FORM 396 4-30-40-2M

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

December 31, 1940

H. M. HARTMANN, MANAGER

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

Dear Mr. Sales:

The two accompanying sketches show the present position of 1017DN and of 1201DN, also a December 1, 1940, tabulation of Available Ore Reserves.

Drill Hole No. 65 cut fairly solid vein material, so we were able to advance in the vein, rather than run into the footwall, as was suggested by you and Mr. Lyon several weeks ago. Mr. Warren had the drift turned and into the vein material by the time the recommendation was in. About 30 or 40 more feet will put us in position for the proposed short hanging wall hole, to test whether vein material exists on the East side of No. 1 fault. The present vein is good and solid, but both of the faults are close at hand and bad where exposed.

40 feet more will put 1017 in position for easterly drilling as suggested by your most recent recommendation. Several zones of fairly strong mineralization have been cut, which may be worth while following at some future date.

Very truly yours,

S. K. Droubay

S. K. Droubay

SKD:DM

cc - Mr. Dugan
Mr. Lyon

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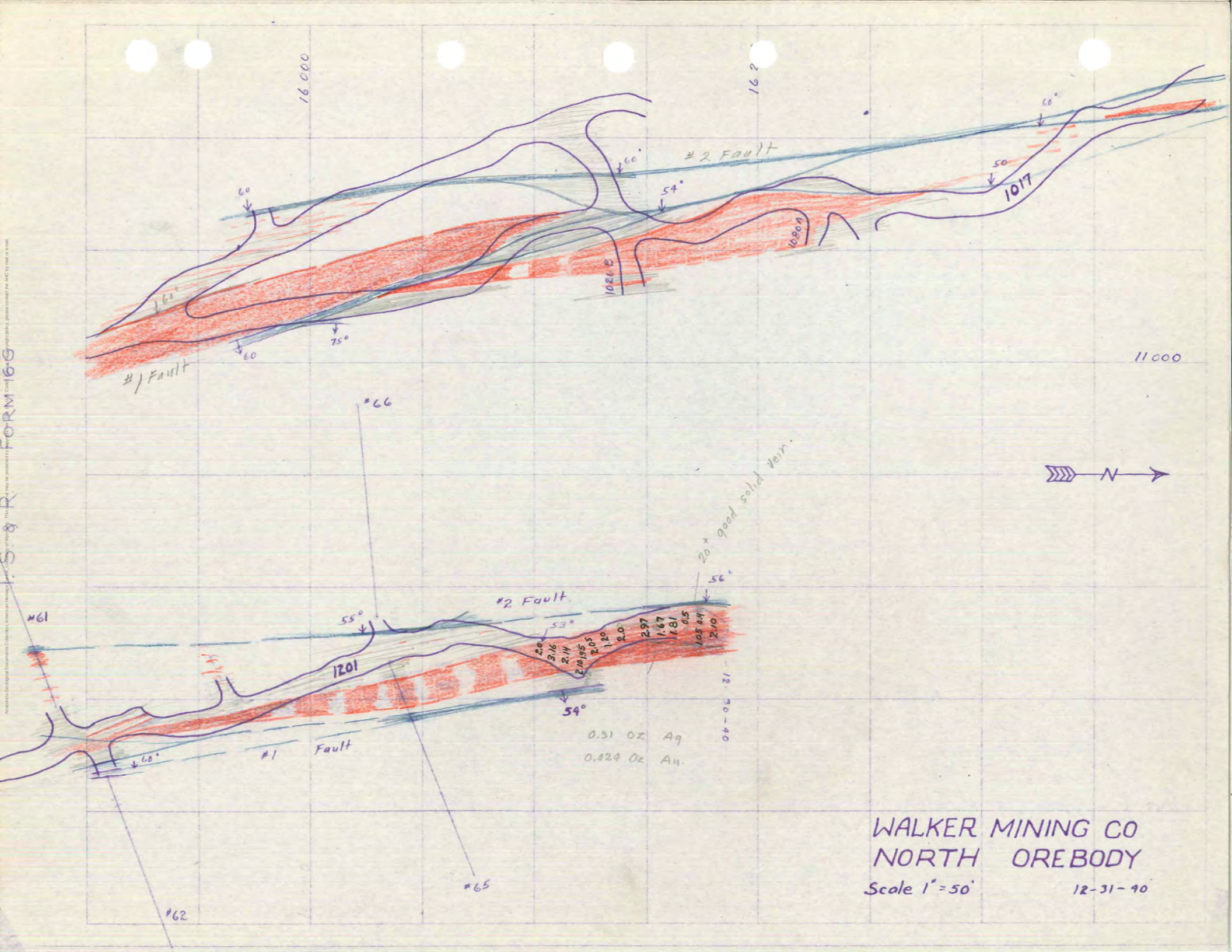

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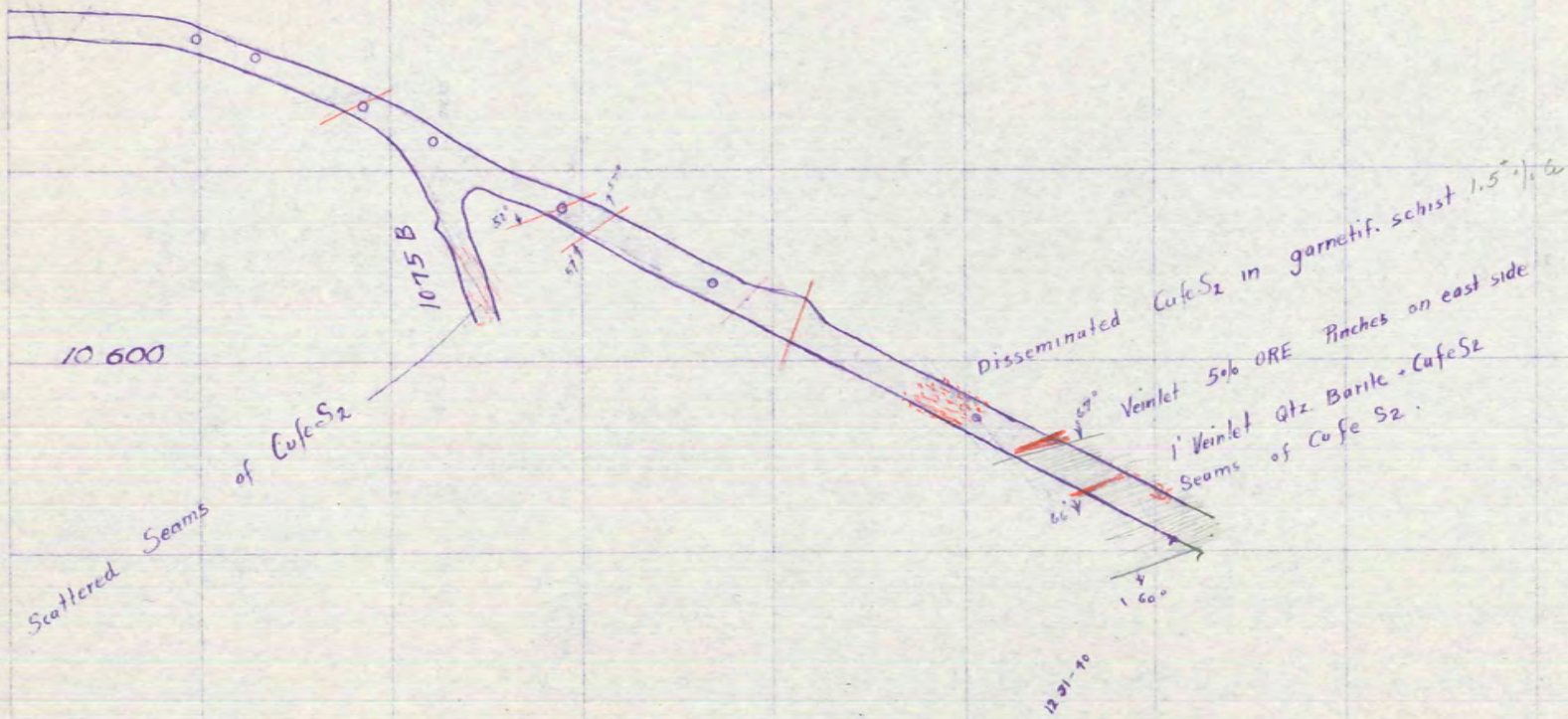
712 O[illegible]-BODY
1017 DN
scale 1"=50'



V.R.C. 11/14/4

U.S. & R. FORM 16-G

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

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

December 28, 1940

H. M. HARTMANN, MANAGER

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

Dear Tom:

Referring to your letter of December 20th and your wire of December 23rd, I would like to make the following explanations:

Diamond Drill Holes Nos. 70, 71 and 72 were completed by the time I received your letter, and as soon as No. 73, the N 50 degree E Hole is drilled, (the one Mr. Sales has requested), we expect to turn the heading into the ore and follow along it. The new hole will give us information ahead of the face and to a certain extent, determine the direction of drifting.

With regards to extending crosscuts to ore limits, or to structual objectives such as you mentioned in your letter, by asking that 9360xcE be extended to the fault, I would like very much to see this done. However, this presents operating difficulties by making it necessary to put in extra switches and track, and in the case of 9360, it meant handling waste, so we have been utilizing the short Diamond Drill holes. In order to keep moving ahead, the crosscuts have been extended just far enough to accomodate a Diamond Drill.

I suppose that since Hole No. 70 is already drilled, it will not be necessary to extend 936CxcW to the footwall fault. If however, you feel that future crosscuts should be extended until they are through the ore, please let me know and I can request that these are not to be stopped until the vein is completely cut.

Surface Diamond Drilling has been at a standstill for about two weeks. One gang of drillers were discharged and heavy storms have prevented the next crew from getting started. The two rigs are fairly well housed in, but there is over four feet of snow in places and it will be difficult to transport gasoline and core, back and forth. Hole No. 51 was drilled to the contact at 750 feet, but contains a broken casing that cannot be passed as yet. Hole No. 57 is 500 feet further North than No. 51, (about 1400 feet North of the present 934CDN heading) and has advanced 708 feet. It should be right at the contact of the lava for the collar is about 40 feet lower than the collar of No. 51. If the present storm blows over, work may be continued so long as we have good weather. However, much more snow will make it necessary to stop drilling until spring.

Very truly yours,

S. K. Droubay

S. K. Droubay

SKD:DM

cc - Mr. Sales
Mr. Weed
Mr. Dugan

Hole # 73 out 23' one 17'-40'

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ANACONDA COPPER MINING COMPANY

25 Broadway, New York

New York, N. Y.
December 27, 1940.

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

Dear Tom:

Please refer to the map accompanying Droubay's letter of December 20th. The way his geological sketch is drawn, it looks as if the drift going southerly had turned too far to the left and had gotten out of the main footwall ore streak. If this be true, a crosscut should be turned to the right at the last survey station point.

Regarding suggested development work on the 300 and 400 levels. There is no doubt about the need for a connection on the 400 level. Possibly the 300 should wait until it is pretty definitely shown that the 500 ore extends upward beyond the 400.

Yours very truly,

RENO H. SALES

RHS:F
CC: Mr. C. E. Weed.
Mr. J. F. Dugan.
Mr. S. K. Droubay.

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FORM 578 8-10-39 3M SETS

WALKER MINING COMPANY

SPRING GARDEN, CALIFORNIA

Daily Mine Assay Report

DIAMOND DRILL ASSAYS. Date 12-26 19 40

SAMPLE NUMBER	DATE BLASTED	PLACE	ASSAYS			LOCATION
			% Cu	Ozs. Ag	Ozs. Au	
HOLE #70		Sludges				
		0 – 10	0.70	0.05	tr	Some fair streaks of qtz + CuFeS2 just before fault is encountered at 46-50. Sludges from 0-20 look high.
		10 – 20	0.70	0.05	tr	
		20 – 30	0.35	Tr	–	
		30 – 40	0.40	0.05	tr	
		40 – 50	0.35	0.17	0.01	
HOLE #71		Sludges				
		0 – 10	0.25	tr	–	There are several 1'-2' streaks of fair vein material around 60'. I examined the core underground but it is not out for reading
		10 – 20	0.80	tr	–	
		20 – 30	0.30	tr	–	
		30 – 40	0.25	0.05	tr	
		40 – 50	0.40			
		50 – 60	0.30			
		60 – 70	1.70			
		70 – 80	0.30			
HOLE #72		Sludges				
		0 – 10	3.10	0.40	0.02	
		10 – 20	2.20	0.19	0.01	
		20 – 30	3.00	0.50	0.01	
		30 – 40	1.40	tr	tr	
		40 – 50	0.50	0.10	tr	
H = #72		CORE				
		0 – 7	2.80	0.40	0.01	
		7 – 12	1.50	0.24	0.025	- looks low. estimated to go 2.8%
		12 – 17	2.25	0.30	0.02	
		17 – 22	4.05	0.56	0.02	
		22 – 24	1.10	0.26	0.005	looks low estimated to run 1.7

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

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

December 20, 1940

H. M. HARTMANN, MANAGER

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

Dear Tom:

Please find enclosed a plan composite and longitudinal vertical projection, showing the south end of the 517 Fissure Zone of the 712 Orebody.

517B has opened up enough country to assure us a nice Stope (617C), that may be started right away, because 713C Raise will hole in a day or two.

