of about 600 meters of single light cable-tram  
line from the beach to the battery site. This tram will be  
permanent and used for hauling up the heavy machinery for  
the battery and after for bringing up all supplies for Lin-  
tido and Dopalak, the supplies for the latter place being  
then forwarded direct by cable rope way.

I have secured the right of a large area of ground (vide plan)  
for the erection of machinery houses and the sole use of the  
surface for tailing heaps and dams. There is sufficient room on  
this site for a 60 head mill and concentrating works. The landing  
of goods from the steamer will continue to be carried out at  
Poeloe Jellesma and from there conveyed to Lintido of steam-  
launch and lighters.

The advantage of having the battery site at Lintido I so far  
favour as the height of the mines from any reliable water  
supply brings Lintido within reasonable distances of mines and sea,  
whereas the lower Dopalak site would require a long tram line to  
transport the ore which is expensive and always unsatisfactory.

The upper site at Dopalak would bring the battery almost  
to the mine but a very expensive and heavy pumping plant  
would have to be erected and in both cases a road a great  
expense would be also necessary before any machinery could be  
conveyed there. At Lintido there are none of these disadvantages.

The present ropeway is by no means a satisfactory transporter but  
with a few alterations I hope to make it equal to requirements.

The fall from the mine to the new site is perfect for a rope-  
way, so in the event of larger works being erected a new rope-  
way of modern design will be required.

As Lintido is so easy of access and in direct communication  
with the mines I propose making this the central work shops,  
and will therefore convey all mechanical tools and machines  
and erect same here. At present work is carried on all over  
the district which entails loss of time and innumerable errors.

**Dopalak.** This camp is the centre of the mining area and  
is situated at a very high elevation. At present there is only  
one payable reef being worked. Although reefs exist of well  
known high grade within a few meters of the present Dopalak

reef, no attempt has been made to open these reefs or leaders up.

So much has been written about the formation and existence of reefs, at this particular spot, it is needless for me to repeat it here. It will be sufficient for me to say the reefs are, I believe, true fissures in diorite-rock. It is impossible to say to what depth these reefs penetrate the earth but from their appearance I should say far deeper than any present mining knowledge is capable of extracting the ore.

I must say I am greatly pleased with the general appearance of the country and of the reef-formation. The gold belt is some 2 miles in width and simply intersected with reefs and leaders some more payable than others. The length these run on the strike I am unable to say at present, as I have not yet inspected the country beyond the present workings. I am satisfied there is sufficient reef-matter within the present area, now being worked, to last a goldmining co<sup>y</sup> with a 40 head mill for some years to come.

The gold no doubt will run in chutes as will be seen from the assay-plan. From the developement already done these chutes have shown a strong tendency to become richer in depth and also wider and I quite believe, they will do this as from past history in the Diorite formations, mines which were of little or no value on the surface have become very rich in depth.

I find the past-tendency here has been to work this property with adit-tunnels; these no doubt are the cheapest possible way of mining a lode and the position of this mine imposes one at once of being specially suitable for such a system of mining.

But on examination of the gold bearing lodes in this district and in this mine in particular the gold will be found not to exist in large quantities in the reef, when running through soft or surface ground. The gold only makes in the reef, when such is in solid ground. Now as these hills mostly consist of loose boulders and decomposed Diorites to a considerable depth it is here proved that the adit-tunnels have to be driven in a considerable distance before any payable results make their appearance.

In this case I think with the amount of reliable evidence which could be obtained from the old workings, it would have

been better to have sunk on the up right and left from this point.

In this way a decent mine might be obtained in less than one year, whereas with the present workings it will be months before they reach the surface. I am therefore going to carry on the present mine. At the same time I will take the best way for its working and the best way for its development.

Attached is an assay-plan and a cross-section of the reef. A red pencil line on the cross-section shows where the reef commences. The assay results show of little or no gold being present on the surface ground. It can also be seen that the reef is not to reach payable ore by adit-tunnels.

**Tunnel I.** This tunnel is now being worked. It has long since fallen in and is now ground round the shaft and will be a great expense to tunnel ought never to have been worked. As it has not been properly timbered, it is now in a very bad way below.

