

REPORT# 1520

FILE REPORT: BIRCHLAND/ DRYBED CREEKS- SITE
INSPECTION

By: Peter Woods

Date: May 25, 1990

% Regional Water Manager

Nelson

(from Peter Wood 367-3564)

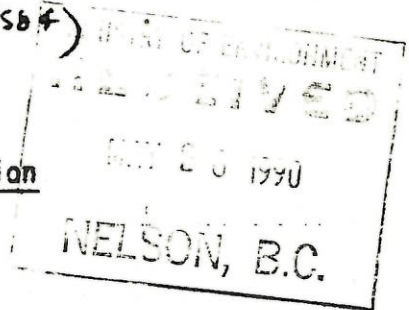
May 25, 1990

File: 30-0000-S.1

MEMO TO FILE

Birchlands/Drybed Creeks - Site Inspection

Floodplain Development Control



An inspection was made of the Drybed Creek/Birchlands Creek alluvial fan complex near Golden, B.C., together with Mr. D. Boyer on May 16, 1990. The purpose of the inspection was to review field evidence of debris flow and flooding activity on Drybed Creek with regard to a pending application for subdivision located off Mitchell and Jones Roads (Mr. D. Crandall).

1. Mr. Boyer has considerable previous knowledge with debris flow activity on the upper part of the fan having examined available air photos and documenting first hand an event in 1982. The 1982 event moved material on Drybed Creek to just above its confluence with Birchlands Creek, while a large event on Birchlands Creek blocked Highway 95, damaged a house and inundated a large portion of the fan. (The Regional Water Manager's file contains more detailed information.)
2. The present inspection included walking the stream channel down the left side of the Drybed Creek fan and also a traverse across the mid portion of the fan. Transported rock and mud debris was observed just above the Birchlands Creek confluence. There were observed areas of previous inundation of the forest causing extensive tree kills (about 1 m depth of rubble over +/- 30 m width along the channel). Also, the present channel near the apex has scoured out about 1.8 m below the fan surface to reveal buried tree stumps. There is evidence of radial fossil channels throughout the upper fan and at least one additional flow channel defined by debris inundation and modern tree kills.
3. Mr. Boyer indicates that prior to 1976, airphotos (BC 7021 No. 246) did not show the present channel activity but recent air photos (BC 86087 No. 75) clearly show this and a nearby channel scar.
4. The fan apex contains coarse rubble to occasional pieces larger than one metre in diameter, and numerous parallel levees and lobes indicating frequent activity. There is a potential avulsion route down the right side of the fan where an old road was bulldozed into the area.
5. A borrow excavation above Mitchell Road near the subject property shows an exposure of about four large scale debris flow events plus intervening fluvial processes. A buried burned organic layer 2.2 m below the fan surface was sampled. There are layers of buried organic surface and possible ash layers evident.

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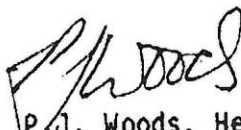
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6. A bedrock outcrop was noted on Jones Road near Birchlands Creek, also low marshlands and fine grained surface deposits indicating a change in fan character and activity. Certain of these lands may be suitable for development subject to an engineer's appraisal of suitability.