A new Raise (593B), will be started in the high grade from 517B right away and will be extended to the 400 Level as shown on the long section. We would like permission to drift from near the 400 Level Shaft Station, as shown on the plan, to prospect the ore zone and to service the Stope. Any waste broken will be gobbed in the empty 505#2 Stope, 300 feet away. Ore may be produced with a 350 foot tram.

We would also like permission to drift into this country from the 300 Level Station and eventually connect with 318C. We have one nice block of ore above the 300 Level, as laid out with 318CDN&S and by 317CDN&S, and from surface indications above the 317D block, I am sure we will have ample tonnage to warrant this development work. Any waste from the 300 Level drifting will be passed down the service raise and gobbed in 505#2 Stope.

Mr. Hartmann and Mr. Warren have gone over these plans with me, and are very much in favor of them. Ore from this section may now be passed directly to the 700 haulage level, and is very much needed.

621F did not open up nearly so well as did 517B, but there is enough so that we are assured of 617D Stope.

Very truly yours,

S. K. Droubay

S. K. Droubay

SKD:DM
Encl. 2

cc - Mr. Sales
Mr. Weed
Mr. Dugan

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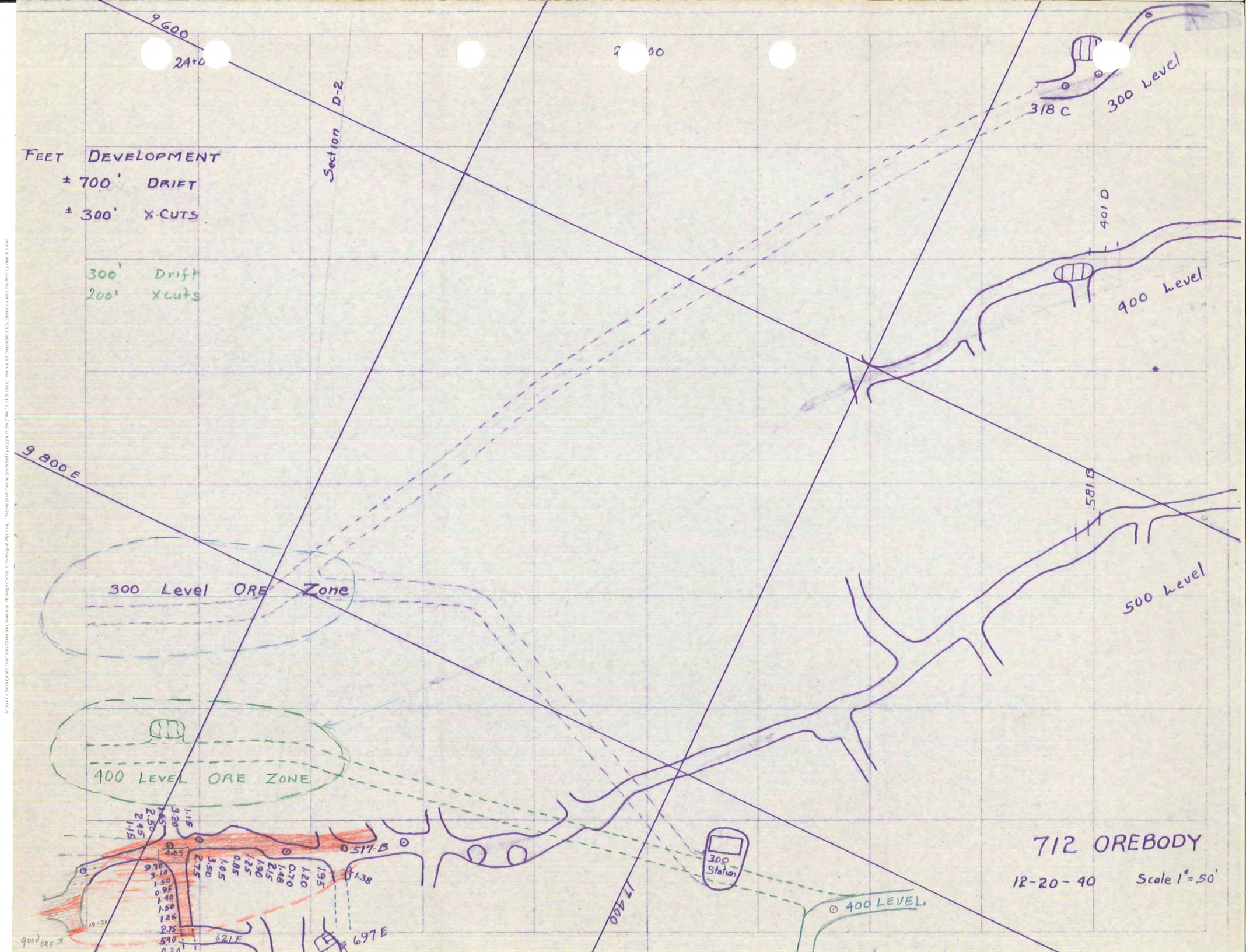

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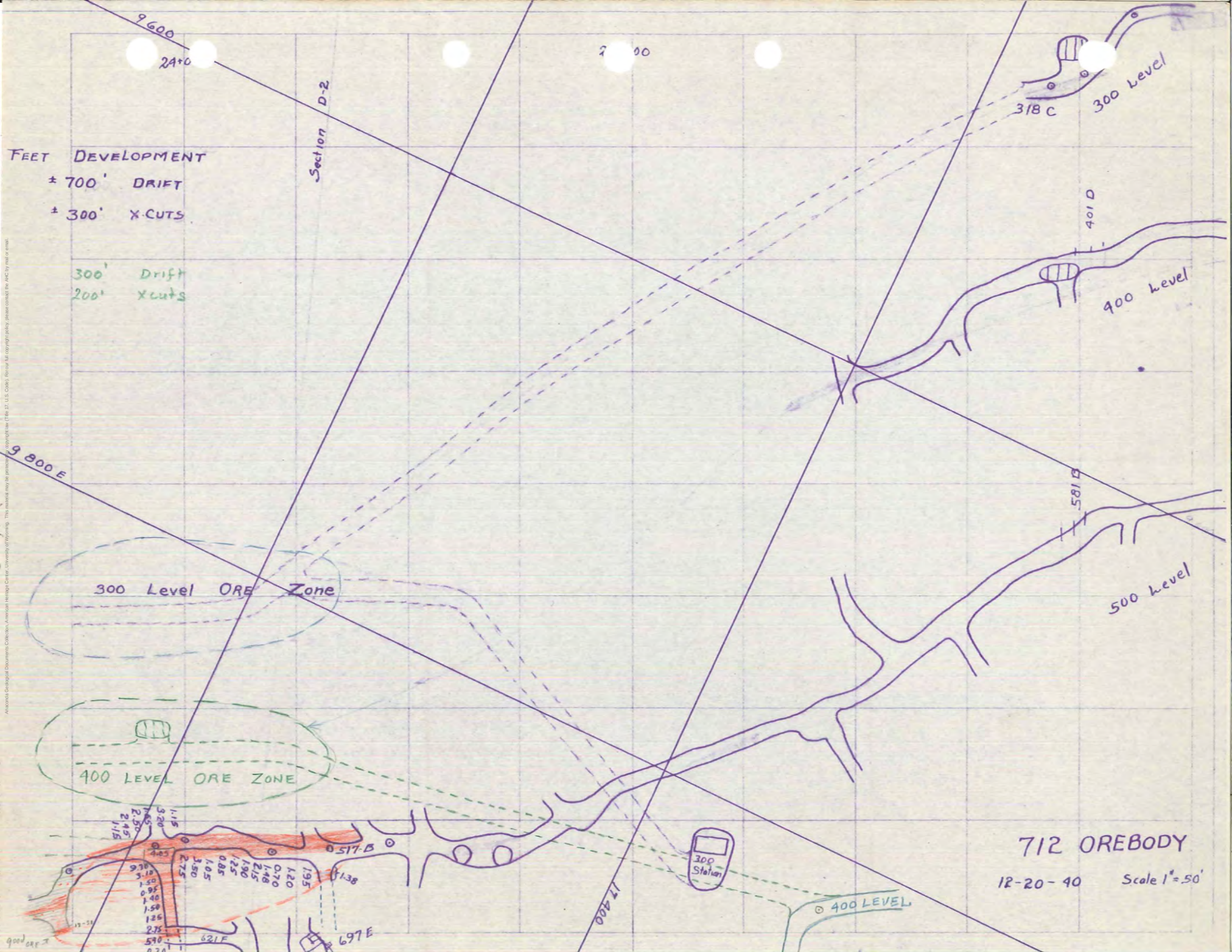

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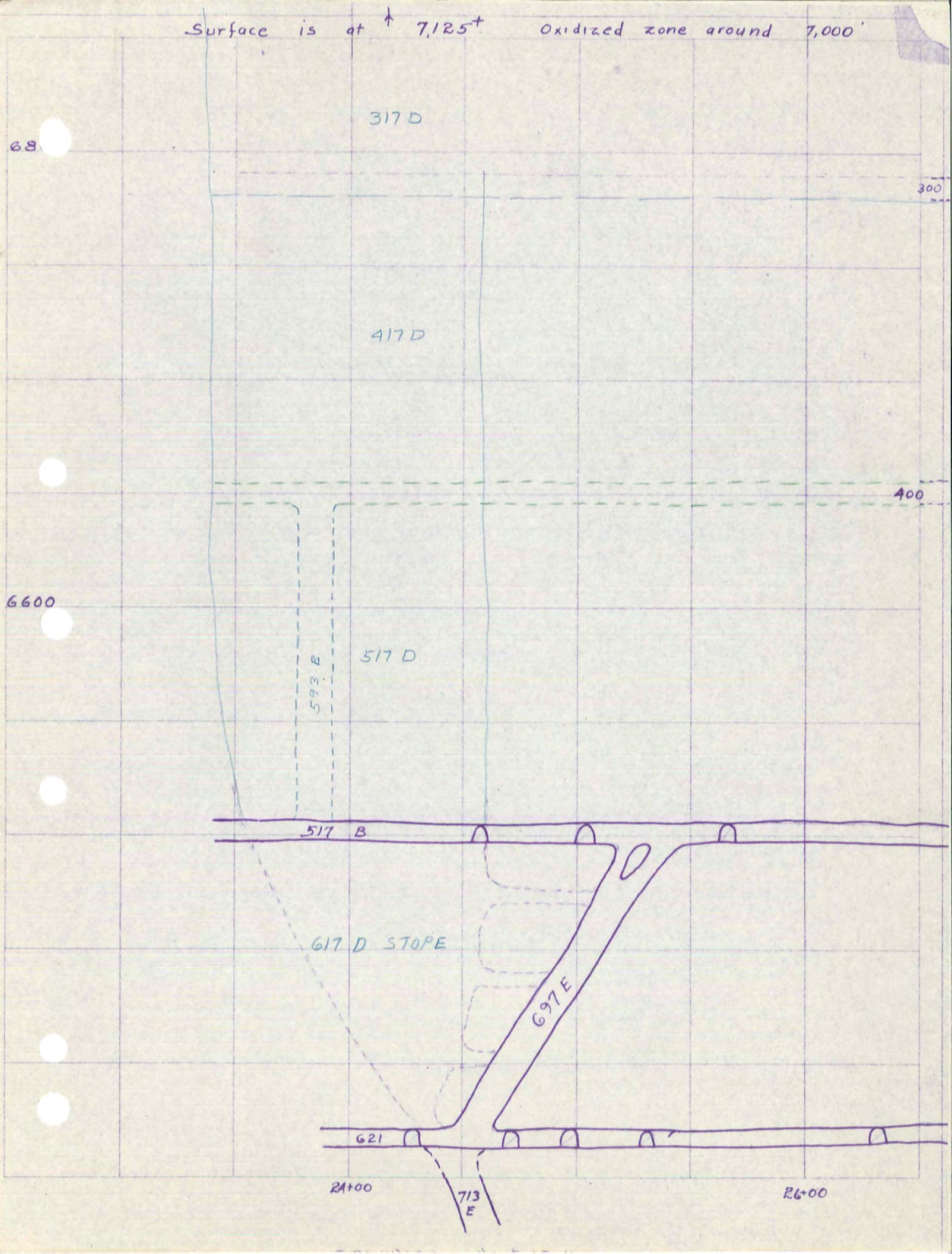

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December 20, 1940

Waeher

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

Dear Red:

I am in receipt of an air mail letter from Mr. Sales, dated December 18, a copy of which has been sent to Mr. Hartmann.

This letter contains instructions as to diamond drilling on the 1000 level. Will you please see that this work is done according to the wishes of Mr. Sales and Mr. Weed.

Yours very truly,

Tom Lyon

TL:P
cc: Messrs: R. H. Sales ✓
C. E. Weed
J. F. Dugan
H. M. Hartmann

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December 20, 1940

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

Dear Red:

I am in receipt of your letter of December 17 together with the enclosed sketch showing the conditions existing at the north end of 934 C drift north. The mineralization showing in the face of the crosscut east appears to justify a round or so before any drilling is done, as it is quite possible that the main vein is in the footwall as shown in Drill Hole 69.

