



Virginia Department of Conservation & Recreation

Date Prepared: 2/14/2024

Prepared By: David Henderson

ANNUAL INSPECTION REPORT FOR VIRGINIA REGULATED IMPOUNDING STRUCTURES

Reference: Impounding Structures Regulations, 4VAC 50-20-10 et seq., including 4VAC 50-20-105, Virginia Soil and Water Conservation Board

Dam Information

Name of Dam: Woods End Dam
Other Name: Hidden Valley Highschool Dam
Inventory Number: 161005
Location-County/City: Roanoke County
Lat/Long (Decimal Degrees): 37.2237, -80.0205
Stream Name: Mud Lick Creek
Hazard Classification: High
Name of reservoir:
Purpose of reservoir: Flood Control or storm water management - Primary
Other - Primary

Owner's Information

Owner's Name: Roanoke County - David Henderson
Owner's Address: 5204 Bernard Drive, PO Box 29800, Roanoke, VA 24018
Email: dhenderson@roanokecountyva.gov

Owner Telephone Numbers

Name	Number	Type
Roanoke County - David Henderson	(540) 772-2083	Office

Primary Contact

Name: Roanoke County - David Henderson
Address: 5204 Bernard Drive PO Box 29800, Roanoke VA, 24018
Email: dhenderson@roanokecountyva.gov
Phone: (540) 772-2083

Owner's Engineer

Owner's Engineer Telephone Numbers

Name	Number	Type
------	--------	------

Directions: Make note of all pertinent conditions and changes since the last inspection, or, if this is the first inspection, since the filing of a design report.

Date of This Inspection 2/14/2024
Date of Last Inspection 4/6/2023

1. EMBANKMENT

- Any alteration made to the embankment? No
- Erosion on embankment? No
- Settlement, misalignment or cracks in embankment? No - No cracks observed on embankment. Some settlement was observed over top of emergency spillway pipes. Most likely from backfill settlement from original construction. See pictures.

d. Seepage? If so, seepage flow rate and location (describe any turbidity and observed color within the flow): Yes - Upstream Face - about 100' from north abutment, about 10' above base of embankment - moist area, no active flow. Downstream Face - about 100' from north abutment, about 15 foot above base of embankment - small flow. No turbidity or color. Seepage is from upland area (not reservoir). There have been recent rains.

2. UPSTREAM SLOPE

- a. Woody vegetation discovered? No - None on embankment.
- b. Rodent burrows discovered? No - No rodent burrows observed.
- c. Remedial work performed? No

3. INTAKE STRUCTURE

- a. Deterioration of concrete? No - No significant deterioration.
- b. Exposure of rebar reinforcement? No
- c. Is there a need to repair or replace the trash rack? No
- d. Any problems with debris? No - No debris present at inspections.
- e. Was the drawdown valve operated? No - There is no drawdown valve. The impoundment is dry, except during rain events. Principal spillway is at the bottom of the ponding area.

4. ABUTMENT CONTACTS

- a. Any seepage? If so, estimate the flow rate and describe the location of the seep or damp areas (describe any turbidity and observed color within the flow): No

5. EARTHEN EMERGENCY SPILLWAY

- a. Obstructions to flow? If so, describe plans to correct: No - Emergency spillway is not earthen. Emergency spillway consists of three-12.5 foot diameter round structural steel conduits. Conduits are in good condition and they are clear of debris. Some seepage is visible from inside conduits. Appears to be minor, no signs of soil piping.
- b. Rodent burrows discovered? No
- c. Any deterioration in the approach or discharge channel? No

6. CONCRETE EMERGENCY SPILLWAY

- a. Deterioration of concrete?
- b. Exposed steel reinforcement?
- c. Any leakage below concrete spillway?
- d. Obstructions to flow? If so, lists plans to correct:

7. DOWNSTREAM SLOPE

- a. Woody vegetation discovered? No - Embankment is clear of woody vegetation.
- b. Rodent burrows discovered? No - None observed
- c. Are seepage drains flowing? No - Not applicable.
- d. Any seepage or wet areas? Yes - As described in 1.d. Note reservoir is normally dry (empty). Wet areas are from upland area.

8. OUTLET PIPE

- a. Any water flowing outside of discharge pipe through the Impounding Structure? No - None observed.
- b. Any deflection or damage to the pipe? No - None observed.

