

# SPRING LAKE DAM : D3539

## Dams Preliminary Inspection Form



Inspector: Dani H Felkel

Start Date: 09/28/2018

Completed Date: 10/05/2018

### Inspection Information

1. Date of Inspection 09/28/2018

2. Inspectors Present Dani Felkel

#### 3. Other Persons Attending Inspection

Name	Phone	Owner/Engineer/Other
David Beasley		Owner

4. Is this a follow-up inspection?  Yes  No  NA

### Observation/Instrumentation

1. Estimate the current level of the water in the reservoir: Breached

Dam was breached as a result of Hurricane Florence. Breach occurred near the left abutment and auxiliary spillway.



Photo Taken: 9/28/2018 10:44:09 AM



Photo Taken: 9/28/2018 10:46:11 AM

2. Describe the current weather & conditions: Sunny

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<b>Observation/Instrumentation</b>	
3. Recent rainfall quantity:	Less than 2"
Recent rainfall of approximately 1.5"	
4a. Are Piezometers or Observation Wells present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
4b. (If Present:) Condition of Piezometers/Observation Wells	
5a. Is a Staff Gauge or Recorder present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
5b. (If Present:) Condition of Staff Gauge or Recorder	
6a. Are Measurement Weirs Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
6b. (If Present:) Condition of Weirs:	
7a. Number of Spillways Present	3
7b. Type of Spillways Present	Drop-Inlet, Earthen Overflow/Runaround
8. Other:	
9. Additional Comments (Refer to item number if applicable)	
<b>Embankment: Crest</b>	
Is this section applicable for this dam?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1. Grass Cover	Action Required
Minimal grass coverage along some areas of the crest.	
2. Deleterious Vegetation	Monitor
3. Trees	No Deficiency
4. Animal Activity	Monitor
5. Surface Cracking	
6. Horizontal Alignment	
7. Settlement	
8. Sinkhole	
9. Erosion	Action Required
Dam was breached due to overtopping.	
10a. Are Alterations/Repairs Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
10b. (If Present:) Alterations/Repairs Condition	

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<b>Embankment: Crest</b>	
11. Other:	
12. Embankment: Crest Condition	Needs Maintenance, Needs Permitted Repair(s)
<b>Violation Determined: 9/28/2018 DAMMAINTREP</b>	
13. Additional Comments (Refer to item number if applicable)	
<b>Concrete/Masonry Dams: Crest</b>	
Is this section applicable for this dam?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1. Surface Conditions	
2. Horizontal Alignment	
3. Vertical Alignment	
4. Condition of Joints	
5. Unusual Movement	
6a. Are Alterations/Repairs Present?	<input type="checkbox"/> Yes <input type="checkbox"/> No
6b. (If Present:) Alterations/Repairs Condition	
7. Other:	
8. Concrete/Masonry Dam Crest Condition	
9. Additional Comments (Refer to item number if applicable)	

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## Embankment: Upstream Slope

*Is this section applicable for this dam?*

Yes  No



Photo Taken: 9/28/2018 11:11:19 AM

1. Grass Cover	Action Required
Establish and maintain grass coverage along the length of the slope.	
2. Deleterious Vegetation	Action Required
Small trees, weeds, and brush present.	
3. Trees	Action Required
Small and large trees present.	
4. Animal Activity	Monitor
5. Surface Cracking	
6. Subsidence, Sinkhole	
7. Slide, Slough, Scarp	Monitor
Some portions of the upstream slope are very steep. No signs of recent movement of soil, but this should be monitored.	
8. Groins	Action Required
Some brush in left groin.	
9. Erosion	Action Required
Dam breached due to overtopping.	
10a. Slope Protection/Armoring Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
10b. (If Present:.) Slope Protection/Armoring	
11a. Alterations/Repairs Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

