ANACONDA COPPER MINING COMPANY

25 Broadway, New York

New York, New York,
January 8, 1941.

Mr. Tom Lyon,
820 Kearns Building,
Salt Lake City, Utah.

Dear Tom:

You no doubt have received copies of Droubay's letter and maps of December 31 date.

I am sure we did not recommend driving 1201 in waste if there was a possibility of it being extended in ore. There is no doubt about the importance of driving Walker Mine openings in ore wherever possible; that is, where there is no conflict of interest with good mining. I am wondering why 1201 diverged from the vein at approximately 16000 coordinate.

The ore segment now being followed by 1201 probably corresponds to the segment between the faults on the 1000 level at 16000 coordinate. Farther to the north on the 1000 the fault crosses the vein and the ore appears on the hanging wall side. I suppose we may expect the two faults to converge and pinch out the ore at some point farther north on the twelfth level. If the geology is consistent, we should then find the vein continuation to the east of the faults.

Yours very truly,

RENO H. SALES

RHS:aw

CC: Mr. C. E. Weed.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

ANACONDA COPPER MINING COMPANY

25 Broadway, New York

New York, N. Y.
January 9, 1941.

AIR MAIL

Mr. S. K. Droubay,
Walkermine, California.

Dear Droubay:

This will acknowledge receipt of your letter of December 31st, together with maps showing portions of the 10th and 12th levels.

Regarding Lyon's letter of November 27th, I recall that in my discussion with Tom our plan was to keep 1201 drift straight as long as we had no ore but to supplement the drift advance with drill holes into the vein, the idea being to get back on the vein any time we found ore.

It has been my most earnest belief in connection with Walker development that, wherever possible, raises and drifts should be driven in ore or at least upon the vein, of whatever grade. In this connection, I am wondering why 1201 turned away from the vein at or about the 16000 coordinate. My recollection of my talk with Lyon was that we did not want to stop 1201 until it had been extended at least as far as there is any ore showing on the 10th level.

If I have not made myself clear in the past, I will do so now and advise that development faces be kept in the vein as far as possible in order that the amount of waste broken be kept at a minimum. Of course, there are occasions where speed is the most important factor and, in such instances, it may be advisable to run laterals with the use of crosscuts or diamond drill holes to determine the position and grade of the vein itself.

Incidentally, we have had no word as to how you are taking care of the situation at the north face of 934C drift north on the Piute vein. Here is a place where Mr. Weed and I think it important to keep in the vein and avoid breaking waste, if possible. However, that is the mine management's job, to develop the vein and at the same time have a satisfactory haulage way.

Yours very truly,

RENO H. SALES

RHS:F
CC: Messrs. Weed, Dugan, Lyon,
& Hartmann.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

FORM 396 4-30-40-2M

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

January 15, 1941

H. M. HARTMANN, MANAGER

Mr. Reno H. Sales, Chief Geologist
Anaconda Copper Mining Company
Hennessy Building
Butte, Montana

Dear Mr. Sales:

Please find enclosed, sketches of the 900 Level, North Piute Heading and of 1201DN, which I trust, will answer your inquiry of January 9, 1941.

For the time being, we are following out along the vein in the North Piute Heading, but from the looks of things, it is going to pinch. Shall we attempt to continue North along stringers, such as the one shown in Hole No. 71, if the vein dies out, or should we drop back and drive out along the original lines of 934CDN. This latter course is favored by the Operating Department, because the advance is much more rapid.

In regards to 1201DN running off the vein at co-ordinate 16,000, an attempt was made to drive the drift on lines in solid ground because the hanging wall fault caved into the drift when the narrow streak of ore was followed. The heading was advanced before 1209 or 1210 crosscuts were driven, and it was supposed that ore streaks continued in the footwall, as indicated just ahead of 1208 crosscut west. However, it would help if these crosscuts were driven as we advance and not saved up until the heading is in a convenient stage for delay.

A short crosscut east has just been started from the present face of 1201, which will be extended through the fault, in anticipation of finding ore here, the same as on the 1000 Level. If waste is encountered, a 50 foot drill hole will be extended, and operations stopped until you direct us as to what should be done.

An attempt is being made to advance Surface Drill Hole No. 57, but they are not gaining much headway. The bottom is still at 715 feet and just about to the contact.

Respectfully yours,

S. K. Droubay

S. K. Droubay

SKD:DM

cc - Mr. Lyon
Mr. Dugan
Mr. Weed

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

FORM 396 8-40 2M M.P.C.

WALKER MINING COMPANY
WALKERMINE
PLUMAS COUNTY, CALIFORNIA

January 15, 1941

H. M. HARTMANN, MANAGER

Mr. John F. Dugan, Gen. Supt. of Mines
International Smelting & Refining Company
818 Kearns Building
Salt Lake City, Utah

Dear Jack;

I have a copy of Mr. Sales' letter to Mr. Droubay, of January 9th. We have had some telephone conversation regarding this.

Regarding keeping Development faces in the vein and following ore, I can assure you that this is being done and furthermore, an extra-ordinary amount of effort is being expended in connection with this. Where there is any doubt, rush samples are taken and these are out, shortly after noon of the day they are taken. During the past two months, in all the work we have been doing, there have only been two instances where ore could have been followed and some waste was broken. In both these instances, in Piute, the result was half a face, instead of a full face of ore. The miners in both cases drilled contrary to instructions and they will not do it anymore, also, the Shift Bosses throughly understand that it is their responsibility to see that the miners drill where they are told.

Specifically regarding the 1200 mentioned in Mr. Sales' letter, Mr. Droubay has written Mr. Sales, with copies to Mr. Weed, Mr. Lyon and yourself, also enclosing sketches. If you will refer to the sketch enclosed with Mr. Droubay's letter, you will see a pencil note: "Caved into drift", at the point just before 1209 crosscut. Up to this time, we had been making every attempt to follow the ore. While the red color, indicating heavy mineralization, is straight on the map, the values were very irregular. That is, no two faces were alike. This was the first place visited each morning by the Sampler, the Shift Boss and Earl Forgaard. Also at least every other day, a visit was made by the Geological Department, to say nothing of the trips by Bill Warren and myself.

At the point marked, "caved into drift", No. 1 Fault was very bad. In fact, we could not have gone ahead without breast boarding and spiling. The drift was put on lines to swing us toward the foot. It is possible, that we could have gone ahead and kept nearer No. 1 Fault, but we had so much trouble with the fault caving, that it seemed the best thing to get ahead and if the ground got better, to turn back into the ore, which we did. As far as cutting 1209 crosscut sooner, it is doubtful if it would have helped any, as we had to get into the footwall of the ore streak, to make any kind of progress. The stretch of 1201 that was in waste, was hoisted separately as waste. Mr. Droubay informs me, that the original sketches sent Mr. Sales, bore the pencil notation, which he thought at the time, explained the reason for turning the drift.

Very truly yours,

H. M. Hartmann

HMH:DM

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

CLASS OF SERVICE

This is a full-rate [illegible]am or Cable-[illegible] unless its de-[illegible]d character is indicated by a suitable symbol above or preceding the address.

