J 10-3-c-22

No. 34.F

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

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ANACONDA COPPER MINING COMPANY

25 Broadway, New York

New York, New York,
January 8, 1941.

Mr. Tom Lyon,
520 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.

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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 9340 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: Messers. Weed, Dugan, Lyon,
& Hartmann.

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INTERNATIONAL SMELTING AND REFINING COMPANY

Kearns Building, Salt Lake City, Utah

TOM LYON
GEOLOGICAL DEPARTMENT

January 10, 1941

Air Mail

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

WALKER MINE

Dear Reno:

I have your letter of January 8 in which you refer to Droubay's letter and maps of December 31. I have received no letter or maps from Droubay dated December 31 and neither has Dougan's office. However, Mr. Dugan received a telegram from Droubay dated December 31 in which he states:

> "1201 is 156 feet beyond 1210 crosscut 20 feet of solid vein assays 1½ percent copper with streak over two percent. Fault on foot and hanging."

Kindest personal regards,

Very truly yours,

Tom Lyon

TL:P
cc: C. E. Weed

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ANACONDA COPPER MINING CO.

COPY

January 14, 1941.

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

Re: Specimens - Walker Mine

Dear Red:-

Mr. Reno H. Sales, who is in New York, has transmitted to me for acknowledgement, your letter of December 18, 1940, regarding a box of specimens from the Walker Mine, which you forwarded to the Butte office.

The specimens were received here while I was on a field trip.

I have examined some and find that the mineral associations are unusual and interesting, particularly the larger fragment showing reddish FeO type (almandite) garnet crystals embedded in chalcocite. The chalcocite appears to be primary.

The smaller specimens show the brown CaO type (grossularite) garnet in close association with vitreous quartz, chalcopyrite and a little bornite, the latter copper minerals occurring as filling between garnet crystals, that is, as an intergrowth or probably slightly later in age.

Some of the fragments containing brown garnet have spots of greenish epidote. In every case, barite appears to be the latest mineral, excepting the zeolites noted in some of the samples previously submitted.

I assume that all of the unlabeled specimens which you sent us on December 18th are from the Piute 900 level.

You have at hand an excellent opportunity to study the paragenesis of an unusual combination of minerals and deciding on the probable significance of same in respect to ore possibilities at deeper elevations.

Thanking you for these specimens, I remain

Sincerely yours,

MHG:MBS

M. H. GIDEL

cc: R.H.S.
Tom Lyon
V. D. Perry

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

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

January 15, 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 sheets, for Development during the Month of December, and prints showing in yellow, mining operations with respect to Orebodies. The following is a resume of the classification sheet and Prospect Diamond Drilling:

South & Central Orebodies: None.

North Orebody: 797CxcW is being driven to the footwall from 1062BRs, so that an additional section of the pillar between 920 and 920A Stopes may be blasted with Diamond Drill holes.

1201DN is the main level heading, exploring North along the vein.

712 Orebody: 317CDN&S and 318CDN, are being driven from the tops of 401D and 496C Raises as 500 Level headings along the footwall vein. 319CDN&S are the same, from the top of 401DRs, with the exception that they are about 20 feet lower in elevation. A 2 foot vein of ore that assayed 14.0% copper, was cut with 319CDS, but as waste and ventilation are needed for 405E Stope, the drift is being continued to hole 487CRs, that connects with the surface. 319CDN is in a chalky, quartzy vein, that is leached of what little sulphides it originally carried. Developments here may warrant exploring North along the 400 Level.

406BDS is being driven toward the ore zone that is exposed in 517BDS, 591B and 592B crosscuts. It will develop this block of ore and give direct service from the main 712 Shaft Station. 593BRs is being driven in the ore near the face of 517BDS and will connect with the extension of 406BDS.

615F and 616F are branch raises that were driven from 614FRs, to connect with the 500 Level near 581B and 578B raises. They are now holed and will act as ore passes and give service for mining.

621FDS was driven to develop the footwall vein under the South end of 517BDS. 622Fxcuts were driven East and West from 621F, to determine the footwall and hanging wall.

715E, 716E and 720E, are transfer raises to connect with the 600 Level. 713E and 720E are driven from 711EDN and 716E is being driven to hole under 605E Stope for passing ore to the Main Haulage Drift.

1017DN is being driven to connect the Main Orebody with Piute. It has been advanced to the 18,300 co-ordinate, where easterly Diamond Drilling is prospecting for possible southerly extension of the Piute Orebody. This Main Haulage Level will be used to produce ore from below the Piute 900 Level, through 706E Winze.

Piute Orebody: 928C, 929C, 930C and 931C, are flat pilot raises with herring-bone connections, that are being driven from the 900 Level to the 800 Level. They will later be enlarged as stopes.

934CDN, is exploring a new Orebody, North of Piute. 936CxcE&W were driven for Diamond Drill stations, from which short holes were extended to determine the walls of the vein. The vein has turned out to be crescent shaped and it appears that the present streak of ore may pinch. The heading is near the north-easterly point of the crescent and will be continued so long as ore exists.

Prospect Diamond Drilling: Hole No. 70 was drilled 50 feet north-westerly from the face of 934CDN, near the point where the drift first passed into the waste. Slightly mineralized schist extended to the footwall fissure at 46 to 50 feet, with a few feet of fair looking vein material, adjacent to the fissure.

Hole No. 71, (Shown as Hole No. 72 on sketches to Salt Lake and New York, to conform with correspondence), was drilled easterly into the vein from a point near the end of 934CDN, after it had been turned to the east along the vein. It cut 24 feet of ore, then 26 feet of waste, to the cross fault at 50 feet. The core assays from the vein averaged 2.34% cu; 0.37 oz. Ag and 0.016 oz. Au.

Hole No. 72, (Shown as Hole No. 71 on sketches to Salt Lake and New York to keep records straight) was drilled 100 feet North from the same face that Hole No. 71 was drilled. With the exception of 4 feet of good vein material from 65 - 69 feet, the hole cut schist, containing a few scattered zones of slight mineralzation.

Hole No. 73 was extended 48 feet between Holes Nos. 71 and 72 and cut 24 feet of ore, from 16 feet to 40 feet. This ore averaged 2.83% Cu, 0.51 oz. Ag and 0.01 oz. Au.

Respectfully submitted,

S. K. Dronbay

S. K. Dronbay

SKD:DM
Encl.

cc - Mr. Dugan
Mr. Sales

INTERNATIONAL SMELTING AND REFINING COMPANY

Kearns Building, Salt Lake City, Utah

TOM LYON
GEOLOGICAL DEPARTMENT

ANACONDA
from mine to consumer

AIR MAIL

January 15, 1941

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

WALKER MINE

Dear Reno:

I have found the letter from Droubay dated December 31 together with the sketches. This letter evidently arrived during my absence and was mixed up with some other maps.

You will recall our conversation with Droubay regarding the 1201 drift. At the time of the conversation the 1201 drift was in very heavy ground requiring timber and the ore was very low grade. It was decided to drive the 1201 into the footwall for about 50 feet or so and then drill the hanging wall. If the ore was better the drift would then be turned into the vein. This is apparently what happened.

Very truly yours,

Tom Lyon

TL:P
cc: C. E. Weed
J. F. Dugan

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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

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

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

January 16, 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

H. M. Hartmann

HMH:DM

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

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WESTERN UNION

1201

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

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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...

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

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WESTERN UNION

1206-B

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

CHECK

ACCOUNTING INFORMATION

TIME FILED

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

INTERNATIONAL SMELTING AND REFINING COMPANY

Kearns Building, Salt Lake City, Utah

TOM LYON
GEOLOGICAL DEPARTMENT

ANACONDA
from mine to consumer

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

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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. F. Wood, 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 Flute 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 1201NW.