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<b>Embankment: Upstream Slope</b>	
<i>11b. (If Present:) Alterations/Repairs Condition</i>	
<i>12. Other:</i>	
<i>13. Embankment: Upstream Slope Condition</i>	Needs Maintenance, Needs Permitted Repair(s)
<b>Violation Determined: 9/28/2018 DAMMAINTREP</b>	
<i>14. Additional Comments (Refer to item number if applicable)</i>	
<b>Concrete/Masonry Dams: Upstream Face</b>	
<i>Is this section applicable for this dam?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<i>1. Surface Conditions</i>	
<i>2. Condition of Joints</i>	
<i>3. Unusual Movement</i>	
<i>4. Abutments</i>	
<i>5a. Alterations/Repairs Present?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>5b. (If Present:) Alterations/Repairs Condition</i>	
<i>6. Other:</i>	
<i>7. Concrete/Masonry Dams: Upstream Face Condition</i>	
<i>8. Additional Comments (Refer to item number if applicable)</i>	

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**Embankment: Downstream Slope**

*Is this section applicable for this dam?*

Yes  No



Photo Taken: 9/28/2018 10:46:48 AM

1. <i>Grass Cover</i>	Action Required
Establish grass coverage along the length of the slope.	
2. <i>Deleterious Vegetation</i>	Action Required
Small trees, weeds, and brush present.	
3. <i>Trees</i>	Action Required
Large trees present along the slope.	
4. <i>Animal Activity</i>	Monitor, Investigate
See Question 6.	
5. <i>Surface Cracking</i>	
6. <i>Subsidence, Sinkhole</i>	Investigate
Sinkhole/animal burrow observed a few feet above the end of the left outlet pipe (looking downstream).	
7. <i>Slide, Slough, Scarp</i>	
8. <i>Groins</i>	



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## Embankment: Downstream Slope

### 9. Erosion

Action Required

Dam breached as a result of overtopping. Erosion also observed on downstream slope, surrounding the right outlet pipe's discharge channel.



Photo Taken: 9/28/2018 10:58:59 AM  
GPS Orientation: 270 degrees

10a. Slope Protection/Armoring Present?

Yes  No

10b. (If Present:) Slope Protection Condition

11. Wet Areas

Unable to observe. Dam is breached and holding no water.

12a. Seepage

Yes  No

Unable to observe. Dam is breached and holding no water.

12b. (If Present:) Seepage Flow

13a. Drainage System Present?

Yes  No

13b. (If Present:) Drainage System Condition

14a. Alterations/Repairs Present?

Yes  No

14b. (If Present:) Alterations/Repairs Condition

15. Other:

16. Embankment: Downstream Slope Condition

Needs Maintenance,  
Needs Permitted  
Repair(s)

**Violation Determined: 9/28/2018  
DAMMAINTREP**

17. Additional Comments (Refer to item number if applicable)

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<b>Concrete/Masonry Dams: Downstream Face</b>	
<i>Is this section applicable for this dam?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<i>1. Surface Conditions</i>	
<i>2. Condition of Joints</i>	
<i>3. Unusual Movement</i>	
<i>4. Drains</i>	
<i>5. Leakage</i>	
<i>6. Abutments</i>	
<i>7a. Alterations/Repairs Present?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>7b. (If Present:) Alterations/Repairs Condition</i>	
<i>8. Other:</i>	
<i>9. Concrete/Masonry Dam: Downstream Face Condition</i>	
<i>10. Additional Comments (Refer to item number if applicable)</i>	



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**Downstream Area**

*Is this section applicable for this dam?*

Yes  No



Photo Taken: 9/28/2018 11:04:17 AM



Photo Taken: 9/28/2018 11:04:21 AM

*Is Downstream Area clear?*

Yes  No

Some large trees and debris from the dam's failure present.

1. *Trees*

Action Required

Several large trees present.

2. *Deleterious Vegetation*

Monitor

Downstream area is largely covered with sediment from the dam's failure.

3. *Wet Areas*

Unable to observe. Dam is breached and holding no water.

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### Downstream Area

4a. Seepage

Yes  No  NA

Unable to observe. Dam is breached and holding no water.

4b. (If Present): Seepage Flow

5a. Boils

Yes  No  NA

Unable to observe. Dam is breached and holding no water.

5b. (If Present): Boil Flow

6a. Alterations/Repairs Present

Yes  No  NA

6b. (If Present:) Alterations/Repairs Condition

7. Other:

8. Downstream Area Condition

Needs Maintenance,  
Needs Permitted  
Repair(s)

**Violation Determined: 9/28/2018  
DAMMAINTREP**

9. Additional Comments (Refer to item number if applicable)

### Spillways: Erodible Channel

Is this section applicable for this dam?

