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January 23, 1950

Mr Robert F. Koenig, Pres.,
Cerro de Pasco Copper Corp.,
40 Wall Street, New York City 5

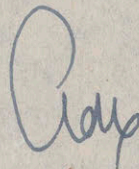
Dear Mr Koenig:

OOROYA SILVER REFINERY

I enclose 13 photostats from the about 150 drawings covering the silver refinery of the Oolen plant in Belgium, which please return when they have served your purpose. Starting from scratch with full information it would take half-a-dozen draftsmen about six months to complete such a task.

These will give you some idea of what an integrated silver plant looks like and form a basis for discussion of Oroya needs.

Very truly yours,



January 5, 1937

MR. DREW:

COPPER SLIMES - ASSAY COMPARISONS.

The following assays have been made since Oct. 22 on composite sample of copper slimes made at Oroya:

<u>Laboratory</u>	<u>Sample</u>	<u>Au</u>	<u>Ag</u>
Research	C	43.48	
Walker-Whyte	A	44.06	13121.94
"	B	44.04	13091.36

Listing all assays on the several portions of the composite sample we have:

Research	A	43.72	13143.2
"	C	43.48	
		<u>43.60</u>	
Smelter	B	43.13	13213.6
Walker-Whyte	A	44.06	13121.94
"	B	44.04	13091.36
"	C	44.20	13108.80
	average	<u>44.10</u>	<u>13107.33</u>
Ledoux	C	44.30	13090.35
Nichols Copper	C	43.85	13079.75
Chrome, USMR	C	43.50	13091.00
Genl Avg. all assays		<u>43.67</u>	<u>13117.50</u>

From these assays it would appear that laboratory differences are of greater magnitude than sample differences. Walker-Whyte get higher gold on all samples than other laboratories except Ledoux. Both Oroya laboratories get higher silver values than any other laboratory.

My experience with Nichols Copper Co. slime leads me to believe that were Oroya slime handled regularly the several laboratories would get much closer agreement.

W. C. SMITH

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January 23, 1939

Mr F.H. Clark, Pres.,
Cerro de Pasco Copper Corp.,
44 Wall Street, New York City

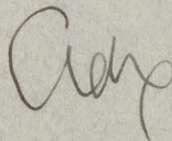
Dear Mr Clark:

SILVER

I enclose herewith Senator Townsend's S.J.1
and S.785 with accompanying press release, although I
suppose Mr Peckham has kept you posted as usual.

Also in Washington last Friday I heard the
Treasury either had or was about to issue a ruling
that domestic silver above ground June 30th and
delivered by November 30th would be paid for at the
present domestic price. This also may be "old
stuff" but I have not seen it in the papers nor can
I vouch for its reliability.

Very truly yours,



September 19, 1938.

SILVER POSITION
Week Ending Sept. 17, 1938.

Dues from Blister Copper

September (Balance)	270,000	ozs.	
October	887,000		
November	1,330,000		
December	1,150,000		
Jan. 1939	900,000		
Feb. 1939	900,000		
Total estimated dues to Feb. 28, 1939.....			5,437,000
Anticipated dues.....			<u>1,212,000</u>
Total.....			<u>6,649,000</u>

Undelivered Sales

September (Balance)	800,000	ozs.	
September/October	850,000		
October/November	900,000		
November/December	1,150,000		
December/January	900,000		
January/February	550,000		
Anticipated dues to be returned (est.)	<u>1,212,000</u>		<u>6,362,000</u>
Balance available for sale.....			287,000

Anode Slimes

Estimated silver content of Anode Slimes (not included above).....	<u>639,000</u>
Silver Unsold.....	926,000

PHYSICAL POSITION

	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>	<u>Jan.1939</u>	<u>Feb.1939</u>	
Bal. For'd	--	-530,000	-493,000	-63,000	-63,000	-63,000	
Dues	270,000	887,000	1,330,000	1,150,000	900,000	900,000	
Total	270,000	357,000	837,000	1,087,000	-837,000	-837,000	
Sales	800,000	850,000	900,000	1,150,000	900,000	550,000	
Balance	-530,000	-493,000	-63,000	-63,000	-63,000	287,000	ozs.
				Add Anode Slimes....		639,000	
				Silver Unsold.....		926,000	

September 6, 1938

WEEKLY STATEMENT OF SILVER POSITION
SEPTEMBER 3, 1938

SALES:

Aug. 28 - Sept. 3 = 100,000-ozs.
Jan. 1 - Sept. 3 = 8,812,250-ozs.