**Winze no I.** This winze is very old and is a means of obtaining air and the ore from level no. 1 (or 19 meters level) in the mine. I propose retimbering the winze no. 2. I propose retimbering the winze to the surface for an air and exit shaft. It is cheaper than timbering level no. 1 (or 19 meters level).

**Level no. 1 (19 meters level)** This level of any value has been stopped by the winze no. 1 to the shaft the timbering is now sunken some two feet. To reach this level is a great expense and danger to the mine. I intend to secure winze no. 1. I intend to retimber the winze going North and let the portion of the reef go. Before this is allowed, all payable ore must be such filling in done so as to stop the reef.

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up right and left from this point.

In this way a decent mine might have been the result in less  
than one year, whereas with the adit-tunnels, as at present it  
will be months before they reach any ore worth taking out.  
I am therefore going to carry out the following work in the  
mine. At the same time I will try and explain the state of each  
working and the best way for its future treatment.

Attached is an assay-plan and cross section of the works, the  
red pencil line on the cross section will show where the hard  
rock commences. The assay results will prove the above theory  
of little or no gold being present when the chute is in soft  
ground. It can also be seen the distance required to be driven  
to reach payable ore by adittunnels.

**Tunnel I.** This tunnel is nothing more than on old surface  
working. It has long since fallen in and has thus caused the  
ground round the shaft and winze No. 1 to be insecure. This  
tunnel ought never to have been driven, if so it ought to have  
been properly timbered, it is now causing trouble in the works  
below.

**Winze no I.** This winze is very insecure and will be the only  
means of obtaining air and the only exit from the present level  
no. 1 (or 19 meters level) in the event of any accident to the shaft  
or winze no. 2. I propose retimbering the winze opening it out  
to the surface for an air and exit hole. I find this will be cheaper  
than timbering level no. 1 (or 19 meter level).

**Level no. 1 (19 meters level).** Nearly all the ore above this  
level of any value has been stoped out vide plan. From winze  
no. 1 to the shaft the timbering is insecure and in one case  
sunken some two feet. To retimber this level would mean  
great expense and danger to life having therefore decided to  
secure winze no. 1. I intend timbering this level from winze 2  
going North and let the portion of this level to the S. fall in.  
Before this is allowed, all payable ore will be taken out, and  
such filling in done so as to secure the shaft and lower level,

should a fall take place now, I fear the entire loss of the ground above the 30 meter level. From winze no. 2 going north the level is in loose ground and the reef of no value. I shall have this ground secured as at any time this portion of the level may be required for ventilation of the lower workings.

At present driving is still progressing in the north face with an idea of testing the Tomako reefs when reached, but I intend discontinuing work here on account of the unsatisfactory state of the ground and poorness of the lodes. A cross cut in such ground might easily pass through a lode without knowing it.

**Level no. 2. (30 meter level).** This is the first of any consequence. Here is a considerable amount of dead work accomplished to strike the rich chute already known to exist at winze 2, 3 and 4. The whole timbering of this level is more or less decayed but can with ease be made secure in the level itself.

At the junction of crosscuts and in the vicinity of the stopes above no. 2, 3 and 4 winze, the timbering will require to be renewed as in some cases it is not correctly timbered and in others there is none at all. I propose taking out the decayed timber in the levels.

Retimbering the junction of crosscuts and also timbering and securing the stopes round winzes 2, 3 and 4. Before this latter is accomplished a small amount of ore yet left in the stopes above must be taken out.

This is an important level for the future opening up of the mine as the present winzes commenced and abandoned on account of water must be sunk to the 3<sup>d</sup> level and there driven N. and S. and connected. This will open up the rich chute. Other winzes will also be required within the rich area. The face of this level is at present in loose boulder ground. I have therefore decided to stop work here, it is the only level with any ore developed as with the exception of the stopes round the winzes 2, 3, 4, the ore above is untouched. From the assay plan will be shown there is a considerable amount of rock in sight but of low grade = about  $\frac{1}{2}$  o.z. per ton.

