



Catherine E. Heigel, Director

Promoting and protecting the health of the public and the environment

CERTIFIED MAIL

May 13, 2016

Mr. Kip Myers
[REDACTED]
[REDACTED]
[REDACTED]

RE: Inspection of Lake Oakdale Dam
D-1627, Florence County

Dear Mr. Myers:

On April 13th, 2016, the Department (or DHEC) conducted a preliminary inspection of the above-referenced dam. A copy of my inspection report is attached, along with pictures of items observed. **A detailed inspection, as defined in S.C. Reg. 72-1, by a qualified South Carolina licensed professional engineer is required. Documentation of this inspection must be submitted to the Department on or before 7/12/16.**

Through correspondence on 11/2/15 and 2/11/16, the Department has previously requested that you perform routine maintenance of the dam and submit documentation of this to the Department.

Below is a list of the items of concern noted during the inspection on April 13th, 2016 (report enclosed):

- The October flooding event caused large amounts of flow through the auxiliary spillway, scouring an erosional path backwards along the spillway channel to a point that is dangerously close to intersecting the reservoir.
- There are areas around the RH outlet channel which have sloughed down the slope or otherwise eroded, and the riprap in this area appears to be inadequately sized/graded to prevent further erosion.
- Animal burrows were observed on the upstream slope the dam. The holes and burrows must be evaluated by a qualified South Carolina licensed professional engineer to determine whether the structural stability of the dam is affected.
- **An updated Emergency Action Plan (EAP) must be provided to the Department on or before 6/13/16.**

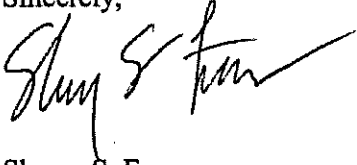
Additionally enclosed, as we discussed at the dam, is a copy of the Dams and Reservoirs Safety Act regulations, and a copy of the list of engineers whom have previously worked with the department on dams.

Return all documentation required by this letter to:

Dam Safety Program
SCDHEC Bureau of Water
2600 Bull Street
Columbia, SC 29201
Or by email to: response@dhec.sc.gov

Response(s) to the items in this letter and associated report are required by the above-listed dates. If timely, adequate responses are not received, then this matter may be referred to the Bureau of Water's Enforcement Section for resolution, which may involve assessment of civil penalties.

Sincerely,



Shawn S. Frazer
Dam Safety Engineer
BOW – Dams & Reservoirs Safety
Sims/Aycock Building

cc: Jill Stewart, P.E.—Bureau of Water
Adam Cannon, Manager, WPC Enforcement
Florence Office – Regional File
File: Lake Oakdale Dam, D-1627

Enclosed: Attachment 1: Pictures
Dam D-1627 Inspection Report: 4-13-16
Emergency Notification and Action Plan Form
Dams & Reservoirs Safety Act Regulations
List of South Carolina Professional Engineers with Dam Experience

Attachment 1: Pictures



Picture 1: Erosion and apparent rodent burrows in upstream slope near auxiliary spillway



Picture 2: Slide/Slough area near RH outlet channel



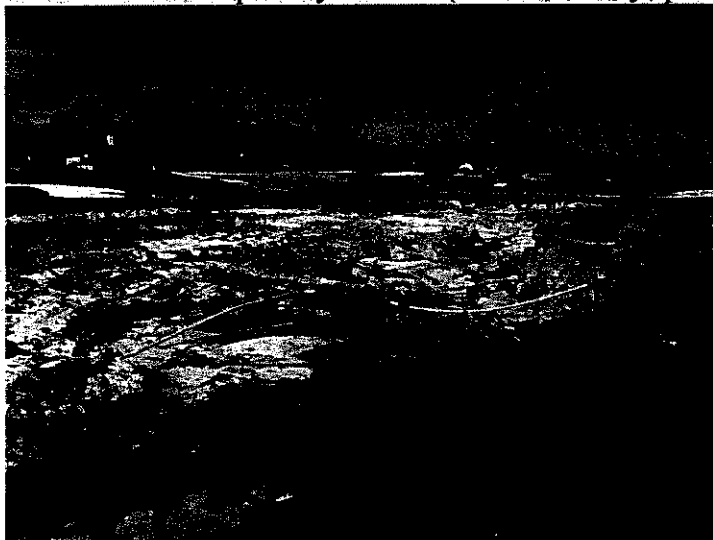
Picture 3: Inappropriately sized riprap near RH outlet channel



Picture 4: Backwards erosion up auxiliary spillway (From RH dam edge, down the aux spillway channel.)



Picture 5: Erosion in spillway channel (From auxiliary spillway)



Picture 6: Erosion in auxiliary spillway channel (Facing towards the spillway)



Preliminary Inspection Report for South Carolina Regulated Dams and Impoundment Structures Regulations R.72-1 through R.72-9

Section I (Owner's Information)

A. Dam Number: D 1627 & Hazard Class C2 B. Name of Dam: Lake Oakdale
C. Inspection Date (04/13/2016) & Time: 11:00 AM D. Date of Last Inspection:
E. Location-County/City: Florence / Florence F. EQC Regional Office: Florence EQC
G. Inspector's Name: Shawn Frazer (Also present: Dan Hallman, Ania Chandler)
H. Owner's Name: The Palms Course at Lake Oakdale, LLC
I. Contact Person (if different from above): Kip Myers
J. Dam Owner's or Contact Person's Phone Numbers: Pro-Shop ##### Office ##### Kip Meyer's Cell #####
K. Dam Owner's or Contact Person's mailing address: Address 1 Address 2 (optional) City State Zip Code Email:

* as of 10/9/16 number disconnected

Section II (Dam Condition)

General Condition Assessment (Select one of the following):

- a) Satisfactory [] b) Fair [] c) Poor [x] d) Unsatisfactory [] e) Not Rated []

Section III (Dam Inspection Checklist)

A. Dam Crest

- i. Vegetation (grass, trees weeds)? Grass, golf cart path
ii. Animal activity observed? None observed
iii. Any obvious alteration or repairs made? None observed
iv. Erosion noticed on crest? None observed.
v. Any visible settlement, misalignment or cracks? Some wide areas of non-level crest along length near outlets that should be monitored, but no significant variance in crest elevation or alignment was observed, and no cracking was observed.

