

ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND, GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE

WATER LEVEL - BELOW DAM CREST ~12 FT BELOW SPILLWAY ~4 FT GAGE ROD - _____
GROUND MOISTURE CONDITION: DRY ^x WET _____ SNOWCOVER - _____ OTHER _____

UPSTREAM SLOPE	<p>PROBLEMS NOTED: <input type="checkbox"/> (0) NONE <input type="checkbox"/> (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED <input type="checkbox"/> (2) WAVE EROSION-WITH SCARPS <input type="checkbox"/> (3) CRACKS WITH DISPLACEMENT <input type="checkbox"/> (4) SINKHOLE <input type="checkbox"/> (5) APPEARS TOO STEEP <input type="checkbox"/> (6) DEPRESSIONS OR BULGES <input type="checkbox"/> (7) SLIDES <input type="checkbox"/> (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED <input checked="" type="checkbox"/> (9) OTHER <u>SOME REES NEED TO BE REMOVED FROM SLOPE</u></p> <p>COMMENTS: <u>OWNER IN PROCESS OF REMOVING YOUNG TREES FROM UPSTREAM SLOPE OF DAM.</u></p> <p>_____</p> <p>_____</p>	UPSTREAM SLOPE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
CREST	<p>PROBLEMS NOTED: <input type="checkbox"/> (10) NONE <input checked="" type="checkbox"/> (11) RUTS OR PUDDLES <input type="checkbox"/> (12) EROSION <input type="checkbox"/> (13) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (14) SINKHOLES <input type="checkbox"/> (15) NOT WIDE ENOUGH <input type="checkbox"/> (16) LOW AREA <input type="checkbox"/> (17) MISALIGNMENT <input type="checkbox"/> (18) INADEQUATE SURFACE DRAINAGE <input type="checkbox"/> (19) OTHER _____</p> <p>COMMENTS: <u>THERE WERE SOME DEEP RUTS FROM VEHICLE TRAFFIC ON TOP OF THE CREST.</u></p> <p>_____</p> <p>_____</p>	CREST	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
DOWNSTREAM SLOPE	<p>PROBLEMS NOTED: <input type="checkbox"/> (20) NONE <input type="checkbox"/> (21) LIVESTOCK DAMAGE <input type="checkbox"/> (22) EROSION OR GULLIES <input type="checkbox"/> (23) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (24) SINKHOLE <input type="checkbox"/> (25) APPEARS TOO STEEP <input type="checkbox"/> (26) DEPRESSION OR BULGES <input type="checkbox"/> (27) SLIDE <input type="checkbox"/> (28) SOFT AREAS <input checked="" type="checkbox"/> (29) OTHER <u>EXCESS VEGETATION BUT NEW OWNER SAID HE WILL BEGIN MWOING SCHEDULE ONCE GROUND DRIES.</u></p> <p>COMMENTS: <u>SOME ANIMAL BURROWS WERE FOUND.</u></p> <p>_____</p> <p>_____</p>	DOWNSTREAM SLOPE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
SEEPAGE	<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (30) NONE <input type="checkbox"/> (31) SATURATED EMBANKMENT AREA <input type="checkbox"/> (32) SEEPAGE EXITS ON EMBANKMENT <input type="checkbox"/> (33) SEEPAGE EXITS AT POINT SOURCE <input type="checkbox"/> (34) SEEPAGE AREA AT TOE <input type="checkbox"/> (35) FLOW ADJACENT TO OUTLET <input type="checkbox"/> (36) SEEPAGE INCREASED/MUDDY DRAIN OUTFALLS SEEN <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> (37) FLOW INCREASED/MUDDY <input type="checkbox"/> (38) DRAIN DRY/OBSTRUCTED <input type="checkbox"/> (39) OTHER _____</p> <p>COMMENTS: <u>NO SEEPAGE WAS FOUND.</u></p> <p>_____</p> <p>_____</p>	SEEPAGE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
OUTLET	<p>PROBLEMS NOTED: <input type="checkbox"/> (40) NONE <input type="checkbox"/> (41) NO OUTLET FOUND <input type="checkbox"/> (42) POOR OPERATING ACCESS <input type="checkbox"/> (43) INOPERABLE <input type="checkbox"/> (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION <input type="checkbox"/> NO <input type="checkbox"/> YES INTERIOR INSPECTED <input type="checkbox"/> (120) NO <input type="checkbox"/> (121) YES <input type="checkbox"/> (46) CONDUIT DETERIORATED OR COLLAPSED <input type="checkbox"/> (47) JOINTS DISPLACED <input type="checkbox"/> (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> (49) OTHER _____</p> <p>COMMENTS: <u>DID NOT SEE SEPERATE OUTLET WORKS FROM SPILLWAY.</u></p> <p>_____</p> <p>_____</p>	OUTLET	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
SPILLWAY	<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (50) NONE <input type="checkbox"/> (51) NO EMERGENCY SPILLWAY FOUND <input type="checkbox"/> (52) EROSION WITH BACKCUTTING <input checked="" type="checkbox"/> (53) CRACK - WITH DISPLACEMENT <input type="checkbox"/> (54) APPEARS TO BE STRUCTURALLY INADEQUATE <input type="checkbox"/> (55) APPEARS TOO SMALL <input type="checkbox"/> (56) INADEQUATE FREEBOARD <input type="checkbox"/> (57) FLOW OBSTRUCTED <input type="checkbox"/> (58) CONCRETE DETERIORATED/UNDERMINED <input type="checkbox"/> (59) OTHER _____</p> <p>COMMENTS: <u>SEEM ALONG SPILLWAY THAT WAS REPAIRED WAS NOT REPAIRED PROPERLY AND IS ALREADY FALLING APART. NEW OWNERS SAID THEY WILL REPAIR PROPERLY.</u></p> <p>_____</p> <p>_____</p>	SPILLWAY	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>

MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
<p>EXISTING INSTRUMENTATION FOUND: <input type="checkbox"/> (110) NONE <input type="checkbox"/> (111) GAGE ROD <input type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES</p> <p><input type="checkbox"/> (114) SURVEY MONUMENTS <input checked="" type="checkbox"/> (115) OTHER</p> <p>MONITORING OF INSTRUMENTATION: <input type="checkbox"/> (116) NO <input type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input checked="" type="checkbox"/> (118) OWNER <input type="checkbox"/> (119) ENGINEER</p> <p>COMMENTS: <u>FLOAT GAUGE TO MEASURE DEPTHWATER LOSS, OWNERS SAID THAT IT IS REMOTELY MONITORED.</u></p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE</p> <p><input checked="" type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input checked="" type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE</p> <p><input type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY</p> <p><input type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input type="checkbox"/> (68) OTHER</p> <p>COMMENTS: <u>OWNER IS IN PROCESS OF REMOVING WEEDS AND TREES FROM DOWNSTREAM SLOPE OF DAM AND WILL PROPERLY REPAIR THE SEAM ALONG THE SPILLWAY. NEEDS TO ERADICATE RODENTS FROM DIGGIN HOLES</u></p>	<p>REMARKS: <u>DAM OWNER INQUIRED ABOUT THE POSSIBILITY OF HAVING DAM RE-CLASSIFIED (FROM HIGH HAZARD TO SIGNIFICANT HAZARD), BASED ON A NEW SURVEY OF THE SIZE OF THE RESERVOIR HE PLANS TO CONDUCT; DAM-OWNER STILL DETERMINED TO SURVEY THE DAM (ADVISED HIM THAT ENGINEER/PROFESSIONAL SURVEYOR MUST CONDUCT SURVEY IN ORDER TO RE-CLASSIFY DAM. DAM CONDITION IS GREAT AND NEW OWNER IS SCHEDULED TO MAINTAIN THE VEGETATION PROPERLY ONCE THE GROUND DRIES OUT. SOME ANIMAL BURROWS</u></p> <p><u>Based on this Safety Inspection and recent file review, the overall condition is determined to be:</u></p> <p><input checked="" type="checkbox"/> (71) SATISFACTORY <input checked="" type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input type="checkbox"/> (73) UNSATISFACTORY</p>

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☐ (80) PROVIDE ADDITIONAL RIPRAP: _____
- ☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE: _____
- ☒ (82) CLEAR TREES AND/OR BRUSH FROM: U/S & D/S SLOPES
- ☒ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: _____
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: _____
- ☐ (85) PROVIDE SURFACE DRAINAGE FOR: _____
- ☐ (86) MONITOR: _____
- ☐ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____
- ☐ (88) OTHER: _____
- ☐ (89) OTHER: _____

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:

(Plan & Specification must be approved by State Engineer prior to construction)

- ☐ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: _____
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____
- ☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: _____
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____
- ☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS: _____
- ☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____
- ☐ (97) OTHER: _____
- ☐ (98) OTHER: _____
- ☐ (99) OTHER: _____

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- ☒ (101) FULL STORAGE
- ☐ (102) CONDITIONAL FULL STORAGE
- ☐ (103) RECOMMENDED RESTRICTION
- RESTRICTED LEVEL
OFFICIAL ORDER TO FOLLOW
- _____ FT BELOW DAMS CREST
 _____ FT BELOW SPILLWAY CREST
 _____ FT GAGE HEIGHT
 _____ NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's
Signature _____Owner's
Signature _____

DATE: 01/09/2019

INSPECTED BY

OWNER/OWNER'S REPRESENTATIVE

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human life is expected and damage will occur only to the dam owner's property.

National Operation & Maintenance Manual

U.S. Department of Agriculture
Natural Resources Conservation Service

WATERSHED STRUCTURE INSPECTION REPORT

Date of Inspection July 2016

County Craighead Watershed Big Creek Site 2

Field Office Jonesboro Sponsor Arkansas Game & Fish Commission

Legal Description, Sec _____ T _____ R _____

"YES" responses need explanation added to "Remarks" section. (ie: What? Where? Extent?)

"NO" responses indicate problems not observed during inspection.

Non-applicable items should be lined out.

ITEM	YES	NO	REMARKS
1. General Conditions			
a. Alterations to dam?		✓	
b. Development in downstream floodplain?		✓	
c. Development around reservoir?		✓	
2. Embankment			
a. Is vegetative cover inadequate?		✓	
b. Are trees growing on either slope?		✓	
c. Is brush/weed control needed?		✓	
d. Are trees growing at waterline?	✓		
e. Is drift debris present?		✓	
f. Are cracks, settlement, or bulges present?		✓	
g. Are animal burrows present?		✓	
h. Are trails present?		✓	
3. Front Slope Protection			
a. Any wave damage observed?		✓	
b. Is riprap inadequate?		✓	
c. Are rodent holes present?		✓	
4. Inlet Structure and Gate Valves			
a. Does concrete exhibit deterioration?		✓	
b. Is concrete reinforcement exposed?		✓	
c. Was leakage observed inside inlet?		✓	
d. Any corrosion of metal appurtenances?		✓	
e. Is debris guard obstructed?		✓	
f. Is debris guard corroded?		✓	
g. Is gate stem broken or bent?		✓	
h. Are components missing?		✓	
i. Was gate determined not operational?		✓	Date gate last operated: Not Sure
j. Has inlet been modified to alter water surface?		✓	
5. Principal Spillway Conduit			
a. Is concrete conduit deteriorated?		✓	
b. Is metal conduit corroded?		✓	
c. Was leakage observed at pipe joints?		✓	

National Operation & Maintenance Manual

ITEM	YES	NO	REMARKS
6. Auxiliary Spillway			
a. Is vegetative cover inadequate?		✓	
b. Any animal trails observed?		✓	
c. Any vehicular trails observed?		✓	
d. Is flow area obstructed?		✓	
e. Is control section disturbed?		✓	
7. Principal Spillway Release Channel			
a. Does scour hole appear unstable?		✓	
b. Any boils observed?		✓	
c. Is riprap inadequate?		✓	
d. Any seepage observed?		✓	
e. Is conduit outlet submerged?		✓	
f. Is conduit outlet not properly supported?		✓	
g. Is outlet channel obstructed?		✓	
h. Is outlet channel degrading?		✓	
i. Is foundation drain submerged?		✓	
j. Is foundation drain rodent barrier missing?		✓	
k. Is foundation drain not functional?		✓	
8. Perimeter Fence			
a. Is fence inadequate?		✓	
b. Are gates open?		✓	
9. Easements/landrights			
a. Are terms of landrights out of compliance?		✓	
b. Are landrights boundaries being encroached upon?		✓	
ACTIONS TAKEN: (Identify all work performed preceding 12 months by sponsors and/or NRCS, including approximate cost and date completed).			

Dam was bushhogged in 2015.

**ACTIONS NEEDED: (Identify items by priority: low - next 12 months; high - as soon as possible).
(Indicate date assistance requested; technical or financial).**

High - Trees at waterline need sprayed and cut.

Sponsor Representative

(Adapted from Oklahoma NRCS)

/s/ Craig Roach, Civil Engineer

NRCS Representative

National Operation & Maintenance Manual

U.S. Department of Agriculture
Natural Resources Conservation Service

WATERSHED STRUCTURE INSPECTION REPORT

Date of Inspection July 2016

County Craighead Watershed Big Creek Site 13

Field Office Jonesboro Sponsor Big Creek Watershed Improvement District

Legal Description, Sec _____ T _____ R _____

"YES" responses need explanation added to "Remarks" section. (ie: What? Where? Extent?)
"NO" responses indicate problems not observed during inspection.
Non-applicable items should be lined out.

ITEM	YES	NO	REMARKS
1. General Conditions			
a. Alterations to dam?		✓	
b. Development in downstream floodplain?	✓		Vacant Subdivision immediately downstream of dam. Lots are for sale and will eventually be built on.
c. Development around reservoir?		✓	
2. Embankment			
a. Is vegetative cover inadequate?		✓	
b. Are trees growing on either slope?		✓	Trees are growing in two cross fences.
c. Is brush/weed control needed?		✓	
d. Are trees growing at waterline?		✓	
e. Is drift debris present?		✓	
f. Are cracks, settlement, or bulges present?		✓	
g. Are animal burrows present?		✓	
h. Are trails present?		✓	
3. Front Slope Protection			
a. Any wave damage observed?		✓	
b. Is riprap inadequate?			N/A
c. Are rodent holes present?		✓	
4. Inlet Structure and Gate Valves			
a. Does concrete exhibit deterioration?		✓	
b. Is concrete reinforcement exposed?		✓	
c. Was leakage observed inside inlet?		✓	
d. Any corrosion of metal appurtenances?		✓	
e. Is debris guard obstructed?	✓		Beaver activity has inlet port hole partly clogged.
f. Is debris guard corroded?		✓	
g. Is gate stem broken or bent?		✓	
h. Are components missing?		✓	
i. Was gate determined not operational?		✓	Date gate last operated: Not sure
j. Has inlet been modified to alter water surface?		✓	
5. Principal Spillway Conduit			
a. Is concrete conduit deteriorated?		✓	
b. Is metal conduit corroded?		✓	
c. Was leakage observed at pipe joints?		✓	

National Operation & Maintenance Manual

ITEM	YES	NO	REMARKS
6. Auxiliary Spillway			
a. Is vegetative cover inadequate?		✓	
b. Any animal trails observed?		✓	
c. Any vehicular trails observed?		✓	
d. Is flow area obstructed?		✓	
e. Is control section disturbed?		✓	
7. Principal Spillway Release Channel			
a. Does scour hole appear unstable?		✓	
b. Any boils observed?		✓	
c. Is riprap inadequate?			N/A
d. Any seepage observed?		✓	
e. Is conduit outlet submerged?		✓	
f. Is conduit outlet not properly supported?		✓	
g. Is outlet channel obstructed?		✓	
h. Is outlet channel degrading?		✓	
i. Is foundation drain submerged?		✓	
j. Is foundation drain rodent barrier missing?		✓	
k. Is foundation drain not functional?		✓	
8. Perimeter Fence			
a. Is fence inadequate?			No fence
b. Are gates open?			No gates or fence
9. Easements/landrights			
a. Are terms of landrights out of compliance?		✓	
b. Are landrights boundaries being encroached upon?		✓	
ACTIONS TAKEN: (Identify all work performed preceding 12 months by sponsors and/or NRCS, including approximate cost and date completed).			

Dam was bushhogged in Fall 2015.

**ACTIONS NEEDED: (Identify items by priority: low - next 12 months; high - as soon as possible).
(Indicate date assistance requested; technical or financial).**

Low - Beaver activity in pool area has riser port hole partially blocked.

Sponsor Representative

(Adapted from Oklahoma NRCS)

/s/ Craig Roach, Civil Engineer

NRCS Representative

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U.S. Department of Agriculture
Natural Resources Conservation Service

WATERSHED STRUCTURE INSPECTION REPORT

Date of Inspection July 2016

County Craighead Watershed Big Creek Site 21

Field Office Jonesboro Sponsor Big Creek Watershed Improvement District

Legal Description, Sec _____ T _____ R _____

"YES" responses need explanation added to "Remarks" section. (ie: What? Where? Extent?)
"NO" responses indicate problems not observed during inspection.
Non-applicable items should be lined out.

ITEM	YES	NO	REMARKS
1. General Conditions			
a. Alterations to dam?		✓	
b. Development in downstream floodplain?		✓	
c. Development around reservoir?		✓	
2. Embankment			
a. Is vegetative cover inadequate?		✓	
b. Are trees growing on either slope?		✓	
c. Is brush/weed control needed?		✓	
d. Are trees growing at waterline?		✓	
e. Is drift debris present?		✓	
f. Are cracks, settlement, or bulges present?		✓	
g. Are animal burrows present?		✓	
h. Are trails present?	✓		Major ATV Trails present.
3. Front Slope Protection			
a. Any wave damage observed?	✓		
b. Is riprap inadequate?		✓	
c. Are rodent holes present?		✓	
4. Inlet Structure and Gate Valves			
a. Does concrete exhibit deterioration?		✓	
b. Is concrete reinforcement exposed?		✓	
c. Was leakage observed inside inlet?		✓	
d. Any corrosion of metal appurtenances?		✓	
e. Is debris guard obstructed?		✓	
f. Is debris guard corroded?		✓	
g. Is gate stem broken or bent?		✓	
h. Are components missing?		✓	
i. Was gate determined not operational?		✓	Date gate last operated: Not Sure
j. Has inlet been modified to alter water surface?		✓	
5. Principal Spillway Conduit			
a. Is concrete conduit deteriorated?		✓	
b. Is metal conduit corroded?		✓	
c. Was leakage observed at pipe joints?		✓	

National Operation & Maintenance Manual

ITEM	YES	NO	REMARKS
6. Auxiliary Spillway			
a. Is vegetative cover inadequate?		✓	
b. Any animal trails observed?		✓	
c. Any vehicular trails observed?		✓	
d. Is flow area obstructed?		✓	
e. Is control section disturbed?		✓	
7. Principal Spillway Release Channel			
a. Does scour hole appear unstable?		✓	
b. Any boils observed?		✓	
c. Is riprap inadequate?		✓	
d. Any seepage observed?		✓	
e. Is conduit outlet submerged?		✓	
f. Is conduit outlet not properly supported?		✓	
g. Is outlet channel obstructed?		✓	
h. Is outlet channel degrading?		✓	
i. Is foundation drain submerged?		✓	
j. Is foundation drain rodent barrier missing?		✓	
k. Is foundation drain not functional?		✓	
8. Perimeter Fence			
a. Is fence inadequate?		✓	
b. Are gates open?		✓	
9. Easements/landrights			
a. Are terms of landrights out of compliance?		✓	
b. Are landrights boundaries being encroached upon?		✓	
ACTIONS TAKEN: (Identify all work performed preceding 12 months by sponsors and/or NRCS, including approximate cost and date completed).			

None.

**ACTIONS NEEDED: (Identify items by priority: low - next 12 months; high - as soon as possible).
(Indicate date assistance requested; technical or financial).**

Medium Priority - Emergency Spillway needs repaired on one side of control section. Haunch on right side of frontslope needs repaired as well as an ATV trail that has started washing on front slope that needs repaired.
Estimated Cost - \$3500

Sponsor Representative

(Adapted from Oklahoma NRCS)

/s/ Craig Roach, Civil Engineer

NRCS Representative

ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND, GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE

WATER LEVEL - BELOW DAM CREST ~2 FT BELOW SPILLWAY ~1 in. FT GAGE ROD -
GROUND MOISTURE CONDITION: DRY x WET SNOWCOVER OTHER

	UPSTREAM SLOPE	CREST	DOWNSTREAM SLOPE	SEEPAGE	OUTLET	SPILLWAY
PROBLEMS NOTED:	<input type="checkbox"/> (0) NONE <input checked="" type="checkbox"/> (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED <input checked="" type="checkbox"/> (2) WAVE EROSION-WITH SCARPS <input type="checkbox"/> (3) CRACKS WITH DISPLACEMENT <input type="checkbox"/> (4) SINKHOLE <input type="checkbox"/> (5) APPEARS TOO STEEP <input type="checkbox"/> (6) DEPRESSIONS OR BULGES <input type="checkbox"/> (7) SLIDES <input type="checkbox"/> (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED <input type="checkbox"/> (9) OTHER _____	PROBLEMS NOTED: <input checked="" type="checkbox"/> (10) NONE <input type="checkbox"/> (11) RUTS OR PUDDLES <input type="checkbox"/> (12) EROSION <input type="checkbox"/> (13) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (14) SINKHOLES <input type="checkbox"/> (15) NOT WIDE ENOUGH <input type="checkbox"/> (16) LOW AREA <input type="checkbox"/> (17) MISALIGNMENT <input type="checkbox"/> (18) INADEQUATE SURFACE DRAINAGE <input type="checkbox"/> (19) OTHER _____	PROBLEMS NOTED: <input type="checkbox"/> (20) NONE <input type="checkbox"/> (21) LIVESTOCK DAMAGE <input checked="" type="checkbox"/> (22) EROSION OR GULLIES <input type="checkbox"/> (23) CRACKS - WITH DISPLACEMENT <input checked="" type="checkbox"/> (24) SINKHOLE <input type="checkbox"/> (25) APPEARS TOO STEEP <input checked="" type="checkbox"/> (26) DEPRESSION OR BULGES <input type="checkbox"/> (27) SLIDE <input checked="" type="checkbox"/> (28) SOFT AREAS <input checked="" type="checkbox"/> (29) OTHER CUT-OFF OF TOE _____	PROBLEMS NOTED: <input type="checkbox"/> (30) NONE <input type="checkbox"/> (31) SATURATED EMBANKMENT AREA <input checked="" type="checkbox"/> (32) SEEPAGE EXITS ON EMBANKMENT <input checked="" type="checkbox"/> (33) SEEPAGE EXITS AT POINT SOURCE <input checked="" type="checkbox"/> (34) SEEPAGE AREA AT TOE <input type="checkbox"/> (35) FLOW ADJACENT TO OUTLET <input type="checkbox"/> (36) SEEPAGE INCREASED/MUDDY DRAIN OUTFALLS SEEN <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> (37) FLOW INCREASED/MUDDY <input type="checkbox"/> (38) DRAIN DRY/OBSTRUCTED <input type="checkbox"/> (39) OTHER _____	PROBLEMS NOTED: <input type="checkbox"/> (40) NONE <input type="checkbox"/> (41) NO OUTLET FOUND <input type="checkbox"/> (42) POOR OPERATING ACCESS <input type="checkbox"/> (43) INOPERABLE <input checked="" type="checkbox"/> (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES INTERIOR INSPECTED <input type="checkbox"/> (120) NO <input type="checkbox"/> (121) YES <input type="checkbox"/> (46) CONDUIT DETERIORATED OR COLLAPSED <input type="checkbox"/> (47) JOINTS DISPLACED <input type="checkbox"/> (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> (49) OTHER _____	PROBLEMS NOTED: <input checked="" type="checkbox"/> (50) NONE <input type="checkbox"/> (51) NO EMERGENCY SPILLWAY FOUND <input type="checkbox"/> (52) EROSION WITH BACKCUTTING <input type="checkbox"/> (53) CRACK - WITH DISPLACEMENT <input type="checkbox"/> (54) APPEARS TO BE STRUCTURALLY INADEQUATE <input type="checkbox"/> (55) APPEARS TOO SMALL <input type="checkbox"/> (56) INADEQUATE FREEBOARD <input checked="" type="checkbox"/> (57) FLOW OBSTRUCTED <input type="checkbox"/> (58) CONCRETE DETERIORATED/UNDERMINED <input type="checkbox"/> (59) OTHER _____
COMMENTS:	RIP-RAP IS MISSING IN PLACES, SPARCE, AND WEATHERED. EROSION IS OCCURRING IN MULTIPLE LOCATIONS.		MULTIPLE SMALL DEPRESSIONS AND BULGES. EROSION APPEARS TO BE INCREASING. ANIMAL BURROWS. SINKHOLE WITH INCREASED/MUDDY SEEPAGE EVIDENCE OF IMPROPER TREE REMOVAL	CENTRAL AR WATER (CAW) WAS CONTACTED, TESTED WATER, CLAIMS NOT THEIRS)	OUTLET WORKS IS BEHIND SHOPPING CENTER; NEEDS TO BE INSPECTED	

MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
<p>EXISTING INSTRUMENTATION FOUND: <input checked="" type="checkbox"/> (110) NONE <input type="checkbox"/> (111) GAGE ROD <input type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES</p> <p><input type="checkbox"/> (114) SURVEY MONUMENTS <input type="checkbox"/> (115) OTHER</p> <p>MONITORING OF INSTRUMENTATION: <input type="checkbox"/> (116) NO <input type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input type="checkbox"/> (118) OWNER <input type="checkbox"/> (119) ENGINEER</p> <p>COMMENTS: NO EXISTING INSTRUMENTATION. NO OWNER INSPECTION HAS BEEN SUBMITTED.</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE</p> <p><input checked="" type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input checked="" type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE</p> <p><input checked="" type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY</p> <p><input type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input type="checkbox"/> (68) OTHER</p> <p>COMMENTS:</p>	<p>REMARKS: NO EAP. INCREASED/MUDDY SEEPAGE AT SINKHOLE MAIN CONCERN. IMPROPER TREE REMOVAL OF TREES OVER 6 IN.</p> <p>Based on this Safety Inspection and recent file review, the overall condition is determined to be:</p> <p><input type="checkbox"/> (71) SATISFACTORY <input checked="" type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input type="checkbox"/> (73) UNSATISFACTORY</p>
MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
GOOD	GOOD	GOOD
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
POOR	POOR	POOR

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☒ (80) PROVIDE ADDITIONAL RIPRAP: UPSTREAM SLOPE
- ☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE:
- ☒ (82) CLEAR TREES AND/OR BRUSH FROM: SIGNIFICANT TREE AND BRUSH COVER ON DOWNSTREAM SLOPE
- ☒ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: DOWNSTREAM SLOPE
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE:
- ☐ (85) PROVIDE SURFACE DRAINAGE FOR:
- ☒ (86) MONITOR: SEEPAGE
- ☒ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN:
- ☐ (88) OTHER:
- ☐ (89) OTHER:
- ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:
(Plan & Specification must be approved by State Engineer prior to construction)
- ☒ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM:
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF:
- ☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM:
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE:
- ☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY:
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS:
- ☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET:
- ☐ (97) OTHER:
- ☐ (98) OTHER:
- ☐ (99) OTHER:

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- ☐ (101) FULL STORAGE
- ☒ (102) CONDITIONAL FULL STORAGE
- ☐ (103) RECOMMENDED RESTRICTION
- RESTRICTED LEVEL
OFFICIAL ORDER TO FOLLOW
- _____ FT BELOW DAMS CREST
 _____ FT BELOW SPILLWAY CREST
 _____ FT GAGE HEIGHT
 NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's
Signature _____Owner's
Signature _____

DATE: 1/25/2018

INSPECTED BY

OWNER/OWNER'S REPRESENTATIVE

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human life is expected and damage will occur only to the dam owner's property.

National Operation & Maintenance Manual

U.S. Department of Agriculture
Natural Resources Conservation Service

WATERSHED STRUCTURE INSPECTION REPORT

Date of Inspection 8-25-16

County Cross Watershed Caney Creek Site 4

Field Office Wynne Sponsor Caney Creek Watershed Improvement District

Legal Description, Sec _____ T _____ R _____

"YES" responses need explanation added to "Remarks" section. (ie: What? Where? Extent?)

"NO" responses indicate problems not observed during inspection.

Non-applicable items should be lined out.

ITEM	YES	NO	REMARKS
1. General Conditions			
a. Alterations to dam?		✓	
b. Development in downstream floodplain?		✓	
c. Development around reservoir?		✓	
2. Embankment			
a. Is vegetative cover inadequate?		✓	
b. Are trees growing on either slope?	✓		
c. Is brush/weed control needed?	✓		
d. Are trees growing at waterline?	✓		
e. Is drift debris present?		✓	
f. Are cracks, settlement, or bulges present?		✓	
g. Are animal burrows present?		✓	
h. Are trails present?		✓	
3. Front Slope Protection			
a. Any wave damage observed?		✓	
b. Is riprap inadequate?		✓	
c. Are rodent holes present?		✓	
4. Inlet Structure and Gate Valves			
a. Does concrete exhibit deterioration?		✓	
b. Is concrete reinforcement exposed?		✓	
c. Was leakage observed inside inlet?		✓	
d. Any corrosion of metal appurtenances?		✓	
e. Is debris guard obstructed?		✓	
f. Is debris guard corroded?		✓	
g. Is gate stem broken or bent?		✓	
h. Are components missing?		✓	
i. Was gate determined not operational?		✓	Date gate last operated: <u>unknown</u>
j. Has inlet been modified to alter water surface?		✓	
5. Principal Spillway Conduit			
a. Is concrete conduit deteriorated?		✓	
b. Is metal conduit corroded?		✓	
c. Was leakage observed at pipe joints?		✓	

National Operation & Maintenance Manual

ITEM	YES	NO	REMARKS
6. Auxiliary Spillway			
a. Is vegetative cover inadequate?		✓	
b. Any animal trails observed?		✓	
c. Any vehicular trails observed?		✓	
d. Is flow area obstructed?		✓	
e. Is control section disturbed?		✓	
7. Principal Spillway Release Channel			
a. Does scour hole appear unstable?		✓	
b. Any boils observed?		✓	
c. Is riprap inadequate?	✓		
d. Any seepage observed?		✓	
e. Is conduit outlet submerged?		✓	
f. Is conduit outlet not properly supported?	✓		
g. Is outlet channel obstructed?		✓	
h. Is outlet channel degrading?	✓		
i. Is foundation drain submerged?		✓	
j. Is foundation drain rodent barrier missing?		✓	
k. Is foundation drain not functional?		✓	
8. Perimeter Fence			
a. Is fence inadequate?		✓	
b. Are gates open?		✓	
9. Easements/landrights			
a. Are terms of landrights out of compliance?		✓	
b. Are landrights boundaries being encroached upon?		✓	
ACTIONS TAKEN: (Identify all work performed preceding 12 months by sponsors and/or NRCS, including approximate cost and date completed).			

None.

**ACTIONS NEEDED: (Identify items by priority: low - next 12 months; high - as soon as possible).
(Indicate date assistance requested; technical or financial).**

Dam needs bushhogged in Fall 2016. Spillway channel and conduit support need stabilization.

Sponsor Representative

(Adapted from Oklahoma NRCS)

/s/ Caleb Henry, Civil Engineer

NRCS Representative

National Operation & Maintenance Manual

U.S. Department of Agriculture
Natural Resources Conservation Service

WATERSHED STRUCTURE INSPECTION REPORT

Date of Inspection 8-25-16

County Cross Watershed Caney Creek Site 5

Field Office Wynne Sponsor Caney Creek Watershed Improvement District

Legal Description, Sec _____ T _____ R _____

"YES" responses need explanation added to "Remarks" section. (ie: What? Where? Extent?)
"NO" responses indicate problems not observed during inspection.
Non-applicable items should be lined out.

ITEM	YES	NO	REMARKS
1. General Conditions			
a. Alterations to dam?		✓	
b. Development in downstream floodplain?		✓	
c. Development around reservoir?		✓	
2. Embankment			
a. Is vegetative cover inadequate?		✓	
b. Are trees growing on either slope?		✓	
c. Is brush/weed control needed?	✓		
d. Are trees growing at waterline?		✓	
e. Is drift debris present?		✓	
f. Are cracks, settlement, or bulges present?		✓	
g. Are animal burrows present?		✓	
h. Are trails present?		✓	
3. Front Slope Protection			
a. Any wave damage observed?		✓	
b. Is riprap inadequate?		✓	
c. Are rodent holes present?		✓	
4. Inlet Structure and Gate Valves			
a. Does concrete exhibit deterioration?		✓	
b. Is concrete reinforcement exposed?		✓	
c. Was leakage observed inside inlet?		✓	
d. Any corrosion of metal appurtenances?		✓	
e. Is debris guard obstructed?	✓		Soil accumulation on debris guard
f. Is debris guard corroded?		✓	
g. Is gate stem broken or bent?		✓	
h. Are components missing?		✓	
i. Was gate determined not operational?		✓	Date gate last operated: unknown
j. Has inlet been modified to alter water surface?		✓	
5. Principal Spillway Conduit			
a. Is concrete conduit deteriorated?		✓	
b. Is metal conduit corroded?		✓	
c. Was leakage observed at pipe joints?		✓	

National Operation & Maintenance Manual

ITEM	YES	NO	REMARKS
6. Auxiliary Spillway			
a. Is vegetative cover inadequate?		✓	
b. Any animal trails observed?		✓	
c. Any vehicular trails observed?		✓	
d. Is flow area obstructed?		✓	
e. Is control section disturbed?		✓	
7. Principal Spillway Release Channel			
a. Does scour hole appear unstable?		✓	
b. Any boils observed?		✓	
c. Is riprap inadequate?		✓	
d. Any seepage observed?		✓	
e. Is conduit outlet submerged?		✓	
f. Is conduit outlet not properly supported?		✓	
g. Is outlet channel obstructed?		✓	
h. Is outlet channel degrading?		✓	
i. Is foundation drain submerged?		✓	
j. Is foundation drain rodent barrier missing?		✓	
k. Is foundation drain not functional?		✓	
8. Perimeter Fence			
a. Is fence inadequate?		✓	
b. Are gates open?		✓	
9. Easements/landrights			
a. Are terms of landrights out of compliance?		✓	
b. Are landrights boundaries being encroached upon?		✓	

ACTIONS TAKEN: (Identify all work performed preceding 12 months by sponsors and/or NRCS, including approximate cost and date completed).

None.

**ACTIONS NEEDED: (Identify items by priority: low - next 12 months; high - as soon as possible).
(Indicate date assistance requested; technical or financial).**

Dam needs bushhogged in Fall 2016.

Sponsor Representative

(Adapted from Oklahoma NRCS)

/s/ Caleb Henry, Civil Engineer

NRCS Representative

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U.S. Department of Agriculture
Natural Resources Conservation Service

WATERSHED STRUCTURE INSPECTION REPORT

Date of Inspection 2/29/2016

County Yell Watershed Cedar-Piney Site 2

Field Office Danville FSC Sponsor Yell County Conservation District

Legal Description, Sec _____ T _____ R _____

"YES" responses need explanation added to "Remarks" section. (ie: What? Where? Extent?)
"NO" responses indicate problems not observed during inspection.
Non-applicable items should be lined out.

ITEM	YES	NO	REMARKS
1. General Conditions			
a. Alterations to dam?		✓	
b. Development in downstream floodplain?		✓	
c. Development around reservoir?		✓	
2. Embankment			
a. Is vegetative cover inadequate?		✓	
b. Are trees growing on either slope?	✓		Dam was sprayed and it appears that an 80% die off occurred. Looks like a few trees may have survived.
c. Is brush/weed control needed?		✓	
d. Are trees growing at waterline?		✓	
e. Is drift debris present?		✓	
f. Are cracks, settlement, or bulges present?		✓	
g. Are animal burrows present?		✓	
h. Are trails present?		✓	
3. Front Slope Protection			
a. Any wave damage observed?		✓	
b. Is riprap inadequate?		✓	
c. Are rodent holes present?		✓	
4. Inlet Structure and Gate Valves			
a. Does concrete exhibit deterioration?		✓	
b. Is concrete reinforcement exposed?		✓	
c. Was leakage observed inside inlet?			Did not look
d. Any corrosion of metal appurtenances?		✓	
e. Is debris guard obstructed?		✓	
f. Is debris guard corroded?		✓	
g. Is gate stem broken or bent?		✓	
h. Are components missing?		✓	
i. Was gate determined not operational?			Date gate last operated: unknown
j. Has inlet been modified to alter water surface?		✓	
5. Principal Spillway Conduit			
a. Is concrete conduit deteriorated?		✓	
b. Is metal conduit corroded?			n/a
c. Was leakage observed at pipe joints?			did not look inside pipe

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ITEM	YES	NO	REMARKS
6. Auxiliary Spillway			
a. Is vegetative cover inadequate?		✓	
b. Any animal trails observed?		✓	
c. Any vehicular trails observed?		✓	
d. Is flow area obstructed?		✓	
e. Is control section disturbed?		✓	
7. Principal Spillway Release Channel			
a. Does scour hole appear unstable?		✓	
b. Any boils observed?		✓	
c. Is riprap inadequate?		✓	
d. Any seepage observed?		✓	
e. Is conduit outlet submerged?		✓	
f. Is conduit outlet not properly supported?		✓	
g. Is outlet channel obstructed?	✓		Riprap has been pushed to the channel entrance, but not enough to change water surface elevation.
h. Is outlet channel degrading?		✓	
i. Is foundation drain submerged?		✓	
j. Is foundation drain rodent barrier missing?		✓	
k. Is foundation drain not functional?		✓	
8. Perimeter Fence			
a. Is fence inadequate?		✓	
b. Are gates open?		✓	
9. Easements/landrights			
a. Are terms of landrights out of compliance?		✓	
b. Are landrights boundaries being encroached upon?		✓	

ACTIONS TAKEN: (Identify all work performed preceding 12 months by sponsors and/or NRCS, including approximate cost and date completed).

Dam has been sprayed with a significant die off.

**ACTIONS NEEDED: (Identify items by priority: low - next 12 months; high - as soon as possible).
(Indicate date assistance requested; technical or financial).**

Trees/brush on dam needs to be observed this spring do determine if further spraying and or brush hogging needs to be performed this summer or fall.

Sponsor Representative

(Adapted from Oklahoma NRCS)



Digitally signed by JAMES STRINGER
DN: c=US, o=U.S. Government, ou=Department of
Agriculture, cn=JAMES STRINGER,
0.9.2342.19200300.100.1.1=12001000497632
Date: 2016.02.29 14:36:00 -06'00'

NRCS Representative

ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DAM NAME <u>Deer Run Lake Dam Permit #232</u>				DATE OF INSPECTION <u>01/29/2019</u>	
DAM ID <u>AR01440</u>				DATE OF LAST INSPECTION <u>10/19/2017</u>	
OWNER NAME <u>Deer Run Property Owners Association</u>				OWNER PHONE <u>(870) 283-4655</u>	
ADDRESS <u>P.O. Box 346, Evening Shade, AR</u>				ZIP <u>72532</u>	
CONTACT NAME <u>Janet Coleman</u>				CONTACT PHONE <u>(870) 283-4655</u>	
CLASS <u>H</u>	CAPACITY <u>310</u>	AF	SURFACE AREA <u>30</u>	AC	HEIGHT <u>40</u> FT
CREST LENGTH <u>350</u> FT		CREST WIDTH <u>16</u> FT			
CURRENT RESTRICTION <input type="checkbox"/> (NO)		<input type="checkbox"/> (YES)		LEVEL <u> </u>	
EAP ON FILE <input type="checkbox"/> (NO)		<input checked="" type="checkbox"/> (YES)			
INSPECTION PARTY REPRESENTING <u>Josh Graham & Stephen Smedley, ANRC</u>					

FIELD CONDITIONS OBSERVED

WATER LEVEL - BELOW DAM CREST ~4 FT BELOW SPILLWAY FT GAGE ROD
GROUND MOISTURE CONDITION: DRY ☒ WET ☐ SNOWCOVER ☐ OTHER ☐

UPSTREAM SLOPE	<p>PROBLEMS NOTED: <input type="checkbox"/> (0) NONE <input type="checkbox"/> (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED <input checked="" type="checkbox"/> (2) WAVE EROSION-WITH SCARPS <input type="checkbox"/> (3) CRACKS WITH DISPLACEMENT <input type="checkbox"/> (4) SINKHOLE <input type="checkbox"/> (5) APPEARS TOO STEEP <input type="checkbox"/> (6) DEPRESSIONS OR BULGES <input type="checkbox"/> (7) SLIDES <input type="checkbox"/> (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED <input type="checkbox"/> (9) OTHER _____</p> <p>COMMENTS: <u>Water was above the rip-rap and wave erosion has caused scarping and a narrowing in the center of the crest width.</u></p> <p>_____</p> <p>_____</p>	UPSTREAM SLOPE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
CREST	<p>PROBLEMS NOTED: <input type="checkbox"/> (10) NONE <input checked="" type="checkbox"/> (11) RUTS OR PUDDLES <input type="checkbox"/> (12) EROSION <input type="checkbox"/> (13) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (14) SINKHOLES <input type="checkbox"/> (15) NOT WIDE ENOUGH <input type="checkbox"/> (16) LOW AREA <input type="checkbox"/> (17) MISALIGNMENT <input type="checkbox"/> (18) INADEQUATE SURFACE DRAINAGE <input type="checkbox"/> (19) OTHER _____</p> <p>COMMENTS: <u>Some vehicle ruts and narrowing of the center width.</u></p> <p>_____</p> <p>_____</p>	CREST	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
DOWNSTREAM SLOPE	<p>PROBLEMS NOTED: <input type="checkbox"/> (20) NONE <input type="checkbox"/> (21) LIVESTOCK DAMAGE <input type="checkbox"/> (22) EROSION OR GULLIES <input type="checkbox"/> (23) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (24) SINKHOLE <input type="checkbox"/> (25) APPEARS TOO STEEP <input type="checkbox"/> (26) DEPRESSION OR BULGES <input type="checkbox"/> (27) SLIDE <input type="checkbox"/> (28) SOFT AREAS <input checked="" type="checkbox"/> (29) OTHER <u>Vegetation growing along bottom of Downstream Sope, Toe, and Left Abutment; Large area of seepage at the toe.</u></p> <p>COMMENTS: <u>Animal burrows are present.</u></p> <p>_____</p> <p>_____</p>	DOWNSTREAM SLOPE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
SEEPAGE	<p>PROBLEMS NOTED: <input type="checkbox"/> (30) NONE <input type="checkbox"/> (31) SATURATED EMBANKMENT AREA <input type="checkbox"/> (32) SEEPAGE EXITS ON EMBANKMENT <input checked="" type="checkbox"/> (33) SEEPAGE EXITS AT POINT SOURCE <input checked="" type="checkbox"/> (34) SEEPAGE AREA AT TOE <input type="checkbox"/> (35) FLOW ADJACENT TO OUTLET <input checked="" type="checkbox"/> (36) SEEPAGE INCREASED/MUDDY DRAIN OUTFALLS SEEN <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> (37) FLOW INCREASED/MUDDY <input type="checkbox"/> (38) DRAIN DRY/OBSTRUCTED <input type="checkbox"/> (39) OTHER _____</p> <p>COMMENTS: <u>Recommned monitoring of seepage for increase in rate of seepage at the toe. Drainage from seepage should be concentrated away from the dam.</u></p> <p>_____</p> <p>_____</p>	SEEPAGE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
OUTLET	<p>PROBLEMS NOTED: <input type="checkbox"/> (40) NONE <input type="checkbox"/> (41) NO OUTLET FOUND <input type="checkbox"/> (42) POOR OPERATING ACCESS <input type="checkbox"/> (43) INOPERABLE <input type="checkbox"/> (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES INTERIOR INSPECTED <input checked="" type="checkbox"/> (120) NO <input type="checkbox"/> (121) YES <input type="checkbox"/> (46) CONDUIT DETERIORATED OR COLLAPSED <input type="checkbox"/> (47) JOINTS DISPLACED <input type="checkbox"/> (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> (49) OTHER _____</p> <p>COMMENTS: <u>PVC-SIPHON IN USE DURING TIME OF INSPECTION; OWNERS LOWERING LAKE TO ENSURE SPILLWAY IS NOT ACTIVATED WHILE UNDER CONSTRUCTION</u></p> <p>_____</p> <p>_____</p>	OUTLET	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
SPILLWAY	<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (50) NONE <input type="checkbox"/> (51) NO EMERGENCY SPILLWAY FOUND <input checked="" type="checkbox"/> (52) EROSION WITH BACKCUTTING <input type="checkbox"/> (53) CRACK - WITH DISPLACEMENT <input type="checkbox"/> (54) APPEARS TO BE STRUCTURALLY INADEQUATE <input type="checkbox"/> (55) APPEARS TOO SMALL <input type="checkbox"/> (56) INADEQUATE FREEBOARD <input type="checkbox"/> (57) FLOW OBSTRUCTED <input type="checkbox"/> (58) CONCRETE DETERIORATED/UNDERMINED <input checked="" type="checkbox"/> (59) OTHER <u>Spillway repairs have been washed out and heavy erosion has occurred.</u></p> <p>COMMENTS: <u>There is only one spillway and the soil repairs that were made have been destroyed by washout and emankment cutting has occurred. Concrete portion of the spillway appears to still be under construction with one newer concrete section installed.</u></p> <p>_____</p> <p>_____</p>	SPILLWAY	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>

MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
<p>EXISTING INSTRUMENTATION FOUND: <input checked="" type="checkbox"/> (110) NONE <input type="checkbox"/> (111) GAGE ROD <input type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES</p> <p><input type="checkbox"/> (114) SURVEY MONUMENTS <input type="checkbox"/> (115) OTHER</p> <p>MONITORING OF INSTRUMENTATION: <input checked="" type="checkbox"/> (116) NO <input type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input checked="" type="checkbox"/> (118) OWNER <input type="checkbox"/> (119) ENGINEER</p> <p>COMMENTS: OWNER LIVES ON LAKE AND MONITORS DAM REGULARLY; VERY CO-OPERATIVE POA PRESIDENT (BRAD EDGIN- CURRENT DEER RUN POA PRESIDENT HAS 2 MORE YEARS AS POA PRESIDENT; THEY LACK ADEQUATE FUNDING TO COMPLETE SPILLWAY ALL AT ONCE,</p> <p>SO THEY ARE MODIFYING SPILLWAY IN PHASES (PHASE 1 & 2 COMPLETE)); HOWEVER IT APPEARS SPILLWAY HAS BEEN ERODED BACK TO BEDROCK.</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE</p> <p><input checked="" type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input checked="" type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE</p> <p><input checked="" type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY</p> <p><input type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input checked="" type="checkbox"/> (68) OTHER SPILLWAY REPAIR HAS BEEN ERODED AWAY; NEED TO FIND OUT FURTHER STEPS</p> <p>COMMENTS: CLEAR BRUSH AND VEGETATION FROM LOWER PORTION OF DS SLOPE OF DAM AND MONITOR SEEPAGE CLOSELY FOR SIGNS OF INCREASED/MUDDY DISCHARGE</p> <p>SEEPAGE SHOULD BE CONCENTRATED AWAY FROM THE DAM; TREES REMOVED FROM THE LEFT ABUTMENT</p>	<p>REMARKS: SERIOUS ISSUE WITH THE SPILLWAY REPAIR; NEED TO FIND OUT WHAT THE POA PLANS TO DO TO REMEDY THE SITUATION.</p> <p>Based on this Safety Inspection and recent file review, the overall condition is determined to be:</p> <p><input type="checkbox"/> (71) SATISFACTORY <input checked="" type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input type="checkbox"/> (73) UNSATISFACTORY</p>

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☐ (80) PROVIDE ADDITIONAL RIPRAP: _____
- ☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE: _____
- ☒ (82) CLEAR TREES AND/OR BRUSH FROM: DOWNSTREAM SLOPE/TOE/LEFT ABUTMENT
- ☒ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: _____
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: _____
- ☐ (85) PROVIDE SURFACE DRAINAGE FOR: _____
- ☒ (86) MONITOR: SEEPAGE
- ☐ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____
- ☒ (88) OTHER: CREATE PLAN TO PROPERLY REPAIR THE SPILLWAY.
- ☐ (89) OTHER: _____

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:

(Plan & Specification must be approved by State Engineer prior to construction)

- ☐ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: _____
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____
- ☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: _____
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____
- ☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS: _____
- ☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____
- ☐ (97) OTHER: _____
- ☐ (98) OTHER: _____
- ☐ (99) OTHER: _____

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- ☐ (101) FULL STORAGE
- ☒ (102) CONDITIONAL FULL STORAGE
- ☐ (103) RECOMMENDED RESTRICTION
- RESTRICTED LEVEL
OFFICIAL ORDER TO FOLLOW
- _____ FT BELOW DAMS CREST
_____ FT BELOW SPILLWAY CREST
_____ FT GAGE HEIGHT
NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's
Signature _____Owner's
Signature _____

DATE: 10/18/2017

INSPECTED BY

OWNER/OWNER'S REPRESENTATIVE

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human life is expected and damage will occur only to the dam owner's property.