I saw the same condition on the 600 sub-level in the North ore body where the mineralization appeared to stop against a very small crack which showed no clay gouge whatever. The drift was continued, however, and the vein appeared again in about 50 feet. From the looks of your notes, we may encounter a similar condition in this area. However, the distance from the face of the East crosscut to the projected position of the footwall is so short that I think this crosscut should be run out before anything else is done.

Very truly yours

Tom Lyon

TL:P
cc: Messrs: C. E. Weed
R. H. Sales
J. F. Dugan

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ANACONDA COPPER MINING COMPANY

25 Broadway, New York

December 18, 1940.

AIR MAIL

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

Dear Tom:

I have discussed the 1000 level Walker development with Weed. We think a turn-out should be made to the south at "A" in accompanying sketch. This point is approximately at coordinate 18300. From this turn-out diamond drill holes to be extended approximately as indicated.

The purpose is to determine if the vein contains ore southerly from where 1017 would normally intersect the fissure. If drill hole #1 should get ore, 1017 should be turned to the right to avoid as much cross-cutting in waste as possible.

If drill hole #1 should get ore, then we think it would be well to drill #2.

There is no advantage in doing this work unless it can be done soon, in order that we can save as much crosscutting as possible. I understand a car turn-out is needed at about point "A".

Yours very truly,

RENO H. SALES

Enc.

RHS:aw

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

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

WALKER MINING COMPANY
WALKERMINE
PLUMAS COUNTY, CALIFORNIA

December 17, 1940

H. M. HARTMANN, MANAGER

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

Dear Tom:

The enclosed sketch gives a picture of what we are up against in 934CDN. From the looks of the structure, it appears as though we may have a post mineral fault, even though very little clay is apparent. The heavier slip about 20 feet back, may be responsible for the condition. On the other hand, one of the characteristics of the Piute Orebody, is the way the local structure angles to the main footwall, with a steeper dip. This same condition seems to exist here, but much more pronounced.

Mr. Hartmann, Mr. Warren and myself, have discussed the situation and figure to drill the three short holes shown on the sketch, starting this afternoon. We would appreciate additional recommendations.

If Hole No. 70 cuts ore along the footwall, we will drift on this. If none of the holes cut ore, then perhaps the drift should be continued N 15 W along the original lines. Hole No. 71 will pick up the vein if it is thrown to the east, providing the displacement is not too great. Hole No. 72 will tell whether or not the vein bends to the east.

Surface Hole No. 57 (1300 feet north of present face) is 715 feet and should be at sub-surface. It is going along fine. Hole No. 51 (800 north) is still stuck at the sub-surface.

Advice would be very gladly accepted.

Very truly yours,

S. K. Droubay

S. K. Droubay

SKD:DM
Encl. 1

cc - Mr. Sales
Mr. Weed
Mr. Dugan

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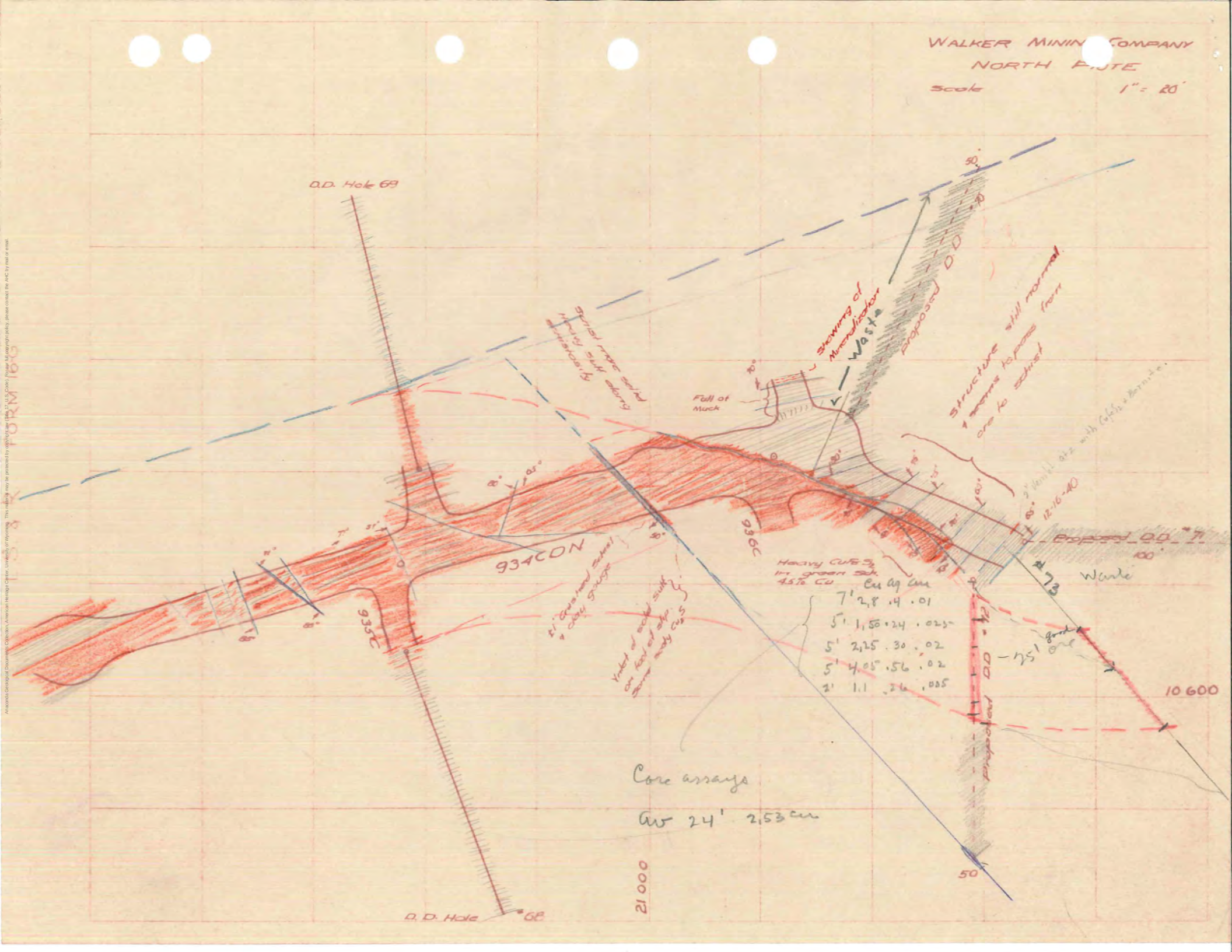

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ANACONDA COPPER MINING COMPANY

25 BROADWAY

NEW YORK

OFFICE OF THE
GENERAL MANAGER OF MINES

December 16, 1940.

AIR MAIL

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

Dear Tom:

Apparently my letter of November 29th regarding Walker development was written prior to the receipt of your letter of November 27th on the same subject. We both agree that 1017 was looking for the downward extension of the 900 south Piute and, therefore, no time should be wasted looking for the 712 ore body.

It makes no particular difference to me whether the hole drilled east from 1017 is drilled at 18,400 coordinate or at 18,500 coordinate. I think you are correct in stating that there would be more chance of striking the ore body at 18,500 than there would at 18,400. When this hole is drilled, and if it should strike ore, the 1017 drift should immediately be made into a crosscut allowing a reasonable curve for hauling in order to get into the mineralization as rapidly as possible.

In regard to 934 North Piute, I would like to discuss this matter with Mr. Sales who is due here tomorrow before I say anything further about it.

With kind personal regards, I am

Sincerely yours,

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

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

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

December 13, 1940

H. M. HARTMANN, MANAGER

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

Dear Tom:

Enclosed please find geological sketches and classification sheets for development during the Month of November, a tabulation of Diamond Drill progress for the month, and prints showing in yellow, mining operations with respect to Orebodies. The following is a resume of the classification sheet and the Diamond Drilling.

SOUTH OREBODY None.

CENTRAL OREBODY None.

NORTH OREBODY 1201 DN is the main level heading exploring north along the vein. 1209 and 1210 crosscuts were driven long enough for extending short Diamond Drill holes to determine the extent of the vein. 1201 is being driven between the two faults, along 2% ore, but as soon as the faults come together, it will be turned into the footwall and advanced to the point where a Diamond Drill hole will prospect the hanging wall as you suggested in your last letter. The vein appears to have gotten wider, and is not pinching as soon as I anticipated and it is possible we will not have to drive it in waste. Some assays in this part of the vein go up to 4% Cu. The occurance of considerable Barite and Magnetite looks as though we may be getting some of the Piute type mineralization.

712 OREBODY 517CDN&S and 518CDN&S are being driven from the tops of 496C and 401D raises, as 500 Level heading. 519CDN&S, 520CxcE&W and 221CxcE, are driven from the top of 403DRs, but are about 20 feet lower than the 500 Level. These headings will prospect the vein at this level, and will furnish waste for 405E Stope.

517BDS is exploring the south extension of the footwall vein. 591BxcE&W were driven to determine the width of the vein. It looks as though we have quite a nice lenticular body of ore out here that will run about 1.75% Cu. We have over 600 feet of backs over this area, so it may yield a fair tonnage of ore.

560BDS was extended and holed to 615FRs and to 528EDN. It explored the vein over 605E Stope and will be used for service in mining.

610FDN was the main level along the footwall vein zone. It holed 619ExcW and completed the loop for service.

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613F explored the vein above 605E Stope and will be used for servicing the stope.

615F and 616F raises are branches from 614FRs, that will transfer ore from under 581B and 578B raises. 619E was a small exploratory heading from 615F, to see if any ore existed in the hanging wall.

621F is being driven south to test the ground under 517BDS. It has not been as high in grade as 517B.

711EDN was driven as a main haulage level to produce the footwall ore. 713E and 420E are transfer raises, that will connect with the 600 Level, through which the ore will be passed.

1017DN is being driven to connect with the Piute Orebody and explore for mineralization between there and 712. Several zones of highly garnetiferous formation, containing scattered chalcopyrite specks, have been encountered, but there has been no definite vein structure. 1075BxcE was extented for a car siding.

PIUTE OREBODY 903EDS is the main level heading exploring south along the vein. It has been driven along a high grade streak, but has been temporarily stopped to get a small stope started.

928C, 929C, 930C and 931C, are pilot raises driven on 70 foot centers, up the footwall of the 900 ore to the 800 Level. They are being connected at intervals with herring-bone raises and will later be enlarged as stopes.

934CDN is exploring a new orebody north of Piute. Either the vein has turned to the east, or has been faulted. The heading had to be turned from a N 15 degrees W direction, to a N 30 degrees E direction, to keep ore exposed. The structure of both ore and waste continues to strike about N 15 degrees W, but we have either passed into the footwall, or the vein has been faulted. We will continue the present course for a few rounds at least, and drill a short drill hole west from the most northerly crosscut, to see if ore continues along the footwall. The ore along the south side of 934C will assay over 4% copper, while the north side is barren. There is a sharp transitional point between ore and waste, but no heavy clay.

PROSPECT DIAMOND DRILLING Hole No. 62 was drilled 100 feet into the hanging wall from 1208xcE and cut nothing but barren schist.

Hole No. 63 was drilled into the footwall from the present face of 903EDS and cut 31 feet of ore averaging 1.85% Cu; 0.69 oz. Ag; 0.035 oz. Au, from 28 to 59 feet. The first 28 feet of the hole was crystalline schist and the fault was crossed at 59 feet.

Hole No. 64 was drilled into the hanging wall from the present face of 903EDS. Green chloritic schist was cut near the end of the hole, showing a few stringers of Bornite. No vein material was exposed.

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Holes No. 65 and No. 66 were drilled east and west from 1210 crosscut, to test for possible mineralization. They both cut barren schist their entire distance of 106 and 96 feet.

Hole No. 67 was to check the vein between Holes No. 61 and No. 66 on the 1200 Level, but was lost at 12 feet. This was within a few feet of No. 2 fault, so it was called good.

Hole No. 68 was drilled east from the face of 935CxcE. Nothing but scattered specks of mineralization was cut, which assured us that the crosscut was to the ore limits.

Hole No. 69 was driven west from 935CxcW and cut 15 feet of 2.5% ore before crossing into the barren footwall.

Very truly yours,

S. K. Droubay

SKD;DM
Encl.

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AIR MAIL

December 10, 1940

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

WALKER MINE

Dear Clyde:

This is in answer to your letter of November 29 regarding the Walker mine. Your letter was probably written prior to the receipt of my letter of November 27 regarding the same subject.

Referring to the second paragraph of your letter regarding a drill hole to the east along coordinate 18,400. A hole at this point could be drilled from 1017 north without slowing down the progress of 1017 materially. However, in looking at the composite map of the Piute ore body, there is but slight indication that the ore shoot would reach that far south. I would suggest that the hole be spotted at coordinate 18,500, as I believe there would be more chance of striking mineralization at this point than farther south.

Regarding the ore now being developed in 934 North Piute, I can see no economical way of testing this ore at depth except by drilling or sinking a winze. If the ore extends to depth, and we decide to drive under it, it will be necessary to drive a raise for ventilation, so that if it is prospected by a winze, the work will not be lost. If it is necessary to drill, we will have to crosscut well into the hanging wall before drilling, as the dips on the various streaks of mineralization seem to vary from 50° to 22° to the east, making it necessary to drive a crosscut at least 100 feet into the hanging wall before much depth could be obtained by diamond drilling.

