INSTRUCTIONS FOR COMPLETING THIS FORMAL INSPECTION CHECKLIST

1. Complete all items that are applicable; if not applicable, write in "N/A".

2. Use the next page to determine ratings of each dam component.

3. Please either type or write legibly and concisely.

4. The inspection personnel shall review the "Guidelines for Inspection of Dams" available on the MDEQ website prior to conducting the inspection. Failure to comply with the requirements of this guideline may result in the inspection being rejected by MDEQ.

5. If the ratings of the components of the dam have changed since the last inspection, please explain the change in condition under the appropriate section. If a rating has improved, dam repairs, improvements, analyses, or maintenance must have been performed and documented.

6. The inspection report including this form shall be submitted to MDEQ including pictures in an appendix section.

7. Please sign and date this page in the space below to verify that you have read and understand these instructions.

Inspector's Signature: Robert A. King Date: Feb. 15, 2018

GUIDELINES FOR DETERMINING CONDITIONS

CONDITIONS OBSERVED - APPLIES TO UPSTREAM SLOPE, CREST, DOWNSTREAM SLOPE, PRINCIPAL SPILLWAY, AUXILIARY SPILLWAY

SATISFACTORY	FAIR	POOR	UNSATISFACTORY
In general, this part of the structure has a good 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 like new condition. Conditions in this area do not currently appear to threaten the safety of the dam.	Continued deterioration and/or unusual loading may threaten the safety of the dam.	Conditions observed in this area appear to threaten the safety of the dam. Conditions observed in this area are unacceptable.

CONDITIONS OBSERVED – APPLIES TO SEEPAGE

SATISFACTORY (NONE)	FAIR	POOR	UNSATISFACTORY
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 flows from designed drains. All seepage is clear. Seepage conditions observed do not currently appear to threaten the safety of the dam.	Excessive seepage exists at areas other than drain outfalls and other designed drains. Seepage needs to be evaluated. Increased flow and/or continued deterioration in seepage conditions may threaten the safety of the dam.	Excessive seepage conditions observed appear to threaten the safety of the dam and is unacceptable. 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.

Formal Inspection Checklist

(For Engineers)

DAM NAME: Olen Burrage Dam

DAM INVENTORY NO: MS03530

OWNER:

Land Owners Name (Per Deed):Olen Burrage, Jr.

Address: P.O. Box 428, Philadelphia, MS 39350

Phone #:(601) 656-9444

Email: sotrucks@aol.com

Primary Contact Person (if different from above):

Address:

Phone #:

Email:

OPERATOR (if different from Owner):

Name:

Address:

Phone #:

Email:

DATE(S) OF INSPECTION: Jan. 23, 2018

INSPECTION PERSONNEL (include contact information)

Mississippi Licensed Professional Engineer(s):

Name	Affiliation	Area of Expertise
Herbert King, P.E.	King Engineering Assoc., Inc.	Civil Engineer

MULTIDISCIPINARY: I am experienced in the technical disciplines or I am working with other professionals experienced in the technical disciplines to properly inspect this dam and appurtenant works. Technical disciplines, in additional to the general civil engineering, may include geotechnical, geological, hydrologic, structural, and mechanical.

☒ Yes ☐ No Comment: Civil Engineer

Other technical expert(s) and advisors(s):

Name	Affiliation	Area of Expertise

State Representative(s):

Name	Affiliation

Dam Owner Representative(s):

Name	Affiliation

Others:

Name	Affiliation

GENERAL INFORMATION

Weather Conditions (including rainfall within previous 14 days): See attached rainfall data

County: Neshoba

Stream Name: Unnamed stream

Tributary of: Kentawka Creek a tributary The Pearl River

Latitude (N): 32°45'26"

Longitude (W): 89°09'21"

Purpose of Dam:

Hazard Classification: High

Drainage Area (sq. mi.): 0.12

Height of Dam (ft): 17 ft

Length (ft): 600 ft

Normal Surface (ac): 13.5 acres @ 440.0 ft

Normal Capacity (ac-ft): 80

Maximum Surface (ac): 19.5 acres @ 440.0 ft

Maximum Capacity (ac-ft): 162.5

Normal Reservoir Elevation (ft): 440.0 ft

Reservoir Elevation at time of inspection (ft): 440.0 ft (NAVD88)

SPILLWAY SYSTEM

Type of spillway (riser and conduit, concrete chute, vegetated earthen, etc.)