DAM INSPECTION CHECK LIST

HJB-D9

235 - VAN Buren

PERMIT NO. 235 COUNTY CRAWFORD DATE 4-29-81 CONTACT Rennie Keener

1. Hazard Rating (Visual observation of homes in flood plain) _____ NO. _____
2. Condition of Dam *Putting in the outlet Pipe + pouring River Box pond area is cleared + area for lake*
- | | | |
|------------------|------------|---------------------|
| Vert. Alignment | <u>OK</u> | <u>NEEDS REPAIR</u> |
| Horiz. Alignment | <u>OK</u> | <u>NEEDS REPAIR</u> |
| Surface Cracks | <u>YES</u> | <u>NO</u> |
3. Condition of Abut.
- | | |
|--------------------------|---|
| Left Abut. (Upstream) | <u>The crack for the outlet Box is almost</u> |
| Left Abut. (Downstream) | <u>complete + forms are ready to pour</u> |
| Right Abut. (Upstream) | <u>Lower sections of risers.</u> |
| Right Abut. (Downstream) | <u></u> |
4. Condition of Upstream Embankment Construction is progressing satisfactorily
- | | |
|-------------------|-----------|
| <u> </u> Erosion | <u> </u> |
| <u> </u> Trees | <u> </u> |
| <u> </u> Burrows | <u> </u> |
| <u> </u> Other | <u> </u> |
5. Condition of Downstream Embankment
- | | |
|-------------------|-----------|
| <u> </u> Erosion | <u> </u> |
| <u> </u> Trees | <u> </u> |
| <u> </u> Burrows | <u> </u> |
| <u> </u> Other | <u> </u> |
6. Condition of Principal Spillway _____
7. Condition of Emergency Spillway _____
8. Condition of Water Clear Normal Murky
9. Water Level Flowing over weir At Weir Low
10. Condition of Toe (noticeable movement) _____
- Boils (estimated amount) _____
11. Seepage Yes No
- Amount _____ (est. Saturated Area _____)
12. Shore Line Steep Moderate Gentle
13. Condition of Plunge Basin and Channel _____
14. Recommendations _____

DAM INSPECTION CHECK LIST

VAN BUREN

PERMIT NO. 235 COUNTY CRAWFORD DATE 8-20-81 CONTACT _____

1. Hazard Rating (Visual observation of homes in flood plain) _____ NO. _____

2. Condition of Dam *Construction inspection*
 Vert. Alignment OK NEEDS REPAIR _____
 Horiz. Alignment OK NEEDS REPAIR _____
 Surface Cracks YES NO OK

3. Condition of Abut.
 Left Abut. (Upstream) Riser nearly finished
 Left Abut. (Downstream) Red platform on top
 Right Abut. (Upstream) _____
 Right Abut. (Downstream) _____

4. Condition of Upstream Embankment Structure not started
 Erosion outflow covered up
 Trees _____
 Burrows _____
 Other _____

5. Condition of Downstream Embankment _____
 Erosion _____
 Trees _____
 Burrows _____
 Other _____

6. Condition of Principal Spillway _____

7. Condition of Emergency Spillway _____

8. Condition of Water Clear Normal Murky

9. Water Level Flowing over weir At Weir Low

10. Condition of Toe (noticeable movement) _____
 Boils (estimated amount) _____

11. Seepage Yes No
 Amount _____ (est.) Saturated Area _____

12. Shore Line Steep Moderate Gentle

13. Condition of Plunge Basin and Channel _____

14. Recommendations Construction progressing satisfactory

DAM INSPECTION CHECK LIST

INSPECTOR D.P. Gordon LAKE NAME Van Buren, City of

PERMIT NO. 235 COUNTY Crawford DATE 6-22-82 CONTACT _____

Hazard Rating _____ NO. Of Homes _____

CONDITION OF:

Rockfill Dam - Construction completed

1. Dam	2. Crest
Vert. Alignment _____	Erosion _____
Horiz. Alignment <u>OK</u>	Ruts Potholes <u>OK</u>
Surface Cracks _____	Trees, Brush _____

3. Abutments _____
OK

4. Embankments	Upstream	Downstream
Erosion _____	_____	_____
Trees <u>OK</u>	_____	<u>OK</u>
Burrows _____	_____	_____
Other, veg. etc. _____	_____	_____

5. Principal Spillway Concrete Riser

6. Emergency Spillway Clear

7. Plunge Basin, Channel OK

8. Water Level _____ Flowing over weir _____ At weir ☒ Below weir Spoke is still filling

9. Toe Movement OK
Boils _____

10. Seepage no total est. amount
_____ saturated area, (sketch on back)

11. Recommendations _____

DAM INSPECTION CHECK LIST

MAYOR
Municipal Complex
Van Buren, 72956

INSPECTOR Acre LAKE NAME City of Van Buren

PERMIT NO. 235 COUNTY Crawford DATE 2-9-89 CONTACT _____

Hazard Rating _____ NO. Of Homes _____

CONDITION OF:

1. Dam	2. Crest
Vert. Alignment <u>OK</u>	Erosion <u>none</u>
Horiz. Alignment <u>OK</u>	Ruts Potholes <u>none</u>
Surface Cracks <u>none</u>	Trees, Brush <u>none</u>

3. Abutments OK

4. Embankments	Upstream	Downstream
Erosion	<u>none</u>	<u>none</u>
Trees	<u>none</u>	<u>none</u>
Burrows	<u>none</u>	<u>none</u>
Other, veg. etc.	<u>none</u>	<u>none</u>

5. Principal Spillway OK - no flood raised through

6. Emergency Spillway

7. Plunge Basin, Channel

8. Water Level _____ Flowing over weir _____ At weir _____ Below weir

9. Toe Movement no problems
Boils

10. Seepage _____ total est. amount none
_____ saturated area, (sketch on back)

11. Recommendations

DAM INSPECTION CHECK LIST

INSPECTOR Acre LAKE NAME Van Buren

PERMIT NO. 235 COUNTY Crawford DATE 11-17-89 CONTACT _____

Hazard Rating _____ NO. Of Homes _____

CONDITION OF:

1. Dam	2. Crest
Vert. Alignment <u>OK</u>	Erosion <u>no problem</u>
Horiz. Alignment <u>OK</u>	Ruts Potholes <u>none</u>
Surface Cracks <u>none noted</u>	Trees, Brush <u>none</u>

3. Abutments OK no problems noted

4. Embankments	Upstream	Downstream
Erosion	<u>no problems noted</u>	<u>no problems noted</u>
Trees	<u>" " "</u>	<u>" " "</u>
Burrows	<u>" " "</u>	<u>" " "</u>
Other, veg. etc.	<u>" " "</u>	<u>" " "</u>

5. Principal Spillway J

6. Emergency Spillway appeared OK

7. Plunge Basin, Channel _____

8. Water Level _____ Flowing over weir ☒ At weir _____ Below weir _____

9. Toe Movement no problems noted
Boils

10. Seepage _____ total est. amount _____
saturated area, (sketch on back) no problems noted

11. Recommendations no problems noted continue good maintenance

DAM INSPECTION CHECK LIST

INSPECTOR RALPH EEELLE LAKE NAME CAP BEDELL

PERMIT NO. 235 COUNTY Crawford DATE 8-28-90 CONTACT Mayor Bell

Hazard Rating _____ NO. Of Homes _____

CONDITION OF:

<p>1. Dam</p> <p>Vert. Alignment _____</p> <p>Horiz. Alignment _____</p> <p>Surface Cracks _____</p>	<p>2. Crest</p> <p>Erosion _____</p> <p>Ruts Potholes _____</p> <p>Trees, Brush _____</p>
--	---

3. Abutments _____

4. Embankments	Upstream	Downstream
Erosion	_____	_____
Trees	_____	_____
Burrows	_____	_____
Other, veg. etc.	_____	_____

5. Principal Spillway _____

This is one of the States
 Model Dams - No Problems

6. Emergency Spillway _____

7. Plunge Basin, Channel _____

8. Water Level _____ Flowing over weir _____ At weir _____ Below weir _____

9. Toe Movement _____

Boils _____

10. Seepage _____ total est. amount _____

_____ saturated area, (Sketch on back)

11. Recommendations _____

DAM INSPECTION CHECK LIST

HJB-D9

235 - VAN Buren

PERMIT NO. 235 COUNTY CRAWFORD DATE 4-29-81 CONTACT Rennie Keener

1. Hazard Rating (Visual observation of homes in flood plain) _____ NO. _____
2. Condition of Dam *Putting in the outlet Pipe + pouring River Box pond area is cleared + area for lake*
- | | | |
|------------------|------------|---------------------|
| Vert. Alignment | <u>OK</u> | <u>NEEDS REPAIR</u> |
| Horiz. Alignment | <u>OK</u> | <u>NEEDS REPAIR</u> |
| Surface Cracks | <u>YES</u> | <u>NO</u> |
3. Condition of Abut.
- | | |
|--------------------------|--|
| Left Abut. (Upstream) | <u>The cradle for the outlet Box is almost</u> |
| Left Abut. (Downstream) | <u>complete + forms are ready to pour</u> |
| Right Abut. (Upstream) | <u>Lower sections of risers.</u> |
| Right Abut. (Downstream) | <u></u> |
4. Condition of Upstream Embankment Construction is progressing satisfactorily
- | | |
|-------------------|-----------|
| <u> </u> Erosion | <u> </u> |
| <u> </u> Trees | <u> </u> |
| <u> </u> Burrows | <u> </u> |
| <u> </u> Other | <u> </u> |
5. Condition of Downstream Embankment _____
- | | |
|-------------------|-----------|
| <u> </u> Erosion | <u> </u> |
| <u> </u> Trees | <u> </u> |
| <u> </u> Burrows | <u> </u> |
| <u> </u> Other | <u> </u> |
6. Condition of Principal Spillway _____
7. Condition of Emergency Spillway _____
8. Condition of Water Clear Normal Murky
9. Water Level Flowing over weir At Weir Low
10. Condition of Toe (noticeable movement) _____
- Boils (estimated amount) _____
11. Seepage Yes No
- Amount _____ (est. Saturated Area _____)
12. Shore Line Steep Moderate Gentle
13. Condition of Plunge Basin and Channel _____
14. Recommendations _____

DAM INSPECTION CHECK LIST

VAN BUREN

PERMIT NO. 235 COUNTY CRAWFORD DATE 8-20-81 CONTACT _____

1. Hazard Rating (Visual observation of homes in flood plain) _____ NO. _____

2. Condition of Dam Construction inspection
 Vert. Alignment OK NEEDS REPAIR _____
 Horiz. Alignment OK NEEDS REPAIR _____
 Surface Cracks YES NO _____ *OK*

3. Condition of Abut.
 Left Abut. (Upstream) Riser nearly finished
 Left Abut. (Downstream) Red platform on top
 Right Abut. (Upstream) _____
 Right Abut. (Downstream) _____

4. Condition of Upstream Embankment Structure not started
 Erosion outflow covered up
 Trees _____
 Burrows _____
 Other _____

5. Condition of Downstream Embankment _____
 Erosion _____
 Trees _____
 Burrows _____
 Other _____

6. Condition of Principal Spillway _____

7. Condition of Emergency Spillway _____

8. Condition of Water Clear Normal Murky

9. Water Level Flowing over weir At Weir Low

10. Condition of Toe (noticeable movement) _____
 Boils (estimated amount) _____

11. Seepage Yes No
 Amount _____ (est.) Saturated Area _____

12. Shore Line Steep Moderate Gentle

13. Condition of Plunge Basin and Channel _____

14. Recommendations Construction progressing satisfactory

DAM INSPECTION CHECK LIST

INSPECTOR D.P. Gordon LAKE NAME Van Buren, City of

PERMIT NO. 235 COUNTY Crawford DATE 6-22-82 CONTACT _____

Hazard Rating _____ NO. Of Homes _____

CONDITION OF:

Rockfill Dam - Construction completed

1. Dam	2. Crest
Vert. Alignment _____	Erosion _____
Horiz. Alignment <u>OK</u>	Ruts Potholes <u>OK</u>
Surface Cracks _____	Trees, Brush _____

3. Abutments _____
OK

4. Embankments	Upstream	Downstream
Erosion _____	_____	_____
Trees <u>OK</u>	_____	<u>OK</u>
Burrows _____	_____	_____
Other, veg. etc. _____	_____	_____

5. Principal Spillway Concrete Riser

6. Emergency Spillway Clear

7. Plunge Basin, Channel OK

8. Water Level _____ Flowing over weir _____ At weir ☒ Below weir Spoke is still filling

9. Toe Movement OK
Boils _____

10. Seepage no total est. amount
_____ saturated area, (sketch on back)

11. Recommendations _____

DAM INSPECTION CHECK LIST

MAYOR
Municipal Complex
Van Buren, 72956

INSPECTOR Acre LAKE NAME City of Van Buren

PERMIT NO. 235 COUNTY Crawford DATE 2-9-89 CONTACT _____

Hazard Rating _____ NO. Of Homes _____

CONDITION OF:

1. Dam	2. Crest
Vert. Alignment <u>OK</u>	Erosion <u>none</u>
Horiz. Alignment <u>OK</u>	Ruts Potholes <u>none</u>
Surface Cracks <u>none</u>	Trees, Brush <u>none</u>

3. Abutments OK

4. Embankments	Upstream	Downstream
Erosion	<u>none</u>	<u>none</u>
Trees	<u>none</u>	<u>none</u>
Burrows	<u>none</u>	<u>none</u>
Other, veg. etc.	<u>none</u>	<u>none</u>

5. Principal Spillway OK - no flood raised through

6. Emergency Spillway

7. Plunge Basin, Channel

8. Water Level _____ Flowing over weir _____ At weir _____ Below weir

9. Toe Movement no problems
Boils

10. Seepage _____ total est. amount none
_____ saturated area, (sketch on back)

11. Recommendations

DAM INSPECTION CHECK LIST

INSPECTOR Acre LAKE NAME Van Buren

PERMIT NO. 235 COUNTY Crawford DATE 11-17-89 CONTACT _____

Hazard Rating _____ NO. Of Homes _____

CONDITION OF:

1. Dam	2. Crest
Vert. Alignment <u>OK</u>	Erosion <u>no problem</u>
Horiz. Alignment <u>OK</u>	Ruts Potholes <u>none</u>
Surface Cracks <u>none noted</u>	Trees, Brush <u>none</u>

3. Abutments OK no problems noted

4. Embankments	Upstream	Downstream
Erosion	<u>no problems noted</u>	<u>no problems noted</u>
Trees	<u>" " "</u>	<u>" " "</u>
Burrows	<u>" " "</u>	<u>" " "</u>
Other, veg. etc.	<u>" " "</u>	<u>" " "</u>

5. Principal Spillway J

6. Emergency Spillway appeared OK

7. Plunge Basin, Channel _____

8. Water Level _____ Flowing over weir ☒ At weir _____ Below weir _____

9. Toe Movement no problems noted
Boils

10. Seepage _____ total est. amount _____
saturated area, (sketch on back) no problems noted

11. Recommendations no problems noted continue good maintenance

DAM INSPECTION CHECK LIST

INSPECTOR RALPH EEELLE LAKE NAME CAP BEDELL

PERMIT NO. 235 COUNTY Crawford DATE 8-28-90 CONTACT Mayor Bell

Hazard Rating _____ NO. Of Homes _____

CONDITION OF:

<p>1. Dam</p> <p>Vert. Alignment _____</p> <p>Horiz. Alignment _____</p> <p>Surface Cracks _____</p>	<p>2. Crest</p> <p>Erosion _____</p> <p>Ruts Potholes _____</p> <p>Trees, Brush _____</p>
--	---

3. Abutments _____

4. Embankments	Upstream	Downstream
Erosion	_____	_____
Trees	_____	_____
Burrows	_____	_____
Other, veg. etc.	_____	_____

5. Principal Spillway _____

THIS IS ONE OF THE STATES

MODEL DAMS - NO PROBLEMS

6. Emergency Spillway _____

7. Plunge Basin, Channel _____

8. Water Level _____ Flowing over weir _____ At weir _____ Below weir

9. Toe Movement _____

Boils _____

10. Seepage _____ total est. amount

_____ saturated area, (Sketch on back)

11. Recommendations _____

ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND, GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE

WATER LEVEL - BELOW DAM CREST 4 FT BELOW SPILLWAY FLOWING FT GAGE ROD
GROUND MOISTURE CONDITION: DRY x WET SNOWCOVER OTHER

UPSTREAM SLOPE	PROBLEMS NOTED: <input type="checkbox"/> (0) NONE <input checked="" type="checkbox"/> (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED <input checked="" type="checkbox"/> (2) WAVE EROSION-WITH SCARPS <input type="checkbox"/> (3) CRACKS WITH DISPLACEMENT <input type="checkbox"/> (4) SINKHOLE <input checked="" type="checkbox"/> (5) APPEARS TOO STEEP <input type="checkbox"/> (6) DEPRESSIONS OR BULGES <input type="checkbox"/> (7) SLIDES <input type="checkbox"/> (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED <input type="checkbox"/> (9) OTHER _____ COMMENTS: <u>NO RIP-RAP; COVERED IN EXCESS VEGETATION; SLOPE TOO STEEP; WAVE EROSION</u> _____ _____	UPSTREAM SLOPE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
CREST	PROBLEMS NOTED: <input checked="" type="checkbox"/> (10) NONE <input type="checkbox"/> (11) RUTS OR PUDDLES <input type="checkbox"/> (12) EROSION <input type="checkbox"/> (13) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (14) SINKHOLES <input type="checkbox"/> (15) NOT WIDE ENOUGH <input type="checkbox"/> (16) LOW AREA <input type="checkbox"/> (17) MISALIGNMENT <input type="checkbox"/> (18) INADEQUATE SURFACE DRAINAGE <input type="checkbox"/> (19) OTHER _____ COMMENTS: <u>VEGETATION</u> _____ _____	CREST	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
DOWNSTREAM SLOPE	PROBLEMS NOTED: <input type="checkbox"/> (20) NONE <input type="checkbox"/> (21) LIVESTOCK DAMAGE <input checked="" type="checkbox"/> (22) EROSION OR GULLIES <input type="checkbox"/> (23) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (24) SINKHOLE <input checked="" type="checkbox"/> (25) APPEARS TOO STEEP <input type="checkbox"/> (26) DEPRESSION OR BULGES <input type="checkbox"/> (27) SLIDE <input type="checkbox"/> (28) SOFT AREAS <input type="checkbox"/> (29) OTHER _____ COMMENTS: <u>SLOPE TOO STEEP; COVERED IN DENSE VEGATION</u> _____ _____	DOWNSTREAM SLOPE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
SEEPAGE	PROBLEMS NOTED: <input type="checkbox"/> (30) NONE <input type="checkbox"/> (31) SATURATED EMBANKMENT AREA <input type="checkbox"/> (32) SEEPAGE EXITS ON EMBANKMENT <input type="checkbox"/> (33) SEEPAGE EXITS AT POINT SOURCE <input checked="" type="checkbox"/> (34) SEEPAGE AREA AT TOE <input type="checkbox"/> (35) FLOW ADJACENT TO OUTLET <input type="checkbox"/> (36) SEEPAGE INCREASED/MUDDY DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (37) FLOW INCREASED/MUDDY <input type="checkbox"/> (38) DRAIN DRY/OBSTRUCTED <input type="checkbox"/> (39) OTHER _____ COMMENTS: <u>DENSE VEGETATION OBSCURED GOOD VISUAL OBSERVATION</u> _____ _____	SEEPAGE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
OUTLET	PROBLEMS NOTED: <input type="checkbox"/> (40) NONE <input type="checkbox"/> (41) NO OUTLET FOUND <input type="checkbox"/> (42) POOR OPERATING ACCESS <input type="checkbox"/> (43) INOPERABLE <input type="checkbox"/> (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION <input type="checkbox"/> NO <input type="checkbox"/> YES INTERIOR INSPECTED <input checked="" type="checkbox"/> (120) NO <input type="checkbox"/> (121) YES <input type="checkbox"/> (46) CONDUIT DETERIORATED OR COLLAPSED <input type="checkbox"/> (47) JOINTS DISPLACED <input type="checkbox"/> (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (49) OTHER _____ COMMENTS: <u>CAUSEWAY ROAD IS BUILT ON IS INTENDED TO ALLOW FREE FLOW OF WATER BETWEEN THE TWO POOLS, BUT THE DRAIN BETWEEN THE TWO PONDS HAS BEEN PLUGGED WITH A METAL PLATE; SOME WATER STILL PASSES THROUGH</u> _____ _____	OUTLET	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
SPILLWAY	PROBLEMS NOTED: <input type="checkbox"/> (50) NONE <input type="checkbox"/> (51) NO EMERGENCY SPILLWAY FOUND <input type="checkbox"/> (52) EROSION WITH BACKCUTTING <input type="checkbox"/> (53) CRACK - WITH DISPLACEMENT <input type="checkbox"/> (54) APPEARS TO BE STRUCTURALLY INADEQUATE <input checked="" type="checkbox"/> (55) APPEARS TOO SMALL <input type="checkbox"/> (56) INADEQUATE FREEBOARD <input type="checkbox"/> (57) FLOW OBSTRUCTED <input type="checkbox"/> (58) CONCRETE DETERIORATED/UNDERMINED <input type="checkbox"/> (59) OTHER _____ COMMENTS: <u>SPILLWAY IS JUST LOW SPOT AND WOODS</u> _____ _____	SPILLWAY	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>

MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
<p>EXISTING INSTRUMENTATION FOUND: <input checked="" type="checkbox"/> (110) NONE <input type="checkbox"/> (111) GAGE ROD <input type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES</p> <p><input type="checkbox"/> (114) SURVEY MONUMENTS <input type="checkbox"/> (115) OTHER</p> <p>MONITORING OF INSTRUMENTATION: <input checked="" type="checkbox"/> (116) NO <input type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input type="checkbox"/> (118) OWNER <input type="checkbox"/> (119) ENGINEER</p> <p>COMMENTS: NO MONITORING; NO INSTRUMENTATIONS</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE</p> <p><input checked="" type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input checked="" type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE</p> <p><input type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY</p> <p><input checked="" type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input type="checkbox"/> (68) OTHER</p> <p>COMMENTS:</p>	<p>REMARKS: CANNOT REACH DAM OWNER. NO EAP. NO REGULAR INSPECTIONS OR MAINTENANCE; WORKING ON CONSENT ORDER</p> <p>Based on this Safety Inspection and recent file review, the overall condition is determined to be:</p> <p><input type="checkbox"/> (71) SATISFACTORY <input type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input checked="" type="checkbox"/> (73) UNSATISFACTORY</p>
MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
GOOD	GOOD	GOOD
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
POOR	POOR	POOR

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☐ (80) PROVIDE ADDITIONAL RIPRAP: _____
- ☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE: _____
- ☒ (82) CLEAR TREES AND/OR BRUSH FROM: ENTIRE DAM
- ☐ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: _____
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: _____
- ☐ (85) PROVIDE SURFACE DRAINAGE FOR: _____
- ☒ (86) MONITOR: SEEPAGE AT TOE
- ☒ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____
- ☐ (88) OTHER: _____
- ☐ (89) OTHER: _____

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:

(Plan & Specification must be approved by State Engineer prior to construction)

- ☐ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: _____
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____
- ☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: _____
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____
- ☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS: _____
- ☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____
- ☐ (97) OTHER: _____
- ☐ (98) OTHER: _____
- ☐ (99) OTHER: _____

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- ☐ (101) FULL STORAGE
- ☒ (102) CONDITIONAL FULL STORAGE
- ☐ (103) RECOMMENDED RESTRICTION
- RESTRICTED LEVEL
OFFICIAL ORDER TO FOLLOW
- _____ FT BELOW DAMS CREST
 _____ FT BELOW SPILLWAY CREST
 _____ FT GAGE HEIGHT
 NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's
Signature _____Owner's
Signature _____

INSPECTED BY

OWNER/OWNER'S REPRESENTATIVE

DATE: 4/17/2018

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human life is expected and damage will occur only to the dam owner's property.

ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND, GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE

WATER LEVEL - BELOW DAM CREST 4 FT BELOW SPILLWAY FLOWING FT GAGE ROD
GROUND MOISTURE CONDITION: DRY x WET SNOWCOVER OTHER

UPSTREAM SLOPE	PROBLEMS NOTED: <input type="checkbox"/> (0) NONE <input checked="" type="checkbox"/> (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED <input checked="" type="checkbox"/> (2) WAVE EROSION-WITH SCARPS <input type="checkbox"/> (3) CRACKS WITH DISPLACEMENT <input type="checkbox"/> (4) SINKHOLE <input checked="" type="checkbox"/> (5) APPEARS TOO STEEP <input type="checkbox"/> (6) DEPRESSIONS OR BULGES <input type="checkbox"/> (7) SLIDES <input type="checkbox"/> (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED <input type="checkbox"/> (9) OTHER _____ COMMENTS: <u>NO RIP-RAP; COVERED IN EXCESS VEGETATION; SLOPE TOO STEEP; WAVE EROSION</u> _____ _____	UPSTREAM SLOPE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
CREST	PROBLEMS NOTED: <input checked="" type="checkbox"/> (10) NONE <input type="checkbox"/> (11) RUTS OR PUDDLES <input type="checkbox"/> (12) EROSION <input type="checkbox"/> (13) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (14) SINKHOLES <input type="checkbox"/> (15) NOT WIDE ENOUGH <input type="checkbox"/> (16) LOW AREA <input type="checkbox"/> (17) MISALIGNMENT <input type="checkbox"/> (18) INADEQUATE SURFACE DRAINAGE <input type="checkbox"/> (19) OTHER _____ COMMENTS: <u>VEGETATION</u> _____ _____	CREST	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
DOWNSTREAM SLOPE	PROBLEMS NOTED: <input type="checkbox"/> (20) NONE <input type="checkbox"/> (21) LIVESTOCK DAMAGE <input checked="" type="checkbox"/> (22) EROSION OR GULLIES <input type="checkbox"/> (23) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (24) SINKHOLE <input checked="" type="checkbox"/> (25) APPEARS TOO STEEP <input type="checkbox"/> (26) DEPRESSION OR BULGES <input type="checkbox"/> (27) SLIDE <input type="checkbox"/> (28) SOFT AREAS <input type="checkbox"/> (29) OTHER _____ COMMENTS: <u>SLOPE TOO STEEP; COVERED IN DENSE VEGATION</u> _____ _____	DOWNSTREAM SLOPE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
SEEPAGE	PROBLEMS NOTED: <input type="checkbox"/> (30) NONE <input type="checkbox"/> (31) SATURATED EMBANKMENT AREA <input type="checkbox"/> (32) SEEPAGE EXITS ON EMBANKMENT <input type="checkbox"/> (33) SEEPAGE EXITS AT POINT SOURCE <input checked="" type="checkbox"/> (34) SEEPAGE AREA AT TOE <input type="checkbox"/> (35) FLOW ADJACENT TO OUTLET <input type="checkbox"/> (36) SEEPAGE INCREASED/MUDDY DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (37) FLOW INCREASED/MUDDY <input type="checkbox"/> (38) DRAIN DRY/OBSTRUCTED <input type="checkbox"/> (39) OTHER _____ COMMENTS: <u>DENSE VEGETATION OBSCURED GOOD VISUAL OBSERVATION</u> _____ _____	SEEPAGE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
OUTLET	PROBLEMS NOTED: <input type="checkbox"/> (40) NONE <input type="checkbox"/> (41) NO OUTLET FOUND <input type="checkbox"/> (42) POOR OPERATING ACCESS <input type="checkbox"/> (43) INOPERABLE <input type="checkbox"/> (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION <input type="checkbox"/> NO <input type="checkbox"/> YES INTERIOR INSPECTED <input checked="" type="checkbox"/> (120) NO <input type="checkbox"/> (121) YES <input type="checkbox"/> (46) CONDUIT DETERIORATED OR COLLAPSED <input type="checkbox"/> (47) JOINTS DISPLACED <input type="checkbox"/> (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (49) OTHER _____ COMMENTS: <u>CAUSEWAY ROAD IS BUILT ON IS INTENDED TO ALLOW FREE FLOW OF WATER BETWEEN THE TWO POOLS, BUT THE DRAIN BETWEEN THE TWO PONDS HAS BEEN PLUGGED WITH A METAL PLATE; SOME WATER STILL PASSES THROUGH</u> _____ _____	OUTLET	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
SPILLWAY	PROBLEMS NOTED: <input type="checkbox"/> (50) NONE <input type="checkbox"/> (51) NO EMERGENCY SPILLWAY FOUND <input type="checkbox"/> (52) EROSION WITH BACKCUTTING <input type="checkbox"/> (53) CRACK - WITH DISPLACEMENT <input type="checkbox"/> (54) APPEARS TO BE STRUCTURALLY INADEQUATE <input checked="" type="checkbox"/> (55) APPEARS TOO SMALL <input type="checkbox"/> (56) INADEQUATE FREEBOARD <input type="checkbox"/> (57) FLOW OBSTRUCTED <input type="checkbox"/> (58) CONCRETE DETERIORATED/UNDERMINED <input type="checkbox"/> (59) OTHER _____ COMMENTS: <u>SPILLWAY IS JUST LOW SPOT AND WOODS</u> _____ _____	SPILLWAY	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>

MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
<p>EXISTING INSTRUMENTATION FOUND: <input checked="" type="checkbox"/> (110) NONE <input type="checkbox"/> (111) GAGE ROD <input type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES</p> <p><input type="checkbox"/> (114) SURVEY MONUMENTS <input type="checkbox"/> (115) OTHER</p> <p>MONITORING OF INSTRUMENTATION: <input checked="" type="checkbox"/> (116) NO <input type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input type="checkbox"/> (118) OWNER <input type="checkbox"/> (119) ENGINEER</p> <p>COMMENTS: NO MONITORING; NO INSTRUMENTATIONS</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE</p> <p><input checked="" type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input checked="" type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE</p> <p><input type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY</p> <p><input checked="" type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input type="checkbox"/> (68) OTHER</p> <p>COMMENTS:</p>	<p>REMARKS: CANNOT REACH DAM OWNER. NO EAP. NO REGULAR INSPECTIONS OR MAINTENANCE; WORKING ON CONSENT ORDER</p> <p>Based on this Safety Inspection and recent file review, the overall condition is determined to be:</p> <p><input type="checkbox"/> (71) SATISFACTORY <input type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input checked="" type="checkbox"/> (73) UNSATISFACTORY</p>
MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
GOOD	GOOD	GOOD
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
POOR	POOR	POOR

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☐ (80) PROVIDE ADDITIONAL RIPRAP: _____
- ☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE: _____
- ☒ (82) CLEAR TREES AND/OR BRUSH FROM: ENTIRE DAM
- ☐ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: _____
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: _____
- ☐ (85) PROVIDE SURFACE DRAINAGE FOR: _____
- ☒ (86) MONITOR: SEEPAGE AT TOE
- ☒ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____
- ☐ (88) OTHER: _____
- ☐ (89) OTHER: _____
- ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:
(Plan & Specification must be approved by State Engineer prior to construction)
- ☐ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: _____
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____
- ☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: _____
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____
- ☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS: _____
- ☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____
- ☐ (97) OTHER: _____
- ☐ (98) OTHER: _____
- ☐ (99) OTHER: _____

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- ☐ (101) FULL STORAGE
- ☒ (102) CONDITIONAL FULL STORAGE
- ☐ (103) RECOMMENDED RESTRICTION
- RESTRICTED LEVEL
OFFICIAL ORDER TO FOLLOW
- _____ FT BELOW DAMS CREST
 _____ FT BELOW SPILLWAY CREST
 _____ FT GAGE HEIGHT
 NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's
Signature _____Owner's
Signature _____

INSPECTED BY

OWNER/OWNER'S REPRESENTATIVE

DATE: 4/17/2018

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human life is expected and damage will occur only to the dam owner's property.

ENGINEERS INSPECTION REPORT
ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DAM NAME James Fork Dam & Reservoir Permit #346 DATE OF INSPECTION 10/17/19
DAM ID AR01506 DATE OF LAST INSPECTION 8/22/18
OWNER NAME James Fork Regional Water District OWNER PHONE (800) 782-4812
ADDRESS P.O. Box 1180, Greenwood, AR ZIP 72936
CONTACT NAME Jeff CONTACT PHONE (479) 650-3422
CLASS H CAPACITY 4752 AF SURFACE AREA 212 AC HEIGHT 81 FT CREST LENGTH 2070 FT CREST WIDTH 24 FT
CURRENT RESTRICTION ☒ (NO) ☐ (YES) LEVEL _____ EAP ON FILE ☐ (NO) ☒ (YES)
INSPECTION PARTY REPRESENTING NRD

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND, GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE

FIELD CONDITIONS OBSERVED

WATER LEVEL - BELOW DAM CREST 16 FT BELOW SPILLWAY 1.5 FT GAGE ROD Pic 13, Camera 1
GROUND MOISTURE CONDITION: DRY ☒ WET _____ SNOWCOVER _____ OTHER _____

UPSTREAM SLOPE

PROBLEMS NOTED: ☐ (0) NONE ☒ (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED ☐ (2) WAVE EROSION-WITH SCARPS
☐ (3) CRACKS WITH DISPLACEMENT ☐ (4) SINKHOLE ☐ (5) APPEARS TOO STEEP ☐ (6) DEPRESSIONS OR BULGES ☐ (7) SLIDES
☐ (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED ☒ (9) OTHER Vegetation.
COMMENTS: Brush covering the entire upstream slope, riprap covered in vegetation too; Woody vegetation present;

UPSTREAM SLOPE

<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
GOOD	ACCEPTABLE	POOR

CREST

PROBLEMS NOTED: ☐ (10) NONE ☒ (11) RUTS OR PUDDLES ☐ (12) EROSION ☐ (13) CRACKS - WITH DISPLACEMENT ☐ (14) SINKHOLES
☐ (15) NOT WIDE ENOUGH ☐ (16) LOW AREA ☐ (17) MISALIGNMENT ☐ (18) INADEQUATE SURFACE DRAINAGE
☐ (19) OTHER _____
COMMENTS: Ruts and missing grass cover.

CREST

<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
GOOD	ACCEPTABLE	POOR

DOWNSTREAM SLOPE

PROBLEMS NOTED: ☐ (20) NONE ☐ (21) LIVESTOCK DAMAGE ☐ (22) EROSION OR GULLIES ☐ (23) CRACKS - WITH DISPLACEMENT
☐ (24) SINKHOLE ☐ (25) APPEARS TOO STEEP ☐ (26) DEPRESSION OR BULGES ☐ (27) SLIDE ☐ (28) SOFT AREAS
☒ (29) OTHER Woody vegetation.
COMMENTS: Brush covering the entire downstream slope; Bar spot on right abutment with minor erosion;

DOWNSTREAM SLOPE

<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
GOOD	ACCEPTABLE	POOR

SEEPAGE

PROBLEMS NOTED: ☒ (30) NONE ☐ (31) SATURATED EMBANKMENT AREA ☐ (32) SEEPAGE EXITS ON EMBANKMENT
☐ (33) SEEPAGE EXITS AT POINT SOURCE ☐ (34) SEEPAGE AREA AT TOE ☐ (35) FLOW ADJACENT TO OUTLET ☐ (36) SEEPAGE INCREASED/MUDDY
DRAIN OUTFALLS SEEN ☐ NO ☐ YES ☐ (37) FLOW INCREASED/MUDDY ☐ (38) DRAIN DRY/OBSTRUCTED
☐ (39) OTHER _____
COMMENTS: None observed.

SEEPAGE

<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
GOOD	ACCEPTABLE	POOR

OUTLET

PROBLEMS NOTED: ☐ (40) NONE ☒ (41) NO OUTLET FOUND ☐ (42) POOR OPERATING ACCESS ☐ (43) INOPERABLE
☐ (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION ☒ NO ☐ YES
INTERIOR INSPECTED ☒ (120) NO ☐ (121) YES ☐ (46) CONDUIT DETERIORATED OR COLLAPSED ☐ (47) JOINTS DISPLACED
☐ (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN ☐ NO ☐ YES
☐ (49) OTHER _____
COMMENTS: Outlet leads to water treatment and was not observed.

OUTLET

<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
GOOD	ACCEPTABLE	POOR

SPILLWAY

PROBLEMS NOTED: ☒ (50) NONE ☐ (51) NO EMERGENCY SPILLWAY FOUND ☐ (52) EROSION WITH BACKCUTTING
☐ (53) CRACK - WITH DISPLACEMENT ☐ (54) APPEARS TO BE STRUCTURALLY INADEQUATE ☐ (55) APPEARS TOO SMALL
☐ (56) INADEQUATE FREEBOARD ☐ (57) FLOW OBSTRUCTED ☒ (58) CONCRETE DETERIORATED/UNDERMINED
☐ (59) OTHER _____
COMMENTS: _____

SPILLWAY

<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
GOOD	ACCEPTABLE	POOR

MONITORING	EXISTING INSTRUMENTATION FOUND: <input type="checkbox"/> (110) NONE <input type="checkbox"/> (111) GAGE ROD <input type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES <input type="checkbox"/> (114) SURVEY MONUMENTS <input checked="" type="checkbox"/> (115) OTHER MONITORING OF INSTRUMENTATION: <input type="checkbox"/> (116) NO <input type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input checked="" type="checkbox"/> (118) OWNER <input type="checkbox"/> (119) ENGINEER COMMENTS: <u>Water supply lake so the levels are monitored.</u>	MONITORING	
	PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE <input checked="" type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE <input type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input checked="" type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY <input type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input type="checkbox"/> (68) OTHER COMMENTS: <u>Brush covers both slopes entirely and should be removed so a more thorough inspection can occur. Also, cracks on concrete should be fixed.</u>		MAINTENANCE & REPAIR
	REMARKS: <u>Once the brush is removed, ANRC can conduct a more detailed inspection.</u>		
Based on this Safety Inspection and recent file review, the overall condition is determined to be: <input type="checkbox"/> (71) SATISFACTORY <input checked="" type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input type="checkbox"/> (73) UNSATISFACTORY			

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

☐ (80) PROVIDE ADDITIONAL RIPRAP: _____

☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE: _____

☒ (82) CLEAR TREES AND/OR BRUSH FROM: Brush on both slopes.

☐ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: _____

☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: _____

☐ (85) PROVIDE SURFACE DRAINAGE FOR: _____

☐ (86) MONITOR: _____

☐ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____

☐ (88) OTHER: _____

☐ (89) OTHER: _____

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:
(Plan & Specification must be approved by State Engineer prior to construction)

☐ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: _____

☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____

☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: _____

☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____

☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____

☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS: _____

☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____

☐ (97) OTHER: _____

☐ (98) OTHER: _____

☐ (99) OTHER: _____

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

<input checked="" type="checkbox"/> (101) FULL STORAGE	RESTRICTED LEVEL OFFICIAL ORDER TO FOLLOW	{	_____ FT BELOW DAMS CREST
<input type="checkbox"/> (102) CONDITIONAL FULL STORAGE			_____ FT BELOW SPILLWAY CREST
<input type="checkbox"/> (103) RECOMMENDED RESTRICTION			_____ FT GAGE HEIGHT
			_____ NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's Signature _____ Owner's Signature _____ DATE: _____

INSPECTED BY _____ OWNER/OWNER'S REPRESENTATIVE _____

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human life is expected and damage will occur only to the dam owner's property.

ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND, GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE

WATER LEVEL - BELOW DAM CREST ~10 FT BELOW SPILLWAY ~1 FT GAGE ROD x
GROUND MOISTURE CONDITION: DRY x WET SNOWCOVER OTHER

UPSTREAM SLOPE		CREST		DOWNSTREAM SLOPE		SEEPAGE		OUTLET		SPILLWAY	
PROBLEMS NOTED: <input type="checkbox"/> (0) NONE <input checked="" type="checkbox"/> (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED <input type="checkbox"/> (2) WAVE EROSION-WITH SCARPS <input type="checkbox"/> (3) CRACKS WITH DISPLACEMENT <input type="checkbox"/> (4) SINKHOLE <input type="checkbox"/> (5) APPEARS TOO STEEP <input type="checkbox"/> (6) DEPRESSIONS OR BULGES <input type="checkbox"/> (7) SLIDES <input type="checkbox"/> (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED <input type="checkbox"/> (9) OTHER _____		GOOD		ACCEPTABLE		POOR					
COMMENTS: _____		GOOD		ACCEPTABLE		POOR					

PROBLEMS NOTED: <input checked="" type="checkbox"/> (10) NONE <input type="checkbox"/> (11) RUTS OR PUDDLES <input type="checkbox"/> (12) EROSION <input type="checkbox"/> (13) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (14) SINKHOLES <input type="checkbox"/> (15) NOT WIDE ENOUGH <input type="checkbox"/> (16) LOW AREA <input type="checkbox"/> (17) MISALIGNMENT <input type="checkbox"/> (18) INADEQUATE SURFACE DRAINAGE <input type="checkbox"/> (19) OTHER _____		GOOD		ACCEPTABLE		POOR					
COMMENTS: _____		GOOD		ACCEPTABLE		POOR					

PROBLEMS NOTED: <input type="checkbox"/> (20) NONE <input type="checkbox"/> (21) LIVESTOCK DAMAGE <input type="checkbox"/> (22) EROSION OR GULLIES <input type="checkbox"/> (23) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (24) SINKHOLE <input type="checkbox"/> (25) APPEARS TOO STEEP <input type="checkbox"/> (26) DEPRESSION OR BULGES <input type="checkbox"/> (27) SLIDE <input type="checkbox"/> (28) SOFT AREAS <input type="checkbox"/> (29) OTHER _____		GOOD		ACCEPTABLE		POOR					
COMMENTS: <u>CLEAR EXCESS VEGETATION/TREES FROM LOWER PORTION OF DOWNSTREAM SLOPE</u>		GOOD		ACCEPTABLE		POOR					

PROBLEMS NOTED: <input checked="" type="checkbox"/> (30) NONE <input type="checkbox"/> (31) SATURATED EMBANKMENT AREA <input type="checkbox"/> (32) SEEPAGE EXITS ON EMBANKMENT <input type="checkbox"/> (33) SEEPAGE EXITS AT POINT SOURCE <input type="checkbox"/> (34) SEEPAGE AREA AT TOE <input type="checkbox"/> (35) FLOW ADJACENT TO OUTLET <input type="checkbox"/> (36) SEEPAGE INCREASED/MUDDY DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (37) FLOW INCREASED/MUDDY <input type="checkbox"/> (38) DRAIN DRY/OBSTRUCTED <input type="checkbox"/> (39) OTHER _____		GOOD		ACCEPTABLE		POOR					
COMMENTS: <u>NO OBSERVABLE SEEPAGE</u>		GOOD		ACCEPTABLE		POOR					

PROBLEMS NOTED: <input type="checkbox"/> (40) NONE <input type="checkbox"/> (41) NO OUTLET FOUND <input type="checkbox"/> (42) POOR OPERATING ACCESS <input type="checkbox"/> (43) INOPERABLE <input type="checkbox"/> (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES INTERIOR INSPECTED <input checked="" type="checkbox"/> (120) NO <input type="checkbox"/> (121) YES <input type="checkbox"/> (46) CONDUIT DETERIORATED OR COLLAPSED <input type="checkbox"/> (47) JOINTS DISPLACED <input type="checkbox"/> (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (49) OTHER _____		GOOD		ACCEPTABLE		POOR					
COMMENTS: <u>OUTLET WORKS OF PRINCIPAL SPILLWAY CONDUIT INUNDATED WITH WATER; RECOMMEND ESTABLISHING A CHANNEL FOR THE WATER TO PROPERLY DRAIN</u>		GOOD		ACCEPTABLE		POOR					

PROBLEMS NOTED: <input type="checkbox"/> (50) NONE <input type="checkbox"/> (51) NO EMERGENCY SPILLWAY FOUND <input type="checkbox"/> (52) EROSION WITH BACKCUTTING <input type="checkbox"/> (53) CRACK - WITH DISPLACEMENT <input type="checkbox"/> (54) APPEARS TO BE STRUCTURALLY INADEQUATE <input type="checkbox"/> (55) APPEARS TOO SMALL <input type="checkbox"/> (56) INADEQUATE FREEBOARD <input checked="" type="checkbox"/> (57) FLOW OBSTRUCTED <input type="checkbox"/> (58) CONCRETE DETERIORATED/UNDERMINED <input type="checkbox"/> (59) OTHER _____		GOOD		ACCEPTABLE		POOR					
COMMENTS: <u>RECOMMEND CLEARING TREES GROWING IN AUXILIARY SPILLWAY OUTFLOW CHANNEL</u>		GOOD		ACCEPTABLE		POOR					

MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
<p>EXISTING INSTRUMENTATION FOUND: <input checked="" type="checkbox"/> (110) NONE <input type="checkbox"/> (111) GAGE ROD <input type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES</p> <p><input type="checkbox"/> (114) SURVEY MONUMENTS <input type="checkbox"/> (115) OTHER</p> <p>MONITORING OF INSTRUMENTATION: <input type="checkbox"/> (116) NO <input type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input checked="" type="checkbox"/> (118) OWNER <input type="checkbox"/> (119) ENGINEER</p> <p>COMMENTS: _____</p> <p>_____</p> <p>_____</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE</p> <p><input type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input checked="" type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE</p> <p><input type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY</p> <p><input type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input type="checkbox"/> (68) OTHER _____</p> <p>COMMENTS: _____</p> <p>_____</p> <p>_____</p>	<p>REMARKS: HIGHWAY DEPARTMENT MOWS THE U/S SLOPE AND UPPER PORTION OF D/S SLOPE FOR P.O.A. RECOMMEND CLEARING EXCESS TREES AND VEGETATION FROM LOWER PORTION OF D/S SLOPE, ESTABLISHING CHANNEL FOR WATER TO DRAIN BELOW PRINCIPAL SPILLWAY OUTLET, CLEARING TREES IN AUXILIARY SPILLWAY CHANNEL</p> <p>_____</p> <p>Based on this Safety Inspection and recent file review, the overall condition is determined to be:</p> <p><input type="checkbox"/> (71) SATISFACTORY <input checked="" type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input type="checkbox"/> (73) UNSATISFACTORY</p>
MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
GOOD	GOOD	GOOD
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
POOR	POOR	POOR

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☐ (80) PROVIDE ADDITIONAL RIPRAP: _____
- ☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE: _____
- ☒ (82) CLEAR TREES AND/OR BRUSH FROM: LOWER PORTION OF D/S SLOPE
- ☐ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: _____
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: _____
- ☒ (85) PROVIDE SURFACE DRAINAGE FOR: WATER IN CHANNEL BELOW PRINCIPAL SPILLWAY OUTLET WORKS
- ☐ (86) MONITOR: _____
- ☒ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____
- ☐ (88) OTHER: _____
- ☐ (89) OTHER: _____

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:

(Plan & Specification must be approved by State Engineer prior to construction)

- ☐ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: _____
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____
- ☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: _____
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____
- ☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS: _____
- ☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____
- ☐ (97) OTHER: _____
- ☐ (98) OTHER: _____
- ☐ (99) OTHER: _____

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- ☐ (101) FULL STORAGE
- ☒ (102) CONDITIONAL FULL STORAGE
- ☐ (103) RECOMMENDED RESTRICTION
- RESTRICTED LEVEL
OFFICIAL ORDER TO FOLLOW
- _____ FT BELOW DAMS CREST
_____ FT BELOW SPILLWAY CREST
_____ FT GAGE HEIGHT
NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's
Signature _____Owner's
Signature _____

DATE: 12/13/2017

INSPECTED BY

OWNER/OWNER'S REPRESENTATIVE

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human is expected and damage will occur only to the dam owner's property.

