

A. E. BULLER LTD.
CONSULTING GEOLOGISTS
SUITE 2001 - COMMERCE COURT WEST
TORONTO, CANADA

Kam-Kotia
801383

BOX 129, COMMERCE COURT POSTAL STATION
TORONTO, CANADA

June 21, 1973.

Mr. G. W. Walkey,
25 Adelaide Street West - Suite 416,
Toronto 1, Ontario.

Dear Graham: Re: Drilling and Exploration Work Agreed on
by the Joint Venture Management Committee

Attached is a sketch showing our proposal for drilling to check your Area 1 (your memorandum of 11 June, 1973). The first hole should be drilled on section with Holes K-194, 193, 200 and 196, and at a dip of about -34° to cut the F.W. of the lode about 25 feet updip from where it was cut by Hole K-193.

The second and third holes should be drilled to cut the F.W. of the lode about 25 feet updip and 35 feet downdip (at approximate elevations 4535' and 4490' respectively) from the point where K-189 cuts the F.W. at Elevation 4514'. If possible, these holes should be collared at about 4400N and 11730E, so as to form a fan parallel to that formed by Holes K-194, etc.

With regard to the work in the 4690 No.2 crosscut area, we still don't know the location of the lode on the level west of the crosscut. The stub crosscut driven from the footwall side of the lode to the west needs to be re-mapped, and Bill Hogg has already asked his geologist to do this.

There is evidence from one intersection in Hole K-215, the flattest of the three holes drilled in a fan from the face of the 4690W H.W. lateral (the other two holes, K-213 and 217, failed to find recognizable lode), that the lode swings sharply from the east-west strike which it had in Stope 4690-16 above the level to a south-westerly strike. If this is true, none of our drilling west of the 4690 crosscut is likely to have reached the lode, and it remains unlocated and untested between here and its junction with, ^{or its} your continuation as the Carnation lode.

My idea was that we should locate the lode on the level and if, in fact, it is heading such that it is untested by our drilling, we should start a lateral in the footwall of the lode at some reachable distance from it and from some convenient point of departure from either the 4690W Lateral or the 4690 No.2 crosscut. The steps we should take and the exact location of a lateral will depend on our mapping and our interpretation of all the geological information to date, including results of a hole currently being drilled to the west from the face of the 4690W H.W. lateral. I'll put this information together just as soon as I can, but I am sure that Bill Hogg meanwhile has been developing ideas about this since we discussed it at some length.

Yours sincerely, *A. E. Buller*
A. E. Buller.

AEB:WS
cc: -RNFigueroa/AWWhite
encl. " " /Orig.

*Self-m
holes to
delimit an
area that
can be
cut.
poss others
?*

*loose
statement*

*W.S. says
better alternative
to the lode
towards lode
that it was
4690 H.W. fan
of holes.*

4690 Not a good horizon for this purpose

Confidential

CONFIDENTIAL

To: Bill Hogg

June 22, 1973.

From: G. W. Walkey

Subject: Drilling & Exploration at Joint Venture.

1. I enclose copy of letter dated June 21, with attachment from Art Buller. I advised you of the holes Buller wanted drilled from 4,625 H.W. drift and his thoughts on the lode, west of 4,690 No. 2 x-cut, at and above 4,690 level, by telephone on Wednesday, June 20.

2. From the sketch, you can see that he wants to test the lode on section made by K196, 200, 193, and 194, at a point midway between K194 & 193, and he would like a section drilled on bearing N56 west, collared at 11,734 E. and 4,405 N., to test up dip and down dip from the intersection in K189 at, approximate F.W. elevations 4,535 and 4,490.

3. We agreed to drill the above holes at our June 19 meeting.

4. In regard to Buller's comments on the lode, west of 4,690 No. 2 x-cut, specifically, the F.W. portion to the north of the strike fault which drops the lode to the south, I understood from you and sections you made, that the displacement was established, at least near 4,690 #2 x-cut. Of course, the fault can be hinged, and the displacement can have a rake or plunge. However, movement appears to be down and the lode is well established in the F.W. by stoping from 4,690 x-cut. The strike of the lode may well change from north 70 to 80 degrees west to south of west along the strike to the west. However, I have made a N-S section on co-ordinate 10,080 E. through holes K124 and 123 and the strike would have to be sharply south of west, or the dip to have steepened sharply, to as much as 50 degrees, or a combination of both strike change and dip steepening for K124 to have not reached the lode. There could, of course, be other reasons for K124 not reaching the lode, such as 1) flattening of the drill hole. 2) Additional faulting and offsetting.

