

MEMORANDUM

To A.K. Campbell
From H.E. Pawson
Subject Proposed New Tailings Site

Date July 18, 1973
Ref.

Length of Present Line: 1800 ft.
Addition from B.A.F.: 2600 ft.(3)
4400 ft.

New site: Small lake above Baker Creek 3,500 ft. from mill located in a swampy area with discharge not clearly defined but probably into Baker Creek. Swampy area an advantage, see Laval re: Con.

Area: Lake appears to be circular with a diameter of 800 ft.

$$\begin{aligned} \therefore \text{area} &= d^2 \times .7854 \\ &= 502,656 \text{ sq. ft.} \end{aligned}$$

$$43,560 \text{ sq. ft.} = 1 \text{ Acre}$$

$$\therefore \frac{502656}{43560} = 11.5 \text{ Acres}$$

Volume = area of end x depth

$$\begin{aligned} \therefore 1 \text{ ft. of depth} &= 502,656 \text{ cu. ft.} \\ 3 \text{ ft. (ave)} &= 1,507,968 \text{ cu. ft.} \end{aligned}$$

Assuming 1 ton solid occupies 20 cu. ft. the volume of the lake without any dyke can store 25,000 tons at one foot of depth.

$$\begin{aligned} \text{Lake Circumference} &= 800 \times 3.14 \\ &= 2500 \text{ ft.} \end{aligned}$$

Using observation 6: (2600 ft. long dyke 30' high).

$$\begin{aligned} 25,000 \times 30 &= 750,000 \text{ tons (dyke)} \\ 3 \text{ ft depth of lake} &= 75,000 \text{ tons} \end{aligned}$$

$$\text{Total} = 825,000 \text{ tons}$$

825,000 tons of solid represents at a ratio of concentration of 7:1. --

$$\begin{aligned} \text{Mill tons/annum} &= 400,000 \\ 7:1 \text{ R.C.} &= \underline{57,000} \\ &343,000 \text{ tails ton} \\ 50\% \text{ for fill} &= \underline{150,000} \text{ tons} \\ &193,000 \text{ of tails} \end{aligned}$$

$$\begin{aligned} \frac{825}{193} &= 4 \text{ years} + \text{ of solid storage.} \end{aligned}$$

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Advantages New Site: Compared to B. Ferguson Recommendations:

Providing use of lake allowed:

1. No additional cost for pumps or pipe
2. 4 years storage as opposed to 1 at old site
3. Cost free for 2 years after usage begins
4. Decant filters through swamp producing cyanide oxidization and fines settling.

Disadvantages:

1. Slightly more expensive to haul waste because of increased time factor.
2. Until site survey, must assume area flat, thus a ramp must be provided as the dyke goes up for access to top.