

# **B U F F A L O**

## **S E W E R A U T H O R I T Y**

**SPDES Permit No. NY0028410**

**Long Term Control Plan**  
**Annual Post Construction Monitoring**  
**Status Report**  
**Reporting Period: *July 2021 through June 2022***  
**Amended Administrative Order**  
**CWA-02-2014-3033**  
**(Amends CWA-02-2012-3024)**

**September 2022**

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### **ATTACHMENT:**

- A. RTC Monthly Performance Report
- B. Niagara Street Green Infrastructure Post-Construction Monitoring
- C. KPI Dashboards Memo



# **1. INTRODUCTION**

The Buffalo Sewer Authority (Authority) received approval of its Long Term Control Plan (LTCP) from the United States Environmental Protection Agency (USEPA) and New York State Department of Environmental Conservation (NYSDEC) on March 18, 2014. The Authority entered into an Amended Administrative Order on April 16, 2014 (herein after referred to as the AO), with the USEPA. This AO establishes a schedule for implementation of the Authority's LTCP, approved by the USEPA and NYSDEC.

The AO in part requires that the Authority submit written Annual Post Construction Monitoring (PCM) Status Reports to the USEPA and NYSDEC to be included with the Semi-Annual Status Report. This report covers July 2021 through June 2022 which serves as Annual PCM Report No. 6.

## **2. DISCUSSION OF PCM TASKS BEGUN OR COMPLETED**

Post construction monitoring of the Bird, Lang and Hazelwood, North Bailey, Hertel at Deer, and Smith St. Real-Time Control (RTC) projects has continued in the last reporting period. For Bird, Hazelwood and Land, North Bailey, and Hertel at Deer RTCs, the number of Sewer Patrol Point (SPP) overflow events and volume of overflow that the structures have prevented is being monitored. For Smith St. RTC, the total volume captured is being recorded. The monthly performance reports for the reporting period are included in Appendix A.

Monthly Key Performance Indicator (KPI) reports for Lang RTC were combined with Hazelwood RTC starting in August 2019. Operations at Hazelwood RTC are triggered by depth immediately upstream of the Lang RTC. In general, the Hazelwood RTC will start storing when the depth at Lang indicates wet weather flow. The Lang RTC control is based on the depth at the downstream SPP. In general, the Lang RTC begins storing when the depth at the SPP indicates wet weather flow.

Post-construction monitoring of the Babcock Pump Station and Smith at Eagle RTCs will commence in the next reporting period. These projects are currently functioning, but connectivity for monitoring purposes has been delayed.

Per previous discussions with the USEPA and NYSDEC there was an interest in reviewing the reports of work to date by the United State Geological Survey (USGS) in regard to the Niagara Street GI project, interim reports regarding this work is enclosed in Appendix B.

At this time, Buffalo Sewer is not pursuing any additional GI credit on the basis of demolitions, as such post-construction monitoring for this work is not enclosed in this report.

### 3. RESULTS OF PCM EFFORTS

During the reporting period, a total of 92 SPP overflow events, or approximately 184.5 million gallons of overflow, have been prevented by the Bird, Lang, Hazelwood, North Bailey, and Hertel at Deer RTC projects. Since June 2017 a total of 350 SPP overflow events or approximately 581.2 million gallons of overflow, has been prevented by the Bird, Lang, Hazelwood, North Bailey, and Hertel at Deer RTC projects. (Please note that the number and volume of overflow events has been significantly impacted in recent years by the commencement of monitoring at Hazelwood, North Bailey, and Hertel at Deer in 2020 with over half of the volume diversion occurring at Hertel at Deer.)

As discussed in the Semi-Annual Report, due to ongoing supply chain and COVID-19 related labor shortages, the Smith Street RTC had been off-line since August 2021, significantly reducing its efficacy over this reporting period, however it still prevented 23 million gallons of overflow in the reporting period (for a total of 2816 million gallons over the life of this project). In November of 2021, Hertel at Deer suffered a similar outage which was able to be rectified in a much more expeditious manner. During June of 2022, July 2021, and August 2021, Bird RTC also suffered outages which have since been corrected. Efforts are ongoing to ensure that spare parts and sufficient staffing and equipment are available to maintain greater reliability of these and all new RTC facilities.

### 4. MODEL UPDATES COMPLETED

The Model Calibration Report (2018) was approved by the USEPA and NYSDEC in October 2021. The recalibrated model, as discussed, has triggered a review of the proposed gray and real-time control infrastructure projects included in the LTCP and their viability in completing the goals and positively impacting water quality. Based on model results and post construction monitoring of installed projects, BSA expects to present proposed projects to achieve LTCP goals in the next period.

### 5. CERTIFICATION STATEMENT

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."



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*Oluwole A. McFoy, P.E., General Manager*

9/1/2022

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Date

BIRD

Month	Prevented SPP Activations	Actual SPP Activations	Percentage Reduction	Prevented SPP Overflow Volume (MG)	Actual SPP Overflow Volume (MG)	Percentage Reduction
Jul-17	4	4	50%	4.0	6.5	38%
Aug-17	2	5	29%	4.7	3.4	58%
Sep-17	3	3	50%	4.4	5.8	43%
Oct-17	5	3	63%	5.8	18.3	24%
Nov-17	2	6	25%	5.3	20.2	21%
Dec-17	2	2	50%	2.3	0.4	85%
Jan-18	1	2	33%	2.6	4.5	37%
Feb-18	3	1	75%	1.7	13.1	12%
Mar-18	1	1	50%	1.0	10.3	9%
Apr-18	1	1	50%	1.6	19.5	7%
May-18	2	2	50%	2.5	5.0	34%
Jun-18	1	5	17%	5.3	14.8	26%
Subtotal	27	35	44%	41.2	121.8	25%
Jul-18	2	2	50%	2.0	5.2	28%
Aug-18	4	4	50%	4.8	25.4	16%
Sep-18	3	4	43%	4.5	21.6	17%
Oct-18	7	3	70%	5.0	13.3	27%
Nov-18	5	4	56%	5.6	3.3	63%
Dec-18	1	3	25%	3.3	20.2	14%
Jan-19	1	2	33%	2.0	32.1	6%
Feb-19	2	3	40%	3.9	31.8	11%
Mar-19	2	2	50%	2.7	22.7	11%
Apr-19	3	2	60%	2.8	3.0	48%
May-19	4	3	57%	4.4	10.5	30%
Jun-19	5	5	50%	4.5	23.3	16%
Subtotal	37	35	51%	43.5	207.2	17%

BIRD

Month	Prevented SPP Activations	Actual SPP Activations	Percentage Reduction	Prevented SPP Overflow Volume (MG)	Actual SPP Overflow Volume (MG)	Percentage Reduction
Sep-19	4	3	57%	2.2	5.1	30%
Oct-19	0	3	0%	0.0	9.3	0%
Nov-19	2	0	100%	0.1	0.0	100%
Dec-19	0	2	0%	0.0	1.8	0%
Jan-20	0	1	0%	0.0	0.0	0%
Feb-20	1	0	100%	0.7	0.0	100%
Mar-20	7	0	100%	5.0	0.0	100%
Apr-20	4	0	100%	2.4	0.0	100%
May-20	7	0	100%	4.9	0.0	100%
Jun-20	2	2	50%	3.3	4.6	42%
<b>Subtotal</b>	<b>35</b>	<b>15</b>	<b>70%</b>	<b>23.0</b>	<b>33.3</b>	<b>41%</b>
Jul-20	1	0	100%	0.8	0.0	100%
Aug-20	N/A	N/A		N/A	N/A	
Sep-20	4	1	80%	3.7	0.7	84%
Oct-20	10	0	100%	5.5	0.0	100%
Nov-20	4	2	67%	4.2	0.9	83%
Dec-20	6	1	86%	3.8	4.0	49%
Jan-21	0	1	0%	0.8	0.1	88%
Feb-21	2	0	100%	1.5	0.0	100%
Mar-21	2	0	100%	0.7	0.0	100%
Apr-21	6	0	100%	2.1	0.0	100%
May-21	3	0	100%	1.8	0.0	100%
Jun-21	0	N/A		1.6	0.0	100%
<b>Subtotal</b>	<b>38</b>	<b>5</b>	<b>88%</b>	<b>26.5</b>	<b>5.7</b>	<b>82%</b>
Jul-21	N/A	N/A	N/A	N/A	N/A	N/A
Aug-21	N/A	N/A	N/A	N/A	N/A	N/A
Sep-21	0.0	1	0%	0.9	4.7	16%
Oct-21	1.0	2	33%	2.5	2.5	50%
Nov-21	7.0	1	88%	5.7	0.0	100%
Dec-21	5.0	0	100%	4.2	0.0	100%
Jan-22	3.0	0	100%	1.7	0.0	100%
Feb-22	1.0	2	33%	2.5	11.0	18%
Mar-22	2.0	1	67%	2.0	0.5	80%
Apr-22	3.0	1	75%	3.1	1.9	62%
May-22	4.0	2	67%	4.1	1.0	80%
Jun-22	0.0	0.0	N/A	0.0	0.0	N/A
<b>Subtotal</b>	<b>26.0</b>	<b>10.0</b>	<b>72%</b>	<b>26.6</b>	<b>21.7</b>	<b>55%</b>
<b>Total</b>	<b>163.0</b>	<b>100.0</b>	<b>62%</b>	<b>160.8</b>	<b>389.7</b>	<b>29%</b>

LANG

Month	Prevented SPP Activations	Actual SPP Activations	Percentage Reduction	Prevented SPP Overflow Volume (MG)	Actual SPP Overflow Volume (MG)	Percentage Reduction
Jul-17	2	2	50%	2.2	8.2	21%
Aug-17	4	1	80%	2.9	0.0	100%
Sep-17	2	2	50%	1.9	0.1	93%
Oct-17	1	1	50%	1.8	0.2	92%
Nov-17	5	1	83%	2.6	4.1	39%
Dec-17	0	0	#DIV/0!	0.0	0.0	#DIV/0!
Jan., 2018	3	0	100%	0.9	0.0	100%
Feb., 2018	1	1	50%	1.0	1.4	40%
Mar., 2018	1	0	100%	0.8	0.0	100%
Apr., 2018	1	0	100%	0.8	0.0	100%
May, 2018	4	0	100%	0.3	0.0	100%
June, 2018	4	0	100%	2.2	0.0	98%
<b>Subtotal</b>	<b>28</b>	<b>8</b>	<b>78%</b>	<b>17.5</b>	<b>14.1</b>	<b>55%</b>
Jul-18	2	1	67%	1.7	0.3	84%
Aug-18	1	1	50%	0.9	0.7	54%
Sep-18	N/A	N/A		N/A	N/A	
Oct-18	N/A	N/A		N/A	N/A	
Nov-18	N/A	N/A		N/A	N/A	
Dec-18	N/A	N/A		N/A	N/A	
Jan-19	1	0	100%	0.8	0.0	100%
Feb-19	3	0	100%	1.9	0.0	100%
Mar-19	0	2	0%	1.4	7.6	15%
Apr-19	0	1	0%	0.3	0.8	29%
May-19	0	3	0%	1.1	4.1	21%
Jun-19	N/A	N/A		N/A	N/A	
<b>Subtotal</b>	<b>5</b>	<b>8</b>	<b>38%</b>	<b>6.3</b>	<b>13.5</b>	<b>32%</b>
Jul-19	N/A	N/A		N/A	N/A	
<b>Total</b>	<b>33</b>	<b>16</b>	<b>67%</b>	<b>23.8</b>	<b>27.5</b>	<b>46%</b>

## HAZELWOOD &amp; LANG

Month	Prevented SPP Activations	Actual SPP Activations	Percentage Reduction	Prevented SPP Overflow Volume (MG)	Actual SPP Overflow Volume (MG)	Percentage Reduction
Aug-19	0	1	0%	1.3	5.7	18%
Sep-19	0	6	0%	3.8	16.1	19%
Oct-19	1	3	25%	4.1	15.8	21%
Nov-19	N/A	N/A		N/A	N/A	
Dec-19	0	3	0%	3.1	14.0	18%
Jan-20	N/A	N/A		N/A	N/A	
Feb-20	N/A	N/A		N/A	N/A	
Mar-20	N/A	N/A		N/A	N/A	
Apr-20	N/A	N/A		N/A	N/A	
May-20	N/A	N/A		N/A	N/A	
Jun-20	N/A	N/A		3.0	0.0	100%
<b>Subtotal</b>	<b>1</b>	<b>13</b>	<b>7%</b>	<b>15.2</b>	<b>51.6</b>	<b>23%</b>
Jul-20	N/A	N/A		N/A	N/A	
Aug-20	1	2	33%	0.7	2.5	22%
Sep-20	0	1	0%	1.1	4.4	20%
Oct-20	4	1	80%	0.3	0.1	66%
Nov-20	2	3	40%	1.8	2.0	48%
Dec-20	2	2	50%	2.1	1.4	60%
Jan-21	0	1	0%	0.6	2.8	18%
Feb-21	1	1	50%	0.1	0.0	100%
Mar-21	2	2	50%	2.1	6.3	25%
Apr-21	1	1	50%	0.2	0.2	47%
May-21	1	1	50%	0.1	0.0	96%
Jun-21	2	1	67%	0.4	0.8	32%
<b>Subtotal</b>	<b>16</b>	<b>16</b>	<b>50%</b>	<b>9.5</b>	<b>20.5</b>	<b>32%</b>
Jul-21	4.0	7	36%	4.8	22.7	18%
Aug-21	3.0	0	100%	2.7	40.0	6%
Sep-21	2.0	5	29%	2.3	16.2	12%
Oct-21	3.0	5	38%	0.4	39.9	1%
Nov-21	6.0	0	100%	0.4	0.0	100%
Dec-21	0.0	2	0%	0.5	0.4	54%
Jan-22	0.0	1	0%	0.1	0.2	21%
Feb-22	0.0	4	0%	3.0	55.1	5%
Mar-22	4.0	1	80%	0.0	0.8	0%
Apr-22	0.0	1	0%	0.8	5.3	14%
May-22	2	3	40%	0.7	1.5	32%
Jun-22	0.0	4.0	0%	2.0	9.9	17%
<b>Subtotal</b>	<b>24.0</b>	<b>33.0</b>	<b>42%</b>	<b>17.7</b>	<b>192.0</b>	<b>8%</b>
<b>Total</b>	<b>41.0</b>	<b>62.0</b>	<b>40%</b>	<b>42.4</b>	<b>264.0</b>	<b>14%</b>

## HERTEL AT DEER

Month	Prevented SPP Activations	Actual SPP Activations	Percentage Reduction	Prevented SPP Overflow Volume (MG)	Actual SPP Overflow Volume (MG)	Percentage Reduction
Apr-20	4	0	100%	8.9	0.0	100%
May-20	7	1	88%	22.4	0.4	98%
Jun-20	3	2	60%	18.5	3.0	86%
<b>Subtotal</b>	<b>14</b>	<b>3</b>	<b>82%</b>	<b>49.8</b>	<b>3.5</b>	<b>94%</b>
Jul-20	3	3	50%	19.0	4.3	81%
Aug-20	4	1	80%	11.3	0.9	93%
Sep-20	3	2	60%	16.0	11.0	59%
Oct-20	6	1	86%	20.5	0.0	100%
Nov-20	2	4	33%	16.7	162.7	9%
Dec-20	5	1	83%	15.8	0.1	100%
Jan-21	1	0	100%	0.2	0.0	100%
Feb-21	1	1	50%	7.9	0.1	98%
Mar-21	3	1	75%	10.7	2.4	82%
Apr-21	4	1	80%	8.6	0.5	94%
May-21	2	1	67%	8.2	0.6	93%
Jun-21	2	3	40%	12.4	0.1	99%
<b>Subtotal</b>	<b>36</b>	<b>19</b>	<b>65%</b>	<b>147.2</b>	<b>182.9</b>	<b>45%</b>
Jul-21	5.0	4.0	56%	31.7	15.8	67%
Aug-21	3.0	2.0	60%	13.2	5.3	71%
Sep-21	3.0	3.0	50%	15.8	4.3	79%
Oct-21	3.0	1.0	75%	5.4	3.1	63%
Nov-21	N/A	N/A	N/A	No Data	No Data	N/A
Dec-21	1.0	1.0	50%	7.2	0.2	97%
Jan-22	2.0	0.0	100%	6.0	0.0	100%
Feb-22	1.0	2.0	33%	11.7	34.1	25%
Mar-22	2.0	1.0	67%	11.5	1.5	89%
Apr-22	0.0	0.0	N/A	0.0	0.0	N/A
May-22	0.0	2.0	0%	5.383	0.4	93%
Jun-22	1.0	3.0	25%	14.1	4.2	77%
<b>Subtotal</b>	<b>21.0</b>	<b>19.0</b>	<b>53%</b>	<b>122.0</b>	<b>68.9</b>	<b>64%</b>
<b>Total</b>	<b>71.0</b>	<b>41.0</b>	<b>63%</b>	<b>319.1</b>	<b>255.3</b>	<b>56%</b>

11/15/20 event, high degree of uncertainty on overflow volume calculation due to Lake Erie seiche event.

NORTH BAILEY

Month	Prevented SPP Activations	Actual SPP Activations	Percentage Reduction	Prevented SPP Overflow Volume (MG)	Actual SPP Overflow Volume (MG)	Percentage Reduction
May-20	3	2	60%	2.1	1.0	67%
Jun-20	3	4	43%	2.8	3.6	43%
Subtotal	6	72	8%	4.9	4.6	51%
Jul-20	1	5	17%	2.3	1.0	71%
Aug-20	0	3	0%	1.3	0.6	68%
Sep-20	0	2	0%	0.9	1.2	44%
Oct-20	4	1	80%	1.5	0.0	98%
Nov-20	2	3	40%	1.4	1.0	58%
Dec-20	3	1	75%	1.4	0.8	62%
Jan-21	0	1	0%	0.4	0.2	64%
Feb-21	1	1	50%	0.8	0.0	99%
Mar-21	1	0	100%	0.1	0.0	100%
Apr-21	1	0	100%	0.2	0.0	100%
May-21	2	0	100%	0.6	0.0	100%
Jun-21	0	3	0%	1.2	0.1	96%
Subtotal	15	20	43%	12.1	4.9	71%
Jul-21	2.0	6.0	25%	3.0	8.5	26%
Aug-21	0.0	3.0	0%	1.4	2.1	40%
Sep-21	1.0	6.0	14%	2.9	3.0	50%
Oct-21	3.0	3.0	50%	2.2	4.2	35%
Nov-21	3.0	1.0	75%	1.2	0.0	98%
Dec-21	4.0	0.0	100%	0.9	0.0	100%
Jan-22	1.0	0.0	100%	0.2	0.0	100%
Feb-22	1.0	3.0	25%	1.6	2.7	37%
Mar-22	3.0	1.0	75%	1.2	0.2	88%
Apr-22	0.0	0.0	N/A	0.0	0.0	N/A
May-22	3	2	60%	1.9	0.4	81%
Jun-22	0	4	0%	1.7	2.7	39%
Subtotal	21.0	29.0	42%	18.3	23.7	44%
Total	42.0	121.0	26%	35.2	33.3	51%

Total for Reporting period	92.0	184.5
Total for Bird, Lang & Hazelwood, North Bailey, Hertel at Deer	350.0	581.2



# January 2022 Bird Ave. RTC KPI Report

**BUFFALO**  
SEWER AUTHORITY



**ARCADIS**

Design & Consultancy  
for natural and  
built assets

# Bird Ave. RTC Monthly Performance Report

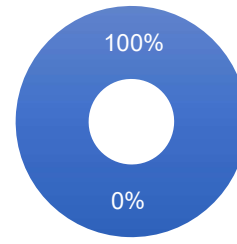
January 2022

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.)  
■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
3	0	1,676,719	-
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
1/1/2022	718,104	-	100%
1/9/2022	748,819	-	100%
1/19/2022	209,796	-	100%

Site:	Bird RTC
Analysis Date:	2/11/2022
Event Start Date/Time:	1/1/2022 19:10
Event End Date/Time:	1/2/2022 5:50

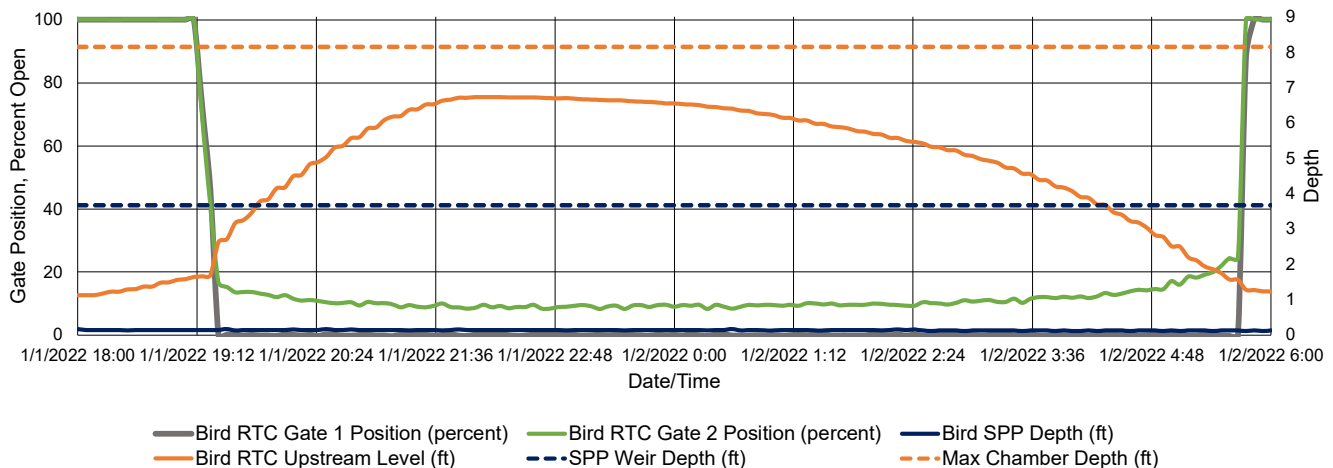
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.41 in.
Storm Event Duration:	12 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.64 ft.
Return to Normal Depth:	1.28 ft.
Time Gate 1 Activated:	1/1/2022 19:10
Time Gate 2 Activated:	1/1/2022 19:10
Time Gate 1 Returned to Normal:	1/2/2022 5:50
Time Gate 2 Returned to Normal:	1/2/2022 5:40
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.73 ft.
Volume Stored:	718,104 Gal.
Unused Storage Volume:	374,034 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	718,104 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

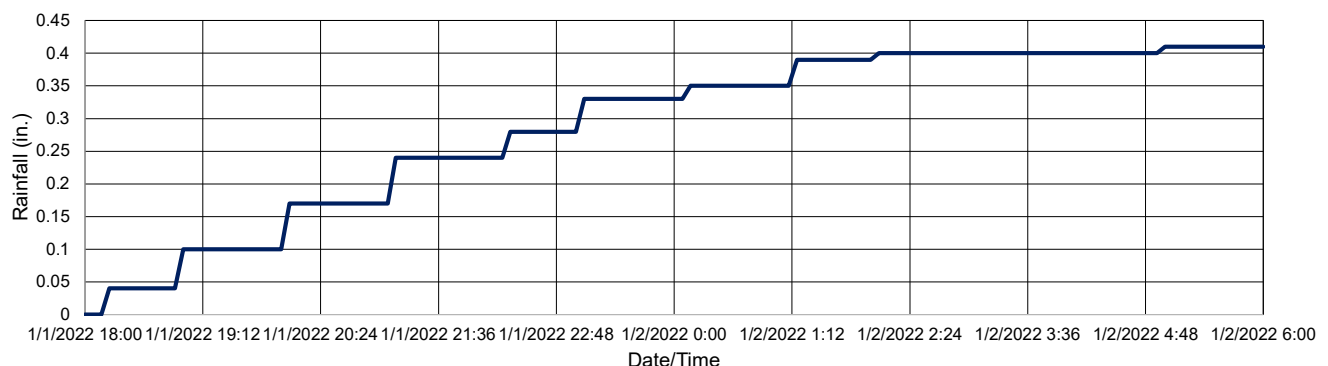
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	2/11/2022
Event Start Date/Time:	1/9/2022 8:30
Event End Date/Time:	1/15/2022 5:59

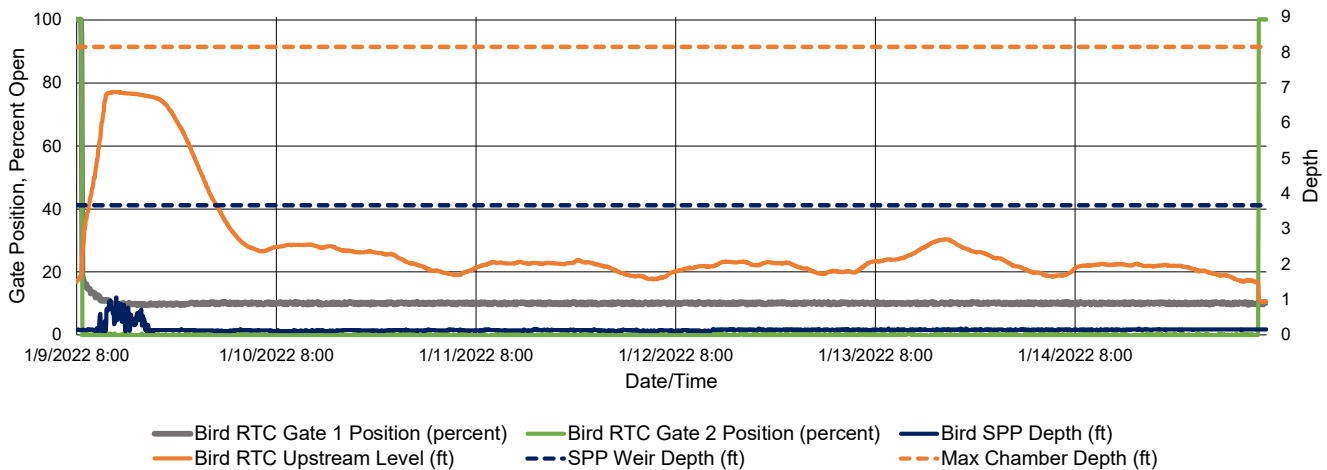
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.19 in.
Storm Event Duration:	143 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.70 ft.
Return to Normal Depth:	1.06 ft.
Time Gate 1 Activated:	1/9/2022 8:30
Time Gate 2 Activated:	1/9/2022 8:30
Time Gate 1 Returned to Normal:	N/A
Time Gate 2 Returned to Normal:	1/15/2022 5:59
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.87 ft.
Volume Stored:	748,819 Gal.
Unused Storage Volume:	340,525 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	748,819 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

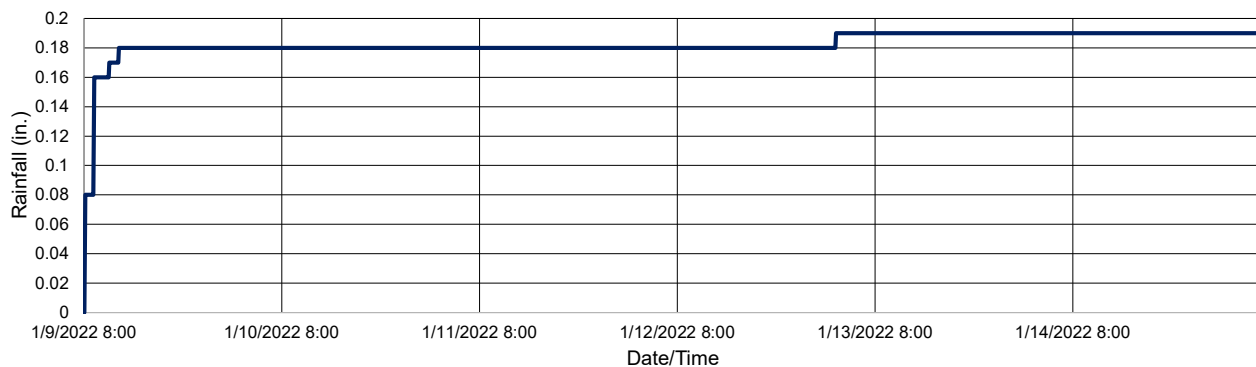
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 10% open at the end of this event.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	2/11/2022
Event Start Date/Time:	1/19/2022 14:55
Event End Date/Time:	1/23/2022 6:05

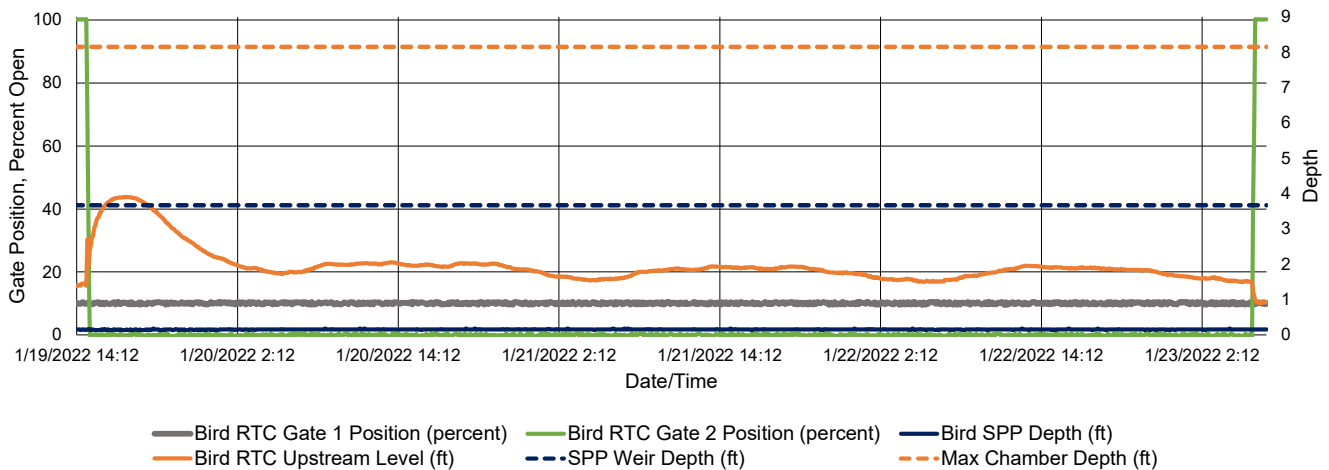
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.14 in.
Storm Event Duration:	89 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.40 ft.
Return to Normal Depth:	1.11 ft.
Time Gate 1 Activated:	N/A
Time Gate 2 Activated:	1/19/2022 14:55
Time Gate 1 Returned to Normal:	N/A
Time Gate 2 Returned to Normal:	1/23/2022 6:05
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	3.91 ft.
Volume Stored:	209,796 Gal.
Unused Storage Volume:	892,166 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	209,796 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

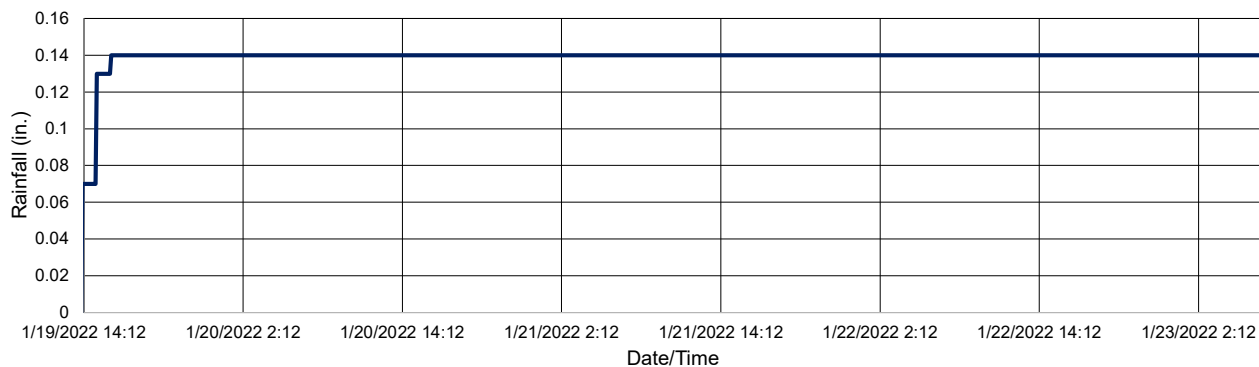
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 10% open during this event.

#### RTC Gate Performance



#### Rainfall Accumulation

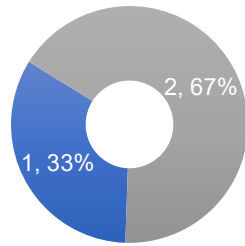


# February 2022 Bird Ave. RTC KPI Report

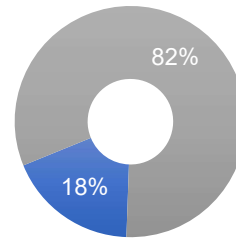
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**Prevented SPP Events**

■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

**Prevented SPP Volume**

■ Prevented SPP Overflow Volume (Gal.)  
 ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
1	2	2,453,927	10,974,060
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
2/2/2022	778,911	-	100%
2/11/2022	831,195	8,216,090	9%
2/22/2022	843,821	2,757,970	23%

Site:	Bird RTC
Analysis Date:	3/14/2022
Event Start Date/Time:	2/2/2022 19:05
Event End Date/Time:	2/3/2022 9:05

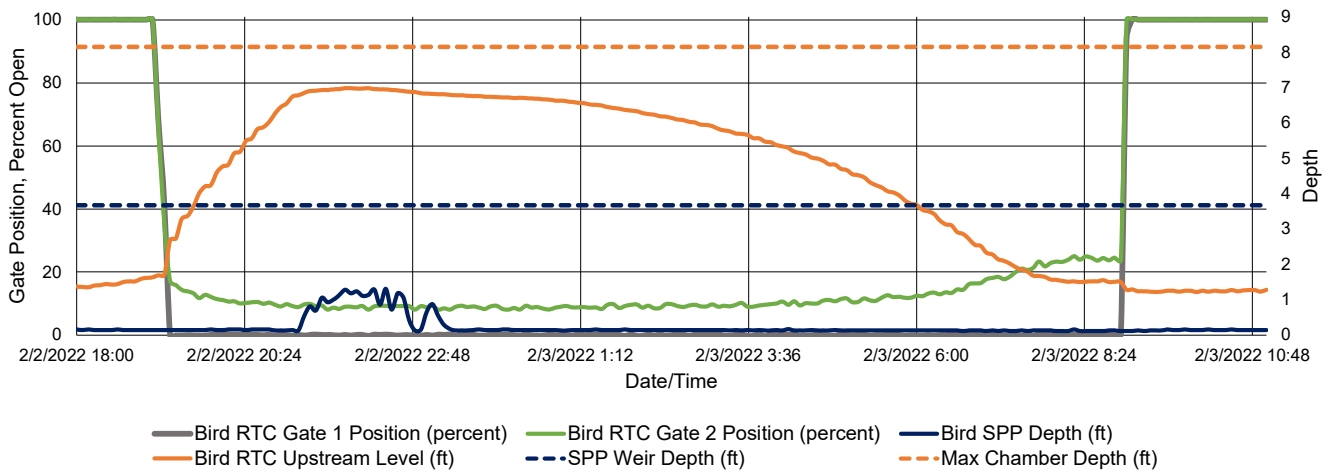
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.45 in.
Storm Event Duration:	17 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.63 ft.
Return to Normal Depth:	1.28 ft.
Time Gate 1 Activated:	2/2/2022 19:05
Time Gate 2 Activated:	2/2/2022 19:05
Time Gate 1 Returned to Normal:	2/3/2022 9:05
Time Gate 2 Returned to Normal:	2/3/2022 8:55
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.98 ft.
Volume Stored:	778,911 Gal.
Unused Storage Volume:	313,679 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	778,911 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

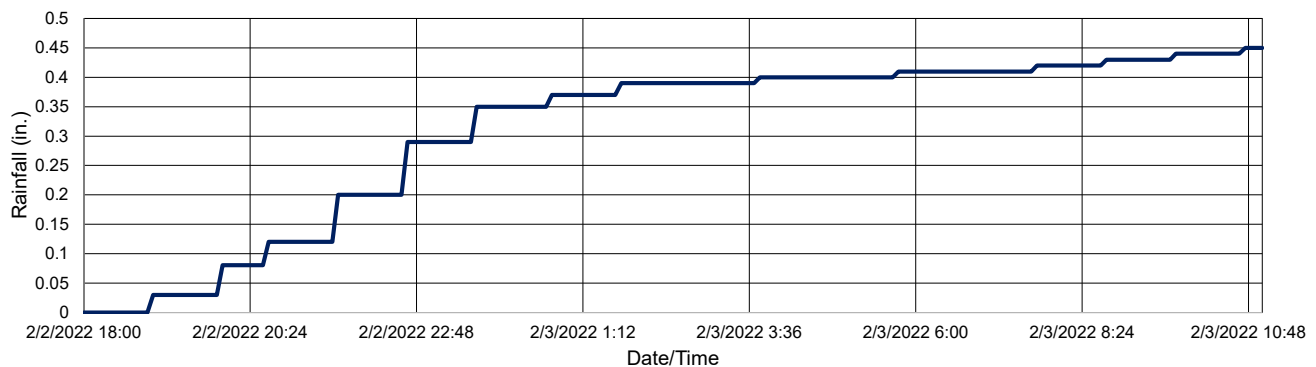
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation





Site:	Bird RTC
Analysis Date:	3/14/2022
Event Start Date/Time:	2/11/2022 17:55
Event End Date/Time:	2/19/2022 22:39

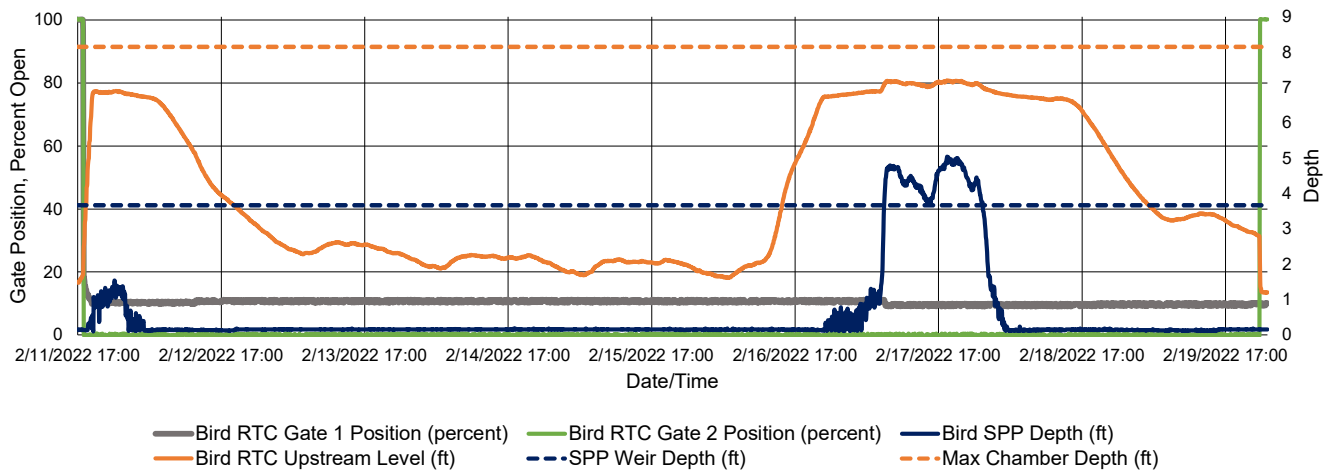
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.52 in.
Storm Event Duration:	8 days 7 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.69 ft.
Return to Normal Depth:	1.81 ft.
Time Gate 1 Activated:	2/11/2022 17:55
Time Gate 2 Activated:	2/11/2022 17:55
Time Gate 1 Returned to Normal:	N/A
Time Gate 2 Returned to Normal:	2/19/2022 22:39
Percent Capture	9%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	7.20 ft.
Volume Stored:	831,195 Gal.
Unused Storage Volume:	258,624 Gal.
Overflow Volume:	8,216,090 Gal.
Overflow Volume Prevented:	831,195 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	8,216,090
Could SPP activation have been prevented?	No

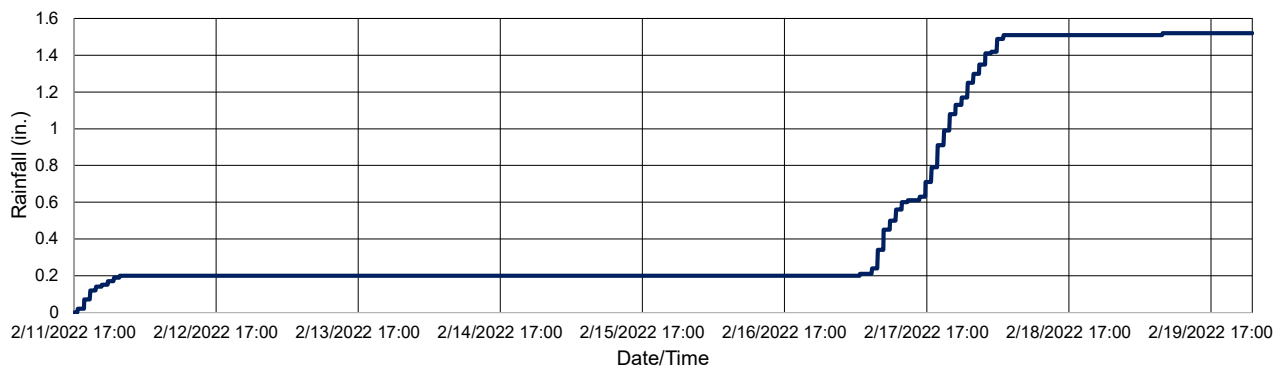
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 10% open at the end of this event.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	3/14/2022
Event Start Date/Time:	2/22/2022 9:05
Event End Date/Time:	2/28/2022 12:25

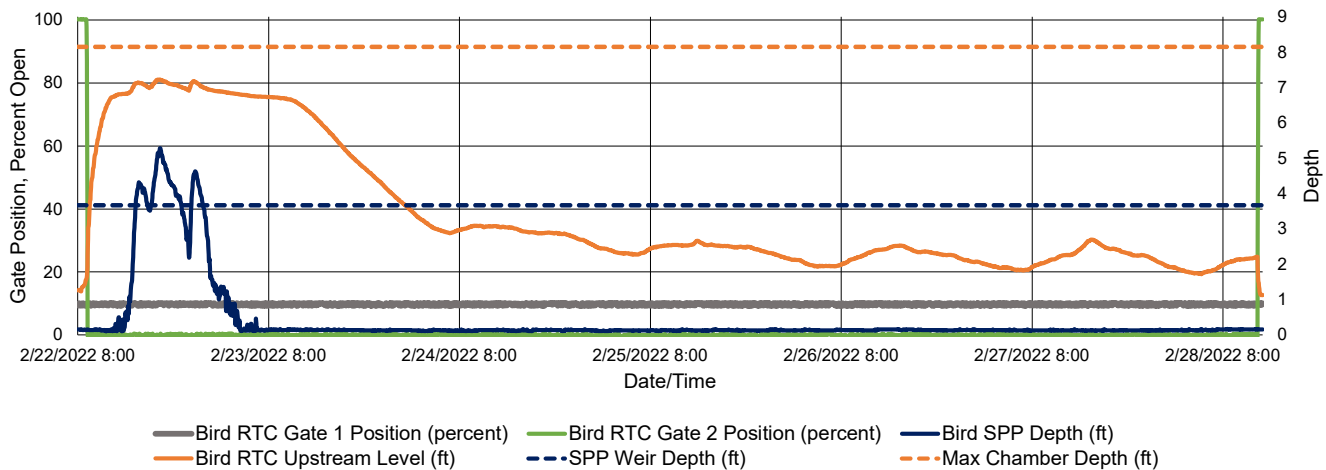
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.73 in.
Storm Event Duration:	6 days 5 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.58 ft.
Return to Normal Depth:	1.47 ft.
Time Gate 1 Activated:	N/A
Time Gate 2 Activated:	2/22/2022 9:05
Time Gate 1 Returned to Normal:	N/A
Time Gate 2 Returned to Normal:	2/28/2022 12:25
Percent Capture	23%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	7.23 ft.
Volume Stored:	843,821 Gal.
Unused Storage Volume:	250,975 Gal.
Overflow Volume:	2,757,970 Gal.
Overflow Volume Prevented:	843,821 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	2,757,970
Could SPP activation have been prevented?	No

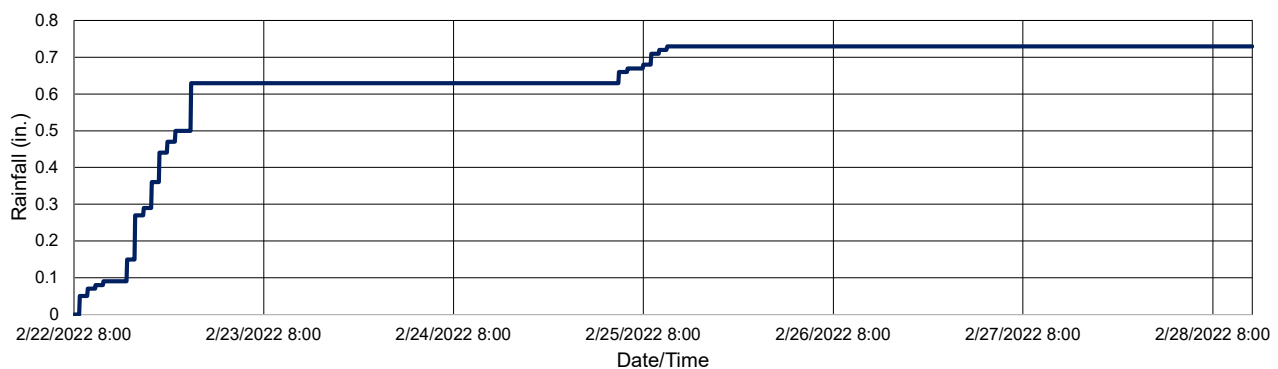
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 10% open for the event.

#### RTC Gate Performance



#### Rainfall Accumulation



# March 2022 Bird Ave. RTC KPI Report

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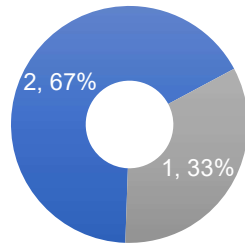


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# Bird Ave. RTC Monthly Performance Report

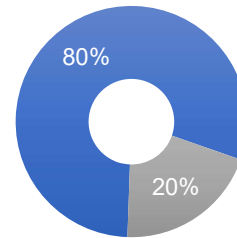
March 2022

## Prevented SPP Events



- Number of Prevented SPP Overflow Events
- Number of Occurred SPP Overflow Events

## Prevented SPP Volume



- Prevented SPP Overflow Volume (Gal.)
- Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
2	1	2,028,603	514,848
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
3/6/2022	459,300	-	100%
3/23/2022	849,746	514,848	62%
3/31/2022	719,557	-	100%

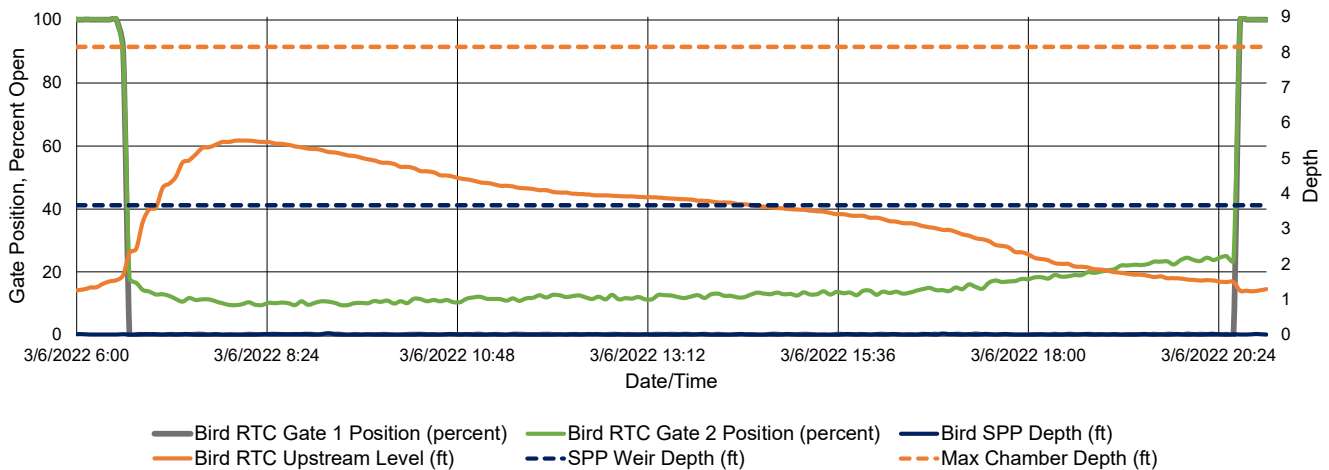
Site:	Bird RTC
Analysis Date:	5/2/2022
Event Start Date/Time:	3/6/2022 6:30
Event End Date/Time:	3/6/2022 20:40

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.04 in.
Storm Event Duration:	15 hr.
Storm Type:	Less than one year

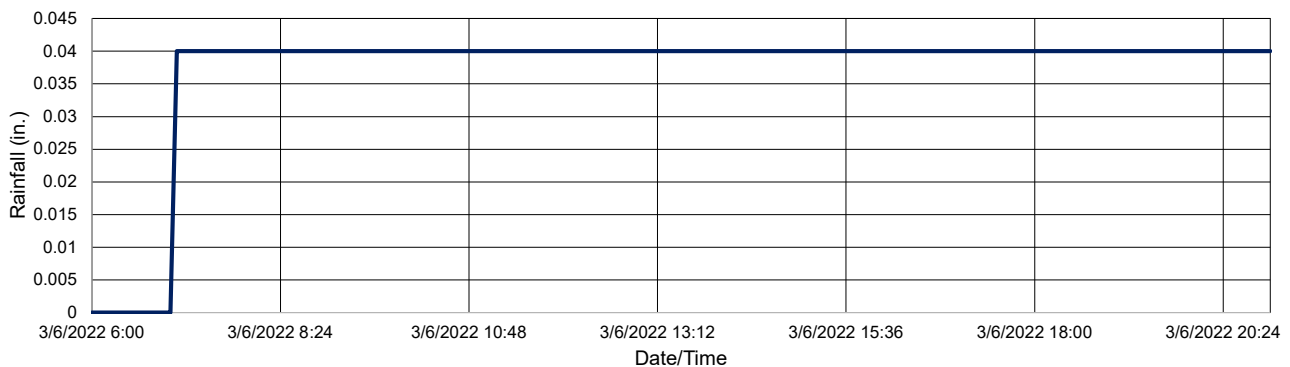
Gate Activation Trigger Depth:	1.55 ft.
Return to Normal Depth:	1.50 ft.
Time Gate 1 Activated:	3/6/2022 6:30
Time Gate 2 Activated:	3/6/2022 6:30
Time Gate 1 Returned to Normal:	3/6/2022 20:40
Time Gate 2 Returned to Normal:	3/6/2022 20:35
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	5.50 ft.
Volume Stored:	459,300 Gal.
Unused Storage Volume:	636,775 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	459,300 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

Recommended Operational Changes/Notes:
Rainfall data sourced from BSA rain gauge station at South Buffalo.

## RTC Gate Performance



## Rainfall Accumulation



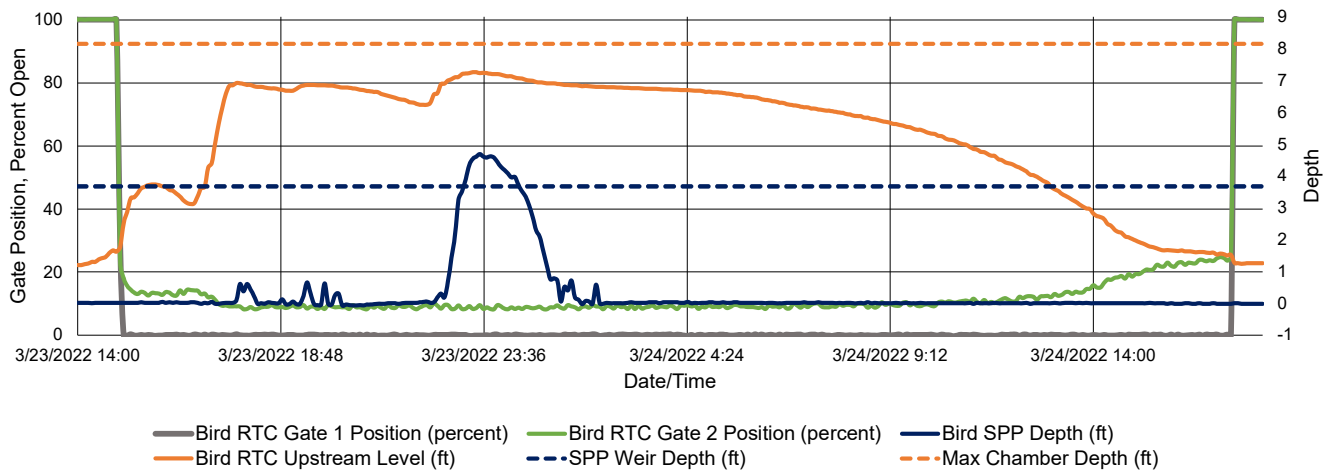
Site:	Bird RTC
Analysis Date:	5/2/2022
Event Start Date/Time:	3/23/2022 14:55
Event End Date/Time:	3/24/2022 17:20

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.4 in.
Storm Event Duration:	28 hr.
Storm Type:	Less than one year

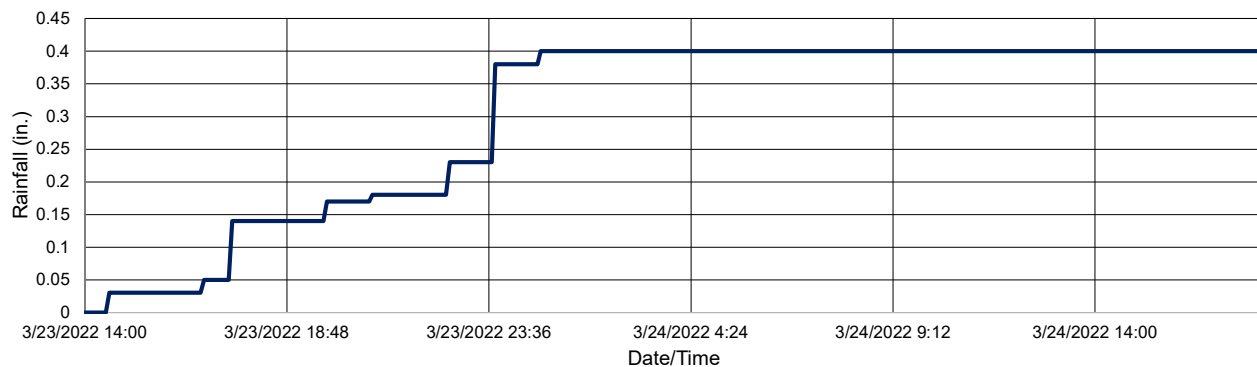
Gate Activation Trigger Depth:	1.62 ft.
Return to Normal Depth:	1.52 ft.
Time Gate 1 Activated:	3/23/2022 14:55
Time Gate 2 Activated:	3/23/2022 14:55
Time Gate 1 Returned to Normal:	3/24/2022 17:20
Time Gate 2 Returned to Normal:	3/24/2022 17:15
Percent Capture	62%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	7.26 ft.
Volume Stored:	849,746 Gal.
Unused Storage Volume:	243,293 Gal.
Overflow Volume:	514,848 Gal.
Overflow Volume Prevented:	849,746 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	514,848
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.