**Level 3 (60 meter level).** This and poor ground for some distance to shows signs of improved value before any ore of high grade is worked. As soon as possible work has been done it is now more as quickly as possible and connected then be a considerable amount of ore be necessary on account of air in winze but this will be avoided if met with.

**Patokko.** This tunnel is in w country and is some short distance same level. A considerable amount but although rich leaders have been on, nothing of payable size is in view here to crosscut the country and believed to exist in this formation.

**Shaft.** This shaft has been sunk of the Dopalak lode and is connected crosscuts. The shaft is 30 meters deep no. 2. I found on my arrival this shaft with Djatiwood, the shaft is  $1\frac{3}{4}$  meters in the centre. I propose sinking connecting up to this level but before the whole of the new work must be large bearers put in, as I find, on forgot to think it necessary to support any given point. Should sinking of the shaft most probably will collapse the ground is removed from below. this shaft with two  $\frac{1}{2}$  ton buckets, running away in the drain I do not out. From what I can see from the respects looks secure and strongly timber well wedged up and filled behind to displace the timbers.

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**Level 3 (60 meter level).** This level has been driven on loose  
and poor ground for some distance and is now only beginning  
to shows signs of improved value, it will be some time yet  
before any ore of high grade is met with, but as so much  
work has been done it is now necessary to push on this face  
as quickly as possible and connect winze 2, 3, 4. There will  
then be a considerable amount of good ore in sight. It may  
be necessary on account of air to connect level no. 2 with a  
winze but this will be avoided if possible until payable ore is  
met with.

**Patokko.** This tunnel is in what is known as the slate  
country and is some short distance west of adit III and at the  
same level. A considerable amount of work has been done here  
but although rich leaders have been passed through and driven  
on, nothing of payable size is in view. Further work is necessary  
here to crosscut the country and open any veins which are  
believed tot exist in this formation.

**Shaft.** This shaft has been sunk some 30 meters to the west  
of the Dopalak lode and is connected with levels 1 and 2 by  
crosscuts. The shaft is 30 meters deep or exactly down to level  
no. 2. I found on my arrival this shaft had just been retimbered  
with Djatiwood, the shaft is  $1\frac{3}{4}$  meters  $\times$  95 meters and divided  
in the centre. I propose sinking this shaft to level 3 and  
connecting up to this level but before this can be accomplished  
the whole of the new work must be underpinned with jacks and  
large bearers put in, as I find, on timbering the Engineer quite  
forgot to think it necessary to support this enormous weight at  
any given point. Should sinking continue without these bearers  
the shaft most probably will collapse with its own weight directly  
the ground is removed from below. I intend, if possible, to sink  
this shaft with two  $\frac{1}{2}$  ton buckets, as from the amount of water  
running away in the drain I do not think I will be swamped  
out. From what I can see from the outside, the shaft in other  
respects looks secure and strongly timbered but unless these are  
well wedged up and filled behind a heavy blow or shake may  
displace the timbers.

**Level no. 4.** This adit has only just been commenced having been driven on a reef at the junction of the slate and Diorite. The reef is highly mineralized and about 2' 6" wide, the assay sample showed  $1\frac{1}{4}$  oz Gold per ton. I am continuing the work here.

**Bolano.** This is situated about  $1\frac{1}{2}$  kilometer in direct line East from Dopalak and is in reality a system of reefs in itself; the Bolano reef is the main reef as it may be termed of the series. Assays taken at a previous date gave very good results as did also a sample crushing of some. The reef to all appearance looks well and permanent and judging from the member of old native shafts and gold mining utensils in the immediate vicinity other reefs of value must be in close proximity. I am therefore intending to at once commence opening up this point as payable ore can be obtained almost from the surface. The ground is extremely hard and solid. The old shaft and workings are too much out of order to be of any use, so work will have to commence from the surface; before this can be done a road will have to be cut and houses build.

**Harasi and Tomakko.** This system of reefs is some distance north of Dopalak and Bolano. The indications are also good here which is proved from past samples and large extent of native workings but it will be impossible to commence opening up all these valuable properties at once until I am well settled down to work at Dopalak and Bolano.