With kindest personal regards,

Very truly yours,

Tom Lyon

TL:P
cc: Messrs: R. H. Sales
J. F. Dugan

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November 27, 1940

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

WALKER MINE

Dear Red:

I am in receipt of your letter of November 25 together with the accompanying maps.

Mr. Sales is in town and we have considered the suggestions you have made.

Regarding the proposed drill holes from 1017, we feel that it is too soon to spot the drill holes which you have suggested and we would like to have the 1017 completed before any further drilling is done. By deferring the drilling until after 1017 is completed, we may decide on a different location for the holes.

Regarding the 1201 drift north, we feel that this drift should be run through No. 2 fault and turned nearly due north in good ground and extended for about 150 feet from the present face. We can then put in a couple of more holes to the hanging wall to prospect the vein. The drift itself should be run on the assumption that the 1017 cuts the Piute ore body, in which case it will probably be necessary to continue the 1200 out beneath 1017. If we do not receive any encouragement from the next 150 feet of drift, together with a couple of drill holes, we will probably suspend this operation.

Kindest personal regards,

Very truly yours,

Tom Lyon

TL:P
cc: Messrs: R. H. Sales
C. E. Weed
J. F. Dugan

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ANACONDA COPPER MINING COMPANY

25 BROADWAY

NEW YORK

OFFICE OF THE
GENERAL MANAGER OF MINES

November 29, 1940.

AIR MAIL

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

Dear Tom:

Today, I received a copy of Droubay's letter of November 25th together with certain sketches and maps of the Walker Mining Company concerning development. I note that Droubay shows two proposed drill holes to the west from some point along 1017DN. Undoubtedly, one of these drill holes looks like a reasonable prospect in looking for the continuation of the 712. However, this drift is being driven to get under the 900 south Piute, as I feel that this has more prospects than the 712 country. For this reason, I do not feel that this drift should be held up in any way by prospecting for the 712 orebody. If a hole can be drilled and not hold up 1017, and you consider a hole necessary, I would not object to it.

I wish to make the following suggestion. At some point at about 18400 coordinate, we should cut a diamond drill station to the east of 1017 and drill a hole straight east along 18400 coordinate. It seems to me there is a good possibility of the 900 South orebody pitching strongly to the south and at this point a hole might intersect it. If this were true, 1017DN should be turned north straight east and reach the ore as quickly as possible.

I would be very interested in hearing your reaction to this line of development.

I note Droubay states that 1201DN looks pretty sad. I would have no objection to having 1201DN stopped if Sales and you consider the possibilities are rather limited. I am certain, on account of the faults that I saw while I was at Walker, that it would be almost impossible to mine this ore without considerable dilution.

Referring to the ore being developed in 934 north Piute, I am wondering how we are going to test the possible downward extension of this ore. So far, I have not received any information in regard to the dip of the vein, but, I assume that it is probably dipping at 30°, the same as the ore body south of the shaft. To extend 1017 drift over this point would involve

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approximately 2,000 feet of drifting from the South ore body over, which would be a long and expensive job. It might be advisable to consider the possibility of driving a crosscut in the hanging wall at some point to be determined in the near future and drilling some vertical holes below. Even this would require quite a long crosscut if the vein is as flat as 30°.

I would appreciate your ideas on the possibilities of determining this ore at depth. I have a feeling that we are probably close to the top of an ore body which may become much larger on the levels below.

Yours very truly,

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

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FORM 96 8-40 2M M.P.C.

WALKER MINING COMPANY
WALKERMINE
PLUMAS COUNTY, CALIFORNIA

November 28, 1940

H. M. HARTMANN, MANAGER

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

Dear Tom:

Please find enclosed, sketches of Walker Mine Development, with respect to 1017DN, 1201DN, 934CDN and 517BDS.

The 1017 heading passed from barren rock, with numerous epidote inclusions, to a highly garnetiferous formation. In some places, the garnet is exceedingly abundant and in one place near the present face, there are two almost horrizontal veinlets of it. Although there is not enough chalcopyrite to make the drift assay to any extent, a considerable amount of it seems to be associated with the garnet.

If 1017 does not open up any definite vein before the next crosscut for a car siding is needed, do you think we would be justified in drilling one, or possibly the two, diamond drill holes, as laid out on the plan and vertical cross-section No. D-97 The fissure cutting across the drift, seems to line up fairly well with the 712 structure. By drilling the one hole 650 feet deep, we would test the entire structure, including the vein ahead of 1071BDN and D.D. Hole No. 29.

Because of Hole No. 28, I feel that we should have driven the 1075B Tool Room drift to the west, but this was started before I knew about it.

1201DN looks rather sad. It was necessary to turn west to keep from timbering and it met the No. 2 footwall fault. It looks as though the wisest thing to do, is to continue the drift about 50 feet further, immediately under No. 2 fault, then as a last resort, drill one more hole into the hanging wall. We might try to keep the heading between the two faults, but it would be necessary to timber before we advanced very far. The same situation was encountered on the 1000 Level. Do you think this amount of work is enough to exhaust the possibilities of the 1200 Level? If the footwall Hole No. 66 shows ore, it will change the picture, but this is rather unexpected.

934CDN looks very encouraging. The vein turned into a softer, chloritic formation, without much quartz, and the gold and silver values fell off. There is not so much bornite in the ore. Short drill holes will be driven from the faces of 935CxcE&W, to determine the limits of the vein. This will enable the heading to continue north, without delay for putting in switches and track for mucking the crosscuts.

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517BDS is in a nice zone of ore. We are driving 621FDS, to see if the ore extends down. I am glad to see this show up, because this is in the old 710 Orebody and shows fair surface indications. It is about 650 feet from 517B to the surface.

We would appreciate any comments or suggestions, especially concerning the 1200 Level. This Level is very expensive to keep going, and Mr. Hartmann would like to shut it down just as soon as possible.

Very truly yours,

S. K. Droubay

SKD:DM
Encl. 5

cc - Mr. Sales
Mr. Dugan
Mr. Weed

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

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

November 13, 1940

. M. HARTMANN, MANAGER

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

Dear Tom:

Please find enclosed, geological sketches and classification sheet for development during the month of October, a tabulation of Diamond Drill progress for the month, also prints showing in yellow, mining operations with respect to orebodies. The following is a resume of the classification sheet:

SOUTH OREBODY: None.

CENTRAL OREBODY: 1063B Raise is a chute and manway service raise for mining the 1080C block north of 706E Winze. It is finished.

NORTH OREBODY: 1201DN is the main level heading, exploring the extension of the North Orebody. 1207XCE and 1208 crosscuts East and West, were driven from 1201 to explore the limits of the vein.

712 OREBODY: 315CDN&S, 317CDN&S, 318CDN&S, and 319CDN&S, are 300 Level headings being driven from the tops of 487CRs, 496CRs, 401DRs, and 403DRs, respectively. They will eventually be connected.

401D, 496C, 613F, 614F, 710E, and 716E are chute and manway raises being driven up the vein from one level to another. They will later act as service raises or ore passes. 615F and 616F, are branch raises from 614F, that will hole under 581BRs and 578BRs also, 618FRs is a branch from 615F and 619F is a branch from 616F. 618F and 619F will hole between 615F and 616F, to act as mill holes for stopes above.

517BDS is being driven along the footwall vein. The last few assays have been around 3% cu.

560BDS is being driven along the vein over 605E Stope and will connect with 613FRs.

610FDN was holed to the face of 619ExcW. The loop is now complete with the shaft, so service is available to 605E Stope. 617FxcE&W were extended from 610F, to be sure we were following the best mineralization.

711EDN is the main haulage level being extended to produce the ore from the 517 fissure. 719ExcE&W were small crosscuts extended from 711E.

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November 13, 1940

712 OREBODY: 720ERs is being driven from the face of 711E and will hole under 614FRs. This will complete the connections for producing the footwall ore.

1071DN is being driven to Piute for producing lower level ore to 706E Winze. Prospecting for the extension of 712 ore will also be done from this drift. The heading has passed from the unfavorable looking dark rock, containing blebs of epidote, into garnetiferous schist, so we should prospect to the footwall before long.

1071EDN was driven for exploration along the lower levels of the 517 fissure. 1074B was driven to the footwall from 1071, to be sure we were not off the best mineralization.

PIUTE OREBODY: 903EDS is being driven along a high grade streak of hanging wall ore and is the main level exploring south.

933CxcW and D.D. holes No. 55 and No. 58, were driven into the footwall from 903B and cut a good grade of ore. 903B has been stopped temporarily, while a narrow stope is being started on the streak. The streak flattens and seems to pinch at the face of the drift, and a few rounds show the same condition just over the drift - getting higher progressively to the North. Although this condition does not look favorable for much ore above the 900 Level, it resembles very closely the situation that concentrated the best ore deposition of the 712 Orebody, and indicates that better ore exists below the 900 Level.

928C, 929C and 931C, are large pilot raises being driven up the footwall to the 800 Level, at 70 foot intervals. They will later be enlarged as stopes, to produce the ore between the 900 and 800 Levels.

932CxcE was driven along D.D. hole No. 50, to explore the mineralization indicated. 934CDN is being driven north along this newly developed ore and from indications, we have excellent chances of opening up a considerably large amount of commercial ore.

PROSPECT DIAMOND DRILLING

Hole No. 54 was driven 105 feet from the face of 904BxcE, to test for mineralization extending south from the ore opened up with 934EDN and drill holes No. 49 and No. 50. Other than a scattered few specks of chalcopyrite around 50 feet, the entire length of the hole was barren.

Hole No. 55 was drilled 81 feet into the footwall from 933CxcW. The average core assay, up to 56 feet, ran 1.7% cu. The heavy footwall fissure was cut at 67 feet and the rest of the hole beyond, cut barren schist. This ore is about 90 feet south of 927CxcW.

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November 13, 1940

PROSPECT DIAMOND DRILLING

Hole No. 56 was drilled up 32 degrees into the hanging wall opposite Hole No. 55. The hanging wall fissure was cut at 15 feet, but no ore other than the first 4 feet was drilled. Specks and veinlets of quartz and sulphides, in grey, sheared schist, caused the sludges beyond the fissure to average 0.50% Cu. The hole ended at 50 feet.

Hole No. 57 is a surface hole, started 500 feet north of surface Hole No. 51. Hole No. 51 will cut the vein zone about 900 feet ahead of the present face of 934BDN. A months delay was caused by dropping casing in Hole No. 51, but this has been milled out and it is expected that drilling will be resumed right away. This hole has penetrated the sub-surface at 750 feet. Hole No. 57 will drill lava to approximately 700 feet.

Hole No. 58 was drilled into the footwall from 903BDS, cutting the vein 50 feet south of D.D. Hole No. 55. The first 30 feet was low grade schist, but the next 37 feet, up to the footwall at 67 feet, averaged 1.7% Cu. This, and hole No. 58, indicate ore to at least 140 feet south of 927CxcW.

Hole No. 59 was drilled into the hanging wall opposite Hole No. 58, but drilled waste for its entire length of 100 feet. However, sludges averaged 0.55% Cu for the first 40 feet. This was due to dissemenated sulphide and mineralized veinlets of quartz in grey, sheared schist.

Hole No. 60 was driven to locate the footwall from 934CDN, about 50 feet north of its starting point. The first 10 feet (sludge 1.8% Cu.) cut the mineralized schist of the vein zone, then the footwall was cut. Barren schist extended to the end of the hole at 30 feet.

Hole No. 61 was drilled west from the face of 1208 crosscut west to determine the extent of the vein zone. Mineralized schist extended to 25 feet, with 4-1/2 feet of good ore, from 20-1/2 feet to 25 feet, where the footwall fault was cut. The hole was in barren schist from here to the end, at 105 feet.

Very truly yours,

S. K. Droubay

S. K. Droubay

SKD:DM
Encl.

cc Mr. Sales
Mr. Dugan

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Calif

November 13, 1940

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

Re: Walker Mining Co.,
Plumas Co., Calif.

Dear Droubay:

I have in hand copies of your letters and maps forwarded to Tom Lyon on November 7th.

I am pleased to note your recommendation for more sampling at the Walker. This will be an important step and it will be the means of preventing the breakage of a lot of waste.

The 1200 level development is not encouraging. I am glad to see the good use you are making of the diamond drill in prospecting laterally from your drift faces as they advance. I agree that a little care and attention is required to keep these drill holes from going farther than necessary.

Do not forget your promise to send me a small collection of ore specimens showing mineral relationship. I am particularly anxious for a good specimen or two illustrating the occurrence of barite, garnet, and chalcopyrite. Do not be disturbed about the size of a good specimen. I want something showing these later veinlets cutting old vein material. My recollection is that many of the veinlets are composed of barite, garnet, chalcopyrite and possibly magnetite.

Yours very truly,

RENO H. SALES

RHS:KM
cc: Messrs. C.E.W.
T.L.
J.F.D.

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

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

November 7, 1940

.. M. HARTMANN, MANAGER

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

Dear Tom:

Please find enclosed, sketches of the Piute 900 Level, North and South and of the North Orebody, 1200 Level.

