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December 28th, 1966

Mr. Angus McLean,
Dept. of Transport, Regional Materials Laboratory,
33 Willington Crescent,
Sea Island,
Richmond, B.C.

Dear Sir:

This is in reply to your letters of November 30, 1966, and December 7, 1966, to Mr. McCallum.

First let me thank you for sending us the data from the drilling program near the Prince George Airport; these are very useful to us.

I have discussed the situation there with Mr. McCallum, and we think that there is a reasonable chance of finding the 50gpm. you require in the area north of the airport.

Based on considerations of aquifer lithology, thickness and length of water column, TW12, located southwest of Haggith Lake, appears to have the greatest groundwater potential of all holes drilled.

As indicated by your records, a summary of the log of this hole would be as follows:

0 - 49'	Clay
49 - 70	Water bearing sand
70 - 81	Water bearing gravel

Static level: 46' (+2177')
Minimum length of water column - 35'

Wells to the north and south of the subject well encountered till below this outwash sand and gravel aquifer. Since the outwash deposits were not completely penetrated in this well, the aquifer thickness of 32 feet must be regarded as a minimum.

TW8, located southwest of the subject well, pump tested the same aquifer at 10 gpm. for 12 hours, with a drawdown of 2' 10".

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This well has a specific capacity of 3 gpm. per foot of drawdown. Assuming a similar specific capacity for TW12, your requirement of 50 gpm. could theoretically be met by a 17 foot water column. The minimum usable water column in this well, even after allowance for a 10 foot screen installation at the bottom of the hole, is 25 feet.

What we do not know, and what we cannot even speculate upon at this time, is the storage or recharge ability of this aquifer. This can only be determined by a full 24 hour pump test on a properly screened and developed well.

Based on your data, we would recommend the drilling of a 6 or 8 inch well (preferably the latter) at a location immediately adjacent to TW12, to a depth sufficient to penetrate fully the aquffer and a few feet of the underlying till. Two foot samples should be taken in the aquifer. These samples should be sieved to determine the best interval to be screened.

Once screened, the well should be properly developed by a contractor familiar with the better methods of well construction; then pump tested, as previously described, for a minimum of 24 hours.

The area of recharge to this aquifer, could be, as you have mentioned, from the swamp to the southwest. However, the high static level in TW7 could be related to discontinuous aquifer development as well as hydraulic gradient.

If, for some reason, the desired yield is not obtained from the recommended location, we would suggest a gravel pack of the near-flowing artesian sub-till sand aquifer encountered in test wells south of the airport terminal. Such a location could be discussed in detail if the need arises.

We hope these suggestions will be of some assistance to you in your efforts to locate a water supply.

Yours very truly,

E. Livingston, Chief,
Ground Water Division

JAN::eo