Recommendations

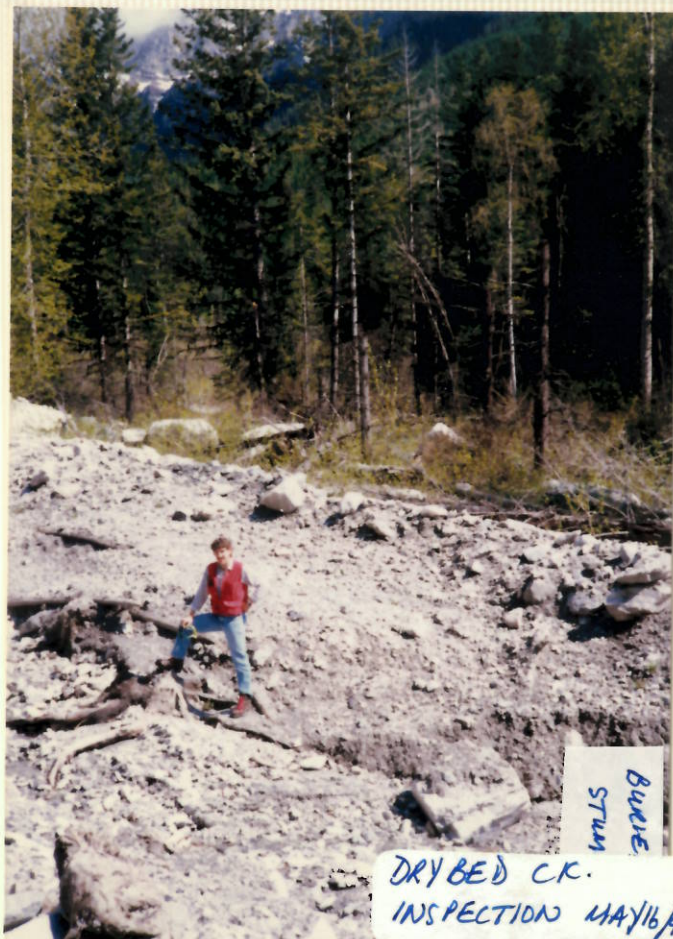
- Given the geomorphology, historical knowledge and other evidence, it is clear that this feature is a debris flow fan with a minor flooding component.
- Because of the apparent geological hazard, the Approving Officer should be advised of this potential and the need for appropriate evaluation by a Professional Engineer.
- If areas safe from debris flows are verified, there is likely to be a residual flood threat on these areas. An informational covenant identifying this aspect and requirements for floodproofing would be desirable. (The engineer's report should recommend appropriate floodproofing requirements.)


P.J. Woods, Head
Special Projects Section

PJW:khh

cc: Mr. D. Boyer
cc: Mr. N. Hamilton

Attach.



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INSPECTION MAY 16/90



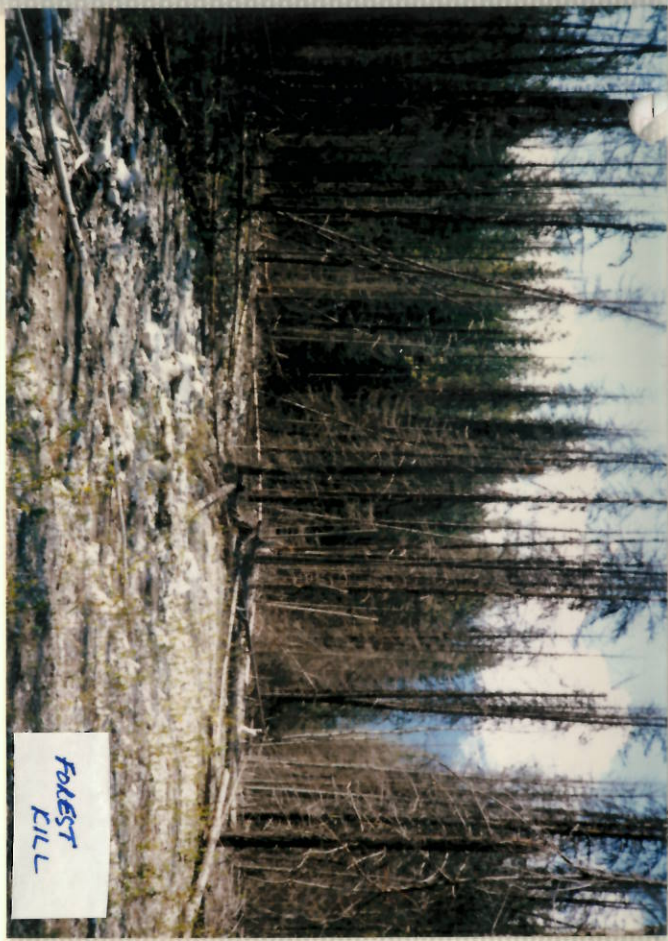
ROAD near APEX



CHANNEL near
APEX



MITCHEL RD.
EXPOSURE



FOREST
FILL



CLIVER FAN

LOWER FAN
from MITCHEL RD.



DYED C.K.
near
CONJUNCTIVE