Apparently
effort
to delineate
an area of
ore
OK, but
is it
likely to
suggest a similar
approach to
other areas
prior to
completion of
decline?

As you can see from Art's letter, he has no specific plan for testing and defining the F.W. section of the lode west of the 4,690 x-cut.

We will, therefore, take no specific action although I would like to get any ideas you have on this matter.

Currently, I hope to get to the mine the first or second week of July. I'll try and let you know late next week, when I can make the trip.

W.S. suggests best to concentrate on dropped segment (F.W. seg re possible fault & W) and then establish where it "should be" @ the "4690' horizon. This can be checked out via G. W. Walkey. Encl. The 4690 H.W. lateral

Confidential

To: Bill Hogg

June 26, 1973.

From: G. W. Walkey

Subject: Lode Exploration, West of 4,690 #2 x-cut.

1. Further to my letter of June 22, 1973 and enclosure of Art Buller's letter of June 21st, I talked with Art today, he appears to be specifically concerned with locating the lode to the west of No. 2 x-cut at elevation 4,690. *perhaps a slim chance of finding lode at this horizon (too many fault complications or "fault window")*

2. *insert* If, as you say, the lode strike changes to S45 west, True west of the x-cut, and, from F.W. location in K180 & K215, I can see a strike of S60 west, then any holes drilled from 4,690 west lateral, west of 10,100 E co-ordinate, would almost certainly not have intersected the lode and, at the face of 4,690 W. lateral, at co-ordinate 9,700 E, we could be 600 to 700 ft. or more north of the lode trace at 4,690 elevation. However, a hole drilled from the 4,690 W lateral face, due south at plus 40 degrees, should intersect the lode at about 400 ft. from the collar, but, this is not practical for lode exploration.

3. We don't know what happens to the NW trending fault which drops the lode to the south, as it moves to the west. There may also be additional transverse faults which offset the lode as we move to the west.

*good analysis!
Probable
conjugate (or
homonetic) w.
re. to normal
displacement
which looks
to be diminishing
westward (see
K184)*

4. The last known "ore", or potential ore, i.e. high grade but narrow lode, occurs in the F.W. of the fault system at about 10,300 E and 4,400 N. In the H.W. section, the lode is mineralized in the vicinity of the No.2 x-cut both to the East and West, and to about 4,200 N. This suggests a plunge to the west, which may be explained by the change in strike.

*Q.W. Buller
mentioning
here.*

5. I would like you to discuss this problem with Bill Sharp prior to my next visit and ask him to develop any ideas that he might have.

If you have not already done so, I would like a hole drilled from the west face of the 4,690 H.W. lateral, to the N.W. at minus 45 degrees. If we can confirm the strike and dip, we might be able to locate a F.W. drift, close to the lode driven from No.2 x-cut. *good idea to drill above NW, -45°*

X hole, but it might be geologically impossible to "locate" such a F.W. drift from the 4690 #2 x-c (fault window?) and might be better to resort to a modification of Buller's notion (this also "geologically impossible") concerning a F.W. lateral driven from

*come on
layout of
this during
July visit.*

GWW/rk on appropriate part G. W. Walkey. *the new 4625 F.W. lat.*

BOX 129
COMMERCE COURT POSTAL STATION
TORONTO, CANADA

Rec'd July 16 mail

July 12, 1973.

Mr. G. W. Walkey,
25 Adelaide Street West - Suite 416,
Toronto 1, Ontario.

Dear Graham:

Kan-Kotia - Burkam Joint Venture

Re: Exploration West of 4690 No. 20 X-Cut

The exploration work recommended at this time for the western extension of the lode is to be just enough to locate the lode on the hangingwall of the fault and to test it with two fans of short (packsack) drill holes about 75 or 100 feet apart. Any decision to continue longer range exploration here must depend on results obtained.

