

**Site F - Burleigh Falls Dam
Underwater Inspection Footage
May 30th and 31st 2018**

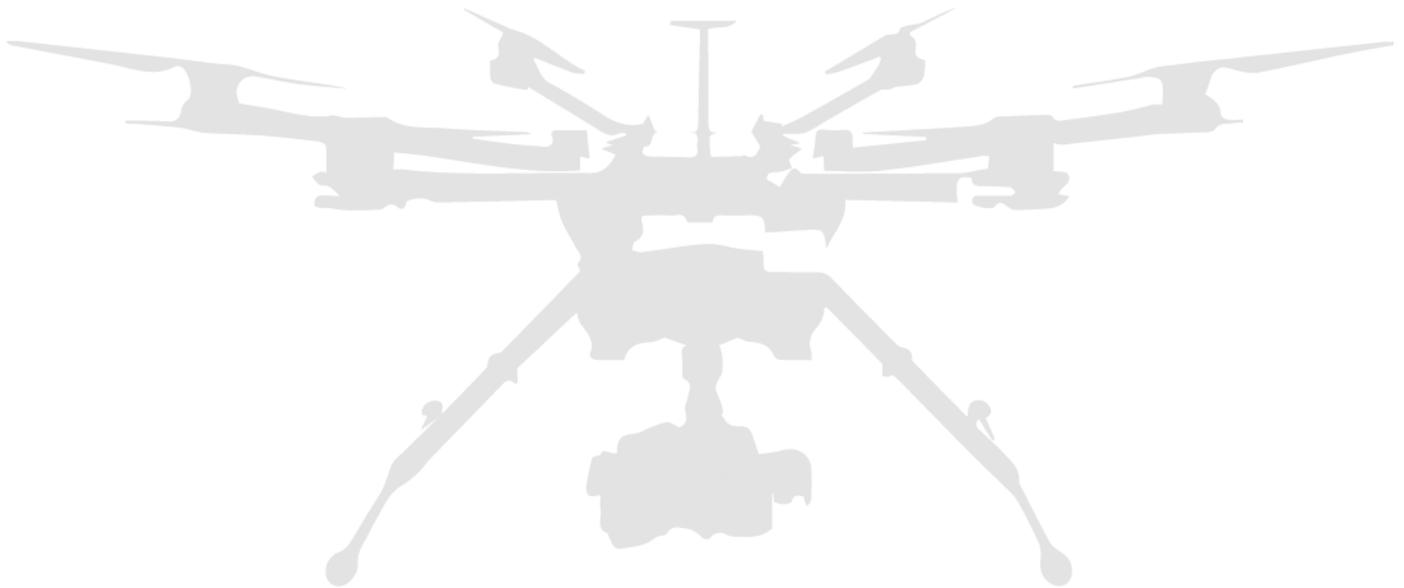
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1.0 Introduction

The purpose of this report is to convey the data collected during the underwater inspection of the Site F – Burleigh Falls Dam on the Trent Severn waterway undertaken on May 30th and May 31st, 2018. This document is meant to be read in conjunction with the included video footage and to be used as a guide for those using the footage to assess the state of the dam.

2.0 Methodology

On May 30th, filming began at approximately 10:15am and video footage was taken showing the upstream South Gravity Dam and the 8 southernmost bays of the Spillway Section, with the last footage of the Spillway Section for that day being taken at approximately 3pm. Footage of the four southernmost bays on the downstream side of the dam was taken between 4pm and 5pm of that same day. Due to increased current, turbulence, and lower water level on the downstream side of the dam, the footage from downstream section was limited somewhat in quality and quantity when compared to the upstream footage, however relevant information can still be identified within it.

On May 31st filming began on the upstream side of the dam at approximately 9:30am, first covering the North Abutment and then the four northernmost bays of the Spillway Section. Footage of these sections ended at approximately 11:30am. Filming of the downstream side of the Spillway Section covering bays five to twelve was then taken between 1pm and 3pm but was also limited due to the increased current and decreased depth downstream.