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.

FGC:H
Enc.
cc:Mr. Sales

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FORM 396 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
812 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	73	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.

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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.

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

S. K. Droubay

SKD:DM

paper to Mr. Sales

INTERNATIONAL SMELTING AND REFINING COMPANY

Kearns Building, Salt Lake City, Utah

TOM LYON
GEOLOGICAL DEPARTMENT

ANACONDA
from mine to consumer

January 21, 1941

Mr. M. H. Gidel
P. O. Box 26
Butte, Montana

Dear Murl:

I am sending you two copies of a statement showing ore reserves at the Walker mine as of January 1, 1941. I am also sending you, by express, two long sections showing the location of the various blocks.

The statement by Droubay regarding the change in the ore reserve from January 1, 1940 to January 1, 1941 is self explanatory.

Last year I was instructed to send two copies of the ore reserve statements of our mines to you. It was assumed that you would retain one copy in your files and send the other copy to Mr. Weed. I imagine that the procedure of last year will be followed this year as I have heard nothing to the contrary.

Very truly yours,

Tom Lyon

TL:P
2- Encl.

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ANACONDA COPPER MINING COMPANY

25 BROADWAY

NEW YORK

OFFICE OF THE
GENERAL MANAGER OF MINES

January 22, 1941.

Mr. J. F. Dugan, Gen. Supt. of Mines,
International Smelting & Refining Co.,
Kearns Building,
Salt Lake City, Utah.

Dear Jack:

This will acknowledge receipt of your letter of January 20th, in which you discuss Mr. Sales' letter of January 9th, concerning Walker Mine developments.

I am very much pleased to see Mr. Hartmann, Mr. Droubay, and Mr. Warren taking an active interest in keeping our drifts in ore as much as possible. I am certain that ultimately this will produce good results for the Walker Mining Company.

With kind personal regards, I am

Sincerely yours,

C. E. WEED

CEW:F
CC: Mr. R. H. Sales.

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ANACONDA COPPER MINING COMPANY

25 Broadway, New York

New York, New York,
January 23, 1941.

Walkermine

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

Dear Tom:

Concerning Droubay's telegram quoted in your letter of January 20th, you no doubt have received by this time copies of my wire and letter of January 20th to Droubay. In his wire to me, he asked for definite instructions.

Yours very truly,

RENO H. SALES

RHS:aw

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J. C. WILLEVER, FIRST VICE-PRESIDENT

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FB520 79 NT=WALKER MINE CALIF 23

1941 JAN 24 AM 1 54

RENO H SALES, CARE ANACONDA COPPER MINING CO=
25 BROADWAY NYK=

CLAY SEAMS THEN TEN FEET TWO PERCENT ORE CHALCOPYRITE SOME BORNITE STARTING 207 FEET THEN FORTY FEET WASTE IN HOLE SEVENTY FOUR DRILLED NORTH SEVENTY EIGHT DEGREES EAST REFER MR SALES SKETCH DRILLING ORDER REVERSED BY MISUNDERSTANDING 1017 IS SIXTY FEET BEYOND CROSSCUT HOLE SEVENTY FIVE IN EIGHTY FEET NORTH FORTY FOUR EAST IF ENCOUNTERS ORE WILL TURN 1017 NORTH SIXTY THREE DEGREES EAST DISCUSSED SAME WITH MR LYON BY FONE. COPIES THIS WIRE TO DUGAN LYON AND SALES=
DROUBAY.

CD JAN 24 AM 2 04

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ANACONDA COPPER MINING CO.

C O P Y

January 24, 1941.

Mr. C. E. Weed, Gen. Mgr. of Mines,
Anaconda Copper Mining Company,
25 Broadway, Room 1726,
New York City, New York.

Re: Walker Mine Ore Reserves

Dear Mr. Weed:

I received from Mr. Tom Lyon duplicate copies of S. K. Droubay's "Statement of Ore Reserves" in the Walker Mine as of January 1, 1941, one copy of which is enclosed herewith. A Longitudinal Section of the mine is being sent to you under separate cover.

Following is a comparison of Ore Reserves as of January 1,1940, and January 1, 1941, taken from Droubay's reports:

	January 1, 1940				January 1, 1941			
Reserves	Tons	Cu %	Ag. Oz.	Au Oz.	Tons	Cu %	Ag Oz.	Au Oz.
Recoverable Dev. plus Prob. Ore	1,358,700	1.35	0.80	0.040	1,054,100	1.48	0.75	0.035
Recov.Poss.Ore	510,800	1.21	0.65	0.031	313,800	1.36	0.77	0.033
Total Recov.Ore	1,869,500	1.31	0.76	0.038	1,367,900	1.45	0.76	0.034
Est. Non-Recov. Ore in Pillars	2,143,500	1.32	0.77	0.038	2,364,400	Grade not stated		
Gross Ore Reserve	4,012,000	1.32	0.77	0.038	3,732,300	"	"	"

Ore Mined during 1940..... 599,593 tons.

The above reserve figures show a decrease of 501,600 tons in Recoverable Ore during 1940, partially compensated by an improvement in grade from 1.31% copper on Jan. 1, 1940, to 1.45% copper on Jan. 1, 1941.

ANACONDA COPPER MINING CO.

COPY

Mr. C. E. Weed--2 January 24, 1941.

The showing of good grade (2.3% Cu) ore in 9340 drift north of the Piute Shaft, which was developed during the latter part of 1940, is worthy of mention. A polished section study of the chalcocite occurring in the vein at this point shows that it is a relatively late mineral filling small fractures in earlier garnet, quartz, chalcopyrite, and pyrite. Chalcocite replaces the latter two minerals, thus indicating secondary copper enrichment, obviously pre-basalt in age. Since the vein exposed on 9340 drift may be only 150 to 200 feet below the old surface under the lava, further prospecting of the vein zone to the northward may find additional ore, at least within the area subjected to secondary enrichment influences.

Encl.
cc: 1 Extra
Messrs. D.M.K.
R.H.S.
T.L.

Yours very truly,

M. H. GIDEL

INTERNATIONAL SMELTING AND REFINING COMPANY

Walker

Kearns Building, Salt Lake City, Utah

TOM LYON
GEOLOGICAL DEPARTMENT

ANACONDA
from mine to consumer

January 25, 1941

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

Dear Reno:

I am enclosing reports on the development work which was done during the year 1940 at the Walker mine by S. K. Droubay; the Mountain City mine by G. R. Beechel; and the North Lily mine by F. W. Anderson.