### RTC Gate Performance



### Rainfall Accumulation



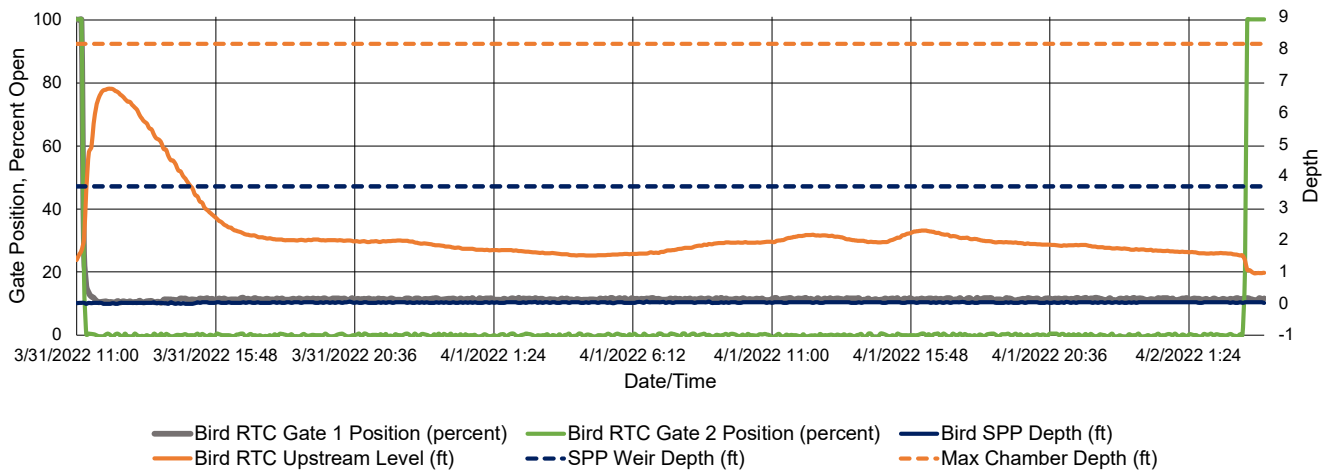
Site:	Bird RTC
Analysis Date:	5/2/2022
Event Start Date/Time:	3/31/2022 11:10
Event End Date/Time:	4/2/2022 3:20

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.13 in.
Storm Event Duration:	40 hr.
Storm Type:	Less than one year

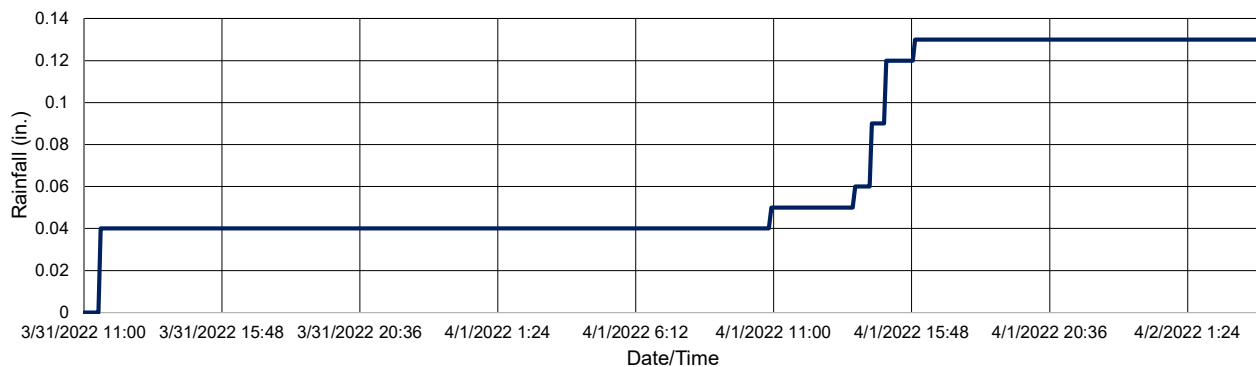
Gate Activation Trigger Depth:	1.66 ft.
Return to Normal Depth:	1.05 ft.
Time Gate 1 Activated:	3/31/2022 11:10
Time Gate 2 Activated:	3/31/2022 11:10
Time Gate 1 Returned to Normal:	N/A
Time Gate 2 Returned to Normal:	4/2/2022 3:20
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.74 ft.
Volume Stored:	719,557 Gal.
Unused Storage Volume:	371,665 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	719,557 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 12% open at the end of this event.

## RTC Gate Performance



## Rainfall Accumulation



# April 2022 Bird Ave. RTC KPI Report

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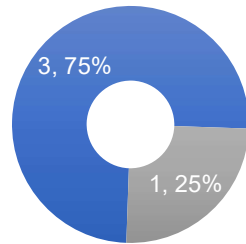


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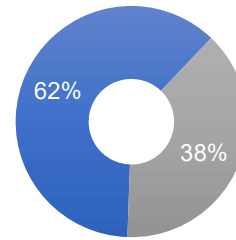


## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.)  
 ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
3	1	3,050,884	1,905,585
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
4/6/2022	727,010	-	100%
4/16/2022	737,713	-	100%
4/18/2022	731,919	-	100%
4/25/2022	854,242	1,905,585	31%

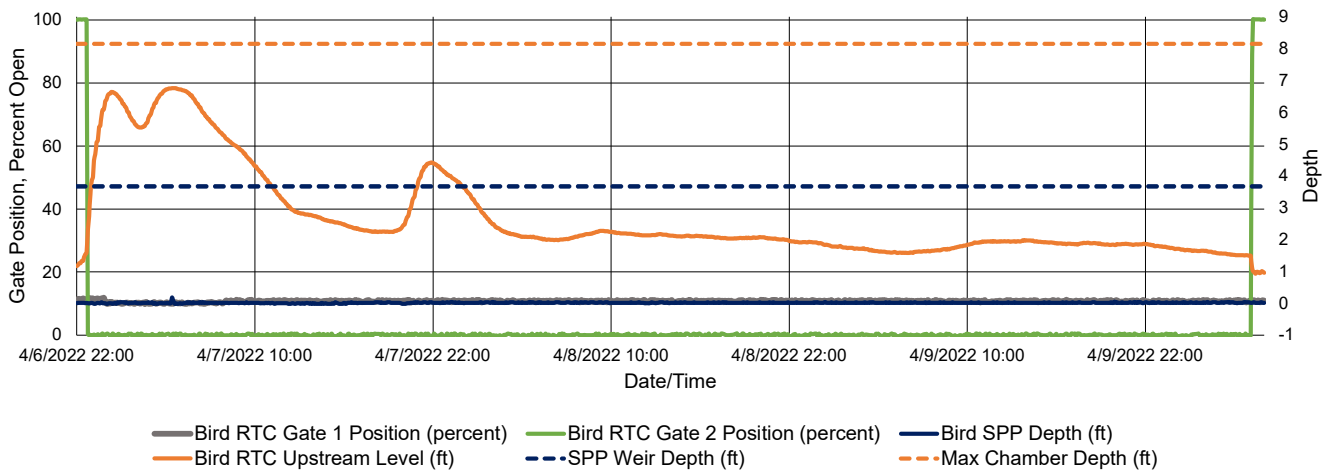
Site:	Bird RTC
Analysis Date:	5/10/2022
Event Start Date/Time:	4/6/2022 22:40
Event End Date/Time:	4/10/2022 5:10

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.46 in.
Storm Event Duration:	80 hr.
Storm Type:	Less than one year

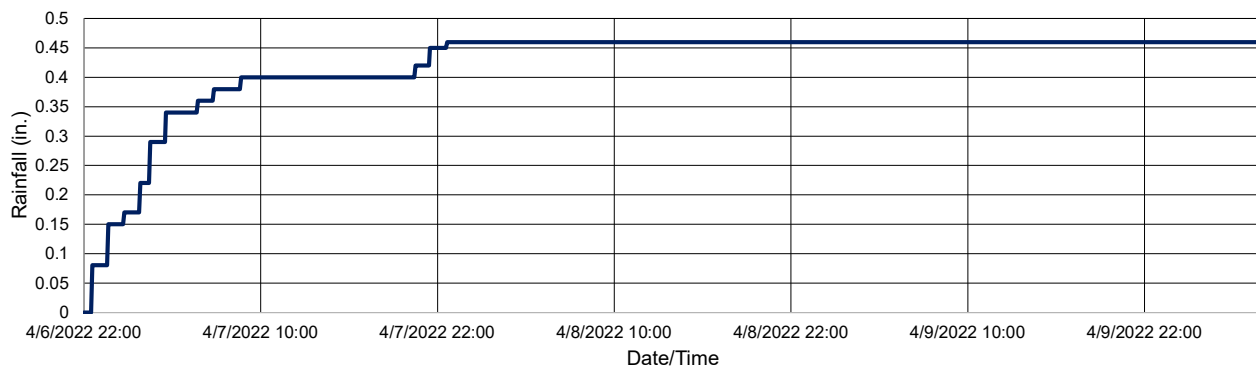
Gate Activation Trigger Depth:	1.60 ft.
Return to Normal Depth:	1.01 ft.
Time Gate 1 Activated:	N/A
Time Gate 2 Activated:	4/6/2022 22:40
Time Gate 1 Returned to Normal:	N/A
Time Gate 2 Returned to Normal:	4/10/2022 5:10
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.76 ft.
Volume Stored:	727,010 Gal.
Unused Storage Volume:	366,915 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	727,010 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 11% open throughout this event.

### RTC Gate Performance



### Rainfall Accumulation



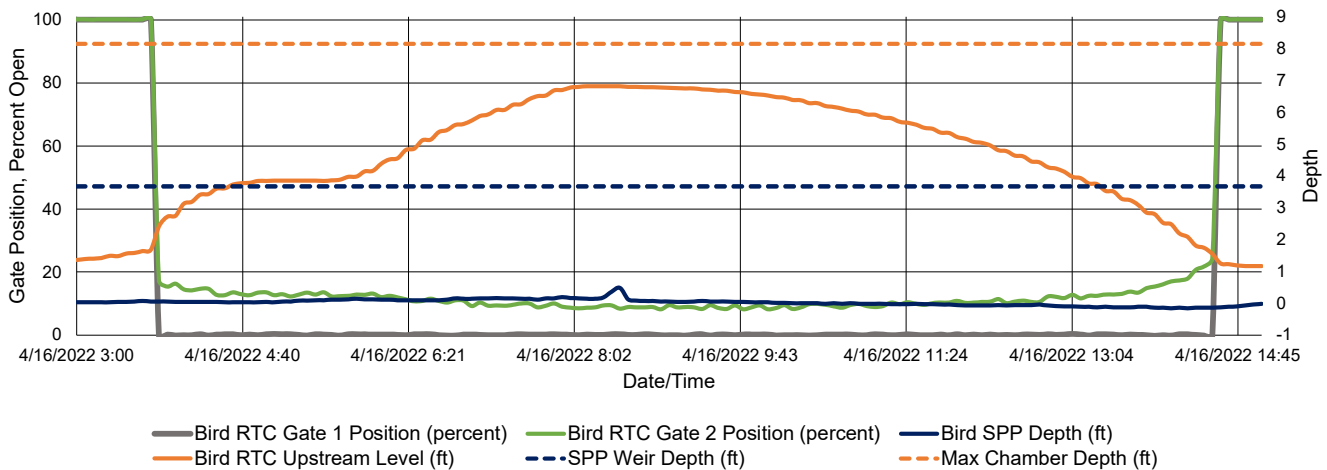
Site:	Bird RTC
Analysis Date:	5/10/2022
Event Start Date/Time:	4/16/2022 3:45
Event End Date/Time:	4/16/2022 14:35

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.26 in.
Storm Event Duration:	12 hr.
Storm Type:	Less than one year

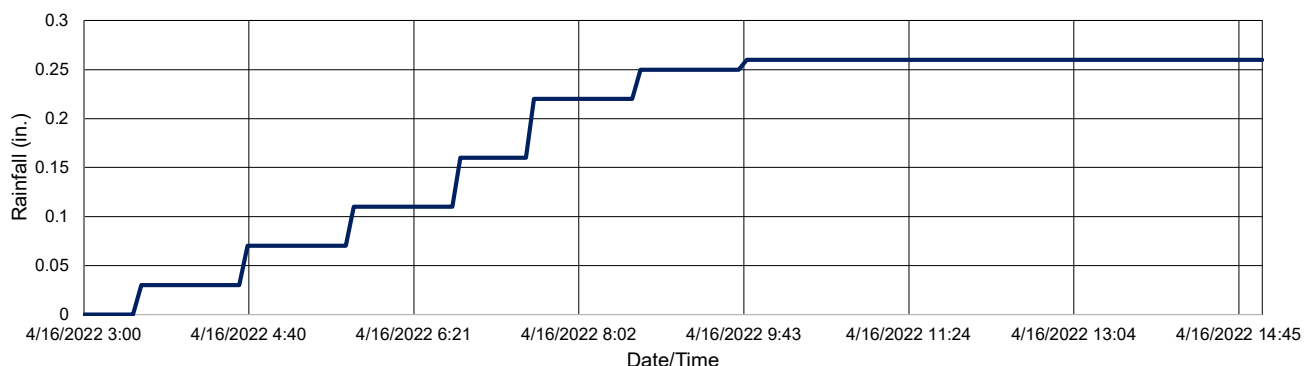
Gate Activation Trigger Depth:	1.68 ft.
Return to Normal Depth:	1.55 ft.
Time Gate 1 Activated:	4/16/2022 3:45
Time Gate 2 Activated:	4/16/2022 3:45
Time Gate 1 Returned to Normal:	4/16/2022 14:35
Time Gate 2 Returned to Normal:	4/16/2022 14:30
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.82 ft.
Volume Stored:	737,713 Gal.
Unused Storage Volume:	352,577 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	737,713 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.

RTC Gate Performance



Rainfall Accumulation



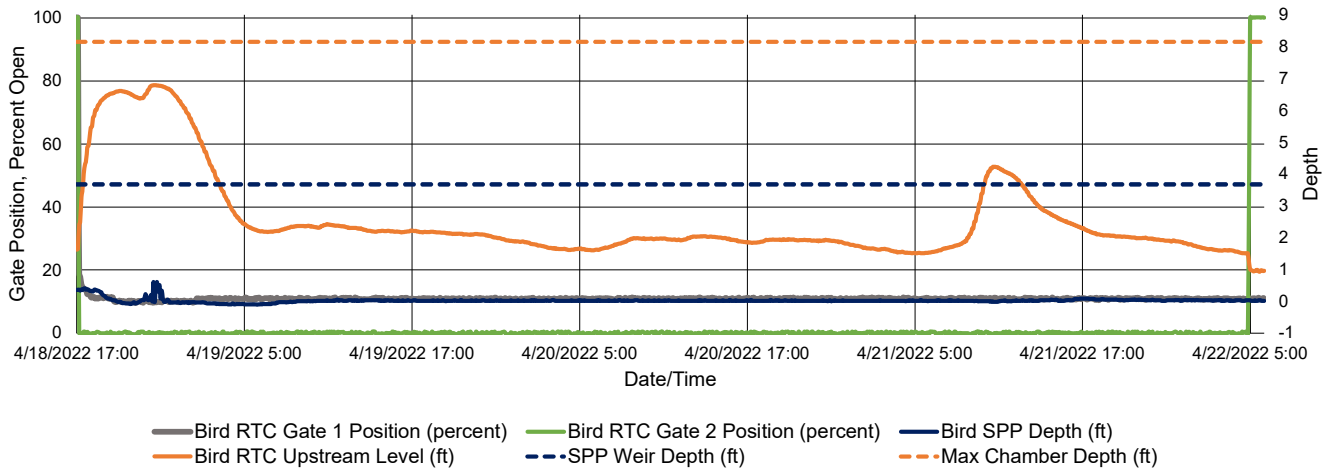
Site:	Bird RTC
Analysis Date:	5/10/2022
Event Start Date/Time:	4/18/2022 17:05
Event End Date/Time:	4/22/2022 4:54

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.3 in.
Storm Event Duration:	85 hr.
Storm Type:	Less than one year

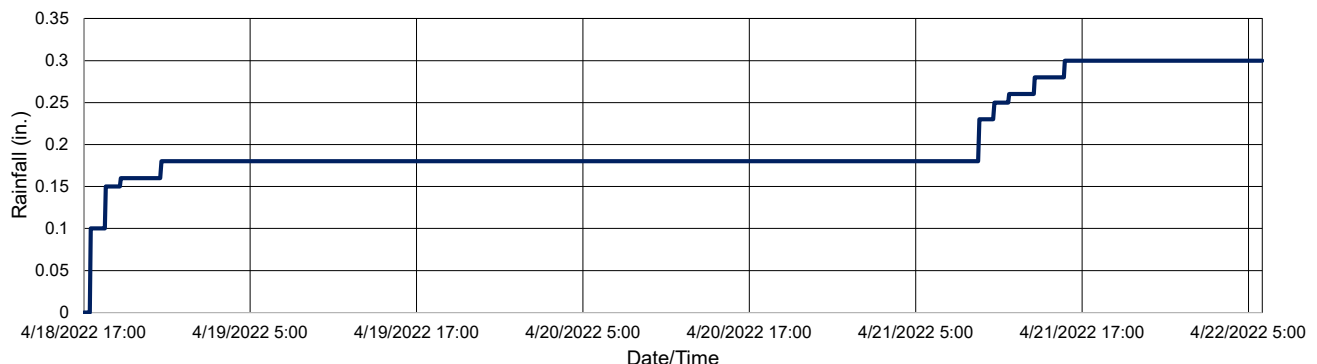
Gate Activation Trigger Depth:	1.65 ft.
Return to Normal Depth:	1.01 ft.
Time Gate 1 Activated:	4/18/2022 17:05
Time Gate 2 Activated:	4/18/2022 17:05
Time Gate 1 Returned to Normal:	N/A
Time Gate 2 Returned to Normal:	4/22/2022 4:54
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.79 ft.
Volume Stored:	731,919 Gal.
Unused Storage Volume:	359,763 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	731,919 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 11% open at the end of this event.

### RTC Gate Performance



### Rainfall Accumulation



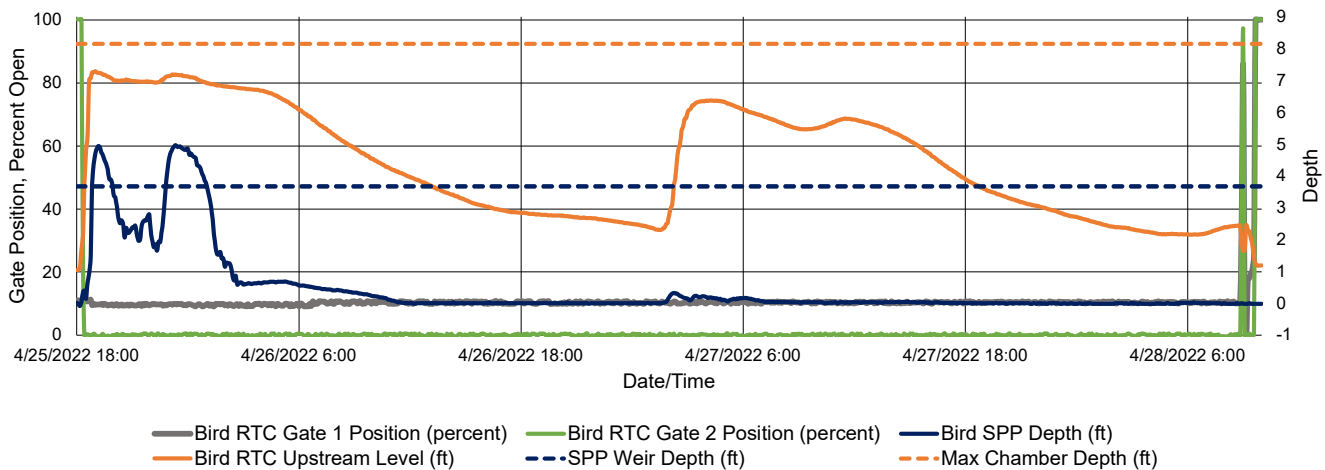
Site:	Bird RTC
Analysis Date:	5/10/2022
Event Start Date/Time:	4/25/2022 18:15
Event End Date/Time:	4/28/2022 9:35

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.16 in.
Storm Event Duration:	64 hr.
Storm Type:	Less than one year

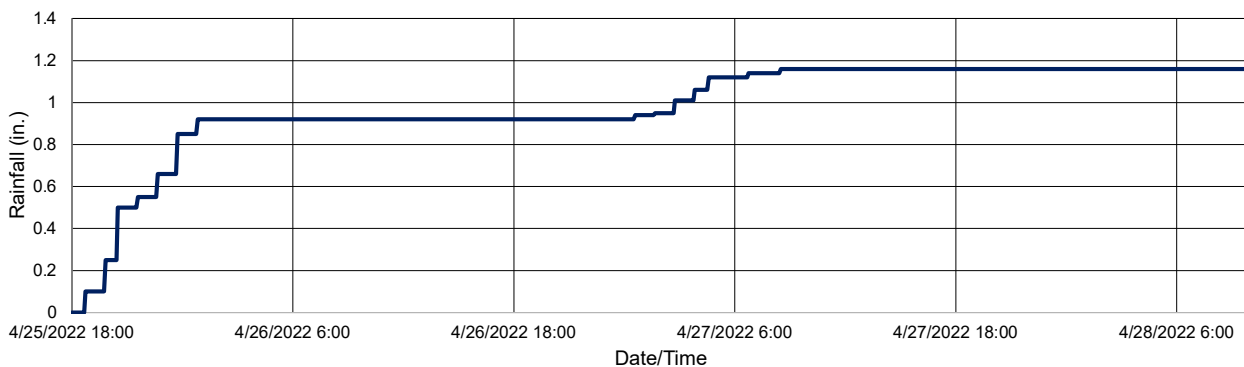
Gate Activation Trigger Depth:	1.69 ft.
Return to Normal Depth:	1.43 ft.
Time Gate 1 Activated:	N/A
Time Gate 2 Activated:	4/25/2022 18:15
Time Gate 1 Returned to Normal:	4/28/2022 9:40
Time Gate 2 Returned to Normal:	4/28/2022 9:35
Percent Capture	31%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	7.29 ft.
Volume Stored:	854,242 Gal.
Unused Storage Volume:	235,577 Gal.
Overflow Volume:	1,905,585 Gal.
Overflow Volume Prevented:	854,242 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	1,905,585
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 11% open at the beginning of this event.

### RTC Gate Performance



### Rainfall Accumulation



# May 2022 Bird Ave. RTC KPI Report

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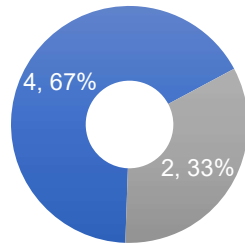


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# Bird Ave. RTC Monthly Performance Report

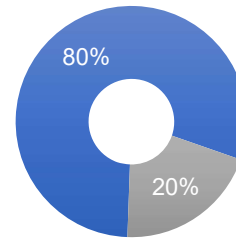
May 2022

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.)  
■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
4	2	4,057,236	1,027,578
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
5/1/2022	774,619	-	100%
5/3/2022	72,210	-	100%
5/4/2022	772,582	-	100%
5/16/2022	751,420	-	100%
5/21/2022	868,086	805,904	52%
5/27/2022	818,319	221,674	79%

# May 1, 2022

# 1

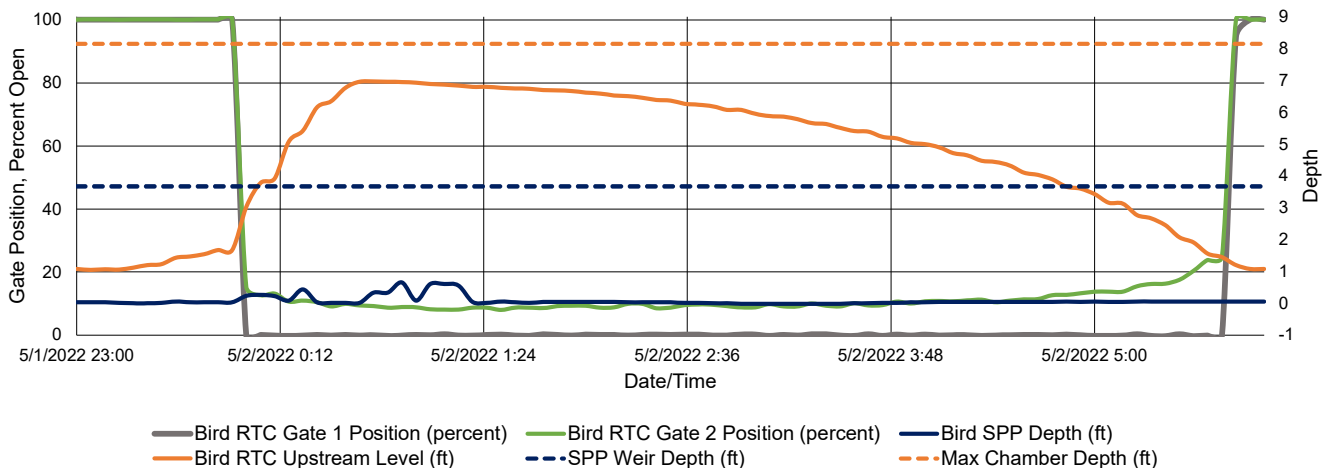
Site:	Bird RTC
Analysis Date:	6/6/2022
Event Start Date/Time:	5/1/2022 23:55
Event End Date/Time:	5/2/2022 5:55

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.17 in.
Storm Event Duration:	6 hr.
Storm Type:	Less than one year

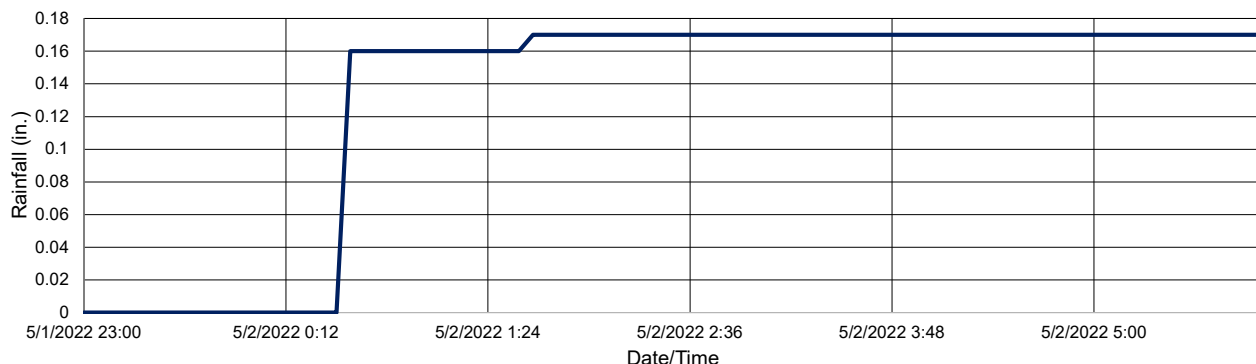
Gate Activation Trigger Depth:	1.67 ft.
Return to Normal Depth:	1.20 ft.
Time Gate 1 Activated:	5/1/2022 23:55
Time Gate 2 Activated:	5/1/2022 23:55
Time Gate 1 Returned to Normal:	5/2/2022 5:55
Time Gate 2 Returned to Normal:	5/2/2022 5:45
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.97 ft.
Volume Stored:	774,619 Gal.
Unused Storage Volume:	316,138 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	774,619 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.

### RTC Gate Performance



### Rainfall Accumulation





May 3, 2022

2

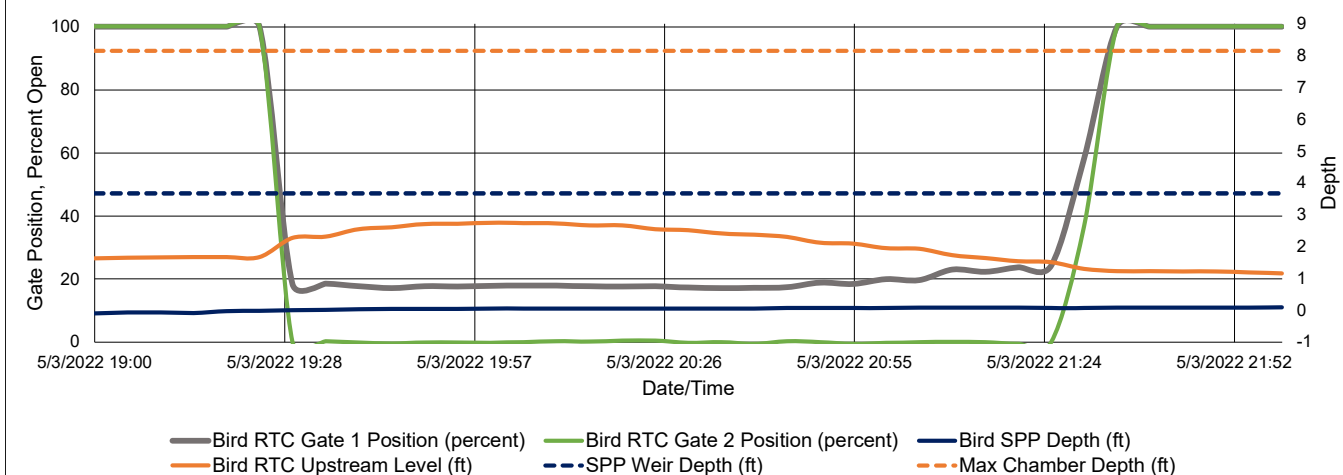
Site:	Bird RTC
Analysis Date:	6/6/2022
Event Start Date/Time:	5/3/2022 19:25
Event End Date/Time:	5/3/2022 21:35

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.03 in.
Storm Event Duration:	3 hr.
Storm Type:	Less than one year

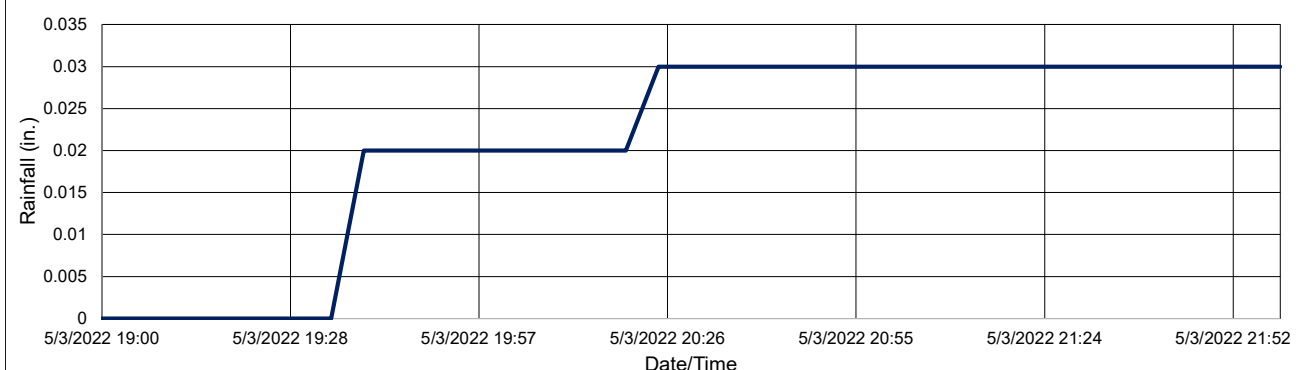
Gate Activation Trigger Depth:	1.67 ft.
Return to Normal Depth:	1.30 ft.
Time Gate 1 Activated:	5/3/2022 19:25
Time Gate 2 Activated:	5/3/2022 19:25
Time Gate 1 Returned to Normal:	5/3/2022 21:35
Time Gate 2 Returned to Normal:	5/3/2022 21:30
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	2.75 ft.
Volume Stored:	72,210 Gal.
Unused Storage Volume:	1,018,548 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	72,210 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.

RTC Gate Performance



Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	6/6/2022
Event Start Date/Time:	5/4/2022 6:30
Event End Date/Time:	5/4/2022 14:35

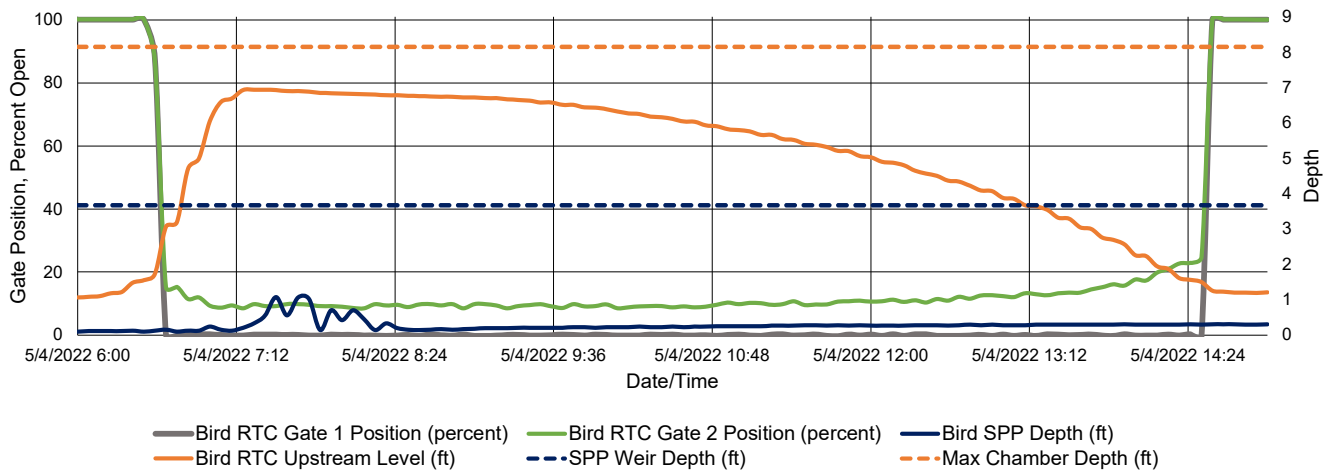
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.34 in.
Storm Event Duration:	9 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.55 ft.
Return to Normal Depth:	1.50 ft.
Time Gate 1 Activated:	5/4/2022 6:30
Time Gate 2 Activated:	5/4/2022 6:30
Time Gate 1 Returned to Normal:	5/4/2022 14:35
Time Gate 2 Returned to Normal:	5/4/2022 14:30
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.94 ft.
Volume Stored:	772,582 Gal.
Unused Storage Volume:	323,494 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	772,582 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

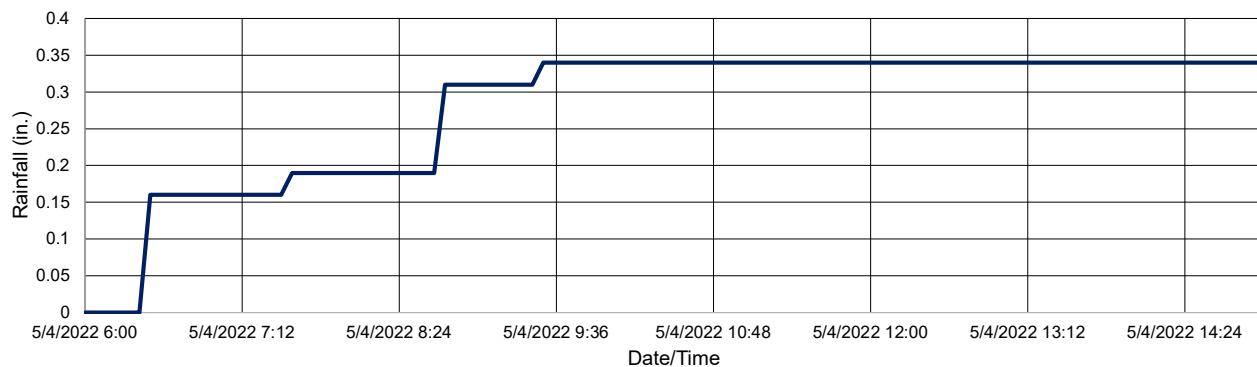
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	6/6/2022
Event Start Date/Time:	5/16/2022 13:20
Event End Date/Time:	5/17/2022 1:45

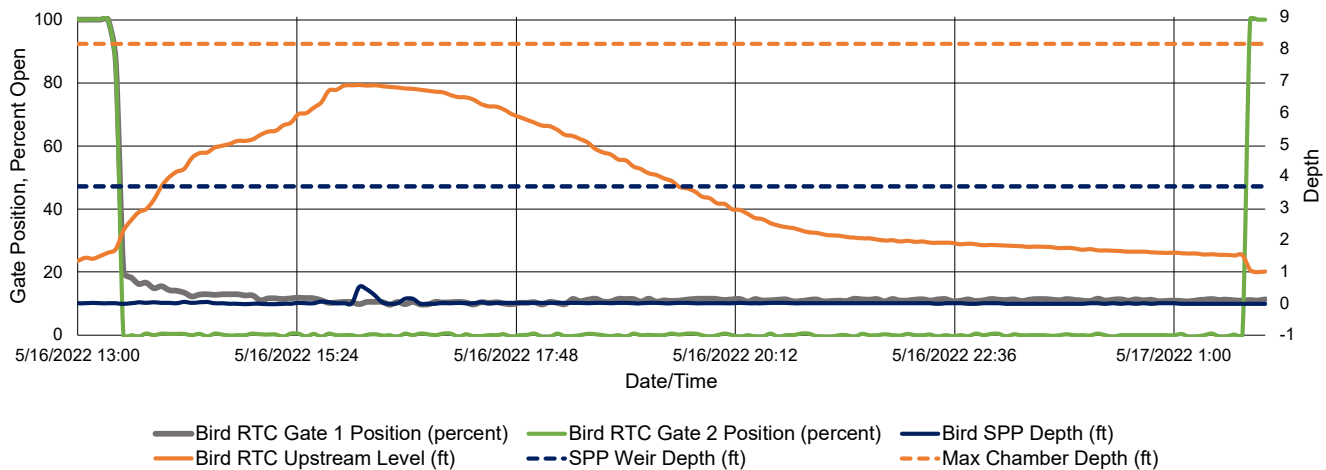
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.27 in.
Storm Event Duration:	12 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.59 ft.
Return to Normal Depth:	1.05 ft.
Time Gate 1 Activated:	5/16/2022 13:20
Time Gate 2 Activated:	5/16/2022 13:20
Time Gate 1 Returned to Normal:	N/A
Time Gate 2 Returned to Normal:	5/17/2022 1:45
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.86 ft.
Volume Stored:	751,420 Gal.
Unused Storage Volume:	342,943 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	751,420 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

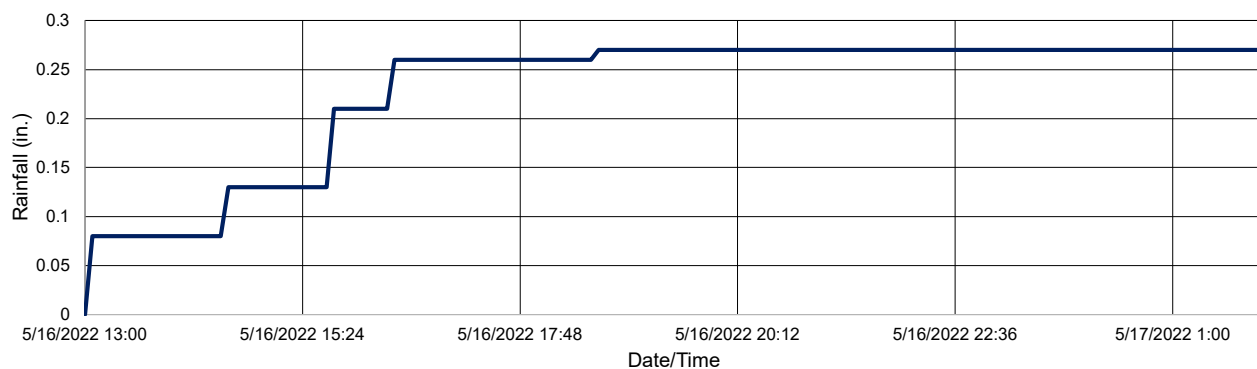
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 10% open at the end of this event.

#### RTC Gate Performance



#### Rainfall Accumulation



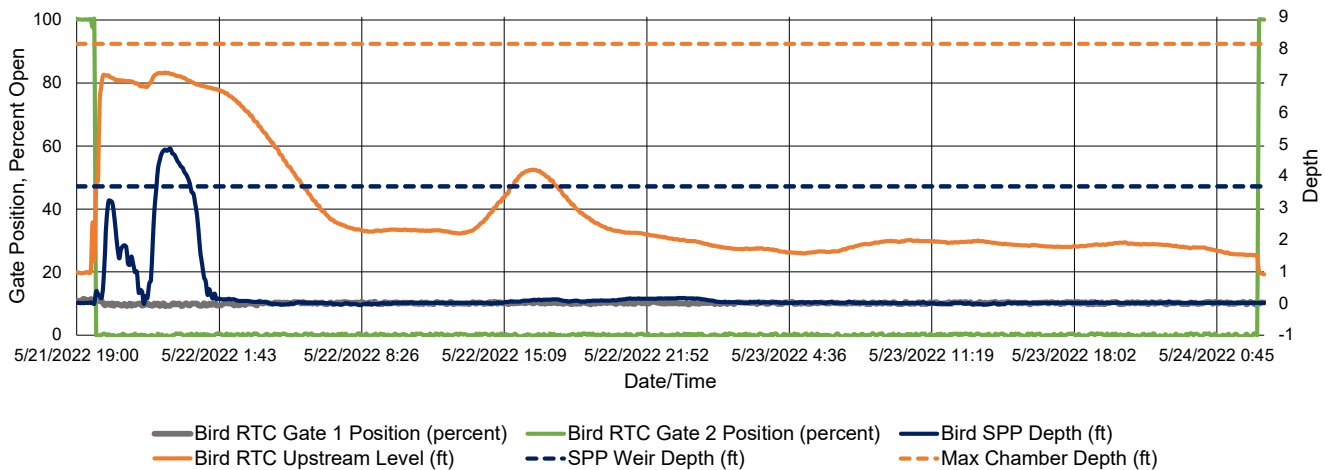
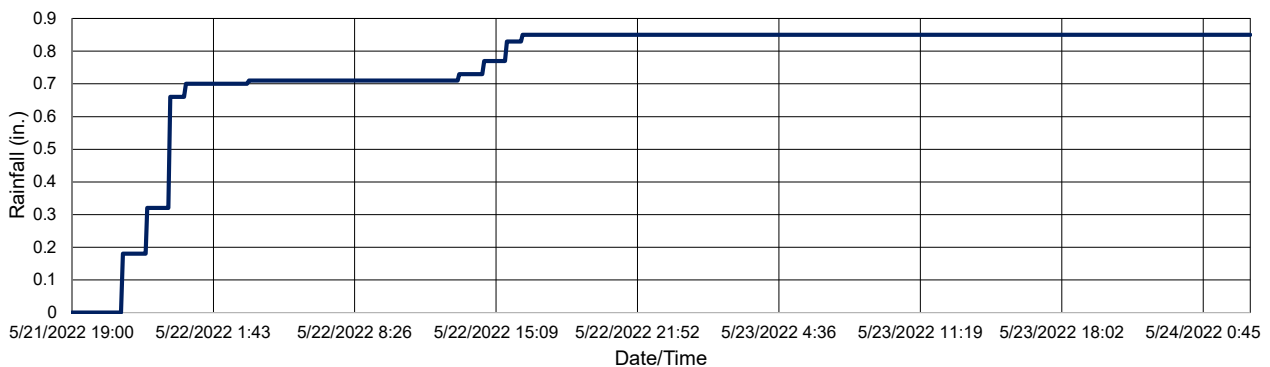
Site:	Bird RTC
Analysis Date:	6/6/2022
Event Start Date/Time:	5/21/2022 19:50
Event End Date/Time:	5/24/2022 2:40

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.85 in.
Storm Event Duration:	56 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	0.98 ft.
Return to Normal Depth:	0.97 ft.
Time Gate 1 Activated:	N/A
Time Gate 2 Activated:	5/21/2022 19:50
Time Gate 1 Returned to Normal:	N/A
Time Gate 2 Returned to Normal:	5/24/2022 2:40
Percent Capture	52%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	7.25 ft.
Volume Stored:	868,086 Gal.
Unused Storage Volume:	245,858 Gal.
Overflow Volume:	805,904 Gal.
Overflow Volume Prevented:	868,086 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	805,904
Could SPP activation have been prevented?	No

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 10% open during this event.

**RTC Gate Performance****Rainfall Accumulation**

Site:	Bird RTC
Analysis Date:	6/6/2022
Event Start Date/Time:	5/27/2022 4:15
Event End Date/Time:	5/29/2022 3:10

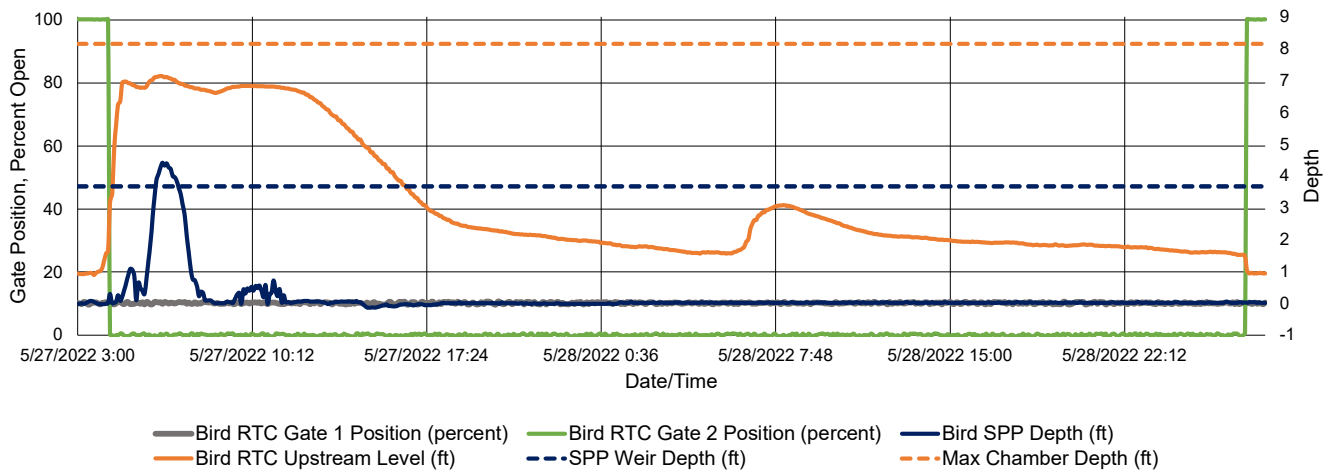
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.09 in.
Storm Event Duration:	48 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.64 ft.
Return to Normal Depth:	1.03 ft.
Time Gate 1 Activated:	N/A
Time Gate 2 Activated:	5/27/2022 4:15
Time Gate 1 Returned to Normal:	N/A
Time Gate 2 Returned to Normal:	5/29/2022 3:10
Percent Capture	79%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	7.14 ft.
Volume Stored:	818,319 Gal.
Unused Storage Volume:	273,819 Gal.
Overflow Volume:	221,674 Gal.
Overflow Volume Prevented:	818,319 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	221,674
Could SPP activation have been prevented?	Yes

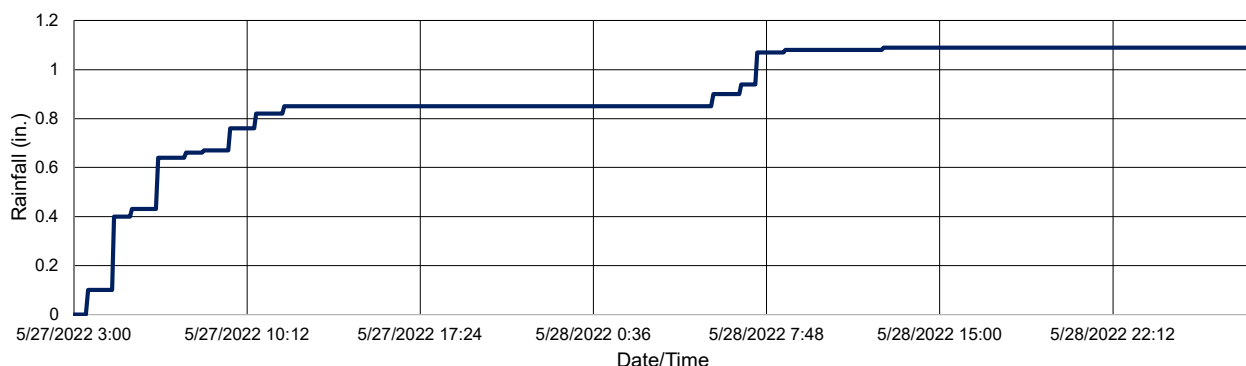
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 10% open during this event.

#### RTC Gate Performance



#### Rainfall Accumulation



# June 2022 Bird Ave. RTC KPI Report

(No activations recorded due to gate issues)

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July 2021  
Bird Ave. RTC  
KPI Report (No  
communication)  
(Gateway shipped to South Bend)

BUFFALO  
SEWER AUTHORITY



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# August 2021 Bird Ave. RTC KPI Report (No gate activations)

(Gateway re-installed on 8/27/2021)

**BUFFALO**  
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built assets

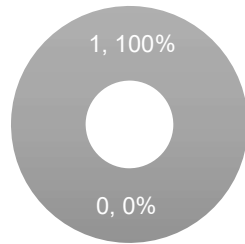


# September 2021 Bird Ave. RTC KPI Report

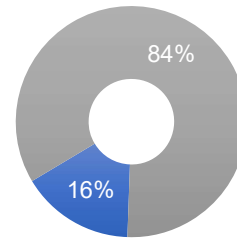
**BUFFALO**  
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**Prevented SPP Events**

■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

**Prevented SPP Volume**

■ Prevented SPP Overflow Volume (Gal.)  
 ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
0	1	893,502	4,738,188
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
9/8/2021	893,502	4,738,188	16%

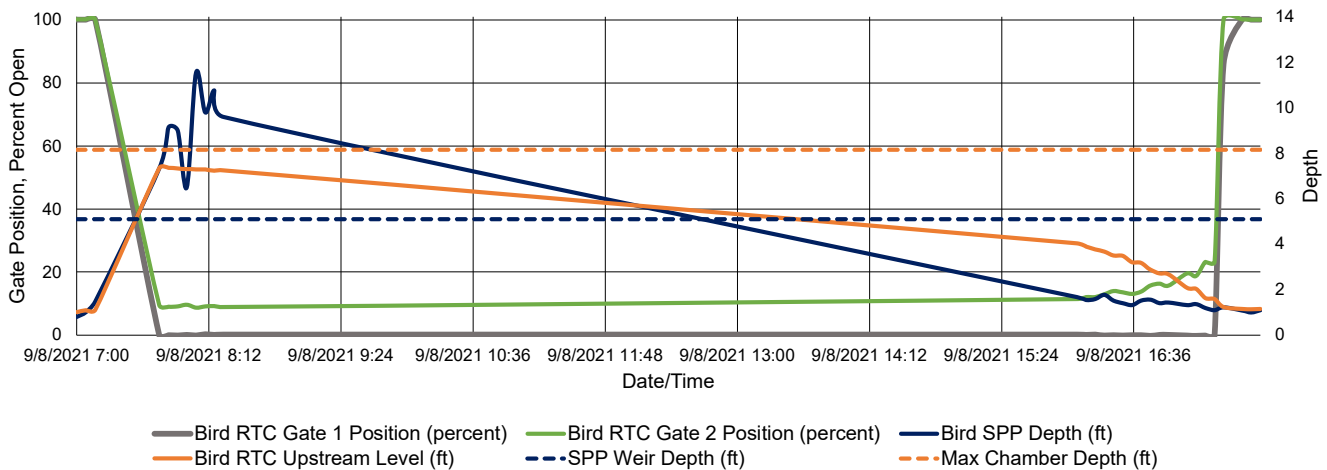
Site:	Bird RTC
Analysis Date:	10/9/2021
Event Start Date/Time:	9/8/2021 7:10
Event End Date/Time:	9/8/2021 17:35

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	10 hr.
Storm Type:	N/A

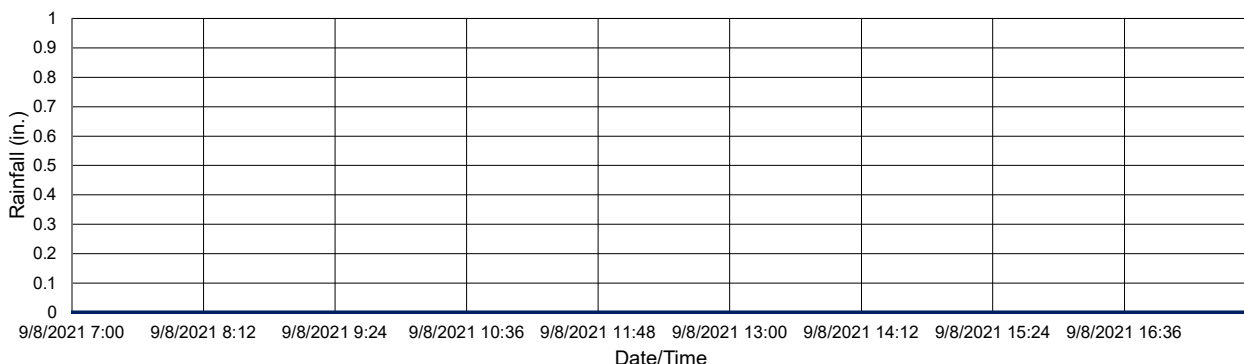
Gate Activation Trigger Depth:	1.11 ft.
Return to Normal Depth:	1.23 ft.
Time Gate 1 Activated:	9/8/2021 7:10
Time Gate 2 Activated:	9/8/2021 7:10
Time Gate 1 Returned to Normal:	9/8/2021 17:35
Time Gate 2 Returned to Normal:	9/8/2021 17:20
Percent Capture	16%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	7.36 ft.
Volume Stored:	893,502 Gal.
Unused Storage Volume:	217,441 Gal.
Overflow Volume:	4,738,188 Gal.
Overflow Volume Prevented:	893,502 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	4,738,188
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo. There was loss of communication during the event. No data available after this event.