Principal: Riser and conduit

Auxiliary (Emergency): Vegetated earthen channel

Principal Spillway Capacity (inches/24 hours & storm distribution): 9.52"/24 hours (estimated 100 yr. 24 hour rainfall)

Auxiliary (Emergency) Spillway Capacity (inches/24 hours & storm distribution): 44"/24 hours (PMP)

See attached Hydrologic Assessment for more detailed information

Note: If you do not understand what is meant by the above questions please engage the services of a professional who can assist you. These questions are not meant to capture the spillway capacity in cfs, as this data is irrelevant in determining the dams overall ability to pass the extreme precipitation event (% of the PMP) as required by the Regulations. If there are more than two spillways, please add an additional item. **A formal inspection will not be approved by the Dam Safety Division unless this section is completed.**

Are the spillway(s) adequate for this classification of dam (see the dam safety regulations 11 Miss. Admin. Code Pt. 7, Ch. 3 for definition of Probable Maximum Precipitation – PMP – and what amount of PMP must be handled by the different spillways)?

Principal: Yes ☒ No ☐

Auxiliary(Emergency): Yes ☒ No ☐

If not, what percent of the total PMP will the combined spillways pass (%)?

Or, note date and author of hydrologic and hydraulic report evaluating spillway capacity: Feb. 2018

Major changes to the dam or watershed since preparation of last report that may affect spillway adequacy? (Yes / No, if yes then describe changes): No

HISTORY

Date Constructed: 1996 Date(s) Reconstructed:

Designer: Herbert King Constructed by: Pierce Construction Co.

PREVIOUS INSPECTIONS (date of)

Last Owner's Inspection:

Last Formal Inspection:2011

EMERGENCY ACTION PLAN

Date of Last Approved Plan (when the plan was last distributed to the EAP holders):

Date of Last Revision:

Is the notification flowchart complete and current?

Is the emergency materials and equipment information current?

When was the plan last tested? Was this test a table top exercise or a full scale exercise?

DOWNSTREAM HAZARD CLASSIFICATIONS

Present Hazard Classification: High

Changes in Downstream Land Use and Habitation since last inspection: Highway improvements

Is present Classification appropriate?Yes

OPERATION AND MAINTENANCE

Date of Operation and Maintenance Plan:

Are instructions adequate?

Do operating personnel follow instructions?

What are operating personnel capabilities?

PROJECT RECORD REVIEW

Date of file review:

Description of previous deficiencies noted and corrective actions taken (if so, when?):

EXAMINATION OF EMBANKMENT DAMS

DESCRIPTION OF STRUCTURE

Embankment Material: Compacted Fill

Cutoff Type (If Known):

Impervious Core (If Known):

Internal Drainage System (Yes / No?) If yes, describe:No

Any Signs of Movement (Horizontal and Vertical Alignment)?:No

Miscellaneous:

CREST

Width of Crest: 15 ft

Problems:
☒ None ☐ Ruts or Puddles ☐ Erosion ☐ Cracks with Displacement ☐ Sinkholes ☐ Not Wide Enough ☐ Low Area ☐ Misalignment ☐ Inadequate Surface Drainage ☐ Trees, Brush, Briars ☐ Other:

If Trees, Brush, Briars is checked above please describe the nature and extent of vegetation on the dam?

Comments:

Overall Condition:
☒ Satisfactory
☐ Fair
☐ Poor
☐ Unsatisfactory

UPSTREAM SLOPE

Slope (H:V): 4:1

Problems:

☒ None ☐ Riprap - Missing, Sparse, Displaced, Weathered ☐ Wave Erosion-with Scarps

☐ Cracks-with Displacement ☐ Sinkhole ☐ Appears Too Steep ☐ Depressions or Bulges

☐ Slides ☐ Animal Burrows ☐ Trees, Brush, Briars

☐ Other:

If Trees, Brush, Briars is checked above please describe the nature and extent of vegetation on the dam?