ENGINEERS INSPECTION REPORT

ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DAM NAME LAKE BLOOMFIELD PERMIT #120 DATE OF INSPECTION 2/7/2018
DAM ID AR01177 DATE OF LAST INSPECTION 3/30/2017
OWNER NAME BLOOMFIELD HILLS POA OWNER PHONE 501.804.1218
ADDRESS 8 ARCADIA CIRCLE, BRANT, AR ZIP 72022
CONTACT NAME FRED FOSTER CONTACT PHONE 501.804.1218
CLASS H CAPACITY 38 AF SURFACE AREA 12 AC HEIGHT 14.5 FT CREST LENGTH 380 FT CREST WIDTH - FT
CURRENT RESTRICTION ☒ (NO) ☐ (YES) LEVEL EAP ON FILE ☒ (NO) ☐ (YES)
INSPECTION PARTY REPRESENTING WALT MACPHEE, ANRC

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND, GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE

FIELD CONDITIONS OBSERVED

WATER LEVEL - BELOW DAM CREST -3 FT BELOW SPILLWAY FLOWING (OVER 1 IN.) FT GAGE ROD -
GROUND MOISTURE CONDITION: DRY WET x SNOWCOVER OTHER

UPSTREAM SLOPE	CREST	DOWNSTREAM SLOPE	SEEPAGE	OUTLET	SPILLWAY	UPSTREAM SLOPE	CREST	DOWNSTREAM SLOPE	SEEPAGE	OUTLET	SPILLWAY
<p>PROBLEMS NOTED: <input type="checkbox"/> (0) NONE <input checked="" type="checkbox"/> (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED <input checked="" type="checkbox"/> (2) WAVE EROSION-WITH SCARPS <input type="checkbox"/> (3) CRACKS WITH DISPLACEMENT <input type="checkbox"/> (4) SINKHOLE <input checked="" type="checkbox"/> (5) APPEARS TOO STEEP <input type="checkbox"/> (6) DEPRESSIONS OR BULGES <input type="checkbox"/> (7) SLIDES <input type="checkbox"/> (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED <input type="checkbox"/> (9) OTHER</p> <p>COMMENTS: WAVE EROSION ACROSS UPSTREAM SLOPE; OWNER HAS BEGUN EFFORTS TO ADD RIP-RAP, BUT HE DID NOT RE-GRADE THE UPSTREAM SLOPE BEFORE ADDING THE RIP-RAP. SO THE EROSION IS MERELY COVERED UP BY THE RIP-RAP (TEMPORARY SOLUTION TO A LONG-TERM PROBLEM); WAVE EROSION HAS LED TO SCARPING (ESPECIALLY ON LEFT SIDE OF U/S SLOPE)</p>						GOOD	ACCEPTABLE	POOR			
<p>PROBLEMS NOTED: <input type="checkbox"/> (10) NONE <input type="checkbox"/> (11) RUTS OR PUDDLES <input type="checkbox"/> (12) EROSION <input type="checkbox"/> (13) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (14) SINKHOLES <input type="checkbox"/> (15) NOT WIDE ENOUGH <input checked="" type="checkbox"/> (16) LOW AREA <input type="checkbox"/> (17) MISALIGNMENT <input type="checkbox"/> (18) INADEQUATE SURFACE DRAINAGE <input type="checkbox"/> (19) OTHER</p> <p>COMMENTS: LOW AREA NEAR LEFT ABUTMENT</p>						GOOD	ACCEPTABLE	POOR			
<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (20) NONE <input type="checkbox"/> (21) LIVESTOCK DAMAGE <input type="checkbox"/> (22) EROSION OR GULLIES <input type="checkbox"/> (23) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (24) SINKHOLE <input type="checkbox"/> (25) APPEARS TOO STEEP <input type="checkbox"/> (26) DEPRESSION OR BULGES <input type="checkbox"/> (27) SLIDE <input type="checkbox"/> (28) SOFT AREAS <input type="checkbox"/> (29) OTHER</p> <p>COMMENTS: SEVERAL SMALL BARE SPOTS, SUSCEPTIBLE TO EROSION/RECOMMEND RE-SEEDING</p>						GOOD	ACCEPTABLE	POOR			
<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (30) NONE <input type="checkbox"/> (31) SATURATED EMBANKMENT AREA <input type="checkbox"/> (32) SEEPAGE EXITS ON EMBANKMENT <input type="checkbox"/> (33) SEEPAGE EXITS AT POINT SOURCE <input type="checkbox"/> (34) SEEPAGE AREA AT TOE <input type="checkbox"/> (35) FLOW ADJACENT TO OUTLET <input type="checkbox"/> (36) SEEPAGE INCREASED/MUDDY DRAIN OUTFALLS SEEN <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> (37) FLOW INCREASED/MUDDY <input type="checkbox"/> (38) DRAIN DRY/OBSTRUCTED <input type="checkbox"/> (39) OTHER</p> <p>COMMENTS: D/S SLOPE AND TOE WERE WELL-SATURATED, BUT IT HAD JUST RAINED THE NIGHT BEFORE</p>						GOOD	ACCEPTABLE	POOR			
<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (40) NONE <input type="checkbox"/> (41) NO OUTLET FOUND <input type="checkbox"/> (42) POOR OPERATING ACCESS <input type="checkbox"/> (43) INOPERABLE <input type="checkbox"/> (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION <input type="checkbox"/> NO <input type="checkbox"/> YES INTERIOR INSPECTED <input type="checkbox"/> (120) NO <input type="checkbox"/> (121) YES <input type="checkbox"/> (46) CONDUIT DETERIORATED OR COLLAPSED <input type="checkbox"/> (47) JOINTS DISPLACED <input type="checkbox"/> (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> (49) OTHER</p> <p>COMMENTS: NO PRIMARY SPILLWAY</p>						GOOD	ACCEPTABLE	POOR			
<p>PROBLEMS NOTED: <input type="checkbox"/> (50) NONE <input type="checkbox"/> (51) NO EMERGENCY SPILLWAY FOUND <input checked="" type="checkbox"/> (52) EROSION WITH BACKCUTTING <input type="checkbox"/> (53) CRACK - WITH DISPLACEMENT <input type="checkbox"/> (54) APPEARS TO BE STRUCTURALLY INADEQUATE <input checked="" type="checkbox"/> (55) APPEARS TOO SMALL <input type="checkbox"/> (56) INADEQUATE FREEBOARD <input type="checkbox"/> (57) FLOW OBSTRUCTED <input type="checkbox"/> (58) CONCRETE DETERIORATED/UNDERMINED <input type="checkbox"/> (59) OTHER</p> <p>COMMENTS: LESS THAN 50% PMF CAPABLE; SINKHOLE HAS DEVELOPED BELOW AUXILIARY SPILLWAY/SOIL IS CRACKING, COLLAPSING, AND ERODING; SINKHOLE WILL CONTINUE TO RAPIDLY-DEVELOP WHILE SPILLWAY ACTIVATED; RECOMMEND CONSULTING WITH AN ENGINEER TO DEVELOP SOLUTION</p>						GOOD	ACCEPTABLE	POOR			

MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
<p>EXISTING INSTRUMENTATION FOUND: <input checked="" type="checkbox"/> (110) NONE <input type="checkbox"/> (111) GAGE ROD <input type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES</p> <p><input type="checkbox"/> (114) SURVEY MONUMENTS <input type="checkbox"/> (115) OTHER</p> <p>MONITORING OF INSTRUMENTATION: <input checked="" type="checkbox"/> (116) NO <input type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input checked="" type="checkbox"/> (118) OWNER <input type="checkbox"/> (119) ENGINEER</p> <p>COMMENTS: _____</p> <p>_____</p> <p>_____</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE</p> <p><input type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE</p> <p><input type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY</p> <p><input type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input type="checkbox"/> (68) OTHER _____</p> <p>COMMENTS: REPAIR UPSTREAM SLOPE PROPERLY ADDING FILL, RE-GRADING, AND ADDING RIP-RAP; ADDRESS SINKHOLE AND EROSION ISSUE BELOW AUXILIARY SPILLWAY</p> <p>(CONSULT W/ ENGINEER)</p> <p>_____</p> <p>_____</p>	<p>REMARKS: _____</p> <p>_____</p> <p>_____</p> <p>Based on this Safety Inspection and recent file review, the overall condition is determined to be:</p> <p><input type="checkbox"/> (71) SATISFACTORY <input checked="" type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input type="checkbox"/> (73) UNSATISFACTORY</p>
MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
GOOD	GOOD	GOOD
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
POOR	POOR	POOR

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☒ (80) PROVIDE ADDITIONAL RIPRAP: UPSTREAM SLOPE _____
- ☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE: _____
- ☐ (82) CLEAR TREES AND/OR BRUSH FROM: _____
- ☐ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: _____
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: _____
- ☐ (85) PROVIDE SURFACE DRAINAGE FOR: _____
- ☒ (86) MONITOR: SINKHOLE _____
- ☒ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____
- ☐ (88) OTHER: _____
- ☐ (89) OTHER: _____

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:

(Plan & Specification must be approved by State Engineer prior to construction)

- ☐ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: _____
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____
- ☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: _____
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____
- ☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS: _____
- ☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____
- ☐ (97) OTHER: _____
- ☐ (98) OTHER: _____
- ☐ (99) OTHER: _____

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- ☒ (101) FULL STORAGE
- ☐ (102) CONDITIONAL FULL STORAGE
- ☐ (103) RECOMMENDED RESTRICTION
- RESTRICTED LEVEL
OFFICIAL ORDER TO FOLLOW
- _____ FT BELOW DAMS CREST
_____ FT BELOW SPILLWAY CREST
_____ FT GAGE HEIGHT
NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's
Signature _____Owner's
Signature _____

DATE: 2/7/2018

INSPECTED BY

OWNER/OWNER'S REPRESENTATIVE

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human life is expected and damage will occur only to the dam owner's property.

ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND, GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE

WATER LEVEL - BELOW DAM CREST 3 FT BELOW SPILLWAY FLOWING (OVER 1 IN.) FT GAGE ROD
GROUND MOISTURE CONDITION: DRY WET x SNOWCOVER OTHER

UPSTREAM SLOPE	<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (0) NONE <input checked="" type="checkbox"/> (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED <input checked="" type="checkbox"/> (2) WAVE EROSION-WITH SCARPS <input type="checkbox"/> (3) CRACKS WITH DISPLACEMENT <input type="checkbox"/> (4) SINKHOLE <input checked="" type="checkbox"/> (5) APPEARS TOO STEEP <input type="checkbox"/> (6) DEPRESSIONS OR BULGES <input type="checkbox"/> (7) SLIDES <input type="checkbox"/> (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED <input type="checkbox"/> (9) OTHER</p> <p>COMMENTS: <u>WAVE EROSION ACROSS UPSTREAM SLOPE; OWNER HAS BEGUN EFFORTS TO ADD RIP-RAP, BUT HE DID NOT RE-GRADE THE UPSTREAM SLOPE BEFORE ADDING THE RIP-RAP, SO THE EROSION IS MERELY COVERED UP BY THE RIP-RAP (TEMPORARY SOLUTION TO A LONG-TERM PROBLEM); WAVE EROSION HAS LED TO SCARPING (ESPECIALLY ON LEFT SIDE OF U/S SLOPE)</u></p>	UPSTREAM SLOPE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
CREST	<p>PROBLEMS NOTED: <input type="checkbox"/> (10) NONE <input type="checkbox"/> (11) RUTS OR PUDDLES <input type="checkbox"/> (12) EROSION <input type="checkbox"/> (13) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (14) SINKHOLES <input type="checkbox"/> (15) NOT WIDE ENOUGH <input checked="" type="checkbox"/> (16) LOW AREA <input type="checkbox"/> (17) MISALIGNMENT <input type="checkbox"/> (18) INADEQUATE SURFACE DRAINAGE <input type="checkbox"/> (19) OTHER</p> <p>COMMENTS: <u>LOW AREA NEAR LEFT ABUTMENT</u></p>	CREST	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
DOWNSTREAM SLOPE	<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (20) NONE <input type="checkbox"/> (21) LIVESTOCK DAMAGE <input type="checkbox"/> (22) EROSION OR GULLIES <input type="checkbox"/> (23) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (24) SINKHOLE <input type="checkbox"/> (25) APPEARS TOO STEEP <input type="checkbox"/> (26) DEPRESSION OR BULGES <input type="checkbox"/> (27) SLIDE <input type="checkbox"/> (28) SOFT AREAS <input type="checkbox"/> (29) OTHER</p> <p>COMMENTS: <u>SEVERAL SMALL BARE SPOTS, SUSCEPTIBLE TO EROSION/RECOMMEND RE-SEEDING</u></p>	DOWNSTREAM SLOPE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
SEEPAGE	<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (30) NONE <input type="checkbox"/> (31) SATURATED EMBANKMENT AREA <input type="checkbox"/> (32) SEEPAGE EXITS ON EMBANKMENT <input type="checkbox"/> (33) SEEPAGE EXITS AT POINT SOURCE <input type="checkbox"/> (34) SEEPAGE AREA AT TOE <input type="checkbox"/> (35) FLOW ADJACENT TO OUTLET <input type="checkbox"/> (36) SEEPAGE INCREASED/MUDDY DRAIN OUTFALLS SEEN <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> (37) FLOW INCREASED/MUDDY <input type="checkbox"/> (38) DRAIN DRY/OBSTRUCTED <input type="checkbox"/> (39) OTHER</p> <p>COMMENTS: <u>D/S SLOPE AND TOE WERE WELL-SATURATED, BUT IT HAD JUST RAINED THE NIGHT BEFORE</u></p>	SEEPAGE	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
OUTLET	<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (40) NONE <input type="checkbox"/> (41) NO OUTLET FOUND <input type="checkbox"/> (42) POOR OPERATING ACCESS <input type="checkbox"/> (43) INOPERABLE <input type="checkbox"/> (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION <input type="checkbox"/> NO <input type="checkbox"/> YES INTERIOR INSPECTED <input type="checkbox"/> (120) NO <input type="checkbox"/> (121) YES <input type="checkbox"/> (46) CONDUIT DETERIORATED OR COLLAPSED <input type="checkbox"/> (47) JOINTS DISPLACED <input type="checkbox"/> (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> (49) OTHER</p> <p>COMMENTS: <u>NO PRIMARY SPILLWAY</u></p>	OUTLET	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>
SPILLWAY	<p>PROBLEMS NOTED: <input type="checkbox"/> (50) NONE <input type="checkbox"/> (51) NO EMERGENCY SPILLWAY FOUND <input checked="" type="checkbox"/> (52) EROSION WITH BACKCUTTING <input type="checkbox"/> (53) CRACK - WITH DISPLACEMENT <input type="checkbox"/> (54) APPEARS TO BE STRUCTURALLY INADEQUATE <input checked="" type="checkbox"/> (55) APPEARS TOO SMALL <input type="checkbox"/> (56) INADEQUATE FREEBOARD <input type="checkbox"/> (57) FLOW OBSTRUCTED <input type="checkbox"/> (58) CONCRETE DETERIORATED/UNDERMINED <input type="checkbox"/> (59) OTHER</p> <p>COMMENTS: <u>LESS THAN 50% PMF CAPABLE; SINKHOLE HAS DEVELOPED BELOW AUXILIARY SPILLWAY/SOIL IS CRACKING, COLLAPSING, AND ERODING; SINKHOLE WILL CONTINUE TO RAPIDLY-DEVELOP WHILE SPILLWAY ACTIVATED; RECOMMEND CONSULTING WITH AN ENGINEER TO DEVELOP SOLUTION</u></p>	SPILLWAY	<div><div></div><div>GOOD</div></div> <div><div></div><div>ACCEPTABLE</div></div> <div><div></div><div>POOR</div></div>

MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
<p>EXISTING INSTRUMENTATION FOUND: <input checked="" type="checkbox"/> (110) NONE <input type="checkbox"/> (111) GAGE ROD <input type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES <input type="checkbox"/> (114) SURVEY MONUMENTS <input type="checkbox"/> (115) OTHER</p> <p>MONITORING OF INSTRUMENTATION: <input checked="" type="checkbox"/> (116) NO <input type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input checked="" type="checkbox"/> (118) OWNER <input type="checkbox"/> (119) ENGINEER</p> <p>COMMENTS: _____</p> <p>_____</p> <p>_____</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE</p> <p><input type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE</p> <p><input type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY</p> <p><input type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input type="checkbox"/> (68) OTHER _____</p> <p>COMMENTS: REPAIR UPSTREAM SLOPE PROPERLY ADDING FILL, RE-GRADING, AND ADDING RIP-RAP; ADDRESS SINKHOLE AND EROSION ISSUE BELOW AUXILIARY SPILLWAY (CONSULT W/ ENGINEER)</p> <p>_____</p> <p>_____</p>	<p>REMARKS: _____</p> <p>_____</p> <p>_____</p> <p>Based on this Safety Inspection and recent file review, the overall condition is determined to be:</p> <p><input type="checkbox"/> (71) SATISFACTORY <input checked="" type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input type="checkbox"/> (73) UNSATISFACTORY</p>
MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
GOOD	GOOD	GOOD
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
POOR	POOR	POOR

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☒ (80) PROVIDE ADDITIONAL RIPRAP: UPSTREAM SLOPE _____
- ☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE: _____
- ☐ (82) CLEAR TREES AND/OR BRUSH FROM: _____
- ☐ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: _____
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: _____
- ☐ (85) PROVIDE SURFACE DRAINAGE FOR: _____
- ☒ (86) MONITOR: SINKHOLE _____
- ☒ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____
- ☐ (88) OTHER: _____
- ☐ (89) OTHER: _____

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:

(Plan & Specification must be approved by State Engineer prior to construction)

- ☐ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: _____
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____
- ☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: _____
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____
- ☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS: _____
- ☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____
- ☐ (97) OTHER: _____
- ☐ (98) OTHER: _____
- ☐ (99) OTHER: _____

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- ☒ (101) FULL STORAGE
- ☐ (102) CONDITIONAL FULL STORAGE
- ☐ (103) RECOMMENDED RESTRICTION
- RESTRICTED LEVEL
OFFICIAL ORDER TO FOLLOW
- _____ FT BELOW DAMS CREST
_____ FT BELOW SPILLWAY CREST
_____ FT GAGE HEIGHT
NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's
Signature _____Owner's
Signature _____

DATE: 2/7/2018

INSPECTED BY

OWNER/OWNER'S REPRESENTATIVE

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human life is expected and damage will occur only to the dam owner's property.

ENGINEERS INSPECTION REPORT

ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DAM NAME LAKE CORTEZ DAM PERMIT #178 DATE OF INSPECTION 1/8/2018
DAM ID AR01206 DATE OF LAST INSPECTION 1/31/2017
OWNER NAME HOT SPRINGS VILLAGE POA OWNER PHONE 501.922.5522
ADDRESS 895 DESOTO BLVD ZIP 71909
CONTACT NAME JASON TEMPLE CONTACT PHONE 501.209.2291
CLASS H CAPACITY 5840 AF SURFACE AREA 247 AC HEIGHT 80 FT CREST LENGTH 857 FT CREST WIDTH 40 FT
CURRENT RESTRICTION ☒ (NO) ☐ (YES) LEVEL EAP ON FILE ☐ (NO) ☒ (YES)
INSPECTION PARTY REPRESENTING WALT MACPHEE, ANRC

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND, GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE

FIELD CONDITIONS OBSERVED

WATER LEVEL - BELOW DAM CREST ~12 FT BELOW SPILLWAY OVER ~1 IN. FT GAGE ROD X
GROUND MOISTURE CONDITION: DRY WET X SNOWCOVER OTHER

UPSTREAM SLOPE	CREST	DOWNSTREAM SLOPE	SEEPAGE	OUTLET	SPILLWAY
<p>PROBLEMS NOTED: <input type="checkbox"/> (0) NONE <input type="checkbox"/> (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED <input type="checkbox"/> (2) WAVE EROSION-WITH SCARPS <input type="checkbox"/> (3) CRACKS WITH DISPLACEMENT <input type="checkbox"/> (4) SINKHOLE <input type="checkbox"/> (5) APPEARS TOO STEEP <input type="checkbox"/> (6) DEPRESSIONS OR BULGES <input type="checkbox"/> (7) SLIDES <input type="checkbox"/> (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED <input checked="" type="checkbox"/> (9) OTHER SMALL TREES AND VEGETATION COMMENTS:</p>	<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (10) NONE <input type="checkbox"/> (11) RUTS OR PUDDLES <input type="checkbox"/> (12) EROSION <input type="checkbox"/> (13) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (14) SINKHOLES <input type="checkbox"/> (15) NOT WIDE ENOUGH <input type="checkbox"/> (16) LOW AREA <input type="checkbox"/> (17) MISALIGNMENT <input type="checkbox"/> (18) INADEQUATE SURFACE DRAINAGE <input type="checkbox"/> (19) OTHER COMMENTS:</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (20) NONE <input type="checkbox"/> (21) LIVESTOCK DAMAGE <input type="checkbox"/> (22) EROSION OR GULLIES <input type="checkbox"/> (23) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (24) SINKHOLE <input type="checkbox"/> (25) APPEARS TOO STEEP <input type="checkbox"/> (26) DEPRESSION OR BULGES <input type="checkbox"/> (27) SLIDE <input type="checkbox"/> (28) SOFT AREAS <input checked="" type="checkbox"/> (29) OTHER EXCESS VEGETATION COMMENTS:</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (30) NONE <input checked="" type="checkbox"/> (31) SATURATED EMBANKMENT AREA <input type="checkbox"/> (32) SEEPAGE EXITS ON EMBANKMENT <input type="checkbox"/> (33) SEEPAGE EXITS AT POINT SOURCE <input type="checkbox"/> (34) SEEPAGE AREA AT TOE <input type="checkbox"/> (35) FLOW ADJACENT TO OUTLET <input type="checkbox"/> (36) SEEPAGE INCREASED/MUDDY DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (37) FLOW INCREASED/MUDDY <input type="checkbox"/> (38) DRAIN DRY/OBSTRUCTED <input type="checkbox"/> (39) OTHER COMMENTS:</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (40) NONE <input type="checkbox"/> (41) NO OUTLET FOUND <input type="checkbox"/> (42) POOR OPERATING ACCESS <input type="checkbox"/> (43) INOPERABLE <input type="checkbox"/> (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES INTERIOR INSPECTED <input checked="" type="checkbox"/> (120) NO <input type="checkbox"/> (121) YES <input type="checkbox"/> (46) CONDUIT DETERIORATED OR COLLAPSED <input type="checkbox"/> (47) JOINTS DISPLACED <input type="checkbox"/> (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (49) OTHER COMMENTS: PRIMARY SPILLWAY CONDUIT VALVE WAS FULLY OPEN (BASED ON METER), BUT WATER DID NOT APPEAR TO BE FLOWING @ OUTLET, OUTLET WAS INUNDATED</p>	<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (50) NONE <input type="checkbox"/> (51) NO EMERGENCY SPILLWAY FOUND <input type="checkbox"/> (52) EROSION WITH BACKCUTTING <input type="checkbox"/> (53) CRACK - WITH DISPLACEMENT <input type="checkbox"/> (54) APPEARS TO BE STRUCTURALLY INADEQUATE <input type="checkbox"/> (55) APPEARS TOO SMALL <input type="checkbox"/> (56) INADEQUATE FREEBOARD <input type="checkbox"/> (57) FLOW OBSTRUCTED <input checked="" type="checkbox"/> (58) CONCRETE DETERIORATED/UNDERMINED <input type="checkbox"/> (59) OTHER COMMENTS: SOME VEGETATION GROWING IN CRACKS; MINOR CONCRETE DETERIORATION @ TOP OF SPILLWAY</p>

MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
<p>EXISTING INSTRUMENTATION FOUND: <input checked="" type="checkbox"/> (110) NONE <input type="checkbox"/> (111) GAGE ROD <input type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES</p> <p><input type="checkbox"/> (114) SURVEY MONUMENTS <input type="checkbox"/> (115) OTHER</p> <p>MONITORING OF INSTRUMENTATION: <input type="checkbox"/> (116) NO <input type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input checked="" type="checkbox"/> (118) OWNER <input type="checkbox"/> (119) ENGINEER</p> <p>COMMENTS: _____</p> <p>_____</p> <p>_____</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE</p> <p><input checked="" type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input checked="" type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE</p> <p><input type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input checked="" type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY</p> <p><input type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input type="checkbox"/> (68) OTHER _____</p> <p>COMMENTS: _____</p> <p>_____</p> <p>_____</p>	<p>REMARKS: CLEAR VEGETATION/TREES FROM DAM & SPILLWAY; IDENTIFY ISSUE WITH PRIMARY SPILLWAY CONDUIT</p> <p>_____</p> <p>_____</p> <p>Based on this Safety Inspection and recent file review, the overall condition is determined to be:</p> <p><input type="checkbox"/> (71) SATISFACTORY <input checked="" type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input type="checkbox"/> (73) UNSATISFACTORY</p>
MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
GOOD	GOOD	GOOD
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
POOR	POOR	POOR

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☐ (80) PROVIDE ADDITIONAL RIPRAP: _____
- ☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE: _____
- ☒ (82) CLEAR TREES AND/OR BRUSH FROM: U/S & D/S SLOPE, SPILLWAY _____
- ☐ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: _____
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: _____
- ☒ (85) PROVIDE SURFACE DRAINAGE FOR: PRIMARY SPILLWAY OUTLET WORKS _____
- ☐ (86) MONITOR: _____
- ☒ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____
- ☐ (88) OTHER: _____
- ☐ (89) OTHER: _____
- ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:
(Plan & Specification must be approved by State Engineer prior to construction)
- ☐ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: _____
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____
- ☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: _____
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____
- ☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS: _____
- ☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____
- ☐ (97) OTHER: _____
- ☐ (98) OTHER: _____
- ☐ (99) OTHER: _____

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- ☐ (101) FULL STORAGE
- ☒ (102) CONDITIONAL FULL STORAGE
- ☐ (103) RECOMMENDED RESTRICTION
- RESTRICTED LEVEL
OFFICIAL ORDER TO FOLLOW
- _____ FT BELOW DAMS CREST
_____ FT BELOW SPILLWAY CREST
_____ FT GAGE HEIGHT
NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's
Signature _____Owner's
Signature _____

DATE: 1/8/2018

INSPECTED BY

OWNER/OWNER'S REPRESENTATIVE

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human life is expected and damage will occur only to the dam owner's property.

ENGINEERS INSPECTION REPORT

ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DAM NAME LAKE ELMDALE PERMIT #353 DATE OF INSPECTION 8/16/2019
DAM ID AR00290 DATE OF LAST INSPECTION 4/12/2018
OWNER NAME ARKANSAS GAME & FISH COMMISSION OWNER PHONE 501.223.6305
ADDRESS 2 NATURAL RESOURCES DR. LITTLE ROCK, AR ZIP 72205
CONTACT NAME JAMES ROGERS CONTACT PHONE 479.926.0987
CLASS H CAPACITY 1049 AF SURFACE AREA 125 AC HEIGHT 46 FT CREST LENGTH 1500 FT CREST WIDTH 19 FT
CURRENT RESTRICTION ☒ (NO) ☐ (YES) LEVEL - EAP ON FILE ☐ (NO) ☒ (YES)
INSPECTION PARTY REPRESENTING Stephen Smedley ANRC ; Andrew Cherry ANRC ; Jackson Pruss ANRC

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND, GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE

FIELD CONDITIONS OBSERVED

WATER LEVEL - BELOW DAM CREST ~8-10 FT BELOW SPILLWAY OVER ~1/2 IN. FT GAGE ROD -
GROUND MOISTURE CONDITION: DRY WET x SNOWCOVER OTHER

UPSTREAM SLOPE	CREST	DOWNSTREAM SLOPE	SEEPAGE	OUTLET	SPILLWAY	UPSTREAM SLOPE	CREST	DOWNSTREAM SLOPE	SEEPAGE	OUTLET	SPILLWAY						
PROBLEMS NOTED: <input type="checkbox"/> (0) NONE <input checked="" type="checkbox"/> (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED <input type="checkbox"/> (2) WAVE EROSION-WITH SCARPS <input type="checkbox"/> (3) CRACKS WITH DISPLACEMENT <input type="checkbox"/> (4) SINKHOLE <input type="checkbox"/> (5) APPEARS TOO STEEP <input type="checkbox"/> (6) DEPRESSIONS OR BULGES <input type="checkbox"/> (7) SLIDES <input type="checkbox"/> (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED <input type="checkbox"/> (9) OTHER COMMENTS: SOME AREAS WHERE RIP-RAP IS MISSING/SPARSE; VEGETATION AND SMALL TREE GROWTH SHOULD BE CLEARED	PROBLEMS NOTED: <input type="checkbox"/> (10) NONE <input checked="" type="checkbox"/> (11) RUTS OR PUDDLES <input type="checkbox"/> (12) EROSION <input type="checkbox"/> (13) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (14) SINKHOLES <input type="checkbox"/> (15) NOT WIDE ENOUGH <input type="checkbox"/> (16) LOW AREA <input type="checkbox"/> (17) MISALIGNMENT <input type="checkbox"/> (18) INADEQUATE SURFACE DRAINAGE <input type="checkbox"/> (19) OTHER COMMENTS: SMALL VEHICULAR RUTS PRESENT	PROBLEMS NOTED: <input type="checkbox"/> (20) NONE <input type="checkbox"/> (21) LIVESTOCK DAMAGE <input checked="" type="checkbox"/> (22) EROSION OR GULLIES <input type="checkbox"/> (23) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (24) SINKHOLE <input type="checkbox"/> (25) APPEARS TOO STEEP <input type="checkbox"/> (26) DEPRESSION OR BULGES <input type="checkbox"/> (27) SLIDE <input checked="" type="checkbox"/> (28) SOFT AREAS <input type="checkbox"/> (29) OTHER COMMENTS: SATURATED AREAS NEAR MIDDLE-TOE OF DAM; TREES GROWING NEAR TOE OF DAM (RECOMMEND 20 FT. BUFFER)	PROBLEMS NOTED: <input type="checkbox"/> (30) NONE <input checked="" type="checkbox"/> (31) SATURATED EMBANKMENT AREA <input type="checkbox"/> (32) SEEPAGE EXITS ON EMBANKMENT <input type="checkbox"/> (33) SEEPAGE EXITS AT POINT SOURCE <input checked="" type="checkbox"/> (34) SEEPAGE AREA AT TOE <input type="checkbox"/> (35) FLOW ADJACENT TO OUTLET <input type="checkbox"/> (36) SEEPAGE INCREASED/MUDDY DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (37) FLOW INCREASED/MUDDY <input type="checkbox"/> (38) DRAIN DRY/OBSTRUCTED <input type="checkbox"/> (39) OTHER COMMENTS: SATURATED EMBANKMENT AND TOE; MONITOR SEEPAGE FOR SIGNS OF INCREASED/MUDDY FLOW	PROBLEMS NOTED: <input type="checkbox"/> (40) NONE <input type="checkbox"/> (41) NO OUTLET FOUND <input type="checkbox"/> (42) POOR OPERATING ACCESS <input type="checkbox"/> (43) INOPERABLE <input type="checkbox"/> (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION <input type="checkbox"/> NO <input type="checkbox"/> YES INTERIOR INSPECTED <input checked="" type="checkbox"/> (120) NO <input type="checkbox"/> (121) YES <input type="checkbox"/> (46) CONDUIT DETERIORATED OR COLLAPSED <input type="checkbox"/> (47) JOINTS DISPLACED <input type="checkbox"/> (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (49) OTHER COMMENTS: PRIMARY SPILLWAY APPEARED TO BE FUNCTIONING PROPERLY; PERFORM PIPE INSPECTION ON NEXT YEAR'S INSPECTION	PROBLEMS NOTED: <input type="checkbox"/> (50) NONE <input type="checkbox"/> (51) NO EMERGENCY SPILLWAY FOUND <input type="checkbox"/> (52) EROSION WITH BACKCUTTING <input type="checkbox"/> (53) CRACK - WITH DISPLACEMENT <input type="checkbox"/> (54) APPEARS TO BE STRUCTURALLY INADEQUATE <input type="checkbox"/> (55) APPEARS TOO SMALL <input type="checkbox"/> (56) INADEQUATE FREEBOARD <input checked="" type="checkbox"/> (57) FLOW OBSTRUCTED <input type="checkbox"/> (58) CONCRETE DETERIORATED/UNDERMINED <input type="checkbox"/> (59) OTHER COMMENTS: SMALL TREE GROWTH OBSTRUCTING ENTRY TO AUXILIARY SPILLWAY; ATTEMPT TO REPAIR SECONDARY EMERGENCY SPILLWAY WITH LARGE CONCRETE AGGREGATE SLAB IS FAILING; ADVISED JAMES ROGERS, AGFC, TO INSTALL RETAINING WALL TO RAISE ELEVATION OF SECONDARY SPILLWAY, SO WATER IS CHanneled TOWARDS PRIMARY AUXILIARY SPILLWAY	GOOD	ACCEPTABLE	POOR	GOOD	ACCEPTABLE	POOR	GOOD	ACCEPTABLE	POOR	GOOD	ACCEPTABLE	POOR

MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
<p>EXISTING INSTRUMENTATION FOUND: <input checked="" type="checkbox"/> (110) NONE <input type="checkbox"/> (111) GAGE ROD <input type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES</p> <p><input type="checkbox"/> (114) SURVEY MONUMENTS <input type="checkbox"/> (115) OTHER</p> <p>MONITORING OF INSTRUMENTATION: <input checked="" type="checkbox"/> (116) NO <input type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input type="checkbox"/> (118) OWNER <input type="checkbox"/> (119) ENGINEER</p> <p>COMMENTS: _____</p> <p>_____</p> <p>_____</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE</p> <p><input checked="" type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input checked="" type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE</p> <p><input type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input checked="" type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY</p> <p><input type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input type="checkbox"/> (68) OTHER _____</p> <p>COMMENTS: CLEAR VEGETATION AND SMALL TREE GROWTH FROM DAM; MONITOR SEEPAGE AREAS; INSPECT PRIMARY SPILLWAY CONDUIT ON NEXT YEAR'S INSPECTION;</p> <p>ADD RETAINING WALL TO SECONDARY AUXILIARY SPILLWAY; ADD RIP-RAP TO UPSTREAM SLOPE</p> <p>_____</p> <p>_____</p>	<p>REMARKS: OVERALL, DAM IS IN GOOD CONDITION; MAIN ISSUE IS SECONDARY EMERGENCY SPILLWAY (ADD RETAINING WALL); MONITOR SEEPAGE; CLEAR TREES OBSTRUCTING EMERGENCY SPILLWAY ENTRANCE</p> <p>_____</p> <p>_____</p> <p>Based on this Safety Inspection and recent file review, the overall condition is determined to be:</p> <p><input type="checkbox"/> (71) SATISFACTORY <input type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input checked="" type="checkbox"/> (73) UNSATISFACTORY</p>
MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
GOOD	GOOD	GOOD
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
POOR	POOR	POOR

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☒ (80) PROVIDE ADDITIONAL RIPRAP: UPSTREAM SLOPE _____
- ☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE: _____
- ☒ (82) CLEAR TREES AND/OR BRUSH FROM: UPSTREAM SLOPE AND TOE (20 FT. BUFFER) _____
- ☐ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: _____
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: _____
- ☐ (85) PROVIDE SURFACE DRAINAGE FOR: _____
- ☒ (86) MONITOR: SEEPAGE ON EMBANKMENT AND TOE _____
- ☒ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____
- ☒ (88) OTHER: ADD RETAINING WALL TO SECONDARY EMERGENCY SPILLWAY _____
- ☐ (89) OTHER: _____
- ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:
(Plan & Specification must be approved by State Engineer prior to construction)
- ☐ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: _____
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____
- ☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: _____
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____
- ☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS: _____
- ☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____
- ☐ (97) OTHER: _____
- ☐ (98) OTHER: _____
- ☐ (99) OTHER: _____

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- ☐ (101) FULL STORAGE
- ☐ (102) CONDITIONAL FULL STORAGE
- ☐ (103) RECOMMENDED RESTRICTION
- RESTRICTED LEVEL
OFFICIAL ORDER TO FOLLOW
- _____ FT BELOW DAMS CREST
_____ FT BELOW SPILLWAY CREST
_____ FT GAGE HEIGHT
NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's
Signature _____Owner's
Signature _____

DATE: 8/19/2019

INSPECTED BY

OWNER/OWNER'S REPRESENTATIVE

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human is expected and damage will occur only to the dam owner's property.

ENGINEERS INSPECTION REPORT

OFFICE OF THE STATE ENGINEER-DIVISION OF WATER RESOURCES - DAM SAFETY BRANCH
1313 Sherman Street, Room 618, Denver, CO 80203, (303) 866-3581

DAM NAME Lake Pauline Dam #495 W. DIV. _____ W. DIST. _____ DATE OF INSPECTION 01/16/2019
DAM ID AR01528 FILE NO. C FOREST I.D. _____ DATE OF LAST INSPECTION 06/21/2018
OWNER NAME Beautiful Lakeside POA OWNER PHONE 501-326-0120
ADDRESS PO Box 55377 Little Rock, AR ZIP CODE 72205
CONTACT NAME Matt Knight CONTACT PHONE 501-326-0120
CLASS H CAPACITY 147 AF SURFACE AREA 14 AC. HEIGHT 25 FT. CREST LENGTH 785 FT. CREST WIDTH _____ FT.
CURRENT RESTRICTION ☒ (NO) ☐ (YES) LEVEL _____ EPP ON FILE ☐ (NO) ☒ (YES) SPWY WIDTH _____ FT. FBO. _____ FT. Z _____
INSPECTION PARTY REPRESENTING Joshua Graham, ASERC

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND AND UNDERLINE WORDS THAT APPLY. GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE I.E. (25) ALL ALONG SLOPE, OR SHOW IT ON SKETCH.

FIELD CONDITIONS OBSERVED
WATER LEVEL - BELOW DAM CREST ~5 FT. BELOW SPILLWAY ~2 FT. GAGE ROD _____
GROUND MOISTURE CONDITION: DRY _____ WET X SNOWCOVER _____ OTHER _____

UPSTREAM SLOPE
PROBLEMS NOTED: ☐ (0) NONE ☐ (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED ☒ (2) WAVE EROSION-WITH SCARPS
☐ (3) CRACKS-WITH DISPLACEMENT ☐ (4) SINKHOLE ☐ (5) APPEARS TOO STEEP ☒ (6) DEPRESSIONS OR BULGES ☐ (7) SLIDES
☐ (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED ☐ (9) OTHER _____
Comments: Large pine trees across the face of the upstream slope; significant wave erosion and scarping; drainage erosion starting in some areas between trees; No rip-rap; multiple animal burrows.

CREST
PROBLEMS NOTED: ☐ (10) NONE ☐ (11) RUTS OR PUDDLES ☐ (12) EROSION ☐ (13) CRACKS - WITH DISPLACEMENT ☐ (14) SINKHOLES
☐ (15) NOT WIDE ENOUGH ☐ (16) LOW AREA ☐ (17) MISALIGNMENT ☐ (18) INADEQUATE SURFACE DRAINAGE
☒ (19) OTHER Pine Spots.
Comments: To prevent erosion, would be nice if it was vegetated with grasses.

DOWNSTREAM SLOPE
PROBLEMS NOTED: ☐ (20) NONE ☐ (21) LIVESTOCK DAMAGE ☒ (22) EROSION OR GULLIES ☐ (23) CRACKS - WITH DISPLACEMENT ☐ (24) SINKHOLE
☐ (25) APPEARS TOO STEEP ☒ (26) DEPRESSION OR BULGES ☐ (27) SLIDE ☒ (28) SOFT AREAS ☐ (29) OTHER _____
Comments: Large trees throughout the downstream slope; multiple deep animal burrows; Soft spots of soil, covered in pine needles and leaves.

SEEPAGE
PROBLEMS NOTED: ☐ (30) NONE ☐ (31) SATURATED EMBANKMENT AREA ☐ (32) SEEPAGE EXITS ON EMBANKMENT
☐ (33) SEEPAGE EXITS AT POINT SOURCE ☒ (34) SEEPAGE AREA AT TOE ☐ (35) FLOW ADJACENT TO OUTLET ☐ (36) SEEPAGE INCREASED/MUDDY
DRAIN OUTFALLS SEEN No Yes ☐ (37) FLOW INCREASED/MUDDY ☐ (38) DRAIN DRY/OBSTRUCTED
☐ (39) OTHER _____ Show location of drains on sketch and indicate amount and quality of discharge
Comments: Seepage area at right toe.

OUTLET
PROBLEMS NOTED: ☐ (40) NONE ☐ (41) NO OUTLET FOUND ☒ (42) POOR OPERATING ACCESS ☐ (43) INOPERABLE
☒ (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION ☐ YES ☒ NO
INTERIOR INSPECTED ☒ (120) NO ☐ (121) YES ☐ (46) CONDUIT DETERIORATED OR COLLAPSED ☐ (47) JOINTS DISPLACED ☐ (48) VALVE LEAKAGE
☐ (49) OTHER _____
Comments: Significant deterioration and corrosion of Principal Spillway outlet; pipe inspectors (6-25-17) found it to be in fair condition. It was recommended pipe be re-lined in 2017.

SPILLWAY
PROBLEMS NOTED: ☐ (50) NONE ☐ (51) NO EMERGENCY SPILLWAY FOUND ☒ (52) EROSION-WITH BACKCUTTING ☐ (53) CRACK - WITH DISPLACEMENT
☒ (54) APPEARS TO BE STRUCTURALLY INADEQUATE ☐ (55) APPEARS TOO SMALL ☐ (56) INADEQUATE FREEBOARD ☒ (57) FLOW OBSTRUCTED
☒ (58) CONCRETE DETERIORATED/UNDERMINED ☐ (59) OTHER _____
Comments: Spillway was rehabilitated in 2017, but spring rains in 2018 washed away most of the material. Spillway is in terrible condition. Rip-rap, concrete piles, support wire is all broken and has been partially blocking the spillway. Geofabric is tearing and exposed. Soil along the side of the spillway is eroding severely and undercutting the banks.

Conditions Observed			
GOOD	ACCEPTABLE	POOR	UPSTREAM SLOPE
GOOD	ACCEPTABLE	POOR	CREST
GOOD	ACCEPTABLE	POOR	DOWNSTREAM SLOPE
GOOD	ACCEPTABLE	POOR	SEEPAGE
GOOD	ACCEPTABLE	POOR	OUTLET
GOOD	ACCEPTABLE	POOR	SPILLWAY

See Guidelines on Back of this Sheet

DAM NAME:

DAM I.D.:

DATE:

EXISTING INSTRUMENTATION FOUND ☒ (110) NONE ☐ (111) GAGE ROD ☐ (112) PIEZOMETERS ☐ (113) SEEPAGE WEIRS/FLUMES☐ (114) SURVEY MONUMENTS ☐ (115) OTHERMONITORING OF INSTRUMENTATION: ☒ (116) NO ☐ (117) YES PERIODIC INSPECTIONS BY: ☐ (118) OWNER ☐ (119) ENGINEER

Comments:

None aware of any inspections.

GOOD

ACCEPTABLE

POOR

PROBLEMS NOTED: ☐ (60) NONE ☐ (61) ACCESS ROAD NEEDS MAINTENANCE ☐ (62) CATTLE DAMAGE☒ (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE ☒ (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE☒ (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE ☒ (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY☒ (67) GATE AND OPERATING MECHANISM NEED MAINTENANCE ☐ (68) OTHER

Comments:

Outlet riser gauge is turned to "off" but water is still flowing through. Riser has debris in inlet pipe and around dash work. Slopes have large trees throughout. Auxiliary Spillway is in awful condition with immediate repairs needed.

GOOD

ACCEPTABLE

POOR

REMARKS:

Based on this Safety Inspection and recent file review, the overall condition is determined to be:

☐ 71 SATISFACTORY☐ 72 CONDITIONALLY SATISFACTORY☒ 73 UNSATISFACTORY

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

☒ (70) PROVIDE ADDITIONAL RIPRAP: *Upstream slope.*☒ (71) LUBRICATE AND OPERATE OUTLET GATES THROUGH FULL CYCLE: *It is in deep position but still flowing.*☒ (72) CLEAR TREES AND/OR BRUSH FROM: *Upstream and downstream slopes.*☒ (73) INITIATE RODENT CONTROL PROGRAM AND PROPERLY BACKFILL EXISTING HOLES:☒ (74) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE:☐ (75) PROVIDE SURFACE DRAINAGE FOR:☒ (76) MONITOR: *Dam after major rain events and seepages.*☒ (77) DEVELOP AND SUBMIT AN EMERGENCY PREPAREDNESS PLAN:☐ (78) OTHER:☐ (79) OTHER:

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN AND CONSTRUCTION OF DAMS TO: (Plans & Specification must be approved by State Engineer prior to construction.)

