

INSPECTION REPORT

LAKE LEMON DAM

Unionville, Indiana

Prepared by:

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2004 INSPECTION REPORT LAKE LEMON DAM UNIONVILLE, INDIANA

INTRODUCTION

As requested by the Lake Lemon Conservancy District, DLZ performed a field inspection of Lake Lemon Dam on July 15, 2004. The inspection was completed by Mr. Pete Nix, a geotechnical engineer with DLZ. This report presents the observations and recommendations resulting from the inspection.

During the inspection, color photographs were taken of pertinent features of the dam. Representative photographs are included in this report in Appendix I. The completed IDNR Dam Inspection Report Form is presented in Appendix II.

PROJECT INFORMATION

It is believed that the dam was constructed in the early 1950's. For years the project was used for water supply to the City of Bloomington, but is now used for recreation. The drainage area is about 71 square miles and the pool area is approximately 1700 acres. The earth embankment is roughly 50 feet high with a crest length of approximately 660 feet. The crest width is about 13 feet, and the upstream and downstream slopes are about 1V:3.5H.

The outlet works consist of a 42-inch diameter reinforced concrete pipe near the left abutment. Flow through the pipe is controlled by a gatewell, and the pipe discharges into a stilling basin.

The principal spillway is a 329-foot long, concrete ogee-type structure. The spillway is located in a valley northeast of the embankment.

FIELD INSPECTION

Embankment

The inspection disclosed no serious problem areas in the physical condition of the embankment. The slopes were relatively uniform; no bulges or depressions were noted. In addition, the upstream and downstream slopes, as well as the crest, were neatly mowed. It is understood from the lake manager that the embankment is mowed twice a year.

Some small brush and trees were observed along the water's edge. These should be removed. In addition, there was some rutting on the crest from vehicular traffic. These ruts should be filled to enhance drainage.

An area of possible seepage was observed along the downstream toe, near the midpoint of the embankment. This area appears to be the location of the original stream channel. No discharge could be seen, but the old channel is wet with iron-stained, brackish water. This possible seepage was noted in the 2002 inspection, also. Based on the comments in the 2002 inspection report, it doesn't appear that the seepage has changed significantly since then. However, because of the high hazard associated with the project, it is recommended that this area be monitored visually on a regular basis (every month or so) and following significant rainfall events. Any changes in the quantity or appearance of the seepage in this area should be brought to the attention of a dam engineer immediately.

Outlet Works

The visible portions of the outlet works appeared in satisfactory condition. The only minor deficiency was the vegetation that was obscuring the left side of the stilling basin. This vegetation should be removed to facilitate inspections of the structure.

It is also understood that the gate is only raised to one-third of its limit during normal operations. It is recommended that the gate be exercised to its full limit at least once per year.

Principal Spillway

The principal spillway was in acceptable condition. It does not appear to have changed significantly since the last inspection. Minor spalling in the ogee face was observed. The lake manager indicated these would be repaired as soon as lake level fell below the spillway crest level.

CONCLUSIONS

Based on our observations, it appears that the project condition has not changed significantly since the 2002 inspection, where the overall surficial condition of the project was determined to be Satisfactory.

RECOMMENDATIONS

1. Visually monitor the possible seepage condition at the toe of the embankment. Report any changes to a dam engineer immediately.
2. Remove the small brush and trees in the embankment along the water's edge.
3. Fill ruts in the crest to facilitate drainage.
4. Remove vegetation from the left wall of the stilling basin.

CLOSING REMARKS

We hope this information is helpful. If you have any questions, please do not hesitate to call.

Sincerely,

DLZ Ohio, Inc.

Pete Nix, P.E.
Geotechnical Division Manager

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APPENDIX I

Photographs

APPENDIX II

Completed IDNR Dam Inspection Report Form