State of Vermont **AGENCY OF NATURAL RESOURCES**
Department of Environmental Conservation
Facilities Engineering Division
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MEMORANDUM

TO: For the File

FROM: Stephen Bushman, P.E., Assistant Dam Safety Engineer

DATE: June 2, 2006

SUBJECT: Inspection of Curtis Pond Dam, Calais

On May 17, 2006 Stephen Bushman, P.E. and Jesse Dunham-Friel made a routine annual inspection of the Curtis Pond Dam located in Calais, Vermont, State Identification Number 40.09. A number of photos where taken. The last inspection of the dam was conducted on May 19, 2005. This report updates those observations and records additional information.

OVERALL CONDITION

The overall condition of the dam was poor, which has been reported in previous reports.

RECOMMENDATIONS FOR OWNER

1. The dam should be observed periodically for any change in the seepage pattern, volume or clarity. Also any sinkhole development or dam movement should be noted. Report any changes to the State Dam Safety Office at (802) 241-3454.

2. The small woody vegetation along the upstream waters edge should be removed.

3. The existing and any future animal burrows should be dug out and filled.

4. The project to determine the appropriate rehabilitation of the dam should be finalized.

DAM DESCRIPTION AND HISTORY

Curtis Pond dam is a small earthen fill gravity structure with a vertical rock face on the downstream side. The dam is located on an unnamed brook just upstream of the junction with Pekin Brook, a tributary of the Kingsbury branch of the Winooski River. When the dam was constructed, it raised the water behind it approximately seven feet causing the two natural ponds upstream to combine into what is now Curtis Pond. The dam is about 120 feet long and has a maximum height of 14 feet. The pond was created for recreational purposes.

INSPECTION

The inspection of the dam was conducted on May 17, 2006 between 1300 and 1330 hours. The weather was overcast, with light rain during the inspection. Previous weather had been rain, for several days. The water level was 0.25 feet above the top of the right upstream log.

1. Embankment Section

a) Upstream Slope: The upstream slope had minor woody vegetation at the waters edge. A new stone wall was noted at the left entrance to the spillway. There was no significant erosion along the waters edge.

b) Downstream Face: The downstream face consists of a dry masonry, stone façade. The wall leans off vertical, as has been recorded in previous reports. The top 3 to 4 feet of the stone face are off vertical by 1.5 to 2 feet. Seepage through the stone face appears similar to previous inspections in both pattern and quantity.

c) Crest: The left side of the crest was irregular with numerous depressions. The right side was more regular. One animal burrow was seen that had been previously recorded. The pile of debris that was previously noted has been removed. The grass cover across the crest was well mowed.

1. Principal Spillway:

The principle spillway consists of an uncontrolled channel in the crest. The approach and weir sections were clear of vegetation and debris. The discharge channel was rock lined and was free of vegetation.

3. Sluice Gate:

The sluice gate was in poor condition. Water flow around the exit of the sluice gate was evident.

HYDROLOGY AND HYDRAULICS

The drainage area at this site is about 917 acres. The pond area at the normal pool is about 76 acres with storage of about 724 acre-feet. At the dam crest, the pool stores 1,000 acre-feet.

DOWNSTREAM HAZARD CLASSIFICATION

The dam is a Class 2, "Significant Hazard" Dam.

JURISDICTION

Since the dam impounds more than 500,000 cubic feet, any alteration, reconstruction or breaching would require prior approval from the Department under provisions of 10 VSA Chapter 43. Further drawdown of the pond would require approval from the Department under a 1272 Order.