Yes  No

Unable to access auxiliary spillway due to the breach.



Photo Taken: 9/28/2018 10:44:55 AM

1. Location

Location from previous inspection report: 34.458454, -79.861541

2. Grass Cover

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<b>Spillways: Erodible Channel</b>	
3. <i>Deleterious Vegetation</i>	Action Required
Small trees, weeds, and brush visible from the accessible area.	
4. <i>Trees</i>	Action Required
Trees visible from the accessible area.	
5. <i>Animal Activity</i>	
6. <i>Subsidence, Sinkhole</i>	
7. <i>Slide, Slough, Scarp</i>	
8. <i>Erosion</i>	
9. <i>Debris</i>	
10. <i>Flowing?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
Dam is breached and holding no water.	
11a. <i>Alterations/Repairs Present</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
11b. <i>(If Present:) Alterations/Repairs Condition</i>	
12. <i>Other:</i>	
13. <i>Spillway: Erodible Channel Condition</i>	Needs Maintenance, Condition Prevented Full Inspection
<b>Violation Determined: 10/1/2018</b> <b>DAMMAINTREP</b>	
14. <i>Additional Comments (Refer to item number if applicable)</i>	
<b>Spillways: Non-Erodible Channel</b>	
<i>Is this section applicable for this dam?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1. <i>Location</i>	
2. <i>Approach Area</i>	
3. <i>Weir/Control</i>	
4. <i>Sidewalls</i>	
5. <i>Channel Floor</i>	
6. <i>Condition of Joints</i>	
7. <i>Surface Condition</i>	

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<b>Spillways: Non-Erodible Channel</b>	
8. Unusual Movement	
9. Discharge Channel	
10. Debris	
11. Flowing?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
12a. Boils	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
12b. (If Present): Boils	
13a. Alterations/Repairs Present	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
13b. (If Present:) Alterations/Repairs Condition	
14. Other:	
15. Spillway: Non-Erodible Channel Condition	
16. Additional Comments (Refer to item number if applicable)	

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**Spillways: Inlet Structure**

*Is this section applicable for this dam?*

Yes    No



Photo Taken: 9/28/2018 10:42:18 AM



Photo Taken: 9/28/2018 10:42:27 AM

*1. Location*

60" CMP: 34.457968, -79.862044

72" CMP: 34.457975, -79.861984

*2a. Intake Structure*

No Deficiency




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<b>Spillways: Inlet Structure</b>	
<p><i>2b. Intake Structure Types</i></p> <p>Inlet structure to the right (looking downstream) appears to have a large flashboard that can be removed to act as a low level control.</p> <div style="display: flex; align-items: center;">  <div style="margin-left: 20px;"> <p>Photo Taken: 10/1/2018 11:00:11 AM</p> </div> </div>	<p>Drop Inlet, Other (Explain In Comments)</p>
<p><i>3. Trashrack</i></p>	<p>Not Present</p>
<p><i>4a. Low-Level Valve Present?</i></p>	<p><input type="checkbox"/> Yes   <input type="checkbox"/> No   <input checked="" type="checkbox"/> NA</p>
<p><i>4b. (If Present:) Low-Level Valve Condition</i></p>	
<p><i>5. Debris</i></p>	<p>Monitor</p>
<p>Small amount of debris on top of left CMP.</p>	
<p><i>6a. Repairs/Alterations Present</i></p>	<p><input type="checkbox"/> Yes   <input checked="" type="checkbox"/> No   <input type="checkbox"/> NA</p>
<p><i>6b. (If Present:) Alterations/Repairs Condition</i></p>	
<p><i>7. Other:</i></p>	
<p><i>8. Spillway: Inlet Structure Condition</i></p>	<p>Regular Monitoring Necessary</p>
<p><i>9. Additional Comments (Refer to item number if applicable)</i></p>	



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## Spillways: Outlet Works

Is this section applicable for this dam?

Yes  No



Photo Taken: 9/28/2018 10:59:09 AM



Photo Taken: 9/28/2018 11:01:29 AM

### 1. Location

34.457817, -79.861914

### 2a. Outlet Structure

No Deficiency

### 2b. Outlet Structure Type

Pipe

Two pipes present. One was fully submerged.