Very truly yours,

Tom Lyon

TL:P
cc: Messrs: C. E. Weed
J. O. Elton
J. F. Dugan

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WALKER MINING COMPANY

DEVELOPMENT PROGRESS - JANUARY, 1941

Orebody	Heading	Size	Ft. Adv.	Total Advance	Feet Ore	% Cu	Oz. Ag	Oz. Au	Feet Waste
North	(M) 873ADN	10x8	34	56	34	1.45	1.03	0.067	
	(M) 937CxcW	8x7½	79	85	79	1.15	0.22	0.015	
	(M) 938CDN	8x8	26	26	26	1.14	0.25	0.037	
	(M) 938CDS	8x8	37	37	37	1.82	0.29	0.031	
	(D) 1201DN	10x8	133	1430	103	1.00	0.24	0.005	30
	(D) 1211xcE	9½x8	8	8					8
	Total		317		279	1.22	0.34	0.022	38
712	(D) 317CDN	7x5	71	182	53	0.51	0.50	0.015	18
	(D) 319CDN	7x5	32	129					32
	(D) 319CDS	7x5	38	102					38
	(D) 322CxcW	7x5	30	30	8	0.80	0.97	0.015	22
	(D) 322CxcE	6x4	21	21					21
	(D) 323CR	4x4	20	20					20
	(D) 406DDS	7x5	101	106					101
	(D) 591BxcE	7x5	76	157					76
	(D) 592BxcW	7x5	9	9	2	1.05	0.37	0.01	7
	(D) 593BR	7½x16	16	29	16	2.20	0.27	0.024	
	(M) 616FR	7½x16	33	161	33	0.98	0.36	0.023	
	(D) 622FxcE	7x5	4	25	4	0.63	0.06	0.005	
	(D) 622FxcW	7x6	6	27	6	1.10	0.34	0.003	
	(D) 713ER	7½x12½	2	210	2	0.60	0.26	0.060	
	(M) 716ER	7½x20	27	161	27	2.29	3.02	0.051	
	(M) 720ER	8½x19	128	199					128
	(D) 1017DN	9½x7½	143	5095					143
	(D) 1076ExcE	9x7	45	45					45
	Total		802		151	1.16	0.90	0.024	651
PIUTE	(M) 928CRs	7x18	42	90	42	1.50	1.28	0.037	
	(M) 929CRs	7x18	47	116	47	1.05	0.43	0.047	
	(M) 930CRs	7x13	46	119	46	1.40	0.67	0.023	
	(M) 931CRs	7x18	33	135	33	1.65	0.78	0.017	
	(D) 934CDN	7x9	43	325	43	2.69	0.33	0.019	
	(D) 939CDN	9x7	40	40					40
	Total		251		211	1.80	0.69	0.029	40
	GRAND TOTAL		1370		641	1.33	0.58	0.025	730
				RECAPITULATION					
	MINING		532		404	1.37	0.73	0.032	128
	DEVELOPMENT		838		237	1.26	0.34	0.012	602

ANACONDA COPPER MINING COMPANY

Butte, Montana

Geological Department
RENO H. SALES, Chief Geologist
M. H. GIDEL, Asst. Chief Geologist

New York, N. Y.
January 28, 1941.

re Walker Mine

AIR MAIL

Mr. M. H. Gidel, Ass't Chief Geologist,
Anaconda Copper Mining Company,
Hennessy Building,
Butte, Montana.

Dear Murl:

I read your comment, in your letter to Weed dated January 24th, concerning the occurrence of chalcocite in the specimens of Walker mine ore reported to have come from 934C, North Piute ore body.

It has been my impression from ore samples submitted by Droubay, and from other information, that there is very little chalcocite in this ore body and, most certainly, I have had no intimation that there was anything like sooty secondary chalcocite present. Out of the samples sent by Droubay, I found one containing a massive looking gray chalcocite, and I am wondering if your polished section was not made from that particular sample.

The comment in your letter gives the reader the idea that the better grade of the North Piute ore may be, in fact, due to the presence of secondary chalcocite. In such an event, we would expect the ore to become decidedly lower in grade at greater depth. This is the important thing and, to be sure of the facts, I am sending a copy of this letter to Droubay and asking him to write me his opinion as to the possible importance of secondary chalcocite in the ore thus far developed in 934C drift.

Yours very truly,

Reno H. Sales

RENO H. SALES

RHS:F
CC: Mr. C. E. Weed.
Mr. Tom Lyon.
Mr. S. K. Droubay.

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ANACONDA COPPER MINING COMPANY

Butte, Montana

Geological Department
RENO H. SALES, Chief Geologist
M. H. GIDEL, Asst. Chief Geologist

New York, N. Y.
January 28, 1941.

AIR MAIL

Mr. S. K. Droubay,

Walkermine, California.

Dear Droubay:

Herewith, a letter to Gidel which is self-explanatory.

I wish you would give me your ideas. I did not get the impression that there was any appreciable secondary chalcocite in the north end of the mine except for the higher stopes of the old Piute ore body. However, we must expect a certain amount of secondary chalcocite in the North Piute ore body immediately below the oxidized portions of the vein.

Yours very truly,

RENO H. SALES

RHS:F
Enc.
CC: Mr. C. E. Weed.
Mr. M. H. Gidel.
Mr. T. Lyon.

FORM 396 4-30-40-2M

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

January 30, 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:

The accompanying sketch shows the results of drilling Diamond Drill Holes No. 74 and 75, for prospecting the southerly extension of Piute mineralization. 1017 is being turned approximately as indicated, but may cut the vein slightly further North than shown, because it has advanced to a point ahead of the face as shown.

Mr. Hartmann did not want to take chances on having any more turns than necessary in the haulage drift, so waited until Hole No. 75 was through the vein before starting to turn.

For 100 feet before encountering the ore streak with Hole No. 74, the speckled, porphyritic schist, drilled as though there were many clay seams within the structure. The majority of the core was recovered and looked solid enough, so it may be that the more fissle zones caused the core to block quite frequently. The core through the ore zone was broken up, and yielded about 50% recovery. It is good looking material, with zones of fairly heavy sulphides. The rest of the hole is slightly mineralized, with a four foot streak of dark quartz, near the end, that shows numerous specks of chalcopyrite and bornite. The sludges from 200-220, look rather high. A considerable flow of water may cause erratic results.

Hole No. 75 was much more solid, with only one fault zone right near the footwall. Beyond the fault is a gray, sheared quartzy formation, that seems rather chalky and has zones of fair mineral. Then there are 13 feet of solid, smooth quartz, that appears to run about 1.50% Cu. This 13 feet is split and being assayed. The rest of the hole is barren, with the exception of a mineralized streak at 300 feet.

The North Piute heading is being extended along the original lines of 934CDN, because the ore pinched to the Northeast. It is 939CDN and is in three rounds beyond 936CxcW.

1201 Drift North has 25 feet more to go, to be in position for the short hole prospecting that you recommended, before abandoning the level for further prospecting, in case nothing is found. The hanging wall fissure crossed and joined the one on the footwall, so the heading is being extended along the East side of them - along a zone of poor vein material that runs about 0.6% Cu.