WESTERN UNION

1201

SYMBOLS

DL=Day Letter
NT=Overnight Telegram
LC=Deferred Cable
NLT=Cable Night Letter
Ship Radiogram

R. B. WHITE, PRESIDENT
NEWCOMB CARLTON, CHAIRMAN OF THE BOARD
J. C. WILLEVER, FIRST VICE-PRESIDENT

The filing time shown in the date line on telegrams and day letters is STANDARD TIME at point of origin. Time of receipt is STANDARD TIME at point of destination

FV70 40 NT=WALKERMINE CALIF 19

RENO H SALES,CARE ANACONDA COPPER MINING CO= 1941 JAN 19 PM 4 15

25 BROADWAY NYK=

HOLE 76 IN 38 FEET EAST FROM 1201 FACE BARREN SCHIST WILL CONTINUE TO FIFTY ADVISE WHAT TO DO STOP HOLE 74 IN 172 FEET NORTH 80 DEGREES EAST FROM CROSSCUT AT FACE 1017 CROSSING CLAY GOUGES NO MINERAL YET=

S K DROUBAY.

76 38 1201 74 172 80 1017...

THE COMPANY WILL APPRECIATE SUGGESTIONS FROM ITS PATRONS CONCERNING ITS SERVICE

Charge to the account of ANACONDA COPPER MINING CO.—GEOLOGICAL DEPARTMENT $

CLASS OF SERVICE DESIRED			
DOMESTIC		CABLE	
TELEGRAM		ORDINARY	
DAY LETTER	X	URGENT RATE	
NIGHT		DEFERRED	
NIGHT LETTER		NIGHT LETTER	
SPECIAL SERVICE		SHIP RADIOGRAM	

Patrons should check class of service desired; otherwise the message will be transmitted as a telegram or ordinary cablegram.

WESTERN UNION

1206-B

CHECK
ACCOUNTING INFORMATION
TIME FILED

R. B. WHITE, PRESIDENT
NEWCOMB CARLTON, CHAIRMAN OF THE BOARD
J. C. WILLEVER, FIRST VICE-PRESIDENT

Send the following message, subject to the terms on back hereof, which are hereby agreed to

January 20, 1941.

S. K. Droubay
Walkermine, California
via Spring Garden

Your telegram nineteenth. Drill west fifty feet face twelve hundred one and if nothing found extend main drift additional hundred feet. Hole seventy-four should go to three hundred feet provided no ore is disclosed at less distance. Continue nine thirty four Piute same course in event ore pinches.

RENO H. SALES

ANACONDA COPPER MINING COMPANY

25 Broadway, New York

New York, New York,
January 20, 1941.

AIR MAIL

Mr. S. K. Droubay,
Walkermine, California.

Dear Droubay:

Wired you this morning, day letter, as follows:

"Your telegram nineteenth. Drill west fifty feet face twelve hundred one and if nothing found extend main drift additional hundred feet. Hole seventy-four should go to three hundred feet provided no ore is disclosed at less distance. Continue nine thirty four Piute same course in event ore pinches."

In my reference there to 934 Piute, I do not know whether you gave the working opposite 936C a new number or continued it as #934C. I had assumed that it would have a new number. In any case, in the above telegram, it is meant that 934C should be continued from crosscut 936C northerly on its original course. It is evident that to try to follow the ore from hole 73 to hole 71 would result in a very crooked drift. If, however, drifting from drill hole 73 should prove that the ore definitely continues more or less parallel to drill hole 71, even at reduced width, I think we should follow it.

As to drift 1201, we think we should take another look at 100' farther. I will leave it to yourselves as to whether the drift goes along the fault or drops off into the footwall. At 100 feet, we should drill again into the foot and hanging, and then, in the event no ore is found, this level should be temporarily abandoned as far as prospecting is concerned.

If farther extension of diamond drill hole #74 finds no ore, we think 1017 should be continued until it intersects the Piute fissure without further consideration as to drilling.

Yours very truly,

RENO H. SALES

RHS:aw

CC: Mr. C. E. Weed
Mr. Tom Lyon
Mr. J. F. Dugan
Mr. H. M. Hartmann

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

INTERNATIONAL SMELTING AND REFINING COMPANY

Kearns Building, Salt Lake City, Utah

TOM LYON
GEOLOGICAL DEPARTMENT

January 20, 1941

AIR MAIL

Mr. Reno H. Sales
Room 1726, 25 Broadway
New York City, N. Y.

WALKER MINE

Dear Reno:

I have just received the following telegram from Droubay:

"HOLE NO. 76 IS IN 38FEET EAST FROM THE FACE OF 1201 DRIFT NORTH IN IN BARREN SCHIST."

Droubay is asking for instructions as to how to proceed. I am wiring Droubay today to stop the work in 1201 as I do not believe it is advisable to continue the drift at this time.

In case you do not agree regarding the stopping of this work, please let me know at once.

Very truly yours,

Tom Lyon

TL:P
cc: Mr. C. E. Weed

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

F. 423 1-8-40 2M

INTER-DEPARTMENTAL CORRESPONDENCE

INTERNATIONAL SMELTING AND REFINING COMPANY

MINING DEPARTMENT

818 KEARNS BUILDING SALT LAKE CITY, UTAH

SUBJECT:

January 20, 1941

Mr. C. E. Weed, General Manager of Mines,
Anaconda Copper Mining Company,
25 Broadway, New York City.

Dear Sir:

I received a copy of Mr. Sales' letter of January 9th to Droubay concerning Walker mine development, in which he states:

> "It has been my most earnest belief in connection with Walker development that, wherever possible, raises and drifts should be driven in ore or at least upon the vein, of whatever grade. In this connection I am wondering why 1201 turned away from the vein at or about the 16000 coordinate. My recollection of my talk with Lyon was that we did not want to stop 1201 until it had been extended at least as far as there is any ore showing on the 10th level."

During my last visit to Walker I went over very thoroughly with Hartmann, Warren and Droubay the development program, and they were given explicit instructions to follow the ore in every instance, and to break the least possible waste. We had a pretty thorough understanding on this point.

There have been a few cases like 903DS Piute where the miners did not follow the ore for a couple of rounds, but the shift boss was directly to blame for not following the work more closely. I do not think this will happen again.

After reading Mr. Sales' letter, I called Hartmann on the 'phone, and attached is a copy of letter which I received from him which is self-explanatory. Please note his comments concerning the 1201DN.

I know Warren and Hartmann are doing everything they can to keep the development going in the proper manner.

Yours very truly,

John F. Dugan

John F. Dugan.

FGD:H
Enc.
cc:Mr. Sales

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

FORM 596 8-40 2M M.P.C.

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

January 20, 1941

H. M. HARTMANN, MANAGER

Mr. Tom Lyon Chief Geologist
International Smelting & Refining Company
818 Kearns Building
Salt Lake City, Utah

Dear Tom:

In answer to your request of January 9th, as to the total number of feet of Development work, drifts, raises and crosscuts, driven during the Year 1940, together with a short report on the results obtained, I submit the following report:

Summary of Heading Progress for Mining Development

Mining Development	New Portal	Central	North	712	Piute	Total
Drifts	49	43	75	58		225
Crosscuts		76	73			149
Raises		413	464	683	661	2,221
Total	49	532	612	741	661	2,595
Prospecting Development						
Drifts		717	1,024	3,744	1,488	6,973
Crosscuts		20	260	1,546	486	2,312
Raises		192	418½	2,215	44	2,869½
Total		929	1,702½	7,505	2,018	12,154½
GRAND TOTAL	49	1,461	2,314½	8,246	2,679	14,749½

SOUTH OREBODY

A new Portal was started to replace the first 600 to 1100 feet of the old one, where the timber and ditch is in extremely bad condition for Spring high water. It is temporarily stopped.