Comments:

Overall Condition:

☒ Satisfactory
☐ Fair
☐ Poor
☐ Unsatisfactory

DOWNSTREAM SLOPE (including groins and toe area)

Slope (H:V): 5:1

Problems:

☒ None ☐ Livestock Damage ☐ Erosion or Gullies ☐ Cracks with Displacement

☐ Sinkholes ☐ Appears too Steep ☐ Depression or Bulges ☐ Slide(s) ☐ Soft Areas

☐ Trees, Brush, Briars on dam or within 50 feet of toe ☐ Animal Burrows

☐ Other:

If Trees, Brush, Briars is checked above please describe the nature and extent of vegetation on the dam?

Comments:

Overall Condition:
☒ Satisfactory
☐ Fair
☐ Poor
☐ Unsatisfactory

UTILITIES

Utilities Installed in Embankment or Toe? None
☐ Phone/Cable ☐ Water ☐ Electrical ☐ Sewer ☐ Gas

Does the location of all utilities appear on the as-built plans for the dam?

SEEPAGE

Problems:
☒ None ☐ Saturated Embankment Area ☐ Seepage Exits on Embankment ☐ Seepage Exits at Point Source ☐ Seepage Area at Toe ☐ Flow Adjacent to Outlet
☐ Other:

Comments:

Overall Condition:
☒ Satisfactory (None)
☐ Fair
☐ Poor
☐ Unsatisfactory

Does the location of all drainage systems/filters appear on the as-built plans for the dam?

SEEPAGE AND TOE DRAIN/RELIEF WELL FLOW

Location	Estimated Flow	Color (Turbidity)

EXAMINATION OF SPILLWAYS AND OUTLET WORKS

PRIMARY SPILLWAY

(Fill out those sections that apply)

ENTRANCE CHANNEL N/A

Description:

Vegetation (Trees, Bushes):

Debris:

Channel Side-Slope Stability:

Slope Protection/Erosion:

Unusual Conditions:

Overall Condition:
- ☐ Satisfactory
- ☐ Fair
- ☐ Poor
- ☐ Unsatisfactory

SPILLWAY CREST N/A

Description:

Condition of Material:

Signs of Movement:

Joints:

Unusual Conditions:

Overall Condition:

- ☐ Satisfactory
- ☐ Fair
- ☐ Poor
- ☐ Unsatisfactory

CHUTES N/A

Description:

Condition of Material:

Signs of Movement:

Joints:

Unusual Conditions:

Overall Condition:

- ☐ Satisfactory
- ☐ Fair
- ☐ Poor
- ☐ Unsatisfactory

SPILLWAY WING WALLS N/A

Description:

Condition of Material:

Signs of Movement:

Joints:

Drains:

Unusual Conditions:

Overall Condition:
- ☐ Satisfactory
- ☐ Fair
- ☐ Poor
- ☐ Unsatisfactory

DOWNSTREAM APRON N/A

Description:

Condition of Material:

Signs of Movement:

Unusual Conditions:

Overall Condition:
- ☐ Satisfactory
- ☐ Fair
- ☐ Poor
- ☐ Unsatisfactory

INLET RISER

Description and Material Type (i.e. HDPE, Concrete, Steel, CMP, etc.): 48" C.M. pipe riser

Condition of Material: Good

Signs of Movement: None

Joints: None

Floor: Concrete

Unusual Conditions:

Overall Condition:
- [x] Satisfactory
- [ ] Fair
- [ ] Poor
- [ ] Unsatisfactory

CONDUIT(S)

Description and Material Type (i.e. HDPE, Concrete, Steel, CMP, etc.): 36" C.M pipe

When was the last video inspection of the conduit? None

Condition of Material: Good

Signs of Movement: None

Joints:

Seepage into conduit(s): No seepage exiting outlet

Location	Estimated Flow	Turbidity

Unusual Conditions:

Overall Condition:
- [x] Satisfactory
- [ ] Fair
- [ ] Poor
- [ ] Unsatisfactory

TRASH RACKS N/A

Description:

Condition of Material:

Unusual Conditions:

Overall Condition:
- ☐ Satisfactory
- ☐ Fair
- ☐ Poor
- ☐ Unsatisfactory

GATES N/A

Description/Type:

Condition:

Protective Coating:

Leakage when gate is closed (Yes / No?):

Exercising Frequency:

Gates operated at time of Inspection?