A map of the dam showing the approximate location of each video clip included with this report can be found in section 3.0 below. The aerial imagery used on the map was taken on May 30th, 2018. In addition, a table describing each video clip can be found below in section 4.0 of this report.

3.0 Footage Location Map



Notes:

Locations shown on this map are approximate.

Numbers shown represent the clip number where relevant video footage can be found.

4.0 Video Clip Identification Key

Note: Bays refer to spillway sections between each pier. Bay number one refers to the southernmost bay, and numbers increase sequentially from South to North.

Clip No.	1	Date	2018.05.30
Location	Upstream South Gravity Dam	Resolution	1280x960
Filename	20180530 - Burleigh Falls - Clip 1.mp4	Duration	10:30
Description	<ul style="list-style-type: none"> - Footage showing the concrete face of the South Gravity Dam, beginning at southern end of south gravity dam section and traversing North until reaching the first pier. - Significant concrete degradation is visible, notable examples at 2:08 and 4:57. 		

Clip No.	2	Date	2018.05.30
Location	Upstream South Gravity Dam	Resolution	1280x960
Filename	20180530 - Burleigh Falls - Clip 2.mp4	Duration	2:19
Description	<ul style="list-style-type: none"> - Footage showing the interface between the concrete face of the South Gravity Dam and the river floor traversing from South to North. 		

Clip No.	3	Date	2018.05.30
Location	Upstream Spillway Section - Bay 1	Resolution	1280x960
Filename	20180530 - Burleigh Falls - Clip 3.mp4	Duration	14:30
Description	<ul style="list-style-type: none"> - Footage showing the upstream side of Bay 1. - Stoplogs visible at timecode 8:32. - Southern pier visible at 9:27, northern pier at 11:26. - Concrete face visible at 12:10. 		

Clip No.	4	Date	2018.05.30
Location	Upstream Spillway Section - Bay 2	Resolution	1280x960
Filename	20180530 - Burleigh Falls - Clip 4.mp4	Duration	18:45
Description	<ul style="list-style-type: none"> - Footage of Bay 2, begins looking at the southern end of the stoplogs within the bay. - Degraded concrete on northern pier visible at 2:41 with exposed reinforcement. - Degraded concrete on southern pier with exposed reinforcement visible at 4:04. - Bottom of concrete face visible at 5:30. - Large hole visible at 6:07 at bottom of concrete face near northern pier. - Significant flow into hole visible at 6:55 onwards, including mussel and other debris being sucked in. - Hole visible again at approximately 15:45. - Large sections of concrete missing from northern pier visible at 17:26. 		

Clip No.	5	Date	2018.05.30
Location	Upstream Spillway Section - Bay 3	Resolution	1280x960
Filename	20180530 - Burleigh Falls - Clip 5.mp4	Duration	8:31
Description	<ul style="list-style-type: none"> - Footage of Bay 2 beginning in front of southern pier (visible at 0:45). - Concrete shelf between piers visible at 2:09 and stoplogs visible at 2:15. - Northern pier visible at 2:53. - Large section of concrete missing from northern pier visible at 5:21. 		

Clip No.	6	Date	2018.05.30
Location	Upstream Spillway Section - Bay 4	Resolution	1280x960
Filename	20180530 - Burleigh Falls - Clip 6.mp4	Duration	4:30
Description	<ul style="list-style-type: none"> - Footage of Bay 4 begins looking at corner where stoplogs meet southern pier. - Northern pier visible at 1:00 with exposed reinforcement visible at 1:11. - Notable concrete degradation visible on the northern pier visible at 1:35 and southern pier at 3:20. 		

Clip No.	7	Date	2018.05.30
Location	Upstream Spillway Section - Bay 5	Resolution	1280x960
Filename	20180530 - Burleigh Falls - Clip 7.mp4	Duration	3:25
Description	<ul style="list-style-type: none"> - Footage begins looking at the southern pier of bay 5. - Stoplogs visible at 0:22. - Gap between stoplogs and concrete shelf visible at 1:33. - Degraded concrete on northern pier visible at 1:52 with notable degradation at 2:24. - Base of northern pier visible at 3:03. 		