The streak followed by 903EDS is turning toward the footwall and should meet it in about 120 feet, unless some change takes place. Drill holes NO. 55 and 58 show zones of good ore, much better than the poor grade exposed with the west half of 927C crosscut west. Holes No. 56 and 59 cut no ore, but the hanging wall fissure was indicated in No. 56. Mr. Dugan has let us stop 903B temporarily, so we could prepare a narrow, high grade stope along this streak south of 927C. There is more 900 Level ground opened up now than we can prepare for mining and handle with the shaft, and as 1017EDN is coming in from the south, it seemed more vital to get some of this high grade ore to the Mill, than to rush this heading. Drifting will be resumed as soon as this stope is prepared.

1017B passed from the dark schist containing epidote, to the coarse garnetiferous type. This is an encouraging sign, and I think we should prospect before long, for an extension of the 712 vein, by means of a couple of drill holes. I will send in sketches of this country in a day or two.

The 934CDN is in a crystalline vein zone, that resembles the North Orebody. Although definite strikes and dips can be seen occasionally, it is very hard to follow any particular streak. The quartz streak in the face, seems to dip as flat as 22 degrees in places, but I hardly think the whole vein zone is this flat. There are bands of quartz ore with streaks of almost barren schist.

1201DN does not look any too good. The main No. 1 hanging wall slip is getting weaker, but sprays to the east still seem to keep on the hanging wall side of the ore. A short drill hole will be driven from 1208 crosscut east. Extreme difficulty is being encountered in trying to follow any particular streak of ore, so we will try and run it on N.20 degree W. lines.

I feel that some of these last drill holes were extended a little too far and perhaps drilled a little close together. This was done while I was away.

Very truly yours,

S. K. Droubay

S. K. Droubay

SKD:DM
Encl. 3

cc - Mr. Sales
Mr. Dugan

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

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

November 7, 1940

. M. HARTMANN, MANAGER

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

Dear Tom:

As a result of my recent trip to Butte, where I studied their sampling methods, I feel that certain changes in our system here at Walker, would present a clearer picture to the Operating Department and enable them to break less waste.

To make such changes, I will have to hire one more sampler and establish the position of Chief Sampler. This will give us three samplers and the Chief Sampler, in place of the present three samplers.

Instead of samplers taking the customary grab of broken muck in stopes and drifts, they will take chip samples of the unbroken faces and record them on sketches similar to the method used in Butte. These sketches will be kept at the Mine Portal office for use by the Operating Department, and will be posted from day-to-day. This will allow the samplers to become more familiar with the structure and the geology of the working places and will put them in a position to furnish daily, more accurate information in directing the advancement of stopes and headings. A considerable number of our samples during the last few months have been chip samples, but the system of recording is not complete enough to get satisfactory results.

It will be necessary to have the Chief Sampler spend most of his time keeping records, and preparing analysis sheets that will summarize the results of such sampling. Of course, he will be a big help in measuring contracts. The analysis sheet will furnish a detailed record twice a month of the ore and waste broken in each working place. This sheet, with the aid of the sample sketches, will enable the Mine Superintendent to discuss more clearly with his Underground Bosses, the assay condition of each working place. The sheet will be of good use to you, Mr. Dugan, and Mr. Hartmann.

It is recommended that we be given authority to hire this extra sampler and to establish the position and rate of Chief Sampler. I suggest a rate of $165.00 base pay, (the same as Surveyor) for this job needs a good progressive engineer

The non-exemption of technical men from the hour limit, has complicated matters in our Engineering and Geological Departments. I have issued orders that any necessary over-time work be limited to Mr. Chamberlain, Geologist and to Mr. Lomnes, Senior Engineer. It would help considerably if these men could be given salary enough to place them out of the non-exemption class. Mr. Lomnes has been with the Company several years and is doing the work of Assistant Chief Engineer.

Very truly yours,

S. K. Droubay

S. K. Droubay
Chief Engineer - Geologist

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

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INTERNATIONAL SMELTING AND REFINING COMPANY

Salt Lake City, Utah

J. F. DUGAN
General Supt. of Mines

October 31, 1940

Walker

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

Dear Reno:

This will acknowledge your letter of October 29th concerning sampling at Walker. Droubay was in yesterday, and we thoroughly discussed this problem. After talking with him I could see that his Butte trip had been worthwhile.

Your remark about the 903B Drift South in the Piute is well taken. There is no excuse for ore not being followed. Poor miners is the cause. However, the shift bosses have been given strict orders to see that the drift is kept on the vein.

I instructed Droubay to pay stricter attention to the sampling in the future, and to see if we cannot do a little better selective mining in order to raise the grade. I also talked with Hartmann today along the same lines.

I am very glad that you have recovered from your cold. You did not look very well the day I saw you at the Utah.

With kindest regards.

Yours very truly,

John F. Dugan.

JFD:H

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October 29, 1940.

Mr. John F. Dugan,
818 Kearns Bldg.,
Salt Lake City, Utah.

Re: Walker Mine,
Plumas Co., Calif.

Dear Jack:

I was glad to get your memoranda covering developments on the Walker.

I saw Droubay at Idaho Falls and discussed Walker sampling. After seeing Chamberlain's sketch of that 900 South Drift on the Piute high grade streak, I again urge that more attention be paid to following ore when you have it. I see no excuse whatsoever for running a drift off into the west in the footwall, when you are following a clearly defined high grade streak of ore.

I am still of the opinion that one of Walker's greatest needs is to apply sampling methods to prevent the everlasting breaking of dead waste, especially with low grade ore and such limited hoisting capacity as exists in the Piute section.

I arrived in Butte on Sunday, and I am glad to say that my cold is practically over.

With best regards, I am

Sincerely yours,

RHS:KM
cc: Mr. C. E. W.

RENO H. SALES

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Memo. For Mr. Sales

Re: Walker Mine

Wacker

Dear Reno:

Enclosed is a sketch of 903B Drift South showing the latest assays which I received from Hartmann a few days ago.

Since receipt of the sketch the drift has advanced to 70 feet south of 933 XC West. Drift shows 2 ft. of good ore on the hanging wall, cut samples of which assayed 13.4% cu, .51 oz. ag and .035 oz. gold. Hartmann says the rich streak on the hanging wall has assayed over 10% copper for the last 30 feet.

934 Drift North in the Piute on October 19th was 50 feet north of 932 crosscut. The ore was 6 ft. wide assaying 3.05% copper, .81 oz. silver and .035 oz. gold. Hartmann said the ore was much harder, less broken up, and containing more quartz.

1201 Drift North at 143 feet north of the last crosscut has 7.5 ft. of mineralization assaying 2% copper, .035 oz. gold.

571C Drift in 517 fissure shows mineralization assaying 1.6% copper.

Just received a telegram from Hartmann in which he says the first half of October production was 1,003 dry tons of concentrates containing 502,720 lbs. of copper, of which 485,150 lbs. are classed as recoverable copper.

John F. Dugan.

JFD:H
Enc.

10-25-40

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WALKER MINING COMPANY

DEVELOPMENT PROGRESS - OCTOBER, 1940

Mr. Sales

Orebody	Heading	Size	Ft. Adv.	Total Advance	Feet Ore	% Cu	Oz. Ag	Oz. Au	Feet Waste
Central	(M) 1063BRs	18x7½	13	249	13	1.14	0.33	0.040	
	Total		13		13	1.14	0.33	0.040	
North	(D) 1201DN	8½x10	189	1028	189	1.07	0.59	0.030	
	(D) 1207xcE	4½x6½	13	35					13
	(D) 1208xcE	8x10	17	17					17
	(D) 1208xcW	5x8½	15	15					15
	Total		234		189	1.07	0.59	0.030	45
712	(D) 315CDN	5½x7	50	54					50
	(D) 315CDS	5½x7	55	68					55
	(D) 317CDN	5x7	17	17	17	1.38	1.48	0.038	
	(D) 317CDS	5x7	13	13	13	2.30	0.69	0.036	
	(D) 318CDN	5x7	25	25	25	1.25	0.53	0.042	
	(D) 318CDS	5x7	15	15					15
	(D) 319CDN	5x7	37	37					37
	(D) 319CDS	5x7	24	24	24	1.59	0.86	0.070	
	(D) 401DRs	13x7½	8	169	8	1.95	0.53	0.042	
	(D) 496CRs	18x13	7	145	7	1.15	0.69	0.036	
	(D) 517EDS	5½x7	44	853	44	1.23	0.24	0.024	
	(D) 560EDS	5½x7	17	93	17	0.80	1.10	0.039	
	(D) 610FDN	5½x7	74	228					74
	(D) 613FRs	18x7½	69	116	69	3.07	4.87	0.072	
	(M) 614FRs	16x7½	28	38					28
	(M) 615FRs	11x7½	44	44					44
	(M) 616FRs	14x7	37	37					37
	(D) 617FxcE	5x7	17	17					17
	(D) 617FxcW	5x7	5	5					5
	(M) 618FRs	7x5	12	12					12
	(M) 619FRs	7x5	12	12					12
	(D) 711EDN	9x10	112	568					112
	(D) 713ERs	12x8	40	122					40
	(M) 716ERs	13½x7	33	69					33
	(D) 719ExcE	5x7	4	4					4
	(D) 719ExcW	5x7	4	4					4
	(M) 720ERs	13x11	5	5					5
	(D) 1017DN	6½x9	149	4670					149
	(D) 1071BDN	8x9	13	439					13
	(D) 1074BxcW	6x7	26	26					26
	Total		996		224	1.90	1.97	0.050	772

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Orebody	Heading	Size	Ft. Adv.	Total Advance	Feet Ore	% Cu	Oz. Ag	Oz. Ag	Feet Waste
Piute	(D) 903EDS	8½x9	90	997	90	3.74	1.06	0.086	
	(M) 928CRs	18x7	13	18	13	1.57	0.95	0.137	
	(M) 929CRs	18x7	20	20	20	1.06	0.39	0.022	
	(M) 931CRs	18x7	29	29	29	1.51	0.62	0.035	
	(D) 932CxcE	7⅓x9	21	138	21	0.99	0.16	0.011	
	(D) 933CxcW	5½x7	25	25	25	1.20	0.36	0.034	
	(D) 934CDN	7x9	104	104	104	1.86	0.39	0.028	
	Total		302		302	2.21	0.62	0.050	
	GRAND TOTAL		1545		728	1.80	1.02	0.045	817
				RECAPITULATION					
	Mining		246		75	1.34	0.57	0.050	171
	Development		1299		653	1.85	1.07	0.044	646

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WALKER MINING COMPANY
DIAMOND DRILL REPORT

October 1 - 15, 1940, Incl.

600 Level				620A Stope			
Hole No.	Length	Hole No.	Length	Hole No.	Length	Hole No.	Length
729B	12	759B	31	630S 24*	19	651S	17
735B	13	760B	23	631S	20	652S	18
736B	13	761B	20	632S	16	653S	18
737B	15	762B	17	633S	17	654S	17
740B 36*	8	765B	27	634S	37	655S	14
741B	24	764B	23	635S	38	656S	20
742B	20	765B	20	636S	27	657S	18
745B	18	766B	21	637S	33	658S	9**
744B	24	767B	13	638S	32	672S	18**
745B	22	774B	14	639S	15	673S	34
746B	19	776B	20	640S	16	674S	35
747B	22	777B	25	641S	17	675S	29
748B	11	778B	35	642S	18	676S	25
749B	14	779B	30	643S	17	677S	22
752B	8	785B	10**	644S	19	678S	19
753B	15	786B	19	645S	26	679S	19
754B	13	788B	22	646S	29	680S	24
755B	14	789B	20	647S 39*	35	681S	26
756B	16	790B	22	648S	37	682S	29
757B	23	791B	24	649S	25	683S	40
758B	31	750B	4	650S	19		
		775B	11				
Total			806				963

1769 feet at $1.47 per foot = $2,600.43

* Total length of hole (Includes footage already paid for
** Hole Not finished at end of period

PROSPECT HOLES

Piute	900 Level	904 Brec E Hole No. 54	0 - 105 feet =	105 ft. @ $1.25 per ft. =	$ 131.25
		933 Crc W Hole No. 55	0 - 81 feet =	81 ft. @ $1.25 per ft. =	101.25
		933 Crc W Hole No. 56	0 - 6 feet =	6 ft. @ $1.25 per ft. =	7.50
			Total		$ 240.00

MISCELLANEOUS

22 hours on Walker Accounts at $1.439 per hours =	$ 31.66

RECAPITULATION

Prospect Holes	Piute Orebody	192 ft. at $1.25 per foot =	$ 240.00
Blast Holes	Main Orebody	1769 ft. at $1.47 per foot =	2600.43
Miscellaneous	Main Orebody	22 hrs. on Walker Accounts =	31.66
		Total	$2872.09

approved
H. M. Hartmann

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WALKER MINING COMPANY
DIAMOND DRILL REPORT

October 16 - 31, 1940

600 Level

Hole No.	Length	Hole No.	Length
'68B	25	608C	19
769B	23	609C	15
770B	13	610C	13
771B	11	611C	15
772B	14	616C	35
773B	14	617C	34
780B	21	629C	12
781B	18	630C	10
782B	20	631C	16
783B	24	632C	29
784B	21	633C	30
785B	20* 10	634C	14**
787B	19	638C	20
792B	12	639C	19
793B	10	642C	12
794B	11	643C	18
795B	12	646C	14
796B	18	647C	21
797B	25	648C	20
798B	32	649C	28
799B	25	650C	28
601C	21	651C	26
02C	28	652C	30
603C	23	654C	5 **
604C	21	655C	13
605C	21	656C	10
606C	14	658C	5
607C	10		
	Total		1025

620 A Stope

Hole No.	Length	Hole No.	Length
658S	26* 17	684S	38
659S	38	685S	35
660S	25	686S	35
661S	24	687S	33
662S	22	688S	26
663S	21	689S	20
664S	19	690S	17
665S	18	691S	18
666S	19	692S	21
667S	18	693S	29
668S	18	694S	29
669S	20	695S	36
670S	24	696S	30
671S	30		
672S	38* 20		
	Total		700

1725 feet at $1.47 per foot = $2,535.75

*Total length of hole (includes Footage already paid for)
**Hole not finished at end of period.