Very truly yours,

S. K. Droubay

S. K. Droubay

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

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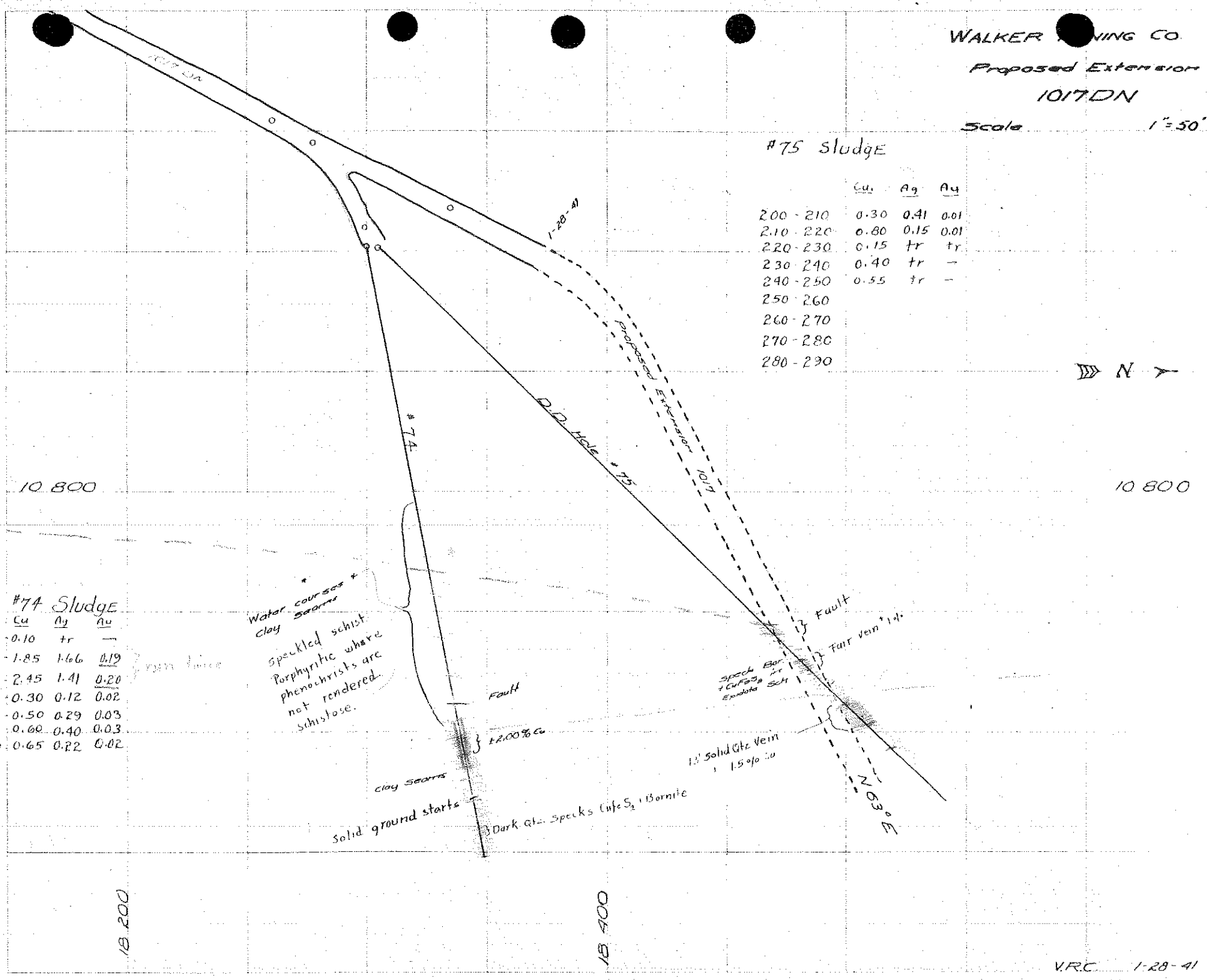

U.S.G.S. FORM 16-G
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FORM 396 4-30-40-2M

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

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FORM 396 6-40 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 occurence 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.

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Respectfully yours,

S. K. Droubay

S. K. Droubay

SKD:DM

cd - 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.

Red

specimen received. M.H.H.

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

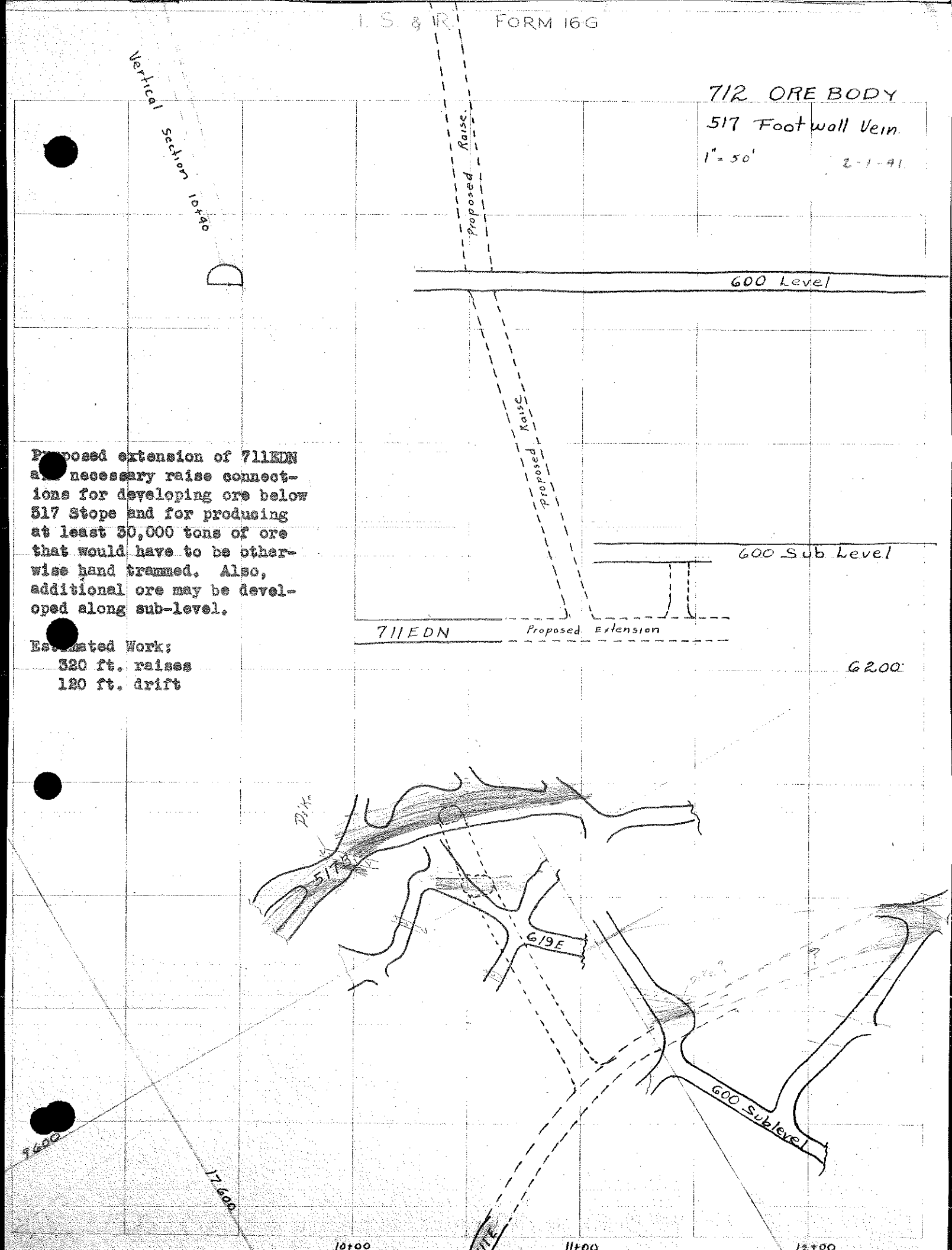
SKD:DM
Encl. 1

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	1.290 oz. Ag	0.08 oz. Au

I. S. & R. FORM 16G



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

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

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ANACONDA COPPER MINING COMPANY

25 Broadway, New York

OFFICE OF THE
GENERAL MANAGER OF MINES

February 5, 1941.

Mr. M. H. Gidel,
Post Office Box 26,
Butte, Montana.

Dear Murl:

This will acknowledge receipt of your letter of January 24, together with a copy of S. K. Droubay's "Statement of Ore Reserves" in the Walker Mine as of January 1, 1941.

Yours very truly,

C. E. WEED

CEW:aw

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ANACONDA COPPER MINING COMPANY

25 BROADWAY

NEW YORK

OFFICE OF THE
GENERAL MANAGER OF MINES

February 5, 1941.

AIR MAIL

Mr. J. F. Dugan, Gen. Supt. of Mines,
International Smelting & Refining Co.
Kearns Building,
Salt Lake City, Utah.

Dear Jack:

Referring to Mr. Droubay's letter of February 1st, to which he attached a sketch showing proposed development from 711E drift extending upward to 517B.

Attached, you will find two copies of a letter from Mr. Sales to me commenting on this development. Sales does not seem to feel that there is much prospect of developing ore in this raise unless the 517 vein can be identified on the 700 level. I concur in Mr. Sales' opinion.