### RTC Gate Performance



### Rainfall Accumulation



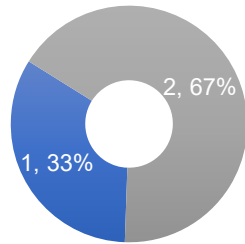
# October 2021 Bird Ave. RTC KPI Report

**BUFFALO**  
SEWER AUTHORITY

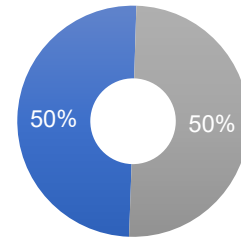


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**Prevented SPP Events**

■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

**Prevented SPP Volume**

■ Prevented SPP Overflow Volume (Gal.)  
 ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
1	2	2,517,626	2,525,698
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
10/3/2021	921,483	2,320,648	28%

Site:	Bird RTC
Analysis Date:	11/13/2021
Event Start Date/Time:	10/3/2021 13:25
Event End Date/Time:	10/5/2021 1:35

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.04 in.
Storm Event Duration:	38 hr.
Storm Type:	Less than 1 yr.

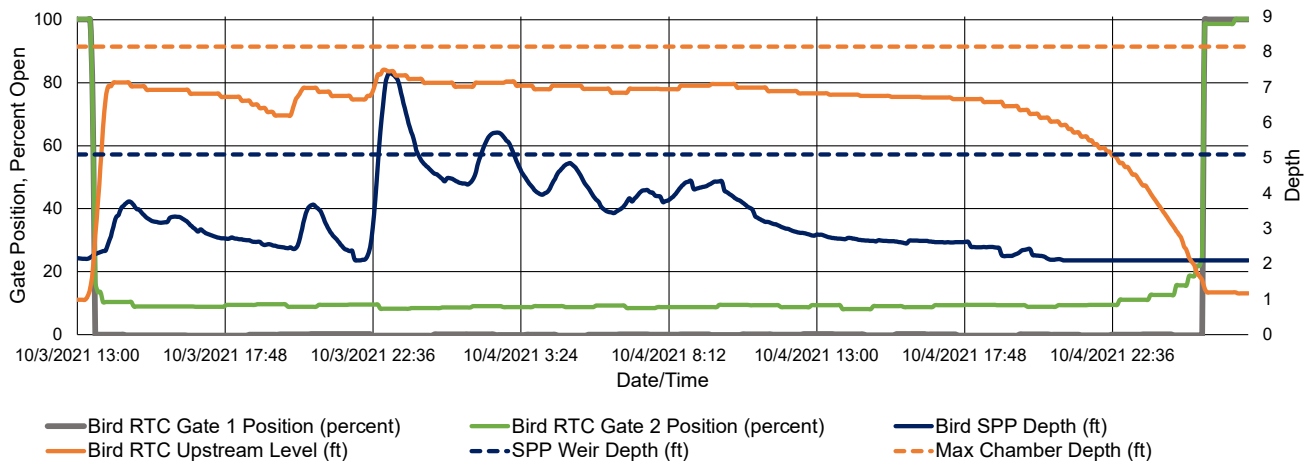
Gate Activation Trigger Depth:	1.32 ft.
Return to Normal Depth:	1.55 ft.
Time Gate 1 Activated:	10/3/2021 13:25
Time Gate 2 Activated:	10/3/2021 13:25
Time Gate 1 Returned to Normal:	10/5/2021 1:35
Time Gate 2 Returned to Normal:	10/5/2021 2:35
Percent Capture	28%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	7.49 ft.
Volume Stored:	921,483 Gal.
Unused Storage Volume:	183,272 Gal.
Overflow Volume:	2,320,648 Gal.
Overflow Volume Prevented:	921,483 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	2,320,648
Could SPP activation have been prevented?	No

#### Recommended Operational Changes/Notes:

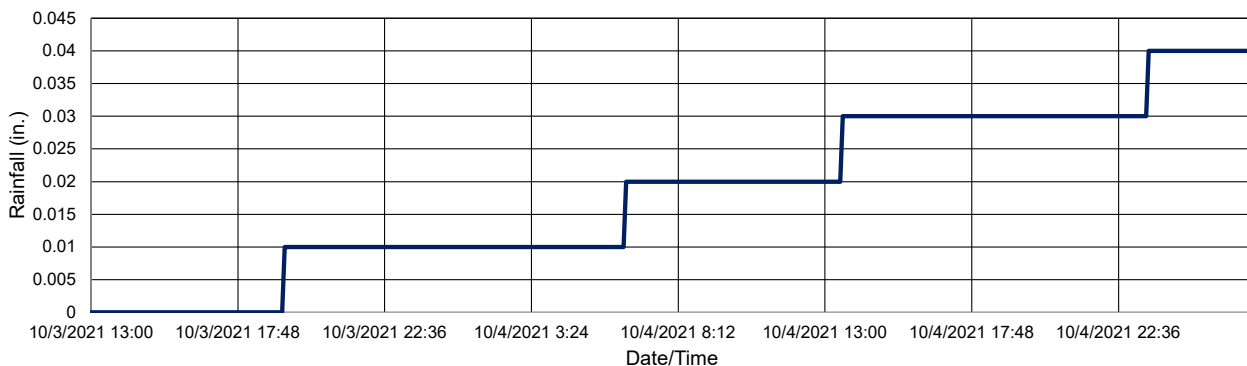
Rainfall data sourced from BSA rain gauge station at South Buffalo.

Downstream level and gate position from Ovation data as EmNet gateway was down during this month. SPP level was calculated by EmNet from Ovation data.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	11/13/2021
Event Start Date/Time:	10/15/2021 17:40
Event End Date/Time:	10/19/2021 5:02

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.06 in.
Storm Event Duration:	84 hr.
Storm Type:	Less than 1 yr.

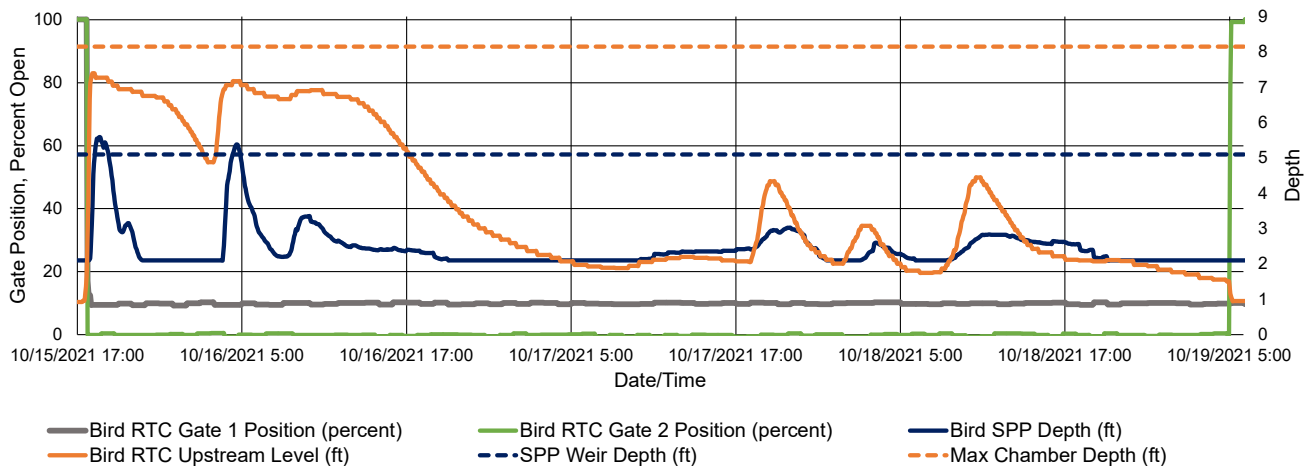
Gate Activation Trigger Depth:	1.66 ft.
Return to Normal Depth:	0.95 ft.
Time Gate 1 Activated:	10/15/2021 17:40
Time Gate 2 Activated:	10/15/2021 17:40
Time Gate 1 Returned to Normal:	N/A
Time Gate 2 Returned to Normal:	10/19/2021 5:02
Percent Capture	81%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	7.39 ft.
Volume Stored:	881,609 Gal.
Unused Storage Volume:	209,612 Gal.
Overflow Volume:	205,050 Gal.
Overflow Volume Prevented:	881,609 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	205,050
Could SPP activation have been prevented?	Yes

#### Recommended Operational Changes/Notes:

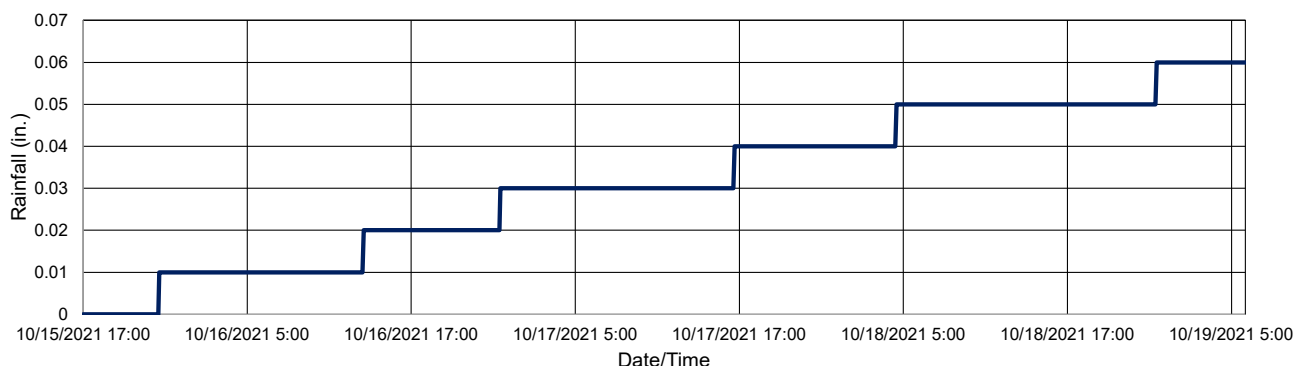
Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 10% open at the end of the event.

Downstream level and gate position from Ovation data as EmNet gateway was down during this month. SPP level was calculated by EmNet from Ovation data.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	11/13/2021
Event Start Date/Time:	10/21/2021 21:00
Event End Date/Time:	10/23/2021 1:34

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.02 in.
Storm Event Duration:	28 hr.
Storm Type:	Less than 1 yr.

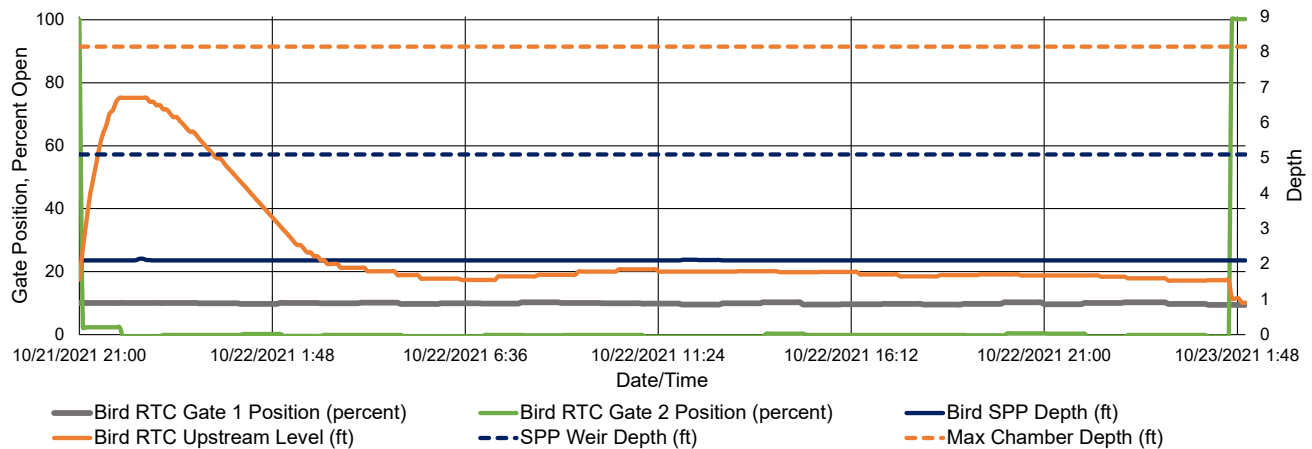
Gate Activation Trigger Depth:	1.56 ft.
Return to Normal Depth:	1.03 ft.
Time Gate 1 Activated:	N/A
Time Gate 2 Activated:	10/21/2021 21:00
Time Gate 1 Returned to Normal:	N/A
Time Gate 2 Returned to Normal:	10/23/2021 1:34
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.70 ft.
Volume Stored:	714,534 Gal.
Unused Storage Volume:	381,119 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	714,534 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

#### Recommended Operational Changes/Notes:

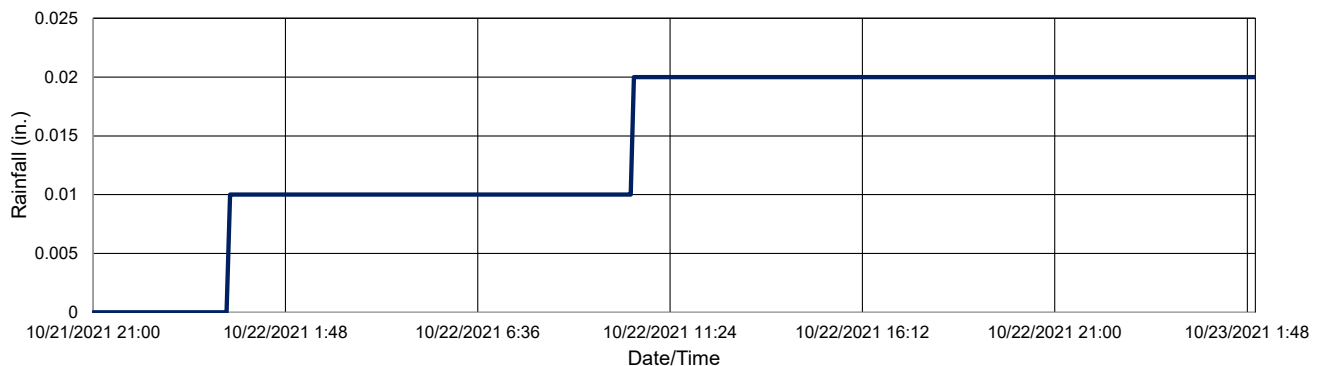
Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 10% for this entire event.

Downstream level and gate position from Ovation data as EmNet gateway was down during this month. SPP level was calculated by EmNet from Ovation data.

#### RTC Gate Performance



#### Rainfall Accumulation





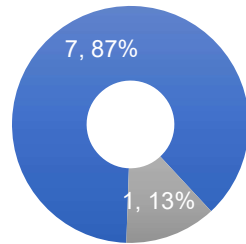
# November 2021 Bird Ave. RTC KPI Report

**BUFFALO**  
SEWER AUTHORITY



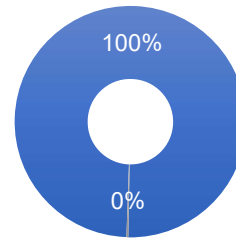
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## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.)  
 ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
7	1	5,681,744	15,466
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
11/4/2021	728,311	-	100%
11/12/2021	590,161	-	100%
11/13/2021	803,850	15,466	98%
11/14/2021	1,151,889	-	100%
11/18/2021	265,272	-	100%
11/22/2021	306,777	-	100%
11/25/2021	732,447	-	100%
11/30/2021	1,103,037	-	100%

Site:	Bird RTC
Analysis Date:	1/13/2022
Event Start Date/Time:	11/4/2021 20:35
Event End Date/Time:	11/6/2021 2:30

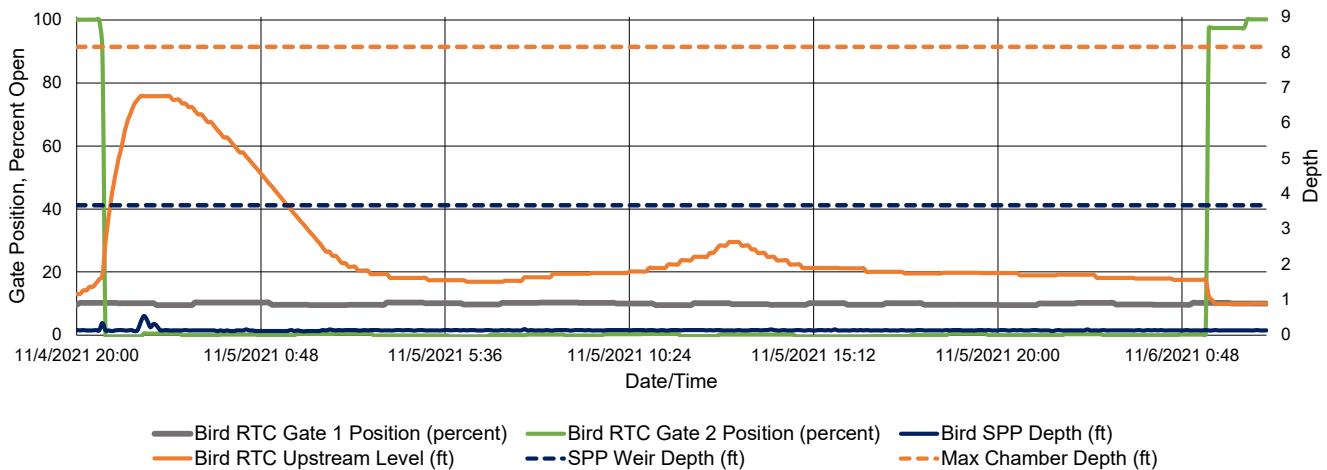
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.09 in.
Storm Event Duration:	30 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.57 ft.
Return to Normal Depth:	0.88 ft.
Time Gate 1 Activated:	11/4/2021 20:35
Time Gate 2 Activated:	11/4/2021 20:35
Time Gate 1 Returned to Normal:	11/6/2021 2:30
Time Gate 2 Returned to Normal:	11/6/2021 2:30
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.76 ft.
Volume Stored:	728,311 Gal.
Unused Storage Volume:	366,915 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	728,311 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

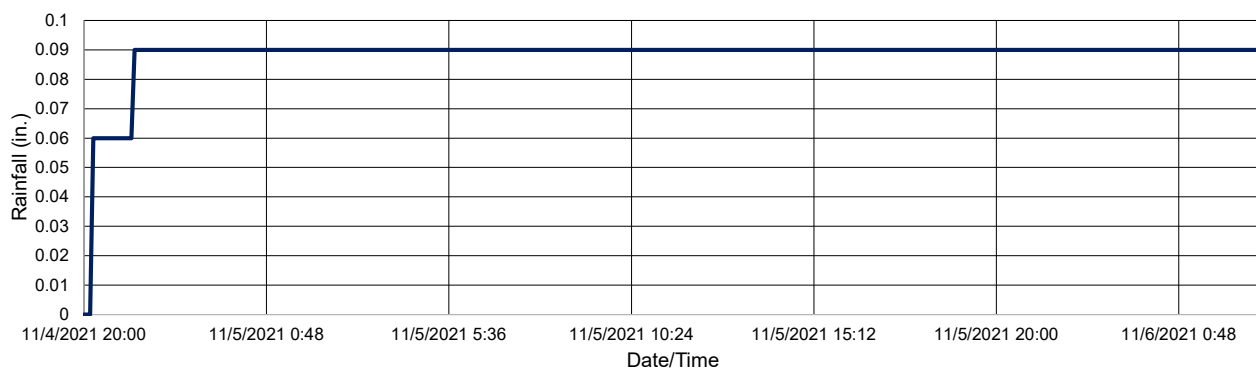
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 10% for this entire event.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	1/13/2022
Event Start Date/Time:	11/12/2021 2:20
Event End Date/Time:	11/12/2021 7:15

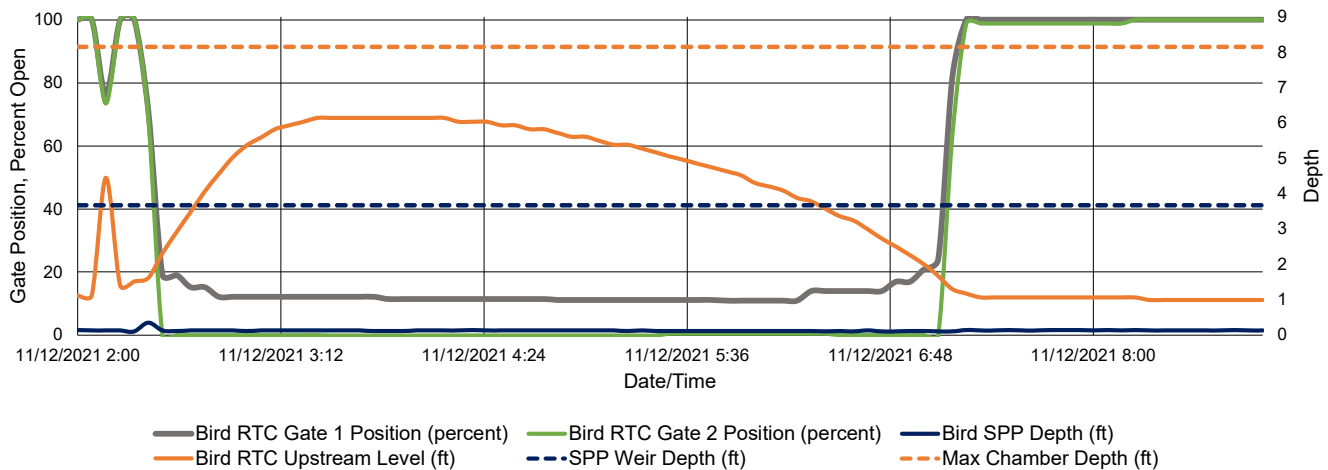
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.01 in.
Storm Event Duration:	7 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.52 ft.
Return to Normal Depth:	1.30 ft.
Time Gate 1 Activated:	11/12/2021 2:20
Time Gate 2 Activated:	11/12/2021 2:20
Time Gate 1 Returned to Normal:	11/12/2021 7:15
Time Gate 2 Returned to Normal:	11/12/2021 8:15
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.14 ft.
Volume Stored:	590,161 Gal.
Unused Storage Volume:	507,159 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	590,161 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

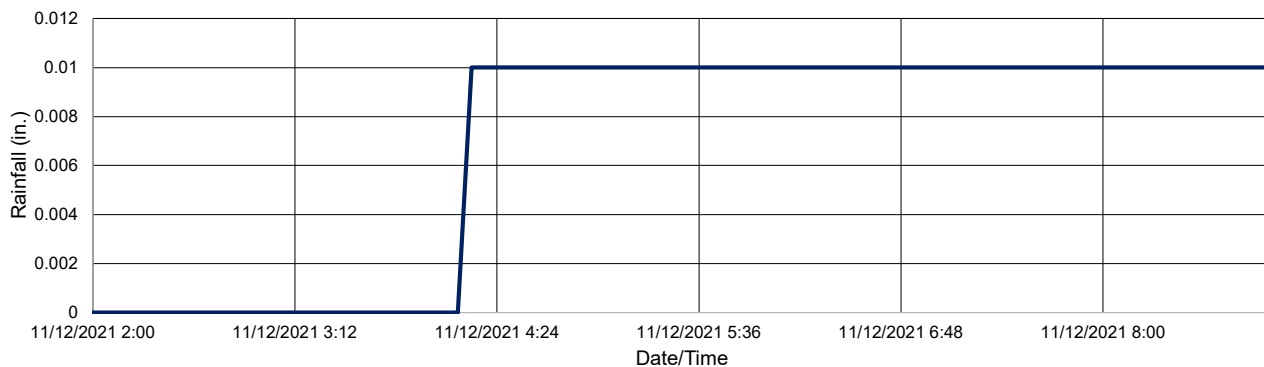
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	1/13/2022
Event Start Date/Time:	11/13/2021 0:30
Event End Date/Time:	11/14/2021 2:35

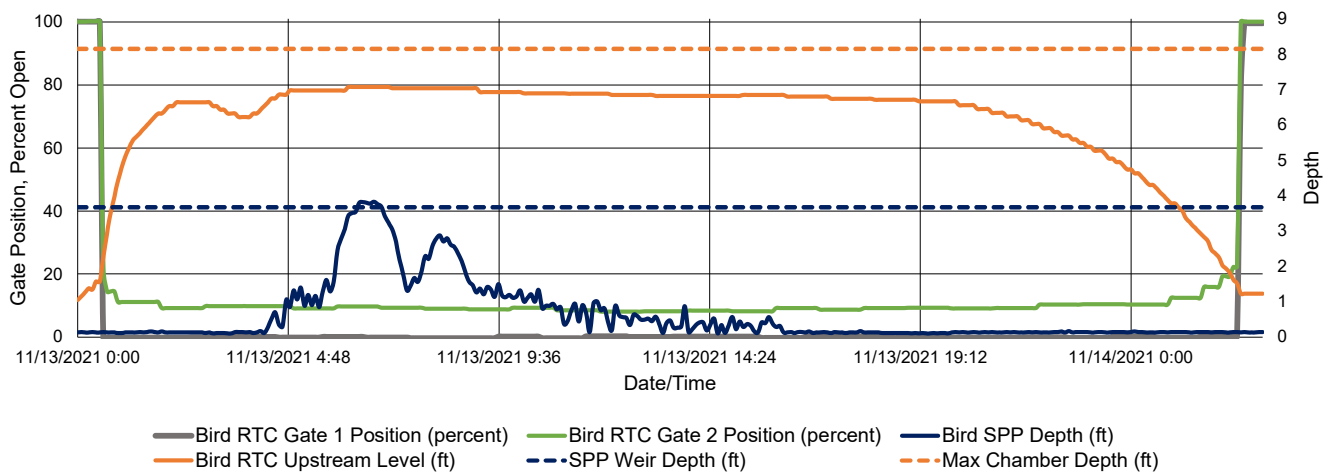
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.02 in.
Storm Event Duration:	27 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.57 ft.
Return to Normal Depth:	1.23 ft.
Time Gate 1 Activated:	11/13/2021 0:30
Time Gate 2 Activated:	11/13/2021 0:30
Time Gate 1 Returned to Normal:	11/14/2021 2:35
Time Gate 2 Returned to Normal:	11/14/2021 2:25
Percent Capture	98%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	7.07 ft.
Volume Stored:	803,850 Gal.
Unused Storage Volume:	291,376 Gal.
Overflow Volume:	15,466 Gal.
Overflow Volume Prevented:	803,850 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	15,466
Could SPP activation have been prevented?	Yes

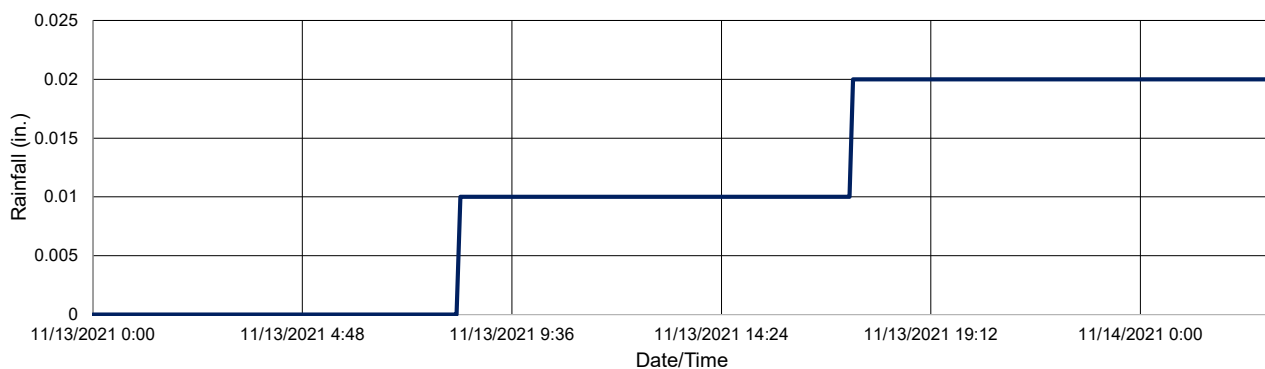
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	1/12/2022
Event Start Date/Time:	11/14/2021 9:10
Event End Date/Time:	11/15/2021 22:40

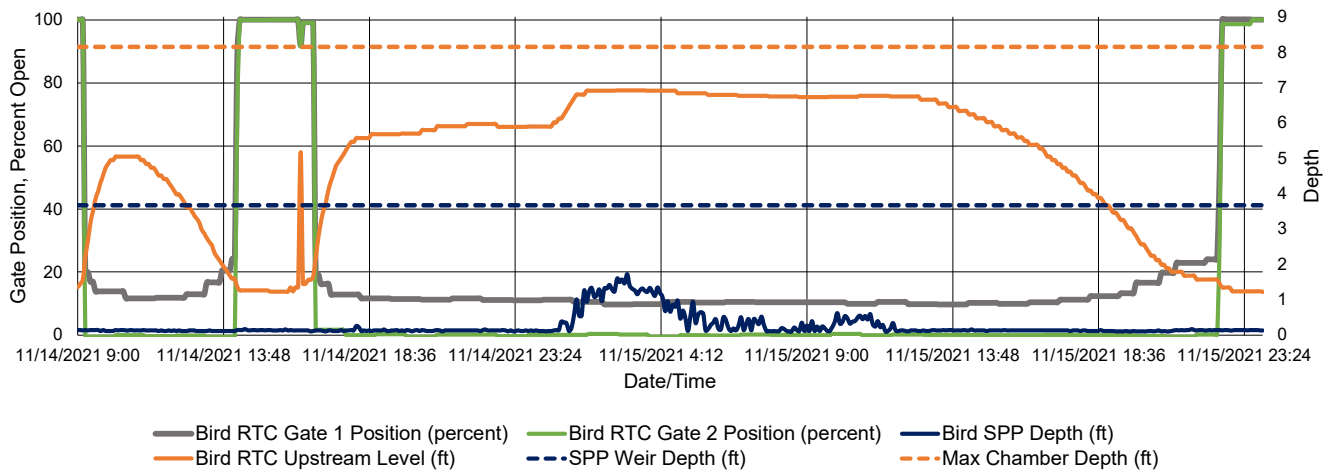
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.03 in.
Storm Event Duration:	39 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.57 ft.
Return to Normal Depth:	1.36 ft.
Time Gate 1 Activated:	11/14/2021 9:10
Time Gate 2 Activated:	11/14/2021 9:10
Time Gate 1 Returned to Normal:	11/15/2021 22:40
Time Gate 2 Returned to Normal:	11/15/2021 23:40
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	5.05 ft.
Volume Stored:	1,151,889 Gal.
Unused Storage Volume:	328,378 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	1,151,889 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

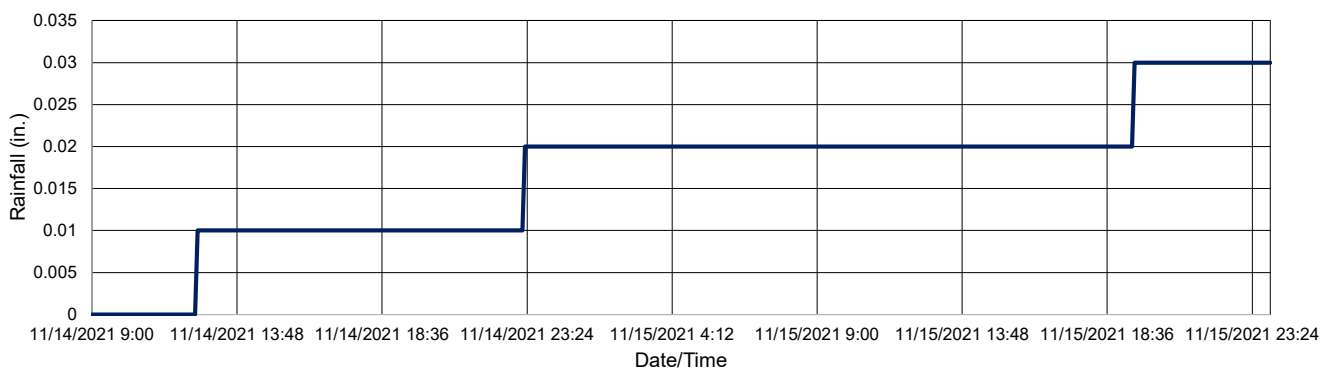
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	1/13/2022
Event Start Date/Time:	11/18/2021 7:10
Event End Date/Time:	11/18/2021 15:45

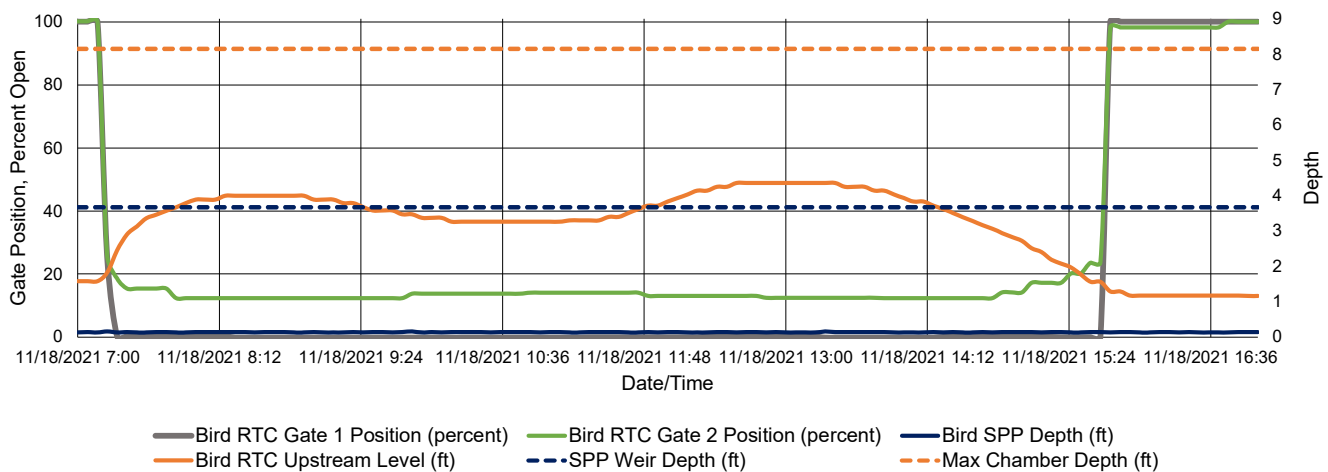
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.27 in.
Storm Event Duration:	10 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.58 ft.
Return to Normal Depth:	1.56 ft.
Time Gate 1 Activated:	11/18/2021 7:10
Time Gate 2 Activated:	11/18/2021 7:10
Time Gate 1 Returned to Normal:	11/18/2021 15:45
Time Gate 2 Returned to Normal:	11/18/2021 16:45
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	4.36 ft.
Volume Stored:	265,272 Gal.
Unused Storage Volume:	829,525 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	265,272 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

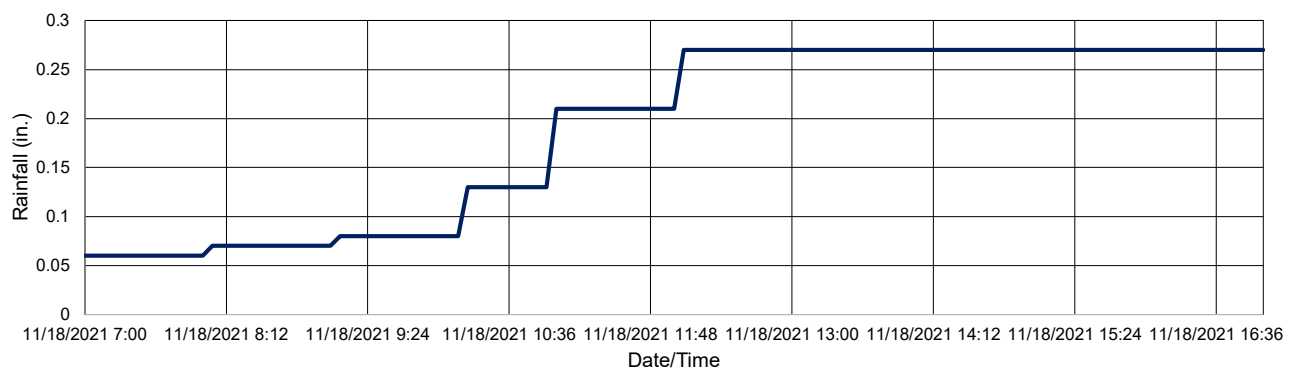
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	1/13/2022
Event Start Date/Time:	11/22/2021 0:25
Event End Date/Time:	11/22/2021 5:25

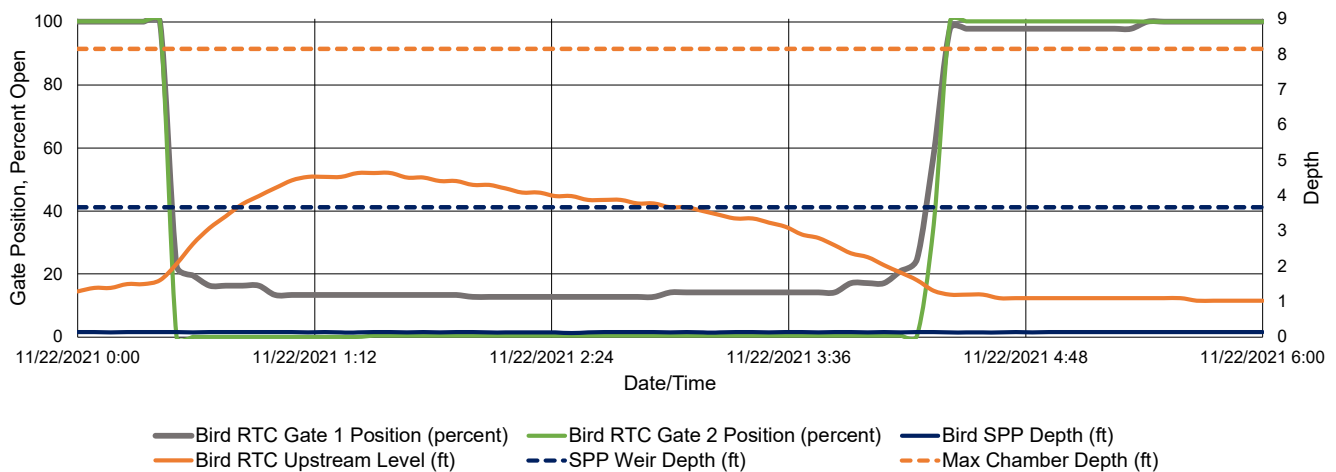
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.04 in.
Storm Event Duration:	6 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.61 ft.
Return to Normal Depth:	1.10 ft.
Time Gate 1 Activated:	11/22/2021 0:25
Time Gate 2 Activated:	11/22/2021 0:25
Time Gate 1 Returned to Normal:	11/22/2021 5:25
Time Gate 2 Returned to Normal:	11/22/2021 4:20
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	4.64 ft.
Volume Stored:	306,777 Gal.
Unused Storage Volume:	786,707 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	306,777 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

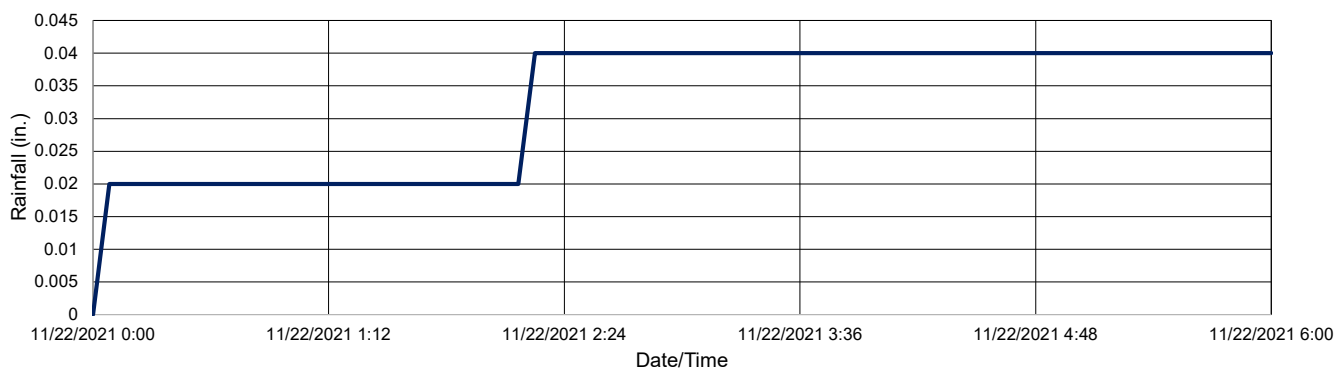
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation





Site:	Bird RTC
Analysis Date:	1/13/2022
Event Start Date/Time:	11/25/2021 18:30
Event End Date/Time:	11/26/2021 9:20

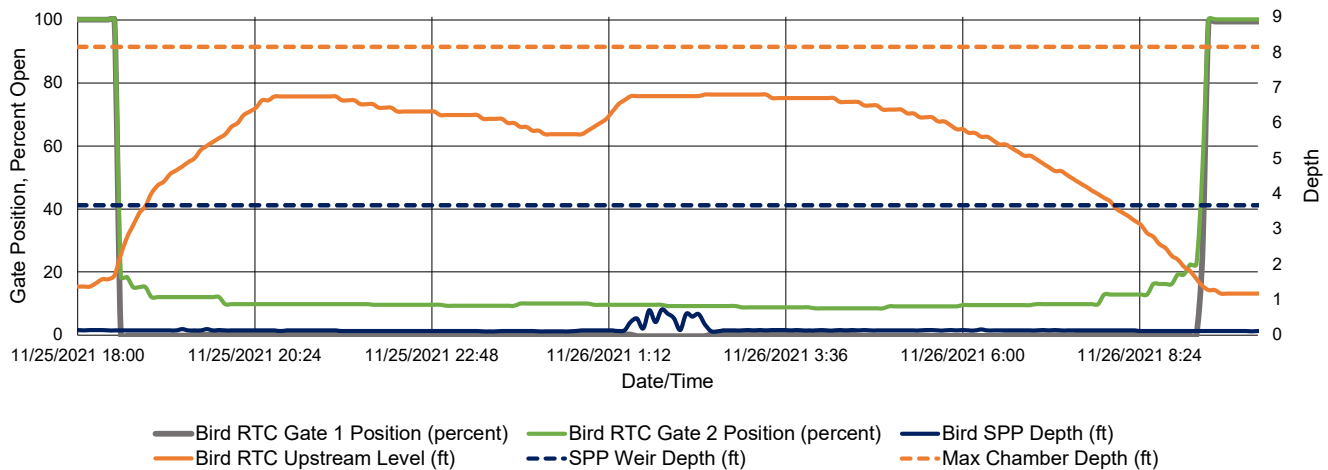
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.21 in.
Storm Event Duration:	6 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.69 ft.
Return to Normal Depth:	1.39 ft.
Time Gate 1 Activated:	11/25/2021 18:30
Time Gate 2 Activated:	11/25/2021 18:30
Time Gate 1 Returned to Normal:	11/26/2021 9:20
Time Gate 2 Returned to Normal:	11/26/2021 9:15
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.80 ft.
Volume Stored:	732,447 Gal.
Unused Storage Volume:	357,371 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	732,447 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

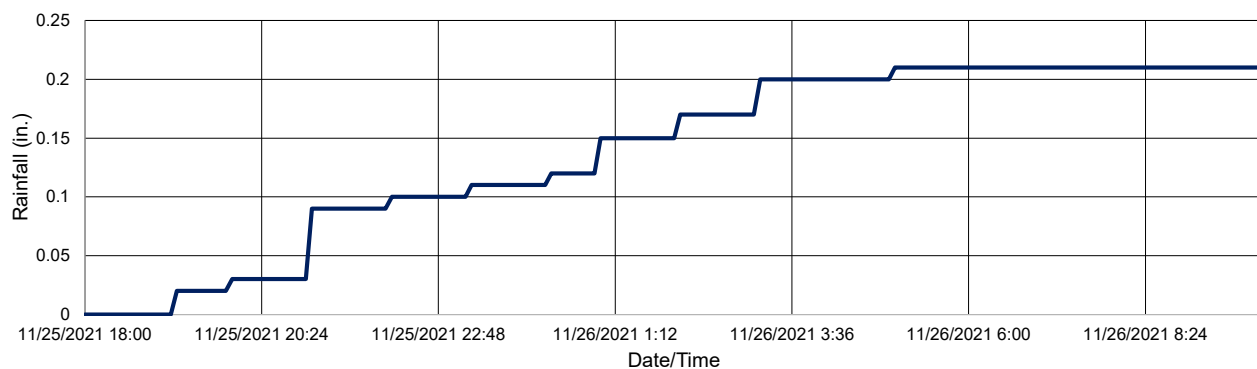
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	1/13/2022
Event Start Date/Time:	11/30/2021 12:50
Event End Date/Time:	11/30/2021 22:20

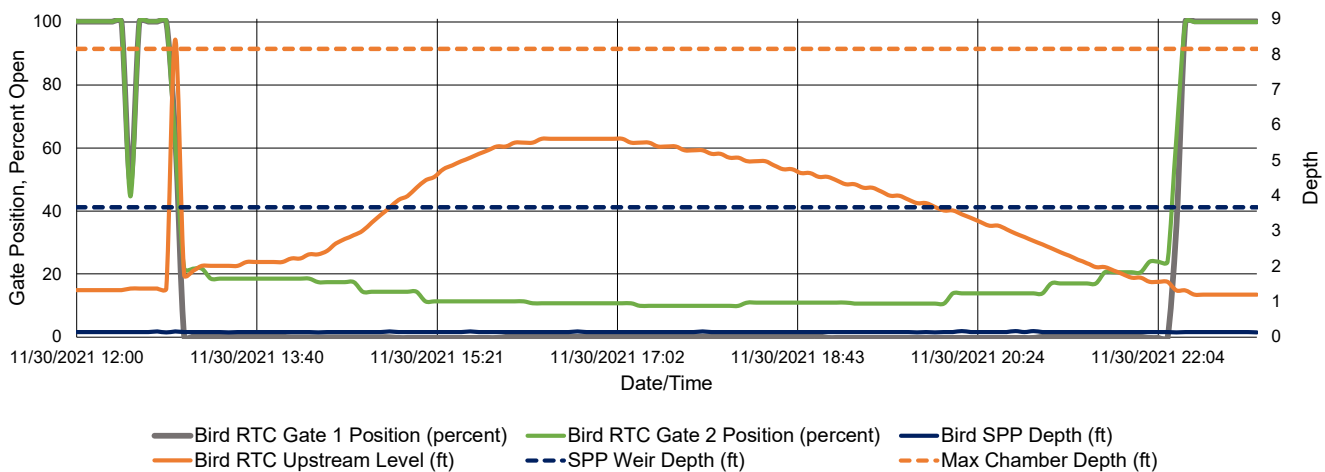
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.03 in.
Storm Event Duration:	11 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.37 ft.
Return to Normal Depth:	1.32 ft.
Time Gate 1 Activated:	11/30/2021 12:50
Time Gate 2 Activated:	11/30/2021 12:50
Time Gate 1 Returned to Normal:	11/30/2021 22:20
Time Gate 2 Returned to Normal:	11/30/2021 22:15
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	8.15 ft.
Volume Stored:	1,103,037 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	1,103,037 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

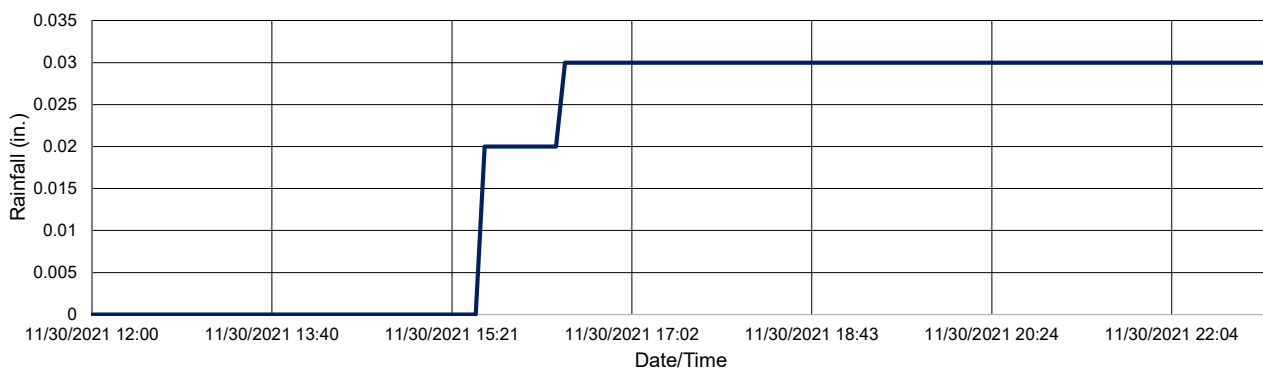
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



# December 2021 Bird Ave. RTC KPI Report

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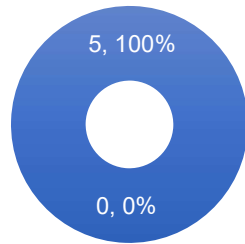


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# Bird Ave. RTC Monthly Performance Report

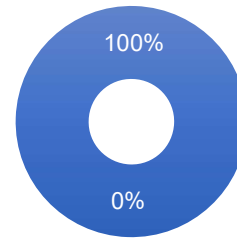
December 2021

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.)  
■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
5	0	4,217,092	-
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
12/2/2021	63,682	-	100%
12/5/2021	1,622,185	-	100%
12/11/2021	1,013,727	-	100%
12/18/2021	727,603	-	100%
12/25/2021	789,895	-	100%

Site:	Bird RTC
Analysis Date:	1/12/2022
Event Start Date/Time:	12/2/2021 16:10
Event End Date/Time:	12/2/2021 17:45

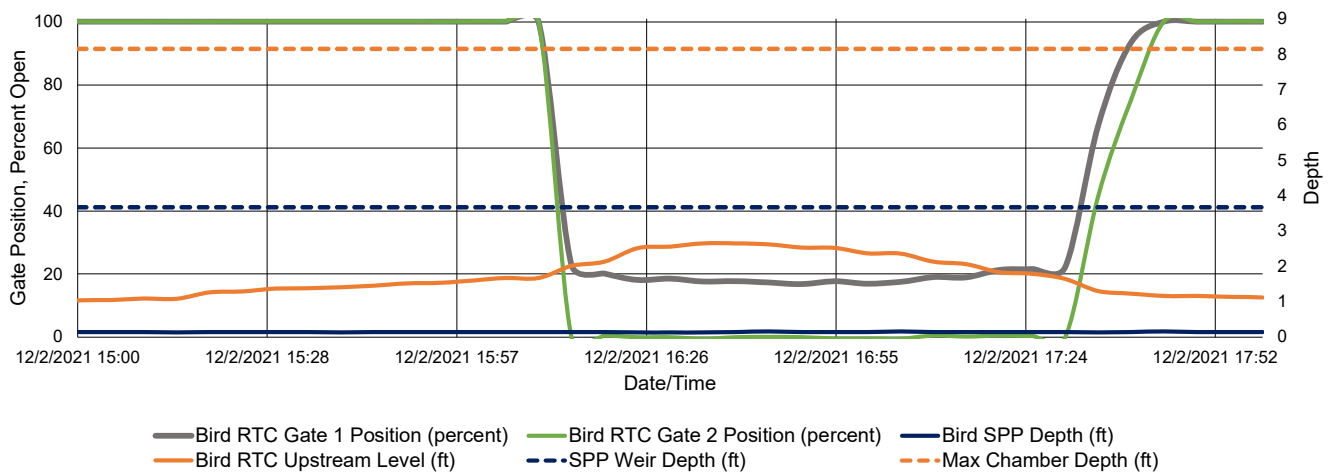
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.07 in.
Storm Event Duration:	2 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.67 ft.
Return to Normal Depth:	1.23 ft.
Time Gate 1 Activated:	12/2/2021 16:10
Time Gate 2 Activated:	12/2/2021 16:10
Time Gate 1 Returned to Normal:	12/2/2021 17:45
Time Gate 2 Returned to Normal:	12/2/2021 17:40
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	2.65 ft.
Volume Stored:	63,682 Gal.
Unused Storage Volume:	1,027,076 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	63,682 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

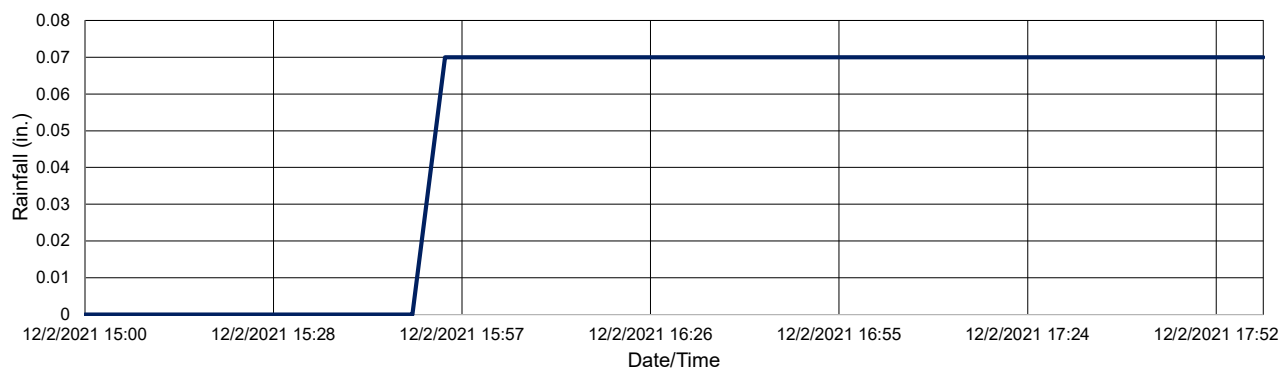
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	1/12/2022
Event Start Date/Time:	12/5/2021 22:15
Event End Date/Time:	12/6/2021 16:40

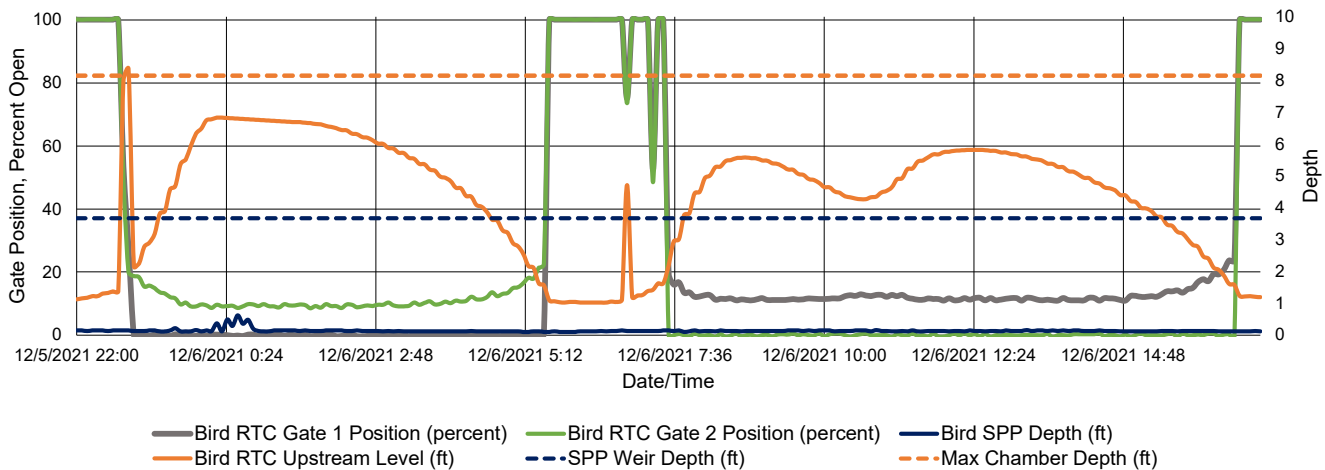
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.38 in.
Storm Event Duration:	20 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.37 ft.
Return to Normal Depth:	1.56 ft.
Time Gate 1 Activated:	12/5/2021 22:15
Time Gate 2 Activated:	12/5/2021 22:15
Time Gate 1 Returned to Normal:	12/6/2021 16:40
Time Gate 2 Returned to Normal:	12/6/2021 16:35
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	8.15 ft.
Volume Stored:	1,622,185 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	1,622,185 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