PROSPECT HOLES

Piute Surface	Hole #57	0 - 246	feet = 246 ft.	at $1.75 per ft. =	$ 430.50
Piute O.B. 953CxcW	" #56	6 - 56	" = 50 ft.	at $1.25 per ft. =	62.50
Piute O.B. 905EDS	" #58	0- 100	" = 100 ft.	at $1.25 per ft. =	125.00
Piute O.B. 903EDS	" #59	0 - 72	" = 72 ft.	at $1.25 per ft. =	90.00
Piute O.B. 954CDN	" #60	0 - 30	" = 30 ft.	at $1.25 per ft. =	37.50
Main O.B. 1208XCW	" #61	0 - 51	" = 51 ft.	at $1.25 per ft. =	63.75
			Total		$ 809.25

Hole #57: Credit due to payments made on lost hole #26A 430.50 & 378.75

MISCELLANEOUS

18-1/2 hours on Walker Accounts at $.439 per hour = $ 26.62

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RECAPITULATION (Period)

Prospect Holes:	Piute Surface	246 ft.	$ 430.50
	Piute Orebody	252 ft.	315.00
	Main Orebody	51 ft.	63.75
Blast Holes:	Main Orebody	1725 ft.	2,535.75
Miscellaneous:	Main Orebody	17 hrs. on Walker Accounts	24.46
	Piute Orebody	1-1/2 hrs. on Walker Accounts	2.16
		Total	$3,371.62
			-430.50
			#2941.12

RECAPITULATION (Month)

Prospect Holes:	Piute Surface	246 ft.	$ 430.50
	Piute Orebody	444 ft.	555.00
	Main Orebody	51 ft.	63.75
Blast Holes:	Main Orebody	3494 ft.	5,136.18
Miscellaneous:	Main Orebody	39 hrs. on Walker Accounts	56.12
	Piute Orebody	1-1/2 hrs. on Walker Accounts	2.16
		Total	$6,243.71
			-430.50
			#5813.21

approved.
H. M. Hartmann

L. K. Drouhay.

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San Francisco
October 12, 1940

Wacher

Mr. J. R. Hobbins
25 Broadway
New York, N. Y.

Dear Mr. Hobbins:

Your letter of September 27 has been late in reaching me.

Mr. Weed and I were in full agreement as to a program for the Walker Mine. He said he would write you fully outlining our ideas. I assume that his letter is in your hands by this time.

We both are of the opinion that the newer ore development on the 900 Piute North, and on the 900 Piute South, should be prospected at deeper levels. My recollection is that three or four months will be required to crosscut the South Piute ore at the 1000 level.

The 1200 level showing thus far is disappointing. Three or four hundred feet more of drifting at this level should tell us whether the North ore body is improving with depth.

If I get a copy of Mr. Weed's letter in the near future, I will write you further. I am returning to Copper Canyon Monday, where I expect to remain for a week or ten days.

Yours very truly,

Reno H Sales

CC-C.F.K.
C.E.W.

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FORM 396 6-40 2M M.P.C.

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

H. M. HARTMANN, MANAGER

October 10, 1940

Devel. Program
Oct. 1940
Walker mine

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

Dear Tom:

In line with the discussions that took place while you, Mr. Sales, Mr. Weed, and Mr. Dugan were at Walkermine, it is our understanding that the only development work to be carried out is to be that of immediate vital importance.

With the understanding of Mr. Hartmann and Mr. Warren, the following outline was drawn up and future work will conform as nearly to this as practical:

South and Central Orebodies. None.

North Orebody. The 1200 Level will be continued north with enough crosscuts to get a picture of the vein. The heading will cross and follow along the east side of the fault.

712 Orebody. The 300 Level will be driven by connecting along the tops of 487C, 490C, 496C, and 401D raises. This level is necessary for mining the 517 Fissure ore above the 400 Level.

A prospect heading will be driven from the top of 403D Raise to secure waste for filling 405E Stope. This will be driven north and south along the fissure and will be run on ore where possible. Going north the heading will prospect for possible secondary ore over the extreme north section of 712. Going south it will give us information to guide the progress of 405E Stope and determine whether 605E Stope should continue above 560EDS. 403D Raise will advance as the stope goes up.

The 517EDS will be continued south until it is out of ore and the extent of the vein at this particular place is determined, then the 600 Level directly below this will be prospected south so long as the heading runs in stope grade ore.

The 610F will be continued until it connects with 619E crosscut. This is almost completed, then the 600 Level will be in shape for service. 614F Raise will be driven with branches to connect with 581B and 578B Raises, and 613F Raise will be driven from 609FDS to connect with the extension of 560EDS, providing the ore continues this high. The shape of the ore will determine the connection with 560B. 614F will prospect the vein and act as an ore pass. 613F will service 605E Stope and will give information about the vein. It will be turned according to ore outline.

The 711EDN will be driven about 90 feet more to allow for a connecting raise to 614F Raise, and 713F Raise will be continued to connect with 697E raise. (697E

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runs from the south end of the 600 Level to the south end of 517BDS) The 716E Raise will be completed to 609FDS and to connect with 613F Raise. This will prospect the vein under 609F and will also act as an ore pass for 605E Stope.

The 1071BDN has been stopped and 1017B is being driven to connect with the Piute Orebody. The present face of 1017B is 19 feet higher than the elevation at the Piute Shaft and 15 feet higher than the present south end of the Piute Level. (track elevations). Short crosscuts will be put into the footwall at various intervals to allow for car sidings and for diamond drill stations to prospect for 712 mineralization.

Piute Orebody. 934CDN and S will be extended along the mineralization cut in the end of 932CxcE with crosscuts to the footwall and hanging wall about every 75 feet or often enough to keep a good picture of the vein. Diamond drill hole No. 54 that was drilled to cut any extension of ore back from holes No. 49 and 50 was a blank so we must extend 934CDS rather than try to come in along the vein farther south.

The 905BDS will be extended so long as any ore can be followed with enough crosscutting to keep track of the vein.

In all cases where practical diamond drilling will be substituted for drifts to avoid breaking waste.

This program covers all development which is at present both important and necessary and no additions, excepting headings necessary for stoping, will be made unless ordered or approved by you, Mr. Sales, Mr. Weed, and Mr. Dugan.

Very truly yours,

S. K. Droubay

SKD:SW

S. K. Droubay

cc - Mr. Sales ✓
Mr. Weed
Mr. Dugan

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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

September 14, 1940

SUBJECT: WALKER MINING COMPANY

Mr. Tom Lyon,
O f f i c e s.

Dear Sir:

A telegram has been received from Mr. Droubay giving the split core assays of Diamond Drill Hole No. 50 which was drilled east from the 900 North Piute, as follows:

			Cu	Ag	Au
99	to	101	1.85	.25	.02
106	to	108	2.40	.34	.02
115	to	121	.60	.13	0.15
121	to	126	.50	Trace	None
126	to	128	4.00	.57	.040

You will note no assays were received on some sections of the hole so evidently there was no core obtained from this footage.

Hole No. 50 was driven at an angle of 35° from Hole No. 49. The mineralization was cut at approximately 100 feet north of where encountered in Hole No. 49.

For comparative purposes the assays of the split core of Hole No. 49 are as follows:

			Cu	Ag	Au
115	to	121	4.10	0.55	0.03
121	to	127	4.80	0.22	0.02
127	to	131	1.95	0.25	0.01
131	to	136	1.00	0.18	0.007

Yours very truly,

John F. Dugan.

JFD:H
cc:RS

cc. D.M.K
C.E.W

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818 Kearns Building
Salt Lake City, Utah
September 3, 1940

Mr. R. H. Sales
P. O. Box 457
Butte, Montana

WALKER MINE

Dear Mr. Sales:

I visited the Walker mine August 23 - 28, accompanied by Droubay, and examined underground and surface geology.

The Walker geological problem may be resolved into two phases, one relating the geology to operating and the other to exploration.

From an operating standpoint, recent development on the 900 level Piute presents an interesting problem. I mapped those workings and noted a definite localization of better grade values, particularly on the hanging wall and footwall of this body. There is a possibility that selective stoping might be applicable to the Piute area, but before any definite plan can be established, careful channel sampling is essential. Droubay is undertaking a thorough sampling job this week. I have hopes, based on grab sampling, that the mining grade might be raised to 2 - 2.5 per cent copper, handling less tonnage and with attendant profit. The limited shaft capacity at Piute dictates that if a profit is to be realized below the 700 level, a reasonably high mining grade must be maintained.

My observations generally tend to the belief that careful sampling is essential to proper study and solution of the Walker Mining problem.

The exploration possibilities at Walker are clouded by the fact that the mine has not made money on most of the ore bodies that have been developed in the past. Therefore, we must evaluate the chance for finding better grade ore. This chance may be resolved into structural and mineralogical elements.

Mineralogically there is definite evidence of a zonal arrangement

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with high temperature quartz, pyrrhotite and low grade copper at the south end of the mine close to the granodiorite. Whether the granodiorite or some hidden intrusive represents the parent magma, the high temperature locus appears to be at the south end of the property. High grade chalcopyrite in the upper part of the main ore body, bornite in the 712 ore body and better grade chalcopyrite in the Piute area, are facts that confirm this theory. Then, too, the quartz changes from a glassy pegmatitic character at the south end to a granular and finally a vein like character at the north end. The proportion of quartz to sulphides is much greater at the south end of the Walker vein system than at the north end.

Therefore, while the deeper levels near the granodiorite do not present an attractive mineralogical picture, the north end of the mine may represent a temperature-pressure zone favorable for the segregation of better grade copper.

The Walker fracture zone is remarkably persistent. Generally the schistose country rock is uniformly sheared along the strike of the Walker zone and offers no particularly obvious focal point where a deep seated concentration of sulphides might be anticipated. But there is one exception and that is the area embraced by the 712 - Piute workings. In this section the schist and the fissuring are bent from the general northwest strike to northeast, and the flat east dipping Piute ore body moves increasingly farther to the east with respect to the 712 zone as deeper levels are approached. Is there a chance this zone, which is on the northeasterly prolongation of the 517 fissure, has deep seated structural significance?

Results of recent development are rather encouraging. The better grade ore at the 900 Piute is definitely an improvement in grade over mineralization on the 700 and 800 levels.

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3- Mr. R. H. Sales September 3, 1940

At the 1200 level, the showing of vein material recently encountered in the main north working is of notable interest. However, this mineralization is typical dark "Walker" quartz with scattered chalcopyrite and there is no particular improvement in copper content. Further development will be necessary to determine the extent and grade of this mineralization.

Just before leaving the Walker I had an opportunity to examine the last core from Hole 49, being drilled horizontally from the north end of the Piute workings at the 900 level. At 115 feet the hole encountered abundant chalcopyrite in green schist. From 115'- 120' there is fair chalcopyrite; from 120' - 122.5' the mineralization is lean; the last pieces of core to 123 feet show abundant chalcopyrite, and the bottom of the hole is in ore. There is little or no quartz with the sulphide. Droubay is sending assays as soon as available.

The showing in Hole 49 may be a significant discovery. It is north of any known ore in the Walker mine. Further drilling will be necessary before the importance of this latest development can be determined.

Sincerely yours,

V. D. Perry

V. D. Perry

VDP:P
cc: Mr. C. F. Kelley
Mr. J. R. Hobbins
Mr. C. E. Weed
Mr. J. O. Elton
Mr. J. F. Dugan
Mr. Tom Lyon

Signed for Mr. Perry in
his absence

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FORM 396 4-30-40-2M

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

H. M. HARTMANN, MANAGER

September 3, 1940

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

Dear Sir:

Please find enclosed geological sketches of the 1200 Level of the North Orebody and the 900 Level of the Piute Orebody, vertical section C-3 through the 900, 1000 and 1200 of the North Orebody and a twenty scale assay plan of the Piute 900 Level.

The 1200 has acted rather strangely as the section shows. We intend drifting north along the footwall of the ore, but I am afraid that the two faults will come together and pinch out the vein as they did on the 1000 Level. We may get ore on the hanging wall of the fault farther north. What do you think of extending 1206 or possibly a crosscut further north, far enough to cut the vein at a greater depth with diamond drill holes?

The twenty scale assay plan was made to see if we could segregate the different grades of ore with the possibility of mining the block selectively. Mr. Perry and I roughed the map from broken muck samples and I am now having five foot channel samples taken along all the crosscuts to try and get a more accurate picture. This orebody has grown to quite a size and it is important to know all about it before a mining method is chosen.

Mr. Perry was here for almost a week and I enjoyed going over the Walker Geology with him. We made as thorough a study of the underground and surface geology as the limited time would let us and I am sure Mr. Perry obtained quite a good picture of the Walker Mine.