9. STILLING BASIN

- a. Deterioration of concrete structures? No - Plunge pool is rip rap, not concrete.
- b. Exposure of rebar reinforcement? No - Not applicable.

c. Deterioration of the basin slopes? No - Slopes satisfactory.
d. Repairs made? No
e. Any obstruction to flow? No

10. GATES

a. Gate malfunctions or repairs? _____
b. Corrosion or damage? _____
c. Were any gates operated? If so, how often and to what extreme? _____

11. RESERVOIR/WATERSHED

a. New developments upstream of dam? No - No significant new development. Dam was designed for future development conditions.
b. Slides or erosion of lake banks around the rim? No
c. General comments to include silt, algae or other influence factors: Sediment is removed from the lower portion of the ponding area several times per year. At the time of inspection, no significant sediment was present in ponding area.

12. INSTRUMENTS

a. List all instruments AWARE Flood System, by Intellisense Systems
b. Any readings of instruments? Yes - During high water, an alert is sent to Roanoke County Department of Emergency Services, through cellular network, when the water level reaches the pressure transducer. Roanoke County Emergency Management Coordinator confirmed in an email I received on 1/26/24 that the system is operational.
c. Any installation of new instruments? No

13. DOWNSTREAM/HAZARD ISSUES

a. New development in downstream inundation zone? No
b. Note the maximum storm water discharge or peak elevation during the previous year. No major storms in past year.
c. Was general maintenance performed on dam? If so, when? Yes - Mowing, removal of woody growth, removal of sediment and debris, performed periodically.
d. List actions that need to be accomplished before the next inspection: Continue to keep inlet clear of sediment and debris and bush/cut embankment annually in the fall. Need to monitor for rodent burrows. Small pile of debris located on the upstream face should be removed.

14. OVERALL CONDITION ASSESSMENT OF IMPOUNDING STRUCTURE AND APPURTENANCES

(Check one) SATISFACTORY FAIR POOR UNSATISFACTORY NOT RATED

1. SATISFACTORY

No existing or potential dam safety deficiencies are recognized. Acceptable performance is expected under all loading conditions (static, hydrologic, seismic) in accordance with the applicable regulatory criteria or tolerable risk guidelines.

2. FAIR

No existing dam safety deficiencies are recognized for normal loading conditions. Rare or extreme hydrologic and/or seismic events may result in a dam safety deficiency. Risk may be in the range to take further action.

3. POOR

A dam safety deficiency is recognized for loading conditions which may realistically occur. Remedial action is necessary. POOR may also be used when uncertainties exist as to critical analysis parameters which identify a potential dam safety deficiency. Further investigations and studies are necessary.

4. UNSATISFACTORY

A dam safety deficiency is recognized that requires immediate or emergency remedial action for problem resolution.

5. NOT RATED

The dam has not been inspected, is not under state jurisdiction, or has been inspected but, for whatever reason, has not been rated.

General Comments:	In spots below the dam, the soil retention fabric is exposed and there is erosion in the stream. No work is needed at this time, but this area should be monitored annually. <u>No significant change since 2021, 2022, and 2023 inspections</u>
Recommendations:	Continue to keep inlet clear of sediment and debris and bush/cut embankment annually in the fall. Need to monitor for rodent burrows. Small pile of debris located on the upstream face should be removed.
Federal Involvement Inspection (Agency):	
Additional people present during inspection:	Nicki Mills, Roanoke County

CERTIFICATION BY OWNER'S ENGINEER (required only when an inspection by an engineer is required)

I hereby certify that the information provided in this report has been examined by me and found to be true and correct in my professional judgment.

Signed:

Professional Engineer's Signature

David M. HENDERSON Virginia Number:

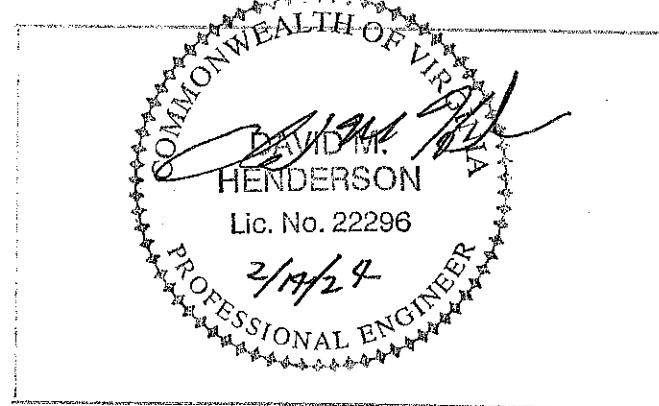
Virginia Number:

0402

22296

This 14 day of February, 20 24.

Engineer's Virginia Seal:



CERTIFICATION BY OWNER(S)

I hereby certify that the information provided in this report has been examined by me.

Signature	Print Name	Signature Date
	DAVID M. HENDERSON	2/19/24

**Mail the executed form to the appropriate
Department of Conservation and Recreation
Division of Dam Safety and Floodplain Management
Regional Engineer**