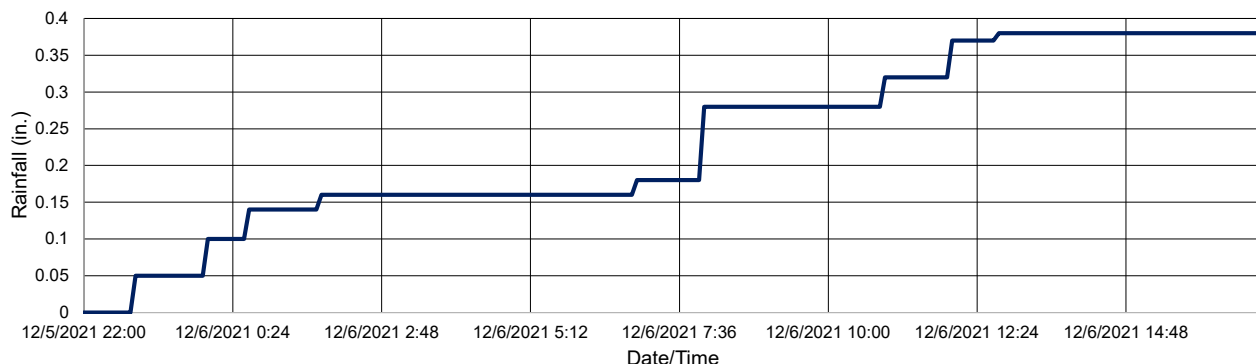
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	1/12/2022
Event Start Date/Time:	12/11/2021 5:35
Event End Date/Time:	12/11/2021 21:35

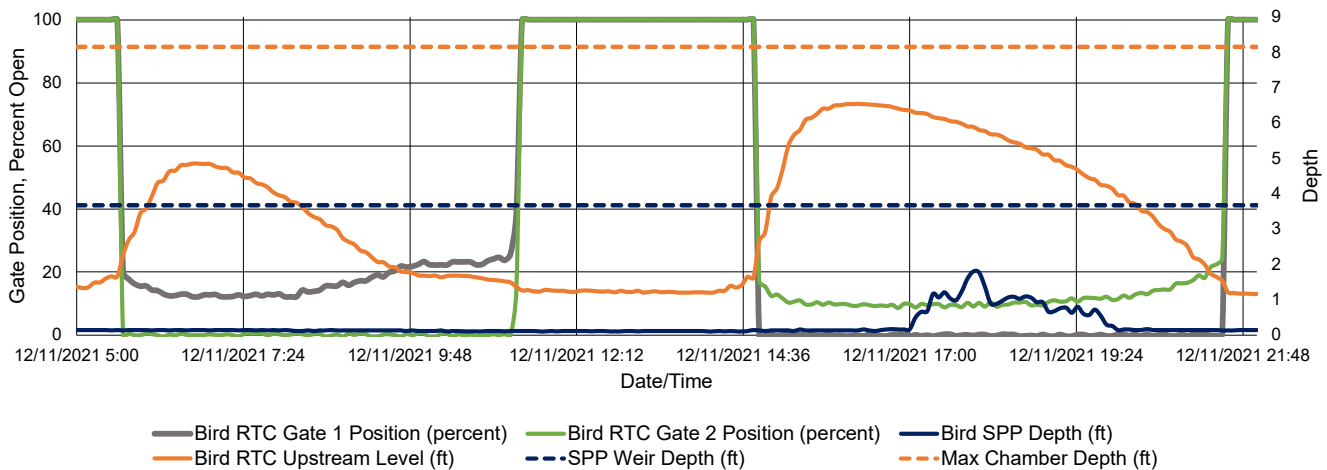
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.44 in.
Storm Event Duration:	18 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.65 ft.
Return to Normal Depth:	1.36 ft.
Time Gate 1 Activated:	12/11/2021 5:35
Time Gate 2 Activated:	12/11/2021 5:35
Time Gate 1 Returned to Normal:	12/11/2021 21:35
Time Gate 2 Returned to Normal:	12/11/2021 21:30
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	4.85 ft.
Volume Stored:	1,013,727 Gal.
Unused Storage Volume:	418,333 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	1,013,727 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

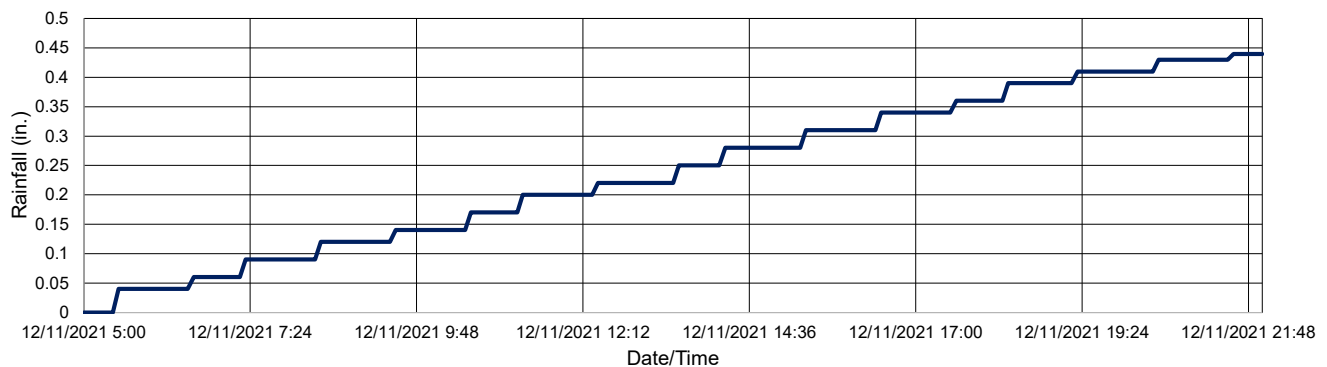
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	Bird RTC
Analysis Date:	1/12/2022
Event Start Date/Time:	12/18/2021 12:10
Event End Date/Time:	12/19/2021 4:45

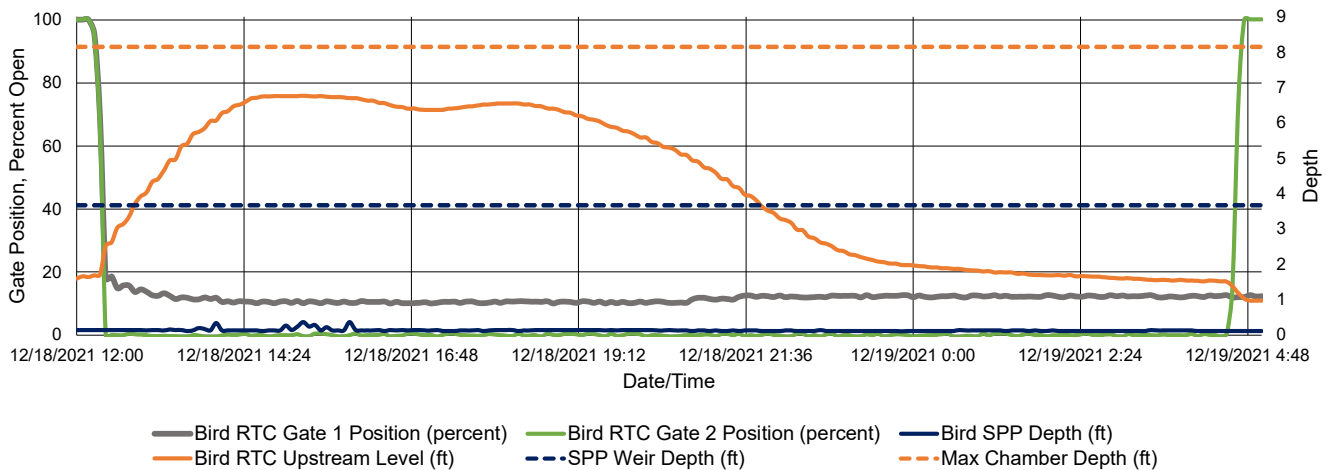
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.24 in.
Storm Event Duration:	17 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.64 ft.
Return to Normal Depth:	1.03 ft.
Time Gate 1 Activated:	12/18/2021 12:10
Time Gate 2 Activated:	12/18/2021 12:10
Time Gate 1 Returned to Normal:	12/19/2021 4:45
Time Gate 2 Returned to Normal:	12/19/2021 4:40
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	6.77 ft.
Volume Stored:	727,603 Gal.
Unused Storage Volume:	364,535 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	727,603 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

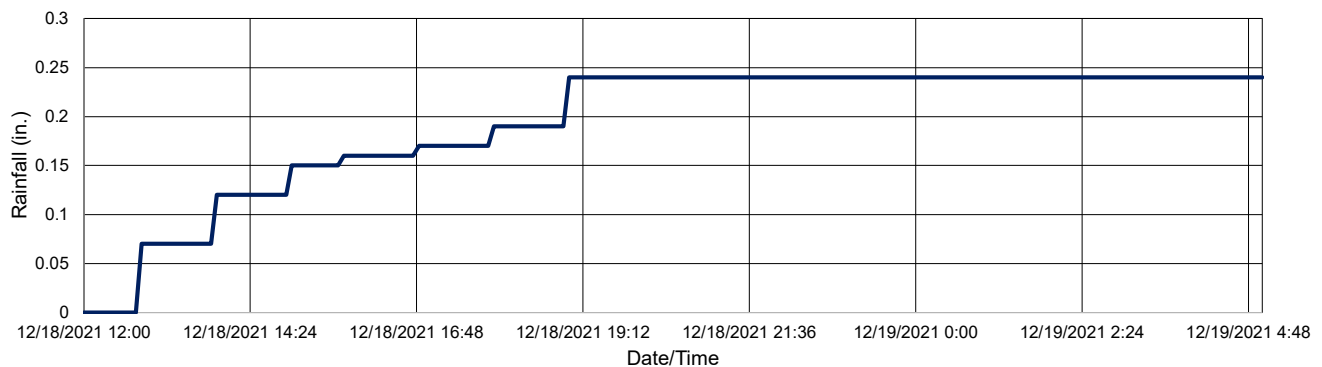
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 12% open at the end of this event.

#### RTC Gate Performance



#### Rainfall Accumulation





Site:	Bird RTC
Analysis Date:	1/12/2022
Event Start Date/Time:	12/25/2021 4:45
Event End Date/Time:	12/26/2021 0:50

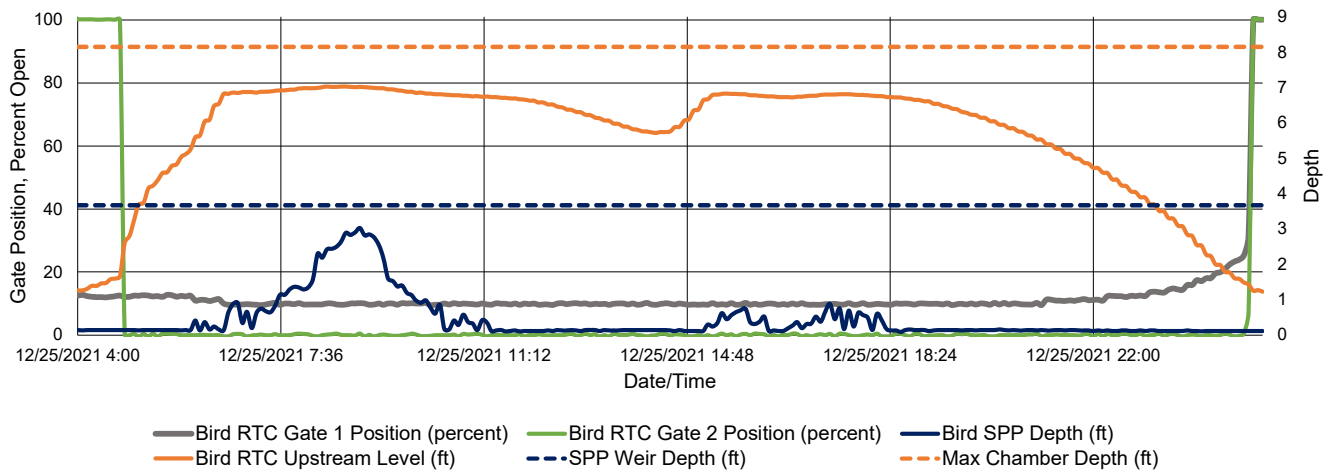
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.63 in.
Storm Event Duration:	21 hr.
Storm Type:	Less than one year

Gate Activation Trigger Depth:	1.66 ft.
Return to Normal Depth:	1.43 ft.
Time Gate 1 Activated:	12/25/2021 4:45
Time Gate 2 Activated:	12/25/2021 4:45
Time Gate 1 Returned to Normal:	12/26/2021 0:50
Time Gate 2 Returned to Normal:	12/26/2021 0:45
Percent Capture	100%
Depth of Weir	8.15 ft.
Maximum Depth Reached:	7.03 ft.
Volume Stored:	789,895 Gal.
Unused Storage Volume:	301,326 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	789,895 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

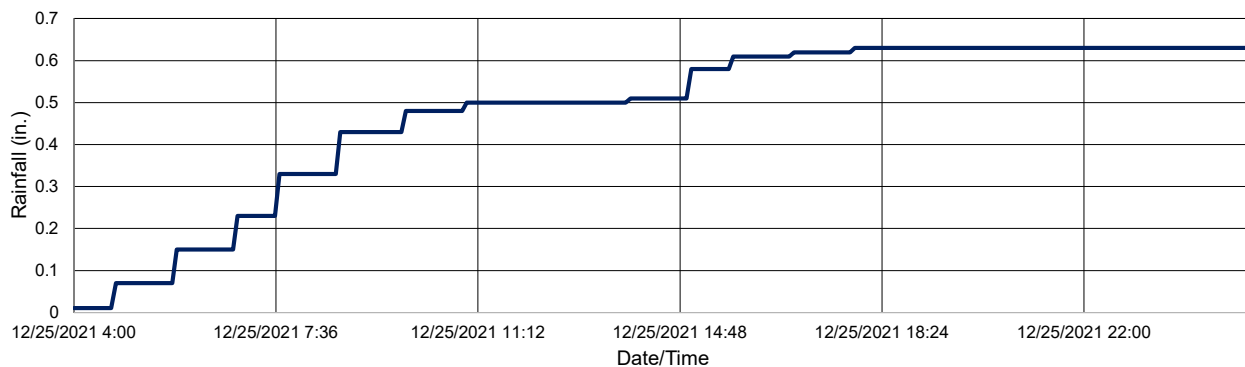
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo. Gate 1 was stuck at 12% open at the beginning of this event.

#### RTC Gate Performance



#### Rainfall Accumulation



# January 2022 Hertel at Deer RTC KPI Report

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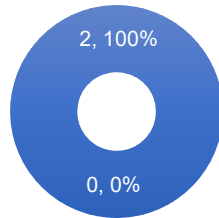
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# Hertel at Deer RTC Monthly Performance Report

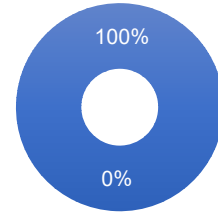
January 2022

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
2	0	6,032,572	-
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
1/1/2022	2,105,810	-	100%
1/9/2022	3,926,762	-	100%

# January 1, 2022

1

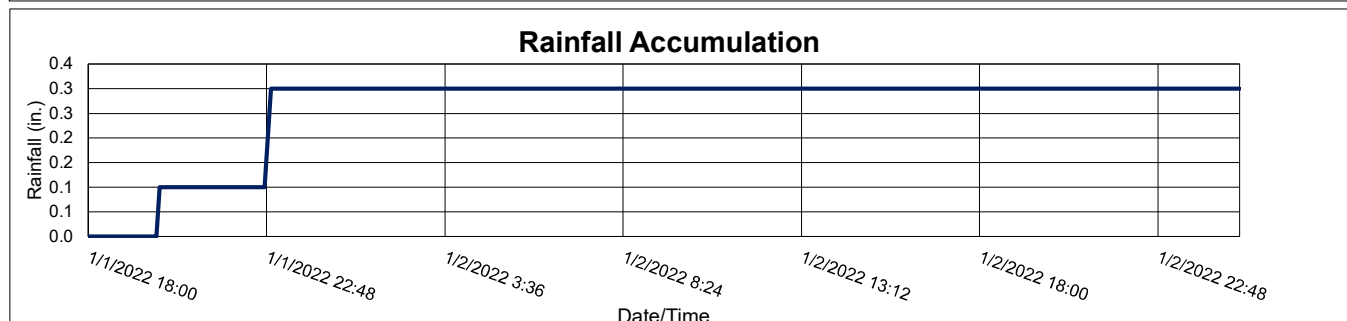
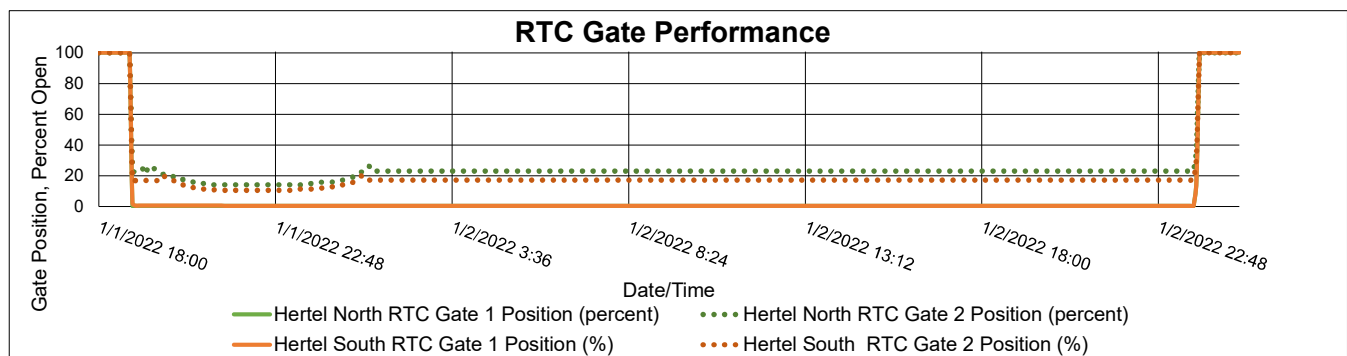
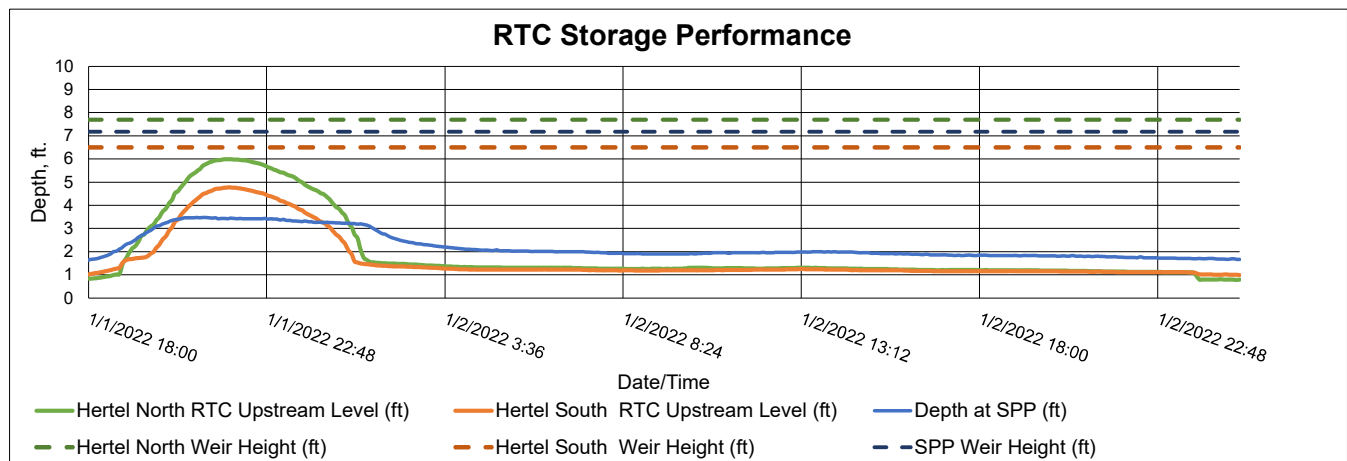
Site:	Hertel at Deer RTC
Time All Gates Active:	1/1/2022 18:50
Time All Gates Returned to Normal:	1/2/2022 23:55
Gate Activation Trigger Depth:	1.31 (South Side) ft.
Return to Normal Depth:	1.07 (South Side) ft.
Minimum Distance to Top of Weir:	1.71 ft.
Volume Stored:	2,105,810 Gal.
Unused Storage Volume:	1,817,614 Gal.

Analysis Date:	2/12/2022
Event Start Date/Time:	1/1/2022 18:50
Event End Date/Time:	1/2/2022 23:55

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.3 in.
Storm Event Duration:	30 hr.
Storm Type:	< 1 yr.

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	2,105,810 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

## Recommended Operational Changes/Notes:



January 9, 2022

2

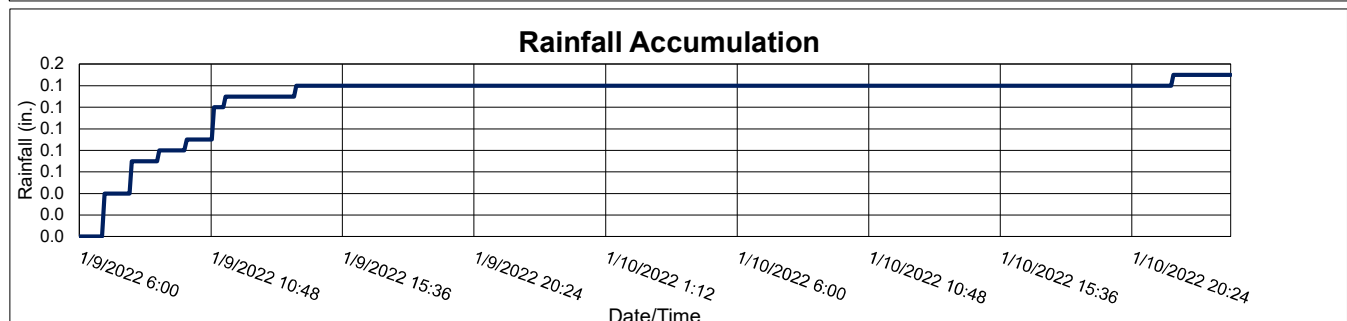
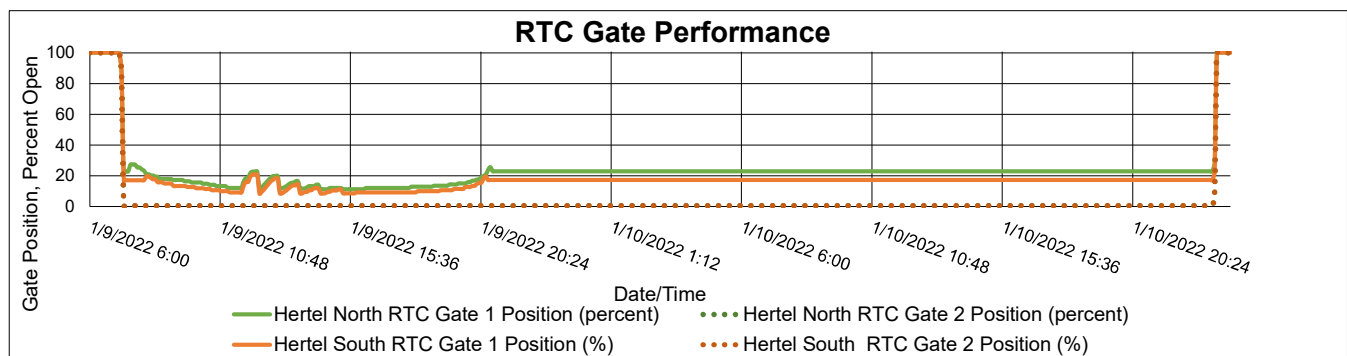
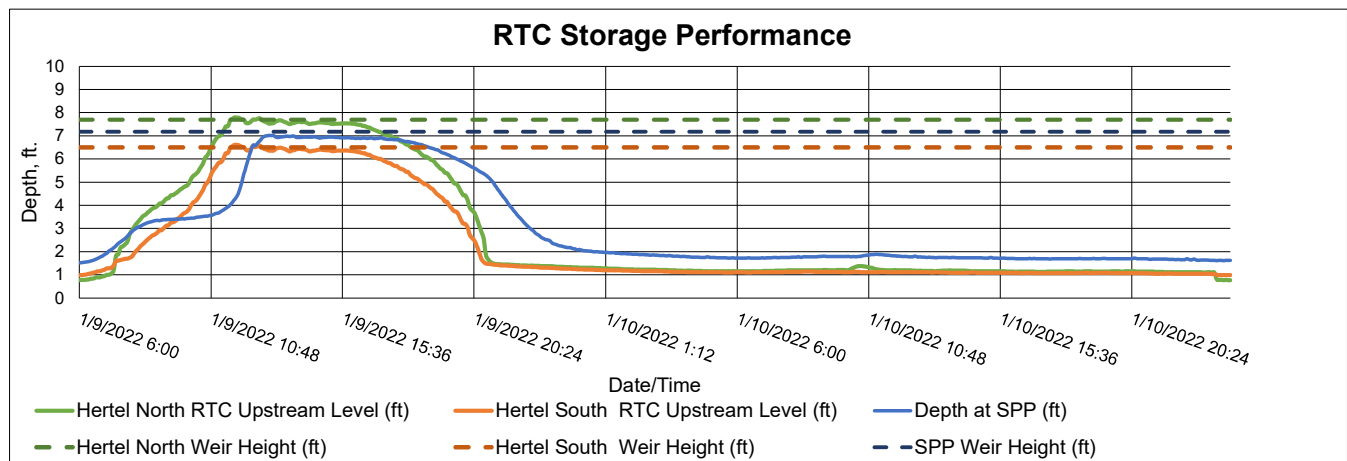
Site:	Hertel at Deer RTC
Time All Gates Active:	1/9/2022 7:05
Time All Gates Returned to Normal:	1/10/2022 23:30
Gate Activation Trigger Depth:	1.28 (South Side) ft.
Return to Normal Depth:	1.03 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,926,762 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	2/12/2022
Event Start Date/Time:	1/9/2022 7:05
Event End Date/Time:	1/10/2022 23:30

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.15 in.
Storm Event Duration:	42 hr.
Storm Type:	< 1 yr.

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	3,926,762 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

#### Recommended Operational Changes/Notes:



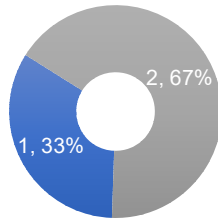
# February 2022 Hertel at Deer RTC KPI Report

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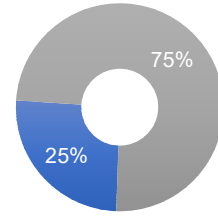


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**Prevented SPP Events**

■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

**Prevented SPP Volume**

■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
1	2	11,674,357	34,117,863
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
2/2/2022	3,924,884	-	100%
2/17/2022	3,876,558	22,220,149	15%
2/22/2022	3,872,915	11,897,714	25%

# February 2, 2022

1

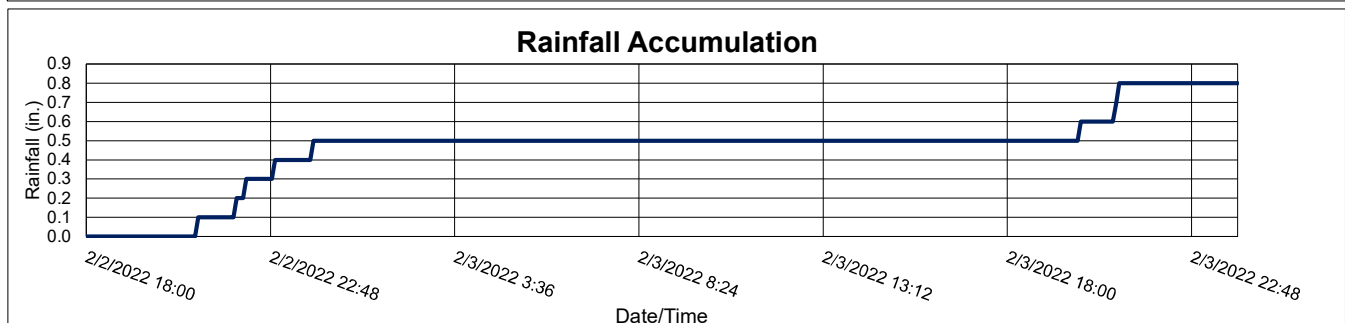
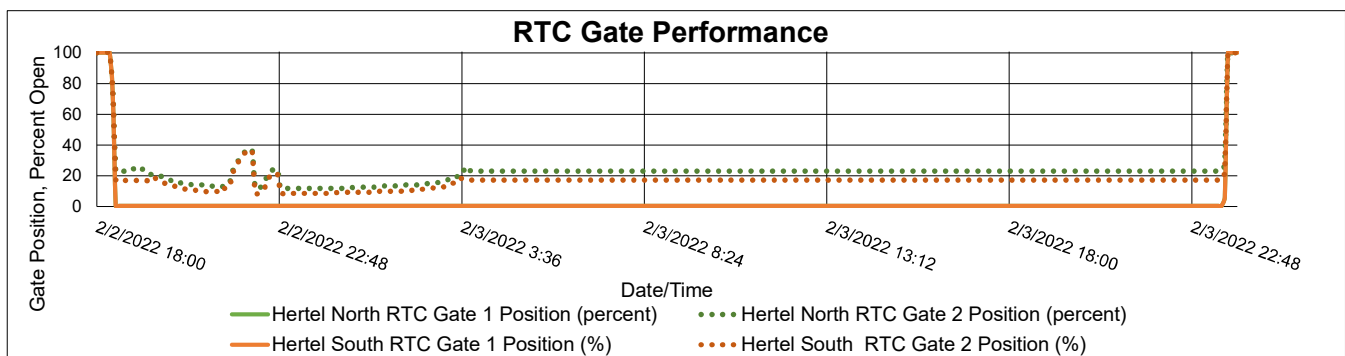
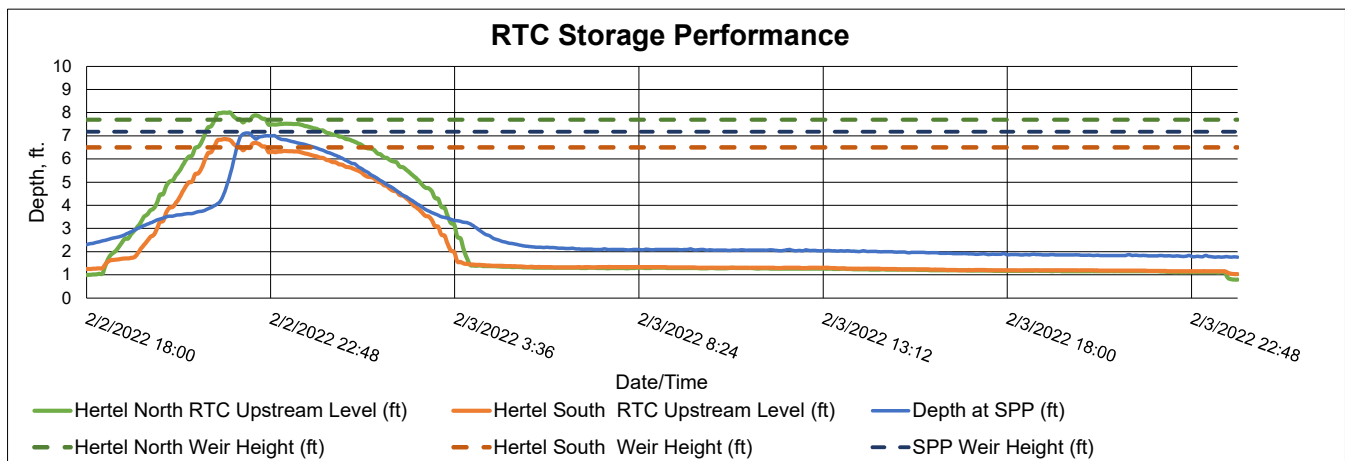
Site:	Hertel at Deer RTC
Time All Gates Active:	2/2/2022 18:20
Time All Gates Returned to Normal:	2/3/2022 23:45
Gate Activation Trigger Depth:	1.28 (South Side) ft.
Return to Normal Depth:	1.15 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,924,884 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	3/14/2022
Event Start Date/Time:	2/2/2022 18:20
Event End Date/Time:	2/3/2022 23:45

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.8 in.
Storm Event Duration:	30 hr.
Storm Type:	< 1 yr.

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	3,924,884 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

## Recommended Operational Changes/Notes:





February 17, 2022

2

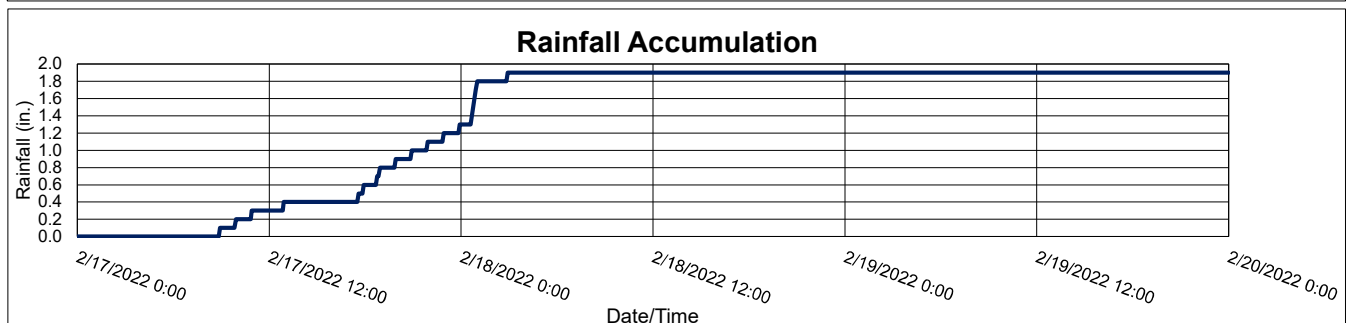
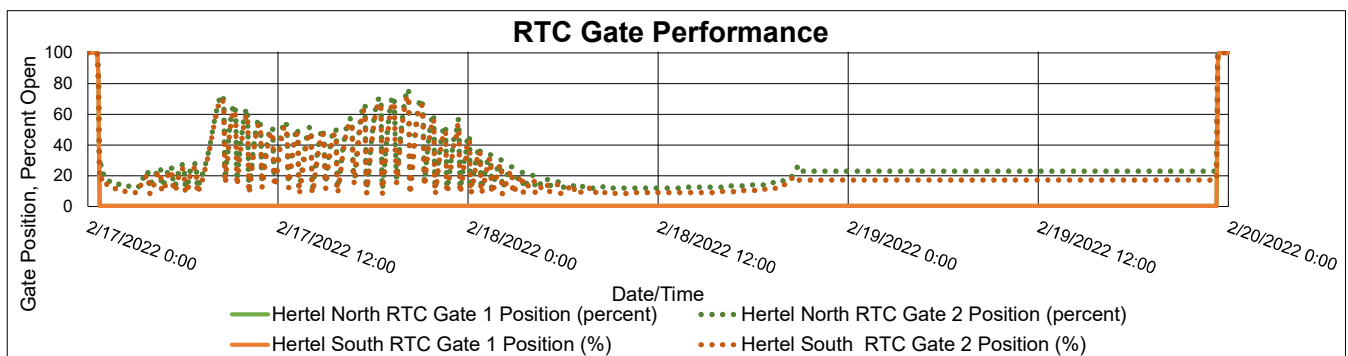
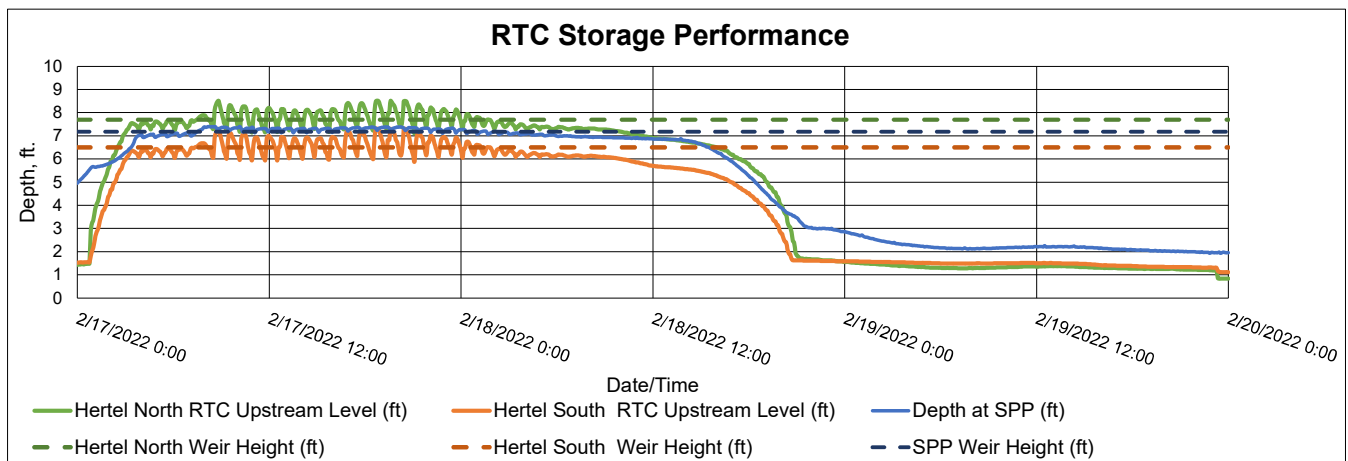
Site:	Hertel at Deer RTC
Time All Gates Active:	2/17/2022 0:35
Time All Gates Returned to Normal:	2/19/2022 23:25
Gate Activation Trigger Depth:	1.54 (South Side) ft.
Return to Normal Depth:	1.17 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,876,558 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	3/14/2022
Event Start Date/Time:	2/17/2022 0:35
Event End Date/Time:	2/19/2022 23:25

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.9 in.
Storm Event Duration:	72 hr.
Storm Type:	< 1 yr.

Percent Capture	15%
Overflow Volume:	22,220,149 Gal.
Overflow Volume Prevented:	3,876,558 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

#### Recommended Operational Changes/Notes:



February 22, 2022

3

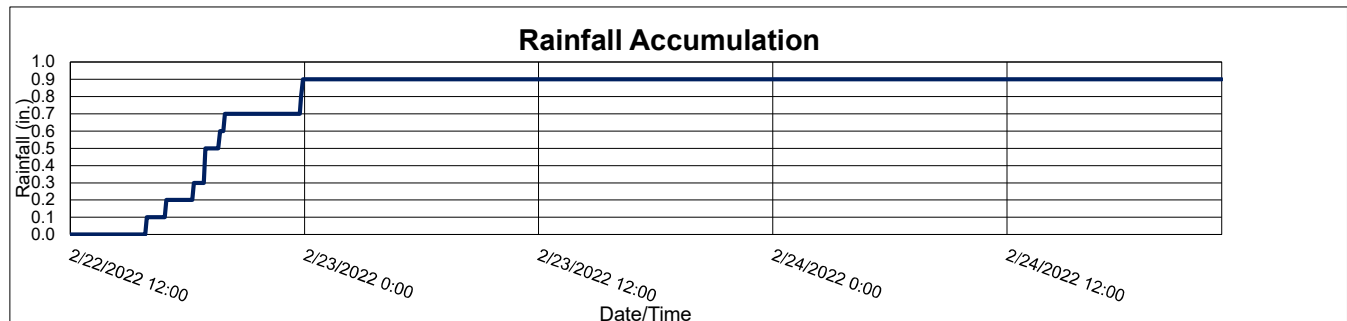
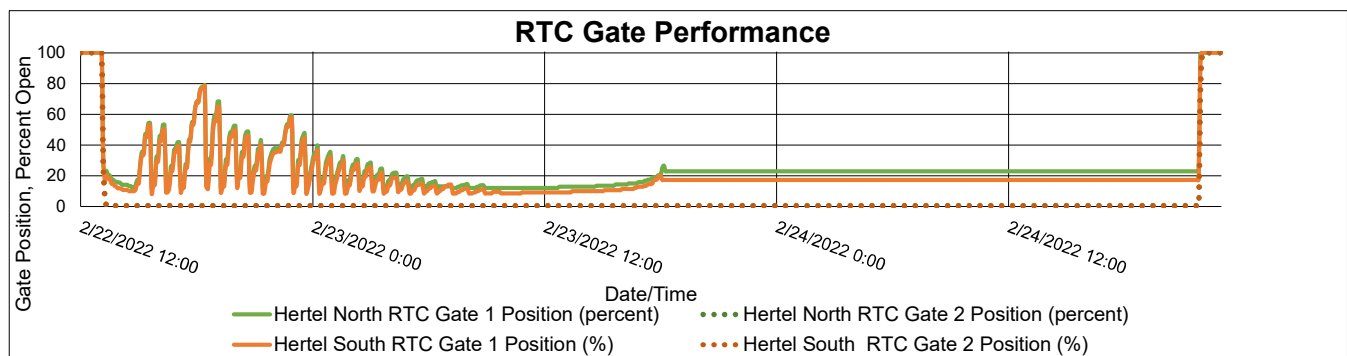
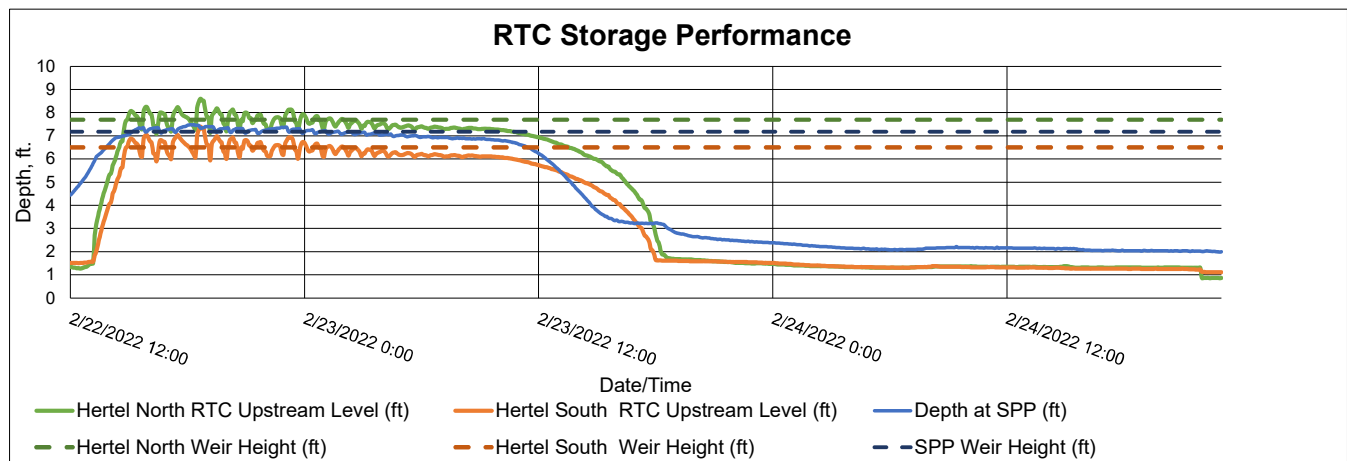
Site:	Hertel at Deer RTC
Time All Gates Active:	2/22/2022 13:05
Time All Gates Returned to Normal:	2/24/2022 22:00
Gate Activation Trigger Depth:	1.57 (South Side) ft.
Return to Normal Depth:	1.23 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,872,915 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	3/14/2022
Event Start Date/Time:	2/22/2022 13:05
Event End Date/Time:	2/24/2022 22:00

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.9 in.
Storm Event Duration:	59 hr.
Storm Type:	< 1 yr.

Percent Capture	25%
Overflow Volume:	11,897,714 Gal.
Overflow Volume Prevented:	3,872,915 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

#### Recommended Operational Changes/Notes:



# March 2022 Hertel at Deer RTC KPI Report

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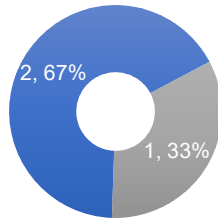
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# Hertel at Deer RTC Monthly Performance Report

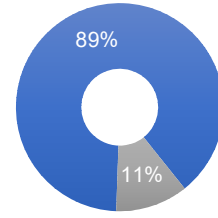
March 2022

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
2	1	11,543,115	1,471,156
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
3/7/2022	3,783,346	-	100%
3/19/2022	3,872,079	-	100%
3/23/2022	3,887,690	1,471,156	73%

# March 7, 2022

1

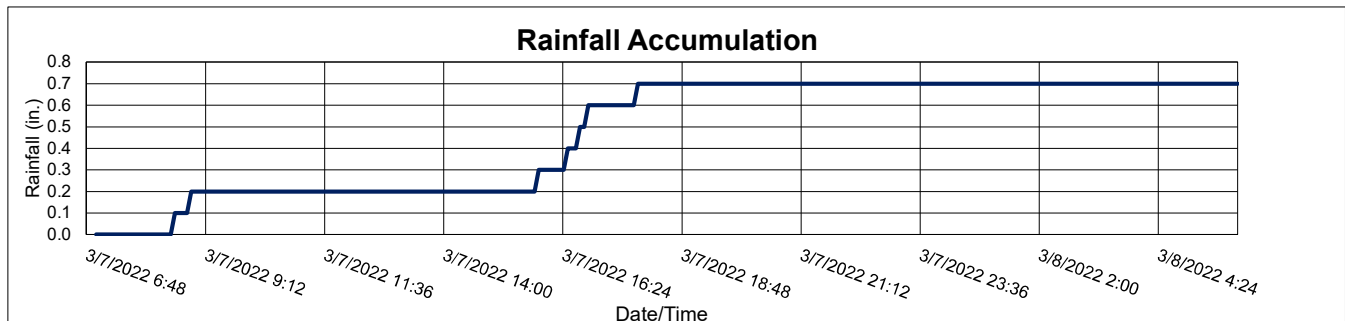
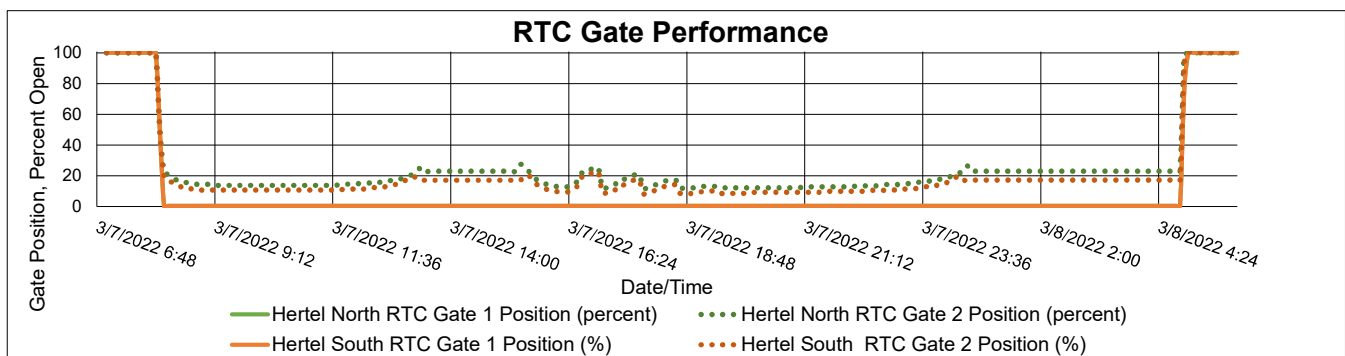
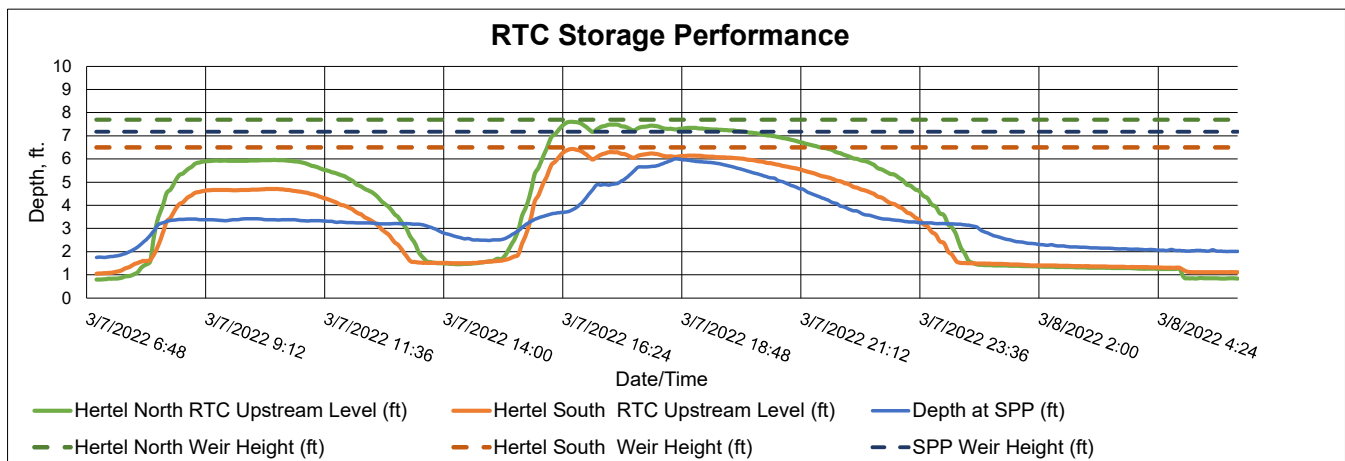
Site:	Hertel at Deer RTC
Time All Gates Active:	3/7/2022 8:00
Time All Gates Returned to Normal:	3/8/2022 5:00
Gate Activation Trigger Depth:	1.60 (South Side) ft.
Return to Normal Depth:	1.19 (South Side) ft.
Minimum Distance to Top of Weir:	0.06 ft.
Volume Stored:	3,783,346 Gal.
Unused Storage Volume:	89,919 Gal.

Analysis Date:	5/2/2022
Event Start Date/Time:	3/7/2022 8:00
Event End Date/Time:	3/8/2022 5:00

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.7 in.
Storm Event Duration:	23 hr.
Storm Type:	< 1 yr.

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	3,783,346 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

## Recommended Operational Changes/Notes:



March 19, 2022

2

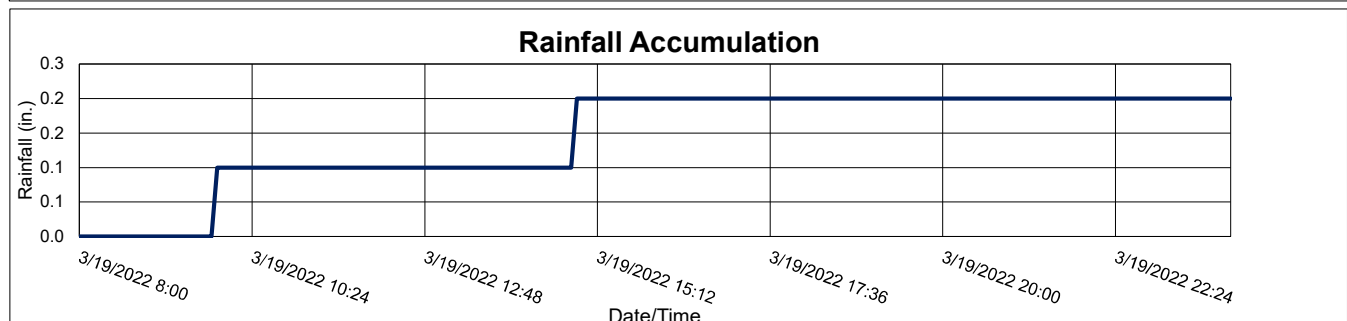
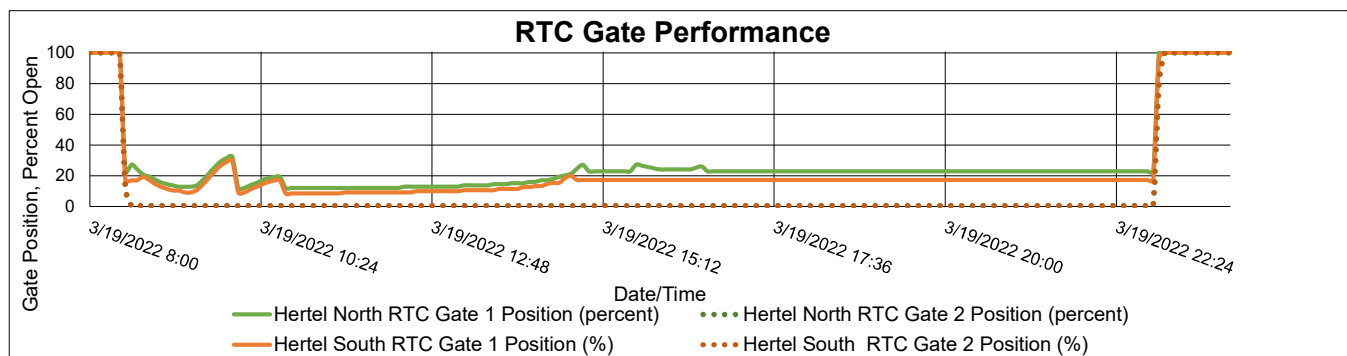
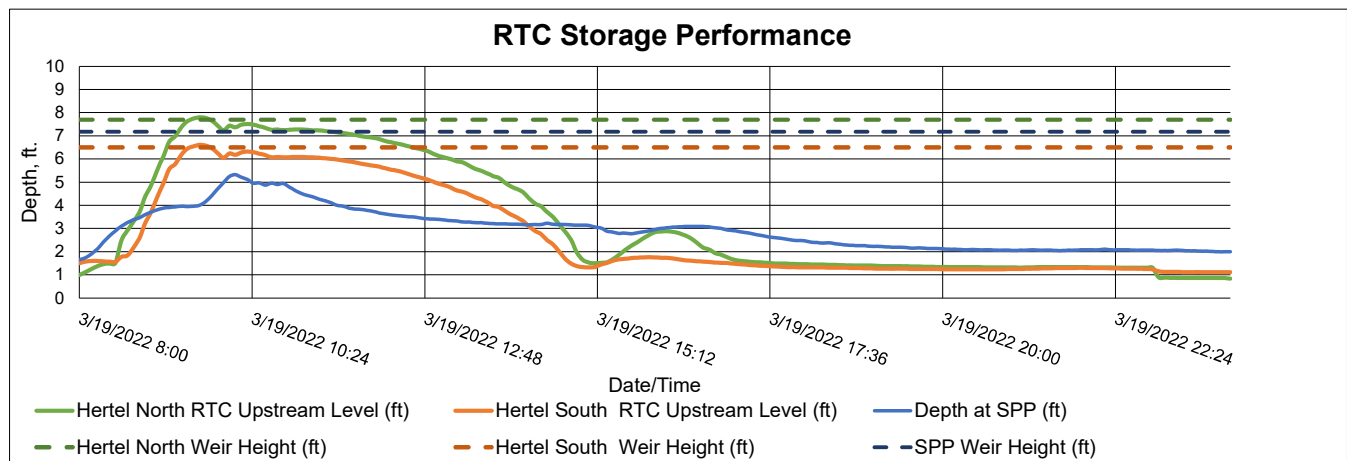
Site:	Hertel at Deer RTC
Time All Gates Active:	3/19/2022 8:25
Time All Gates Returned to Normal:	3/19/2022 23:05
Gate Activation Trigger Depth:	1.57 (South Side) ft.
Return to Normal Depth:	1.15 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,872,079 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	5/2/2022
Event Start Date/Time:	3/19/2022 8:25
Event End Date/Time:	3/19/2022 23:05

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.2 in.
Storm Event Duration:	16 hr.
Storm Type:	< 1 yr.