Clip No.	8	Date	2018.05.30
Location	Upstream Spillway Section - Bay 6	Resolution	3820x2140
Filename	20180530 - Burleigh Falls - Clip 8.mp4	Duration	3:34
Description	<ul style="list-style-type: none"> - Footage begins looking at the southern pier of bay 6. - Stoplogs visible at 0:35. - Degradation of concrete on inside of southern pier visible at 0:41. - Sloped section of concrete face visible at 1:25. - Northern pier visible at 1:40. - Base of northern pier and interface between river floor and concrete face visible at 2:20. - Base of concrete face visible at 2:40 with large cracks. 		

Clip No.	9	Date	2018.05.30
Location	Upstream Spillway Section - Bay 7	Resolution	3820x2140
Filename	20180530 - Burleigh Falls - Clip 9.mp4	Duration	2:14
Description	<ul style="list-style-type: none"> - Footage begins looking at southern pier from within Bay 7 with some degradation visible. - Stoplogs visible at 0:17. - Northern pier visible at 0:45. - Base of northern pier visible at 1:37, base of concrete face visible at 1:46 and base of southern pier visible at 1:54. 		

Clip No.	10	Date	2018.05.30
Location	Upstream Spillway Section - Bay 8	Resolution	3820x2140
Filename	20180530 - Burleigh Falls - Clip 10.mp4	Duration	2:47
Description	<ul style="list-style-type: none"> - Footage begins showing the bottom of the stoplogs on the concrete ledge facing south within bay 8. - Southern pier visible at 0:07. - Northern pier visible at 0:39 with notable degraded concrete at 0:47 where the pier meets the stoplogs. - Base of northern pier visible at 1:18 and interface where base of concrete face meets the river floor visible at 1:28. - Base of southern pier visible at 1:53 with concrete missing where vertical concrete face meets the pier seen at 2:05. 		

Clip No.	11	Date	2018.05.30
Location	Upstream Spillway Section - Bay 2	Resolution	3820x2140
Filename	20180530 - Burleigh Falls - Clip 11.mp4	Duration	2:49
Description	<ul style="list-style-type: none"> - Footage begins looking at the northern pier of bay 2. - Hole visible at base of northern pier at 0:45 (the same hole as seen in clip no. 4). - ROV enters hole at 1:18 and re-enters at 2:20. 		

Clip No.	12	Date	2018.05.31
Location	Upstream North Abutment	Resolution	3820x2140
Filename	20180531 - Burleigh Falls - Clip 12.mp4	Duration	7:51
Description	<ul style="list-style-type: none"> - Footage begins at the northern end of the North Abutment and proceeds to follow the abutment wall heading south. - Cracks in abutment visible at 1:15. - Submerged traffic cone visible at 1:29. - Northernmost ladder visible at 2:37. - Footage ends after traversing approximately half way along the North Abutment wall. 		

Clip No.	13	Date	2018.05.31
Location	Upstream North Abutment	Resolution	3820x2141
Filename	20180531 - Burleigh Falls - Clip 13.mp4	Duration	11:56
Description	<ul style="list-style-type: none"> - Footage begins looking at the face of the North Abutment wall, approximately near the mid point, and traverses the abutment wall heading south to meet the north pier of bay 12. - Notable examples of concrete degradation visible at 3:43, 4:30 and 6:24. - Southern ladder visible at 4:40. - Northern pier of bay 12 visible at 11:12 including significant concrete degradation at 11:44. 		

Clip No.	14	Date	2018.05.31
Location	Upstream North Abutment	Resolution	3820x2142
Filename	20180531 - Burleigh Falls - Clip 14.mp4	Duration	0:54
Description	<ul style="list-style-type: none"> - Footage begins near the middle of the North Abutment and proceeds North while looking at the interface between the North Abutment wall and the river floor. 		