PRODUCTION (Est.):

Aug. 28 - Sept. 3 = 266,611-ozs.
Jan. 1 - Sept. 3 = 7,992,297-ozs.

SILVER IN COPPER BULLION:

	<u>Ounces</u>
At Refinery	2,410,673
In transit to Refinery	983,013
In Peru - Blister (Est.)	<u>378,749</u>
	3,772,435
Less - Accrued Sales deliverable from future Refinery Dues	<u>5,600,000</u>

Future Dues

	<u>Ounces</u>
September	1,170,948
October	887,464
November	1,335,274
December	<u>378,749</u>

In Copper Bullion 3,772,435

Dec. - (Sept. Production)		821,251
Jan. - (Sept.-Oct. ")		<u>1,006,314</u>

Not in Copper Bullion 1,827,565

Total Sales as above 5,600,000

Sold - not in Copper Bullion (as above) 1,827,565

ANODE SLIMES:

Estimated Silver content of Anode Slimes
not included above - 676,757-ozs.

April 8, 1938

Mr. E. H. Clark, Pres.,
Cerro de Pasco Copper Corp.,
44 Wall Street, New York City.

Dear Mr. Clark:

SILVER METALLURGY

There are certain objections to the emergency procedure suggested in Mr. Harper's letter of the 2nd which I believe are sufficient to suspend authorization of its adoption until you feel the market situation more threatening than at present. In the meantime it can be studied.

In the first place the large furnace will absorb an unpredictable but possibly disproportionately great amount of the silver treated in its brickwork. This will retard any prompt recovery of this share and also necessitate the tearing down and smelting of this lining. A smaller more suitable makeshift furnace might be better in the end.

Then we have no cost estimate as to the total treatment and byproduct charges plus metal losses including antimony. Even though it is a wild one we need something which we can translate into cents per ounce of silver which will indicate how much the market would have to fall off to justify the procedure.

Finally I do not at all like the idea of shipping out such a rich bismuth bullion. Perhaps Grasselli is the only plant really equipped to handle it; otherwise we teach others much about the recovery of bismuth as well as run the risk of getting them all tangled up in their metallurgy with difficulties in making the promised deliveries of either silver or bismuth. I think we should wrestle with getting the bismuth out at Oroya. The moment we have a fould dore on hand at Oroya we know that we can either ship it or route it eventually into the copper converters and are safe in selling futures against the recoverable content which we know can be covered within the six months' limit. Finally I should like to avoid the sampling risks involved in shipping rich foul bullion.

While all of these comments fail in an emergency and it is quite possible that no better route is open we can afford a month for study and a more definite cost estimate

Lima, Peru, April 2, 1938.

Mr. E. H. Clark,
President,
Cerro de Pasco Copper Corporation,
44 Wall Street,
New York City.

Dear Sir: Anode Slimes

Regarding the suggestion, made in your letter of March 24, I am today taking this matter up with Messrs. McCutchan and Harper, to see what can be done to get the silver in these slimes into some form that they could be marketed before either a drop in the price of silver or before the end of the present year.

Yours very truly,
HAROLD KINGSMILL

Lima, Peru, April 4, 1938

Mr. E. H. Clark,
President,
Cerro de Pasco Copper Corporation,
44 Wall St., New York City.

Dear Sir: Anode Slimes

Will you kindly refer to my letter of April 2, under the above heading.

Attached hereto you will please find copy of a report from Mr. Harper, Chief Metallurgist, as to what can be done with anode slimes, to get them on the market more quickly than can be done by regular treatment.

Will you kindly advise what can be done with a metal, such as he proposes to make?

Yours very truly,
HAROLD KINGSMILL

La Oroya, April 2, 1938.

Mr. V. L. McCutchan,
Assistant General Manager,
La Oroya.

Dear Sir: Anode Slimes Silver

Referring to Mr. Kingsmill's enquiry regarding emergency silver delivery we can clear up the stock pile of anode residue in from two to three months at a loss of probably not over 5% to 10% of the values, provided a metal of the following assay can be marketed:

Ag.	2,500	ozs.	per	ton
Au.	2	"	"	"
Cu.	2%			
Pb.	25%			
Bi.	60%			
Te.	1%			

It should be understood that the above assay is only approximate and may vary either more or less by 10% or 20% of the figures given.