CENTRAL OREBODY

A substantial footage of drifts, raises and crosscuts were driven, in an attempt to develop a commercial body of ore in the 720 Block, just North of the Central Shaft. This proved to be too low grade and the ore was written off the Reserves.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

Mining Development was carried out to facilitate mining the 880 and the 1080A Blocks, and the sub-level, 1066BDN, was extended North under the 1080A Block.

The Main 1200 Level was extended to a point about 200 feet South of the Shaft and North into the North Orebody vein. Several crosscuts and drill holes were extended, but no ore was located.

NORTH OREBODY

Numerous raises, stopes, drifts and crosscuts were driven to determine vein conditions, or to facilitate mining, in connection with 420B, 920, 930, 940 and 1020 Ore Blocks. A fair tonnage of additional Recoverable Ore was developed in the 1020 Block, by driving 1062B Raise.

The most extensive work was done along the 1200 Level, where the majority of the vein has been opened. It may be too badly broken with faulting for economical mining. Numerous crosscuts and short Diamond Drill holes, in conjunction with the Main 1201 North heading, have exposed the vein quite thoroughly.

712 OREBODY

Development work has been quite active in this Orebody, and has resulted in blocking out 102,025 tons of additional Recoverable Ore above the 700 Level. Most of this occured along the footwall vein, where drifts and crosscuts were driven along the 300, 400, 500, 600, and 700 Levels, with numerous connecting raises driven at various intervals to prospect the vein and to act as service and transfer raises. The 700 Haulage Level has been extended into this country, and it should start yielding a substantial daily tonnage of ore in the near future.

The southerly extension of upper levels have not been explored as yet, and it is likely that additional ore will be developed above the 517D Block.

Development work has also developed ore immediately in the footwall of 605#3 and 605B Stopes, also above the 400 Level along the extreme North end of the footwall vein.

Exploration along the 700 and 1000 Levels, proved that the footwall vein is too poor to mine between these Levels and made it necessary to write off nearly 150,000 tons of low grade, Possible Ore.

709E Winze was driven 72 feet down the Main 712 vein, below the 700 Level, to test the condition of the ore. The vein has almost pinched in the bottom of the Winze, but it may have passed through the ore as it rakes to the North with a discus-like cut-off. Drifting to the North will give this information. With the exception of a few fair stringers near the present face of 1017DN, none of the vein has extended to the 1000 Level.

PIUTE OREBODY

Piute exploration work was confined to the 900 Level, where new ore was developed in the South end, and a new detached block of ore was opened up, several hundred feet to the North of Piute.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

Work South, along the 900 Level, has opened up what appears to be the main ore-shoot, along which Piute mineralizing fluids advanced. The shoot is at least 500 feet long, with a maximum thickness of 70 feet near the middle portion, and a taper toward each end. There is a distinct pinch on the North end, but the South end is not yet fully explored. Crosscuts, raises and short Diamond Drill holes have thoroughly exposed the ore and it should produce at a grade a little better than 1.5% cu. From all indications, this shoot should extend to the 1000 Level, where 1017DN is being driven rapidly as possible to explore it.

The North Piute heading was driven out to explore the mineralized zone that was indicated by Surface Diamond Drill Hole No. 21. Several hundred feet of vein has been developed along the Level, but the full extent of ore is unknown. The present ore-shoot seems to be pinching to the Northeast, but further development may expose additional ore to the North.

The ore out here is higher in grade than the average for Piute, with zones that run up to 5.0% cu. These zones occure where the vein is distinctly chloritic and schistose. Other parts of the vein are solid with quartz and run about 2.0% cu.

It is known that the sub-surface is about 400 feet up the dip of the vein, so the vein should be leached near the 800 Level.

Crosscuts and short drill holes have exposed several hundred feet of mineralization, which should average at least 2.3% cu. No development up or down the vein, has been started.

I trust that this report is complete enough to serve your purpose. If desired, a more complete summary of the Development table may be obtained from the Manager's Report, which is being mailed to Mr. Dugan.

Very truly yours,

S. K. Droubay

SKD:DM

S. K. Droubay

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

FORM 396 4-30-40-2M

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

February 1, 1941

H. M. HARTMANN, MANAGER

Walker

Mr. Reno H. Sales, Chief Geologist
Anaconda Copper Mining Company
25 Broadway
New York City, New York

Dear Mr. Sales:

I have your letter of January 28th, asking my opinion on the occurance of chalcocite in the North Piute heading.

Surely, most of the copper value in the ore is due to chalcopyrite, with a minor amount of bornite, the both of which I think, are primary.

There have been occasions when I noticed sooty chalcocite occuring along seams associated with cross fissuring, or shearing and entered it as such on my 20 scale notes, but these are so rare that only a very limited number of assays would be effected. Occasionaly, chalcopyrite is coated with the gray chalcocite, which I think is due to alteration of the chalcopyrite and not deposited as a secondary product.

Surface drilling shows that the sub-surface is 200 feet vertically above the 900 Level, near the present face and will remain that high for the next 350 feet, to where Diamond Drill Hole No. 51 reached the contact. Hole No. 57 is about 20 feet lower than this and is still in lava. It should be right near the contact at a distance of 500 feet North of Hole No. 51.

I would not be surprised to see a decidedly enriched zone, about half way up the vein to the sub-surface, but could not predict how far. The main Piute Orebody carried values within 50 feet of the surface, but indicated some leaching and oxidation of iron, around 100 feet vertically below the surface. Because the majority of this North Piute mineralization is deposited as a chalcopyrite impregnation into what is now a scaley, chloritic schist with very little quartz, the zone of leaching may be somewhat lower. The amount of primary sulphides is sufficient to furnish an attractive secondary orebody, providing the vein originally extended beyond the present sub-surface.

Respectfully yours,

S. K. Droubay

S. K. Droubay

SKD:DM

cd - Mr. Gidel
Mr. Lyon
Mr. Weed

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

FORM 396 8-40 2M M.P.C.

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

February 1, 1941

H. M. HARTMANN, MANAGER

Mr. Reno H. Sales, Chief Geologist
Anaconda Copper Mining Company
25 Broadway
New York City, New York

Dear Mr. Sales:

I have your letter of January 28th, asking my opinion on the occurance of chalcocite in the North Piute heading.

Surely, most of the copper value in the ore is due to chalcopyrite, with a minor amount of bornite, the both of which I think, are primary.

There have been occasions when I noticed sooty chalcocite occuring along seams associated with cross fissuring, or shearing and entered it as such on my 20 scale notes, but these are so rare that only a very limited number of assays would be effected. Occasionaly, chalcopyrite is coated with the gray chalcocite, which I think is due to alteration of the chalcopyrite and not deposited as a secondary product.

Surface drilling shows that the sub-surface is 200 feet vertically above the 900 Level, near the present face and will remain that high for the next 350 feet, to where Diamond Drill Hole No. 51 reached the contact. Hole No. 57 is about 20 feet lower than this and is still in lava. It should be right near the contact at a distance of 500 feet North of Hole No. 51.