Clip No.	15	Date	2018.05.31
Location	Upstream Spillway Section - Bay 9	Resolution	3820x2143
Filename	20180531 - Burleigh Falls - Clip 15.mp4	Duration	3:17
Description	<ul style="list-style-type: none"> - Footage begins looking at southern pier of bay 9. - Base of southern pier visible at 0:31. - Missing concrete visible at corner where stoplogs meet southern pier at 0:55. - Northern pier visible at 1:50 including notable concrete degradation at 2:08. - Base of northern pier visible at 2:23 and southern pier at 2:34. 		

Clip No.	16	Date	2018.05.31
Location	Upstream Spillway Section - Bay 10	Resolution	3820x2144
Filename	20180531 - Burleigh Falls - Clip 16.mp4	Duration	3:27
Description	<ul style="list-style-type: none"> - Footage begins looking at southern pier of bay 10. - Base of southern pier visible at 0:38. - Corner where southern pier meets stoplogs visible at 1:08. - Corner where northern pier meets stoplogs visible at 1:49. - Degradation of concrete in northern pier visible at 2:11. - Base of northern pier visible at 2:34. - Interface where vertical concrete face meets river floor visible at 2:58. 		

Clip No.	17	Date	2018.05.31
Location	Upstream Spillway Section - Bay 11	Resolution	3820x2145
Filename	20180531 - Burleigh Falls - Clip 17.mp4	Duration	3:30
Description	<ul style="list-style-type: none"> - Footage begins looking at the southern pier of bay 11. - Notable degradation visible in southern pier at 0:06. - Corner where southern pier meets stoplogs visible at 1:13. - Corner where northern pier meets stoplogs visible at 2:07. - Concrete degradation in northern pier visible at 2:27. - Base of northern pier visible at 2:45. - Base of southern pier visible at 3:30. 		

Clip No.	18	Date	2018.05.31
Location	Upstream Spillway Section - Bay 12	Resolution	3820x2146
Filename	20180531 - Burleigh Falls - Clip 18.mp4	Duration	2:21
Description	<ul style="list-style-type: none"> - Footage begins looking at southern pier of bay 12. - Concrete degradation is seen on the pier at 0:11. - Corner where the northern pier meets the stoplogs is visible at 0:27 in concrete degradation is visible at 0:45. - The southern pier is visible at 1:14. - Base of the concrete face in front of the northern pier is visible at 1:54. - Base of the southern pier is visible at 2:14. 		

Clip No.	19	Date	2018.05.31
Location	Downstream Spillway Section - Bays 5-12	Resolution	3820x2145
Filename	20180531 - Burleigh Falls - Clip 19.mp4	Duration	2:54
Description	<ul style="list-style-type: none"> - Footage begins looking at the northern end of the downstream spillway section, focusing on where the concrete meets the river floor. - Footage traverses south, beginning near bay 1 and ending approximately at the pier dividing bays 4 and 5. 		

Clip No.	20	Date	2018.05.31
Location	Downstream Spillway Section - Bays 5-12	Resolution	3820x2146
Filename	20180531 - Burleigh Falls - Clip 20.mp4	Duration	1:43
Description	<ul style="list-style-type: none"> - Footage begins in front of downstream bay 5 and proceeds north following the interface where the concrete apron meets the river floor. - Footage ends in front of bay 12 where the concrete apron meets the abutment along the side of the river. 		

Clip No.	21	Date	2018.05.30
Location	Downstream Spillway Section - Bays 1-4	Resolution	1280x960
Filename	20180530 - Burleigh Falls - Clip 21.mp4	Duration	16:41
Description	<ul style="list-style-type: none"> - Footage begins in front of the pier separating bays 3 and 4. - Northern pier of bay 3 is visible at 1:58. - The southern pier of bay 1 is visible at 4:55. - Possible hole at 11:07 in front of the northern pier of bay 1, as well as at 14:08 and 14:54 in front of the southern pier of bay 1. 		