☒ (80) PREPARE PLANS AND SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: *Spillways and slopes.*☐ (81) PREPARE AS-BUILT DRAWINGS OF:☐ (82) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM:☐ (83) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE:☒ (84) PREPARE PLANS AND SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: *Rebuild spillway past the concrete.*☐ (85) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA AND GRAPHED RESULTS:☐ (86) PERFORM AN INTERNAL INSPECTION OF THE OUTLET:☐ (87) OTHER:☐ (88) OTHER:☐ (89) OTHER:

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

☒ (101) FULL STORAGE☒ (102) CONDITIONAL FULL STORAGE☐ (103) RECOMMENDED RESTRICTION

RESTRICTED LEVEL

OFFICIAL ORDER TO FOLLOW

____ FT. BELOW DAMS CREST

____ FT. BELOW SPILLWAY CREST

____ FT. GAGE HEIGHT

____ NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION:

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL:

Engineer's
Signature*Jon [Signature]*Owner's
Signature

OWNER/OWNER'S REPRESENTATIVE

DATE:

1/16/2019

DC-22-2649a-86

INSPECTED BY:

pp 2 of

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD	ACCEPTABLE	POOR
In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.	Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.	Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD	ACCEPTABLE	POOR
No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.	Some seepage exists at areas other than the drain outfalls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.	Seepage conditions observed appear to threaten the safety of the dam. Examples: 1) Designed drain or seepage flows have increased without increase in reservoir level. 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples. 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD	ACCEPTABLE	POOR
Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.	Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.	Required instrumentation and monitoring are not provided, or required periodic readings are not being made, or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD	ACCEPTABLE	POOR
Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.	Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.	No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY	CONDITIONALLY SATISFACTORY	UNSATISFACTORY
The safety inspection indicates no conditions that appear to threaten the safety of the dam, and the dam is expected to perform satisfactorily under all design loading conditions.	The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which, if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.	The safety inspection indicates definite signs of hydrologic inadequacy or structural distress (excessive seepage, cracks, slides, sinkholes, severe deterioration, etc.), which could lead to the failure of the dam if operated at full storage.

SAFE STORAGE LEVEL

FULL STORAGE	CONDITIONAL FULL STORAGE	RESTRICTION
Dam may be used to full capacity with no conditions attached.	Dam may be used to full storage if certain monitoring, maintenance, or operational conditions are met.	Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

Class 1 - Loss of human life is expected in the event of failure of the dam.	Class 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected. Class 4 - No loss of human life is expected and damage will occur only to the dam owner's property.	Class 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.
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ENGINEERS INSPECTION REPORT

ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DAM NAME LAKE POINSETT DAM PERMIT #395 DATE OF INSPECTION 06/29/2017
DAM ID AR00477 DATE OF LAST INSPECTION 06/01/2016
OWNER NAME ARKANSAS GAME AND FISH COMMISSION OWNER PHONE 501.223.6305
ADDRESS 2 NATURAL RESOURCES DRIVE ZIP 72205
CONTACT NAME BRETT TIMMONS CONTACT PHONE (877) 972-5438
CLASS H CAPACITY 16296 AF SURFACE AREA 540 AC HEIGHT 48 FT CREST LENGTH 2725 FT CREST WIDTH FT
CURRENT RESTRICTION ☒ (NO) ☐ (YES) LEVEL EAP ON FILE ☒ (NO) ☐ (YES)
INSPECTION PARTY REPRESENTING WALT MACPHEE, ANRC

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND, GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE

FIELD CONDITIONS OBSERVED

WATER LEVEL - BELOW DAM CREST ~10 FT BELOW SPILLWAY ~3 FT GAGE ROD
GROUND MOISTURE CONDITION: DRY ☒ WET SNOWCOVER OTHER

UPSTREAM SLOPE

PROBLEMS NOTED: ☐ (0) NONE ☒ (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED ☐ (2) WAVE EROSION-WITH SCARPS
☐ (3) CRACKS WITH DISPLACEMENT ☐ (4) SINKHOLE ☐ (5) APPEARS TOO STEEP ☐ (6) DEPRESSIONS OR BULGES ☐ (7) SLIDES
☐ (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED ☐ (9) OTHER

COMMENTS: MISSING AND SPARSE RIPRAP. FABRIC UNDER RIP-RAP IS INEFFECTIVE BASED ON PAST OBSERVATIONS OF SIMILIAR DESIGN
CONCRETE APPEARS TO BE INEFFECTIVE, LIKELY HINDERS RIPRAP, AND HAS BEEN OBVIOUSLY UNDERMINED. VOIDS PRESENT UNDER CONCRETE

UPSTREAM SLOPE

<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
GOOD	ACCEPTABLE	POOR

CREST

PROBLEMS NOTED: ☐ (10) NONE ☐ (11) RUTS OR PUDDLES ☐ (12) EROSION ☐ (13) CRACKS - WITH DISPLACEMENT ☐ (14) SINKHOLES
☐ (15) NOT WIDE ENOUGH ☒ (16) LOW AREA ☐ (17) MISALIGNMENT ☐ (18) INADEQUATE SURFACE DRAINAGE
☒ (19) OTHER

COMMENTS: SOME MINOR LOW SPOTS; WHEN REPAIRING DAM, ENSURE CREST IS GRADED TOWARDS US SLOPE

CREST

<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
GOOD	ACCEPTABLE	POOR

DOWNSTREAM SLOPE

PROBLEMS NOTED: ☐ (20) NONE ☐ (21) LIVESTOCK DAMAGE ☒ (22) EROSION OR GULLIES ☐ (23) CRACKS - WITH DISPLACEMENT
☐ (24) SINKHOLE ☐ (25) APPEARS TOO STEEP ☒ (26) DEPRESSION OR BULGES ☐ (27) SLIDE ☒ (28) SOFT AREAS
☒ (29) OTHER ANIMAL BURROWS

COMMENTS: BERM HAS RUTS AND IS GRADED TOWARDS US SLOPE, WHICH CAUSES IT TO RETAIN WATER; NUMEROUS SOFT SPOTS; ONE TROUBLESOME DEPRESSION RUNNING OVER PATHWAY FOR SPILLWAY CONDUIT

DOWNSTREAM SLOPE

<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
GOOD	ACCEPTABLE	POOR

SEEPAGE

PROBLEMS NOTED: ☐ (30) NONE ☒ (31) SATURATED EMBANKMENT AREA ☒ (32) SEEPAGE EXITS ON EMBANKMENT
☐ (33) SEEPAGE EXITS AT POINT SOURCE ☒ (34) SEEPAGE AREA AT TOE ☒ (35) FLOW ADJACENT TO OUTLET ☐ (36) SEEPAGE INCREASED/MUDDY
DRAIN OUTFALLS SEEN ☐ NO ☒ YES ☐ (37) FLOW INCREASED/MUDDY ☐ (38) DRAIN DRY/OBSTRUCTED
☐ (39) OTHER

COMMENTS: NUMEROUS AREAS WITH STANDING WATER. MULTIPLE SATURATED AREAS PRESENT ON THE DOWNSTREAM SLOPE AND TOE

SEEPAGE

<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
GOOD	ACCEPTABLE	POOR

OUTLET

PROBLEMS NOTED: ☐ (40) NONE ☐ (41) NO OUTLET FOUND ☒ (42) POOR OPERATING ACCESS ☐ (43) INOPERABLE
☒ (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION ☐ NO ☒ YES
INTERIOR INSPECTED ☒ (120) NO ☐ (121) YES ☒ (46) CONDUIT DETERIORATED OR COLLAPSED ☐ (47) JOINTS DISPLACED
☐ (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN ☐ NO ☒ YES
☒ (49) OTHER HEAVY EROSION

COMMENTS: WE IDENTIFIED A HOLE IN THE CONDUIT LAST YEAR; AGFC IS IN PROCESS OF DRAINING LAKE TO SLIP-LINE CONDUIT; CATCH BASIN WAS DISLODGED FROM CONDUIT AND NOW WATER IS FLOWING OUT AROUND THE CONDUIT, WILL ADVISE AGFC TO MONITOR CLOSELY FOR WASHOUT

OUTLET

<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
GOOD	ACCEPTABLE	POOR

SPILLWAY

PROBLEMS NOTED: ☐ (50) NONE ☐ (51) NO EMERGENCY SPILLWAY FOUND ☐ (52) EROSION WITH BACKCUTTING
☐ (53) CRACK - WITH DISPLACEMENT ☐ (54) APPEARS TO BE STRUCTURALLY INADEQUATE ☐ (55) APPEARS TOO SMALL
☐ (56) INADEQUATE FREEBOARD ☒ (57) FLOW OBSTRUCTED ☐ (58) CONCRETE DETERIORATED/UNDERMINED
☐ (59) OTHER

COMMENTS: TREES AND BRUSH ARE PRESENT IN THE AREA OF THE CHANNEL. THESE OBSTRUCT THE SPILLWAY FLOW.

SPILLWAY

<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
GOOD	ACCEPTABLE	POOR

MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
<p>EXISTING INSTRUMENTATION FOUND: <input checked="" type="checkbox"/> (110) NONE <input type="checkbox"/> (111) GAGE ROD <input type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES</p> <p><input type="checkbox"/> (114) SURVEY MONUMENTS <input type="checkbox"/> (115) OTHER</p> <p>MONITORING OF INSTRUMENTATION: <input type="checkbox"/> (116) NO <input type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input type="checkbox"/> (118) OWNER <input type="checkbox"/> (119) ENGINEER</p> <p>COMMENTS: NO INSTRUMENTATION OR EVIDENCE OF MONITORING COULD BE LOCATED.</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE</p> <p><input checked="" type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input checked="" type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE</p> <p><input checked="" type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input checked="" type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY</p> <p><input type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input checked="" type="checkbox"/> (68) OTHER DRAINAGE BASIN PROBLEMS</p> <p>COMMENTS: AGFC IS CURRENTLY DRAINING THE LAKE TO MAKE REPAIRS TO SPILLWAY</p>	<p>REMARKS: AGFC IS CURRENTLY DRAINING THE LAKE TO MAKE REPAIRS TO SPILLWAY</p> <p>Based on this Safety Inspection and recent file review, the overall condition is determined to be:</p> <p><input type="checkbox"/> (71) SATISFACTORY <input type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input checked="" type="checkbox"/> (73) UNSATISFACTORY</p>
MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
GOOD	GOOD	GOOD
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
POOR	POOR	POOR

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☒ (80) PROVIDE ADDITIONAL RIPRAP: CORRECT RIPRAP ISSUES ACROSS THE ENTIRE UPSTREAM FACE
- ☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE: _____
- ☒ (82) CLEAR TREES AND/OR BRUSH FROM: UPSTREAM SLOPE, CREST, AND DOWNSTREAM SLOPE
- ☐ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: _____
- ☒ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: LOW SPOTS
- ☐ (85) PROVIDE SURFACE DRAINAGE FOR: _____
- ☒ (86) MONITOR: SEEPAGE AND THE PERFORMANCE OF THE OUTLET DRAINAGE BASIN. LOOK FOR FAILURE INDICATORS AND MOVEMENT.
- ☒ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____
- ☐ (88) OTHER: _____
- ☐ (89) OTHER: _____
- ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:
(Plan & Specification must be approved by State Engineer prior to construction)
- ☐ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: _____
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____
- ☒ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: SEEPAGE COULD EFFECT STABILITY
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____
- ☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS: _____
- ☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____
- ☐ (97) OTHER: _____
- ☐ (98) OTHER: _____
- ☐ (99) OTHER: _____

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- ☐ (101) FULL STORAGE
- ☐ (102) CONDITIONAL FULL STORAGE
- ☐ (103) RECOMMENDED RESTRICTION
- RESTRICTED LEVEL
OFFICIAL ORDER TO FOLLOW
- _____ FT BELOW DAMS CREST
_____ FT BELOW SPILLWAY CREST
_____ FT GAGE HEIGHT
NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's
Signature _____Owner's
Signature _____

DATE: 7/12/2017

INSPECTED BY

OWNER/OWNER'S REPRESENTATIVE

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human life is expected and damage will occur only to the dam owner's property.

ENGINEERS INSPECTION REPORT
ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DAM NAME Lakewood Lake Dam No.1 DATE OF INSPECTION 6/25/19
DAM ID AR00099 DATE OF LAST INSPECTION 7/11/18
OWNER NAME Lakewood Improvement District 4 OWNER PHONE (501) 753-4937
ADDRESS P.O. Box 95378, North Little Rock, AR ZIP 72190
CONTACT NAME Mr. Ken Sullivan CONTACT PHONE (501) 753-4937
CLASS H CAPACITY 378 AF SURFACE AREA 46 AC HEIGHT 29 FT CREST LENGTH 900 FT CREST WIDTH FT
CURRENT RESTRICTION ☒ (NO) ☐ (YES) LEVEL EAP ON FILE ☐ (NO) ☒ (YES)
INSPECTION PARTY REPRESENTING ANRC

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND, GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE

FIELD CONDITIONS OBSERVED

WATER LEVEL - BELOW DAM CREST ~20 FT BELOW SPILLWAY 0 FT GAGE ROD
GROUND MOISTURE CONDITION: DRY ☒ WET ☐ SNOWCOVER ☐ OTHER ☐

UPSTREAM SLOPE	CREST	DOWNSTREAM SLOPE	SEEPAGE	OUTLET	SPILLWAY	
<p>PROBLEMS NOTED: <input type="checkbox"/> (0) NONE <input checked="" type="checkbox"/> (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED <input checked="" type="checkbox"/> (2) WAVE EROSION-WITH SCARPS <input type="checkbox"/> (3) CRACKS WITH DISPLACEMENT <input type="checkbox"/> (4) SINKHOLE <input type="checkbox"/> (5) APPEARS TOO STEEP <input type="checkbox"/> (6) DEPRESSIONS OR BULGES <input type="checkbox"/> (7) SLIDES <input type="checkbox"/> (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED <input type="checkbox"/> (9) OTHER <u> </u> COMMENTS: <u>Gravel has been displaced and there is very little vegetation</u></p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (10) NONE <input checked="" type="checkbox"/> (11) RUTS OR PUDDLES <input checked="" type="checkbox"/> (12) EROSION <input type="checkbox"/> (13) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (14) SINKHOLES <input type="checkbox"/> (15) NOT WIDE ENOUGH <input type="checkbox"/> (16) LOW AREA <input type="checkbox"/> (17) MISALIGNMENT <input type="checkbox"/> (18) INADEQUATE SURFACE DRAINAGE <input type="checkbox"/> (19) OTHER <u>Very little topsoil contributing to the lack of vegetation present.</u> COMMENTS: <u> </u></p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (20) NONE <input type="checkbox"/> (21) LIVESTOCK DAMAGE <input checked="" type="checkbox"/> (22) EROSION OR GULLIES <input type="checkbox"/> (23) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (24) SINKHOLE <input type="checkbox"/> (25) APPEARS TOO STEEP <input type="checkbox"/> (26) DEPRESSION OR BULGES <input type="checkbox"/> (27) SLIDE <input checked="" type="checkbox"/> (28) SOFT AREAS <input type="checkbox"/> (29) OTHER <u> </u> COMMENTS: <u>Little to no vegetation which is contributing to some erosion</u></p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (30) NONE <input checked="" type="checkbox"/> (31) SATURATED EMBANKMENT AREA <input type="checkbox"/> (32) SEEPAGE EXITS ON EMBANKMENT <input type="checkbox"/> (33) SEEPAGE EXITS AT POINT SOURCE <input type="checkbox"/> (34) SEEPAGE AREA AT TOE <input type="checkbox"/> (35) FLOW ADJACENT TO OUTLET <input type="checkbox"/> (36) SEEPAGE INCREASED/MUDDY DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> (37) FLOW INCREASED/MUDDY <input type="checkbox"/> (38) DRAIN DRY/OBSTRUCTED <input type="checkbox"/> (39) OTHER <u> </u> COMMENTS: <u>Large seepage area in the vicinity of the cut through the core.</u></p>	<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (40) NONE <input type="checkbox"/> (41) NO OUTLET FOUND <input type="checkbox"/> (42) POOR OPERATING ACCESS <input type="checkbox"/> (43) INOPERABLE <input type="checkbox"/> (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION <input type="checkbox"/> NO <input type="checkbox"/> YES INTERIOR INSPECTED <input type="checkbox"/> (120) NO <input type="checkbox"/> (121) YES <input type="checkbox"/> (46) CONDUIT DETERIORATED OR COLLAPSED <input type="checkbox"/> (47) JOINTS DISPLACED <input type="checkbox"/> (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input type="checkbox"/> YES <input type="checkbox"/> (49) OTHER <u> </u> COMMENTS: <u> </u></p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (50) NONE <input type="checkbox"/> (51) NO EMERGENCY SPILLWAY FOUND <input type="checkbox"/> (52) EROSION WITH BACKCUTTING <input type="checkbox"/> (53) CRACK - WITH DISPLACEMENT <input type="checkbox"/> (54) APPEARS TO BE STRUCTURALLY INADEQUATE <input type="checkbox"/> (55) APPEARS TOO SMALL <input type="checkbox"/> (56) INADEQUATE FREEBOARD <input type="checkbox"/> (57) FLOW OBSTRUCTED <input type="checkbox"/> (58) CONCRETE DETERIORATED/UNDERMINED <input type="checkbox"/> (59) OTHER <u> </u> COMMENTS: <u>Spillway channel erosion</u></p>	<p>GOOD ACCEPTABLE POOR</p>

MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
<p>EXISTING INSTRUMENTATION FOUND: <input type="checkbox"/> (110) NONE <input type="checkbox"/> (111) GAGE ROD <input checked="" type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES <input type="checkbox"/> (114) SURVEY MONUMENTS <input type="checkbox"/> (115) OTHER</p> <p>MONITORING OF INSTRUMENTATION: <input checked="" type="checkbox"/> (116) NO <input type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input type="checkbox"/> (118) OWNER <input checked="" type="checkbox"/> (119) ENGINEER</p> <p>COMMENTS: _____</p> <p>_____</p> <p>_____</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE</p> <p><input type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE</p> <p><input type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY</p> <p><input type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input type="checkbox"/> (68) OTHER _____</p> <p>COMMENTS: _____</p> <p>_____</p> <p>_____</p>	<p>REMARKS: Seepage must be addressed. Areas that lack vegetation should be reseeded and additional riprap should be applied to the upstream slope.</p> <p>_____</p> <p>_____</p> <p>Based on this Safety Inspection and recent file review, the overall condition is determined to be:</p> <p><input type="checkbox"/> (71) SATISFACTORY <input checked="" type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input type="checkbox"/> (73) UNSATISFACTORY</p>
MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
GOOD	GOOD	GOOD
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
POOR	POOR	POOR

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☒ (80) PROVIDE ADDITIONAL RIPRAP: _____
- ☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE: _____
- ☐ (82) CLEAR TREES AND/OR BRUSH FROM: _____
- ☐ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: _____
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: _____
- ☐ (85) PROVIDE SURFACE DRAINAGE FOR: _____
- ☐ (86) MONITOR: _____
- ☐ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____
- ☐ (88) OTHER: _____
- ☐ (89) OTHER: _____

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:

(Plan & Specification must be approved by State Engineer prior to construction)

- ☐ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: _____
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____
- ☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: _____
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____
- ☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS: _____
- ☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____
- ☐ (97) OTHER: _____
- ☐ (98) OTHER: _____
- ☐ (99) OTHER: _____

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- | | | |
|---|--|--|
| <input type="checkbox"/> (101) FULL STORAGE | RESTRICTED LEVEL
OFFICIAL ORDER TO FOLLOW | {
_____ FT BELOW DAMS CREST
_____ FT BELOW SPILLWAY CREST
_____ FT GAGE HEIGHT
_____ NO STORAGE-MAINTAIN OUTLET FULLY OPEN |
| <input type="checkbox"/> (102) CONDITIONAL FULL STORAGE | | |
| <input type="checkbox"/> (103) RECOMMENDED RESTRICTION | | |

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's
Signature _____Owner's
Signature _____

DATE: 7/11/18

INSPECTED BY

OWNER/OWNER'S REPRESENTATIVE

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human life is expected and damage will occur only to the dam owner's property.

ENGINEERS INSPECTION REPORT

ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DAM NAME PEBBLE LAKE DAM PERMIT #416 DATE OF INSPECTION 1/25/2018
DAM ID 00014 DATE OF LAST INSPECTION 6/12/2017
OWNER NAME PEBBLE LAKE P.O.A. OWNER PHONE 501.794.2564
ADDRESS PO BOX 683 BRYANT AR ZIP 72089
CONTACT NAME MRS. DONNA COOK CONTACT PHONE 501.794.2564
CLASS H CAPACITY AF SURFACE AREA AC HEIGHT 30.7 FT CREST LENGTH 789 FT CREST WIDTH N/A FT
CURRENT RESTRICTION ☒ (NO) ☐ (YES) LEVEL EAP ON FILE ☐ (NO) ☒ (YES)
INSPECTION PARTY REPRESENTING WALT MACPHEE, ANRC

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND, GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE

FIELD CONDITIONS OBSERVED

WATER LEVEL - BELOW DAM CREST -5 FT BELOW SPILLWAY N/A FT GAGE ROD X
GROUND MOISTURE CONDITION: DRY X WET SNOWCOVER OTHER

UPSTREAM SLOPE	CREST	DOWNSTREAM SLOPE	SEEPAGE	OUTLET	SPILLWAY
<p>PROBLEMS NOTED: <input type="checkbox"/> (0) NONE <input checked="" type="checkbox"/> (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED <input checked="" type="checkbox"/> (2) WAVE EROSION-WITH SCARPS <input type="checkbox"/> (3) CRACKS WITH DISPLACEMENT <input type="checkbox"/> (4) SINKHOLE <input checked="" type="checkbox"/> (5) APPEARS TOO STEEP <input type="checkbox"/> (6) DEPRESSIONS OR BULGES <input type="checkbox"/> (7) SLIDES <input type="checkbox"/> (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED <input checked="" type="checkbox"/> (9) OTHER <u>ANIMAL BORROWS</u> COMMENTS: <u>NO RIP-RAP OR PROTECTIVE COVER HAS LED TO WAVE EROSION WITH SMALL SCARPS; APPEARS TO STEEP (ESPECIALLY ON RIGHT SIDE)</u></p>	<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (10) NONE <input type="checkbox"/> (11) RUTS OR PUDDLES <input type="checkbox"/> (12) EROSION <input type="checkbox"/> (13) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (14) SINKHOLES <input type="checkbox"/> (15) NOT WIDE ENOUGH <input type="checkbox"/> (16) LOW AREA <input type="checkbox"/> (17) MISALIGNMENT <input type="checkbox"/> (18) INADEQUATE SURFACE DRAINAGE <input type="checkbox"/> (19) OTHER <u> </u> COMMENTS: <u> </u></p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (20) NONE <input type="checkbox"/> (21) LIVESTOCK DAMAGE <input checked="" type="checkbox"/> (22) EROSION OR GULLIES <input type="checkbox"/> (23) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (24) SINKHOLE <input type="checkbox"/> (25) APPEARS TOO STEEP <input checked="" type="checkbox"/> (26) DEPRESSION OR BULGES <input type="checkbox"/> (27) SLIDE <input type="checkbox"/> (28) SOFT AREAS <input type="checkbox"/> (29) OTHER <u> </u> COMMENTS: <u>COVERED IN LARGE TREES; SEVERAL LARGE TREES HAVE BLOWN OVER, LEAVING LARGE DEPRESSIONS</u></p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (30) NONE <input checked="" type="checkbox"/> (31) SATURATED EMBANKMENT AREA <input checked="" type="checkbox"/> (32) SEEPAGE EXITS ON EMBANKMENT <input checked="" type="checkbox"/> (33) SEEPAGE EXITS AT POINT SOURCE <input checked="" type="checkbox"/> (34) SEEPAGE AREA AT TOE <input checked="" type="checkbox"/> (35) FLOW ADJACENT TO OUTLET <input type="checkbox"/> (36) SEEPAGE INCREASED/MUDDY DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (37) FLOW INCREASED/MUDDY <input checked="" type="checkbox"/> (38) DRAIN DRY/OBSTRUCTED <input type="checkbox"/> (39) OTHER <u> </u> COMMENTS: <u>SIGNIFICANT AMOUNT OF SEEPAGE; APPEARS TO BE COMING FROM DECOMMISSIONED PRIMARY SPILLWAY OUTLET WORKS; SEEPAGE INUNDATING TOE OF DAM</u></p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (40) NONE <input type="checkbox"/> (41) NO OUTLET FOUND <input type="checkbox"/> (42) POOR OPERATING ACCESS <input checked="" type="checkbox"/> (43) INOPERABLE <input checked="" type="checkbox"/> (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES INTERIOR INSPECTED <input checked="" type="checkbox"/> (120) NO <input type="checkbox"/> (121) YES <input checked="" type="checkbox"/> (46) CONDUIT DETERIORATED OR COLLAPSED <input type="checkbox"/> (47) JOINTS DISPLACED <input type="checkbox"/> (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (49) OTHER <u> </u> COMMENTS: <u>PRINCIPAL SPILLWAY DECOMMISSIONED AND SEEPAGE EMERGING OVER DECOMMISSIONED PIPE ON DS SLOPE NEAR TOE OF DAM</u></p>	<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (50) NONE <input type="checkbox"/> (51) NO EMERGENCY SPILLWAY FOUND <input type="checkbox"/> (52) EROSION WITH BACKCUTTING <input type="checkbox"/> (53) CRACK - WITH DISPLACEMENT <input type="checkbox"/> (54) APPEARS TO BE STRUCTURALLY INADEQUATE <input type="checkbox"/> (55) APPEARS TOO SMALL <input type="checkbox"/> (56) INADEQUATE FREEBOARD <input type="checkbox"/> (57) FLOW OBSTRUCTED <input type="checkbox"/> (58) CONCRETE DETERIORATED/UNDERMINED <input type="checkbox"/> (59) OTHER <u> </u> COMMENTS: <u> </u></p>

MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
<p>EXISTING INSTRUMENTATION FOUND: <input checked="" type="checkbox"/> (110) NONE <input type="checkbox"/> (111) GAGE ROD <input type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES</p> <p><input type="checkbox"/> (114) SURVEY MONUMENTS <input type="checkbox"/> (115) OTHER</p> <p>MONITORING OF INSTRUMENTATION: <input checked="" type="checkbox"/> (116) NO <input type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input checked="" type="checkbox"/> (118) OWNER <input type="checkbox"/> (119) ENGINEER</p> <p>COMMENTS: _____</p> <p>_____</p> <p>_____</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE</p> <p><input type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input checked="" type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE</p> <p><input checked="" type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input checked="" type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY</p> <p><input type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input type="checkbox"/> (68) OTHER _____</p> <p>COMMENTS: _____</p> <p>_____</p> <p>_____</p>	<p>REMARKS: POA PLANS TO ADD SIPHON TO REPLACE DECOMMISSIONED PRINCIPAL SPILLWAY CONDUIT, BUT ARE SLOW TO MAKE PROGRESS;</p> <p>_____</p> <p>_____</p> <p>Based on this Safety Inspection and recent file review, the overall condition is determined to be:</p> <p><input type="checkbox"/> (71) SATISFACTORY <input checked="" type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input type="checkbox"/> (73) UNSATISFACTORY</p>
MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
GOOD	GOOD	GOOD
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
POOR	POOR	POOR

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☒ (80) PROVIDE ADDITIONAL RIPRAP: _____
- ☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE: _____
- ☒ (82) CLEAR TREES AND/OR BRUSH FROM: D/S SLOPE _____
- ☒ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: U/S & D/S SLOPES _____
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: _____
- ☒ (85) PROVIDE SURFACE DRAINAGE FOR: SEEPAGE @ TOE _____
- ☒ (86) MONITOR: SEEPAGE _____
- ☒ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____
- ☐ (88) OTHER: _____
- ☐ (89) OTHER: _____
- ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:
(Plan & Specification must be approved by State Engineer prior to construction)
- ☐ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: _____
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____
- ☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: _____
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____
- ☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS: _____
- ☐ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____
- ☐ (97) OTHER: _____
- ☐ (98) OTHER: _____
- ☐ (99) OTHER: _____

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- | | | |
|---|--------------------------|--|
| <input type="checkbox"/> (101) FULL STORAGE | RESTRICTED LEVEL | {
_____ FT BELOW DAMS CREST
_____ FT BELOW SPILLWAY CREST
_____ FT GAGE HEIGHT
_____ NO STORAGE-MAINTAIN OUTLET FULLY OPEN |
| <input type="checkbox"/> (102) CONDITIONAL FULL STORAGE | OFFICIAL ORDER TO FOLLOW | |
| <input type="checkbox"/> (103) RECOMMENDED RESTRICTION | | |

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's
Signature _____Owner's
Signature _____

DATE: 1/25/2018

INSPECTED BY

OWNER/OWNER'S REPRESENTATIVE

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human life is expected and damage will occur only to the dam owner's property.

National Operation & Maintenance Manual

U.S. Department of Agriculture
Natural Resources Conservation Service

WATERSHED STRUCTURE INSPECTION REPORT

Date of Inspection March 2016

County Poinsett Watershed Poinsett Site 16

Field Office Harrisburg Sponsor Poinsett Watershed Improvement District

Legal Description, Sec _____ T _____ R _____

"YES" responses need explanation added to "Remarks" section. (ie: What? Where? Extent?)
"NO" responses indicate problems not observed during inspection.
Non-applicable items should be lined out.

ITEM	YES	NO	REMARKS
1. General Conditions			
a. Alterations to dam?		✓	
b. Development in downstream floodplain?		✓	
c. Development around reservoir?		✓	
2. Embankment			
a. Is vegetative cover inadequate?		✓	
b. Are trees growing on either slope?		✓	
c. Is brush/weed control needed?		✓	
d. Are trees growing at waterline?		✓	
e. Is drift debris present?		✓	
f. Are cracks, settlement, or bulges present?		✓	
g. Are animal burrows present?		✓	
h. Are trails present?		✓	
3. Front Slope Protection			
a. Any wave damage observed?		✓	
b. Is riprap inadequate?		✓	
c. Are rodent holes present?		✓	
4. Inlet Structure and Gate Valves			
a. Does concrete exhibit deterioration?		✓	
b. Is concrete reinforcement exposed?		✓	
c. Was leakage observed inside inlet?		✓	
d. Any corrosion of metal appurtenances?		✓	
e. Is debris guard obstructed?		✓	
f. Is debris guard corroded?		✓	
g. Is gate stem broken or bent?		✓	
h. Are components missing?		✓	
i. Was gate determined not operational?		✓	Date gate last operated: Not sure
j. Has inlet been modified to alter water surface?		✓	
5. Principal Spillway Conduit			
a. Is concrete conduit deteriorated?		✓	
b. Is metal conduit corroded?		✓	
c. Was leakage observed at pipe joints?		✓	

National Operation & Maintenance Manual

ITEM	YES	NO	REMARKS
6. Auxiliary Spillway			
a. Is vegetative cover inadequate?		✓	
b. Any animal trails observed?		✓	
c. Any vehicular trails observed?		✓	
d. Is flow area obstructed?		✓	
e. Is control section disturbed?		✓	
7. Principal Spillway Release Channel			
a. Does scour hole appear unstable?		✓	
b. Any boils observed?		✓	
c. Is riprap inadequate?		✓	
d. Any seepage observed?		✓	
e. Is conduit outlet submerged?		✓	
f. Is conduit outlet not properly supported?		✓	
g. Is outlet channel obstructed?		✓	
h. Is outlet channel degrading?		✓	
i. Is foundation drain submerged?		✓	
j. Is foundation drain rodent barrier missing?		✓	
k. Is foundation drain not functional?		✓	
8. Perimeter Fence			
a. Is fence inadequate?		✓	
b. Are gates open?		✓	
9. Easements/landrights			
a. Are terms of landrights out of compliance?		✓	
b. Are landrights boundaries being encroached upon?		✓	
ACTIONS TAKEN: (Identify all work performed preceding 12 months by sponsors and/or NRCS, including approximate cost and date completed).			

None

**ACTIONS NEEDED: (Identify items by priority: low - next 12 months; high - as soon as possible).
(Indicate date assistance requested; technical or financial).**

None

Sponsor Representative

(Adapted from Oklahoma NRCS)

/s/ Craig Roach, Civil Engineer

NRCS Representative

ENGINEERS INSPECTION REPORT
ARKANSAS NATURAL RESOURCES COMMISSION - DAM SAFETY BRANCH
101 E. CAPITOL AVENUE, #350, LITTLE ROCK, AR 72201 (501) 682-3986

DAM NAME Sherwood Lake Dam Permit #29 DATE OF INSPECTION 8/22/2019
DAM ID AR00255 DATE OF LAST INSPECTION 6/28/2018
OWNER NAME Woodland Hills POA OWNER PHONE _____
ADDRESS P.O. Box 161, Hardy, AR ZIP 72542
CONTACT NAME Jason Jackson CONTACT PHONE (870) 219-5562
CLASS H CAPACITY 1500 AF SURFACE AREA 66 AC HEIGHT 51 FT CREST LENGTH 1026 FT CREST WIDTH _____ FT
CURRENT RESTRICTION ☒ (NO) ☐ (YES) LEVEL _____ EAP ON FILE ☒ (NO) ☐ (YES)
INSPECTION PARTY REPRESENTING JACKSON PRUSS, ANRC; STEPHEN SMEDLEY, ANRC

DIRECTIONS: MARK AN X FOR CONDITIONS FOUND, GIVE LOCATION AND EXTENT WITH NUMBER REFERENCE

FIELD CONDITIONS OBSERVED

WATER LEVEL - BELOW DAM CREST -12 FT BELOW SPILLWAY - FT GAGE ROD _____
GROUND MOISTURE CONDITION: DRY ☒ WET _____ SNOWCOVER _____ OTHER Built 1963

UPSTREAM SLOPE	CREST	DOWNSTREAM SLOPE	SEEPAGE	OUTLET	SPILLWAY
<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (0) NONE <input type="checkbox"/> (1) RIPRAP - MISSING, SPARSE, DISPLACED, WEATHERED <input type="checkbox"/> (2) WAVE EROSION-WITH SCARPS <input type="checkbox"/> (3) CRACKS WITH DISPLACEMENT <input type="checkbox"/> (4) SINKHOLE <input type="checkbox"/> (5) APPEARS TOO STEEP <input type="checkbox"/> (6) DEPRESSIONS OR BULGES <input type="checkbox"/> (7) SLIDES <input type="checkbox"/> (8) CONCRETE FACING-HOLES, CRACKS, DISPLACED, UNDERMINED <input type="checkbox"/> (9) OTHER _____ COMMENTS: _____ _____</p>	<p>PROBLEMS NOTED: <input checked="" type="checkbox"/> (10) NONE <input type="checkbox"/> (11) RUTS OR PUDDLES <input type="checkbox"/> (12) EROSION <input type="checkbox"/> (13) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (14) SINKHOLES <input type="checkbox"/> (15) NOT WIDE ENOUGH <input type="checkbox"/> (16) LOW AREA <input type="checkbox"/> (17) MISALIGNMENT <input type="checkbox"/> (18) INADEQUATE SURFACE DRAINAGE <input type="checkbox"/> (19) OTHER _____ COMMENTS: _____ _____</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (20) NONE <input type="checkbox"/> (21) LIVESTOCK DAMAGE <input checked="" type="checkbox"/> (22) EROSION OR GULLIES <input type="checkbox"/> (23) CRACKS - WITH DISPLACEMENT <input type="checkbox"/> (24) SINKHOLE <input type="checkbox"/> (25) APPEARS TOO STEEP <input checked="" type="checkbox"/> (26) DEPRESSION OR BULGES <input type="checkbox"/> (27) SLIDE <input checked="" type="checkbox"/> (28) SOFT AREAS <input checked="" type="checkbox"/> (29) OTHER <u>EXCESS VEGETATION & ANIMAL BURROWS</u> COMMENTS: <u>EXCESSIVE VEGETATION ON LEFT ABUTMENT MADE A THOROUGH INSPECTION IMPOSSIBLE. HOWEVER SEEPAGE WAS FOUND IN THE SAME AREA AS THE LAST INSPECTION</u> _____</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (30) NONE <input type="checkbox"/> (31) SATURATED EMBANKMENT AREA <input checked="" type="checkbox"/> (32) SEEPAGE EXITS ON EMBANKMENT <input checked="" type="checkbox"/> (33) SEEPAGE EXITS AT POINT SOURCE <input checked="" type="checkbox"/> (34) SEEPAGE AREA AT TOE <input type="checkbox"/> (35) FLOW ADJACENT TO OUTLET <input type="checkbox"/> (36) SEEPAGE INCREASED/MUDDY DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (37) FLOW INCREASED/MUDDY <input type="checkbox"/> (38) DRAIN DRY/OBSTRUCTED <input type="checkbox"/> (39) OTHER _____ COMMENTS: <u>RIGHT ABUTMENT HAD SEEPAGE EXITS FROM MULTIPLE POINT SOURCES/SIGNIFICANT AMOUNT OF SEEPAGE; SEEPAGE BEING CHANNLED INTO WEIR USED TO MEASURE FLOW-RATE (CHECKED REGULARLY BY DAVID HAWKINS FROM P.O.A.); WATER IS NOW FLOWING AROUND THE WEIR AND IS CUTTING A GULLEY IN THE DOWNSTREAM SLOPE OF THE DAM.</u> _____</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (40) NONE <input type="checkbox"/> (41) NO OUTLET FOUND <input type="checkbox"/> (42) POOR OPERATING ACCESS <input type="checkbox"/> (43) INOPERABLE <input type="checkbox"/> (44) UPSTREAM OR DOWNSTREAM STRUCTURE DETERIORATED (45) OUTLET OPERATED DURING INSPECTION <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES INTERIOR INSPECTED <input checked="" type="checkbox"/> (120) NO <input type="checkbox"/> (121) YES <input type="checkbox"/> (46) CONDUIT DETERIORATED OR COLLAPSED <input type="checkbox"/> (47) JOINTS DISPLACED <input type="checkbox"/> (48) VALVE LEAKAGE DRAIN OUTFALLS SEEN <input type="checkbox"/> NO <input checked="" type="checkbox"/> YES <input type="checkbox"/> (49) OTHER _____ COMMENTS: <u>THE OUTLET VALVE WAS TURNED OFF. HOWEVER WATER WAS STILL FLOWING THROUGH THE CONDUIT. INTERIOR PIPE INSPECTION WILL NEED TO BE PERFORMED</u> _____</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (50) NONE <input type="checkbox"/> (51) NO EMERGENCY SPILLWAY FOUND <input type="checkbox"/> (52) EROSION WITH BACKCUTTING <input type="checkbox"/> (53) CRACK - WITH DISPLACEMENT <input type="checkbox"/> (54) APPEARS TO BE STRUCTURALLY INADEQUATE <input type="checkbox"/> (55) APPEARS TOO SMALL <input type="checkbox"/> (56) INADEQUATE FREEBOARD <input checked="" type="checkbox"/> (57) FLOW OBSTRUCTED <input type="checkbox"/> (58) CONCRETE DETERIORATED/UNDERMINED <input type="checkbox"/> (59) OTHER _____ COMMENTS: <u>AUXILIARY SPILLWAY HAS LARGE WOODY VEGETATION GROWTH THAT NEEDS TO BE REMOVED</u> _____</p>

MONITORING	MAINTENANCE & REPAIR	OVERALL CONDITIONS
<p>EXISTING INSTRUMENTATION FOUND: <input type="checkbox"/> (110) NONE <input checked="" type="checkbox"/> (111) GAGE ROD <input type="checkbox"/> (112) PIEZOMETERS <input type="checkbox"/> (113) SEEPAGE WEIRS/FLUMES</p> <p><input type="checkbox"/> (114) SURVEY MONUMENTS <input type="checkbox"/> (115) OTHER</p> <p>MONITORING OF INSTRUMENTATION: <input type="checkbox"/> (116) NO <input checked="" type="checkbox"/> (117) YES PERIODIC INSPECTIONS BY: <input checked="" type="checkbox"/> (118) OWNER <input type="checkbox"/> (119) ENGINEER</p> <p>COMMENTS: REGULAR MONITORING OF DAM BY DAVID HAWKINS OF POA</p>	<p>PROBLEMS NOTED: <input type="checkbox"/> (60) NONE <input type="checkbox"/> (61) ACCESS ROAD NEEDS MAINTENANCE <input type="checkbox"/> (62) CATTLE DAMAGE</p> <p><input checked="" type="checkbox"/> (63) BRUSH ON UPSTREAM SLOPE, CREST, DOWNSTREAM, TOE <input type="checkbox"/> (64) TREES ON UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, TOE</p> <p><input checked="" type="checkbox"/> (65) RODENT ACTIVITY ON UPSTREAM SLOPE, CREST, DOWNSTREAM, SLOPE, TOE <input checked="" type="checkbox"/> (66) DETERIORATED CONCRETE-FACING, OUTLET, SPILLWAY</p> <p><input type="checkbox"/> (67) GATE & OPERATING MECHANISM NEED MAINTENANCE <input type="checkbox"/> (68) OTHER</p> <p>COMMENTS:</p>	<p>REMARKS:</p> <p>Based on this Safety Inspection and recent file review, the overall condition is determined to be:</p> <p><input type="checkbox"/> (71) SATISFACTORY <input type="checkbox"/> (72) CONDITIONALLY SATISFACTORY <input checked="" type="checkbox"/> (73) UNSATISFACTORY</p>
GOOD	GOOD	GOOD
ACCEPTABLE	ACCEPTABLE	ACCEPTABLE
POOR	POOR	POOR

ITEMS REQUIRING ACTION BY OWNER TO IMPROVE THE SAFETY OF THE DAM

MAINTENANCE - MINOR REPAIR - MONITORING

- ☐ (80) PROVIDE ADDITIONAL RIPRAP: _____
- ☐ (81) LUBRICATE & OPERATE OUTLET GATES THROUGH FULL CYCLE: _____
- ☒ (82) CLEAR TREES AND/OR BRUSH FROM: D/S SLOPES _____
- ☒ (83) INITIATE RODENT CONTROL PROGRAM & PROPERLY BACKFILL EXISTING HOLES: D/S SLOPE _____
- ☐ (84) GRADE CREST TO A UNIFORM ELEVATION WITH DRAINAGE TO THE UPSTREAM SLOPE: _____
- ☒ (85) PROVIDE SURFACE DRAINAGE FOR: SEEPAGE _____
- ☒ (86) MONITOR: SEEPAGE ON RIGHT AND LEFT ABUTMENTS _____
- ☒ (87) DEVELOP AND SUBMIT AN EMERGENCY ACTION PLAN: _____
- ☐ (88) OTHER: _____
- ☐ (89) OTHER: _____

ENGINEERING - EMPLOY AN ENGINEER EXPERIENCED IN DESIGN & CONSTRUCTION OF DAMS TO:

(Plan & Specification must be approved by State Engineer prior to construction)

- ☒ (90) PREPARE PLANS & SPECIFICATIONS FOR THE REHABILITATION OF THE DAM: _____
- ☐ (91) PREPARE AS-BUILT DRAWINGS OF: _____
- ☐ (92) PERFORM A GEOTECHNICAL INVESTIGATION TO EVALUATE THE STABILITY OF THE DAM: _____
- ☐ (93) PERFORM A HYDROLOGIC STUDY TO DETERMINE REQUIRED SPILLWAY SIZE: _____
- ☐ (94) PREPARE PLANS & SPECIFICATIONS FOR AN ADEQUATE SPILLWAY: _____
- ☐ (95) SET UP A MONITORING SYSTEM INCLUDING WORK SHEETS, REDUCED DATA & GRAPHED RESULTS: _____
- ☒ (96) PERFORM AN INTERNAL INSPECTION OF THE OUTLET: _____
- ☐ (97) OTHER: _____
- ☐ (98) OTHER: _____
- ☐ (99) OTHER: _____

SAFE STORAGE LEVEL RECOMMENDED AS A RESULT OF THIS INSPECTION

- ☐ (101) FULL STORAGE
- ☒ (102) CONDITIONAL FULL STORAGE
- ☐ (103) RECOMMENDED RESTRICTION
- RESTRICTED LEVEL
OFFICIAL ORDER TO FOLLOW
- _____ FT BELOW DAMS CREST
 _____ FT BELOW SPILLWAY CREST
 _____ FT GAGE HEIGHT
 NO STORAGE-MAINTAIN OUTLET FULLY OPEN

REASON FOR RESTRICTION: _____

ACTIONS REQUIRED FOR CONDITIONAL FULL STORAGE OR CONTINUED STORAGE AT THE RESTRICTED LEVEL: _____

Engineer's
Signature _____Owner's
Signature _____

DATE: 6/28/2018

INSPECTED BY

OWNER/OWNER'S REPRESENTATIVE

The State Engineer by providing this dam safety inspection report, does not assume responsibility for any unsafe condition of the subject dam. The sole responsibility for the safety of this dam rests with the reservoir owner or operator, who should take every step necessary to prevent damages caused by leakage or overflow of waters from the reservoir or floods resulting from a failure of the dam.

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, OUTLET, SPILLWAY

GOOD

In general, this part of the structure has a near new appearance, and conditions observed in this area do not appear to threaten the safety of the dam.

ACCEPTABLE

Although general cross-section is maintained, surfaces may be irregular, eroded, rutted, spalled, or otherwise not in new condition. Conditions in this area do not currently appear to threaten the safety of the dam.

POOR

Conditions observed in this area appear to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO SEEPAGE

GOOD

No evidence of uncontrolled seepage. No unexplained increase in flows from designed drains. All seepage is clear. Seepage conditions do not appear to threaten the safety of the dam.

ACCEPTABLE

Some seepage exists at areas other than the drain out-falls, or other designed drains. No unexplained increase in seepage. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.

POOR

Seepage conditions observed appear to threaten the safety of the dam. Examples:

- 1) Designed drain or seepage flows have increased without increase in reservoir level.
- 2) Drain or seepage flows contain sediment, i.e., muddy water or particles in jar samples.
- 3) Widespread seepage, concentrated seepage or ponding appears to threaten the safety of the dam.

CONDITIONS OBSERVED - APPLIES TO MONITORING

GOOD

Instrumentation and monitoring described under acceptable are being exceeded, as described under comments in the report.

ACCEPTABLE

Instrumentation is provided in accordance with the rules. Special instrumentation and monitoring deemed necessary is provided. The owner monitors the dam and records data in accordance with the rules, and submits the data annually or more frequently if required.

POOR

Required instrumentation and monitoring are not provided or required periodic readings are not being made or unexplained changes in readings are not reacted to by the owner.

CONDITIONS OBSERVED - APPLIES TO MAINTENANCE AND REPAIR

GOOD

Owner has a plan for annual maintenance. Dam consistently receives effective on-going maintenance and repair.

ACCEPTABLE

Dam receives maintenance in accordance with a plan, but some maintenance items need to be addressed. No major repairs are required.

POOR

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

OVERALL CONDITIONS

SATISFACTORY

The safety inspection indicates no conditions that appear to threaten the safety of the dam and the dam is expected to perform satisfactorily under all design loading conditions.

CONDITIONALLY SATISFACTORY

The safety inspection indicates symptoms of structural distress (excessive seepage, evidence of major displacements, etc.) which if conditions worsen, could lead to the failure of the dam. Essential monitoring, inspection and maintenance must be performed as a requirement for continued full storage in the reservoir or storage at a reduced level. There are no requirements if maintained at the restricted level.

UNSATISFACTORY

No annual maintenance plan in effect. Dam does not appear to receive adequate maintenance. One or more items needing maintenance or repair have begun to threaten the safety of the dam. Lack of maintenance prevents thorough inspection.

SAFE STORAGE LEVEL

FULL STORAGE

Dam may be used to full capacity with no conditions attached.

CONDITIONAL FULL STORAGE

Dam may be used to full storage if certain monitoring, maintenance or operational conditions are met.

RESTRICTION

Dam may not be used to full capacity, but must be operated at some reduced level in the interest of public safety.

CLASSIFICATION OF DAMS

CLASS 1 - Loss of human life is expected in the event of failure of the dam.

CLASS 2 - Significant damage is expected in the event of failure of the dam, but no loss of human life is expected.

CLASS 3 - A small amount of damage is expected. Loss of human life and significant damage are not expected.

CLASS 4 - No loss of human life is expected and damage will occur only to the dam owner's property.