Very truly yours,

S. K. Droubay

SKD:SW

cc- Mr. Lyon
Mr. Weed
Mr. Dugan

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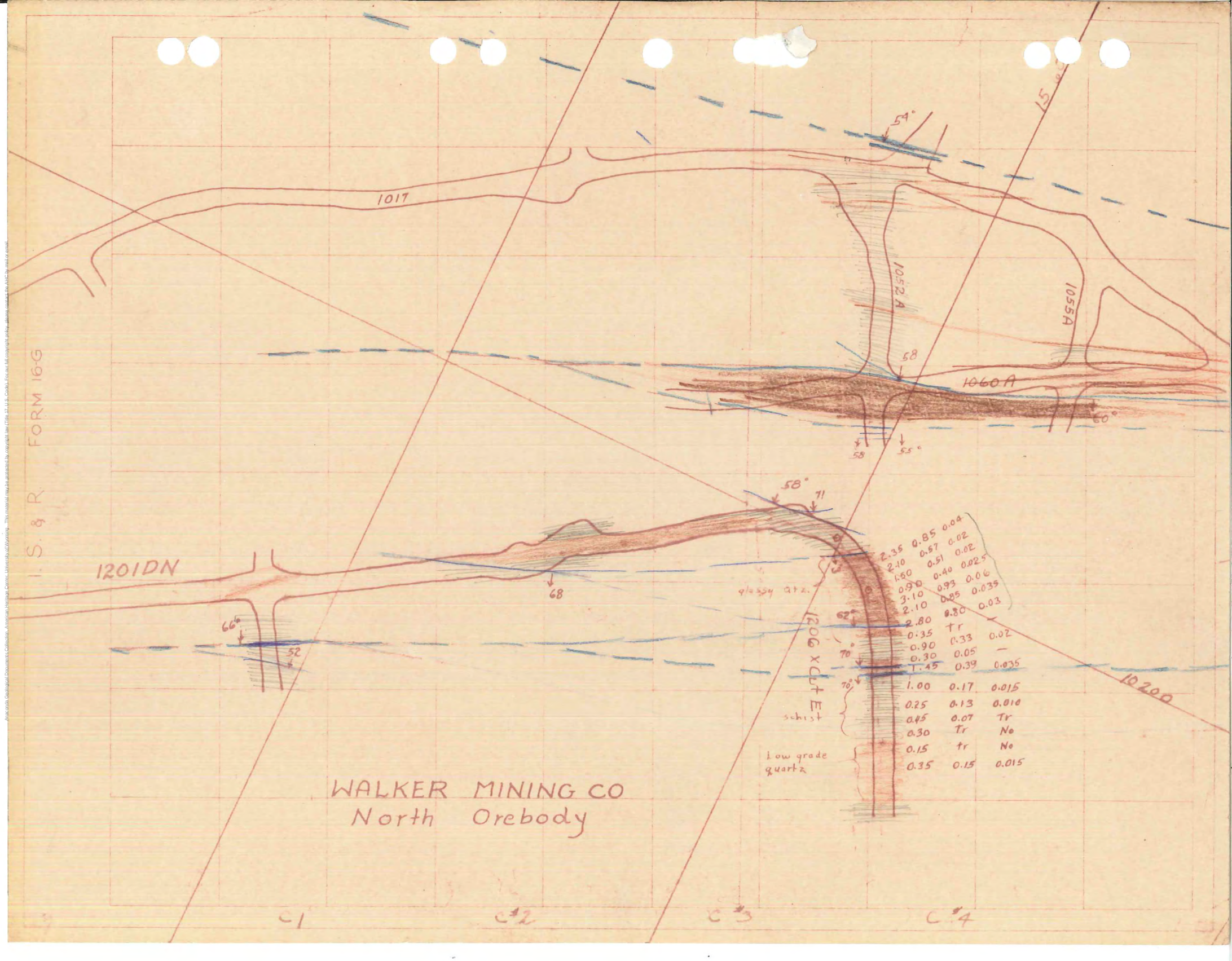

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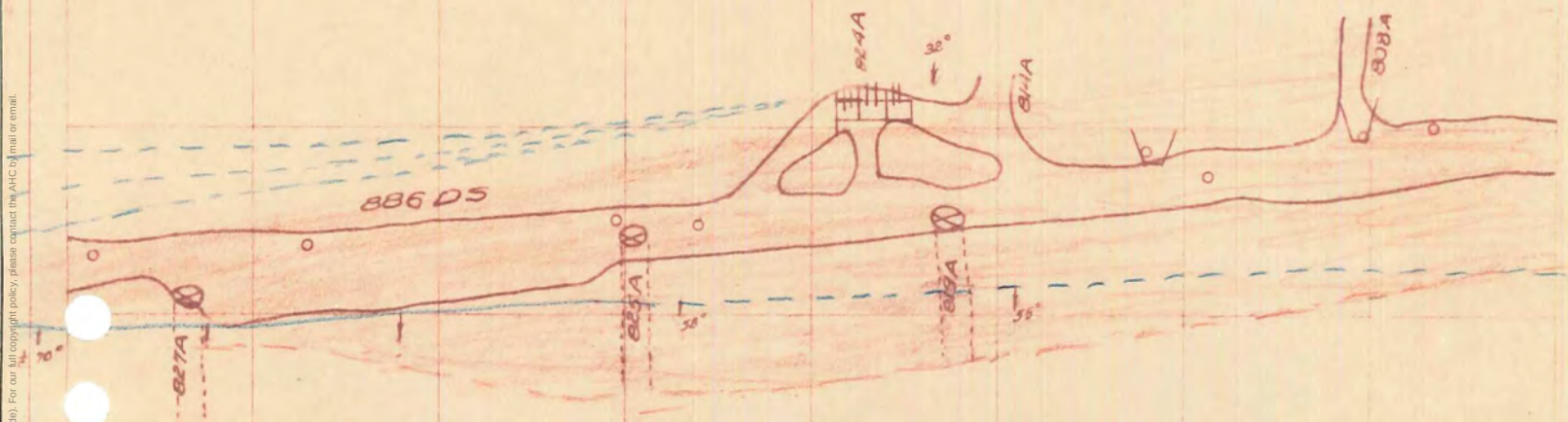
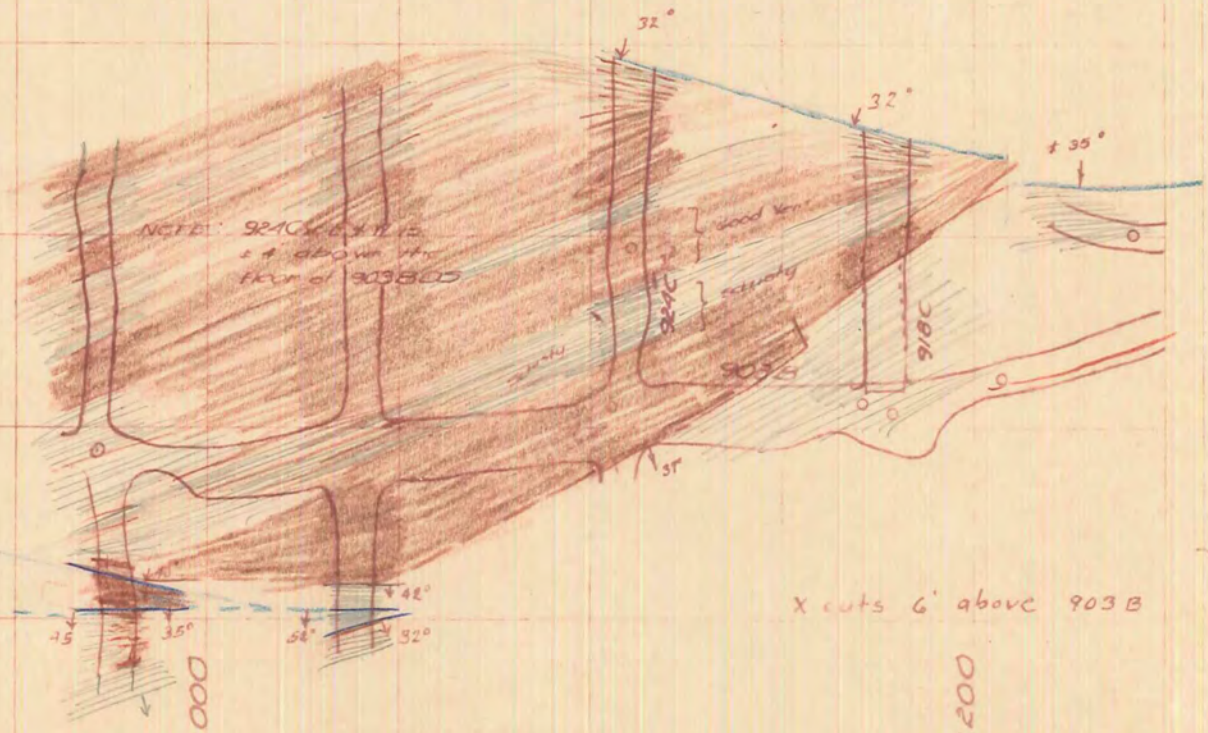
I. S. & R. FORM 166

WALKER MINING CO
PIUTE OREBODY
Scale 1" = 50' V.R.C.



10 400



10 600

X cuts 6' above 903 B

19 000

19 200

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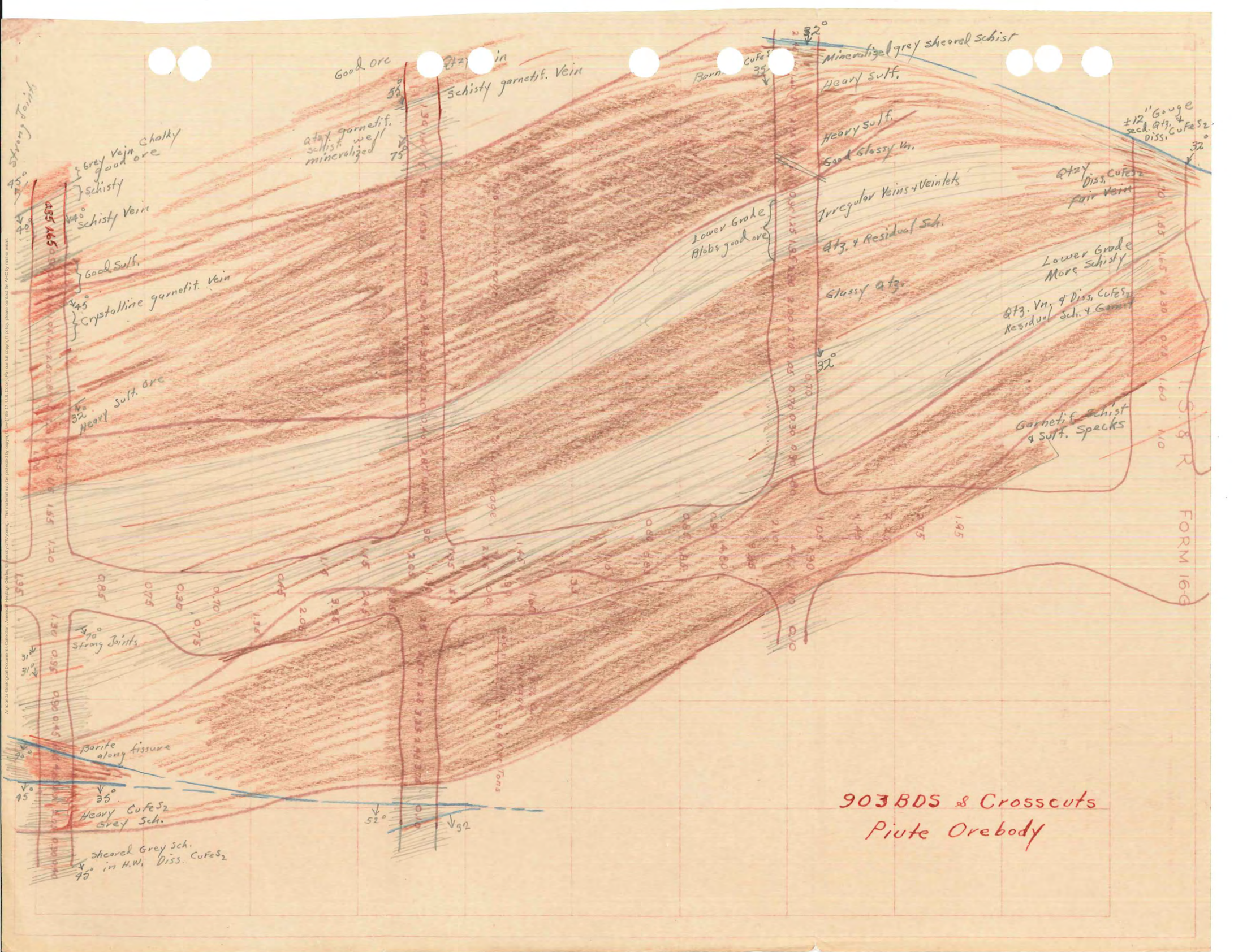

