ANACONDA COPPER MINING CO.
COPY

AIR MAIL

Salt Lake City, Utah
October 4, 1941

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

Dear Clyde:

I spent two days at the Walker mine, paying particular attention to the surface southwesterly from the Piute shaft, and the developments on the 1000 level. There is nothing in surface conditions in that area to justify further drilling.

I found a very good showing in the raise being run from crosscut 1079 E. My conclusion was, after seeing what had been done on the 1000, that the operation there should concentrate vigorously on that raise showing and quit all other work in waste on the level. I got the impression that this raise ore showing might be continuous to the 900 level. In other words, that there may exist quite a body of narrow but better grade ore. I recommended stopping all waste work and do everything possible to open up the raise ore showing. I believe Hartmann consulted with Dugan and waste work was stopped on my suggestion.

I just wanted to be sure that you understand that there is a possibility of mining a considerable amount of better grade gold-copper ore between the 1000 and 900 Piute levels. The ground did not look too good so that it may be necessary to use stulls. The stope width should be kept down in order to maintain the grade. As the raise advances I think it advisable to run an

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2- Mr. Clyde E. Weed October 4, 1941

intermediate drift north and south - say at 50 feet above the 1000 .

Yours very truly,

RHS:P Reno H. Sales

cc: J. F. Dugan
Tom Lyon ✓
H. M. Hartmann

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

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

September 22, 1941

H. M. HARTMANN, MANAGER

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

Dear Mr. Gidel:

Enclosed please find Geological and Assay sketch of the face of 1071BDN. As can be seen from the assays and geological notes, the bornite mineralization is more spotty than I first believed.

Split core assays on Hole No. 29, show the following results:

Feet Drilled	% Cu	Oz.Ag.	Oz.Au.
412 - 417	0.50	Tr.	Nil
417 - 422	0.40	0.05	0.015
422 - 426	0.50	0.14	0.020
426 - 431	0.85	0.27	0.020
431 - 439	1.30	0.66	0.050
439 - 447½	0.85	0.21	0.035

Hole No. 41, a down hole (-69 degrees) drilled on nearly the same bearing, showed a low grade quartz vein from 332' - 346½'. There is some finely desseminated chalcopyrite mineralization. There were no core assays made on this Hole, but the sludge assayed as follows:

Feet Drilled	% Cu	Oz.Ag.	Oz.Au.
320 - 330	0.35	0.03	---
330 - 340	0.45	0.23	0.025
340 - 350	0.85	0.20	0.020
350 - 360	0.35	0.12	Tr

This would seem to indicate that mineralization exists down to the 1200 Level.

All track, air, and water lines have been salvaged from this portion of the 1000 Level, so it would be quite inconvenient for the Operating Department to drift the additional 40 feet to Diamond Drill Holes No. 29 at the present time.

There was at some time, discussion of further drilling of the "footwall zone" north of Hole No. 29 in the vicinity of 1075B and 1076B crosscuts. This cannot be done until 1017 has holed Piute, as they would be drilled from this haulage way.

Very truly yours,

V. R. Chamberlain

VRC:dm
cc - Mr. Dugan
Mr. Lyon

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

WALKER MINING COMPANY
WALKERMINE
PLUMAS COUNTY, CALIFORNIA

April 9, 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 sketch represents the progress of 1017DN toward the Piute Orebody, and the proposed lay-out for continuing the Drift North, that was decided on by you, Mr. Hartman, Mr. Warren, and myself.

The geology of the headings did not check with the geology as we interpreted it from Diamond Drill Holes No. 74 and 75, mainly because Hole No. 75 indicated a 13 foot vein of 2.65% Cu., forty feet beyond a heavy clay fault. The heading exposed a streak of fair mineralization about 30 feet under a heavy clay fissure, but has cut nothing beyond. The clay fault in the heading is 60 feet beyond the point where it was indicated by the Drill Hole. It appears that the Hole either deflected considerably upward to cut the flat fissure at such a point, or, it deflected downward, encountering a local condition that indicated a fissure zone, and did not reach the main fissure. This latter case could account for the position of the mineralization, and the 99.0% core recovery beyond the broken zone with no indication of the clay fissure.

In any event, the main objective is to get North into Piute Ore zone, and the logical place is to advance along the hanging wall side of the fissure.

The planning and estimated cost as indicated by the sketch, does not include the additional work that will be required to reach the shaft.

Very truly yours,

S. K. Droubay

S. K. Droubay

SKD:DM
Encl. 1

cc - Mr. Weed
Mr. Sales
Mr. Lyon

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

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

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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Memorandum

On

Development At Walker Mine

Prospecting at the Walker Mine may be divided roughly, as follows:

1. Exploration work north and south on the 1200 level to locate the extension of the North and Central Orebodies at depth, designated as 1200 development.