The matter of driving the 711 drift and the raising above it to take care of 30,000 tons of ore is a matter of calculation of the cost of doing the work compared to hand tramming the material on the 517 level. This cost can be worked out accurately at the mine. Offhand, it looks as though it would be cheaper to hand tram it if this is all the ore that occurs. On the other hand, if 517 fissure can be identified on the 600 level, it might be well to start a raise from the 600 level to see if you develop any more ore below the good showing on the 500. If you found an additional tonnage, you could use this in your figures instead of the 30,000 tons now estimated above the 500 level. In this case, you might be able to justify the work from 711E drift to 517B.

It seems advisable to me to try the 600 raise first to see what additional tonnage could be developed before doing any work on the 700.

Yours very truly,

C. E. WEED

CEW:F
Enc.
CC: Mr. Reno H. Sales.

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

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

February 5, 1941

H. M. HARTMANN, MANAGER

Mr. M. H. Gidel, Assistant Chief Geologist
Anaconda Copper Mining Company
Butte, Montana

Dear Mr. Gidel:

The recent correspondence with regards to chalcocite in the North Piute Orebody, gives me the impression that the attractive specimen from the 400 Level of the 712 Orebody, showing garnet crystals imbedded in chalcocite, was mistaken as having come from the North Piute heading. Perhaps I did not label it properly, for Mr. Sales knew where it came from and had asked for a piece of it. It came from a footwall fissure, that carries considerable primary bornite and chalcopyrite at this elevation.

At one time, just before our North heading exposed the chloritic schist, such as the specimen I sent you a few days ago, there were some veinlets of sooty chalcocite, associated with cross fissuring. I mentioned this in corresponding with Mr. Perry, but since that time I have seen very little of it. In fact, as we progressed North, the vein changed to chloritic schist, then to a massive, crystalline vein, somewhat similar to the Main Piute ore. Such was the vein when it pinched to the Northeast.

Within a few days, I will mail you a 200 scale print of our 900 Level, showing the North echelon effect. I hardly think this new ore is as flat as it should be, according to the theory we talked of several months ago. However, we have no definite information on the dip. I would appreciate any comments you may have about it.

We are now trying to do our sampling in the same manner as you do at Butte and I am sure the operators will be able to mine more selectively.

Very truly yours,

S. K. Droubay

S. K. Droubay

SKD:DM

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ANACONDA COPPER MINING COMPANY

25 Broadway, New York

New York, New York,
February 5, 1941.

AIR MAIL

Mr. S. K. Droubay,

Walkermine, California.

Dear Droubay:

I have your letter of January 30 and I am pleased to note the good ore showing in No. 75 Hole. If the sludge gold assays from 200 to 220 feet in No. 74 are anywhere near correct, we shall all be pleased over the Piute ore possibilities to the south and in depth.

Yours very truly,

RENO H. SALES

RHS:aw

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FORM 396 4-30-40-2M

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

February 7, 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:

In line with the recent discussion concerning the North Piute Orebody, I have prepared the enclosed sketches to show the relationship between the ore and the sub-surface. The section through Drill Hole No. 21, indicates that the sub-surface would be 70 feet vertically above the 800 Level if it were to be extended out this far. This should be very near the bottom of the leached zone.

Diamond Drill Hole No. 79 into the hanging wall from the face of the 1200 Level, cut a fairly well mineralized zone up to 25 feet. The rest of the hole was in garnetiferous schist. Although some streaks look pretty good, the entire 80 feet will not average over 1.0% cu. The Drill Hole mineralization seems to be away from the broken zone and some streaks appear better than anything we have been drifting along for the last 100 feet. It is now a question as to whether this is worthwhile prospecting, before abandoning the Level.

Will you please wire if you think 1201 should be continued further.

Respectfully yours,

S. K. Droubay

S. K. Droubay

SKD:DM
Encl.

cc - Mr. Lyon
Mr. Weed
Mr. Dugan

P.S. Sludge samples Hole No. 78 -

0 - 10	0.45% Cu.
10 - 20	1.80% Cu.
20 - 30	0.70% Cu.

Will assay total core.

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ANACONDA COPPER MINING COMPANY

25 Broadway

New York

OFFICE OF THE
GENERAL MANAGER OF MINES

February 10, 1941.

AIR MAIL

Mr. Reno H. Sales, Chief Geologist,
Anaconda Copper Mining Company,
818 Kearns Building,
Salt Lake City, Utah.

Dear Reno:

Today, I received a copy of a letter addressed to you dated February 7th, from S. K. Droubay of Walker. He states that they have found about 10 feet of fair looking ore in the hangingwall of the 1200 level in drill hole #78. I believe we should crosscut this before stopping work on the 1200 level as it is only 10 feet in the drill hole. If it looks worthy of drifting, it might be advisable to drift on it for a short distance to see if the showing is of any importance. You will have an opportunity to discuss this with Messrs. Lyon and Perry and whatever you decide will be all right with me.

The interesting thing in the mineralization is that it is apparently away from the fault zone.

Yours very truly,

C. E. WEED

CEW:F

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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 403DRs, 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.

Mr. Tom Lyon
Sheet 2

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

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 0.065 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

February 12, 1941.

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

Re: Walker Mine,
Specimens

Dear Mr. Droubay:

I received your letter of February 5, stating that the large fragment of ore containing chalcocite and garnet, which you sent to Mr. Sales with the last lot of specimens, came from the 400 level of the 712 Orebody and not from the North Piute country. Chalcocite is the latest mineral in the specimen and probably is primary, judging from its hard steely appearance.

I looked through the paper wrappings in that box again, wondering if I had overlooked tags, but found none. The large specimen containing the chalcocite and garnet is the one we cut in two, polished the surface of one piece, and will polish the other one later. Somehow, I got the impression that all of the specimens submitted in the last lot were from the new development in the North Piute country. Mr. Sales was away when the specimens arrived, hence I did not know the true location of same. Are the other specimens in that box from 712 Orebody, or North Piute?

A few days ago, I received from you the specimen of chloritic schist containing chalcopyrite, which you labelled "300 North Piute".

I will be interested in your further comment and findings in regard to a possible en echelon pattern of fracturing showing up in the north end of the mine.

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In regard to the adoption of Butte methods of sampling at the Walker Mine, I believe same should result in minimizing overbreak of waste in stoping operations, and thereby improve the grade of ore produced.

With kindest regards, I remain

Yours very truly,

MHG:KM

cc: Messrs. R.H.S.
C.E.W.

M. H. GIDEL

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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.
John F. Dugan.

JFD:H
cc:RS
TL

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

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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 Crossout 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

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 5178 orebody.

Yours very truly,

John F. Dugan.