**General mining remarks.** My opinion is: you have some very valuable reef systems here which are capable of being divided up and floated into dividend paying companies. This property in itself is almost too large for one Company to undertake to work as the whole districts seems to be intersected with reefs and would take 2000 natives and 100 white men to prospect it properly. I strongly advise that the whole of the money and energy of the Company to be now put into the present mine and two other such reefs as may show signs of immediate return. The Dopalak mine in one year ought to be in a position to continually run a 30 Headmill. The Bolano the same. But this can only be accom-

plished with money properly and judiciously. From the day the company was started there has been now little or no energy or interest in the mine-works. To an experienced miner the work of and timbering on the Dopalak lodes is now in the hands of amateurs only having been employed

**Working.** This for a few months has been the erection of Buildings, readcutting of roads to occupy extra labour. The work to be done here means the commencement of a new system of exception of a few Drifts no mining

**Native Labour.** It is almost impossible to get a number of coolies in the employ of a company to do work, as no proper system of book-keeping is in use, is no method of time-keeping at present, and the books on the books as owing the company no doubt have run away or lay idle. The buildings in Paleleh, Tang etc. below the surface in a short time I hope to demolish the old buildings and get these coolies to work again.

In other cases many coolies are not allowed to cash off their advances, so in this way the company has a fairly even balance. On account of the work required and the erection of machinery all the available labour will be required.

**Machinery.** Since you have decided to erect a Battery to be erected at Lintido the question of what will be required for the erection of for about 3 months. I have cut a road to the place possible within reason and where possible to get as much of the railway machinery as possible for the present financial circumstances the reduction of the ore are as follows.

The ore is mined and picked below

has only just been commenced having the junction of the slate and Diorite. sized and about 2' 6" wide, the assay per ton. I am continuing the work here.

and about 1½ kilometer in direct line in reality a system of reefs in itself; a reef as it may be termed of the series. s date gave very good results as did some. The reef to all appearance looks edging from the member of old native ensils in the immediate vicinity other ose proximity. I am therefore intending ing up this point as payable ore can the surface. The ground is extremely shaft and workings are too much out so work will have to commence from a be done a road will have to be cut

This system of reefs is some distance no. The indications are also good here st samples and large extent of native mpossible to commence opening up all at once until I am well settled down olano.

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plished with money properly and judiciously spent on these mines. From the day the company was floated into Exploitation until now little or no energy or interest seems to have been taken in the mine-works. To an experienced man the system of mining and timbering on the Dopalak lodes gives him the impression of amateurs only having been employed.

**Working.** This for a few months will be very variable as the erection of Buildings, readcutting and machinery fixing will occupy extra labour. The work to be carried out now virtually means the commencement of a mine, as up to now with the exception of a few Drifts no mining has been attempted.

**Native Labour.** It is almost impossible to calculate the exact number of coolies in the employ of the Company and where they work, as no proper system of books have been kept and there is no method of time-keeping at present. About 550 natives are on the books as owing the company advances; some of these no doubt have run away or lay idle among the innumerable buildings in Paleleh, Tang etc. belonging to the Coy but within a short time I hope to demolish these buildings and shelters and get these coolies to work again.

In other cases many coolies are still working who have paid off their advances, so in this way the labour supply is kept at a fairly even balance. On account of the numerous buildings required and the erection of machinery and road cutting I find all the available labour will be required for the present.

**Machinery.** Since you have decided on purchasing a 10 Stamp Battery to be erected at Lintido I herewith enclose a specification of what will be required for same and its maintenance for about 3 months. I have cut down the cost as much as possible within reason and where possible. I intend using up as much of the railway machinery on hand as I can. Under the present financial circumstances my present plans for the reduction of the ore are as follows.

The ore is mined and picked below. From there it is delivered

in the rough to the collar of the shaft by various means of hauling. The large pieces ore reduced to the required size for the battery by hand hammers (I find this will be better for the present than buying expensive stone crushers). The ore is then put into bags and sent to Lintido by cable rope-way and there deposited into a Bin from whence it passes by automatic feeders to the stamps. The pulp passes over electro plates and then into Hydraulic sizers (Spitzkasten) this will divide the concentrates into different sizes and values. These concentrates will be collected in separate dams to await shipping or treatment locally. The cost of this plant, delivered here I calculate at the outside to be £ 25,000.— The labour timber etc. are in abundance here, so no further expenses beyond the usual monthly payments will be necessary. In reference to jigs and Frue vanners, these are very expensive machines and will require skilled workmen to work and are of no immediate necessity. My opinion is the Spitzkastens will suit the requirements now, and later on when the mine is thoroughly in order and known grades of ore obtained these concentrators can be added.

