



For your info.

December 12, 1990  
 Project Number 60619

Curragh Resources Inc.  
 Faro Mine  
 Box 1000  
 Faro, Yukon  
 Y0B 1K0

Attention: Leo Hwozdyk

Dear Leo:

**RE: DECEMBER VISIT, FARO UNDERGROUND**

The following letter is a record of my visit 3 and 4 of December. In the two and a half months since my last visit there has been very little room and pillar development. Work has been concentrated on extending the ramp system and in driving strike development. I will address the following subjects:

- underground visit
- room and pillar design - essential structural information
  - diamond drilling and data collection
  - data presentation
- pillar inspection

### Underground Visit

Most areas in the southern section were visited. There has been no observable change in the condition of the room and pillar workings in the South B.

The most significant difference from the last visit has been the frequency with which the white mica envelope has been exposed. This raises two important points:

- information on the thickness of the competent hanging wall material is of critical importance to design,
- the good mining conditions in the South B area are untypical of the project.



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The difficulty of mining through faulted zones whilst keeping a reasonable thickness of competent material in the back has been made abundantly clear. This subject will be discussed in more detail in the next section.

The overall conditions of the workings are safe and support is being installed satisfactorily.

### **Room and Pillar Design**

The condition of the roof is possibly the single most important factor influencing the success of the Faro underground operations:

- dilution is very sensitive to the condition of the back and exposure of the WME,
- break-through from drifts with exposures of WME tend to slough back to these exposures,
- exposures of WME either cause significant overbreak to a stable shape or require intense support, sometimes both,
- intense support holds up advance and decreases productivity,
- exposure of WME probably implies a decreased span when developing a room-and-pillar, layout with consequent decreases in percentage extraction and productivity,
- it is extremely difficult to develop a cut-through at a point where the WME is exposed and the present exposures are reducing layout flexibility.

The exposure of WME therefore has a significant effect on the mining cost.

The data that is essential for controlling the condition of the back is the depth of competent hanging wall material. A reasonable thickness for planning purposes would be 5 feet. This is thicker than required in a single heading but is barely sufficient when the headings are slashed and converted to a room-and-pillar configuration. The 5 feet of material may have to be massive sulphide where the quartzite is absent.

The data is presently collected on sections with the north or east walls of the development being mapped. This information is supplemented with diamond drill information. The DD information is essential as it records the thickness of competent hanging wall material. It would be an advantage to increase DD holes. At present there is considerable superfluous information as many holes in the F/W and H/W are drilled well past the point of useful information. F/W holes could be stopped at 5 feet beyond the area of economic interest and H/W holes at 10 feet beyond. The savings in footage could enable more holes to be drilled at the same cost. Present DD costs are approximately \$0.8/tonne of ore. More effort could

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possibly be paid to the scheduling of the DD set-ups so that they are less affected by downtime due to production interference. The density of DD holes should not be reduced, rather it should probably be increased.

The hanging wall information is recorded and presented in sections. It is suggested that the communication and use of this data could be greatly improved if data could also be presented in a plan format showing:

- areas of exposed WME,
- areas of intense support (inclusion of straps and or more frequent bolting),
- areas of competent roof less than 5 feet thick.

The plan could be colour coded. Room and pillar layouts are developed in plan and plan information is the easiest to use.

Care should also be taken to include extensive and continuous areas of metabasite as these will influence the strength of pillars.

### **Pillar Inspection**

This subject was addressed thoroughly in my last letter. It would probably be wise to record these weekly visits to completed room and pillar areas. The following could be noted on a simple form:

- fresh material on floor
  - loose in roof
  - new cracks in pillar walls
  - widening of old cracks
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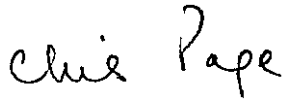
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These weekly visits are different from the normal safety checks carried out by the mining personnel. They address regional stability and it would be prudent to maintain a formal record.

Yours truly,

STEFFEN ROBERTSON AND KIRSTEN (B.C.) INC.

A handwritten signature in cursive script that reads "Chris Page".

Chris H. Page, P.Eng.

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