JFD:H
cc:CEW
MS
HL

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

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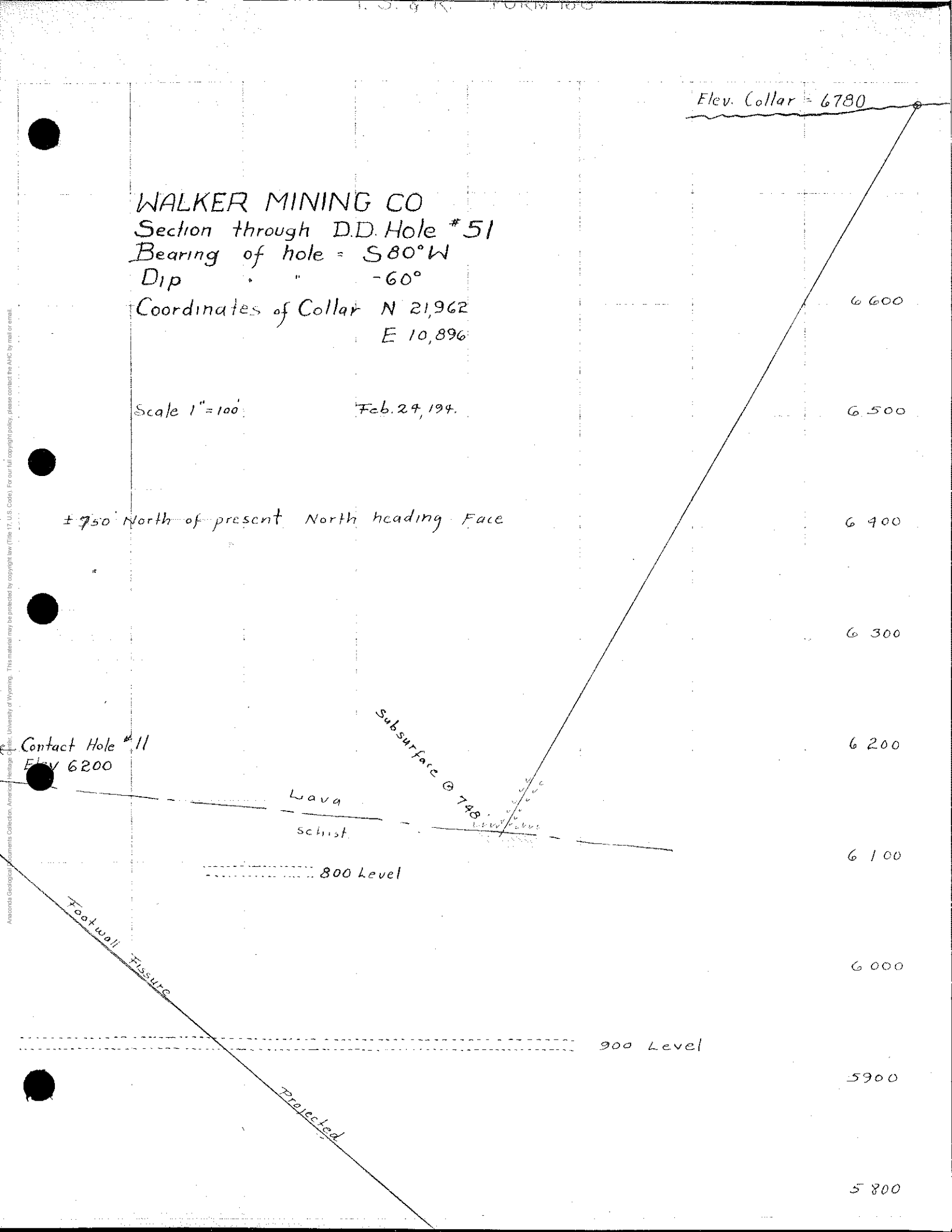

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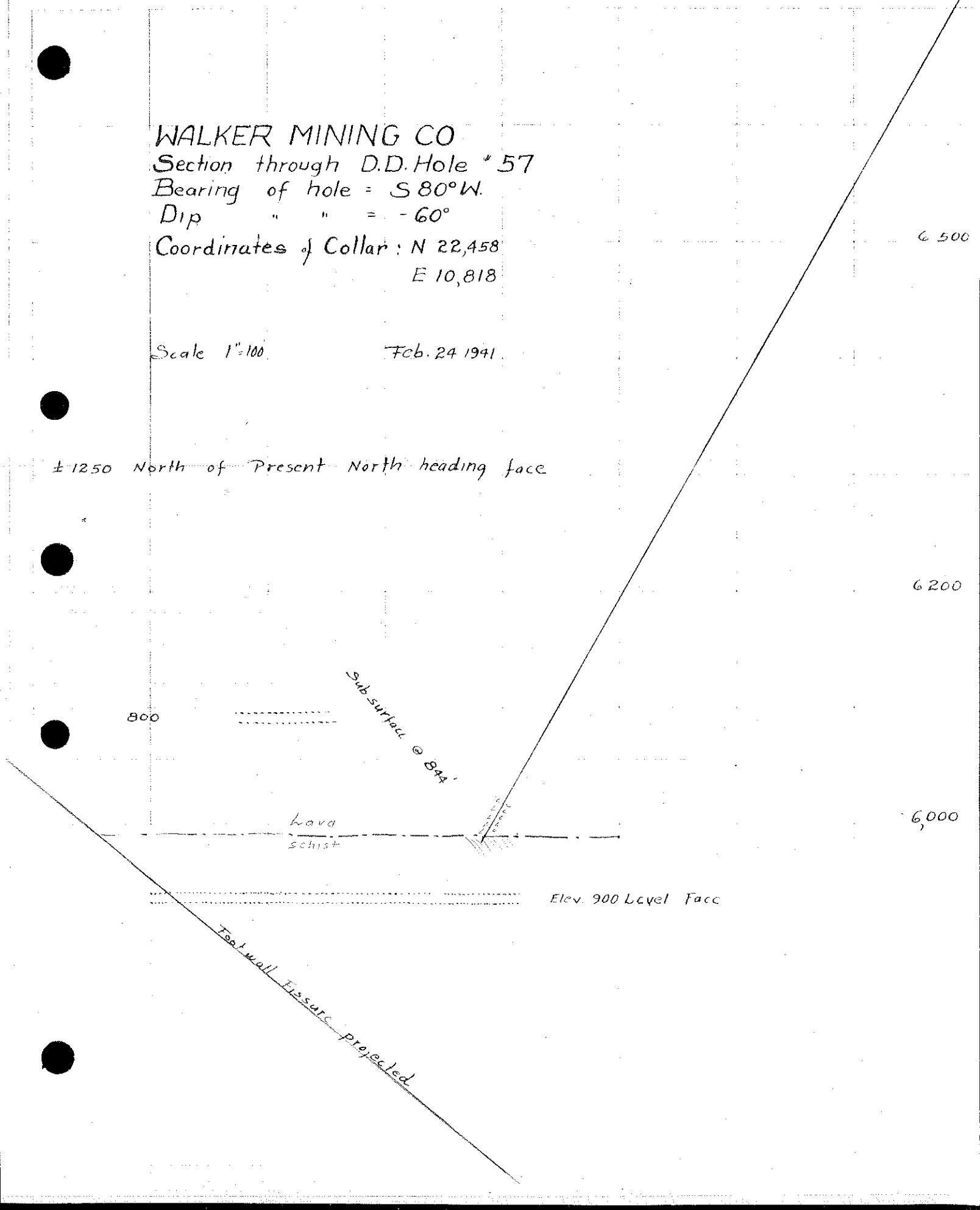
U. S. & R. FORM 16-G

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



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

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

March 3, 1941

H. M. HARTMANN, MANAGER

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

Dear Tom:

The two Diamond Drill Holes from the face of 939CDN, have been completed and the enclosed sketch indicates the results.

Hole No. 80 was extended into the hanging wall and cut several small stringers of mineralization, but nothing as good as the larger stringer in Hole No. 71.

Hole No. 81 indicates slightly better mineralization along the footwall fissure, than did Hole No. 70 and shows that the footwall is turning slightly to the East. The mineralization consists of disseminated chalcopyrite, in gray schist. There are some two inch stringers of fairly heavy sulphides, but the whole 16 feet, will not average over 1% cu. However, it looks as though this would be the best zone to drift along. I will send in the assays just as soon as the returns come in. The zone from 56' to 71' consists of barren quartz vein, containing much epidote and some garnet veinlets, with zones of residual garnetiferous schist.

The Surface Hole No. 57 is progressing slowly. It was down 890 feet the last report I had and the formation is a solid, dark gray schist. No mineral has shown up yet.

Very truly yours,

JChamberlain for

S. K. Droubay

SKD:DM

cc - Mr. Sales
Mr. Dugan
Mr. Weed

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March , 1941

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

Re: Walker Le
Plumas , Calif.

Dear Droubay:

I thank you for your letter of Febary 25th and accompanying maps, drawn to illustrate geolgical conditions disclosed in drill holes 51 and 57. I s much interested to received this information. It is oo bad that 51 had the drilling troubles, as it shouldave been the first one to try out the vein.