2. Drifting north from the Piute to expose the mineralization indicated in surface diamond drill hole No. 21.

3. Develop ore in the footwall of the 712 Orebody above and below the 700 level.

4. Block out ore below the 700 level in the Piute Orebody.

5. Look for the extension of the 712 Main Orebody.

6. Diamond drill prospect holes.

1200 Development:

1. 1201-DN is being driven north toward the North Orebody to a point where the vein is expected to extend on the hangingwall side of the fault against which the main orebody pinched. This objective is 600 feet north of the shaft, of which 310 feet has been accomplished. Crosscuts or drill holes to the east, through the fault, may locate ore closer than the 600 foot mark.

1202-DS has been extended 225 feet south of the shaft and is in a position for two short diamond drill holes which will take the place of crosscuts. There is a possibility of ore existing in the footwall as indicated by disseminated mineralization cut with a hole just north of the shaft on the 1200 level, or it may be associated with the fault to the east, the same as on the 1000 level.

Neither heading has been in ore.

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North Piute Development:

2. A surface diamond drill hole cut mineralization several hundred feet north of the Piute Orebody, and 904B Drift North was extended into this country. Since 904B was started for long range prospecting (the end of ore on the 900 level), it has advanced 420 feet north along the strike of the vein, and has cross cut 120 feet east across the structure. The heading cross cut a shear zone 400 feet south of the drill hole, but the ground was too badly broken to permit drifting north on what little mineralization was there as the shear zone is full of small faults and requires expensive timbering. So it was decided to drop back under the fault and drift due north toward the drill hole and cross cut the shear zone every 100 feet. This drift (923C) has advanced 90 feet and the face is just 400 feet south of the surface drill hole.

It is hoped that other orebodies exist under the lava that caps this country to the north.

3. The 517 fissure zone in the footwall of the 712 Orebody is being opened up on the 1000, 700, 600, 500 and 400 levels.

400 Level:

471C-DS has been driven to a point where the vein has pinched, and approximately 750 feet of ore has been opened up along the strike.

500 Level:

517B has approximately 300 feet more to go before the vein ends, at which point it will meet a raise which is being driven from the 600 level.

600 Level:

The vein has been cut on the 600 level with 693E-XC West which was driven from the south end of the 712 Orebody. The footwall and hangingwall were located and a drift north along the strike of the vein has been started. This drift is in ore averaging about 1.35% copper, and the vein is approximately 18 feet wide. It is from the footwall of this crosscut that a raise is being started which will be driven up the vein to meet the extension of the 517B-DS.

708E-XC N.W. is a main haulage level which is being driven from the south end of the orebody to produce ore from the 517 fissure zone. It is almost to the point where it should meet the vein, then it will be turned and driven along the strike of the ore. Although considerable ore running 1.38% copper has been blocked out above the 500 level by means of numerous raises and crosscuts, it is still

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uncertain how much and of what grade exists below. The vein is cut by three diamond drill holes and by 693E XC, but it still must be listed as possible ore.

It is estimated that 800 feet of haulage level, 600 feet along the strike of the vein on the 600 level, 300 feet along the 500 level and 2000 feet of raising will be needed to complete the program to produce the 165,900 tons of 1.38% copper, .058 oz. Silver and .023 oz. gold blocked out, probable and possible ore which is listed as recoverable above the 700 level in this footwall area. A few short crosscuts to determine the width of the vein will also be needed. It is estimated this program will require six to nine months for completion.

There is one section of this fissure zone that is quite near the Main Orebody, and may be produced through the present haulage system by flattening a raise into the footwall from the bottom of 705B Stope. This country at present is being opened up and mined on the 400, 500 and 600 levels by silling out the ore and either slushing or hand tramming it a short distance. This is the recent work recommended by Mr. Sales in conjunction with opening up all of these footwall fissure splits. We are now assured of stopes from the 600 level to and above the 400 level on this particular swell with at least 17,000 tons of recoverable ore listed at 1.64% copper.

4. Ore is being blocked out in the Piute Orebody by driving 903B-DS. This heading came into 1.5% copper ore 500 feet south of the shaft. If this extends as far south as the ore on the 800 level, then we will have 250 feet of ore ahead of the present face. Ore will now be produced from this heading instead of waste, which will help production.

Two large raises are being driven up the vein north of the shaft on the 900 level, and one is being driven south of the shaft. These will block out ore that is listed as probable and possible ore in the reserve sheets.

5. 1017-DN was stopped in favor of extending 1055B XC West to the foot wall vein (probably 517 fissure) which has been outlined with diamond drill holes. We will then drift along the vein, and from some point north possibly drill to locate any extension of the Main Orebody.