I would not be surprised to see a decidedly enriched zone, about half way up the vein to the sub-surface, but could not predict how far. The main Piute Orebody carried values within 50 feet of the surface, but indicated some leaching and oxidation of iron, around 100 feet vertically below the surface. Because the majority of this North Piute mineralization is deposited as a chalcopyrite impregnation into what is now a scaley, chloritic schist with very little quartz, the zone of leaching may be somewhat lower. The amount of primary sulphides is sufficient to furnish an attractive secondary orebody, providing the vein originally extended beyond the present sub-surface.

Respectfully yours,

S. K. Droubay.

S. K. Droubay

SKD:DM

cc - Mr. Gidel
Mr. Lyon
Mr. Weed

Dear Mr. Gidel,

I am mailing you a specimen of the chloritic schist, which is typical of a good part of this orebody.

Specimen received. M.H.G.

Red

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

FORM 396 8-40 2M M.P.C.

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

February 1, 1941

H. M. HARTMANN, MANAGER

Mr. John F. Dugan, Gen. Supt. of Mines
International Smelting & Refining Company
818 Kearns Building
Salt Lake City, Utah

Dear Mr. Dugan:

Mr. Warren is quite anxious to get permission to do the work as indicated by the accompanying sketch. He will have crews available within a few days and feels that this set-up will complete work necessary for full production of the footwall vein.

At one time, Mr. Sales was interested in opening up the 600 sub-level mineralization, which has always been too isolated for hand tramming. Part of 711E and the necessary raise, may possibly be driven along this mineralized streak.

We have gone over this with Mr. Hartmann and he will no doubt discuss the matter with you in the immediate future.

Very truly yours,

S. K. Droubay

S. K. Droubay

SKD:DM
Encl. 1

cc - Mr. Sales
Mr. Weed
Mr. Lyon

P.S. Split core assays of the 13 feet of glassy vein from Hole No. 75, on the 1000 Level, testing the southerly extension of Piute, ran:

273 - 280	2.35% cu	0.530 oz. Ag	0.03 oz. Au
280 - 286	2.95% cu	1.296 oz. Ag	0.08 oz. Au

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

I. S. & R. FORM 16-G

712 ORE BODY

517 Footwall Vein.

1" = 50' 2-1-41

Vertical Section 10+90

Proposed Raise.

600 Level

Proposed Raise

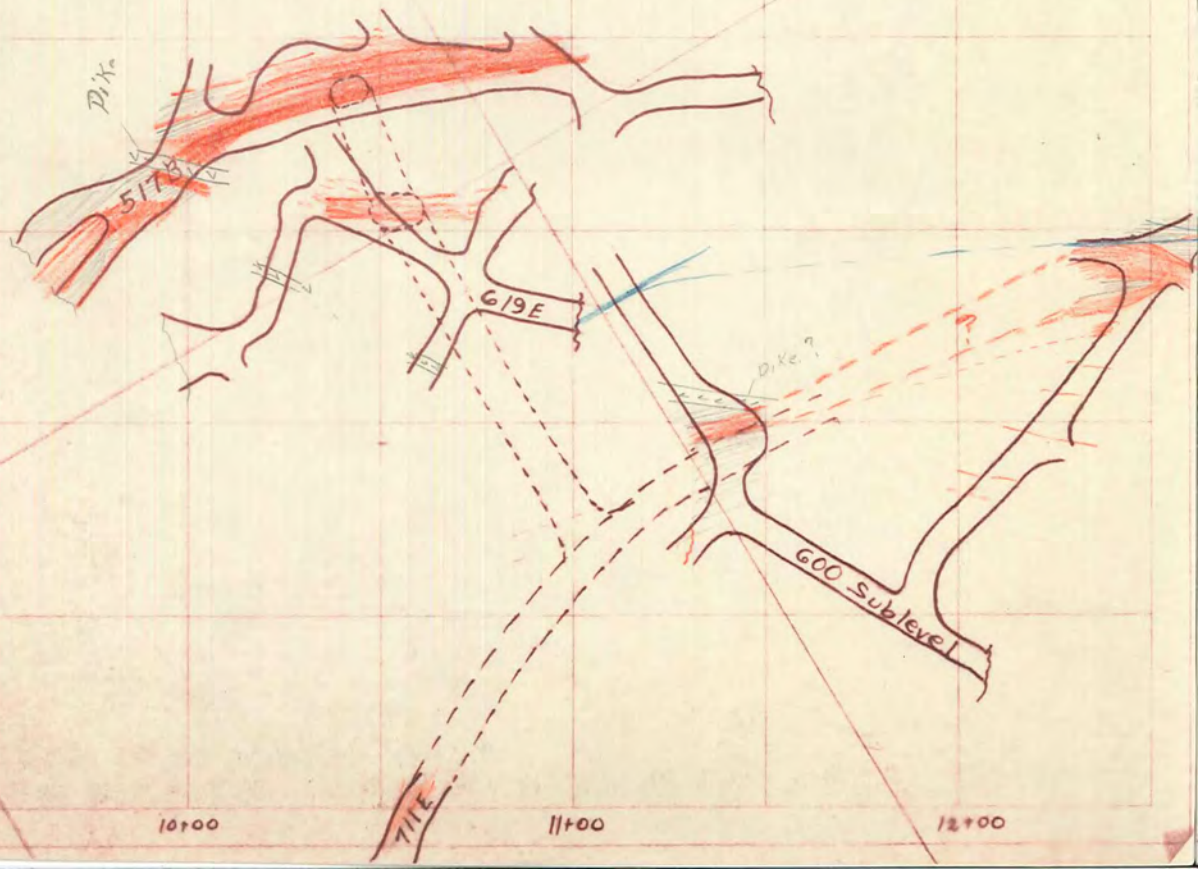
600 Sub Level

711EDN Proposed Extension

Proposed extension of 711EDN and necessary raise connections for developing ore below 517 Stope and for producing at least 30,000 tons of ore that would have to be otherwise hand trammed. Also, additional ore may be developed along sub-level.

Estimated Work:
320 ft. raises
120 ft. drift

6200



Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

ANACONDA COPPER MINING COMPANY

25 Broadway, New York

New York, New York,
February 3, 1941.

Mr. C. E. Weed,
General Manager of Mines,
Anaconda Copper Mining Company,
Building.

Dear Clyde:

I am in receipt of a copy of Droubay's letter of February 1, to which is attached a sketch showing proposed development from 711E drift extended upward to drift 517B.

This, of course, is a dollar and cents mining proposition - that is whether any money can be saved to the operation by the proposed development. I notice, however, that Droubay mentions a proposal made by me some time ago that we extend a drift from the sixth level to develop the vein below 517B. One of the reasons for this suggested drift was to carry the development of the 517 vein downward so that we would be able to know its approximate position at the 700. It is my impression that not enough development work has been done to make a definite correlation from the fifth level to the seventh level. Naturally, this is an important feature with respect to the proposed development.

It is quite necessary therefore, to accomplish the objectives noted in Droubay's letter, that the raise start on the 517 vein. If Droubay feels he can pick the vein out at the seventh so that the raise will follow it continuously to the 515, I would consider it good development work; on the theory, of course, that minable ore will extend to some distance at least below the 517. My offhand judgment would be that the proposed work isn't justified from the viewpoint of costs unless there is a good probability of developing a substantial tonnage below the 500.

Yours very truly,

R. H. SALES

RHS:aw
3 extra copies to Mr. Weed

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

FORM 396 8-40 2M M.P.C.