Did you consider the showing in 11 Crosscut East worth drifting on?

Yours very trul,

RHS:KM

RENO H. SILES

FORM 396 2-1-41-2M

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

March 8, 1941

H. M. HARTMANN, MANAGER

Walker

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

Dear Mr. Sales: SUBJECT: Surface Diamond Drill Holes

Surface Diamond Drill Hole No. 57 is down 941 feet and has cut a ten foot mineralized zone, five feet of which I would estimate will assay 2.0% cu. The zone is from 920 feet to 930 feet, with the best showings of chalcopyrite from 924 feet to 929 feet. Three inches of clay was then cut at 932 feet and from there to 941 feet, the formation is almost barren again, but a few small specks of chalcopyrite may be seen with a glass.

It may be quite possible that this clay is the footwall fissure as exposed with Holes Nos. 70 and 81, (see sketch mailed March 3rd, with copy of letter to Mr. Lyon). The fissure seems to turn slightly to the East, where cut with Hole No. 81. The bearing of a line from the present face of 939C, (North Heading) to the mineralized zone in Hole No. 57, projected to the 900 Level, is North 8 degrees West.

If the formation is barren for the next 40 or 50 feet, will it be all right to stop Hole No. 57 and try to get Hole No. 51 advanced through the vein? Hole No. 51 is 500 feet South of Hole No. 57. The drillers seem to think they can finish cleaning the Hole and get drilling without much trouble.

Sludge assays from Hole No. 81 ran:

	% Cu	AG	AU
0 - 10	0.15	Trace	None
10 - 20	0.55	"	"
20 - 30	0.50	"	"
30 - 40	0.45	"	"

The 1211xcE did not expose anything that looked worthwhile following.

Very truly yours,

S. K. Droubay

S. K. Droubay

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

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FORM 396 6-40 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.

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(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

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

WALKER MINING COMPANY

WALKERMINE
PLUMAS COUNTY, CALIFORNIA

March 12, 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 table for development during the Month of February; prints showing in yellow, mining operations with respect to orebodies; and a report on diamond drilling for the Month. The following is a resume of the classification table and of prospect diamond drilling.

South and Central Orebodies. None.

North Orebody. 873ADN is a slusher drift, driven North from 840B Stope and 877A is a flat raise, driven from the end of 873A to the 700 Level. These headings are to facilitate mining the block North of the Stope.

1201DN is the main level heading, exploring North along the vein. 1212xcE was driven to explore a fairly well mineralized zone, cut with diamond drill Hole No. 78. The mineralization was not any better than the hole indicated and nothing to warrant further exploration to the North was found. The Level is now closed down until such a time as further long range exploration work is justified.

712 Orebody. 3150DN and 3170DN are footwall vein level headings, driven from the tops of 4870 and 4960 Raises. These headings are now all connected. 3230 Raise connected 3190DS with 3150DN, because there was some 25 feet difference in elevation.

3240 is a small raise into the hanging wall from 403D Raise, to furnish fill for 405E Stope.

406DDS is being driven to explore the ore zone that is exposed with the South end of 517MDS. 593B Raise is being extended up the best part of this ore and will connect with 406D.

623YDXCS forms a by-pass around 614F Raise, which now acts as an ore pass.

711E is being extended with the thought in mind, of getting it far enough to drive a raise for producing ore from the 517-617 ore blocks. 711 is the haulage level under the footwall vein.

Piute Orebody. 903EDS is the main level heading, prospecting South along the vein. It still follows the narrow hanging wall streak, but will eventually turn West and be driven along the footwall ore, if this narrow streak pinches.

9280, 9290, 9300, and 9310 are flat pilot raises with herringbone connections, that will later be enlarged as stopes. They will extend from the 900 Level to the 800 Level.

939CDN is an exploration drift, being extended North to locate additional ore in the country that is being diamond drilled from the surface. Hole No. 57 indicates a mineralized shear zone, 1250 feet north of the present face of 939C.

940C is a three compartment, square-set raise, that is being extended up the North Piute Orebody, to determine the extent of the mineralization.

1017DN is being driven to connect 706E Winze and the Central Orebody, with the Piute Orebody. This has just encountered the south extension of the Piute vein and will now be driven north along it. The geology does not check very well with that of the drill hole, because no heavy fissure was crossed. I am under the impression that the best mineralization will be ahead of the present face.

Prospect Diamond Drilling. Holes No. 78 and 79 were driven into the footwall and hanging wall from the face of 1201DN, to exhaust the possibilities of better vein material existing to one side of the face. The first 25 feet of No. 78 showed several streaks of fair mineral, so it was decided to crosscut into this zone and if it looked no better than the drill core indicated, the level would be stopped. Nothing worthwhile was opened up. The rest of Hole 78 and the full 60 feet of No. 79, were driven through practically barren schist.

Holes No. 80 and 81 were extended 75 feet into the hanging wall and footwall, from the face of 939CDN. No. 80 was driven in the hanging wall and cut nothing but dark schist, with two zones that had a small amount of mineralization. No. 81 cut about 15 feet of broken, mineralized vein material, before crossing the fault at 35 feet. From the fault to the end of the Hole was a barren, quartzy formation, containing an abundance of epidote and occasional blebs of garnet. The formation is quite solid and massive.

Hole No. 57 is being drilled from the surface to cut the North Piute vein, 1250 feet ahead of the present face of 939CDN. It passed through the lava capping at 844 feet and is now down 121 feet into the schist. The schist is fissle and gray, with numerous small green inclusions that have not suffered the extreme sericitization that the rest of the formation has. At 920 feet, the core began to contain specks of chalcopyrite and from 924 to 929, was 5 feet of fair ore, showing considerable chalcopyrite with some specks of bornite and chalcocite. Only two feet of core was recovered from this five foot zone and the condition indicated that most of the more brittle mineralized zones may have been washed out. A three inch clay terminated the ore streak, but the formation still looks favorable at 965 feet. Under the clay, the schist is more quartzy and several zones show numerous specks of chalcopyrite. The schist continues to look exceedingly bleached and is highly sericitized.

Very truly yours,

S. K. Droubay

S. K. Droubay

SKD:DM

cc - Mr. Sales
Mr. Dugan

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WALKER MINING COMPANY

DEVELOPMENT PROGRESS - FEBRUARY, 194[illegible]

Orebody	Heading	Size	Ft. Adv.	Total Advance	Feet Ore	% Cu	Oz. Ag	Oz. Au	Feet Waste
North	(M) 873ADN	9½x10	56	112	56	0.95	0.87	0.039	
	(M) 877ARs	7½x10	82	82	82	1.06	1.14	0.012	
	(M) 938CDN	8x8½	10	36	10	1.11	0.25	0.040	
	(D) 1201DN	10x9	12	1442					12
	(D) 1212xcF	8x6	24	24	24	1.10	0.20	0.012	
	Total		184		172	1.03	0.87	0.023	12
712	(D) 315CDN	5x7	20	74					20
	(D) 317CDN	5x7	78	260					78
	(D) 323CRs	4x4	53	73					53
	(M) 324CRs	4½x5	5	5					5
	(D) 406DDS	5x7	93	199	93	0.90	0.59	0.008	
	(D) 593BRs	8x19	38	67	38	1.36	0.19	0.027	
	(M) 623FDN	5x6	61	61					61
	(M) 623FDS	5x6½	18	18					18
	(D) 711EDN	9x9½	51	665					51
	Total		417		131	1.03	0.47	0.014	286
Piute	(D) 903BDS	7x9	14	1019	14	1.51	0.21	0.010	
	(M) 928CRs	7x18	24	129	24	1.48	1.13	0.029	
	(M) 929CRs	7x18	28	144	28	0.80	0.52	0.017	
	(M) 930CRs	7x18	64	183	64	0.99	0.52	0.017	
	(M) 931CRs	7x18	49	184	49	1.38	1.02	0.019	
	(D) 939CDN	7x9	56	96					56
	(D) 940CRs	18x14	11	11	11	2.88	0.08	0.010	
	(D) 1017DN	9x8	178	5273					178
	Total		424		190	1.27	0.68	0.018	234
	GRAND TOTAL		1025		493	1.13	0.69	0.018	532
				RECAPITULATION					
	MINING		397		313	1.09	0.86	0.022	84
	DEVELOPMENT		628		180	1.19	0.39	0.013	448

FORM 396 2-1-41-2M

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

March 13, 1941

H. M. HARTMANN, MANAGER

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

Dear Mr. Sales: SUBJECT: Surface Drilling and 1017DN

Surface Diamond Drill Hole No. 57 is a few feet deeper than 1000 feet and they will stop drilling today, with the understanding that no further surface drilling is contemplated.