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	3,872,079 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

#### Recommended Operational Changes/Notes:



# March 23, 2022

# 3

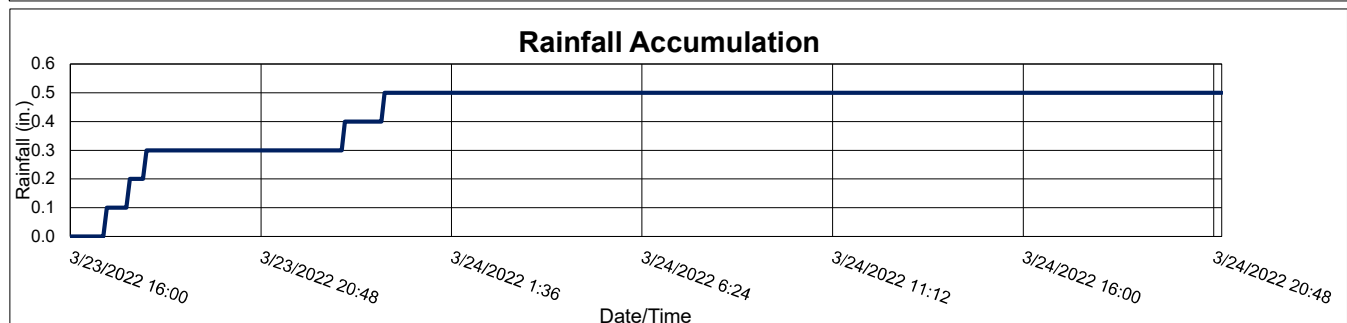
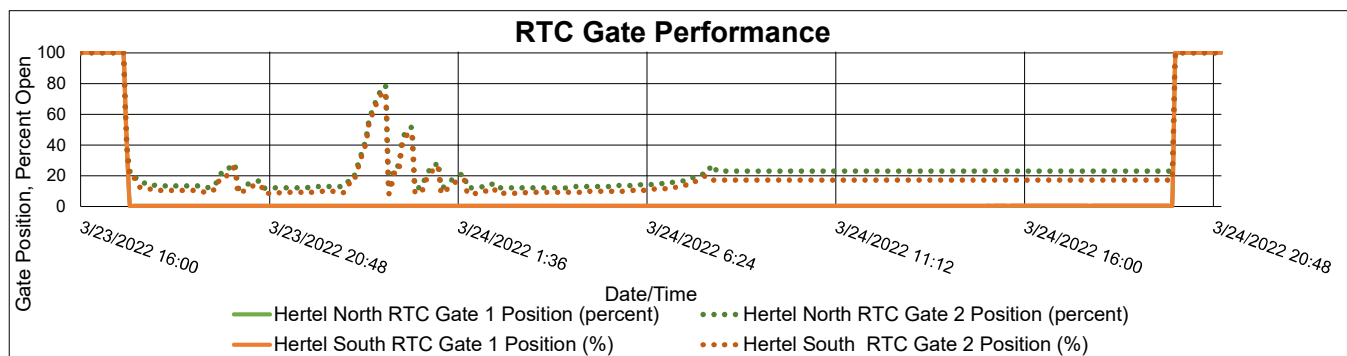
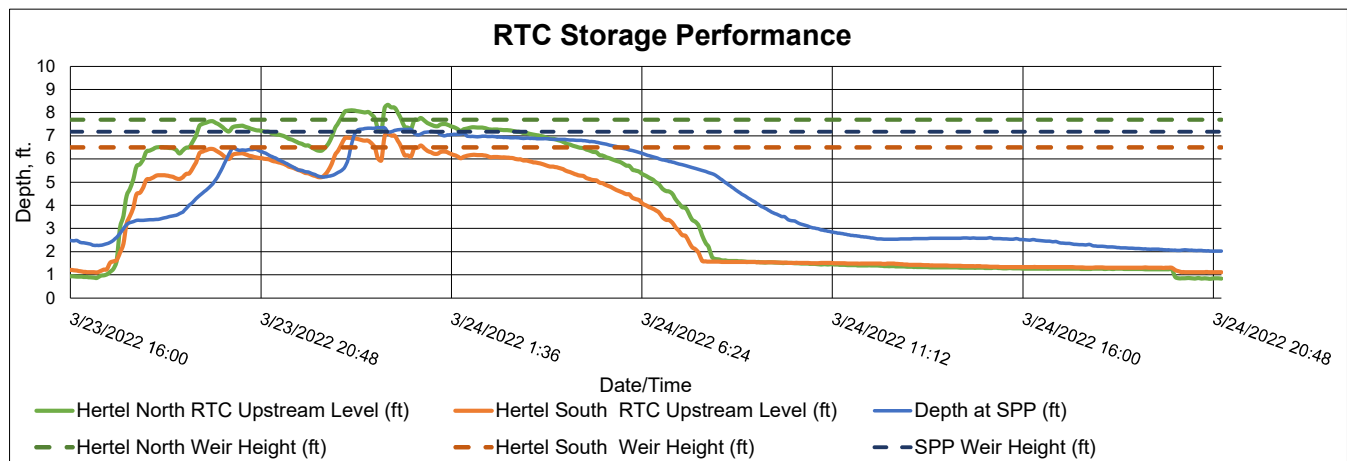
Site:	Hertel at Deer RTC
Time All Gates Active:	3/23/2022 17:05
Time All Gates Returned to Normal:	3/24/2022 19:50
Gate Activation Trigger Depth:	1.58 (South Side) ft.
Return to Normal Depth:	1.30 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,887,690 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	5/2/2022
Event Start Date/Time:	3/23/2022 17:05
Event End Date/Time:	3/24/2022 19:50

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.5 in.
Storm Event Duration:	29 hr.
Storm Type:	< 1 yr.

Percent Capture	73%
Overflow Volume:	1,471,156 Gal.
Overflow Volume Prevented:	3,887,690 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

## Recommended Operational Changes/Notes:



# April 2022 Hertel at Deer RTC KPI Report

(No data was reported during this month due to power failure at the RTC Cabinet.)

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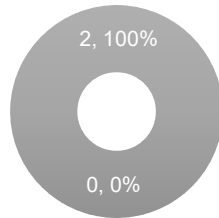
# May 2022 Hertel at Deer RTC KPI Report

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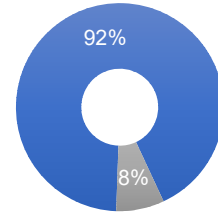


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**Prevented SPP Events**

■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

**Prevented SPP Volume**

■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
0	2	5,383,245	436,491
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
5/21/2022	3,897,737	428,407	90%
5/27/2022	1,485,508	8,084	99%

May 21, 2022

1

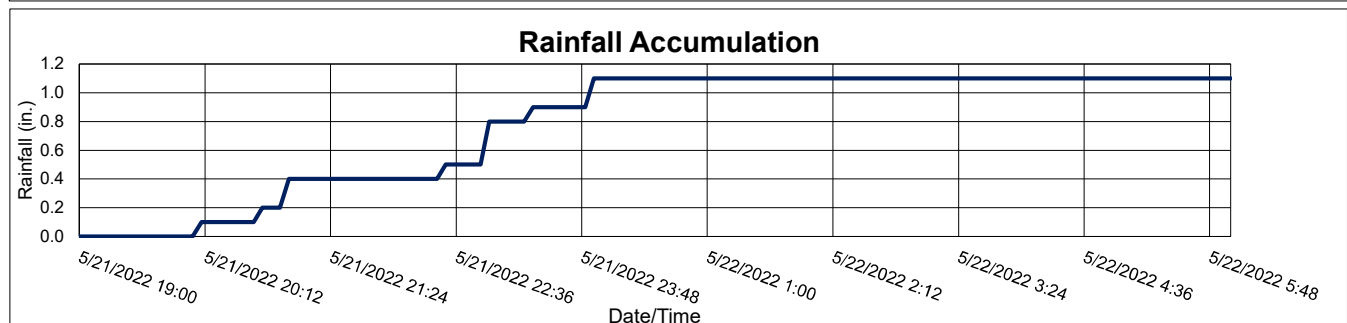
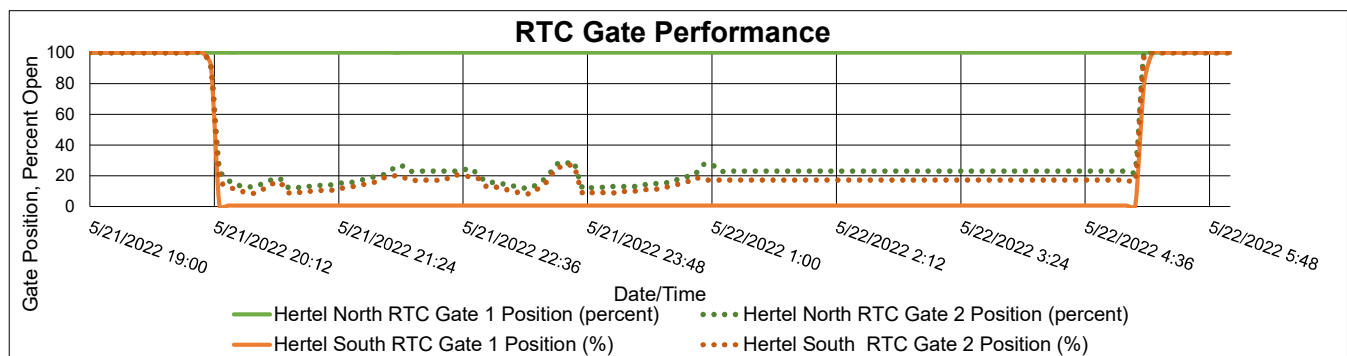
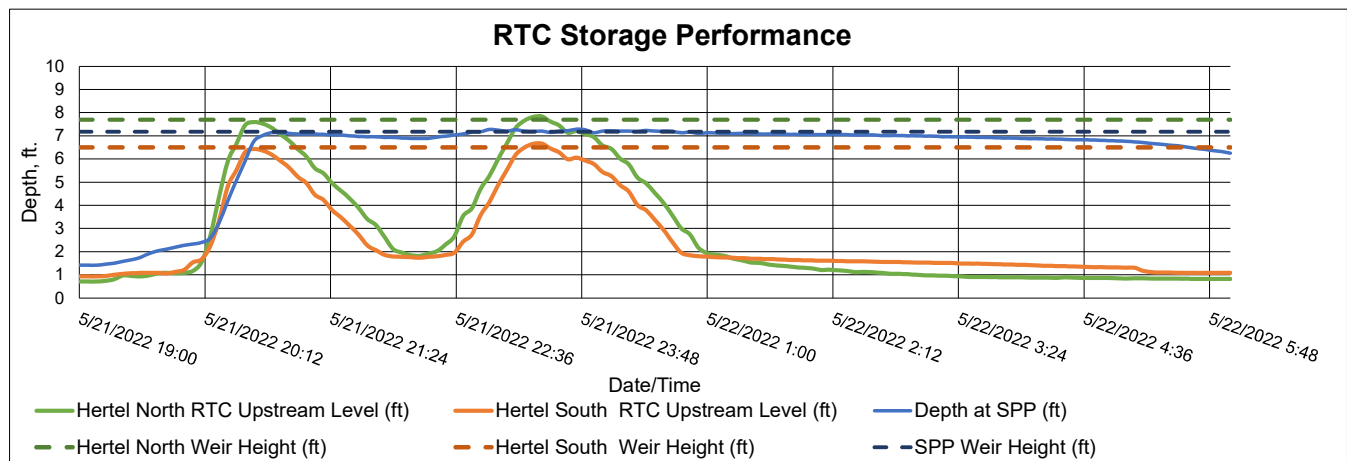
Site:	Hertel at Deer RTC
Time All Gates Active:	5/21/2022 20:05
Time All Gates Returned to Normal:	5/22/2022 5:15
Gate Activation Trigger Depth:	1.54 (South Side) ft.
Return to Normal Depth:	0.85 (North Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,897,737 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	6/13/2022
Event Start Date/Time:	5/21/2022 20:05
Event End Date/Time:	5/22/2022 5:15

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.1 in.
Storm Event Duration:	11 hr.
Storm Type:	< 1 yr.

Percent Capture	90%
Overflow Volume:	428,407 Gal.
Overflow Volume Prevented:	3,897,737 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

#### Recommended Operational Changes/Notes:



May 27, 2022

2

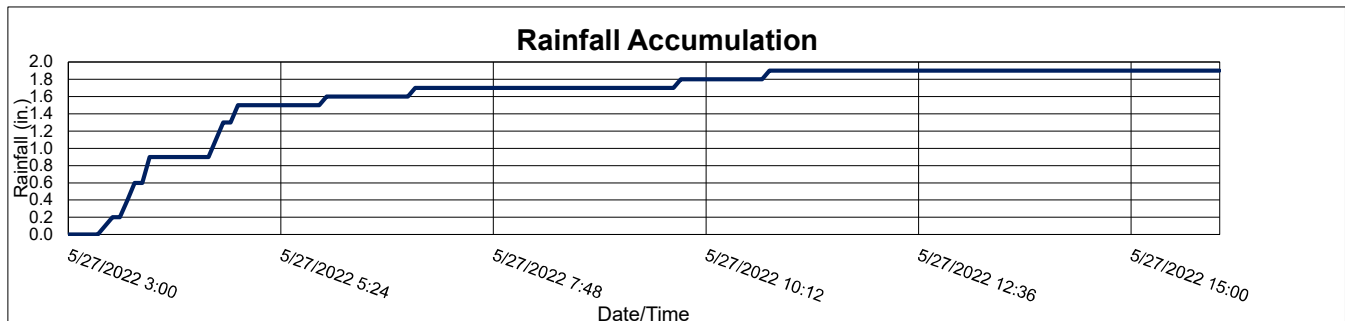
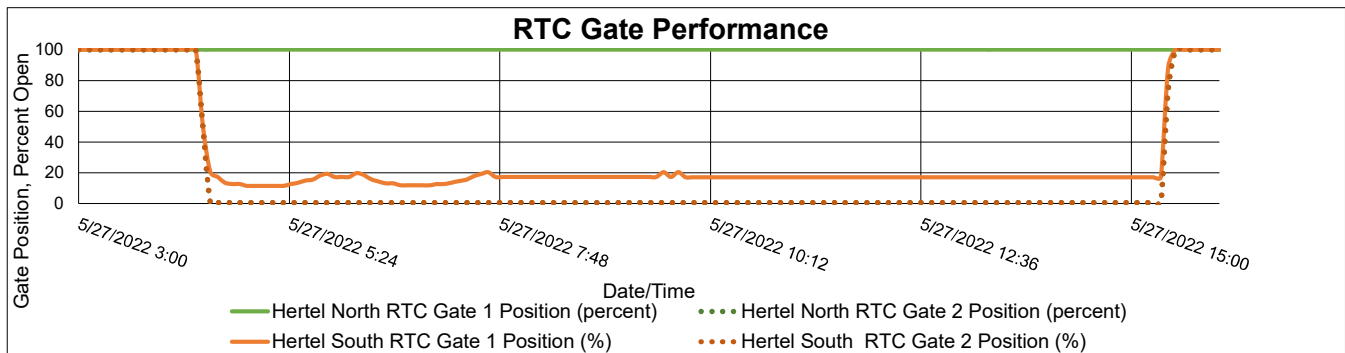
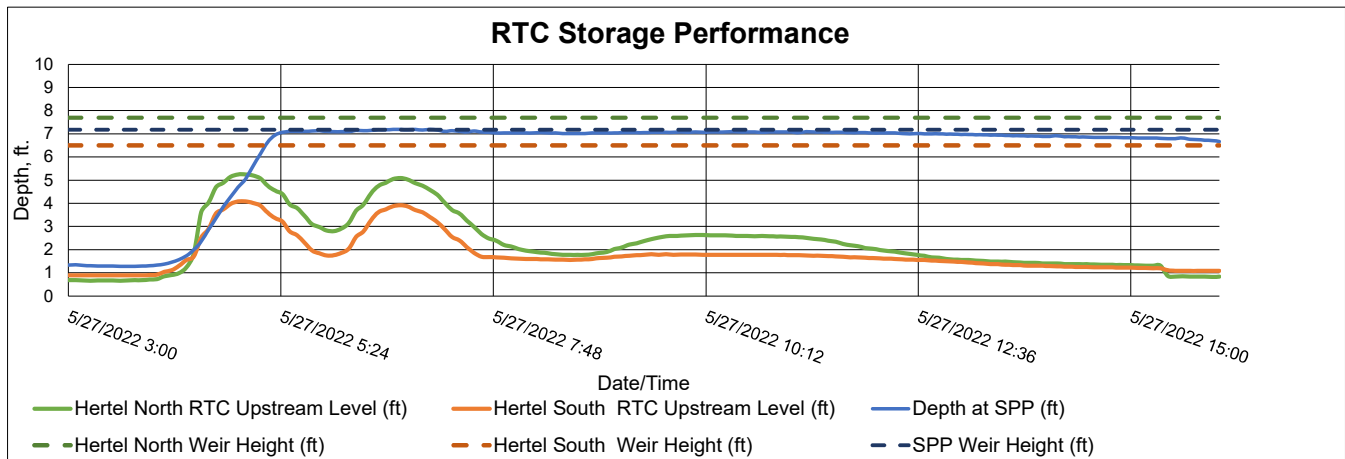
Site:	Hertel at Deer RTC
Time All Gates Active:	5/27/2022 4:20
Time All Gates Returned to Normal:	5/27/2022 15:30
Gate Activation Trigger Depth:	1.55 (South Side) ft.
Return to Normal Depth:	0.84 (North Side) ft.
Minimum Distance to Top of Weir:	2.42 ft.
Volume Stored:	1,485,508 Gal.
Unused Storage Volume:	2,406,994 Gal.

Analysis Date:	6/13/2022
Event Start Date/Time:	5/27/2022 4:20
Event End Date/Time:	5/27/2022 15:30

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.9 in.
Storm Event Duration:	13 hr.
Storm Type:	< 2 yrs.

Percent Capture	99%
Overflow Volume:	8,084 Gal.
Overflow Volume Prevented:	1,485,508 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	8,084 Gal.
If No, could SPP activation have been prevented?	Yes

#### Recommended Operational Changes/Notes:



# June 2022 Hertel at Deer RTC KPI Report

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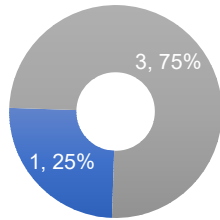
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# Hertel at Deer RTC Monthly Performance Report

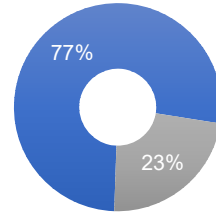
June 2022

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
1	3	14,128,409	4,229,701
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
6/1/2022	2,468,698	-	100%
6/6/2022	3,884,015	67,367	98%
6/9/2022	3,876,016	3,966,564	49%
6/22/2022	3,899,680	195,770	95%

# June 1, 2022

# 1

Site:	Hertel at Deer RTC
Time All Gates Active:	6/1/2022 15:05
Time All Gates Returned to Normal:	6/1/2022 22:55
Gate Activation Trigger Depth:	1.57 (South Side) ft.
Return to Normal Depth:	0.86 (North Side) ft.
Minimum Distance to Top of Weir:	1.27 ft.
Volume Stored:	2,468,698 Gal.
Unused Storage Volume:	1,410,621 Gal.

Analysis Date:	7/8/2022
Event Start Date/Time:	6/1/2022 15:05
Event End Date/Time:	6/1/2022 22:55

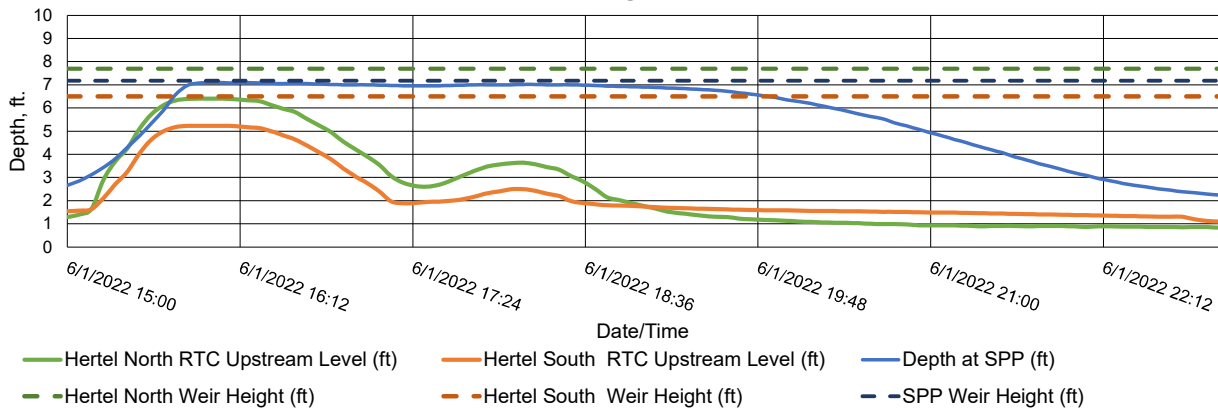
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.4 in.
Storm Event Duration:	8 hr.
Storm Type:	< 2 yr.

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	2,468,698 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

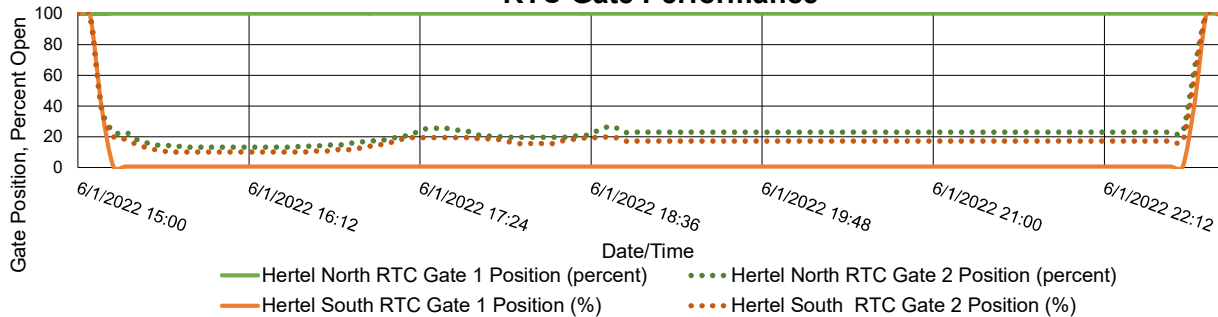
## Recommended Operational Changes/Notes:

Hertel North Gate 1 was stuck at 100% open during this event.

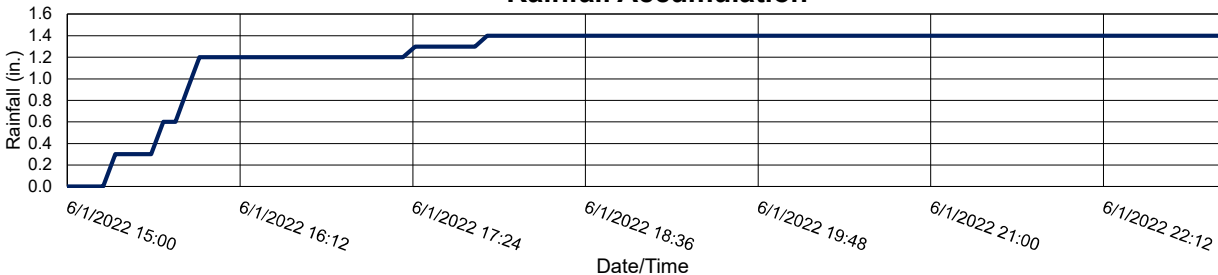
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



# June 6, 2022

# 2

Site:	Hertel at Deer RTC
Time All Gates Active:	6/6/2022 22:55
Time All Gates Returned to Normal:	6/7/2022 22:45
Gate Activation Trigger Depth:	1.56 (South Side) ft.
Return to Normal Depth:	0.85 (North Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,884,015 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	7/8/2022
Event Start Date/Time:	6/6/2022 22:55
Event End Date/Time:	6/7/2022 22:45

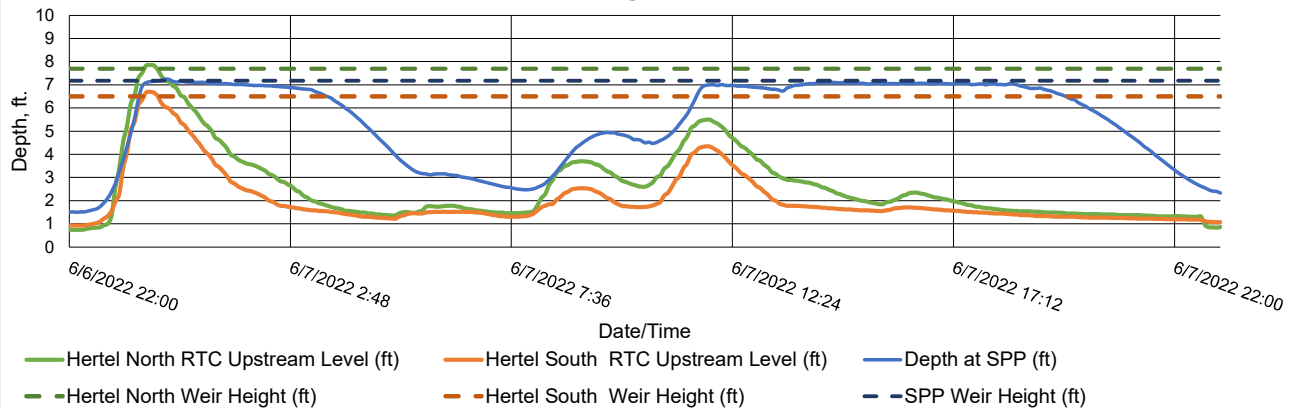
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.0 in.
Storm Event Duration:	24 hr.
Storm Type:	< 1 yr.

Percent Capture	98%
Overflow Volume:	67,367 Gal.
Overflow Volume Prevented:	3,884,015 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

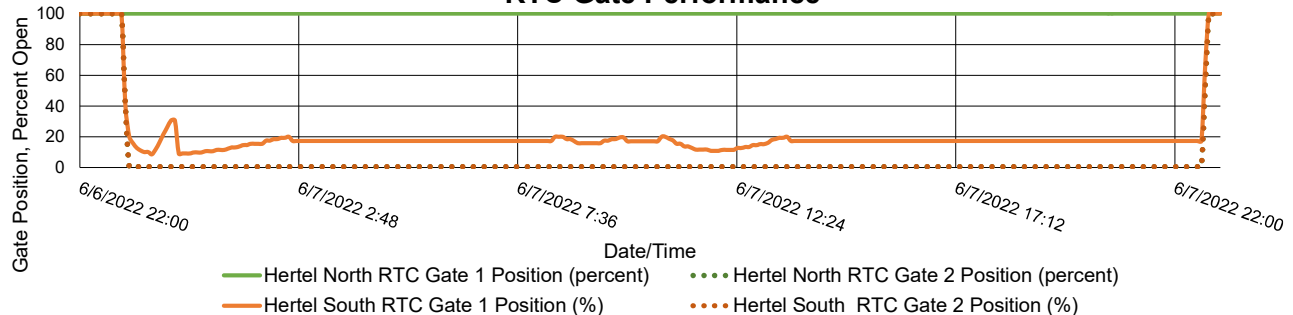
## Recommended Operational Changes/Notes:

Hertel North Gate 1 was stuck at 100% open during this event.

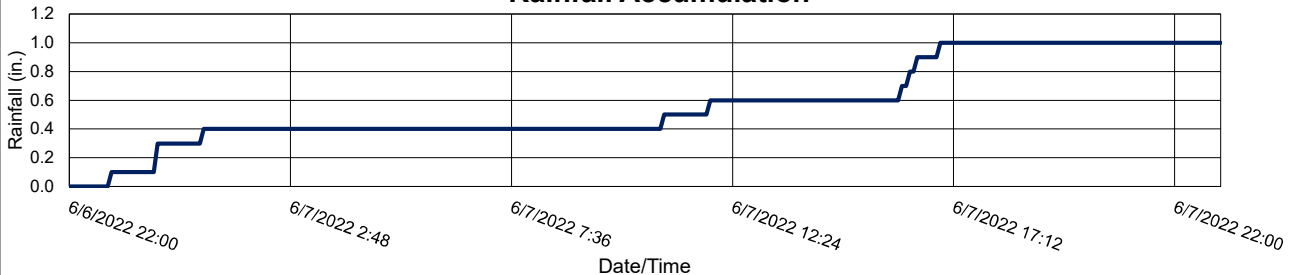
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation





# June 9, 2020

# 3

Site:	Hertel at Deer RTC
Time All Gates Active:	6/9/2022 0:20
Time All Gates Returned to Normal:	6/9/2022 20:40
Gate Activation Trigger Depth:	1.54 (South Side) ft.
Return to Normal Depth:	0.86 (North Side) ft.
Minimum Distance to Top of Weir:	4.33 ft.
Volume Stored:	3,876,016 Gal.
Unused Storage Volume:	3,522,556 Gal.

Analysis Date:	7/8/2022
Event Start Date/Time:	6/9/2022 0:20
Event End Date/Time:	6/9/2022 20:40

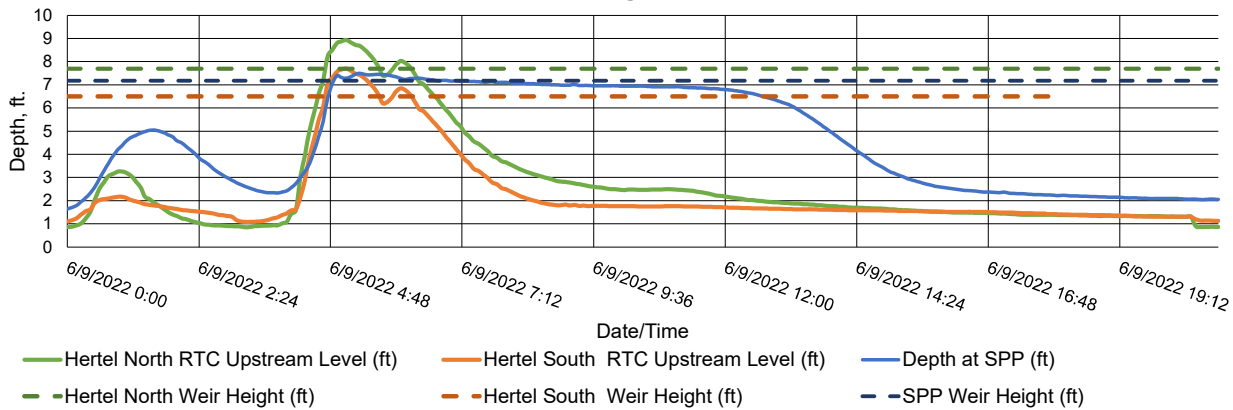
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	2.2 in.
Storm Event Duration:	21 hr.
Storm Type:	Less than 2 years

Percent Capture	49%
Overflow Volume:	3,966,564 Gal.
Overflow Volume Prevented:	3,876,016 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

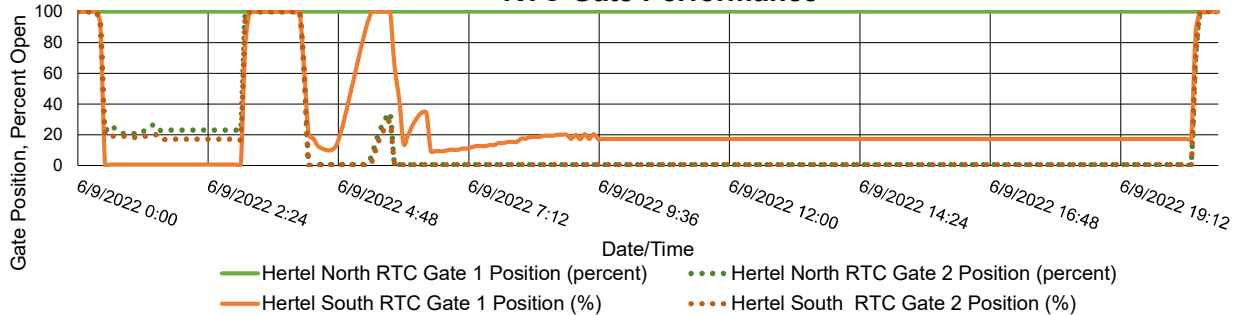
## Recommended Operational Changes/Notes:

Hertel North Gate 1 was stuck at 100% opening during this event.

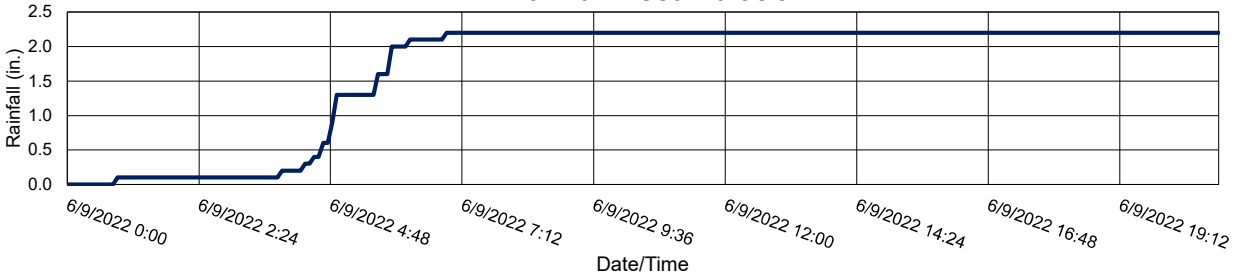
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



June 22, 2020

4

Site:	Hertel at Deer RTC
Time All Gates Active:	6/22/2022 15:00
Time All Gates Returned to Normal:	6/22/2022 22:20
Gate Activation Trigger Depth:	1.42 (South Side) ft.
Return to Normal Depth:	0.84 (North Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,899,680 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	7/8/2022
Event Start Date/Time:	6/22/2022 15:00
Event End Date/Time:	6/22/2022 22:15

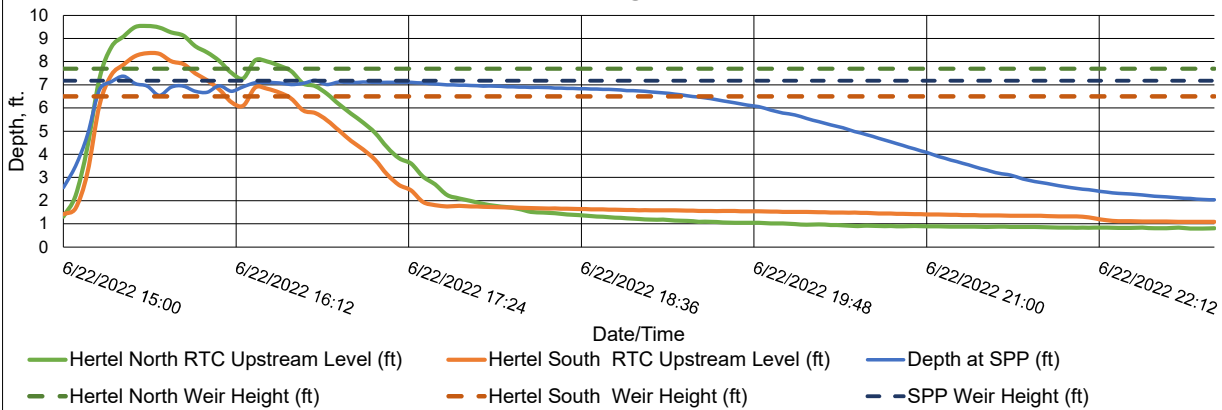
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.18 in.
Storm Event Duration:	8 hr.
Storm Type:	Less than 1 year

Percent Capture	95%
Overflow Volume:	195,770 Gal.
Overflow Volume Prevented:	3,899,680 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

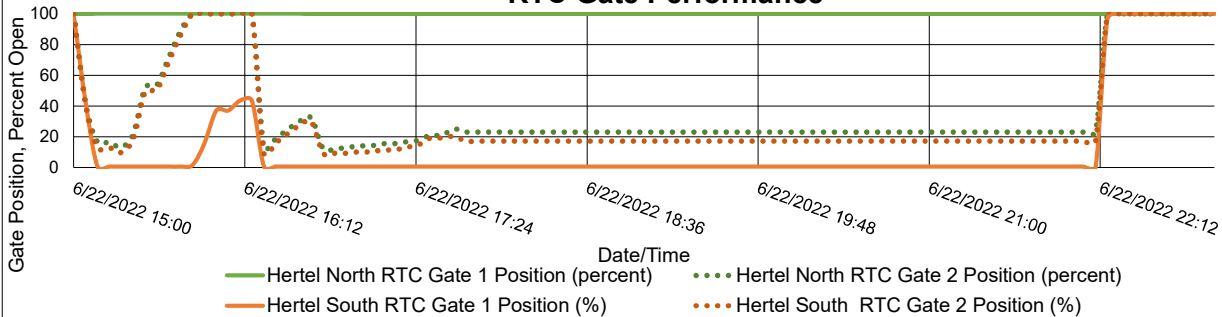
#### Recommended Operational Changes/Notes:

Hertel North Gate 1 was stuck at 100% opening during this event. Rainfall data was obtained from the 911 Tower Rain Gauge.

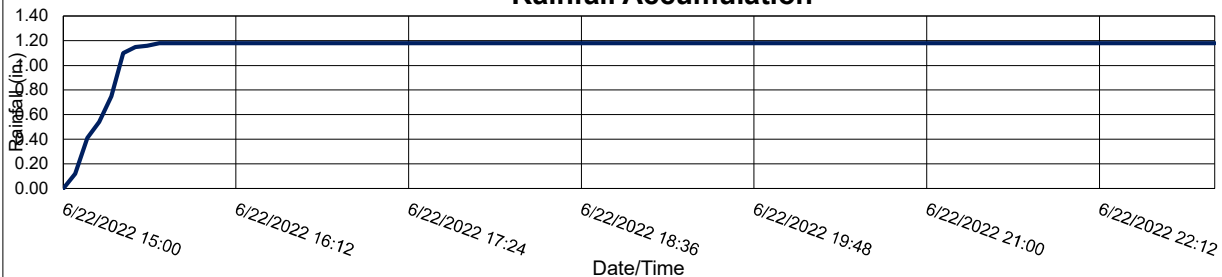
#### RTC Storage Performance



#### RTC Gate Performance



#### Rainfall Accumulation



# July 2021 Hertel at Deer RTC KPI Report

**BUFFALO**  
SEWER AUTHORITY



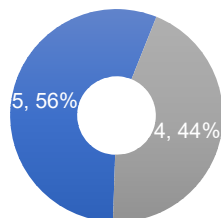
**ARCADIS**

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built assets

# Hertel at Deer RTC Monthly Performance Report

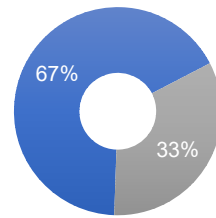
July 2021

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
5	4	31,703,169	15,772,227
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
7/2/2021	6,059,369	-	100%
7/6/2021	3,928,850	-	100%
7/8/2021	3,928,200	2,175,449	64%
7/11/2021	2,194,660	-	100%
7/13/2021	3,854,085	613,347	86%
7/17/2021	3,498,028	12,929,861	21%
7/25/2021	410,903	-	100%
7/27/2021	3,909,326	53,570	99%
7/29/2021	3,919,748	-	100%

# July 2, 2021

1

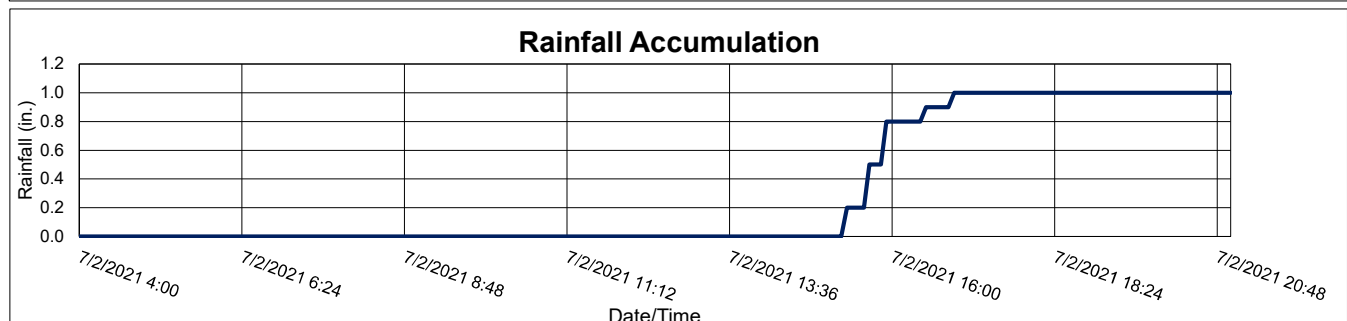
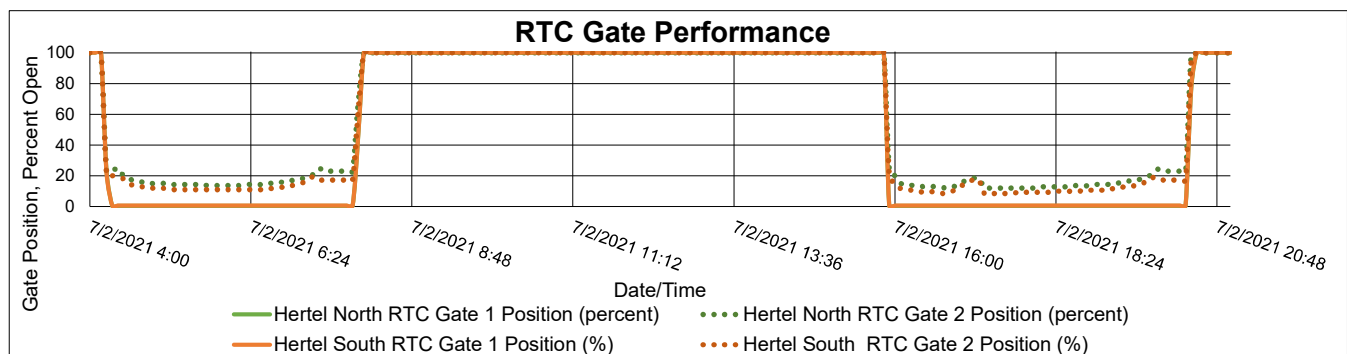
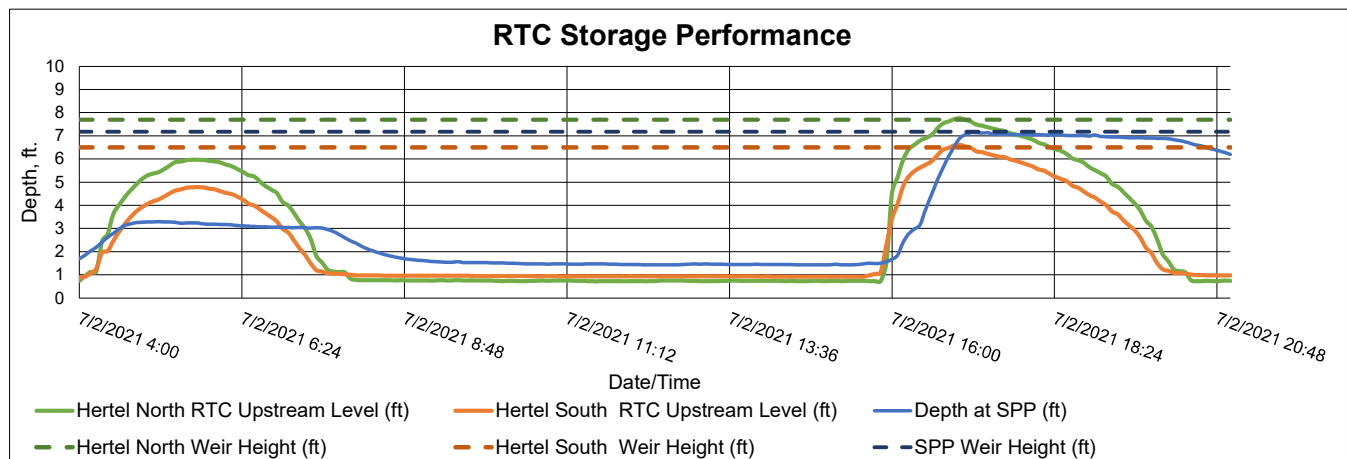
Site:	Hertel at Deer RTC
Time All Gates Active:	7/2/2021 4:10
Time All Gates Returned to Normal:	7/2/2021 20:30
Gate Activation Trigger Depth:	1.07 (South Side) ft.
Return to Normal Depth:	1.01 (South Side) ft.
Minimum Distance to Top of Weir:	1.71 ft.
Volume Stored:	6,059,369 Gal.
Unused Storage Volume:	1,817,271 Gal.

Analysis Date:	8/14/2021
Event Start Date/Time:	7/2/2021 4:10
Event End Date/Time:	7/2/2021 20:30

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.0 in.
Storm Event Duration:	17 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	6,059,369 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

## Recommended Operational Changes/Notes:



July 6, 2021

2

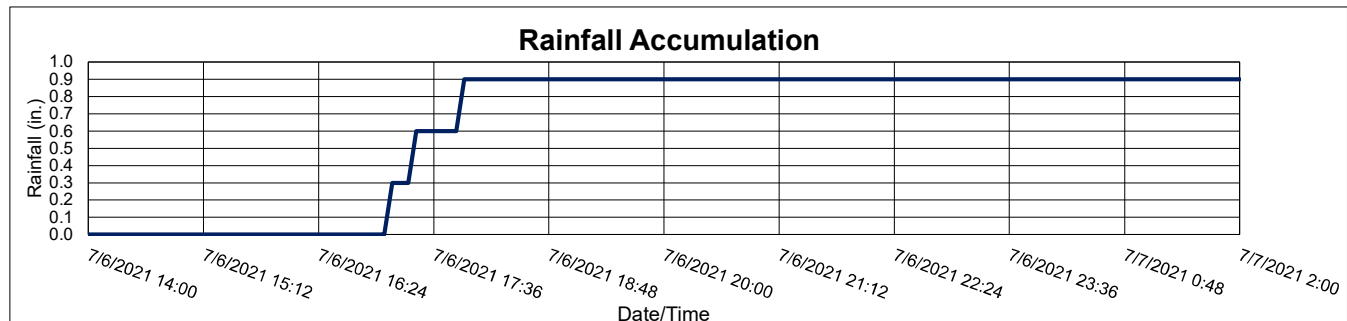
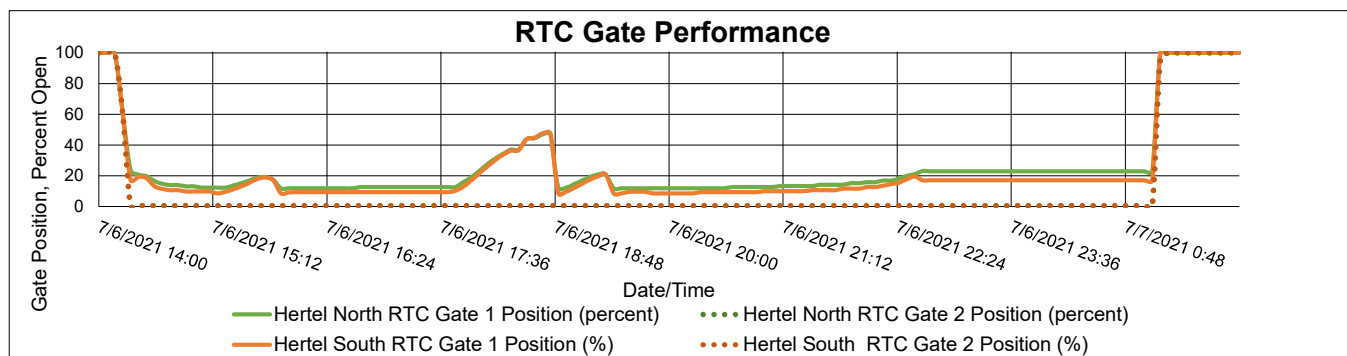
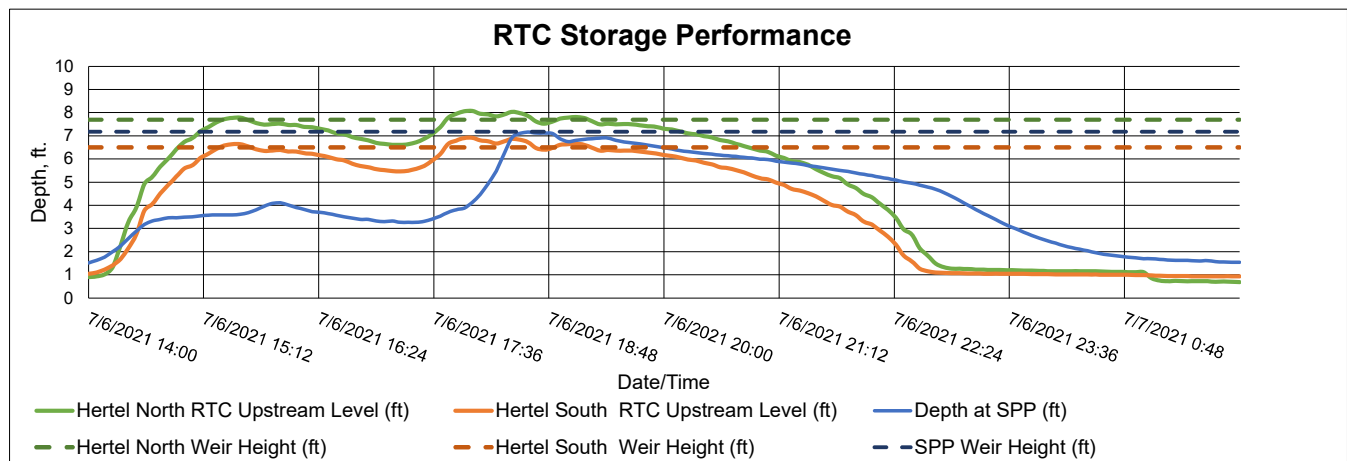
Site:	Hertel at Deer RTC
Time All Gates Active:	7/6/2021 14:10
Time All Gates Returned to Normal:	7/7/2021 1:15
Gate Activation Trigger Depth:	1.23 (South Side) ft.
Return to Normal Depth:	0.97 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,928,850 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	8/14/2021
Event Start Date/Time:	7/6/2021 14:10
Event End Date/Time:	7/7/2021 1:10

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.9 in.
Storm Event Duration:	12 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	3,928,850 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

#### Recommended Operational Changes/Notes:



# July 8, 2021

# 3

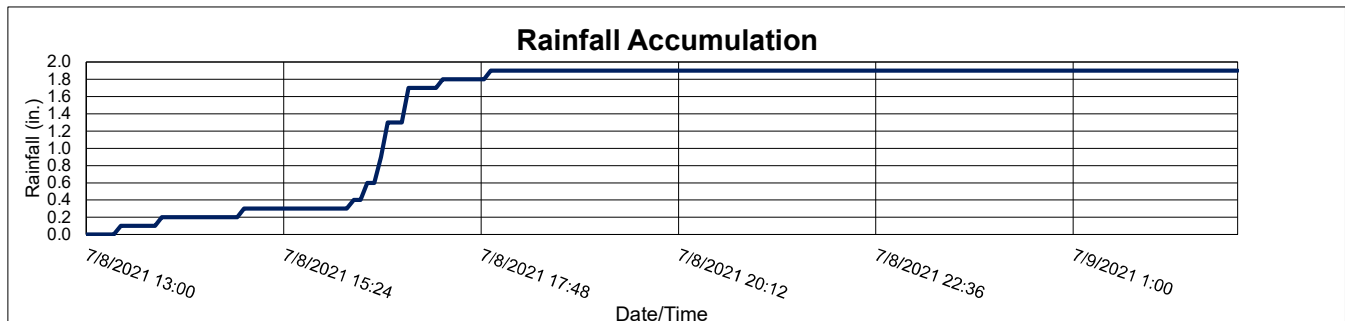
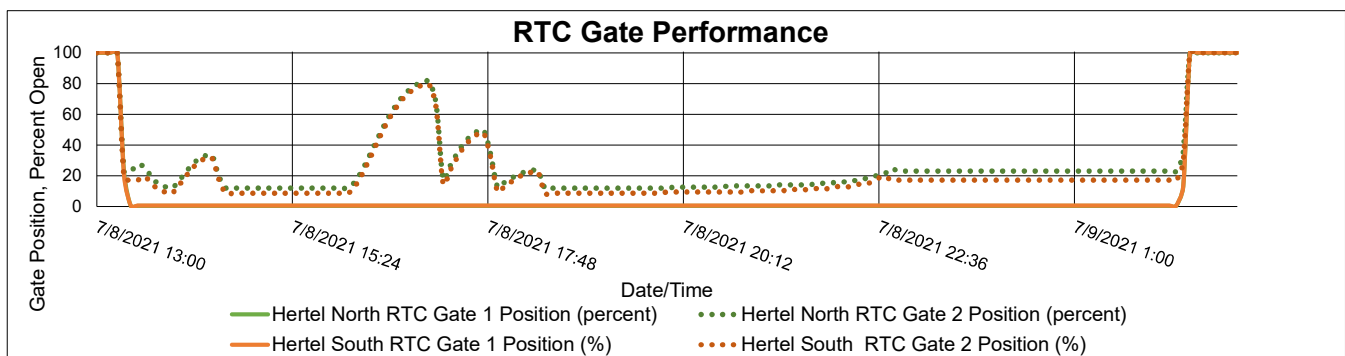
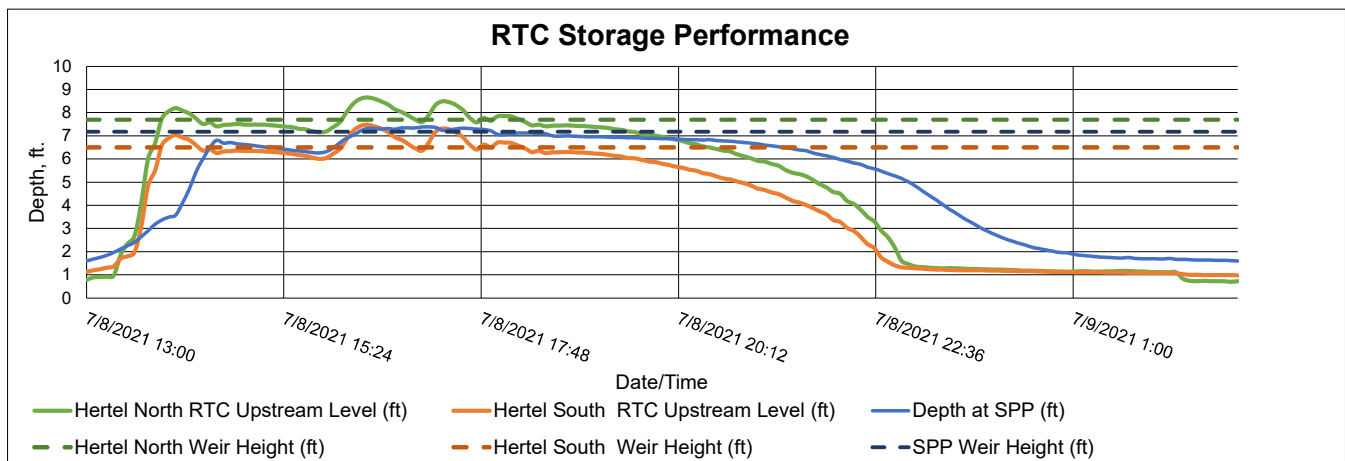
Site:	Hertel at Deer RTC
Time All Gates Active:	7/8/2021 13:15
Time All Gates Returned to Normal:	7/9/2021 2:25
Gate Activation Trigger Depth:	1.31 (South Side) ft.
Return to Normal Depth:	1.03 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,928,200 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	8/14/2021
Event Start Date/Time:	7/8/2021 13:15
Event End Date/Time:	7/9/2021 2:25

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.9 in.
Storm Event Duration:	14 hr.
Storm Type:	Less than two years

Percent Capture	64%
Overflow Volume:	2,175,449 Gal.
Overflow Volume Prevented:	3,928,200 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

## Recommended Operational Changes/Notes:



July 11, 2021

4

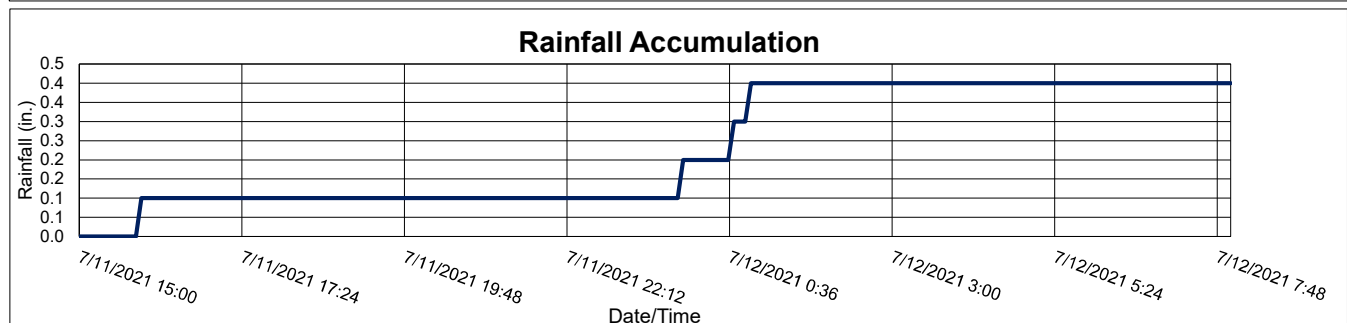
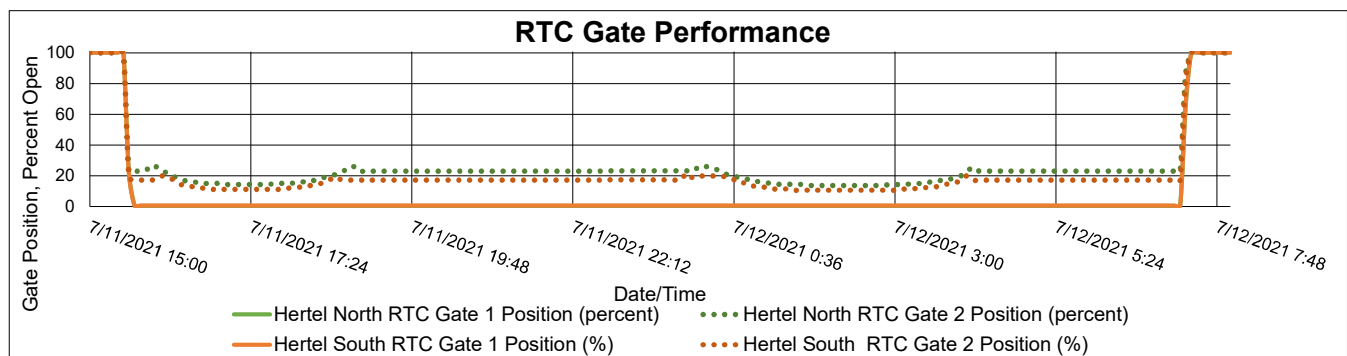
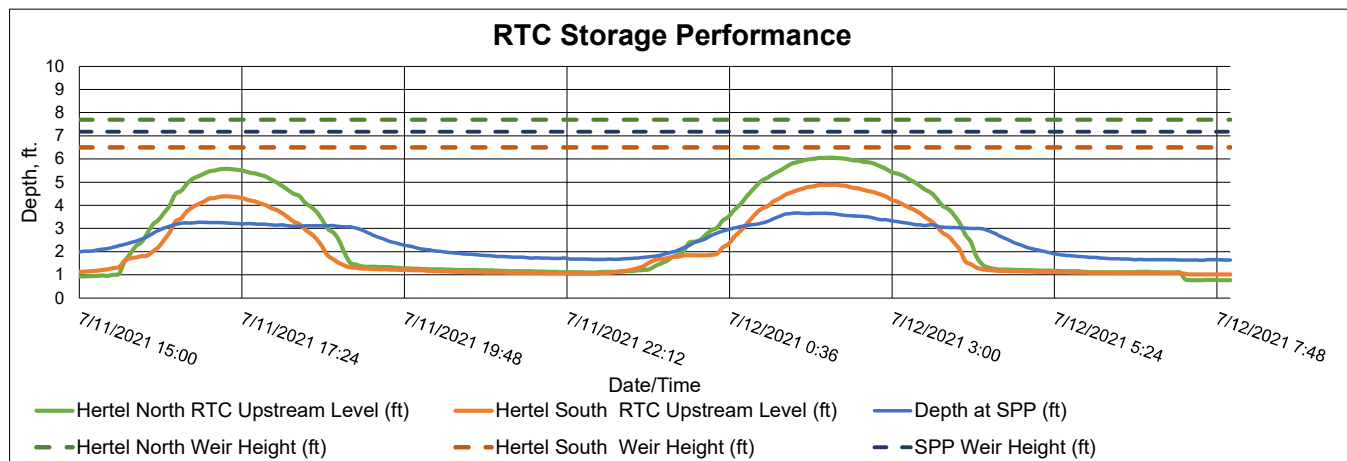
Site:	Hertel at Deer RTC
Time All Gates Active:	7/11/2021 15:30
Time All Gates Returned to Normal:	7/12/2021 7:25
Gate Activation Trigger Depth:	1.29 (South Side) ft.
Return to Normal Depth:	1.04 (South Side) ft.
Minimum Distance to Top of Weir:	1.61 ft.
Volume Stored:	2,194,660 Gal.
Unused Storage Volume:	1,731,466 Gal.