903 BDS & Crosscuts
Piute Orebody

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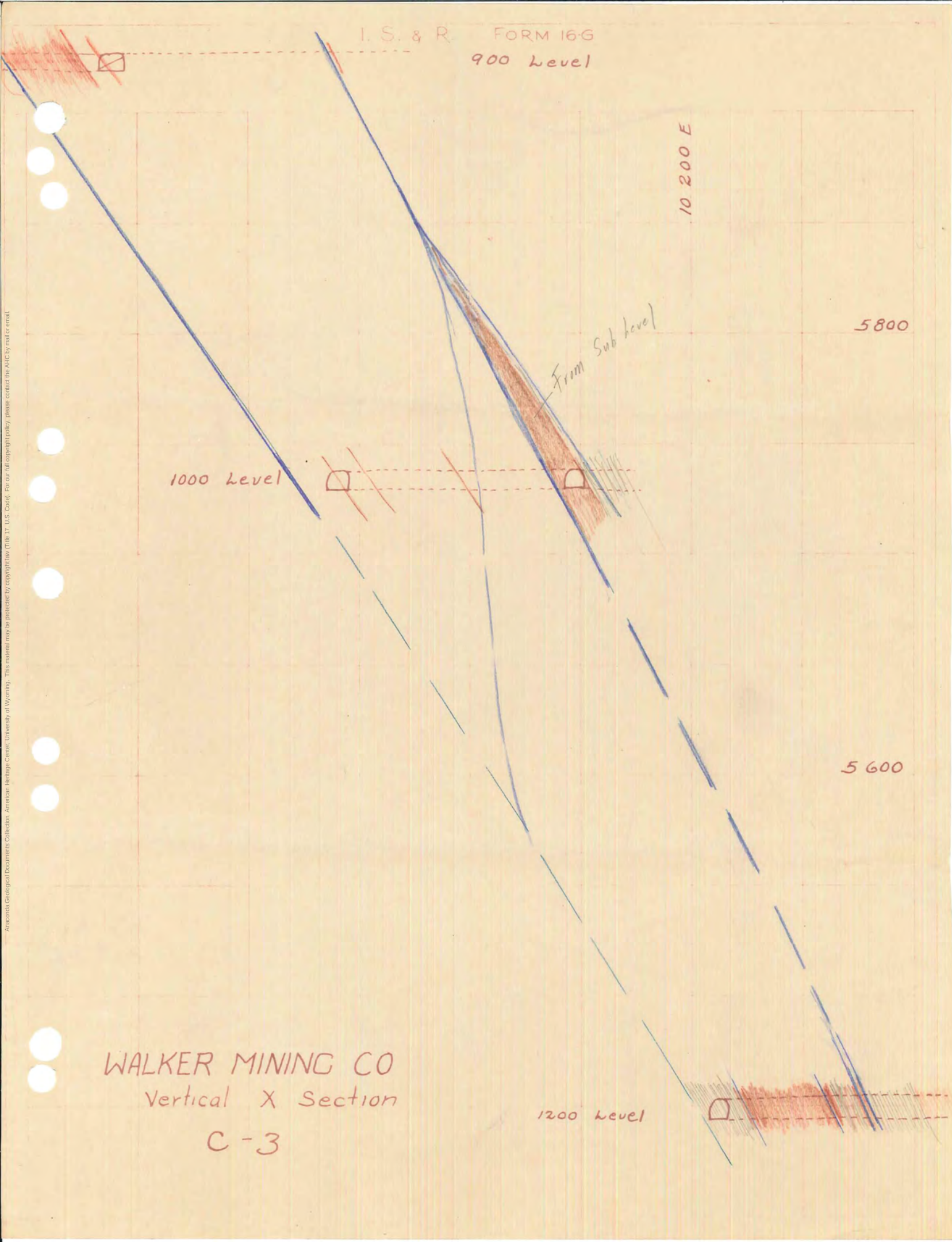
I. S. & R. FORM 16-G



WALKER MINING CO

Vertical X Section

C-3

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Walker

August 20, 1940.

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

Dear Tom:-

I have a copy of Droubay's letter to you dated August 10th. Also a letter from Droubay showing proposed developments at the north end of 1201 drift and 9230 drift north.

I approve the proposed crosscut easterly from 1201 drift north and suggest that we take another shot at the vein by continuing 1201 northerly from this proposed new crosscut. If the vein has the strike indicated on Droubay's sketch, 1201 should be turned slightly to the right before extending it further. I should say that the next crosscut to the vein should be at approximately 100 feet, depending upon what was disclosed in the first one cutting the vein zone.

You will recall the presence of the wide quartz vein which lies considerably to the west of 9230 drift. Might it not be a good plan to give this footwall vein another try with a drill hole opposite the proposed location of #49? Generally it appears to me that this 900 north development has been of a most disappointing nature. Unless the proposed drilling from the surface shows something considerably better than anything we have found, this north end will have to be written off as a failure.

Yours very truly,

RENO H. SALES

RHS:MBS

cc-C.E.W.
J.F.D.
S.K.D.

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FORM 396 4-30-40-2M

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

H. M. HARTMANN, MANAGER

August 12, 1940

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

Dear Sir:

The enclosed sketches show the present positions of 923CDN and 1201DN.

The 1201 heading has been driven along a narrow glassy vein that assays about 1% copper. The vein pinched just before it met No. 3 footwall slip. The drift is now in a position to turn on a fifty foot radius curve which will place the crosscut through No. 1 Fault in a position to locate any ore that may extend from the good showings on the 1000 Level. Where shall we direct further exploration if nothing is located with the crosscut?

The 923C has been stopped about seventy feet from surface diamond drill hole No. 21 and it is planned to start drilling Hole No. 49 immediately. Exceptionally bad ground made it necessary to turn toward the footwall, so Mr. Dugan and Mr. Hartmann want to get an idea of the ground before a crosscut is attempted. If nothing worth drifting toward is located with the drilling, then work in this area will cease pending surface drill results as Mr. Weed suggested.

Very truly yours,

S. K. Droubay

SKD:SW

S. K. Droubay

Encl.

cc - Mr. Weed
Lyon
Dugan

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FORM 396 11-39 2M

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

H. M. HARTMANN, MANAGER

August 10, 1940

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

Dear Tom:

Please find enclosed geological sketches and classification sheet for development during the Month of July, also prints showing in yellow mining operations with respect to the orebodies, also a record of diamond drill progress for the month. The following is a resume of the classification sheet:

SOUTH OREBODY None.

CENTRAL OREBODY 604FxcW explored the footwall country under the 780C Block and 608FDS was extended along No. 2 fault with the hopes of picking up better mineralization. 606FR was driven as a large finger but failed to develop any ore worth mining. 710ER was driven parallel to 606F but on the hanging wall streak of ore. All work in this area has been stopped becaused nothing but a narrow zone along the hanging wall side of the block proved to be worth mining. 1063B is being driven as a service raise for 10800 Stope.

NORTH OREBODY 404DR is a large pilot raise being driven from the 400 to the 300 level for mining 420B Stope.

The 930BDN is exploring the north extension of the orebody along what we call the 800 Level. Either this heading or a scraper drift from the stope above should be extended far enough north and then a crosscut extended through the fault to be sure that there is nothing worth mining under the large 760 Stope. 930B has been stopped pending the scraper drift which is the logical position for exploration.

The 1062B is a prospect raise that located the bottom of the ore under 920A Stope. It will act as an ore pass for mining ground south of 1020 and 920A Stopes.

The 1201DN is the main level heading being driven under the ore zone. We have started a fifty foot radius curve that will place a crosscut through the No. 1 fault and in a position to locate any ore that may extend down from the good showings on the 1000 Level. The crosscut will be directly under 1052AxcE. The last one hundred feet of 1201 has been driven along a narrow vein that assays around 1% copper but which pinched against the No. 3 footwall fault.

712 OREBODY 401D, 403D, 578B, 581B, 696E, 697E, are chute and manway raises being driven to develop ore along the footwall fissure and will later be used as stope service.

The 517B is the main level being driven south along the fissure. It holed into 697ER and is now opening up fair looking vein material again after quite a distance of waste. 587BxcW was driven from 517B to check the footwall. 544B is being extended north along the fissure.

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The 694E, 607E and 610F are headings to determine the condition of the footwall vein along the 600 Level. This level is proving very low grade, but some fair material should be opened up between the present face of 610F and 619ExcW toward which it is being driven. 711E is being driven as a main haulage level directly under this country to produce the entire fissure zone.

The 609FDS is being driven south along a footwall streak just under the main 712 Orebody. It has opened up an extension of 605E Stope that should produce at about 1.60% copper. By extending 560EDS to the main 500 Level this zone would be explored directly above. This ore can all be produced through the present main haulage level by raising along the ore over 201 Chute which is under a small footwall stope from 694AxcW.

The 1071BDN explores the footwall zone along the 1000 Level. 1062BxcE and W explored the footwall and hangingwall. The vein is low grade and broken at the present face. It is being driven toward the vein material cut with diamond drill hole No. 29 from the face of 1017BDN.

PIUTE OREBODY 903BDS, 918CR, 925CxcW, 926CxcE & W, and 927CxcE & W are developing the vein south along the 900 Level. The present face of 903B is apparently in the hanging wall with 927CxcW now opening up exceptionally good looking vein.

The 916CR is a large pilot raise being driven north of the shaft and will later be enlarged as 915 Stope.

The 923CDN is within seventy feet of No. 21 surface drill hole and is in position for drilling one or possibly two drill holes as indicated by the enclosed sketch. In case the ground becomes good enough the heading may be extended in the direction of proposed hole No. 50 if the hole exposes something worth while. Otherwise the heading will remain stopped pending results of other surface holes.

It is estimated that surface hole No. 26A will be repaired and going again by August 17.

I will mail Mr. Weed and Mr. Sales a print of the 923CDN.

Very truly yours,

SKD:SW S. K. Droubay

Encl.

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FORM 396 11-39 2M

WALKER MINING COMPANY

WALKERMINE

PLUMAS COUNTY, CALIFORNIA

H. M. HARTMANN, MANAGER

July 31, 1940

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

Walker

Dear Tom:

The diamond drillers working on the surface hole got their hoist cable tangled in the gears and dropped the string of rods into the fresh cement where they were fixing the hole just before entering the subsurface bedrock at approximately 625 feet. They will now have to over-ream the rods from the bottom of the large casing (around 200 feet, I believe) to the bottom of the hole to recover the rods and save the hole. Miller estimates it will take about two weeks to do this. They will be lucky if they do not lose the hole.

During Mr. Dugan's recent trip here he spent two days with Mr. Hartmann, Mr. Warren, and myself making a thorough study of available ore reserves from an operating viewpoint. In the past I had generally used my own judgment as to what constituted available ore and tried to present a reasonable picture of what we had immediately ahead of us with the monthly tabulation of Available Ore Reserves.

We discussed each item as listed on this sheet and as a result Mr. Dugan prepared an itemized report, a copy of which you no doubt have received. This lists as not available a substantial tonnage that is carried on the sheet, but which the operators feel cannot be recovered, especially under present conditions. I think the report gives an excellent picture of what Walker has to work on and I was very glad to go into this question with the operators.

If reference be made to the January 1, 1940 annual reserve longitudinal projection, it will be noted that many tons of ore shown as recoverable are not being considered as available at present. This is especially true of the 615-625 Block and the 815-825 Block of the Piute Orebody, where the recoverable ore is small in proportion to the gross figure.

I had assumed that fifty per cent of the gross ore would be recovered from the lower levels of the Piute Orebody because this amount was recovered above the 700 Grizzly Level south of the shaft and available ore estimates were based on this assumption. It now appears that difficulties encountered while mining this flat vein, will cut the original estimate of recoverable ore in two and that little more than twenty-five per cent of it will be able to be mined from between the 800 and 700 Levels of Piute.

In view of the picture gained frommining the 800 Level Blocks, I wonder if it is fair to credit as much as fifty per cent of the ore being developed between the 900 and 800 Levels of Piute as available. The ore down here is proving to be a higher grade and from all indications the physical condition

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of the vein is much stronger than it was between the 800 and 700 Levels. The Orebody appears to be in the shape of an elliptical pipe dipping thirty-two degrees with the short axis roughly seventy feet and the long one something over one hundred feet. There are none of the numerous slips splitting from the clay footwall into the hanging wall that were encountered above and the shape suggests that a large arched stope would not only follow the natural boundries of the ore but would furnish the necessary strength for supporting a large open hole. It is with this in mind that I will continue to allow fifty per cent of the gross ore as available.

The July 1 tabulation of available ore reserves has not been adjusted to the estimates of Mr. Dugan's report but as this sheet is mainly a guide for operators, I suppose I should revise the sheet starting August 1 by dropping these questionable tonnages until such a time that economic conditions warrant their consideration.

The 923CDN is less than one hundred feet from the point where the surface drill hole No. 21 will cut over the top of it. As bad ground made it necessary to turn this heading west, we are now right on, if not in, the footwall. We should prospect the hanging wall very soon and it has been suggested that this should be done with one or possibly two drill holes so that we will know the ground and water conditions in case we have to crosscut. This footwall area has been rather silicious for the past fifty feet with several small stringers of fair looking mineralization.

Mr. Dugan's letter remarked about each development project, so I will save my comments until I send you the August 1 geological sketches.

Very truly yours,

S. K. Droubay

SKD:SW

S. K. Droubay

cc - Mr. Sales
Weed
Dugan

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