We would do this by melting anode residue in the dust reduction furnace and blowing the resultant metal free of arsenic and antimony in the bismuth plant converters, using the new and old plants.

This program can be put into effect within two weeks of notification and would deliver from 600,000 to 900,000 ounces of silver a month.

Yours truly, T. E. Harper, Jr.

Cerro de Pasco Copper Corporation
44 Wall Street, New York

April 11, 1938.

Silver Anode Slimes.

Mr. L. Addicks,
Bel Air,
Md.

Dear Mr. Addicks:

I have yours of the 8th on the above subject
and am airmailing copy to Peru to-day with copy of Mr. Smith's
memorandum of even date on the same subject, per attached.

Yours truly,

Edward H. Clark

Edward H. Clark.

April 11, 1938

MR. CLARK:

Complying with your request I herewith submit my suggestions as to a method of treatment of anodes residue stock:

Mr. Harper in his letter of April 2 suggests smelting anode residues in the dust reduction reverberatory furnace. The use of this furnace will permit the smelting of large amounts of the stored residue in a very short time and the collection of the silver in the resultant metal. This furnace is not an ideal one for the treatment of high silver materials and one would expect the furnace bottom to absorb and tie up a large amount of silver. Considerable handling of the residue will be necessary in order to reach the dust reduction furnace and the danger of mechanical losses are great.

The treatment of the residues in the dust reduction furnace will produce a metal high in silver and bismuth. Mr. Harper suggests selling this high silver, bismuth metal. We do not know where this metal can be disposed of to advantage rapidly enough to obtain the present silver price. I suggest as an alternative method:

Use the old bismuth plant slimes furnace and build one or more small temporary furnaces to smelt mixtures of oxidized and fresh residues at the proper rate to keep the old bismuth plant converters operating at capacity on the concentration of the metal to such weight as can be currently refined in the new residue plant furnaces to produce dorè.

The silver loss in flue gases will be relatively low in smelting the residues and in the concentration of the metal until the silver has been concentrated sufficiently to require high operating temperatures, at which point the metal should be transferred to the new slimes plant furnaces which are equipped with baghouses.

The final concentration will produce a dorè to be sent to the copper converters and a bismuth slag to be retreated when the stock of anode residues has been exhausted or when sufficient additional furnace capacity has been installed to permit bismuth production without delaying the liberation of stocked silver.

The rapid delivery of the silver now in the anode residue stock pile will delay the bismuth production and incur the loss of some silver and heavy antimony losses. The operation of the experimental cottrell which was erected at the bismuth plant in 1936 should reduce the losses to some extent.

At the end of the emergency campaign the linings of the several small furnaces can be torn out and resmelted for the recovery of their silver content.

W. C. SMITH
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June 28, 1937

Mr. C.V. Drew, Vice-Pres.,
Cerro de Pasco Copper Corp.,
44 Wall Street, New York City.

Dear Mr. Drew:

SILVER REFINERY

In vol. 106, Page 416, Transactions AIME, is given operating costs for the Mt. Lyell refinery which I think Mr. Smith would be interested in comparing with our estimates for a refinery at Oroya.

The problem is similar as regards cheap power and high cost fuel and they have solved it in the same way we are suggesting for Cerro. They treat converter anodes directly and ship cathodes and slimes. They have not the metallurgical problem of high lead, antimony and silver anodes to deal with, however.

The total cost is given for Mt. Lyell operations only as £ 1.650, Australian currency, with labor (unskilled) at £ 3.30 per week of 48 hours. (long ton)

Very truly yours,

P. S. My address for the balance of this week will be the Ritz-Carlton, Montreal.

Cerro de Pasco Copper Corporation
44 Wall Street, New York

November 23, 1937

Mr. L. Addicks,
Bel Air,
Md.

Dear Mr. Addicks:

I thank you for your memorandum on possible oxidation of the slimes residues stock pile. This possibility has been called to the attention of Mr. Spilsbury.

I am sending the silver research reports to Peru and will ask for suggestions, if they have any.

Thanks for both.

Yours very truly,

Harold Kingman