**Assays.** Enclosed is an assay-plan compiled from past assays. This plan I intend in future to keep up to date as in this way the shoots of gold can be more readily traced and the Directors can judge easier the value of each stope or working face. Until now no milling assays have been made i. e. assays to show the amount of free gold present in the ore. From such assays the mill alone can be checked whether the amalgamation is correct or not. In future this sort of assaying will be carried out as well as fine gold assays.

It must be born in mind that all the assays in the past were for fine gold and it therefore cannot be expected to extract by amalgamation from the refractory ore much more than of the value so given, i. e.  $\frac{1}{2}$  o. z. rock will not mill more than 3 to 4 dwts. at the outside and it therefore remains for the Engineer to see to what low value an ore will pay to mill. The  $\frac{2}{3}$  gold remaining will of course be recoverable from the concentrates. This is in the event of refractory

ores, as the free milling ores up to the assay may be recovered. The 2 me to be tested in with a Battery being

1) Crush coarse a large amount of vanner or sizers and treat these small amount of free gold to be amalgamation.

2) Crush fine and therefore less to amalgamation and collect concentrates

I am sorry time and the large expenses do not permit me to write more fully of my confidence in myself of success within two months of the Battery. In future I will give you more progress and any new developements

It is of the greatest importance to have heads of departments, as I find at present nothing about gold mining.

T. B.

of the shaft by various means of ore reduced to the required size for miners (I find this will be better for expensive stone crushers). The ore is sent to Lintido by cable rope-way and from whence it passes by automatic the pulp passes over electro plates sizers (Spitzkasten) this will divide ore into different sizes and values. These concentrates are in separate dams to await shipping. The cost of this plant, delivered here is estimated to be £ 25,000.— The labour here, so no further expenses beyond the payments will be necessary. In reference to these are very expensive machines and workmen to work and are of no opinion is the Spitzkastens will suit later on when the mine is thoroughly worked. The ore obtained these concentrators

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and that all the assays in the past it therefore cannot be expected to get much from the refractory ore much more than, i. e.  $\frac{1}{2}$  o. z. rock will not mill out the outside and it therefore remains to what low value an ore will pay remaining will of course be recoverable. This is in the event of refractory

ores, as the free milling ores up to 80% of the fine gold assay may be recovered. The 2 methods the ore will require to be tested in with a Battery being as follows:

- 1) Crush coarse a large amount of ore, concentrate with vanner or sizers and treat these afterwards, risking the small amount of free gold to be caught during crushing by amalgamation.
- 2) Crush fine and therefore less ore. Pay more attention to amalgamation and collect concentrates with vanners.

I am sorry time and the large extent of your property will not permit me to write more fully on it. But I feel confident in myself of success within two months of erection of the Battery. In future I will give you full details of all works in progress and any new developements which may take place.

It is of the greatest importance to have competent men as heads of departments, as I find at present the staff knows little or nothing about gold mining.

I remain Gentlemen

Yours faithfully,

T. BOWYER BOWER. M. I. M. M.

*Chief adm. and Engineer.*

PALELEH, 8 April 1899.

Herrn Dr. H. SIBER.

*Commissaris der Ned. Ind. Mijnbouw Mij.*

*zur Zeit Paleleh*

Anbei übersende ich Ihnen Copie der Informationen, welche der Commission von Herrn S. I. VERMAES auf deren Ansuchen gegeben worden sind, und erlaube ich mir hierbei noch zu bemerken, dass, obwohl Herr VERMAES eine sehr grosse Idee zu haben scheint von seinen metallurgischen Kenntnissen, gerade aus seinen an die Commission gegebenen Antworten deutlich hervorgeht, dass wir es mit einem noch unerfahrenen Anfänger in der Kunst zu thun haben, der jedoch den Muth gehabt hat, sein zum Theil noch mangelhaftes Buchwissen, ohne jegliche vorgängige Praxis, allerdings auf Kosten anderer Leute, in practische Ausführung bringen zu wollen.