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

February 11, 1941

H. M. HARTMANN, MANAGER

Mr. Tom Lyon, Chief Geologist
International Smelting & Refining Company
818 Kearns Building
Salt Lake City, Utah

Dear Tom:

Please find enclosed, geological sketches and classification tables for Development during the month of January, also prints showing in yellow, Mining operations with respect to Orebodies, also a report on Diamond Drilling for the month. The following is a resume of the classification tables and of prospect Diamond Drilling.

South and Central Orebodies. None.

North Orebody. 873A Drift North is a slusher way, being driven from 840B Stope for mining an additional section of the Block.

937CxcW was driven to the footwall of the pillar between 920 and 920A Stopes, to accomodate Diamond Drills for mining. 938CDN&S was driven along the footwall to the stopes from either side of 937C for the same purpose.

1201DN is the main level heading, exploring North along the vein. 1211xcE was extended to give room for drilling two short prospect holes into the foot and hanging walls.

712 Orebody. 317CDN is being extended from the top of 496C Raise and will connect with 315CDS, to prospect the vein and to furnish service and ventilation for stopes in this area. 322CxcE&W was extended in foot and hanging wall from 317CDN, to be sure the vein zone was being followed.

319CDN&S is being driven from the top of 406DRs, to explore the vein and furnish waste for 405E Stope. 319CDS will connect with 315CDN for service and ventilation. It was turned off of the vein .

319CDN is in poor vein material that has been leached of what little sulphides it origonally carried, but it is not yet far enough in to explore over the best part of the vein as exposed along the North end of the 500 Level.

406D Drift South is being extended to explore the ore zone that is exposed in the end of 517BDS, in 591CxcE&W, and 592CxcW. 593BRs is being driven along the best part of the ore and will connect with 406D.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

622FxcE&W was driven from 621FDS, to test the vein under the ore-shoot as exposed in the south of 517BDS. The vein zone down here is quite wide, but not so high in grade as it is on the 500 Level.

616FRs is a branch from the top of 614FRs, to connect with the 500 Level. It will act as an ore pass and will give service for mining.

713E, 716E, and 720E, are transfer raises to connect with the 600 Level. 713E and 720E are driven from 711EDN to produce ore from the 517 fissure zone, while 716E will hole under 605E Stope from the main haulage level.

1017DN is being extended to connect the Main Orebody with the Piute Orebody. 1076BxcE was driven from 1017 for a car siding and to act as a Diamond Drill station. Holes No. 74 and No. 75 drilled from here, indicated that Piute mineralization extends fairly well South, so 1017 is being turned east to intersect it sooner.

Piute Orebody. 928C, 929C, 930C, and 931C, are flat pilot raises with herringbone connections, that are being driven to the 800 Level. They will later be enlarged as stopes.

934C and 939C, are exploring the New Orebody, North of Piute. 934C turned East along the vein until it pinched and 939C is being extended along the original lines of 934C. 939C is in waste.

Prospect Diamond Drilling. Hole No. 74 was drilled 260 feet North 78 degrees East, from the face of 1076BxcE, to test for the southerly extension of the Piute Orebody. The formation was a barren, speckled schist, that looks porphyritic where the phenochrists are not drawn out with shearing and altered. The first 100 feet is rather garnetiferous, with an abundance of black hornblend (?). There are numerous zones of epidote. From 205 to 215, a vein carrying considerable chalcopyrite and some bornite was cut and from there to 251, the formation had quartz zones and carried scattered chalcopyrite and a few specks of bornite. The last 9 feet of the core, was quite barren and rather fissle. Sludge assays ran:

Feet	% Cu.	Oz.Ag	Oz.Au
190-200	0.10	Tr.	Nill
200-210	1.85	1.66	0.19
210-220	2.45	1.41	0.20
220-230	0.30	0.12	0.02
230-240	0.50	0.29	0.03
240-250	0.60	0.40	0.03
250-260	0.65	0.22	0.02

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

Hole No. 75 was drilled North 44 degrees East, from the face of 1076B, to cut the Piute vein further North of where Hole No. 74 cut it. The formation is similar to that in Hole No. 74, but is without the numerous clay seams that caused drilling trouble, before passing through the footwall clay into the vein. A heavy clay was encountered at 224 to 231 feet, then vein material extended to 293 feet. Most of the vein material was chalky and not very high grade, but from 273 to 286 feet, there was 13 feet of good looking quartz that yielded a slplit core assay of 2.65% copper, 0.91 oz. ag and 0.055 oz. au. The fault raveled so badly into the hole that the sludges were diluted with waste and did not reflect strong enough mineralization. The following are sludge samples assays:

Feet	% Cu.	Oz. Ag	Oz. Au
190-200	0.15	0.14	0.01
200-210	0.30	0.41	0.01
210-220	0.80	0.15	0.01
220-230	0.15	Tr	Nill
230-240	0.40	Tr	Nill
240-250	No	Assay	--
250-260	0.55	Tr	Nill
260-270	0.20	Tr	Nill
270-280	0.60	0.12	0.01
280-290	0.45	0.14	0.02
290-300	0.20	Tr	Nill

These results would indicate fair mineralization before cutting heavy clay at 224 feet, but the core shows only a few specks of chalcopyrite and bornite in this zone.

Hole No. 76 was drilled 54 feet into the footwall from 1201DN, to be sure the full width of the vein zone was exposed. It cut mottled schist with a few scattered specks of chalcopyrite.

Hole No. 77 was drilled 53 feet into the hanging wall from 1201DN, for the same purpose as Hole No. 76. It cut barren schist.

Respectfully submitted,

S. K. Droubay.

S. K. Droubay

SKD:DM
Encls.

cc - Mr. Dugan
Mr. Sales

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

F. 423 1-22-41 2M

INTER-DEPARTMENTAL CORRESPONDENCE

INTERNATIONAL SMELTING AND REFINING COMPANY
MINING DEPARTMENT
818 KEARNS BUILDING SALT LAKE CITY, UTAH

SUBJECT: February 13, 1941

Walker

Mr. C. E. Weed, General Manager of Mines,
Anaconda Copper Mining Company,
25 Broadway, New York City.

Dear Sir:

Please refer to my February 10th letter concerning the 900 North Piute development.

Reno arrived yesterday morning, and after a discussion I called Hartmann and told him to stop the North Drift temporarily and start a raise from 934C Drift. He said he would get it underway immediately, and suggested the position of the raise to be north of 936 crosscut, which is 60 feet south of where the ore turned abruptly to the east.

I told Hartmann today that it might be a better plan to move the raise a little farther south, as there might be a better chance of having ore all the way up.

We will also prospect the hanging wall and footwall at intervals as we drive the raise.

We will drill a hole from the end of 939C Drift (approximate course N. 55° West to prospect the footwall). Reno suggests another from the same set-up North 20° East to cut the two foot vein shown in hole 71. This will be drilled as soon as we complete the other one.

I told Hartmann to get 903B Drift started right away, and push it as rapidly as possible. They have been held up on account of getting the stope started and the other work on the south end. However, Hartmann told me yesterday he will start it immediately and push it.

I also told Hartmann to crosscut east on the 1200 level along diamond drill hole 78 to prospect the mineralization shown in the hole. If it looks favorable we will drift north, for, as it is east of the fault it may be in better ground. If it does not look favorable we will stop all work on the 1200 until further orders.