It now seems reasonably certain that the NW striking, SW dipping pair of normal faults found in the 4690 No. 2 X-cut and in the 4625 W Lateral, offset the lode in this area about 70 to 90 feet measured down the dip of the fault zone. Drilling below the 4690 Level shows that the lode is continuous downdip to at least an elevation of about 4560' and that its strike changes, more or less vertically below the crosscut, from E-W to about S 40° W (holes K-182, 180, 215 and 220). In all these holes there were narrow intersections of good grade mineralization.

Basic thing to realize is that lode dropped within a block bounded by parallel and transverse faults.

If the lode dips 25°, projecting it updip from the intersection in K-215 would put it at the 4690 Level (4695') at about 4600 N and 10065 E. With a dip of 30°, it should be at 4570 N and 10075 E. If the lode is projected along the strike back to the northeast from these two positions, on a curve paralleling the indicated strike between Holes K-215 and K-180, the lode should intersect the NW strand of the fault near either 4635 N and 10210 E with a 30° dip, or 4658 N and 10180 E with a 25° dip.

A slash in the left corner of the face of the footwall stub from 4690 No. 2 X-cut should locate the hangingwall strand of this fault and confirm whether or not it is likely to continue northeast to become the bedded fault in the K-123 and 124 drill station. We would then have three alternatives:

- (1) To advance the 4690 stub as a crosscut to and through the lode on the hangingwall side of the fault and then turn it to the southwest as a lateral from which to drill the lode above the level.
- (2) To advance a lateral from the drill slash in the 4690 W Lateral at 10270 E on a bearing of S 70° E. This should cut the fault zone at from 120 to 135 feet and at this point would be from 45 to 75 feet horizontally in the footwall of the lode. A further 65 feet of advance

*? what's the drill target here? -
the plus - 4690 or minus - 4690
segment of the lode?*



COPY

What about effect of normal faulting & it should not be affected to be found in the 4690 hanging locally.

not clear - words of the proposed new lateral?

would give room for two fans of drill holes into the lode.

*Not clear -
course of strike
point??*

- (3) To advance the 4625 W Lateral on a bearing of N 80° W for 140 feet, at which point it should be in the hangingwall of the fault and not far in the footwall of the lode. It could then be advanced to the west and then southwest as the position of the lode dictates.

If my estimate of the 140' point is correct, then heading at this point will be 33 (or how should be 151) (re l.w. stand on the hangingwall of the lode).

Alternative (3) has the advantage of keeping our exploration work on the adit level, and it is definitely the preferred one if operating conditions permit.

This an operators decision

Meanwhile, there is one very important aspect to consider, and that is whether further long-range exploration in this direction should be carried out at all. We have so far been unable to explain the location of the ore shoots found ^{and} mined to date by using the long-held district assumption that the motion producing the lode was hangingwall down and to the east. This may be true for the steeper Carnation and Ruth lodes, but it may not be so at all for the flat lode we are mining.

If the hangingwall of our lode moved down to the south and west with a plunge of S 40° W, i.e., parallel to the lode both east and west of the stoped areas, this might explain the lode being tight when it has this strike and more open when it has a strike transverse to this, as it does from the 4690 No. 2 X-cut eastward to 17 Stope. The lode tightens towards 17 Stope and becomes very tight and poorly mineralized beyond this above both 4690 and 4755, when its strike swings to N 40° E. Is it going to be tight and mineralized to the west on a S 40° W strike? Where and why may this strike be expected to change?

all would lode. a transverse panel body. control to explain rather obvious evidence eastward dip of l.w.

This explanation is not entirely satisfactory, but I feel strongly that the geological staff of the mine and Bill Sharp should consider this matter seriously and try to reconcile our assumptions with the geometry of the lode and its ore shoots. This problem won't be solved without a concerted and joint effort, and I'm afraid that our exploration will suffer until it is solved.

I am sorry you didn't let me know that you were going to the mine this week, so we could have talked this matter over with the maps in front of us before you went. However, I have talked with Bill Hogg on the telephone, so he will anticipate much of what I have written, and since the operation is closing down for the holidays this week-end, there is less urgency about this matter.

With best regards,

Sincerely,

AEB:WS
cc:-RNFigueroa
WHogg
WMSHarp ✓
ANWhite

A. E. Buller.

C
O
P
Y