1055B has been extended 70 feet and has 110 feet more before the vein is reached. We will then drift north and south along it.

6. During 1939, 8201 feet of diamond drill prospect work was completed, and since the first of the year we have drilled 1340 feet. With the exception of approximately 100 feet on a difficult long hole to finish in the hangingwall on the 1000 level and occasional short holes to replace crosscuts, the drill program has been completed.

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In the footwall vein of 712 Orebody 297,000 tons of possible ore was blocked out between the 600 sub-level and the 1000 level, with diamond drill holes. At least half of this should prove recoverable, but it may be too low grade for mining at present market.

Numerous zones of mineralization have been located with drill holes, and are a valuable guide for directing future development.

The total cost of this drilling has averaged $1.57 per foot.

In Conclusion:

Development work during the next six to nine months will have an important bearing on the future of the Walker mine, as it will be determined whether or not another ore body exists north of the present Piute vein; also if the Main Orebody extends to the 1200 level. The 517 fissure will also be fully developed.

John F. Dugan.

JFD:H
4-27-40

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ore Reserves

INTERNATIONAL SMELTING AND REFINING COMPANY

Kearns Building, Salt Lake City, Utah

ANACONDA
from mine to consumer

TOM LYON
GEOLOGICAL DEPARTMENT

December 23, 1940

Mr. J. O. Elton, Manager
International Smelting and Refining Company
O f f i c e s

WALKER MINE

Dear Sir:

Attached is a long section showing stoping and ore reserves located in the Piute ore body of the Walker mine. The unstoped ore is shown in red.

You will note there are no ore reserves calculated below the 900 level although it is absolutely certain this ore body will extend below the 900 level for some considerable distance. The reason for not calculating any ore below this level is that we are now driving a crosscut from the 1000 level of the Central ore body to get under this ore shoot and the expense of driving this crosscut will be charged to the ore developed between the 1000 and 900 levels.

The following tabulation shows the amount of ore developed in the Piute ore body beneath the 700 level and above the 900 level:

BETWEEN THE 700 and 800 LEVELS

Broken Ore - - - - - - - - - - - - - - - - - -	27,449 tons
Ore Prepared for stoping - - - - - - - - - -	56,989 tons ✓
T o t a l	84,438 tons

BENEATH 800 LEVEL AND ABOVE 900 LEVEL

Ore prepared for stoping - - - - - - - - - -	50,195 tons ✓
Ore unprepared for stoping - - - - - - - - -	174,700 tons ✓
T o t a l	224,895 tons

BETWEEN 700 and 900 LEVELS

Total Ore - - - - - - - - - - - - - - - - - -	309,333 tons

Saving on Quality $30,933.30 - 50,000 =

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It is somewhat of a guess as to the amount of ore beneath the 900 level but it is almost certain there will be at least 100,000 tons and possibly 250,000 tons between the 900 and 1000 levels.

The crosscut on the 1000 level, which is being driven beneath this ore body, still has about 900 feet to go to reach the projection of the ore body at this elevation.

I am showing on the attached long section the location of the ore body which is being developed north of the shaft. No tonnage can be estimated for this ore body as there is but one opening in it.

Yours very truly,

Tom Lyon

TL:P

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F. 512 1-15-37 2M

INTERNATIONAL SMELTING AND REFINING CO.

ANACONDA
from mine to consumer

TOM LYON

GEOLOGICAL DEPARTMENT
KEARNS BUILDING

SALT LAKE CITY, UTAH

January 21, 1938

Mr. Reno H. Sales
Room 1801
25 Broadway
New York City, N. Y.

Dear Reno:

Enclosed you will find a tabulation showing the ore reserves of the Walker mine as of November 1, 1937, together with a long section showing the location of the ore blocks.

You will note that the assured reserves have been increased by the amount of 632,900 tons. This is not a bad record when we take into consideration that we have mined 439,303 tons up to November 1, as the ore produced plus 632,900 tons is equal to a total of 1,072,203 tons, which represents the ore developed during the year.

The tabulation below shows the tons of ore developed above the 700 level and the amount developed below. The proportion is approximately two-thirds below and one-third above.

	Above 700 Level	Below 700 Level	Total
Assured Ore	841,200	1,663,000	2,504,200
Probable "	260,000	484,300	744,300
Possible "	263,500	502,200	765,700
T o t a l	1,364,700	2,649,500	4,014,200

Assured Ore above 700 - Out of total of 841,200 tons, 540,000 tons is recoverable pillar ore.

Assured Ore Below 700 - Out of total of 1,663,000 tons, 115,000 tons is recoverable pillar ore.

TL:P
Encl.

Very truly yours,

Tom Lyon

Tom Lyon

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