Er sowohl als die Mij. können sich, meiner Ansicht nach, nur Glück wünschen, dass Herr VERMAES durch seine Entlassung daran verhindert worden ist, seine Erzaufbereitungspläne zur vollen Ausführung zu bringen, da ihm dadurch ein gänzlich Fiasco, der Mij. aber noch weitere unnütze Ausgaben erspart worden sind.

Um Ihnen nur einige Andeutungen zu geben, über die von Herrn VERMAES in seinem unreifen Enthusiasmus begangenen Irrthümer, möchte ich hier nur ganz kurz einige der von ihm selbst, in seinen Briefen an die Commission, gemachten Böcke zurückkommen. Vor allem ist

**die gänzliche Vernachlässigung der Amalgamation** ein Hauptfehler von Herrn VERMAES, in seinem System zur Verarbeitung

der *Paleleh*-Erze. Nach seiner Frage kommen bei der Verarbeitung das Gold in groben Stücken (Blät

Wenn Herr VERMAES das Gold nicht sieht, so hält er es von mationsfähig. Jedermann mit n wird ihm auf das Unbegründete können.

Amalgamation muss nämlich wenn sie günstige Resultate Erze, nach dem bei Fr. KR Buckau, angestellten Versuchen n

Die Richtigkeit dieses Ergebnisses anderen Proben von den Herrn PHILIP, Stuttgart, durch sehr worden.

Herr VERMAES wendet allerdings dass das zur Untersuchung verworfen reich und sehr zersetzt gewesen, tate daher nicht zuverlässige seien jeglichen Grundes. Die Ansichten men in Gegentheile darin überein Erzen das Gold sehr fein vertheilt Resultate garantirt werden, welche überdies auch in seinem unter teten Briefe selbst anführt.

**Die Consequenzen dieser Vernachlässigung** durch Herrn VERMAES sind nunkeit und sofort zu gewinnende und sehr complicirten Schmelzproben den Actionären durch die Anwendung einfachen und billigen Verfahrens sehnlich erwarteten Dividenden zu

Die Commission hat selbst ja der *Paleleh*-Erze für spätere Zeit vorläufig aber kommt dieser Proce man eben durch das genannte ein Zeit hinaus den grössten Theil de

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Ind. Mijnbouw Mv.

Paleleh

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Frage kommen bei der Verarbeitung von *Patokko*-Erzen, welche  
das Gold in groben Stücken (Blättchen) sichtbar enthalten.

Wenn Herr VERMAES das Gold in einem Erze mit blossen Auge  
nicht sieht, so hält er es von vorn herein für nicht amalga-  
mationsfähig. Jedermann mit nur einiger practischer Erfahrung  
wird ihn auf das Unbegründete seiner Anschauung hinweisen  
können.

Amalgamation muss nämlich immer dann gemacht werden,  
wenn sie günstige Resultate ergiebt, was für die *Paleleh*-  
Erze, nach dem bei Fr. KRUPP, Grusonwerk, Magdeburg-  
Buckau, angestellten Versuchen nachgewiesen worden ist.

Die Richtigkeit dieses Ergebnisses ist später ebenfalls an ganz  
anderen Proben von den Herren DRs. HUNDESHAGEN und  
PHILIP, Stuttgart, durch sehr eingehende Versuche bestätigt  
worden.

Herr VERMAES wendet allerdings gegen diese Versuche ein,  
dass das zur Untersuchung verwendete Erz ausnahmsweise sehr  
reich und sehr zersetzt gewesen, und die damit erzielten Resul-  
tate daher nicht zuverlässige seien. Diese Behauptung entbehrt  
jeglichen Grundes. Die Ansichten aller Sachverständigen stim-  
men in Gegentheile darin überein, dass gerade in den *Paleleh*-  
Erzen das Gold sehr fein vertheilt ist, wodurch zuverlässige  
Resultate garantirt werden, welche Thatsache Herr VERMAES  
überdies auch in seinem unter dem 26/1 98 an KRUPP gerich-  
teten Briefe selbst anführt.