Section III (Dam Inspection Checklist) continued

B. Upstream Slope

- i. Vegetation (grass, trees weeds)? Grass, low-growing weeds
- ii. Animal activity observed? What appear to be animal burrows occur at the water's edge near the auxiliary spillway
- iii. Any obvious alterations or repairs made? None observed.
- iv. Erosion observed on upstream slope? Particularly near auxiliary spillway (but not exclusively), erosion at the water's edge is undercutting the dam slope.
- v. Settlement or cracks visible in slope? Non-uniform slope, but no cracking or significant variance in alignment or elevation was observed.

C. Down Stream Slope

- i. Vegetation (grass, trees weeds)? Grass. Patches of dead grass, owner states that this was spraying that was applied too liberally by the contractor doing the spraying and it got a large section of grass. Ground underneath is firm and not wet.
- ii. Animal activity observed? None observed
- iii. Any obvious alterations or repairs made? None observed
- iv. Erosion observed on down stream slope? Patches of bare sand and a little erosion, likely due to golf cart traffic.
- v. Settlement or cracks visible in slope? Non-uniform slope, but seems to be in better condition than upstream slope. No cracking observed.
- vi. Toe drains flowing? No toe drains observed.
- vii. Any seepage observed? If so, describe location, flow rate, and any turbidity or color within the flow: One damp area of toe near the downstream right outlet pipe. Low area, likely wet due to surface water runoff accumulating.

D. Primary Spillway

- i. Any visible deterioration of structure? Appears to be in good condition.
- ii. Is there an obvious need to repair or replace trash rack? Both trash racks appear to be in good shape.
- iii. Any noticeable problems with debris? None observed
- iv. Is valve or gate present? Gate & valve present.

E. Outlet Pipe

- i. Any water visibly flowing or leaking outside of the discharge pipe? None observed
- ii. Describe any deflection or damage observed to the pipe: In both spillways, CMP is beginning to corrode
- iii. Visible condition of outlet channel: In channels of both outlets, above and around the pipe, there are areas of erosion that are creating holes into the ground, around and through the riprap. One area of sloughing at the RH outlet. Riprap is of poor quality/size.

F. Auxiliary (Emergency) Spillway

- i. Noticeable obstructions to flow? The vegetation that is growing in and around the low fence on the upstream side of the auxiliary spillway should be trimmed so that water can freely flow if the spillway becomes active.
- ii. Animal activity observed? None observed.
- iii. Any noticeable deterioration in the approach or discharge channel? Extreme erosion from the October flooding cut a long path that eroded backwards towards the auxiliary spillway. Necessitates a detailed inspection and repair.
- iv. Any visible deterioration of structure's crest? Minor erosion from October flooding, but seems in relatively good condition comparatively.

F. Auxiliary (Emergency) Spillway continued

v. If applicable, any observed exposure of rebar reinforcement? N/A

vi. If applicable, any visible leakage below concrete spillway? N/A

H. Downstream/Hazard Class Issues

i. Any noticeable changes immediately downstream of the dam that affects the hazard classification? No.
None observed.

I. Emergency Action Plan (EAP)

i. Emergency Action Plan provided by owner? Mailing a copy with this report.

ii. Does EAP contains emergency alert notification plan? If so, when was it last updated? _____

iii. Does EAP contain specific actions to take if the dam has failed or is near failure? _____

Section IV (Conclusions)

General comments and recommendations:

The damage sustained from the October 2015 flooding event is a serious deficiency that needs to be addressed, and necessitates a detailed inspection of the dam by a South Carolina licensed professional engineer.

The erosion of the upstream slope near the auxiliary spillway has revealed what appear to be animal burrows into the embankment. These should be assessed for remediation.

As discussed with the owner on the dam, a copy of the dams regulations and a copy of the list of engineers that have previously worked on dams with DHEC is included with this report.

Preliminary Dam Inspection Disclaimer:

The information contained in the preliminary inspection report is intended as an aid to identify those dams that require maintenance and/or repair actions to reduce their danger to human life or property only. It is not intended as professional engineering or consulting advice for conditions or situations present at individual dams. It is not a substitute for a detailed inspection, nor does it replace the need for services provided by registered professional engineers. If your dam is experiencing an unusual situation consult with engineering professionals to find an appropriate remedy. Preliminary inspections conducted by South Carolina Department of Health and Environmental Control (the Department) are provided "AS IS" and "as available", without warranties of any kind, either express or implied. Preliminary inspections consist only of a visual but technical examination of the dam and its appurtenant works. All findings are based solely on visual observations of the inspector at the time of the inspection. Common law holds that the storage of water is a hazardous activity and the Department does not assume any responsibility or risk for your actions or inactions. Dam owners are responsible for the safe operations and maintenance of their impoundment structures.