Yours very truly,

John F. Dugan.

JFD:H
cc:RS
TL

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

Salt Lake City, Utah
February 13, 1941

Mr. C. E. Wood, General Manager of Mines
Anaconda Copper Mining Company
Room 1726, 25 Broadway
New York City, N. Y.

WALKER MINE

Dear Clyde:

I have discussed the Walker with Lyon and Dugan. Dugan telephoned Hartmann with respect to the things you and I talked about in New York.

On the 1200, a crosscut will be run following the drill hole near the face. Whether or not we drive on the vein will depend upon its assay and appearance.

Mr. Dugan advises me that he is writing you fully concerning his instructions to Hartmann.

Yours very truly,

RHS:P

Reno H. Sales

cc: Mr. Tom Lyon
Mr. J. F. Dugan

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

F. 423 1-22-41 2M

INTER-DEPARTMENTAL CORRESPONDENCE

INTERNATIONAL SMELTING AND REFINING COMPANY

MINING DEPARTMENT

818 KEARNS BUILDING SALT LAKE CITY, UTAH

February 13, 1941

SUBJECT:

Mr. H. M. Hartmann, Manager,
Walker Mine,
Walkermine, Calif.

Dear Henry:

This will confirm our various conversations yesterday concerning 900 North Piute:

Please stop 939C Drift North for the time being, and start a raise from 934C Drift. While driving the raise we will crosscut to the footwall and hanging wall to prospect the mineralization.

Your suggested location just north of 936C Crosscut looks all right. However, it might be a better plan to move it farther south (on the south side of the crosscut) as it looks like the raise will have a better chance of being in ore all the way up.

With reference to the diamond drilling which you contemplate at the end of 939C Drift, Mr. Sales suggests that after finishing the footwall hole, you drill another one north 20° east from the same set-up. This hole should cut the 2' of 2% ore which is indicated in diamond drill hole 71.

My telegram to you this morning covered the above.

As I informed you yesterday, Mr. Sales also wishes to drive south from 932C Crosscut to prospect the mineralization cut in diamond drill hole 49. You can start on this work after the raise is underway.

Please get 903B Drift south started as soon as possible on the footwall ore, and push it.

I realize that starting 946 stull stope, also the other work on the south end has prevented you from getting this drift underway sooner, but I know Mr. Weed is very anxious that we push this 900 south development as rapidly as possible now that the 1000 south

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

development from 1017 drift is beginning to look favorable. So please give it your personal attention and see that the work is kept going and driven as rapidly as possible.

With reference to 1201 Drift North, Mr. Sales wishes us to crosscut to the east following the course of diamond drill hole 78, as indicated on your sketch of December 31, 1940, until we are through the mineralization. If the samples show any promise we shall start drifting north again as this mineralization is on the other side of the fault and might be better ground.

Please have Droubay prepare a geological crosssection through the proposed raise which you wish to drive on 711 Drift east to 517B orebody.

Yours very truly,

John F. Dugan.

JFD:H
cc:CEW
RS
TL

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

FORM 396 2-1-41-2M

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

February 25, 1941

H. M. HARTMANN, MANAGER

Mr. Reno H. Sales, Chief Geologist
Anaconda Copper Mining Company
Hennessy Building
Butte, Montana

Dear Mr. Sales:

SUBJECT: Surface Diamond Drill Holes Nos. 51 and 57. Also 1201DN.

The enclosed are vertical sections through surface Diamond Drill Holes Nos. 51 and 57, which are approximately 750 feet and 1250 feet respectively, ahead of the present 939C Drift North. (My letter to you, dated February 1, 1941, stated Hole No. 51 was 350 feet ahead of the north heading and it should have read 850 feet ahead).

Both holes are now just a few feet into the schist. Hole No. 51 has been blocked with a piece of steel for a considerable period and although the machine is still set-up, there is no one working on the Hole at present. Heavy snow has made bad working conditions, so they are concentrating their efforts on Hole No. 57. It has passed into the schist, but I am afraid they will not be able to get any water return. I think the core recovery will be fairly good, so it will not be so bad if there are no sludge samples.

It looks as though the sub-surface stays fairly level from Surface Hole No. 21 to Hole No. 51, then drops rapidly during the next 500 feet to Hole No. 57. From this, it would appear that 939CDN would pass through the schist into the lava, at a point about 1500 feet ahead of the present face. However, there would be 200 feet of schist vertically over the 900 Level, for at least the next 750 feet, if the heading were extended along its present course.

The sub-surface schist is light gray and micaceous, very similar to some of the fissle zones that have been encountered in the Piute Orebody. It looks surprisingly fresh, for being so close to the contact.

1211xcE was extended 30 feet northeast from the face of 1201 Drift North, to test the mineralization as exposed in the hanging wall drill hole. Nothing but a few fairly rich stringers of quartz and chalcopyrite in crystalline schist were encountered, so the heading has been temporarily abandoned for the time being, as per instructions.