Analysis Date:	8/14/2021
Event Start Date/Time:	7/11/2021 15:30
Event End Date/Time:	7/12/2021 7:25

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.4 in.
Storm Event Duration:	17 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	2,194,660 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

#### Recommended Operational Changes/Notes:





# July 13, 2021

# 5

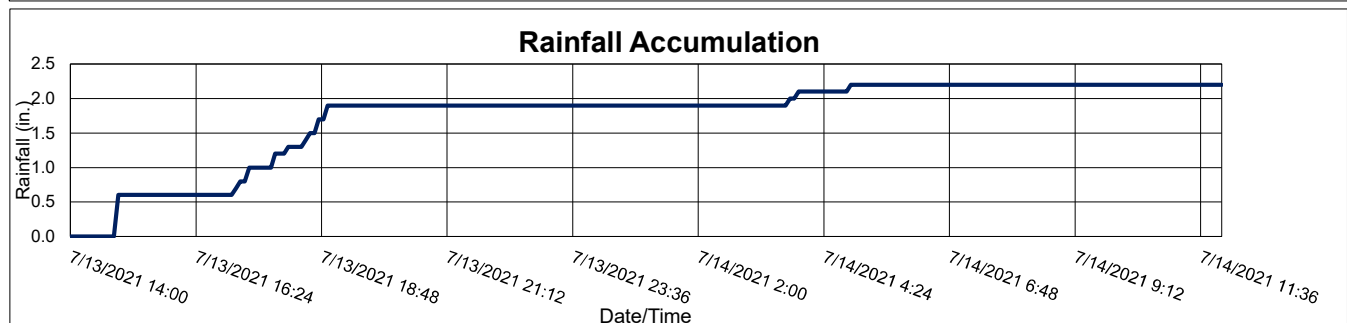
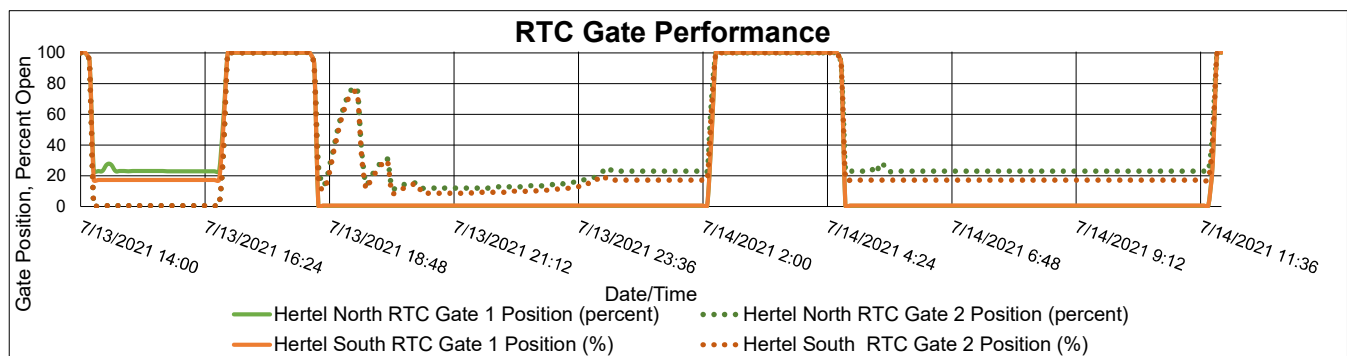
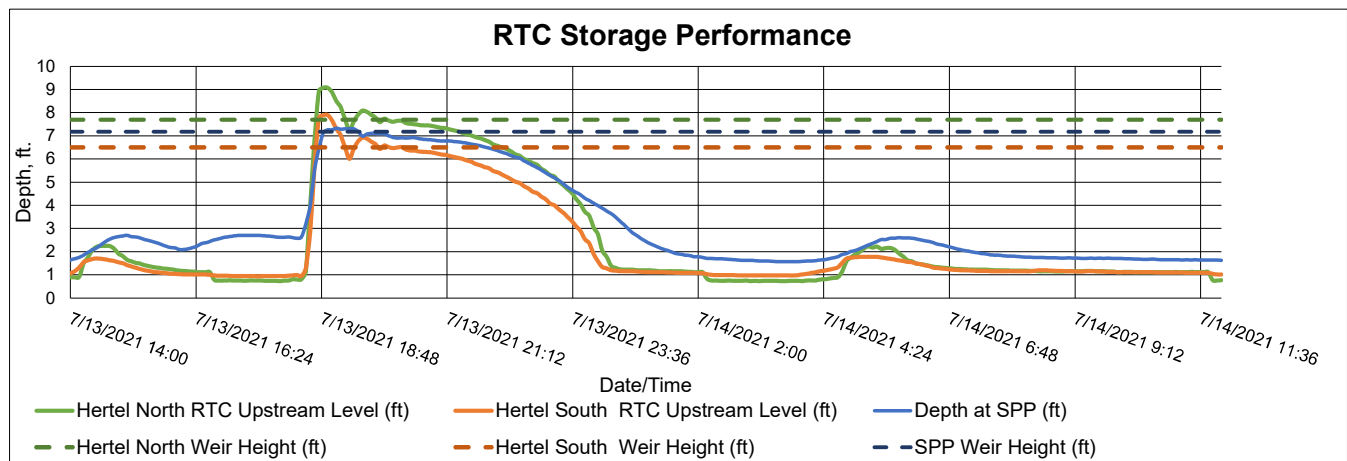
Site:	Hertel at Deer RTC
Time All Gates Active:	7/13/2021 14:05
Time All Gates Returned to Normal:	7/14/2021 11:55
Gate Activation Trigger Depth:	1.16 (South Side) ft.
Return to Normal Depth:	1.04 (South Side) ft.
Minimum Distance to Top of Weir:	4.79 ft.
Volume Stored:	3,854,085 Gal.
Unused Storage Volume:	3,343,250 Gal.

Analysis Date:	8/14/2021
Event Start Date/Time:	7/13/2021 14:05
Event End Date/Time:	7/14/2021 11:55

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	2.2 in.
Storm Event Duration:	22 hr.
Storm Type:	Less than two years

Percent Capture	86%
Overflow Volume:	613,347 Gal.
Overflow Volume Prevented:	3,854,085 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

## Recommended Operational Changes/Notes:



July 17, 2021

6

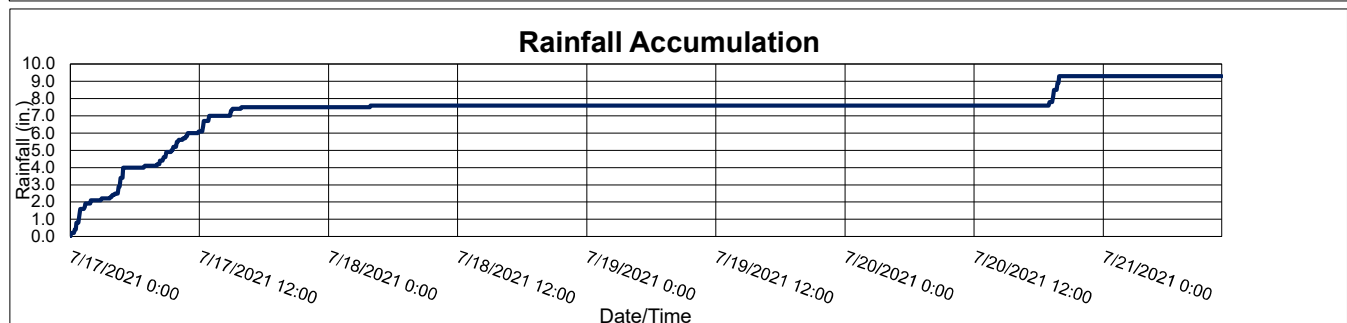
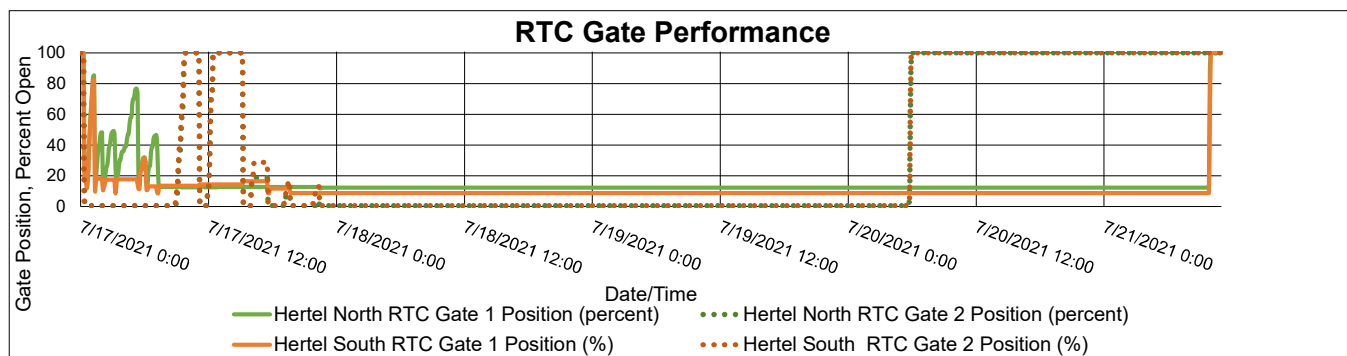
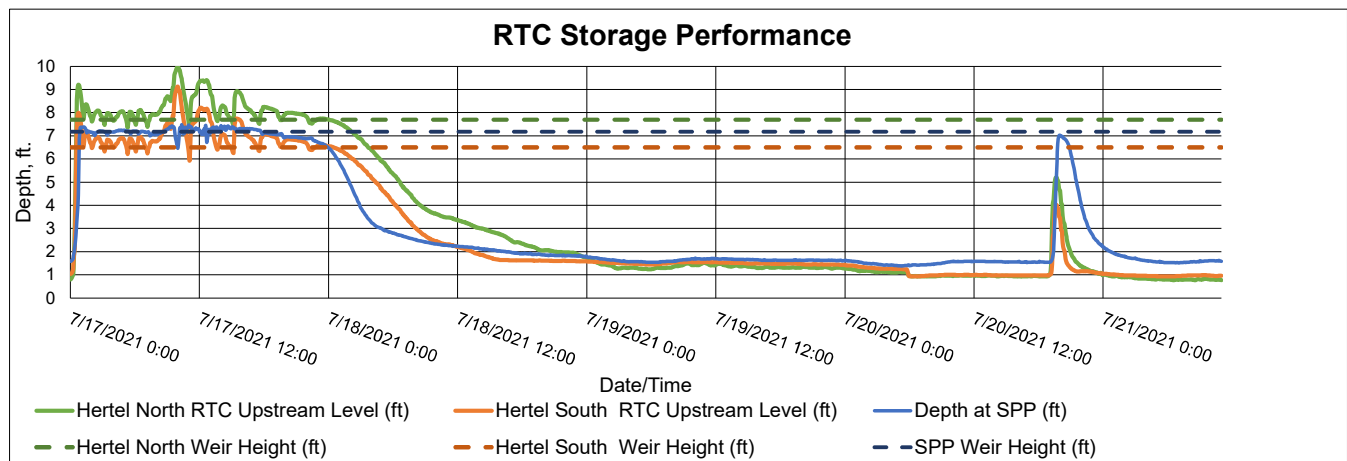
Site:	Hertel at Deer RTC
Time All Gates Active:	7/17/2021 0:15
Time All Gates Returned to Normal:	7/21/2021 10:00
Gate Activation Trigger Depth:	1.27 (South Side) ft.
Return to Normal Depth:	0.97 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,498,028 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	8/14/2021
Event Start Date/Time:	7/17/2021 0:15
Event End Date/Time:	7/21/2021 10:00

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	9.3 in.
Storm Event Duration:	107 hr.
Storm Type:	Less than 1000 years

Percent Capture	21%
Overflow Volume:	12,929,861 Gal.
Overflow Volume Prevented:	3,498,028 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

#### Recommended Operational Changes/Notes:



July 25, 2021

7

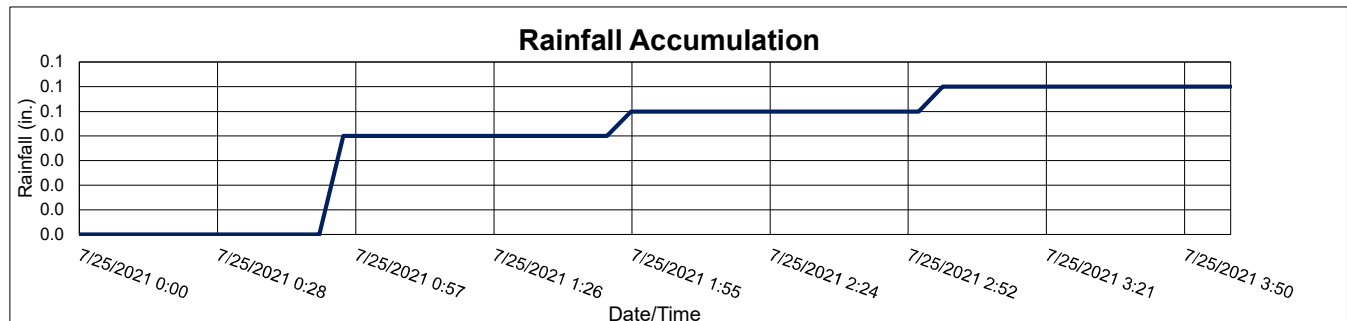
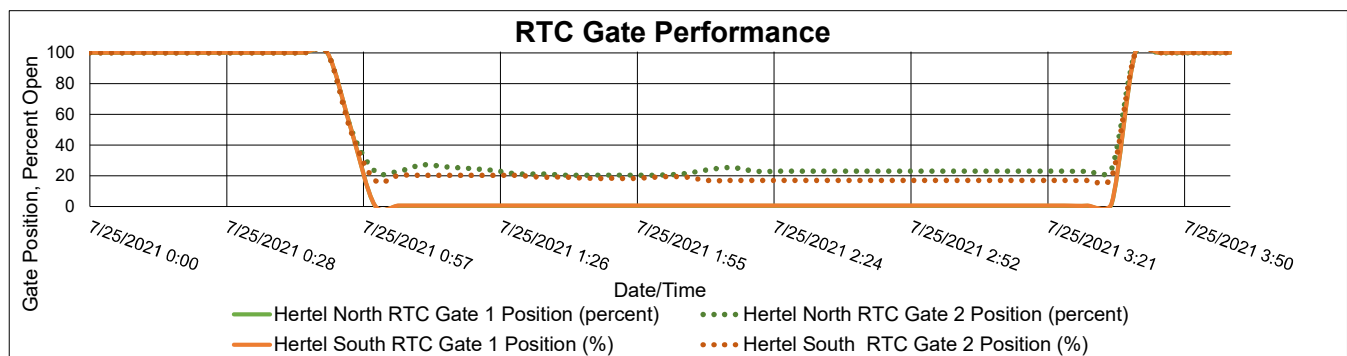
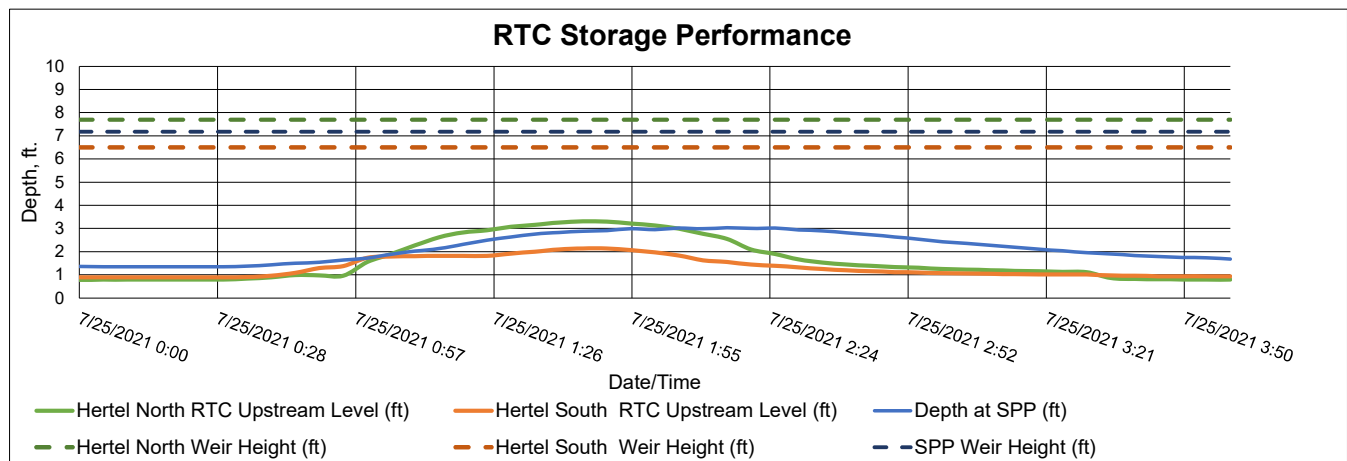
Site:	Hertel at Deer RTC
Time All Gates Active:	7/25/2021 0:50
Time All Gates Returned to Normal:	7/25/2021 3:40
Gate Activation Trigger Depth:	1.29 (South Side) ft.
Return to Normal Depth:	0.97 (South Side) ft.
Minimum Distance to Top of Weir:	4.36 ft.
Volume Stored:	410,903 Gal.
Unused Storage Volume:	3,516,116 Gal.

Analysis Date:	8/14/2021
Event Start Date/Time:	7/25/2021 0:50
Event End Date/Time:	7/25/2021 3:40

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.06 in.
Storm Event Duration:	4 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	410,903 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

#### Recommended Operational Changes/Notes:



July 27, 2021

8

Site:	Hertel at Deer RTC
Time All Gates Active:	7/27/2021 20:15
Time All Gates Returned to Normal:	7/28/2021 2:15
Gate Activation Trigger Depth:	1.17 (South Side) ft.
Return to Normal Depth:	1.04 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,909,326 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	8/14/2021
Event Start Date/Time:	7/27/2021 20:15
Event End Date/Time:	7/28/2021 2:15

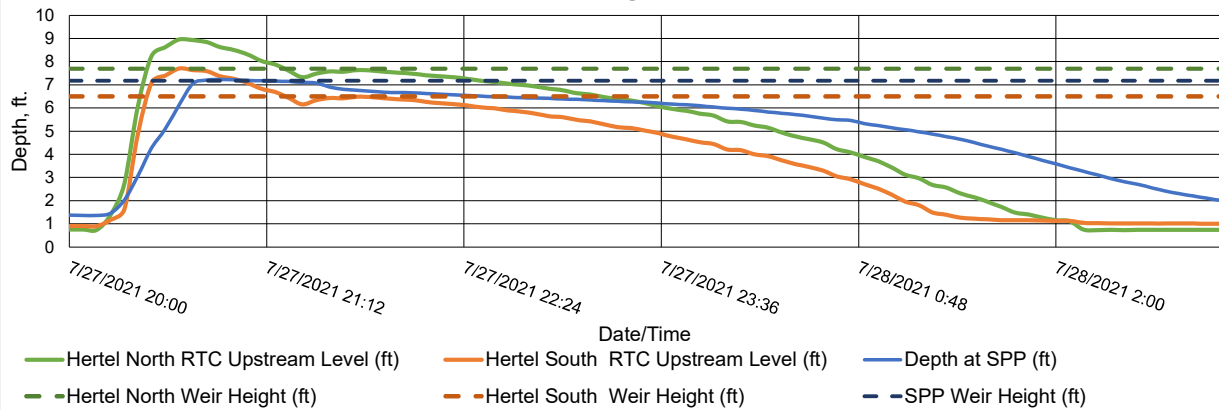
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	7 hr.
Storm Type:	NA

Percent Capture	99%
Overflow Volume:	53,570 Gal.
Overflow Volume Prevented:	3,909,326 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

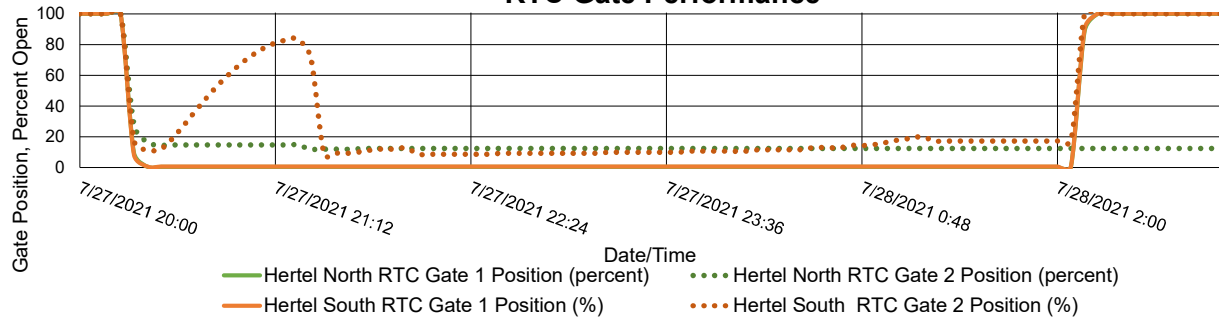
#### Recommended Operational Changes/Notes:

No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm. North Gate 2 was stuck at 12% open towards the end of this event.

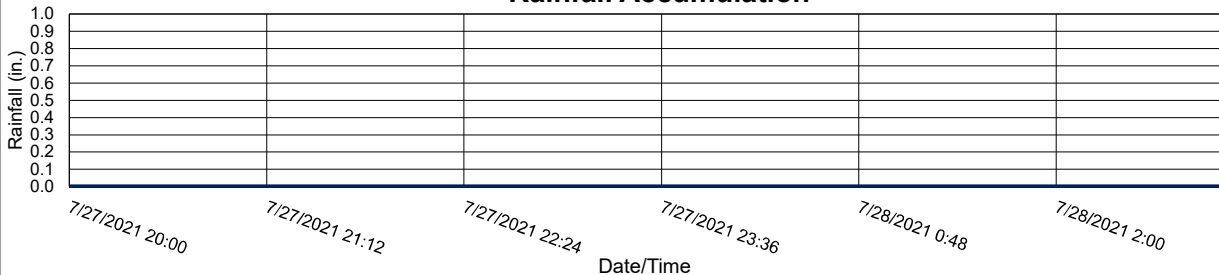
#### RTC Storage Performance



#### RTC Gate Performance



#### Rainfall Accumulation



July 29, 2021

9

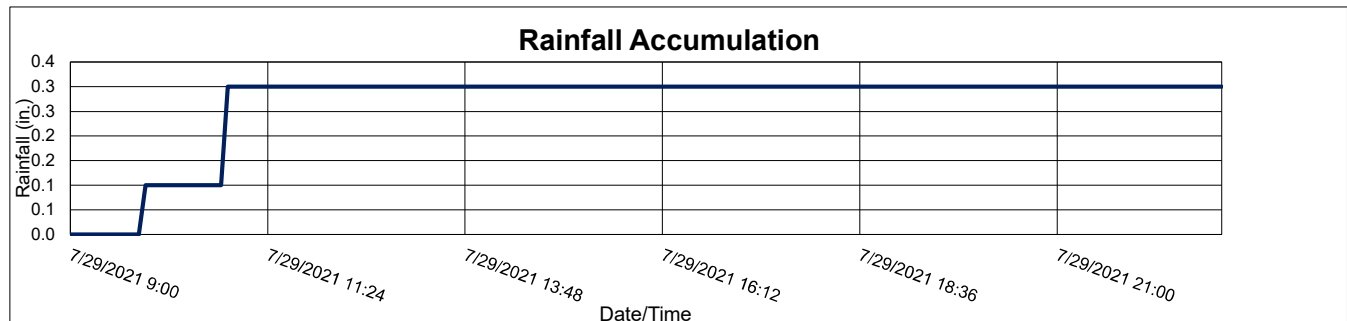
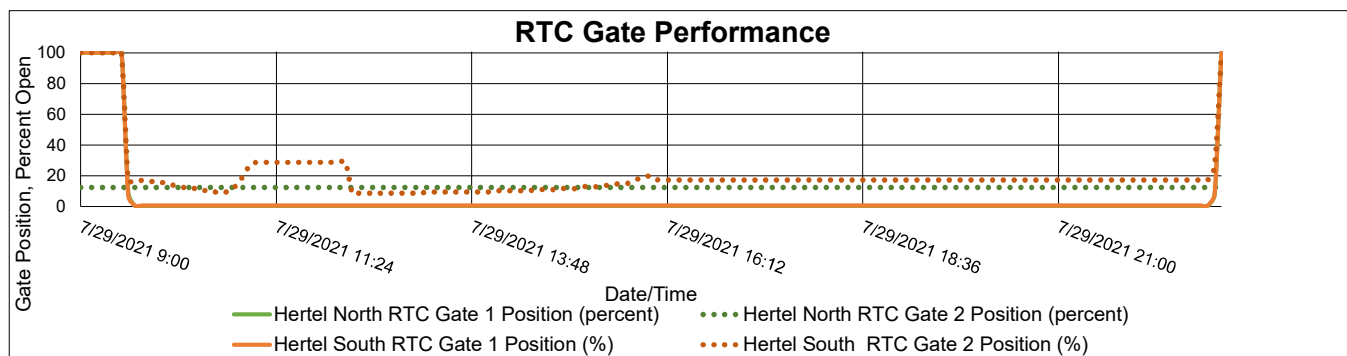
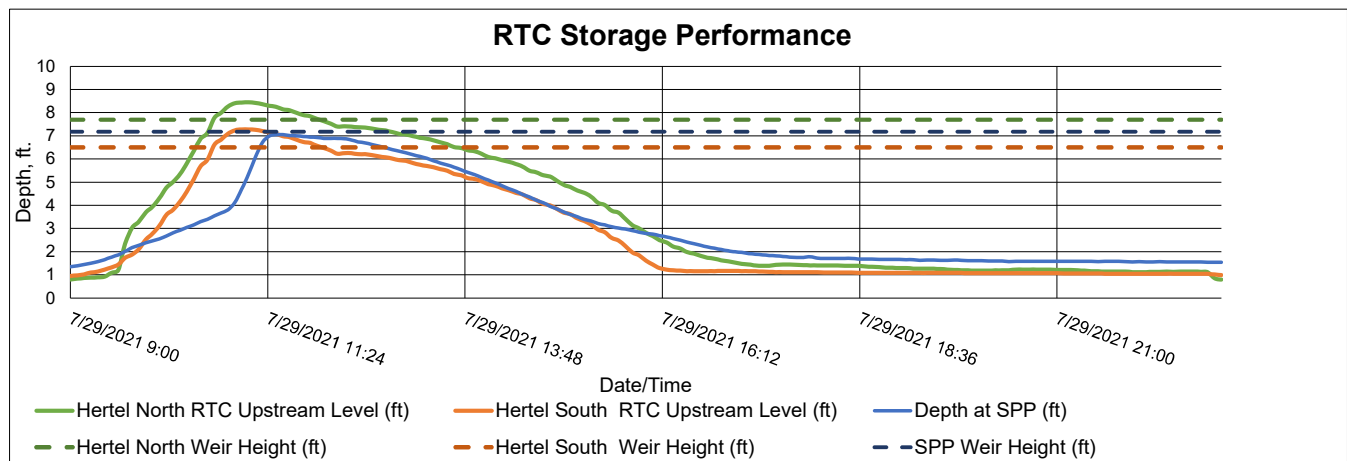
Site:	Hertel at Deer RTC
Time All Gates Active:	7/29/2021 9:30
Time All Gates Returned to Normal:	7/29/2021 23:00
Gate Activation Trigger Depth:	1.32 (South Side) ft.
Return to Normal Depth:	1.01 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,919,748 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	8/14/2021
Event Start Date/Time:	7/29/2021 9:30
Event End Date/Time:	7/29/2021 23:00

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.3 in.
Storm Event Duration:	14 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	3,919,748 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

Recommended Operational Changes/Notes:	
North Gate 2 was stuck at 13% open during this event.	



# August 2021 Hertel at Deer RTC KPI Report

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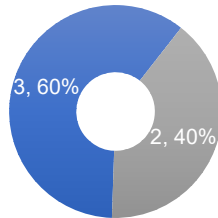
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# Hertel at Deer RTC Monthly Performance Report

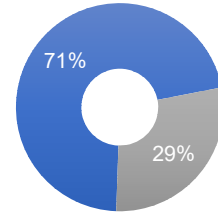
August 2021

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
3	2	13,159,659	5,275,332
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
8/1/2021	3,471,712	-	100%
8/11/2021	1,951,761	-	100%
8/13/2021	3,574,576	5,259,023	40%
8/18/2021	230,495	-	100%
8/29/2021	3,931,115	16,309	100%

# August 1, 2021

# 1

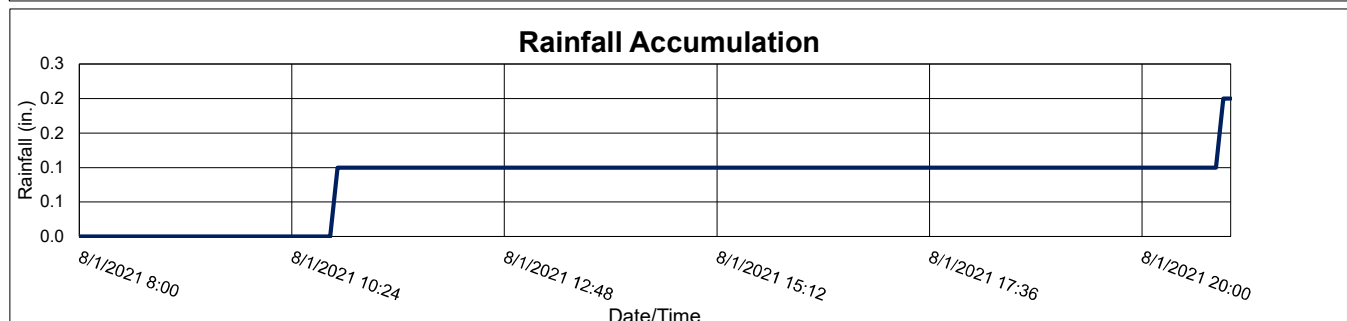
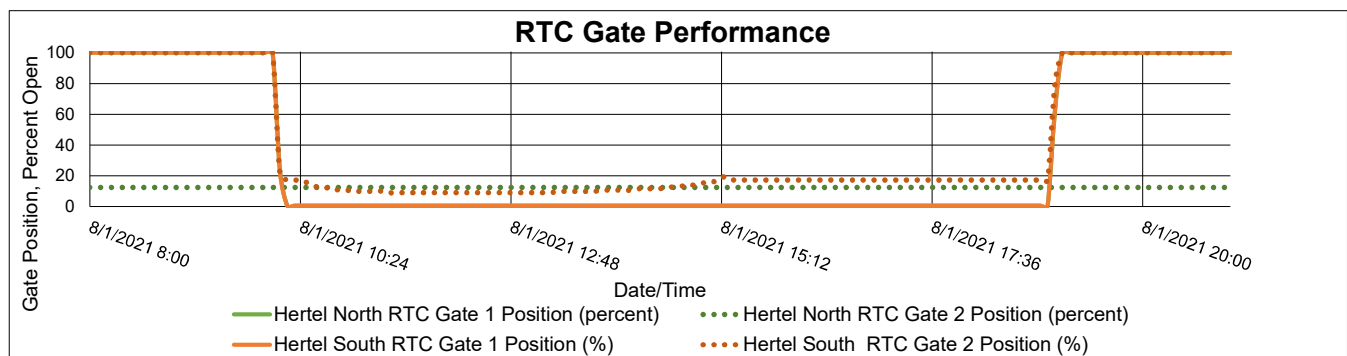
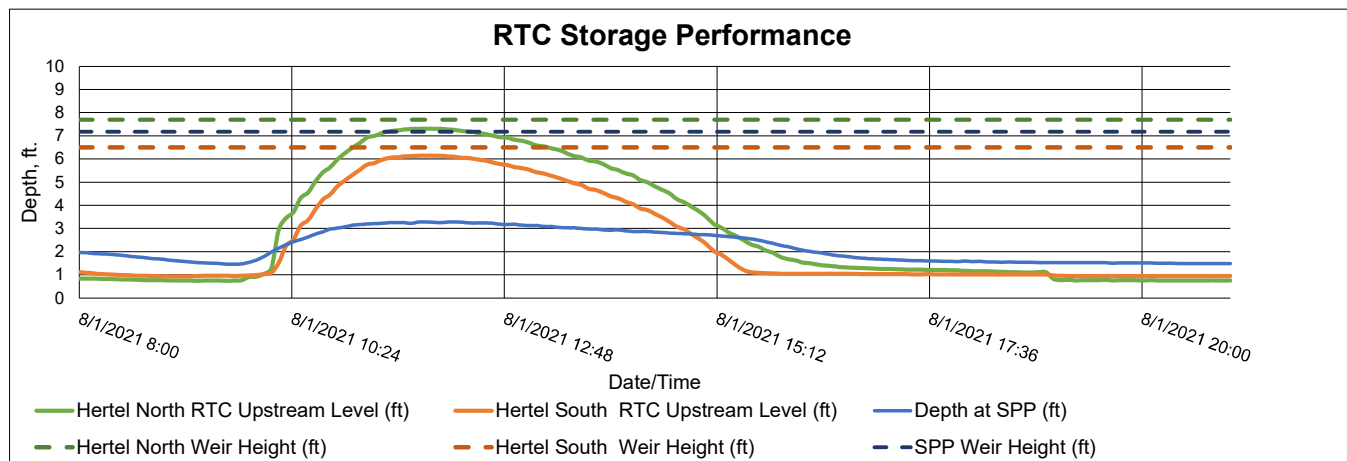
Site:	Hertel at Deer RTC
Time All Gates Active:	8/1/2021 10:05
Time All Gates Returned to Normal:	8/1/2021 19:05
Gate Activation Trigger Depth:	1.03 (South Side) ft.
Return to Normal Depth:	0.97 (South Side) ft.
Minimum Distance to Top of Weir:	0.35 ft.
Volume Stored:	3,471,712 Gal.
Unused Storage Volume:	437,325 Gal.

Analysis Date:	9/11/2021
Event Start Date/Time:	8/1/2021 10:05
Event End Date/Time:	8/1/2021 19:05

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.2 in.
Storm Event Duration:	13 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	3,471,712 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

<b>Recommended Operational Changes/Notes:</b>
North Gate 2 was stuck at 12% open for the entire event.





# August 11, 2021

# 2

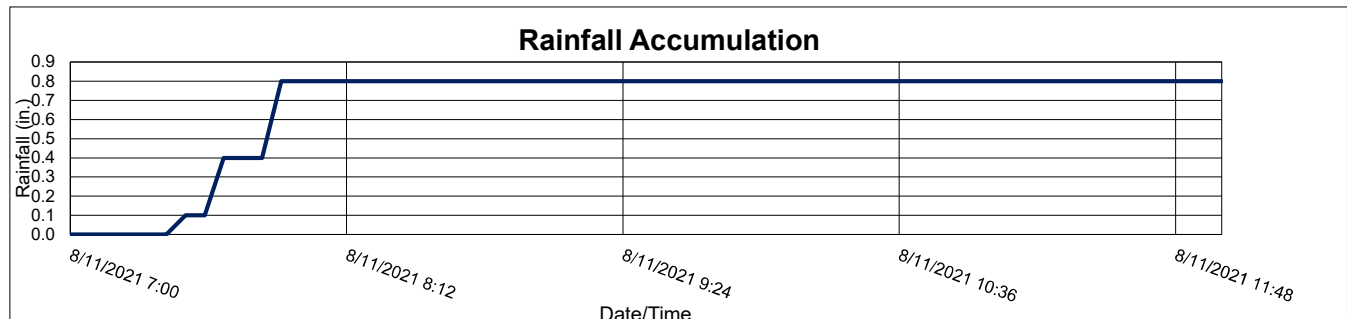
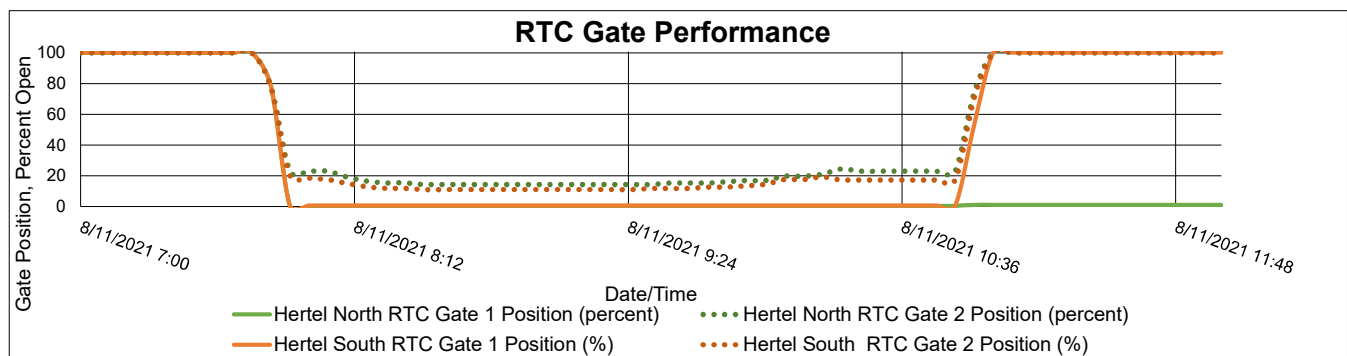
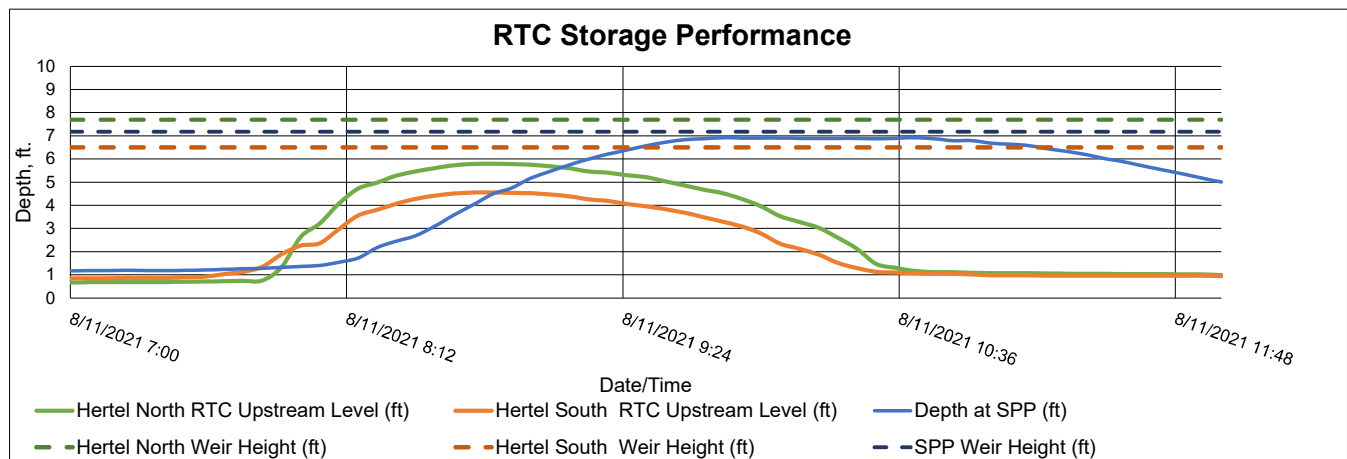
Site:	Hertel at Deer RTC
Time All Gates Active:	8/11/2021 7:45
Time All Gates Returned to Normal:	8/11/2021 11:00
Gate Activation Trigger Depth:	1.13 (South Side) ft.
Return to Normal Depth:	1.07 (North Side) ft.
Minimum Distance to Top of Weir:	1.90 ft.
Volume Stored:	1,951,761 Gal.
Unused Storage Volume:	1,992,333 Gal.

Analysis Date:	9/11/2021
Event Start Date/Time:	8/11/2021 7:45
Event End Date/Time:	8/11/2021 11:00

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.8 in.
Storm Event Duration:	5 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	1,951,761 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

<b>Recommended Operational Changes/Notes:</b>
North Gate 1 was stuck at 1% open at the end of the event.



# August 13, 2021

3

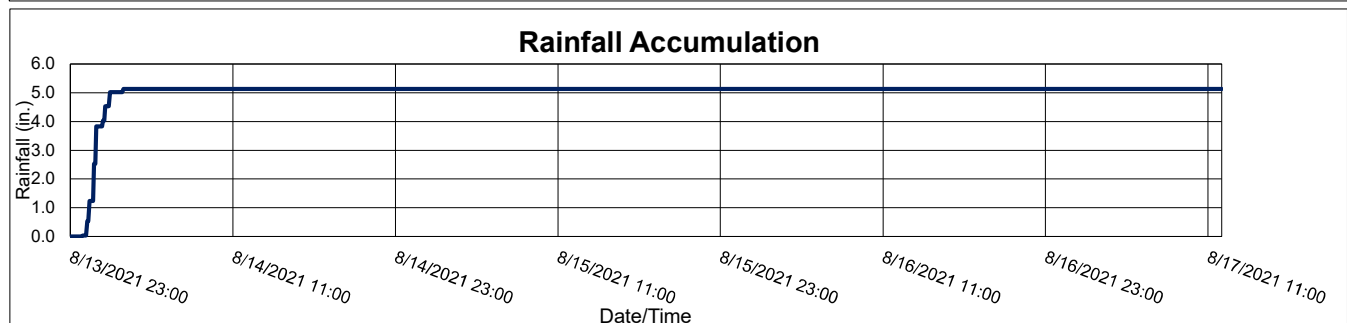
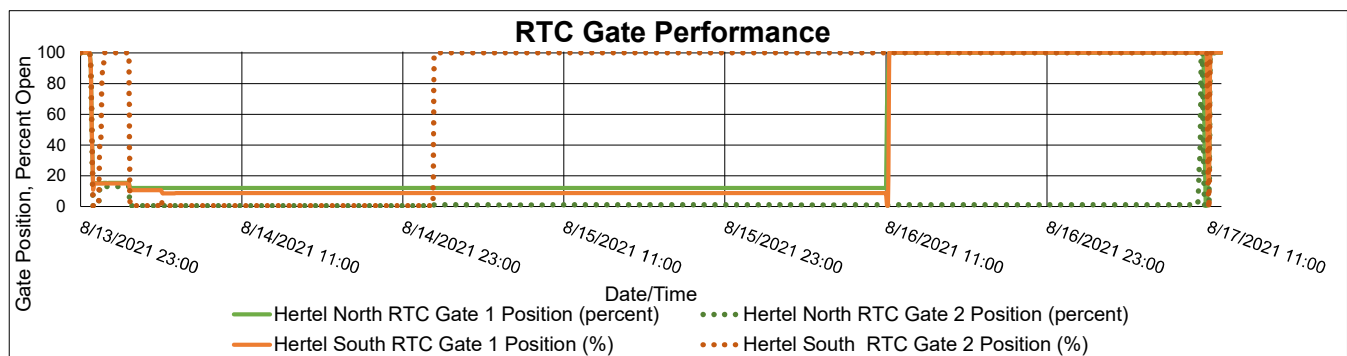
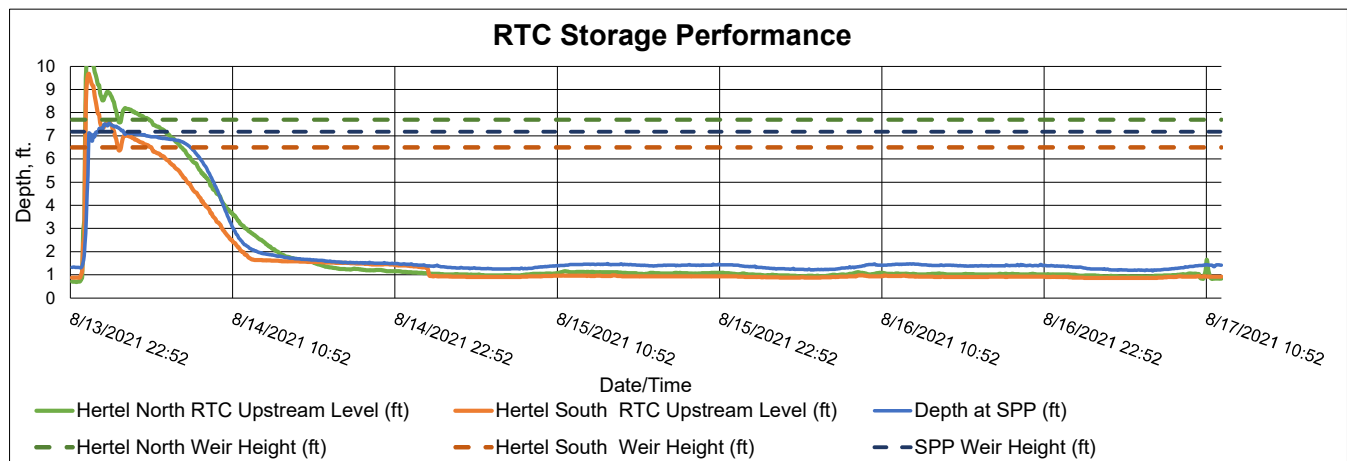
Site:	Hertel at Deer RTC
Time All Gates Active:	8/13/2021 23:40
Time All Gates Returned to Normal:	8/17/2021 11:10
Gate Activation Trigger Depth:	0.99 (South Side) ft.
Return to Normal Depth:	0.92 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,574,576 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	9/11/2021
Event Start Date/Time:	8/13/2021 23:40
Event End Date/Time:	8/17/2021 11:10

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	5.15 in.
Storm Event Duration:	85 hr.
Storm Type:	Less than 50 years

Percent Capture	40%
Overflow Volume:	5,259,023 Gal.
Overflow Volume Prevented:	3,574,576 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

## Recommended Operational Changes/Notes:



# August 18, 2021

4

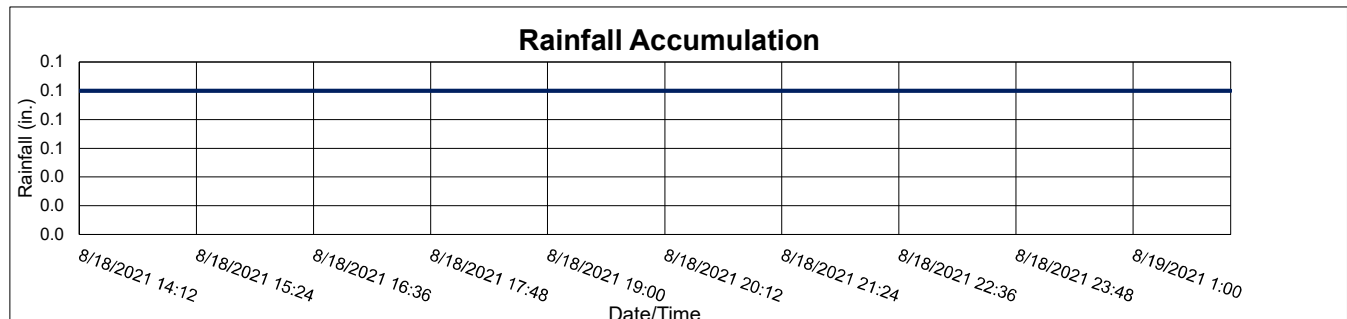
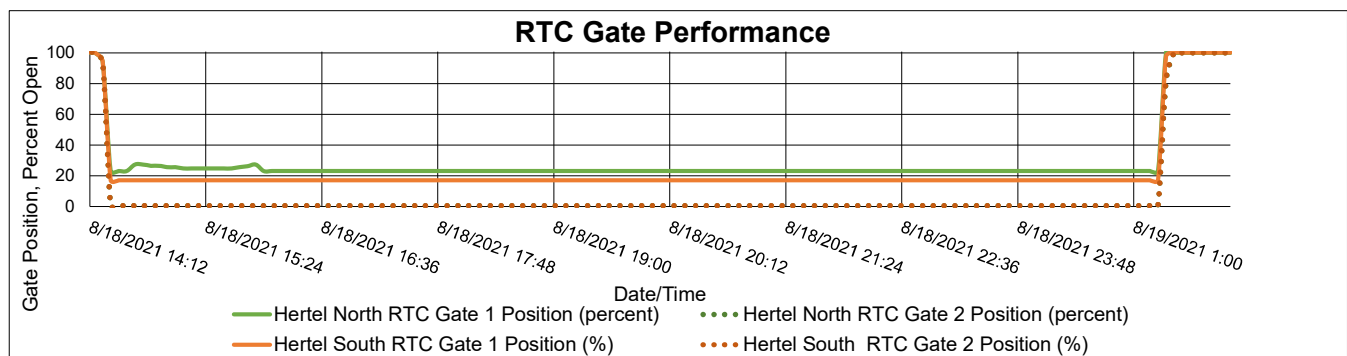
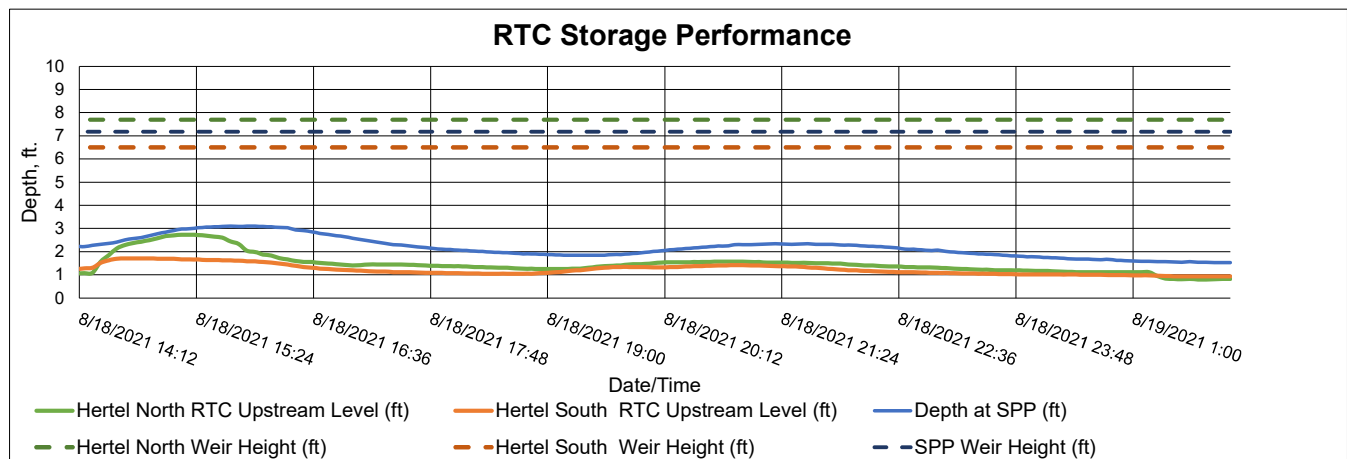
Site:	Hertel at Deer RTC
Time All Gates Active:	8/18/2021 14:15
Time All Gates Returned to Normal:	8/19/2021 1:25
Gate Activation Trigger Depth:	1.28 (South Side) ft.
Return to Normal Depth:	0.94 (South Side) ft.
Minimum Distance to Top of Weir:	4.79 ft.
Volume Stored:	230,495 Gal.
Unused Storage Volume:	3,692,897 Gal.