**Die Consequenzen dieser Vernachlässigung der Amalgamation**  
durch Herrn VERMAES sind nun die, dass er das mit Leichtig-  
keit und sofort zu gewinnende Gold erst einem sehr theuren  
und sehr complicirten Schmelzprocesse unterwerfen wollte, anstatt  
den Actionären durch die Anwendung des vor der Hand liegenden  
einfachen und billigen Verfahrens schon seit langem zu den so  
sehnlich erwarteten Dividenden zu verhelfen.

Die Commission hat selbst ja auch Schmelzen von einzelnen  
der *Paleleh*-Erze für spätere Zeiten als Nebenprocess empfohlen,  
vorläufig aber kommt dieser Process gar nicht in Betracht, weil  
man eben durch das genannte einfache Verfahren noch auf lange  
Zeit hinaus den grössten Theil des Goldes gewinnen kann, wobei

der Rest des durch die Amalgamation nicht extrahirbaren Goldes ausserdem durch die Fruevanners aufgefangen wird.

Das System des Herrn VERMAES ist dasjenige für Bleiglanz-Schwefelkiese, wie es angewendet wird, wenn *kein Gold* in denselben enthalten ist. Ueberdies ist es eine ganz unverständliche Behauptung des Herrn VERMAES, wenn er nunterm 26/98 schreibt:

„Ein Versuch Setzmaschinen dazwischen zu benutzen zeigte deutlich, dass dies nur die Installation theurer, die Resultate aber nicht bedeutend besser machen konnte“.

Die Erfahrung lehrt jedoch, dass bei der Bleierzaufbereitung gerade die Setzmaschinen diejenigen Apparate sind, welche die besten Resultate ergeben, weil sie grob zerkleinertes Material verarbeiten.

Was die von Herrn VERMAES ursprünglich geplante *Bessemerei und electrolytisch Metallabscheidung* anbelangt, so ist er schliesslich allerdings erst dem unter gegenwärtigen Druck der finanziellen Umstände selbst noch so gescheid gewesen, diese Idee fallen zu lassen, da ja gar kein Material für eine solche theure Anlage vorhanden gewesen wäre.

Jeder vernünftige Mensch muss sich aber doch sagen, dass Herr VERMAES sich erst Rechenschaft darüber hätte geben sollen, ob die Materialien auch wirklich vorhanden waren, ehe er seine Pläne für die Erzverarbeitung mit den nöthigen Maassnahmen für Electrolyse aufstellte und durch theure Maschinen-Einkäufe begann zur Ausführung zu bringen.

Dass dies aber nicht der Fall gewesen ist, geht aus seinem Schreiben von 18/2 a. c. an die Commission hervor, worin er sagt:

„By the first plan was reckoned on a higher percentage of copper &c that did *not* get higher.“

Was den *Schmelzofen* anbelangt, so schreibt Herr VERMAES:

„This big capacity was chosen to have all advantages of a big over a small smelter and it is intended to run the furnace in the first years in intervals“.

Einen Schmelzofen aber mit Intervallen zu arbeiten, ist, wie jeder Fachmann wissen sollte, ein grosser Nachtheil, da man jedes mal den Ofen von Neuem in Betrieb setzen muss, eine kostspielige und langweilige Operation bei einem grossen Ofen.

Durch Bestellung eines Schmelzofens hätten ca. Fl. 40000. gespart werden können.

Wie ich nun von Aussen hörte, so bestellte Herr VERMAES eine Bestellung eines derartigen kostspieligen Ofens damit zu rechtfertigen, dass die Erze der anderen Minen von Nord-Süd derselbe Fehler wie soeben; grosse Spalten lediglich basirt auf durch noch nichts gebilligtem um nicht zu sagen Hirngespinnste eingezeichnet.

Hierbei möchte ich noch etwas bemerken.