### 3. Outlet Pipe

Left outlet pipe was completely submerged/covered by brush. Unable to observe its condition.

### 4. Primary Closure/Control

### 5. Secondary Closure/Control (If Applicable)

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<b>Spillways: Outlet Works</b>	
6. <i>Unusual Movement</i>	Investigate, Action Required
<div style="border: 1px solid black; padding: 2px;">Small sinkhole/animal burrow observed above the left outlet pipe, a few feet up the slope.</div>	
7a. <i>Seepage</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> NA
<div style="border: 1px solid black; padding: 2px;">Dam is breached and holding no water.</div>	
7b. <i>(If Present): Seepage</i>	
8. <i>Stilling Basin</i>	Action Required
<div style="border: 1px solid black; padding: 2px;">Erosion of the slope and area surrounding the right outlet's stilling basin.</div>	
9. <i>Normal Flow Quantity</i>	
10. <i>Low-Level Flow Quantity</i>	
11a. <i>Alterations/Repairs Present</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> NA
11b. <i>(If Present:) Alterations/Repairs</i>	
12. <i>Other:</i>	
13. <i>Outlet Works Condition</i>	Needs Maintenance, Needs Permitted Repair(s)
<div style="border: 1px solid black; padding: 2px;"><b>Violation Determined: 9/28/2018 DAMMAINTREP</b></div>	
14. <i>Additional Comments (Refer to item number if applicable)</i>	
<b>Emergency Action Plan</b>	
<i>Is this section applicable for this dam?</i>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
1. <i>Date of last update of emergency plan:</i>	
2a. <i>EAP provided by owner?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
2b. <i>(If EAP was not provided, was a copy of the EAP form left with the owner?)</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
3. <i>Does EAP contain emergency alert plan?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
4. <i>Does EAP contain specific actions to take if the dam has failed or is failing?</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> NA
5. <i>Additional Comments (Refer to item number if applicable)</i>	

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## Downstream Hazard Check

1. *Satellite Imagery*

Yes  No  NA

Photo Taken: 10/5/2018 3:13:21 PM



2. *Inundation Map*

Yes  No  NA

Recent DSS Wise run available.

3. *Structures/Developments*

Yes  No  NA

4. *Roads/Railways*

Yes  No  NA

Society Hill Road (1.15 mi) and Plumfield Road (2.5 mi) downstream.  
Evidence of overtopping of Society Hill Road was noted in the ArcGIS Collector check that was conducted a few days after Hurricane Florence.

5. *Utilities*

Yes  No  NA

6. *Consider For Reclass?*

Yes  No  NA

Consider for reclass to C1 based on potential impacts to Society Hill Road (2,100 cars/day).

7. *Additional Comments (Refer to item number if applicable)*

## Inspection Summary

1. *Overall Condition (\*Per National Inventory of Dams Definition)*

Not Rated

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## Inspection Summary

-----NID Definitions-----

*(SATISFACTORY) No existing or potential dam safety deficiencies are recognized.*

*Acceptable performance is expected under all loading conditions in accordance with state engineer's rules and regulations for dams or tolerable risk guidelines.*

*(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.*

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

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

*(NOT RATED) This should only be used if it is not possible to assess to dam's condition due to site constraints on visibility on the day of inspection. If vegetation is a problem the owner should be ordered perform maintenance to remove it before the next visit.*

### 3. Final Comments

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## Inspection Summary

### *Preliminary Dam Inspection Disclaimer:*

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

SPRING LAKE DAM (D3539)  
Violation List



Form	Determined	Description	Sec. #
Dams Preliminary Inspection Form	9/28/2018	Reference: DAMMAINTREP	
Dams Preliminary Inspection Form	9/28/2018	Reference: DAMMAINTREP	
Dams Preliminary Inspection Form	9/28/2018	Reference: DAMMAINTREP	
Dams Preliminary Inspection Form	9/28/2018	Reference: DAMMAINTREP	
Dams Preliminary Inspection Form	10/1/2018	Reference: DAMMAINTREP	
Dams Preliminary Inspection Form	9/28/2018	Reference: DAMMAINTREP	