Analysis Date:	9/11/2021
Event Start Date/Time:	8/18/2021 14:15
Event End Date/Time:	8/19/2021 1:25

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.1 in.
Storm Event Duration:	12 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	230,495 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

## Recommended Operational Changes/Notes:



# August 29, 2021

# 5

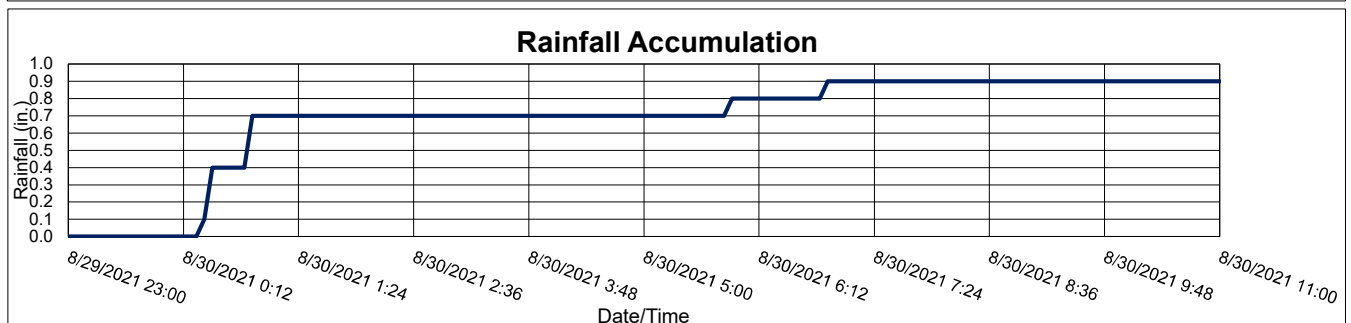
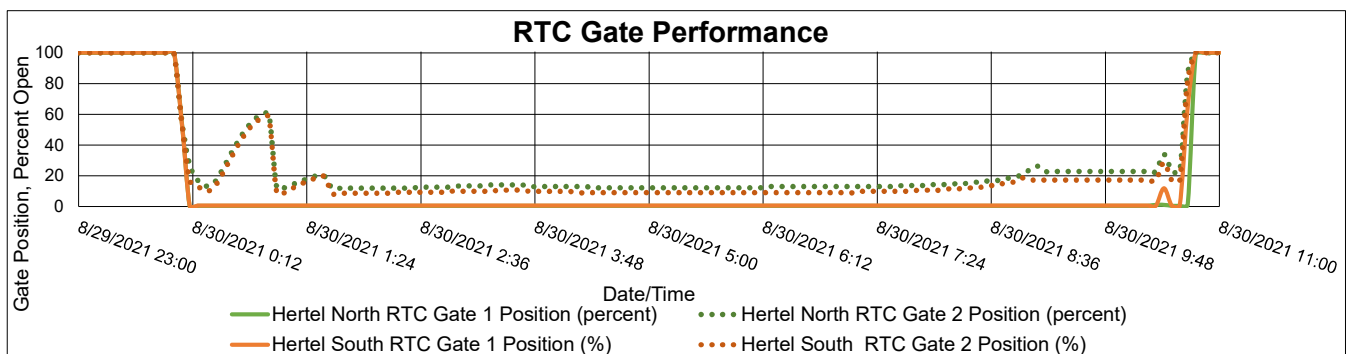
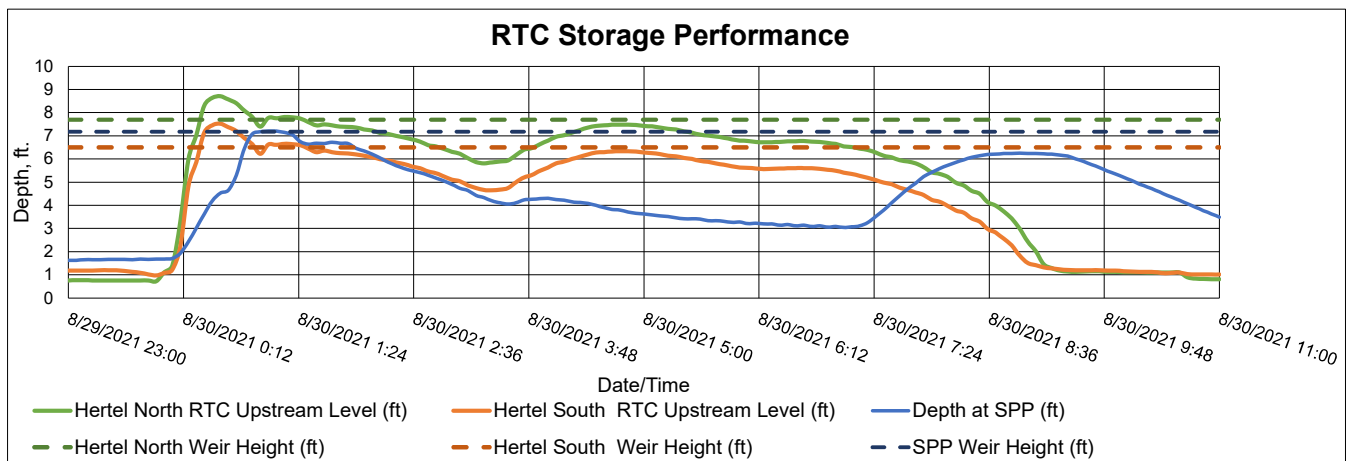
Site:	Hertel at Deer RTC
Time All Gates Active:	8/30/2021 0:00
Time All Gates Returned to Normal:	8/30/2021 10:50
Gate Activation Trigger Depth:	1.08 (South Side) ft.
Return to Normal Depth:	0.82 (North Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,931,115 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	9/11/2021
Event Start Date/Time:	8/30/2021 0:00
Event End Date/Time:	8/30/2021 10:50

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.9 in.
Storm Event Duration:	12 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	16,309 Gal.
Overflow Volume Prevented:	3,931,115 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

## Recommended Operational Changes/Notes:



# September 2021 Hertel at Deer RTC KPI Report

**BUFFALO**  
SEWER AUTHORITY



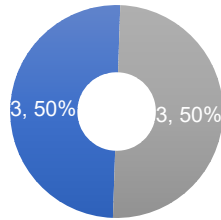
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# Hertel at Deer RTC Monthly Performance Report

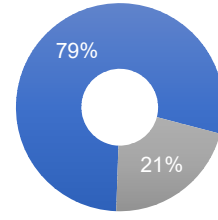
September 2021

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
3	3	15,754,473	4,295,695
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
9/5/2021	2,353,687	-	100%
9/6/2021	4,588,779	399,083	92%
9/12/2021	2,380,853	-	100%
9/13/2021	1,961,783	1,526,410	56%
9/22/2021	3,920,411	2,370,202	62%
9/27/2021	548,960	-	100%

# September 5, 2021

1

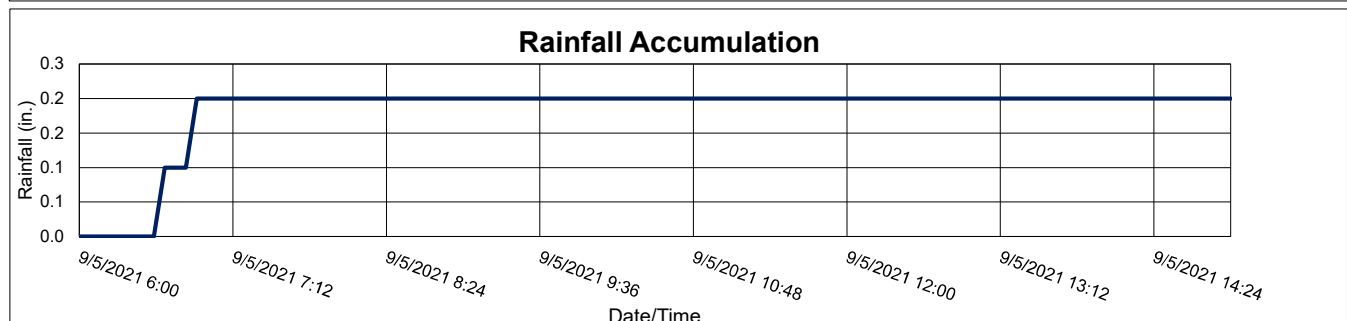
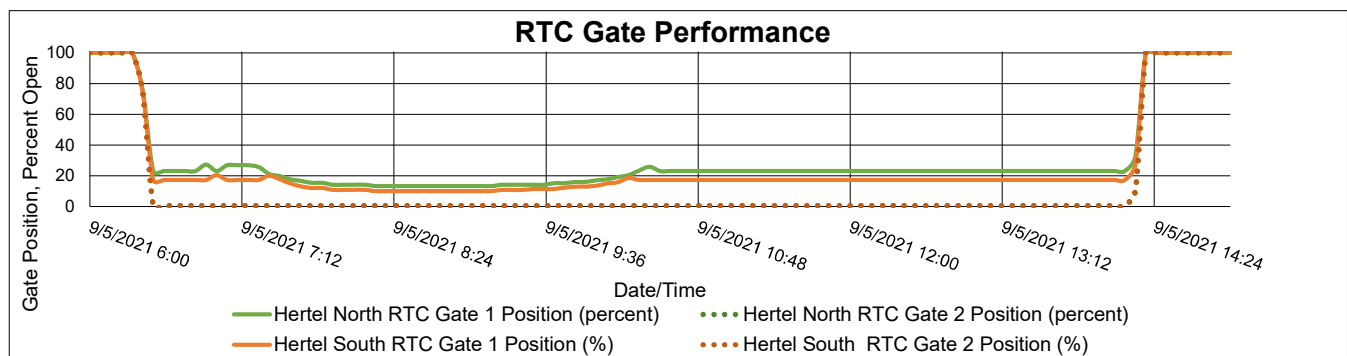
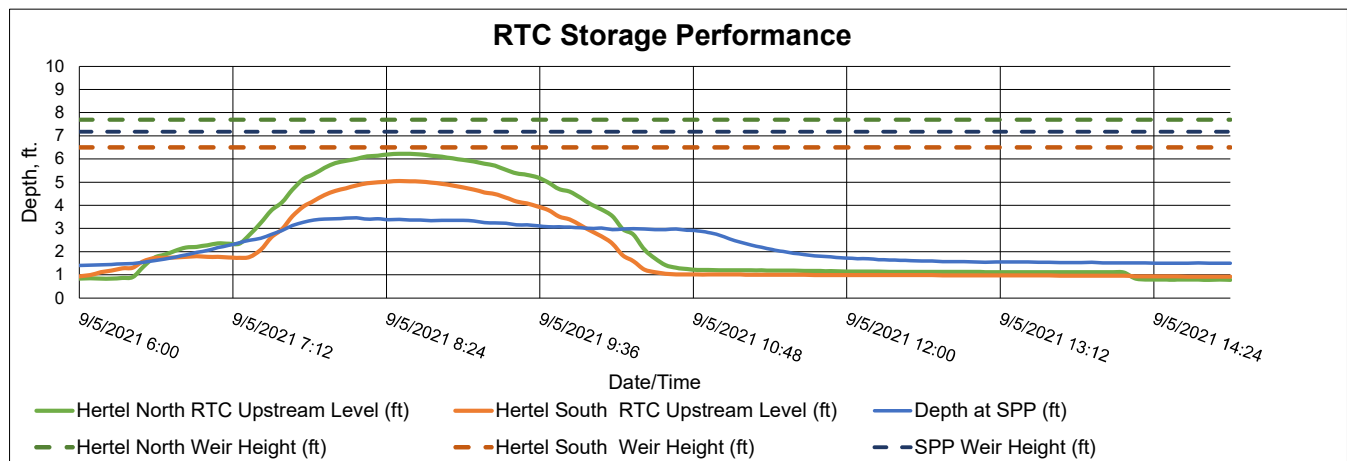
Site:	Hertel at Deer RTC
Time All Gates Active:	9/5/2021 6:20
Time All Gates Returned to Normal:	9/5/2021 14:20
Gate Activation Trigger Depth:	1.28 (South Side) ft.
Return to Normal Depth:	0.94 (South Side) ft.
Minimum Distance to Top of Weir:	1.45 ft.
Volume Stored:	2,353,687 Gal.
Unused Storage Volume:	1,578,657 Gal.

Analysis Date:	10/8/2021
Event Start Date/Time:	9/5/2021 6:20
Event End Date/Time:	9/5/2021 14:20

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.2 in.
Storm Event Duration:	9 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	2,353,687 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

## Recommended Operational Changes/Notes:



# September 6, 2021

# 2

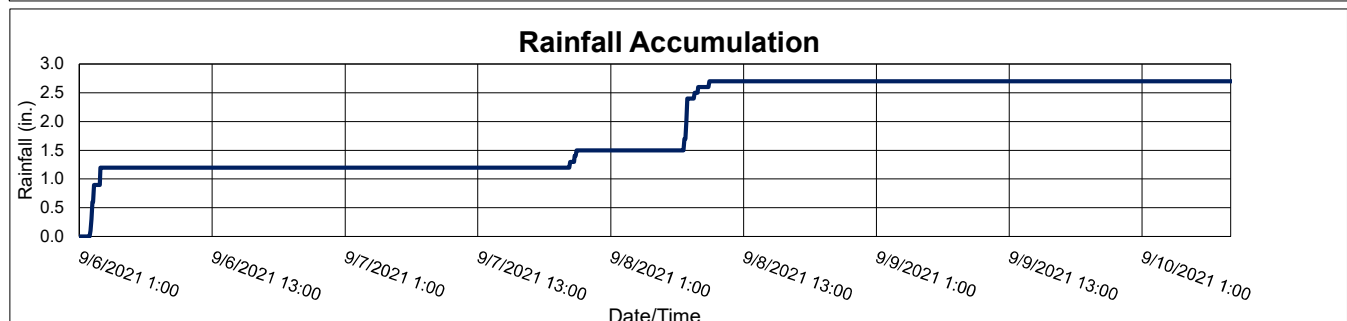
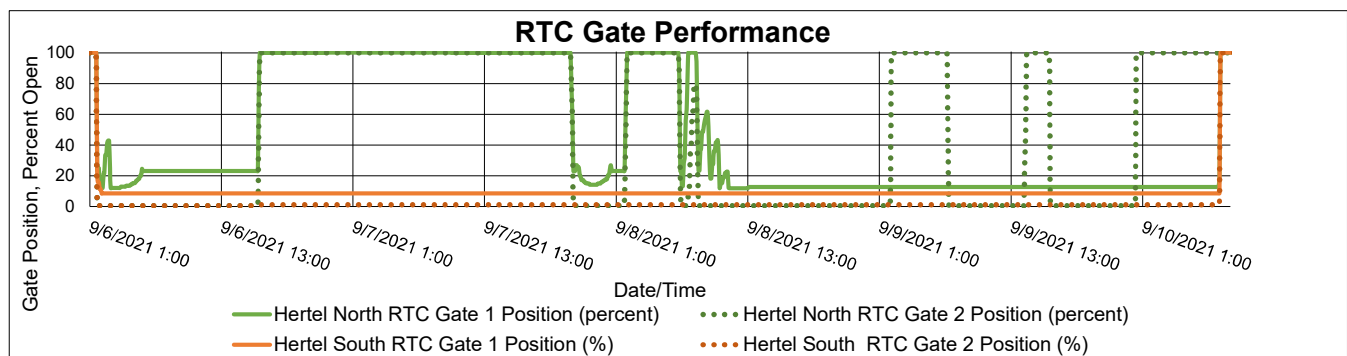
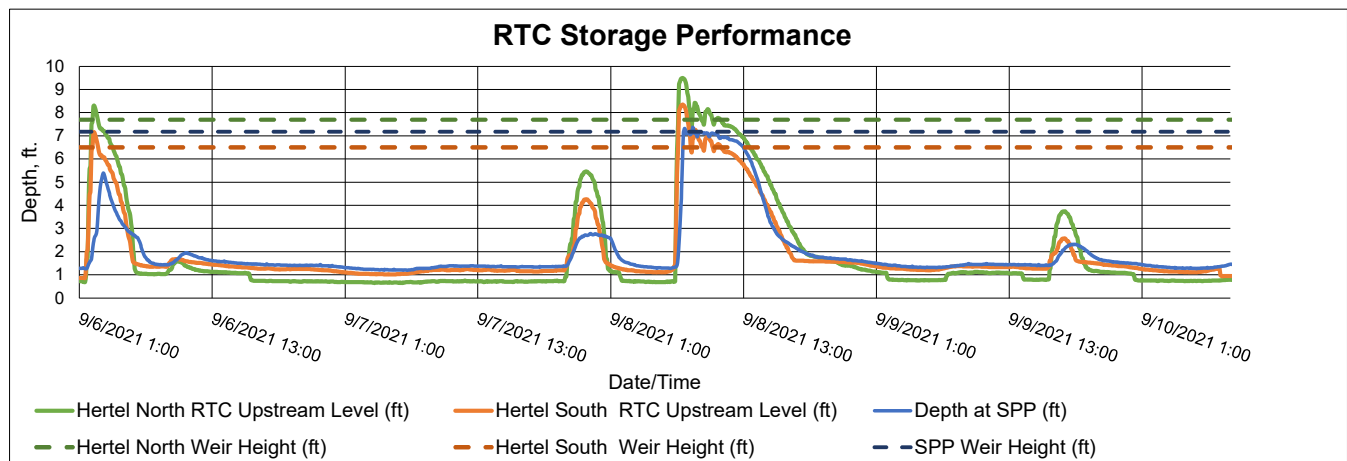
Site:	Hertel at Deer RTC
Time All Gates Active:	9/6/2021 1:35
Time All Gates Returned to Normal:	9/10/2021 8:05
Gate Activation Trigger Depth:	1.30 (South Side) ft.
Return to Normal Depth:	1.29 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	4,588,779 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	10/13/2021
Event Start Date/Time:	9/6/2021 1:35
Event End Date/Time:	9/10/2021 8:05

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	2.7 in.
Storm Event Duration:	104 hr.
Storm Type:	Less than one year

Percent Capture	92%
Overflow Volume:	399,083 Gal.
Overflow Volume Prevented:	4,588,779 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

## Recommended Operational Changes/Notes:





September 12, 2021

3

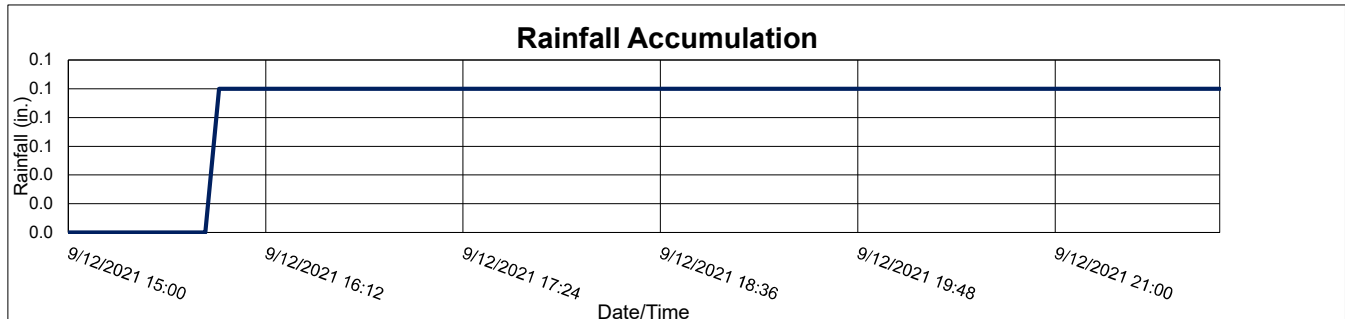
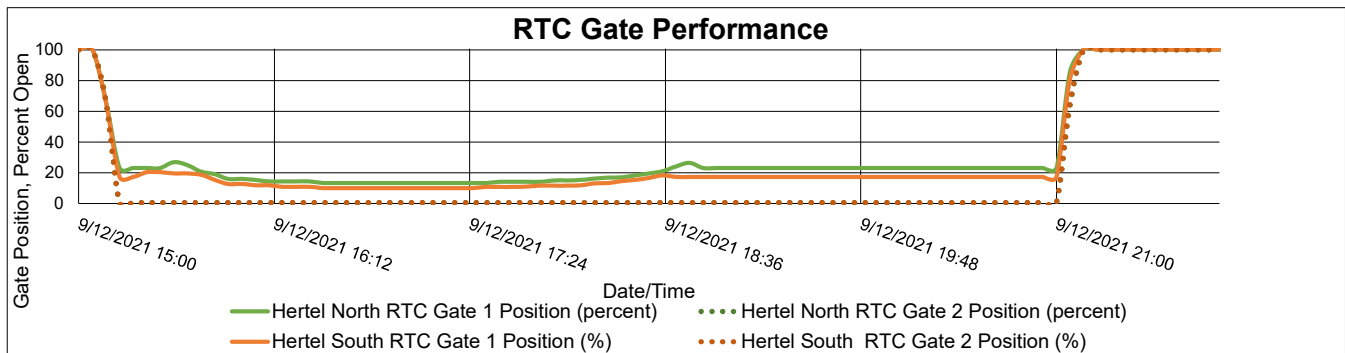
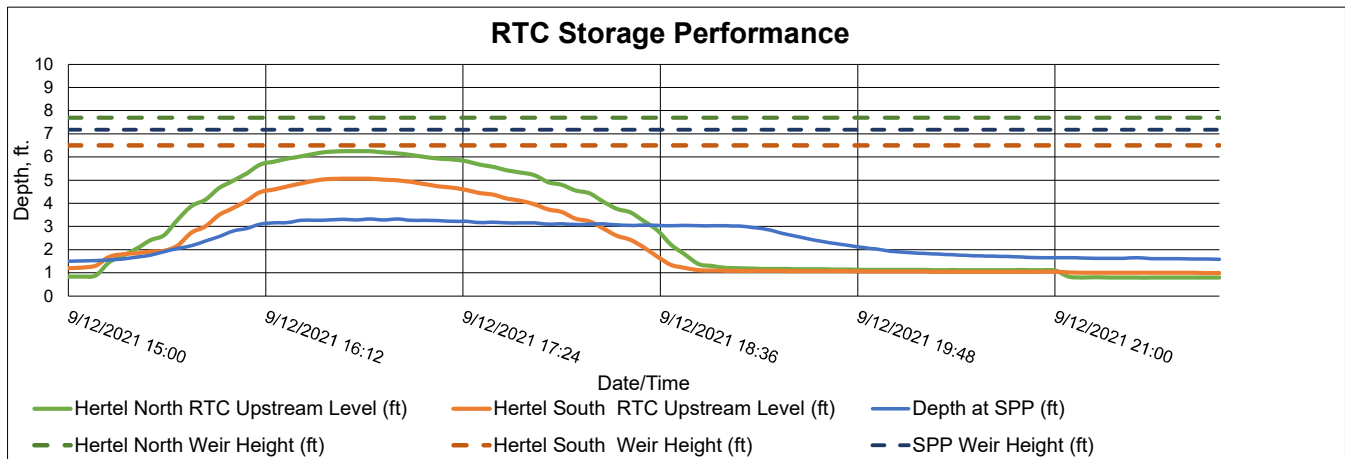
Site:	Hertel at Deer RTC
Time All Gates Active:	9/12/2021 15:05
Time All Gates Returned to Normal:	9/12/2021 21:10
Gate Activation Trigger Depth:	1.23 (South Side) ft.
Return to Normal Depth:	1.02 (South Side) ft.
Minimum Distance to Top of Weir:	1.43 ft.
Volume Stored:	2,380,853 Gal.
Unused Storage Volume:	1,555,174 Gal.

Analysis Date:	10/8/2021
Event Start Date/Time:	9/12/2021 15:05
Event End Date/Time:	9/12/2021 21:10

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.1 in.
Storm Event Duration:	7 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	2,380,853 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

#### Recommended Operational Changes/Notes:



September 13, 2021

4

Site:	Hertel at Deer RTC
Time All Gates Active:	9/13/2021 1:05
Time All Gates Returned to Normal:	9/18/2021 2:10
Gate Activation Trigger Depth:	7.46 (North Side) ft.
Return to Normal Depth:	0.98 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	1,961,783 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	10/8/2021
Event Start Date/Time:	9/13/2021 1:05
Event End Date/Time:	9/18/2021 2:10

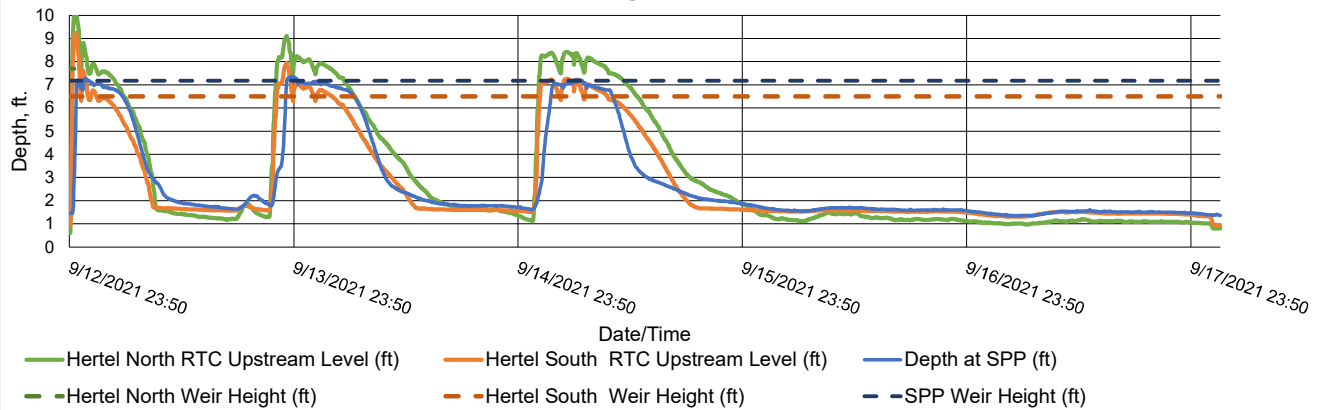
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	3.4 in.
Storm Event Duration:	123 hr.
Storm Type:	Less than two years

Percent Capture	56%
Overflow Volume:	1,526,410 Gal.
Overflow Volume Prevented:	1,961,783 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

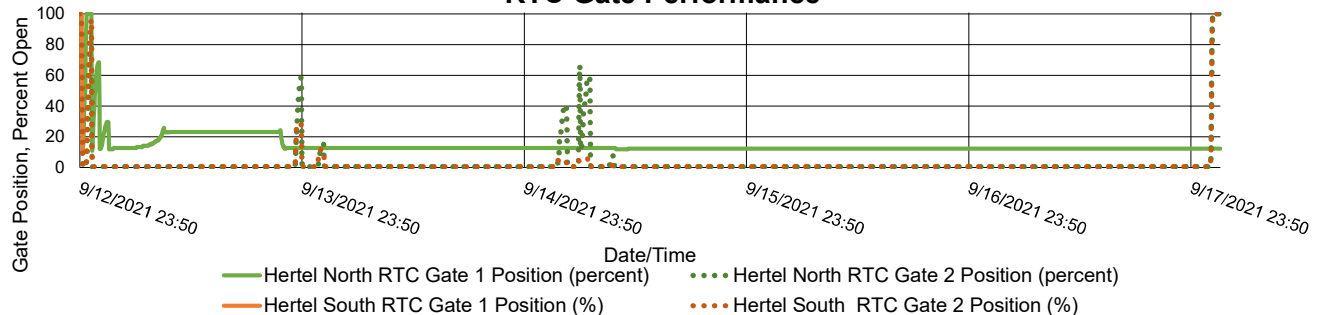
#### Recommended Operational Changes/Notes:

North Gate 1 was stuck at 12% open and South Gate 1 was stuck at 8% open at the end of this event.

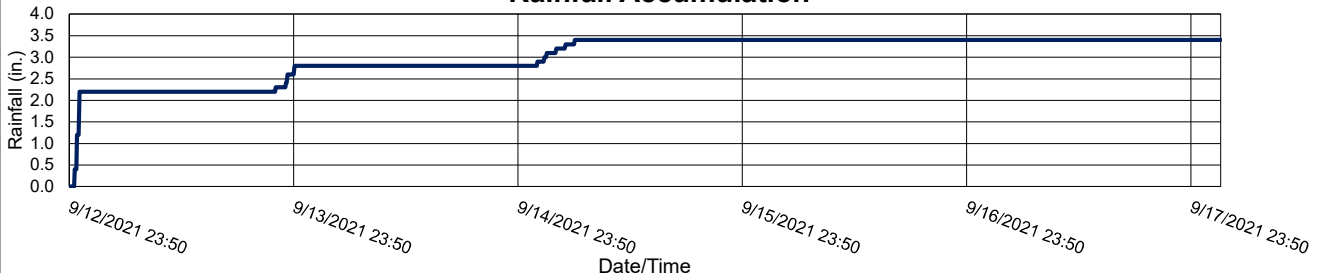
#### RTC Storage Performance



#### RTC Gate Performance



#### Rainfall Accumulation



September 22, 2021

5

Site:	Hertel at Deer RTC
Time All Gates Active:	9/22/2021 6:35
Time All Gates Returned to Normal:	9/26/2021 4:20
Gate Activation Trigger Depth:	1.34 (South Side) ft.
Return to Normal Depth:	1.05 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,920,411 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	10/9/2021
Event Start Date/Time:	9/22/2021 6:35
Event End Date/Time:	9/26/2021 4:20

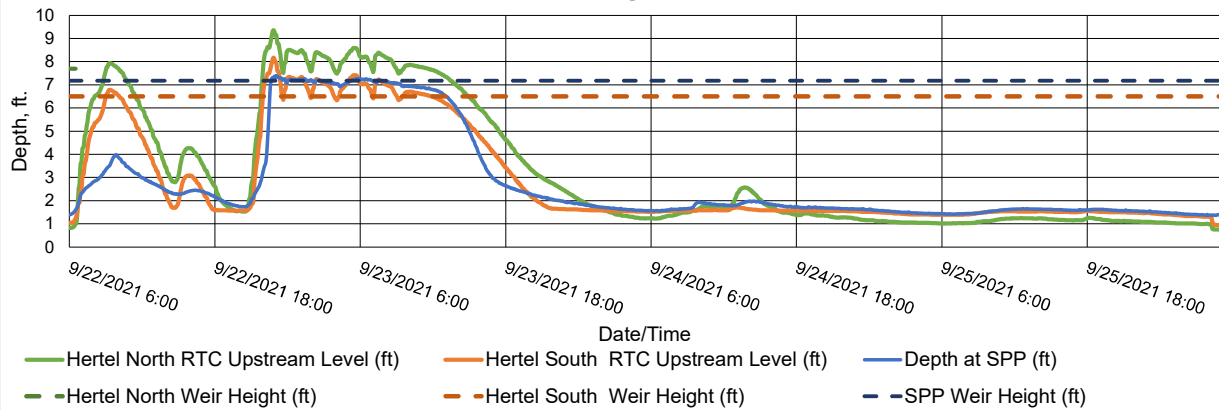
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	2.0 in.
Storm Event Duration:	96 hr.
Storm Type:	Less than one year

Percent Capture	62%
Overflow Volume:	2,370,202 Gal.
Overflow Volume Prevented:	3,920,411 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

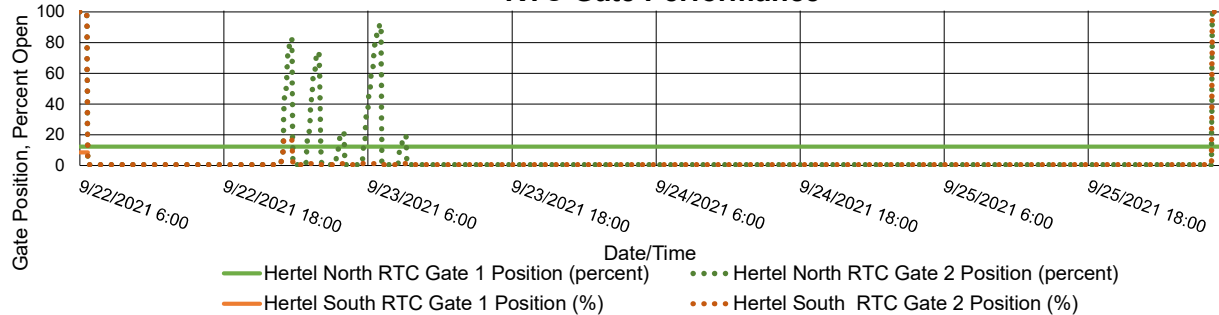
#### Recommended Operational Changes/Notes:

North Gate 1 is stuck at 12% open and South Gate 1 is stuck at 8% open for this entire event.

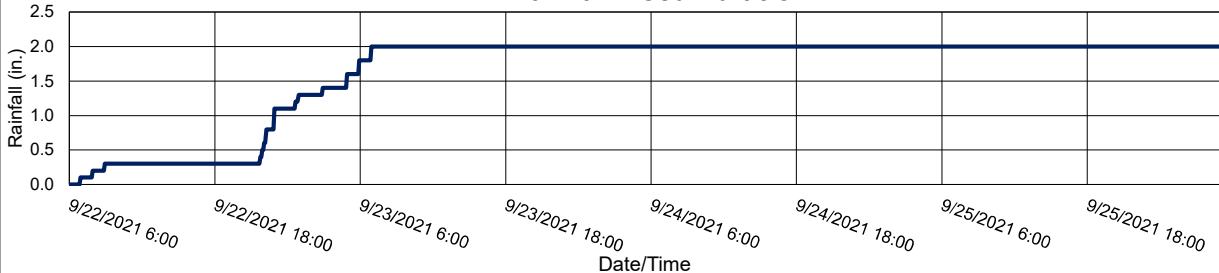
#### RTC Storage Performance



#### RTC Gate Performance



#### Rainfall Accumulation



# September 27, 2021

6

Site:	Hertel at Deer RTC
Time All Gates Active:	9/27/2021 5:05
Time All Gates Returned to Normal:	9/27/2021 11:40
Gate Activation Trigger Depth:	1.26 (South Side) ft.
Return to Normal Depth:	1.15 (South Side) ft.
Minimum Distance to Top of Weir:	4.05 ft.
Volume Stored:	548,960 Gal.
Unused Storage Volume:	3,382,025 Gal.

Analysis Date:	10/8/2021
Event Start Date/Time:	9/27/2021 5:05
Event End Date/Time:	9/27/2021 11:40

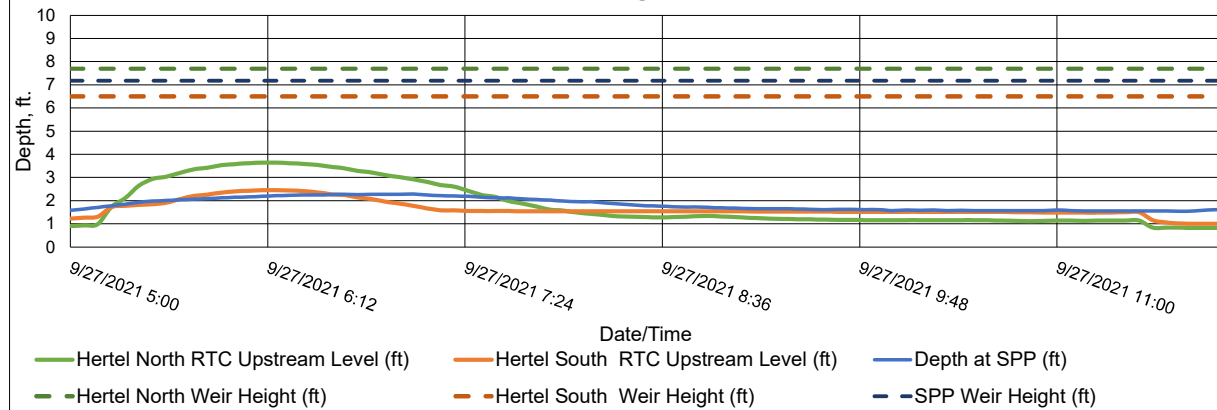
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.1 in.
Storm Event Duration:	7 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	548,960 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

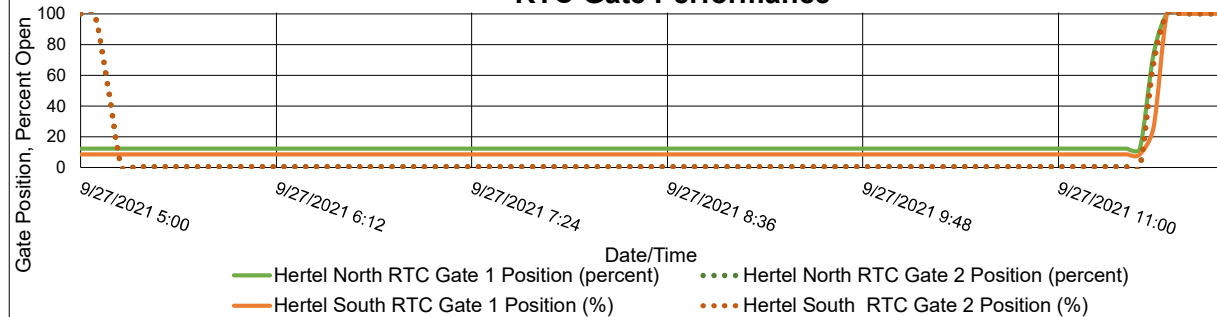
## Recommended Operational Changes/Notes:

North Gate 1 was stuck at 12% open and South Gate 1 was stuck at 8% open at the beginning of this event.

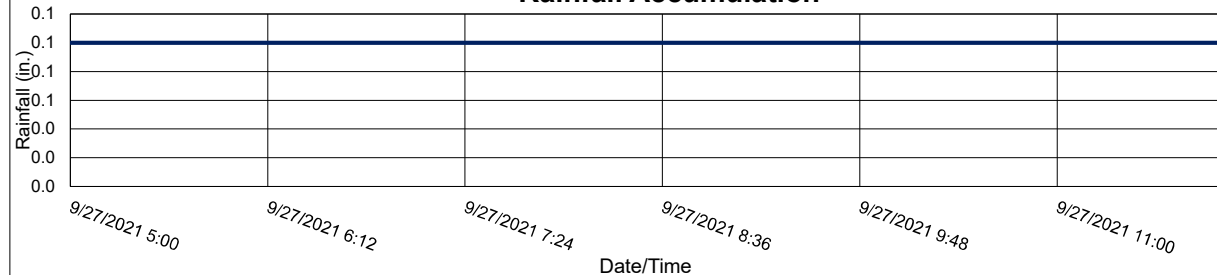
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



# October 2021 Hertel at Deer RTC KPI Report

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SEWER AUTHORITY



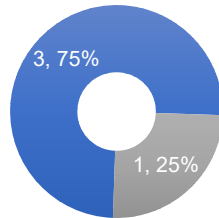
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# Hertel at Deer RTC Monthly Performance Report

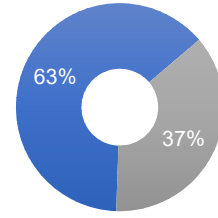
October 2021

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
3	1	5,383,627	3,132,026
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
10/3/2021	4,015,153	3,132,026	56%
10/7/2021	132,685	-	100%
10/12/2021	983,154	-	100%
10/13/2021	252,635	-	100%

October 3, 2021

1

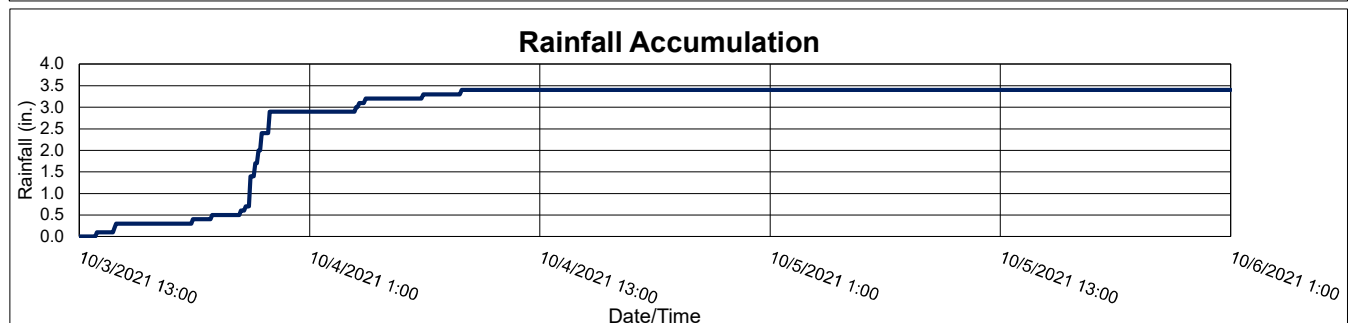
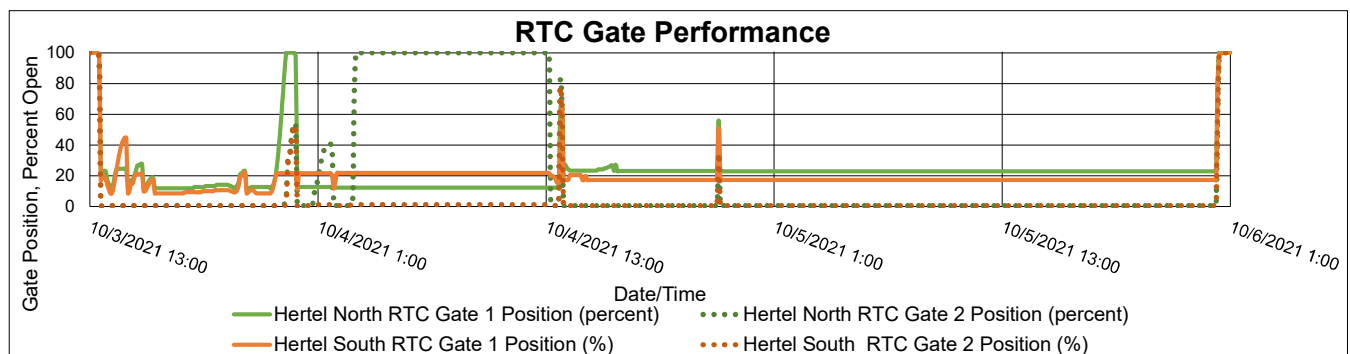
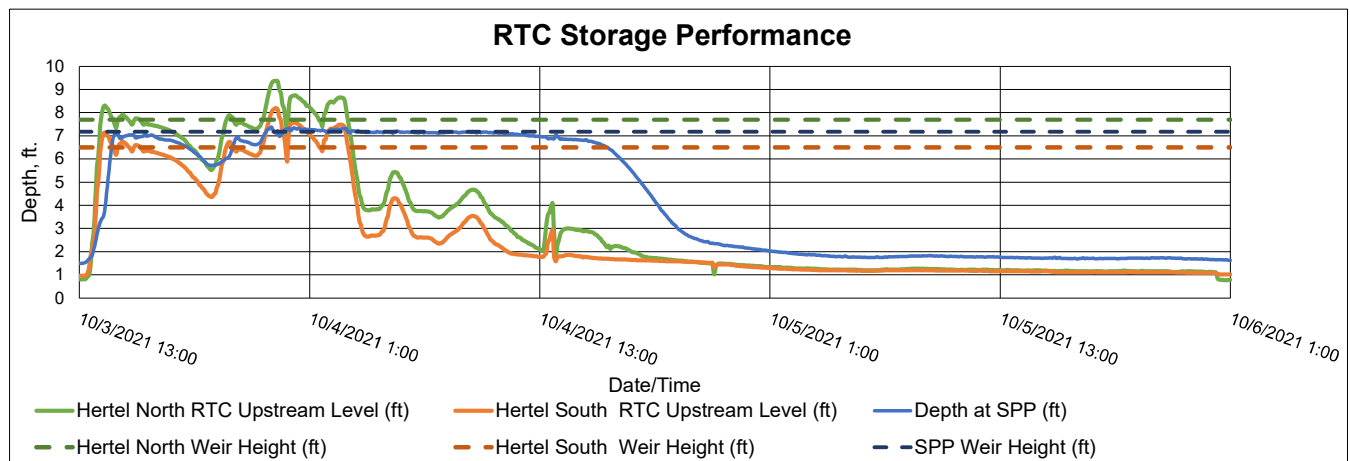
Site:	Hertel at Deer RTC
Time All Gates Active:	10/3/2021 13:30
Time All Gates Returned to Normal:	10/6/2021 0:25
Gate Activation Trigger Depth:	1.06 (South Side) ft.
Return to Normal Depth:	1.04 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	4,015,153 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	11/15/2021
Event Start Date/Time:	10/3/2021 13:30
Event End Date/Time:	10/6/2021 0:25

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	3.4 in.
Storm Event Duration:	60 hr.
Storm Type:	Less than 10 years

Percent Capture	56%
Overflow Volume:	3,132,026 Gal.
Overflow Volume Prevented:	4,015,153 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

#### Recommended Operational Changes/Notes:



October 7, 2021

2

Site:	Hertel at Deer RTC
Time All Gates Active:	10/7/2021 13:40
Time All Gates Returned to Normal:	10/7/2021 15:00
Gate Activation Trigger Depth:	0.77 (North Side) ft.
Return to Normal Depth:	0.87 (North Side) ft.
Minimum Distance to Top of Weir:	5.25 ft.
Volume Stored:	132,685 Gal.
Unused Storage Volume:	3,791,391 Gal.

Analysis Date:	11/15/2021
Event Start Date/Time:	10/7/2021 13:40
Event End Date/Time:	10/7/2021 15:00

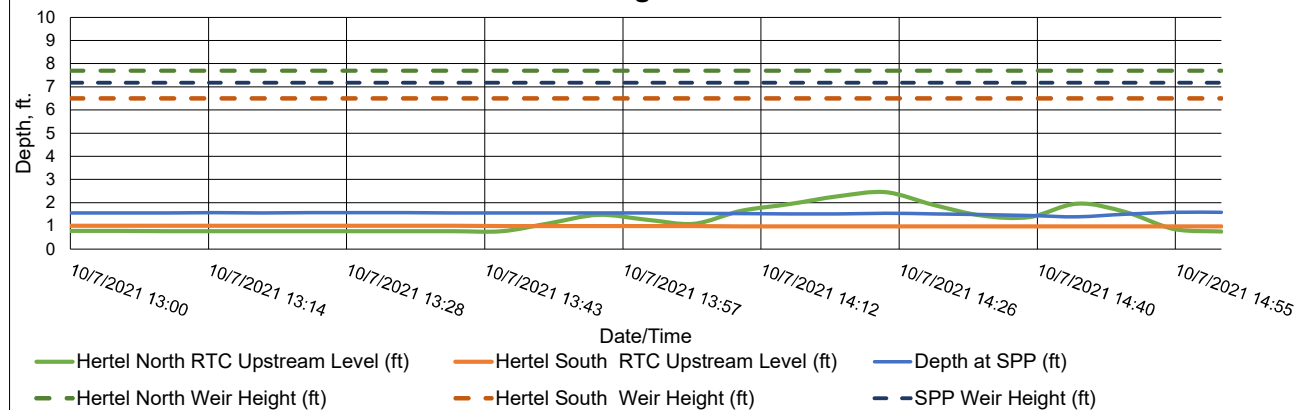
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	2 hr.
Storm Type:	NA

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	132,685 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

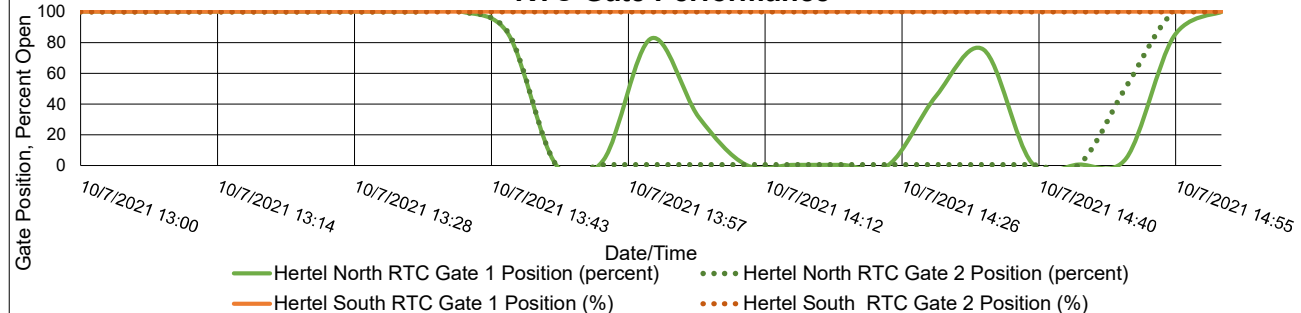
#### Recommended Operational Changes/Notes:

No rainfall recorded during this storm event. This event was likely caused by a localized storm.

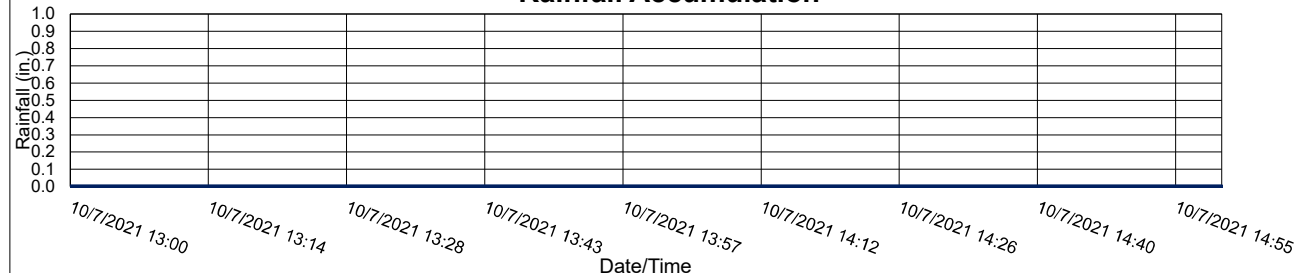
#### RTC Storage Performance



#### RTC Gate Performance



#### Rainfall Accumulation





# October 12, 2021

# 3

Site:	Hertel at Deer RTC
Time All Gates Active:	10/13/2021 0:00
Time All Gates Returned to Normal:	10/13/2021 2:55
Gate Activation Trigger Depth:	1.24 (South Side) ft.
Return to Normal Depth:	0.98 (South Side) ft.
Minimum Distance to Top of Weir:	3.23 ft.
Volume Stored:	983,154 Gal.
Unused Storage Volume:	2,953,542 Gal.