Condition of seals:

Condition of gate controls and hoists:

Overall Condition:
- ☐ Satisfactory
- ☐ Fair
- ☐ Poor
- ☐ Unsatisfactory

STILLING BASIN N/A

Description:

Condition of Material:

Signs of Movement:

Erosion:

Unusual Conditions:

Overall Condition:
☐ Satisfactory
☐ Fair
☐ Poor
☐ Unsatisfactory

OUTLET CHANNEL N/A

Vegetation (Trees, Bushes):

Debris:

Channel Side-Slope Stability:

Erosion:

Unusual Conditions:

Overall Condition:
☐ Satisfactory
☐ Fair
☐ Poor
☐ Unsatisfactory

LOW LEVEL OUTLET N/A

Description:

Condition:

Trash Rack:

Leakage:

Location Estimated Flow

Unusual Conditions:

Was the low-level outlet operated during the inspection?

Were there difficulties operating the low-level outlet?

When was the low-level outlet last operated and did this conform with the Operation and Maintenance Procedures?

Overall Condition:
- ☐ Satisfactory
- ☐ Fair
- ☐ Poor
- ☐ Unsatisfactory

VALVES N/A

Description:

General Condition:

Protective Coating:

Evidence of Cavitation or Abrasion:

Leakage (Yes / No?):

Frequency of Use:

Valve operated during inspection (Yes / No?):

Overall Condition:
☐ Satisfactory
☐ Fair
☐ Poor
☐ Unsatisfactory

AUXILIARY (EMERGENCY) SPILLWAY

Note: For Earthen Spillways Only. If the auxiliary (emergency) spillway is not earthen please duplicate the above sections for the primary spillway here as needed. If there are more than one earthen and/or other spillway besides the primary please duplicate the appropriate sections in this report.

Description: Vegetated earthen channel

Vegetation (Trees, Bushes): Grass

Debris: None

Channel Side-Slope Stability: 6:1 side slope or flatter

Slope Protection/Erosion: Grassed with no erosion

Unusual Conditions:

Overall Condition:
☒ Satisfactory
☐ Fair
☐ Poor
☐ Unsatisfactory

EXAMINATION OF OTHER FEATURES

INSTRUMENTATION N/A

List all instrumentation (i.e. weirs, piezometers, flow gauges):

(A separate report including instrument location, instrument readings, instrument condition, normal readings, observations, and conclusions based upon the collected data shall be attached.)

RESERVOIR

Slopes:

Sedimentation:

Unusual Conditions Which May Affect Dam:

Any Other Unusual Conditions:

APPURTENANT STRUCTURES (Power House, Gatehouse, Penstocks, Water Supply, Other)

Description and Condition of each:

FOUNDATION AND GEOLOGY

Unusual Conditions Which May Affect Dam:

Cracks, Joints, Bedding Planes Which May Affect Dam Or Provide Seepage Paths:

CONCLUSIONS

I certify that the above dam was personally inspected by me and the conditions described herein are correct to the best of my knowledge and belief.

The following maintenance concerns should be addressed (in order of importance):

This dam is very well maintained.

I recommend the following changes in maintenance:

I recommend the following repairs be made within one year (in order of importance):

Abandoned animal burrow at outlet of 36" conduit be packed with dry Sac-crete of mortor mix And allowed to set up to prevent future use by animals

The following long-term improvements should also be undertaken (in order of importance):

The following studies should also be undertaken (in order of importance):

Have the recommendations above included those from previous Inspections?

Does the Emergency Action Plan or the Operation and Maintenance Procedures require revision?

Mississippi Licensed Professional Engineer representing the dam owner in responsible charge of the inspection:

Signature Herbert A. King Date 2/15/2018

P.E. SEAL