Obwohl es einem — bei den Retourcommissionen anbelangt, in der Regel die einfache herrschen — schwer fällt, bei der Beurtheilung und Ziel hinaus gehenden, unnützlichem Anschaffungen und Maschinenbesitz für Eisenbahn- und Wasserkraftanlagen, Häusern, sowie bei der gerade so häufigkeit der angeschafften Werksgeräthschaften, z. B. eiserne „copper rollers“, &c. &c. an die Integrität der Commission in Hinsicht zu glauben, so spricht Herr VERMAES in dessen Plänen documentirte, auf sein eigenes Wissen und seine Erfahrung der Mann, so wie er sich selbst bestellungen keinen Maassstab gekostet, doch bona fide gehandelt haben dürfte, noch jede geschäftliche Erfahrung lockenden Preislisten gegenüber abzugeben.

Die Bemerkung, welche Herr VERMAES wiederholt — so dass ein Versehen

„by smelting it is intended to

„bring the greater part of the

„all the copper and gold“

ist ganz falsch, und eine arge Blamage. Metallurg weiss, dass gerade das Um-

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Erze der anderen Minen von Nord-Celebes gerechnet. Also wieder  
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lediglich basirt auf durch noch nichts gerechtfertigte Voraussetzungen,  
um nicht zu sagen Hirngespinnste eines jugendlichen Enthusiasten.

Hierbei möchte ich noch etwas bemerken:

Obwohl es einem — bei den bekannten Usancen, die, was  
Retourcommissionen anbelangt, im Maschinen und Eisenwaaren-  
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Anschaffungen und Maschinenbestellung von Herrn VERMAES,  
für Eisenbahn- und Wasserkraftanlage, Construction von eisernen  
Häusern, sowie bei der gerade sinnlosen Menge und Mannig-  
faltigkeit der angeschafften Werkzeuge und anderer eisernen  
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Hinsicht zu glauben, so spricht aber doch gerade das ganze  
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An einer anderen Stelle schreibt Herr VERMAES:

„Sorting tables, which you know to be very nice and  
„expensive are weak instruments &c."

er selbst aber schreibt diese Lesetafeln vor in seinem Briefe vom 26/1'98 an KRUPP, und kritisirt sie nachher als unzweckmässig.

Der Haupteinwand des Herrn VERMAES gegen den Vorschlag der Commission, die Anlage in *Lintidoe* zu errichten, ist der, dass nicht genug Wasser für eine solche dort vorhanden sei. Die Commission hat persönlich diesen ihr bereits von früher bekannten, gegen die *Lintidoe*-Anlage gemachten Einwand an Ort und Stelle untersucht, und ist trotzdem der Ueberzeugung treu geblieben, dass in *Lintidoe* nicht allein Wasser genug für Aufbereitungszwecke, sondern auch für Krafterzeugung vorhanden ist.

Widerspricht sich aber Herr VERMAES hier nicht?

Denn als Grund, dass es ihm nicht möglich gewesen sei, dass zur Aufrechterhaltung der Mij. so höchst nothwendige shippingore zu fördern, giebt er doch an, dass er in *Dopalak*, also eben, beinahe auf dem Kamme des Berges soviel Wasser in den Minen habe, dass er es nur mit den schwersten Pumpen und mit enormen Kosten bewältigen könne. Wenn es nun in *Lintidoe*, also am Fusse desselben Berges, so schrecklich an Wasser fehlt, warum kann er denn dieses Wasserreservoir auf dem Gipfel des Berges nicht für *Lintidoe* verwenden, — der Adit No. 2 wird doch binnen kurzem auf dieser Seite herauskommen — und würde ihm ja ausserdem durch den Gebrauch dieses Wassers noch eine beträchtliche Wasserkraft — den colossalen Fall in Betracht gezogen — quasi geschenkt werden.

Zum Schlusse ist noch folgende Bemerkung des Herrn VERMAES interessant: Mr. RICHARDS wolle, nachdem er hier in *Paleleh* gewesen und alle Pläne des Herrn VERMAES gesehen, jetzt dieselben in Soemalata einführen.

Eine solche Bemerkung richtet sich von selbst.

Hochachtungsvoll,

(gez.) RICH. POHLE.

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