From the 941 foot mark, the last I wrote you about, the formation continues bleached, with a few very small zones of chalcopyrite and quartz, to 960 feet.

The entire zone of schist is considerably sericitized and contains numerous dark green inclusions, about the size of a pea or smaller, embedded in the lighter colored groundmass of micaceous schist.

From 960 feet to 983 feet, there is a very barren, massive quartz, containing numerous small island of garnet about the size of pin heads. From 983 feet to the end of the hole, is the characteristic porphyritic meta-anderite (?), that was cut by the old surface drill holes and exists in a number of sections underground. It contains numerous zones of intense green epidote. This may be a less sheared and altered portion of the same rock from which the schist is derived.

1017 Drift North has encountered some of the mineralized zone exposed with Diamond Drill Hole No. 75. The drift has not yet opened up anything as good as the Drill Hole indicated, but I figure this lies ahead of the face. After re-plotting the drill log, using a 2 degree upward inclination, the mineralization was extended about 12 feet further east than it was first shown. If the hole deflected up more than this, it will be out further. I expected to encounter a much heavier clay fissure than we have encountered so far, and it may possibly be out ahead. The shear may have consolidated.

Very truly yours,

S. K. Droubay.

S. K. Droubay

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

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March 20th, 1941.

Mr. S. K. Droubay,
Walkermine, Calif.

Dear Droubay:

This will acknowledge your letter of March 13th, together with a copy of your letter to Dugan on the subject of broken ore reserves.

I note that 1017 is just getting into the ore zone exposed in Drill Hole No. 75.

Thanking you, I am

Very truly, yours,

RHS:KM

RENO H. SALES

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March 17, 1941.

Mr. S. K. Droubay,
Walkermine,
Plumas County, Calif.

Re: Walker Mine
Plumas Co., Calif.

Dear Mr. Droubay:

I received your letter of February 22nd (including map), in which you summarize the results of your study of the structural and mineralogical relationships in the respective ore-bearing zones developed in the Walker Mine. After reviewing this interesting information, I am prompted to comment on certain items, as follows:

South Orebody - last two lines on page 1, quote:

"The east vein has pitched against the hangingwall fissure on the lower levels and will die out against the fissure, if it does the same as the Central Orebody".

This statement leads me to ask if you consider the clay seams to be pre-mineral or post-mineral, a highly important question bearing directly on the possibilities of finding any ore in the South, Central and North ore zones in the Walker Vein at elevations below present bottom levels. If the orebodies are gradually cutoff by post-mineral strike faults, is it possible that the vein may be pulled apart or displaced downward below present bottom levels? If so, should some prospecting be done to check such a possibility?

However, quoting the next to last paragraph in your letter:

"From a casual glance of the 900 level plan, one could almost imagine that the Piute and North Piute orebodies are thrust faulted lower portions of the Central and North orebodies".

You imply a possible lateral or thrust displacement along the fault aggregating 2500 feet or more. This idea appears fantastic, even though the Piute orebodies are on the hangingwall side of the fault clays and the southerly orebodies are largely on the footwall side of the clays.

From your description of the mineral associations in the Walker Vein, I get the impression that there may be a general zoning, that is, a higher ratio of pyrrhotite to chalcopyrite inthe south portion of the mine compared with decreasing amounts of pyrrhotite existing in the North, 713, and Piute orebodies. Also, it appears that there is an increase in the relative amounts of garnet in the vein zone as you go north in the mine. What

about relative amounts of magnetite or other "schist" minerals? Do you think there is anything significant about this probable zoning of schist and vein minerals, including the types of associated quartz and the rarer occurrences of bornite and primary chalcocite?

Referring to your map, I note that the dip of the vein structure varies gradually from 90° at south end of the mine to 35° east (9340 drift) at the north end of the Piute workings. Do these dips (and the strike) conform generally to the banding in the schist? According to your description (Page 3) the Piute orebody at least occurs in a sheared zone which angles slightly to the schist banding. In other words, was a large portion of the mineralization in the Walker Vein deposited contemporaneously with the development of schistosity, or was it introduced following later intrusives into the schist, such as the diorite plug northwest of 712 ore zone, and/or the granite farther south?

I appreciate receiving the map and letter summarizing your observations of the geology at the Walker Mine. Otherwise, at this time, I would not be prompted to ask the above questions regarding the subject, further study of which might suggest some prospective possibilities of importance.

With kindest regards,

Yours very truly,

MEG:KM

cc: C.E.W.
R.H.S.
T.Lyon
V.D.P.

M. E. GINDEL

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

WALKER MINING COMPANY

WALKERMINE
PLUMAS COUNTY, CALIFORNIA

March 21, 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:

The enclosed tabulation is a copy of the regular monthly Sample Analysis Sheet, that is now being prepared by our Sampling Department. A report is made every two weeks, (1st and 16th of the month), for use by the Operating Department and the two are combined to form the monthly sheet.

I am sure these are going to be a real help to Mr. Warren in discussing the ore and waste problems with his Foremen and Shifters, and the whole set-up will have the tendency of reducing waste breakage to a minimum.

We have tried to follow the Butte system in making this report, but one has to be familiar with our working places, in order not to be mis-lead by some of the results as shown. For instance, a period breakage for one particular place may be an irregular section from a large vein extending along the hanging wall and into the waste. The figures as shown should represent the proportions of waste and ore broken, even though the assay and mining widths look peculiar. 1.0% copper is the dividing line between ore and waste.

The assay width is the width of ore broken over 1.0% cu, and does <u>not</u> include waste horses occuring in the vein. Mining width represents the full width of rock broken. Waste from the footwall or hanging wall, is shown in the over-break column, but waste mined as inclusions in the ore, is not shown as over-break. Mr. Warren feels that waste inclusions, or horses, should be used in figuring assay widths, which if done in all cases, would make the assay width and the mining width be identical, providing mining were kept within the limits of the vein. I had instructed the Head Sampler to exclude waste inclusion assays from the assay width, but not to show it as over-break, because this is my understanding of the way it is done at Butte. However, if I am mistaken, or if Mr. Warren could use it to better advantage the other way, it can easily be changed. I will ask Mr. Vivian to straighten us out on this.

I would appreciate any suggestions that may improve this Analysis Report.

Very truly yours,

S. K. Droubay

S. K. Droubay

SKD:DM
Encl.

cc - Mr. Sales
Mr. Lyon
Mr. Vivian

ANACONDA COPPER MINING CO.

COPY

March 26, 1941.

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

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 COPPER MINING CO.

COPY

Mr. S. K. Droubay---3 March 26, 1941.

Juel left here a few days ago to enter the Military Service. He was getting along fine, and we were sorry to see him leave.

Very truly yours,

GFV:KM

cc: M.H.G.

GEO. F. VIVIAN,
Chief Sampler.