

Jonathan's Landing

Quarterly Inspection Report



Prepared for:
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UESI Job No. COM2200054.00

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On Jan 31/Feb 1, 2022, UESI performed a quarterly underwater inspection of the (WCS) Water Control Structures located throughout Jonathan's Landing. This inspection included: (1) Hand scraping exterior gate, frame, and 6" of head wall around gate frame. (2) Assessing the condition of the exterior head wall, gate frame hardware, and gate seals. (3) Clean and lubricate gate seals and moving parts. (4) Determine the percentage of hard and soft growth. (5) Identify any sediment/debris located outside of the WCS. This process was performed at (WCS) 1,2,3,4,5 and 6. (5) Providing a post-cleaning video of each structure.



Water control structure #1



Comments:

- Upon arrival at gate #1, UESI noted no hard or soft growth on the exterior side of all three gates.
- The diver reported a sand and shell natural bottom on the gates exterior side approximately 20" below the gate invert.
- The overall condition of the Hardware was exceptional. Very light to moderate corrosion noted. All hardware/cotter pins were present and tight.
- The overall condition of the gate and gate frame were exceptional.
- There were no flapper gate seals present on any of the three flapper gates. The seal between headwall and gate frame appeared to be present and in good shape.



Water control structure #2



Comments:

- Upon arrival at gate #2 UESI noted little to no growth on the exterior side of all three gates. Loose material and vegetation was removed by hand from the upper sections of the gates.
- The diver reported a sand and shell natural bottom on the gate exterior side with 4' of freeboard below the gates invert.
- The overall condition of the concrete headwall appeared to be in good shape. Some minor pop outs were noted on the interior and exterior. The average pop out dimensions were 1/4" diameter x 1/8" deep. The total coverage of the pop out was an estimated 5%. There was no indication of cracking or spalling noted. Also noted was a 12"X 6" concrete repair above the northern most gate. Repair appeared to be in sound.
- The overall condition of the Hardware was exceptional. Very light to moderate corrosion noted. All hardware/cotter pins were present and in place.
- The overall condition of the gate and gate frame were exceptional. Very light corrosion noted with an estimated total coverage of 5%.
- The condition of the gates seals was exceptional. Showed no indication of dry rot, splits or tearing.



Water control structure #3



The second picture above shows gate #3 and space between the gate's flapper and the gates frame. The gate flapper would not seal against the frame. The gap was an estimated $\frac{1}{4}$ " to $\frac{1}{2}$ ".



Comments:
<ul style="list-style-type: none">• Upon arrival at gate #3 UESI noted no growth on the exterior/interior sides of the gate.
<ul style="list-style-type: none">• The diver reported a sand and shell natural bottom just east of the concrete apron. The exterior side had 2' of freeboard below the gates invert. On the interior side the diver noted a clean culvert with no sediment or debris.
<ul style="list-style-type: none">• The overall condition of the concrete rip rap headwall appeared to be in good shape with no reported damage. The concrete apron had approximately 6" of undermining at the leading eastern edge of the apron. There was also a small 12"X 4" spall in the same area. The diver also noted some soil erosion on the downstream side of the embankment where areas of filter fabric have become exposed.
<ul style="list-style-type: none">• The overall condition of the hardware was exceptional on the gate's flapper. Very light to moderate corrosion noted. All hardware/cotter pins were present and tight.
<ul style="list-style-type: none">• The overall condition of the gate and gate frame was poor. The gates flapper did not seal, due to the excessive amount of concrete between the slip liner and existing corrugated pipe. The only place the flapper made contact with the culvert was at the pipe's invert. The remaining area the flapper had an average of ¼" to ½" gap between gate and flapper.

Water control structure #4



Comments:	
<ul style="list-style-type: none"> Upon arrival at gate #4 UESI noted very light growth on the exterior of the gate. The estimated length of soft growth was ¼" and a total coverage of 30%. The estimated height of the hard growth was ¼" with a coverage of 5% 	
<ul style="list-style-type: none"> The diver reported a sand and shell natural bottom of approximately 6" in depth on top of a fabric formed concrete mat. The bottom material was approximately 2-4" below the bottom of the gate. 	
<ul style="list-style-type: none"> The overall condition of the hardware was exceptional. Very light to moderate corrosion noted. All hardware/cotter pins were present and tight. 	
<ul style="list-style-type: none"> The overall condition of the gate and gate frame were exceptional. Very light corrosion noted with an estimated total coverage of 30%. 	
<ul style="list-style-type: none"> The condition of the gate seal was exceptional. Showed no indication of dry rot, splits or tearing. 	



Water control structure #5



Comments:	
<ul style="list-style-type: none">• Upon arrival at gate #5 UESI noted very little hard growth on the exterior and interior of the gate. The estimated length of soft growth was ¼" and a total coverage of 30%.	
<ul style="list-style-type: none">• The diver reported a mud/sand and shell mix for natural bottom on the gate exterior side 2" to 4" below the gate invert.	
<ul style="list-style-type: none">• The overall condition of the concrete headwall appeared to be good. Some minor pop outs were noted. The average pop out dimensions were 1/4" diameter x 1/8" deep. The total coverage of the pop out was an estimated 5%. There was no indication of cracking or spalling noted.	
<ul style="list-style-type: none">• The overall condition of the Hardware was exceptional. Very light to moderate corrosion noted. All hardware/cotter pins were present and tight.	
<ul style="list-style-type: none">• The overall condition of the gate and gate frame were exceptional. Very light corrosion noted with an estimated total coverage of 40%.	
<ul style="list-style-type: none">• The condition of the gate seal was exceptional. Showed no indication of dry rot, splits or tearing.	



Underwater Engineering Services, Inc.

Jonathan's Landing

Water control structure #6



Picture above is the upstream side of water control structure #6



The picture above is the down stream side of water control structure #6

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Comments:
<ul style="list-style-type: none">• Upon arrival at water control structure #6 UESI noted very little growth on the upstream exterior and interior of the corrugated riser and head wall. The downstream side was typical to the upstream side with little to no growth.
<ul style="list-style-type: none">• The diver reported large amount of organic debris consisting of leaf's sticks palm fronds on the upstream side with a depth of 3' plus with approximately 12" of freeboard to top of both the northern and southern culvert riser. Natural bottom on the downstream side was estimated to be even with the invert of both the northern and southern concrete culverts.
<ul style="list-style-type: none">• The overall condition of the concrete headwall appeared to be in good condition. A minor spall approx. 1 1/4 " deep x 9" square was noted at the 12 O'Clock position of the downstream South pipe. Some minor pop outs were noted. The average pop out dimensions were 1/4" diameter x 1/8" deep. The total coverage of the pop out was an estimated 5%. There was no indication of cracking or spalling noted.
<ul style="list-style-type: none">• The overall condition of upstream risers appeared to be in great shape. Very light corrosion noted. located on the upstream side was a flange that attached the culvert riser to the head wall. On the Sothern most riser flange the diver noted one nut at the 12 O'clock position that was backed out and galled approx. 1/2" from the headwall. The lower half of both risers had been covered with organic debris and the diver was unable it inspect due to accessibility.