Respectfully yours,

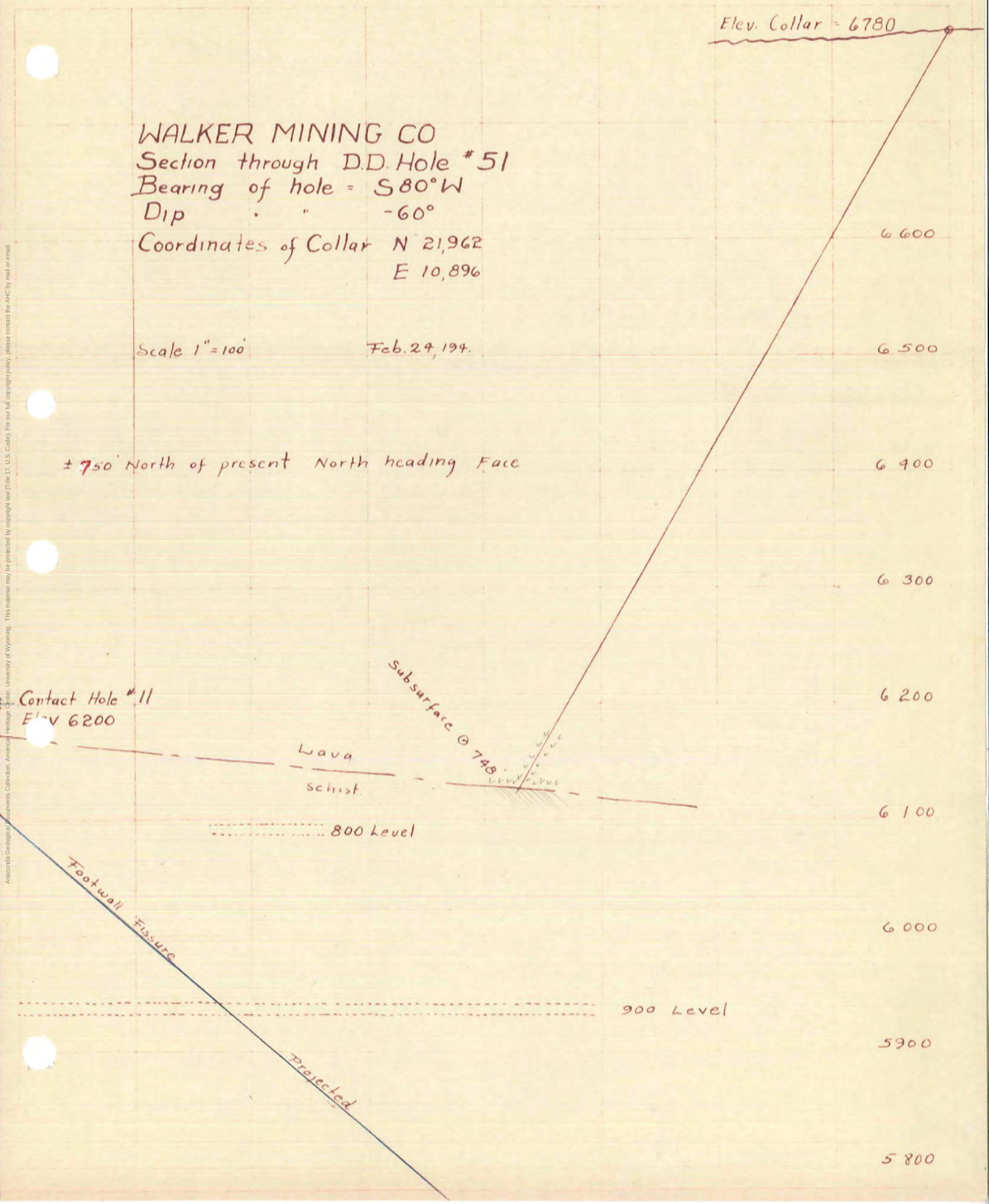
S. K. Droubay

S. K. Droubay

SKD:DM
Encl.

cc - Mr. Weed
Mr. Lyon
Mr. Dugan

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.



Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

U. S. & R. FORM 16-G

Collar Elev. 6720.

WALKER MINING CO

Section through D.D. Hole "57

Bearing of hole = S 80° W.

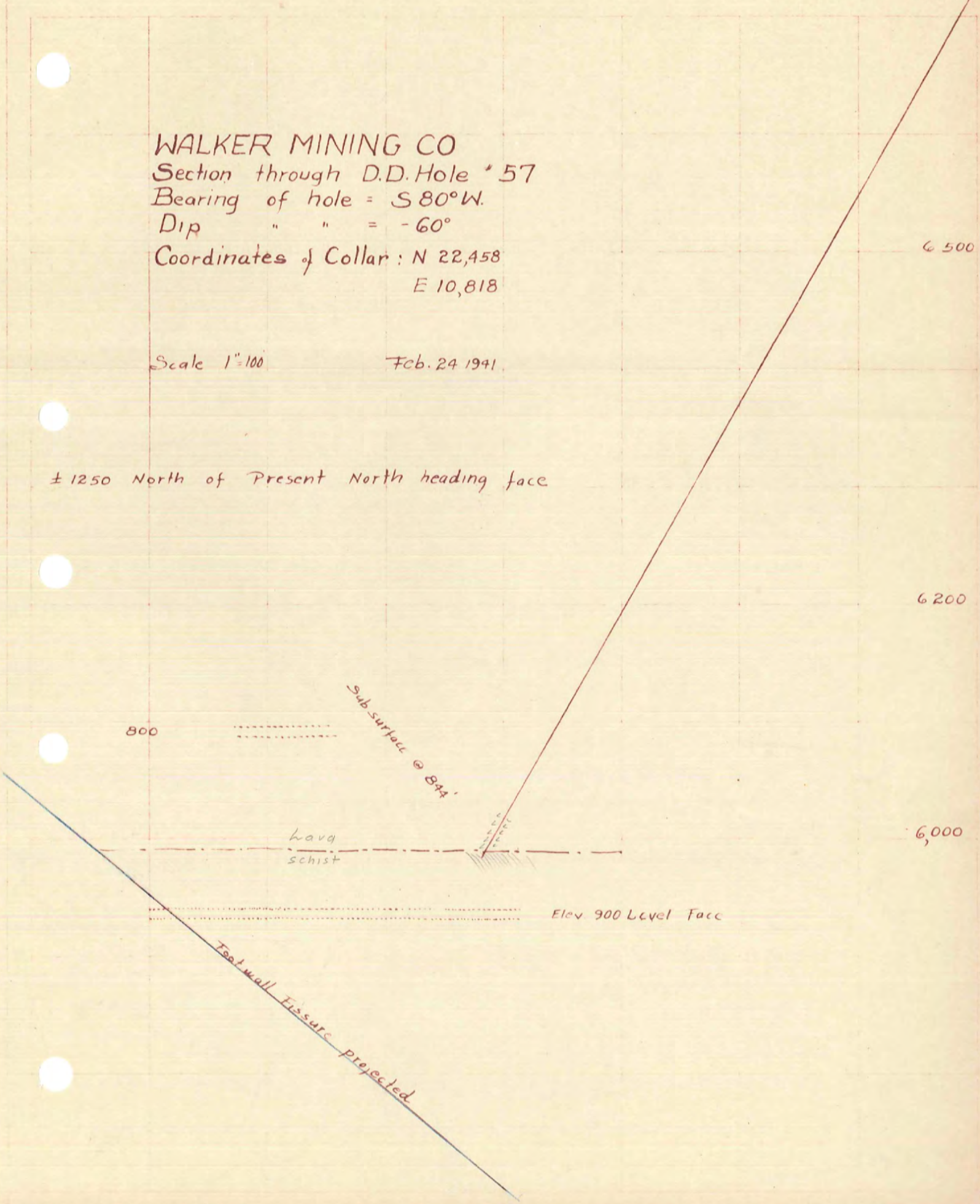
Dip " " = -60°

Coordinates of Collar: N 22,458

E 10,818

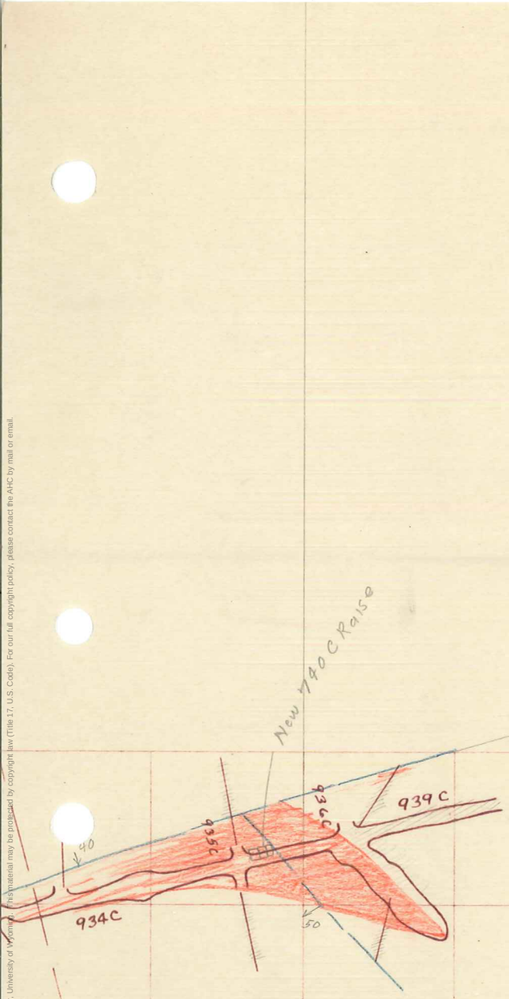
Scale 1" = 100 Feb. 24 1941

± 1250 North of Present North heading face



Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.



#21

WALKER MINING CO
NORTH PIUTE OREBODY

Scale 1" = 100' Feb 25, 1941

11,000 E

#26

#26A

Holes lost before reaching Contact.

21500 N

Pot. of Lava schist Contact

95' above 900 Level

-60°

#51

Surface DD Hole

6780' Elev

30' above 900

Lava-schist contact

-60°

#57

Surface DD Hole

6720 Elev.

FORM 396 8-40 2M M.P.C.

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

March 10, 1941

H. M. HARTMANN, MANAGER

Subject: Broken Ore Reserves.

Mr. John F. Dugan, Gen. Supt. of Mines
International Smelting & Refining Company
818 Kearns Building
Salt Lake City, Utah

Dear Mr. Dugan:

Each year at this time, when the Manager must sign an affidavit as to the amount of our broken ore reserves for the Accounting Department records, the question arises as to whether or not, the ore is actually there and available.

Mr. Hartmann has been reluctant to sign the inventory certificate, because it sets up a cash value of some $1.21 per wet ton and he questions very much whether this amount can be realized out of the ore.

There are several bad features about the inventory, which are more pronounced now than they were in the past, because the reserves are becoming low and a good deal of it has to be scratched for. They are listed as follows:

(1) Until June, 1940, when provisions were made to allow the Operating Department, production credit for unaccountable loss items and for Smelter settlement figures over our local estimates, we were gradually building false inventory figures. These have made a difference of about 1,000 tons per month, that is now credited as production. This correction with the aid of using a 13 cubic foot per ton breakage factor, has overcome a great deal of the inventory error, but we are still considerably short of having available, the 90,000 odd tons that is listed as broken ore in stopes, March 1, 1941.

The inventory figure will eventually become correct, but the Operating Department will continue to take a beating, by having to break 13 cubic feet to get credit for each ton of ore.

(2) It must be remembered, that our broken ore reserve is gradually being diminished and that which remains is, to some extent, the accumulated end products of stope reserves that are left when stope fingers are pulled dry. A certain amount of ore is left resting over finger pillars, or on any flat benches, or packed to the footwall of stopes through which broken ore must pass to be produced. Unless a stope is cleaned down when finished, (which in most cases is too expensive and dangerous to do), the full breakage is not recovered. Usually an effort is made to recover the better grades of ore, so the majority left is low grade. It would be difficult to estimate how much of this clean-up ore could be recovered if the money were spent to get it.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

(3) There has never been any provision to account for ore lost in stopes that cave, other than to absorb the loss by making other stopes over-produce through using an increased breakage factor. (This is essentially what we have been doing for the past year or more, to bring our reserves to an available figure). This could easily be done, so long as there were numerous large stopes that furnished considerable breakage and carried large inventories, but now that most of our stopes are small and flat enough to be operated without broken ore, such a proceedure is very noticeable and irritating to the operator, especially if the error being corrected is an old one. It is only natural that all operators insist that they get full credit for all breakage, because of the cash credit allowed them, therefore the accounting for accumulated losses was put off until the reserves were low enough to indicate that they surely existed.

Fairly recent examples of lost ore having to be absorbed, are:

The hanging wall failed in the 825 Stopes of the Piute Orebody, covering broken ore which will never be recovered. About 1,500 tons.

1020B Stope fingers became empty when only 10,000 tons of 13,000 tons breakage was recovered. The balance rests on the flat north bench of the Stope. This will probably not be recovered, because the Stope became very blocky and dangerous at the 900 Level and had to be abandoned.

The 1040 Block became dry, 5,000 tons short of the breakage figure. Some of this may have been over-measurement, but I think the majority is due to not taking enough production credit for the Stope.

These are several of many examples that come up from time to time.

I have tried several times to get fairly accurate measurements of broken ore, but so much of it is scattered through large open stopes, that it is almost impossible to tell with any degree of accuracy, how much is left. A good number of these places have broken and produced better than a hundred thousand tons over a period of several years time and even small errors could amount to several thousand tons, one way or another.

I would estimate that on March 1st, we had 50,000 tons of broken ore that is readily available and the amount that may be recovered over this figure, depends on how much clean-up work is practical.

For the past several months, our breakage has been considerably less than our production, but the difference is not quite as great as the figures show, because of the effort to correct the reserves.

I trust this letter will be of some use as an explaination in case the question comes up, as to why we are depleting our reserves so rapidly.

Very truly yours,

S. K. Droubay

S. K. Droubay

SKD:DM
cc - Mr. Weed
Mr. Sales
Mr. Lyon

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

ANACONDA COPPER MINING CO.

COPY

March 26, 1941.

Walker Mine

Mr. S. K. Droubay,
Walker Mining Company,
Walkermine, Calif.

Dear Droubay:

We are sending you today, by express, the stope and development analysis sheets that you requested in your letter of March 22nd.

Not being familiar with the nature of your veins, mining practices, costs, etc., about all I could tell you would be how we calculate our averages here in Butte. In order to make suggestions that might be of use to you, I have shown your letter to Mr. Gidel. With his advice and approval, I submit this to you for whatever it may be worth.

Waste inclusions within the orebody are used in our assay averages as follows:

1. Under 1.0' in width, all waste is included in the assay average.
2. From 1.0' to 2.9' in width, half the waste is included.
3. Over 3.0' in width, none of the waste is included.

These rules were adopted to correspond to mining practice here. The waste inclusions that are not included in the assay average represents the waste that will probably be sorted either in the stope or at the chute. In other words, our assay average includes the waste that will probably be shipped with the ore.

Is it possible at Walker to do any sorting or separate blasting of the waste inclusions? If so, possibly a rule similar to ours could be used. If you do not sort, the waste inclusions should be included in the

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.

assay average. When this is done, the "waste broken" and the "overbreak" are exactly the same, and one of these columns can be eliminated from the report.

In Butte the shipments usually equal, or at least approach, the ore reserve grade, which is between four and five percent copper, depending on what mines are operating. Ore reserves include blocks as low as 4.0 ft. of 2.0% copper with one ounce of silver. Material down to 1.2% copper is included in the assay average. Low grade material from development workings, in some cases down to 0.5% copper, is shipped as Development Ore. In other words, with 12¢ copper a mine, with say a 3.0% ore reserve, could not operate at a profit, but a mine with a 4 or 5 percent reserve can stope blocks as low as 2% at a profit and can actually break material as low as 1.2% in a stope without actually losing money. Material from 0.5% to 1.2% that is already broken, can be shipped without losing any money.

I understand your ore reserves are approximately 1.4% copper and that your shipments are approximately 1.27% copper with abcut .035 ounces gold. It seems to me that if this is correct 1.0% is too high a figure for the break-even dividing line. If the ratio is approximately the same as in Butte, 0.4%-0.5% copper could be shipped, if it is broken and enlarging in the footwall or hangingwall could be done if the material would carry 0.7% to 0.8% copper. If this is true, even where sorting is done, some material now classed as a waste inclusion possibly could be included in the assay average if it assays over 0.4% or 0.5% copper.

Anaconda Geological Documents Collection, American Heritage Center, University of Wyoming. This material may be protected by copyright law (Title 17, U.S. Code). For our full copyright policy, please contact the AHC by mail or email.