Analysis Date:	11/15/2021
Event Start Date/Time:	10/13/2021 0:00
Event End Date/Time:	10/13/2021 2:55

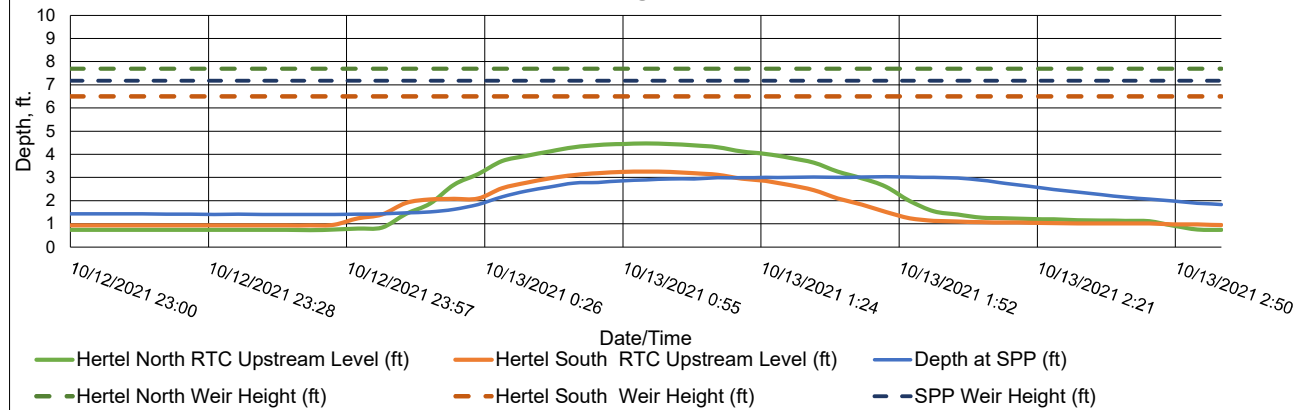
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	3 hr.
Storm Type:	NA

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	983,154 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

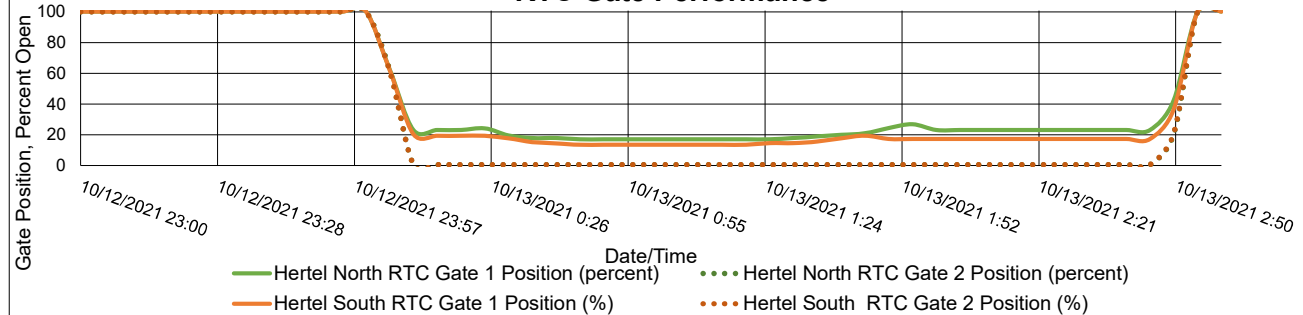
## Recommended Operational Changes/Notes:

No rainfall recorded during this storm event. This event was likely caused by a localized storm.

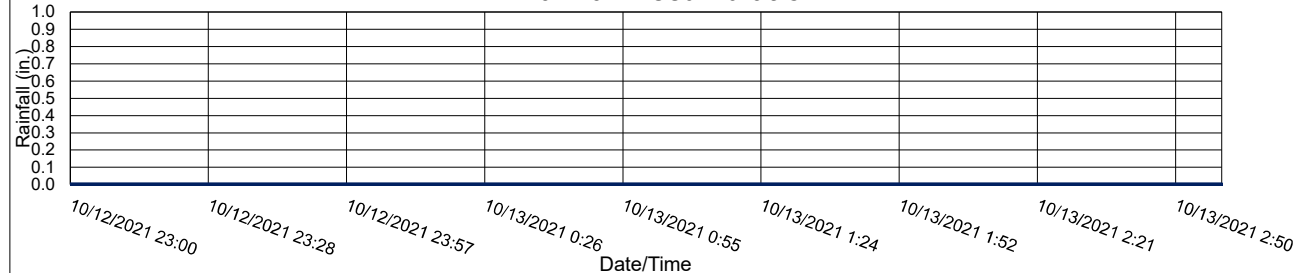
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



# October 13, 2021

4

Site:	Hertel at Deer RTC
Time All Gates Active:	10/13/2021 11:30
Time All Gates Returned to Normal:	10/13/2021 11:45
Gate Activation Trigger Depth:	0.69 (North Side) ft.
Return to Normal Depth:	1.00 (South Side) ft.
Minimum Distance to Top of Weir:	4.77 ft.
Volume Stored:	252,635 Gal.
Unused Storage Volume:	3,693,063 Gal.

Analysis Date:	11/15/2021
Event Start Date/Time:	10/13/2021 9:05
Event End Date/Time:	10/13/2021 11:45

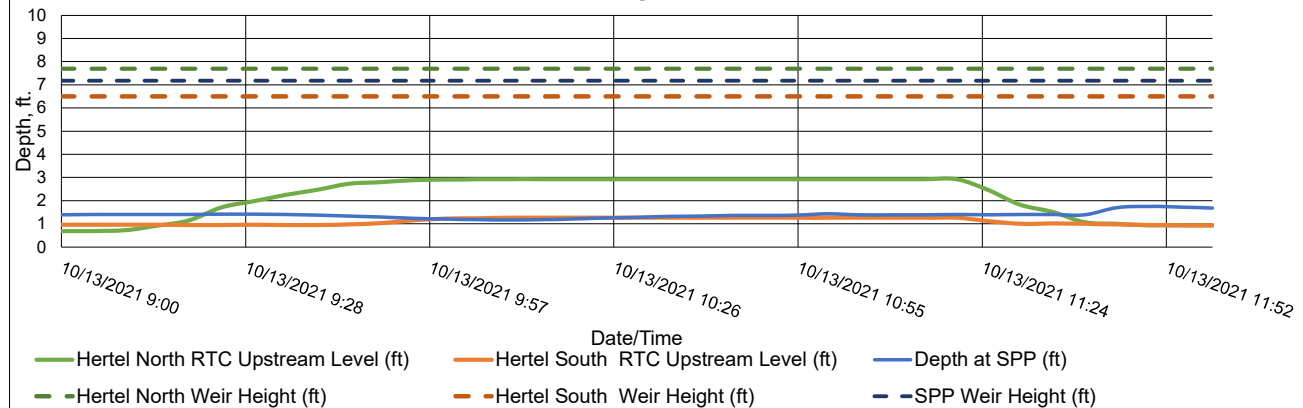
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	3 hr.
Storm Type:	NA

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	252,635 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

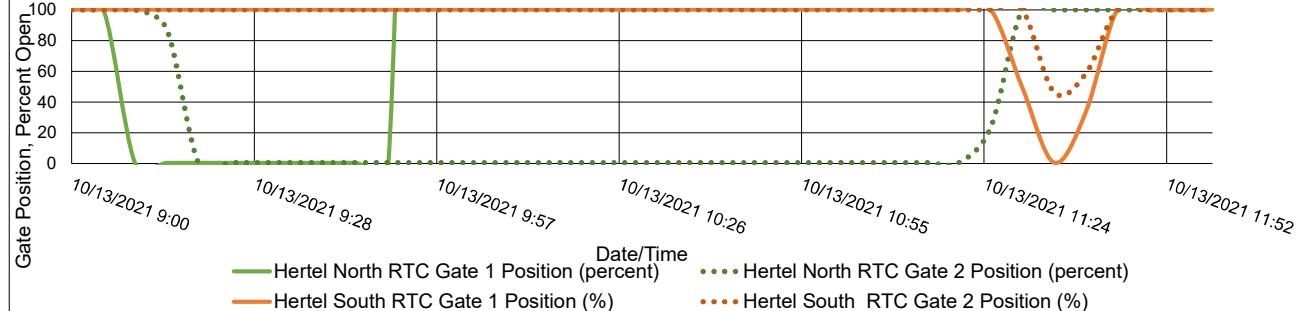
## Recommended Operational Changes/Notes:

No rainfall recorded during this storm event. This event was likely caused by a localized storm.

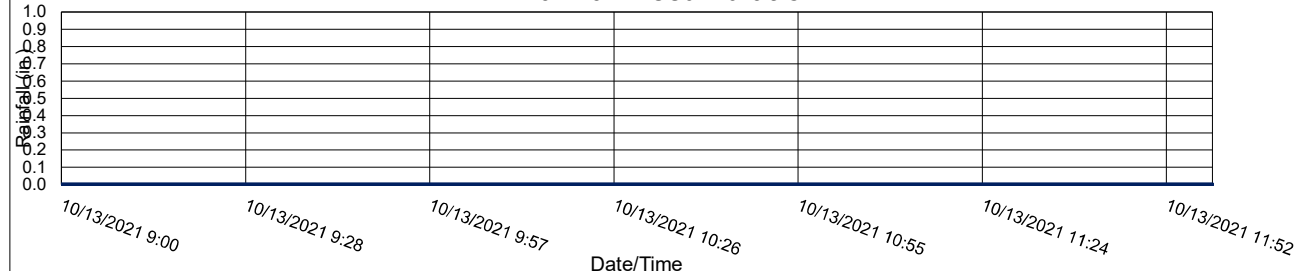
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



# November 2021 Hertel at Deer RTC KPI Report

No events are included as the site is set in manual mode for the entire month of November.

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# December 2021 Hertel at Deer RTC KPI Report

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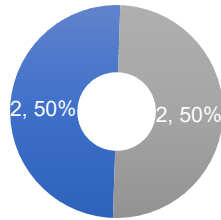
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# Hertel at Deer RTC Monthly Performance Report

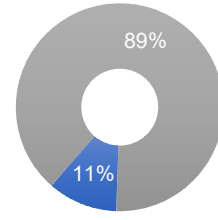
December 2021

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
2	2	8,988,825	74,036,628
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
12/6/2021	16,945	-	100%
12/11/2021	1,725,948	73,840,633	2%
12/18/2021	3,312,223	-	100%
12/25/2021	3,933,709	195,995	95%

# December 6, 2021

1

Site:	Hertel at Deer RTC
Time All Gates Active:	NA
Time All Gates Returned to Normal:	NA
Gate Activation Trigger Depth:	- (South Side) ft.
Return to Normal Depth:	- (North Side) ft.
Minimum Distance to Top of Weir:	5.20 ft.
Volume Stored:	16,945 Gal.
Unused Storage Volume:	3,904,769 Gal.

Analysis Date:	2/4/2022
Event Start Date/Time:	NA
Event End Date/Time:	NA

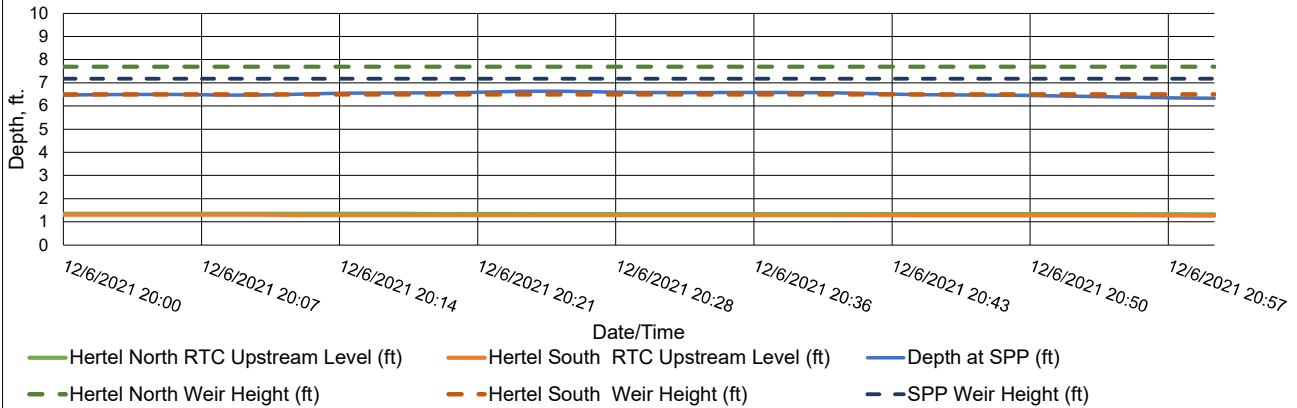
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	1 hr.
Storm Type:	NA

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	16,945 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

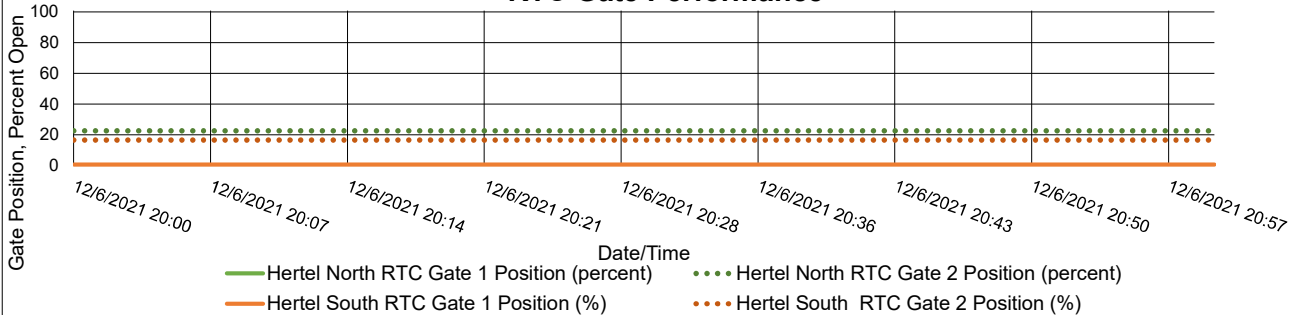
## Recommended Operational Changes/Notes:

The Hertel Gates were manually set at the following positions to store some flow while waiting on actuator repair during this event:  
 North Gate 1: 0% open; North Gate 2: 22% open  
 South Gate 3: 0% open; South Gate 4: 16% open  
 No rainfall was recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm or probable snow melt.

## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



# December 11, 2021

# 2

Site:	Hertel at Deer RTC
Time All Gates Active:	NA
Time All Gates Returned to Normal:	NA
Gate Activation Trigger Depth:	- (South Side) ft.
Return to Normal Depth:	- (North Side) ft.
Minimum Distance to Top of Weir:	2.16 ft.
Volume Stored:	1,725,948 Gal.
Unused Storage Volume:	2,195,767 Gal.

Analysis Date:	2/4/2022
Event Start Date/Time:	NA
Event End Date/Time:	NA

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.1 in.
Storm Event Duration:	10 hr.
Storm Type:	< 1 yr.

Percent Capture	2%
Overflow Volume:	73,840,633 Gal.
Overflow Volume Prevented:	1,725,948 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	73,840,633 Gal.
If No, could SPP activation have been prevented?	No

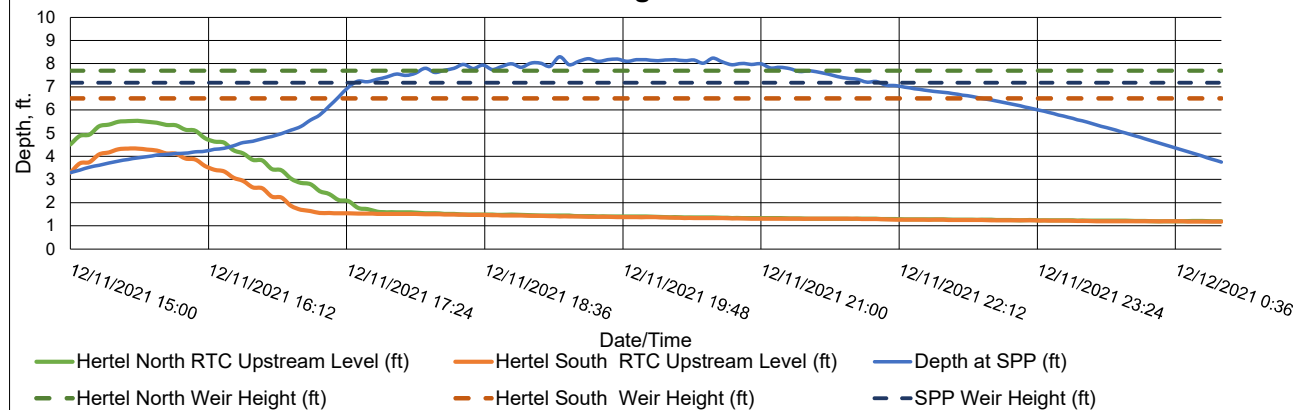
## Recommended Operational Changes/Notes:

Hertel gates were manually set at the following positions to store some flow while waiting on actuator repair during this event:

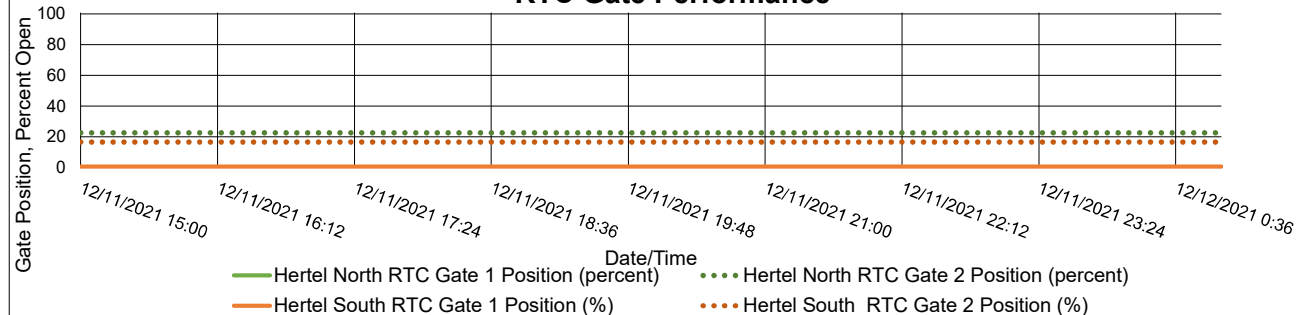
North Gate 1: 0% open; North Gate 2: 22% open  
South Gate 3: 0% open; South Gate 4: 16% open

This is a large seiche event, the overflow volume is expected to be over-estimated.

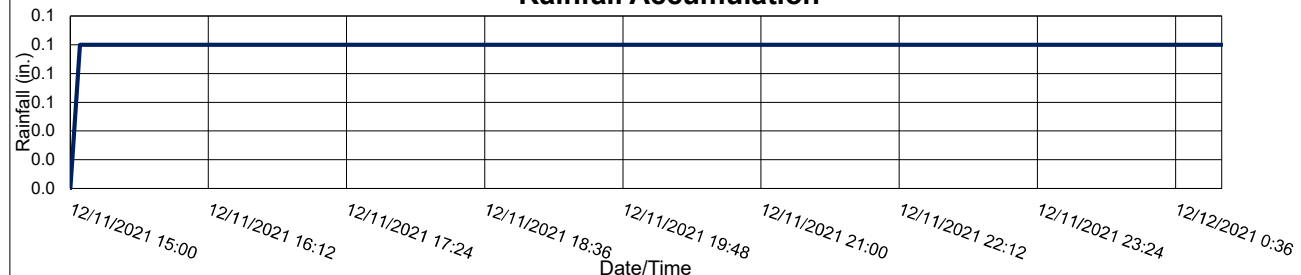
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



December 18, 2021

3

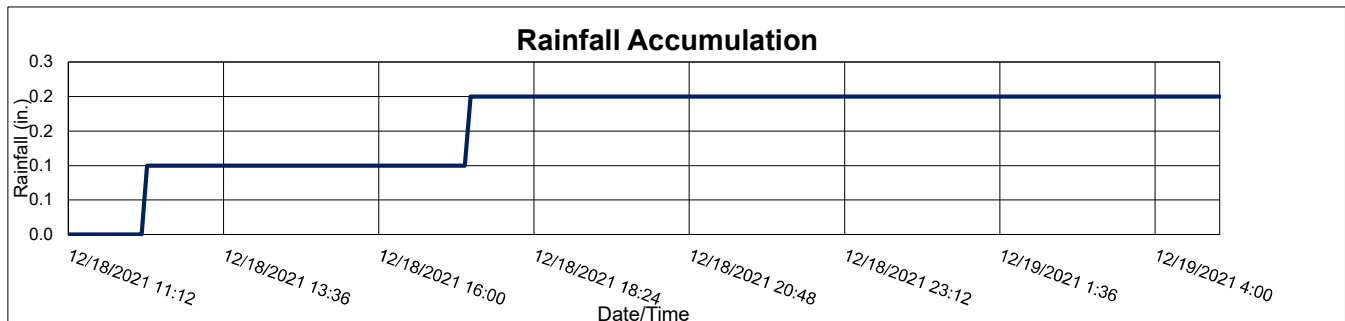
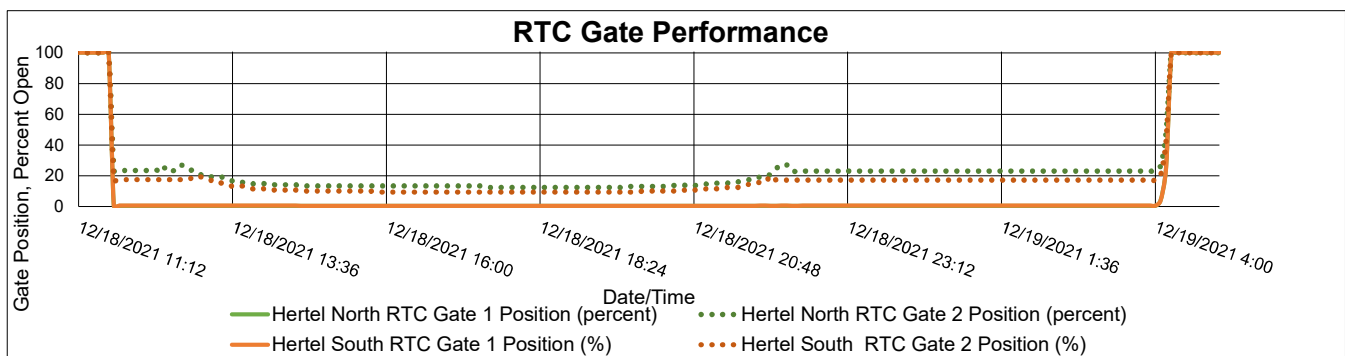
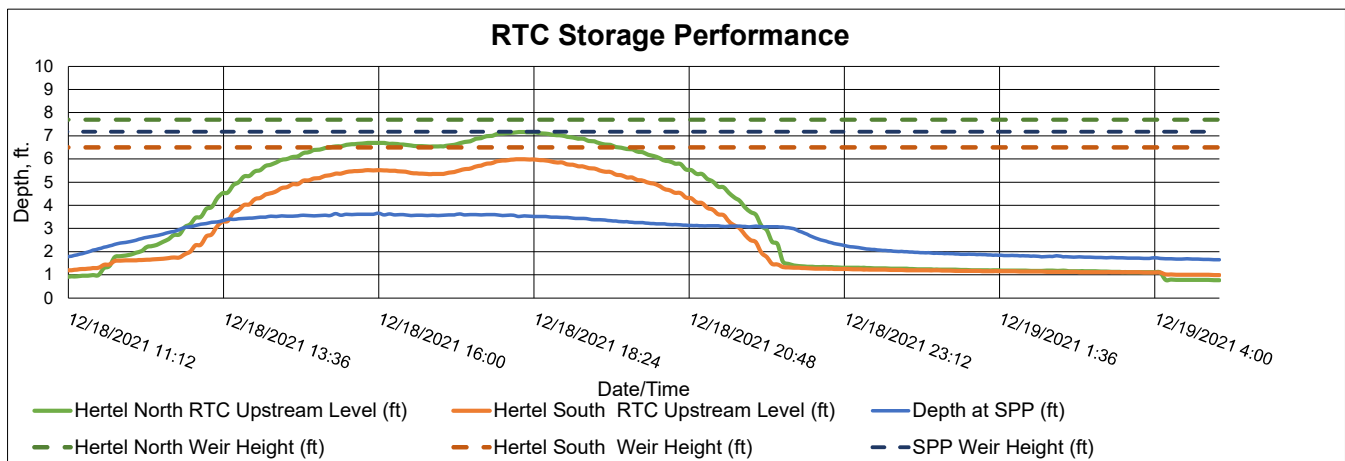
Site:	Hertel at Deer RTC
Time All Gates Active:	12/18/2021 11:40
Time All Gates Returned to Normal:	12/19/2021 4:15
Gate Activation Trigger Depth:	1.30 (South Side) ft.
Return to Normal Depth:	1.02 (South Side) ft.
Minimum Distance to Top of Weir:	0.51 ft.
Volume Stored:	3,312,223 Gal.
Unused Storage Volume:	613,706 Gal.

Analysis Date:	1/14/2022
Event Start Date/Time:	12/18/2021 11:40
Event End Date/Time:	12/19/2021 4:15

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.2 in.
Storm Event Duration:	18 hr.
Storm Type:	< 1 yr.

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	3,312,223 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA

#### Recommended Operational Changes/Notes:





December 25, 2021

4

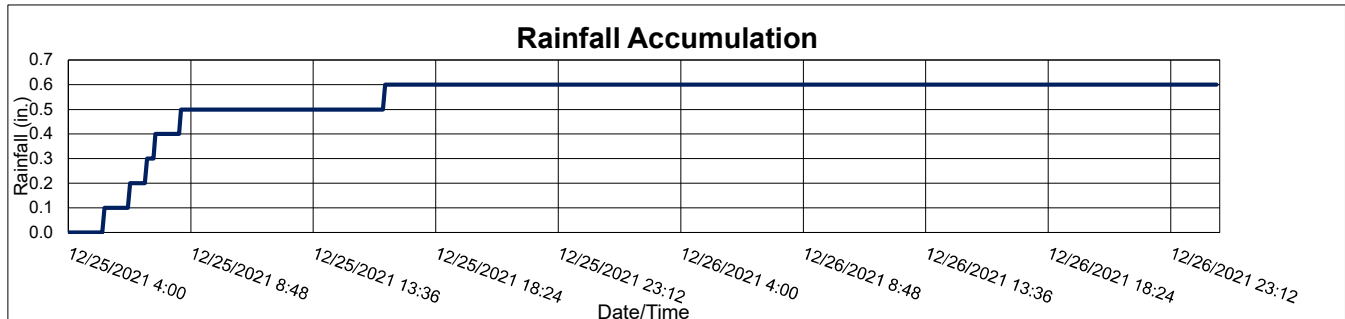
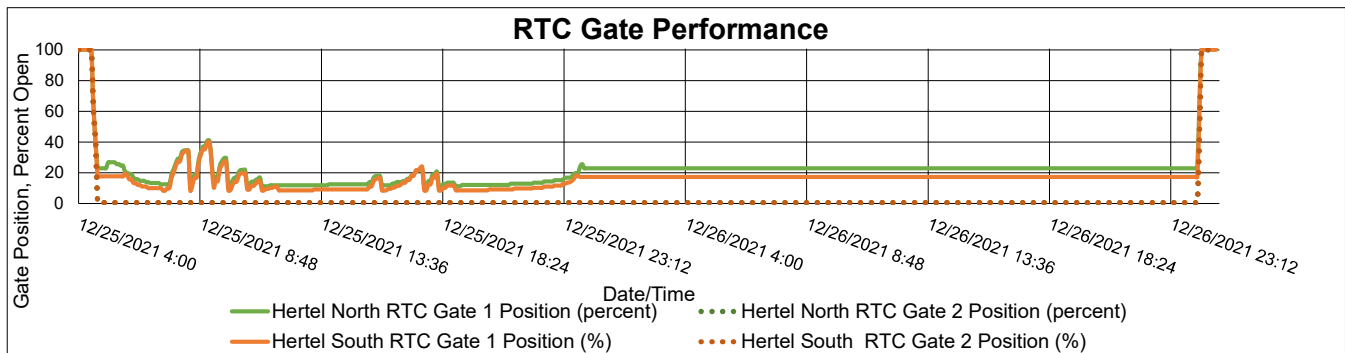
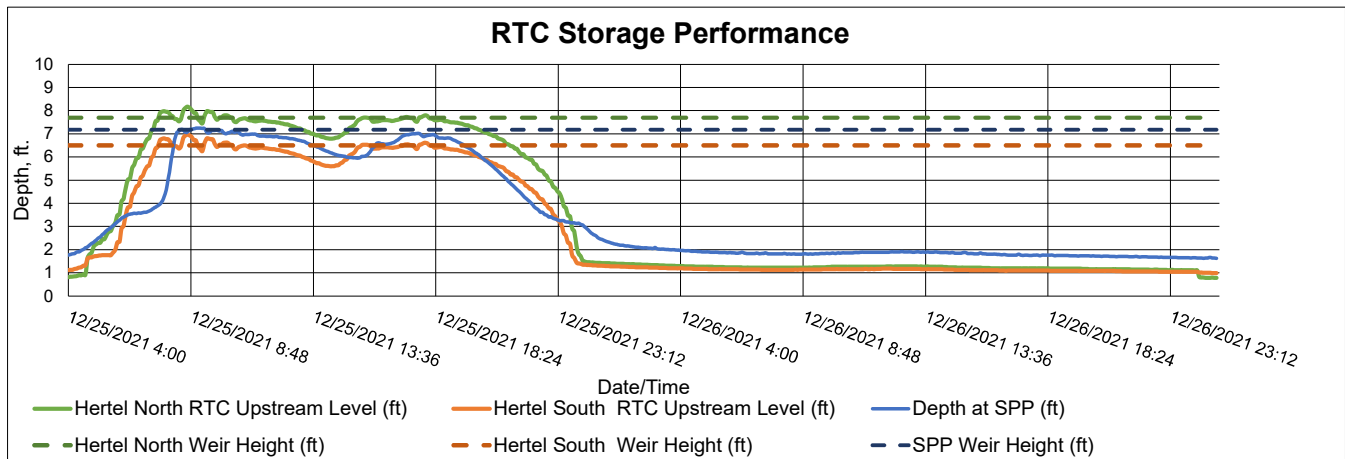
Site:	Hertel at Deer RTC
Time All Gates Active:	12/25/2021 4:30
Time All Gates Returned to Normal:	12/27/2021 0:25
Gate Activation Trigger Depth:	1.24 (South Side) ft.
Return to Normal Depth:	1.01 (South Side) ft.
Minimum Distance to Top of Weir:	0.00 ft.
Volume Stored:	3,933,709 Gal.
Unused Storage Volume:	0 Gal.

Analysis Date:	1/14/2022
Event Start Date/Time:	12/25/2021 4:30
Event End Date/Time:	12/27/2021 0:25

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.6 in.
Storm Event Duration:	45 hr.
Storm Type:	< 1 yr.

Percent Capture	95%
Overflow Volume:	195,995 Gal.
Overflow Volume Prevented:	3,933,709 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No

#### Recommended Operational Changes/Notes:



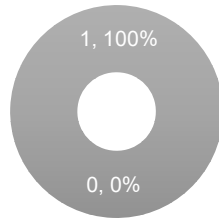
# January 2022 Lang Ave. and Hazelwood RTC KPI Report

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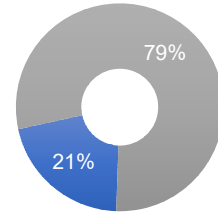


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**Prevented SPP Events**

■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

**Prevented SPP Volume**

■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
0	1	63,389	237,658
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
1/9/2022	63,389	237,658	21%

# January 9, 2022

# 1

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.95 ft.	- ft.
Return to Normal Depth:	0.78 ft.	- ft.
Time Gate 1 Activated:	1/9/2022 10:20	N/A
Time Gate 2 Activated:	1/9/2022 10:20	N/A
Time Gate 1 Returned to Normal:	1/9/2022 19:55	N/A
Time Gate 2 Returned to Normal:	1/9/2022 19:55	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.45 ft.	1.01 ft.
Volume Stored:	10,753 Gal.	52,636 Gal.
Unused Storage Volume:	844,449 Gal.	1,213,535 Gal.

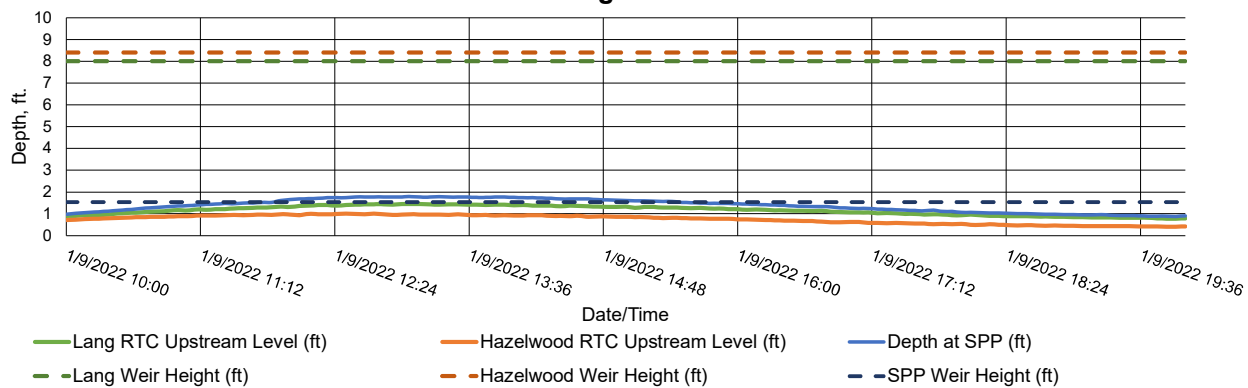
SPP:	340
Analysis Date:	2/14/2022
Event Start Date/Time:	1/9/2022 10:20
Event End Date/Time:	1/9/2022 19:55

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.05 in.
Storm Event Duration:	10 hr.
Storm Type:	Less than one year

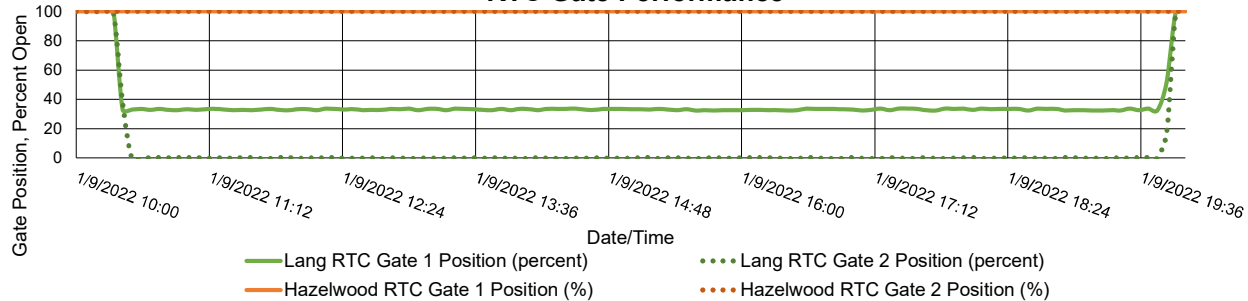
Percent Capture	21%
Overflow Volume:	237,658 Gal.
Overflow Volume Prevented:	63,389 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	237,658 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

## Recommended Operational Changes/Notes:

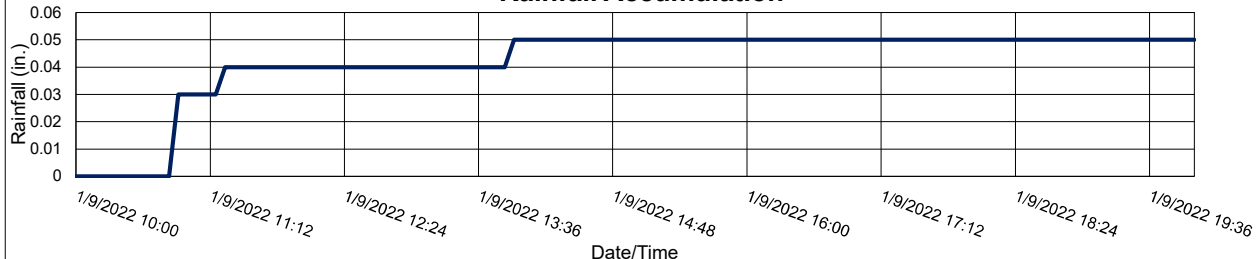
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



# February 2022 Lang Ave. and Hazelwood RTC KPI Report

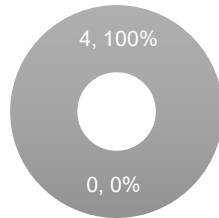
**BUFFALO**  
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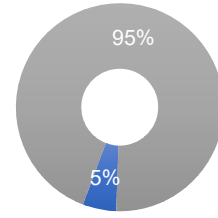
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## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
0	4	3,040,181	55,116,132
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
2/2/2022	55,937	31,572	64%
2/11/2022	176,168	2,123,387	8%
2/16/2022	1,965,794	43,797,469	4%
2/22/2022	842,282	9,163,704	8%

February 2, 2022

1

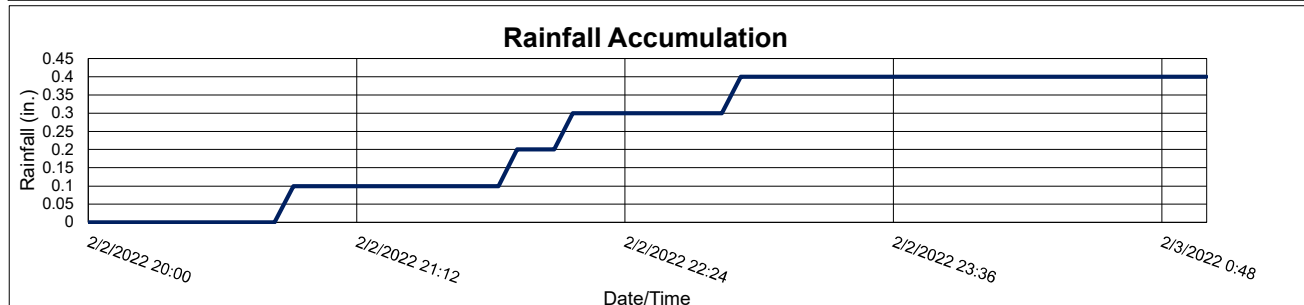
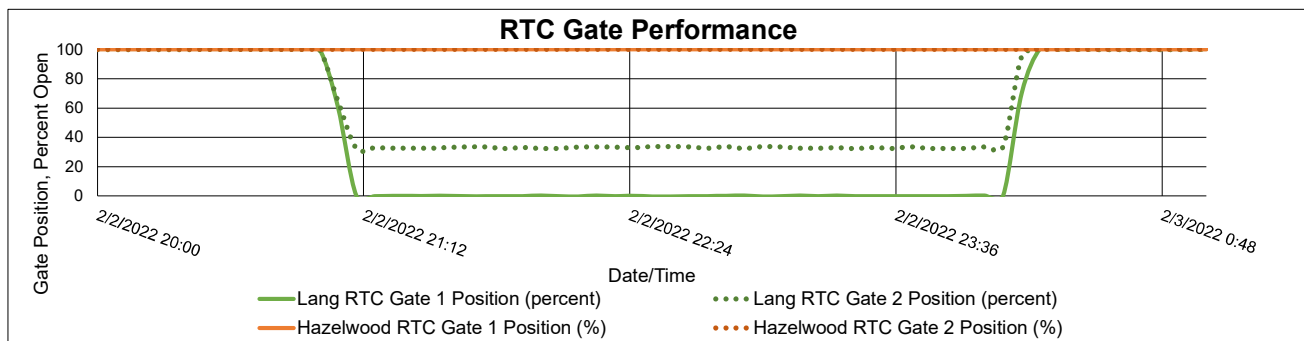
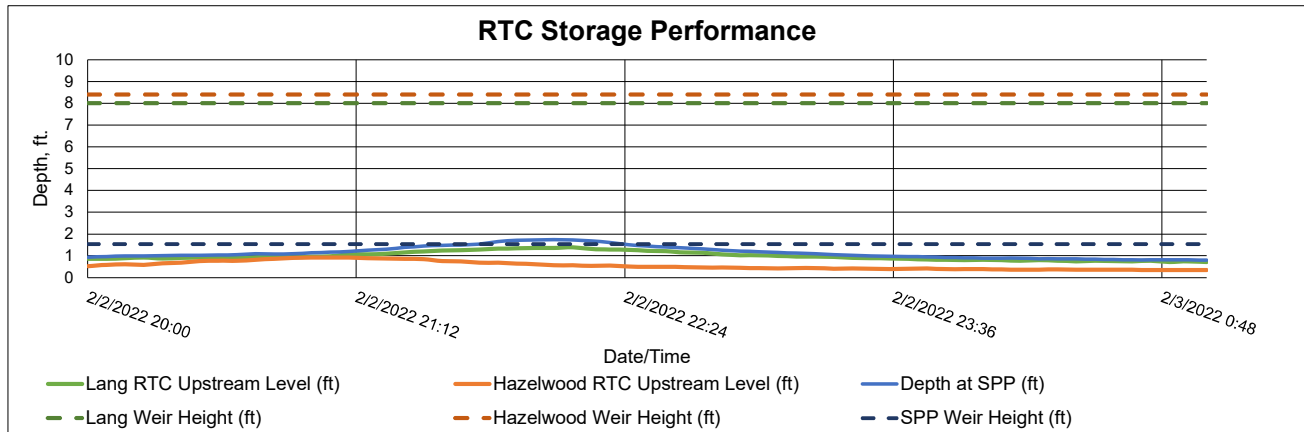
RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.96 ft.	- ft.
Return to Normal Depth:	0.78 ft.	- ft.
Time Gate 1 Activated:	2/2/2022 21:00	N/A
Time Gate 2 Activated:	2/2/2022 21:00	N/A
Time Gate 1 Returned to Normal:	2/3/2022 0:15	N/A
Time Gate 2 Returned to Normal:	2/3/2022 0:15	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.39 ft.	0.92 ft.
Volume Stored:	8,995 Gal.	46,942 Gal.
Unused Storage Volume:	846,047 Gal.	1,219,229 Gal.

SPP:	340
Analysis Date:	3/14/2022
Event Start Date/Time:	2/2/2022 21:00
Event End Date/Time:	2/3/2022 0:15

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.4 in.
Storm Event Duration:	5 hr.
Storm Type:	Less than one year

Percent Capture	64%
Overflow Volume:	31,572 Gal.
Overflow Volume Prevented:	55,937 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	31,572 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

Recommended Operational Changes/Notes:



February 11, 2022

2

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.96 ft.	- ft.
Return to Normal Depth:	0.81 ft.	- ft.
Time Gate 1 Activated:	2/11/2022 18:05	N/A
Time Gate 2 Activated:	2/11/2022 18:05	N/A
Time Gate 1 Returned to Normal:	2/12/2022 12:35	N/A
Time Gate 2 Returned to Normal:	2/12/2022 12:35	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	3.26 ft.	1.29 ft.
Volume Stored:	103,876 Gal.	72,293 Gal.
Unused Storage Volume:	751,166 Gal.	1,193,878 Gal.

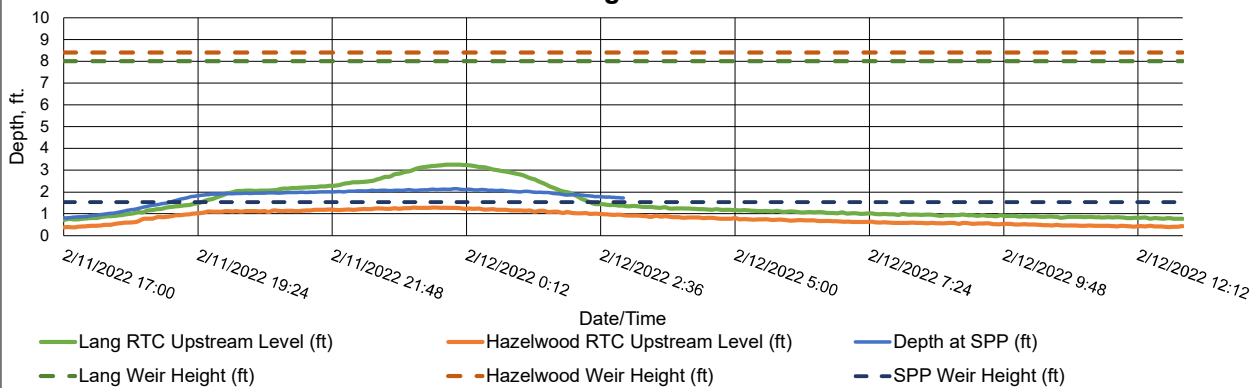
SPP:	340
Analysis Date:	3/14/2022
Event Start Date/Time:	2/11/2022 18:05
Event End Date/Time:	2/12/2022 12:35

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.3 in.
Storm Event Duration:	20 hr.
Storm Type:	Less than one year

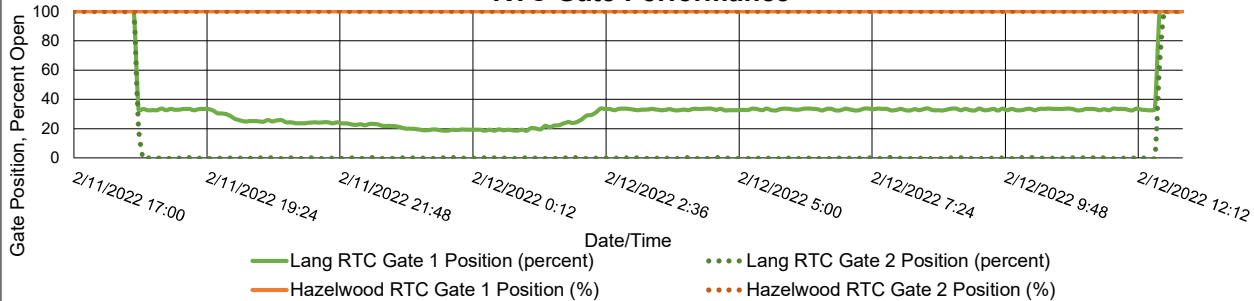
Percent Capture	8%
Overflow Volume:	2,123,387 Gal.
Overflow Volume Prevented:	176,168 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	2,123,387 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

Recommended Operational Changes/Notes:

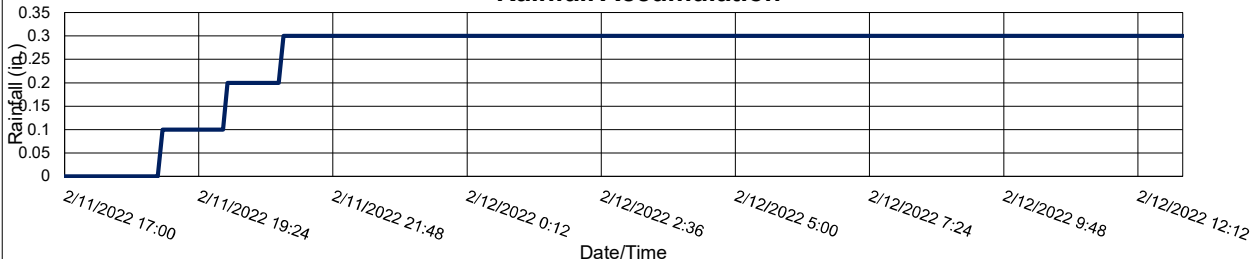
RTC Storage Performance



RTC Gate Performance



Rainfall Accumulation





February 16, 2022

3

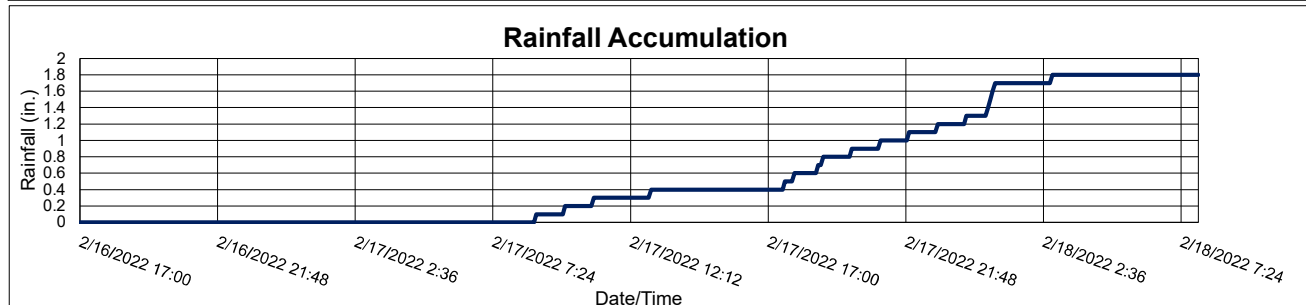
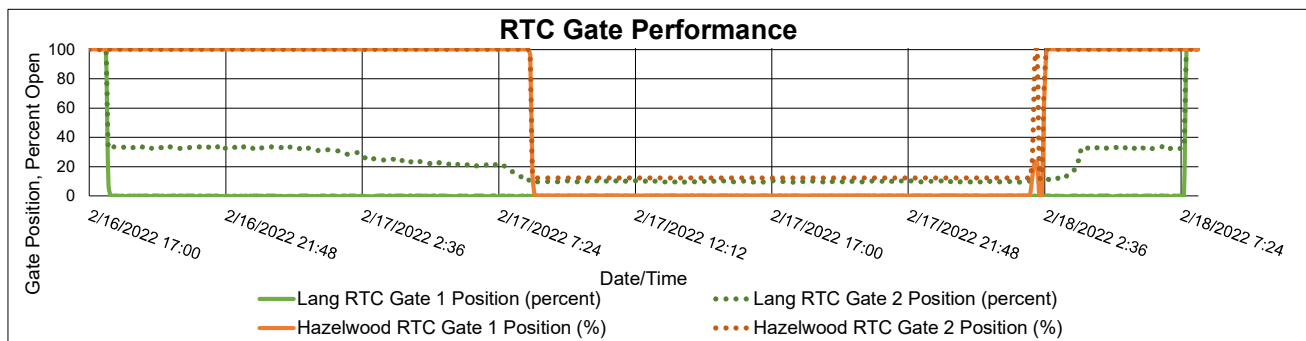
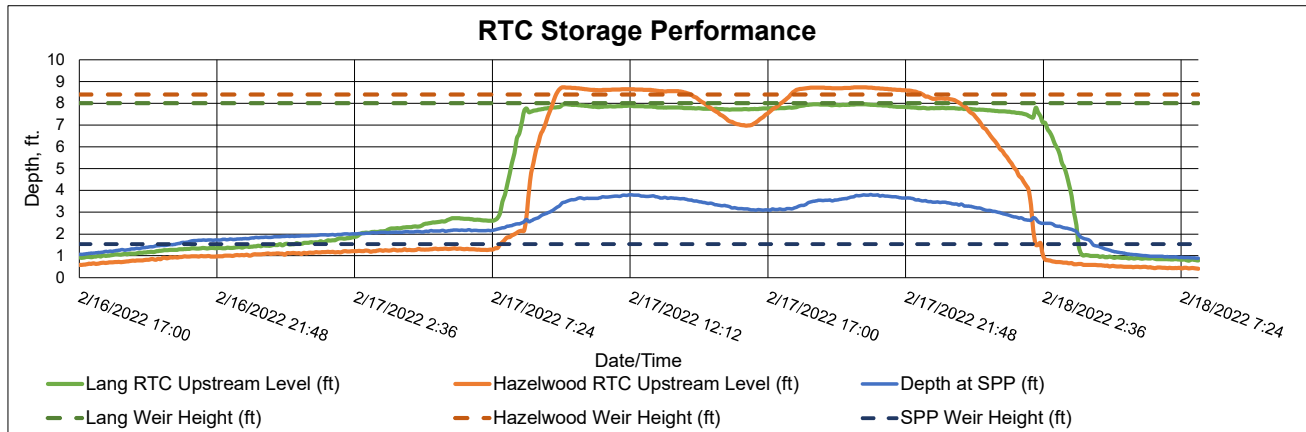
RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.97 ft.	2.15 ft.
Return to Normal Depth:	0.83 ft.	1.05 ft.
Time Gate 1 Activated:	2/16/2022 17:35	2/17/2022 8:30
Time Gate 2 Activated:	2/16/2022 17:35	2/17/2022 8:30
Time Gate 1 Returned to Normal:	2/18/2022 7:35	2/18/2022 2:40
Time Gate 2 Returned to Normal:	2/18/2022 7:35	2/18/2022 2:40
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	7.96 ft.	8.40 ft.
Volume Stored:	845,058 Gal.	1,120,736 Gal.
Unused Storage Volume:	9,822 Gal.	0 Gal.

SPP:	340
Analysis Date:	3/14/2022
Event Start Date/Time:	2/16/2022 17:35
Event End Date/Time:	2/18/2022 7:35

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.8 in.
Storm Event Duration:	39 hr.
Storm Type:	Less than one year

Percent Capture	4%
Overflow Volume:	43,797,469 Gal.
Overflow Volume Prevented:	1,965,794 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	43,797,469 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

Recommended Operational Changes/Notes:



RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.99 ft.	N/A ft.
Return to Normal Depth:	0.81 ft.	0.85 ft.
Time Gate 1 Activated:	2/22/2022 13:55	2/22/2022 18:25
Time Gate 2 Activated:	2/22/2022 13:55	2/22/2022 18:25
Time Gate 1 Returned to Normal:	2/23/2022 7:25	2/23/2022 2:30
Time Gate 2 Returned to Normal:	2/23/2022 7:25	2/23/2022 1:30
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	7.95 ft.	8.40 ft.
Volume Stored:	842,282 Gal.	N/A Gal.
Unused Storage Volume:	12,267 Gal.	0 Gal.

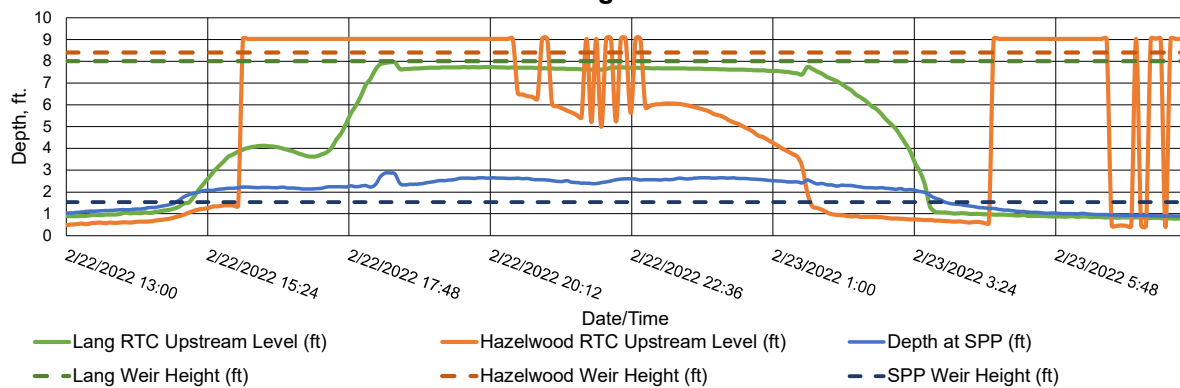
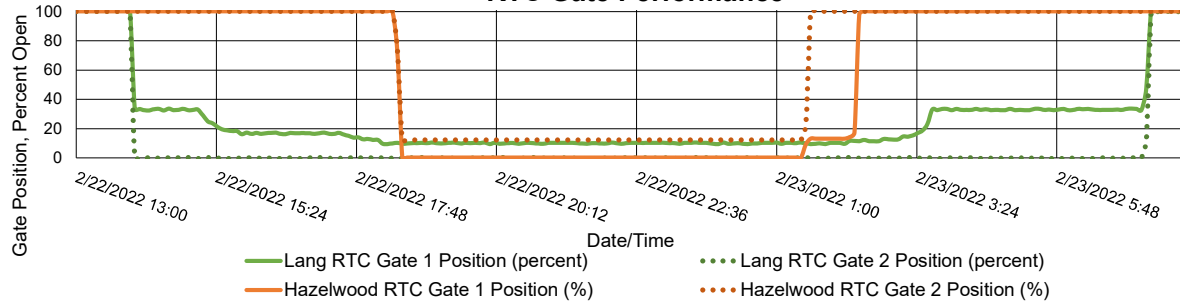
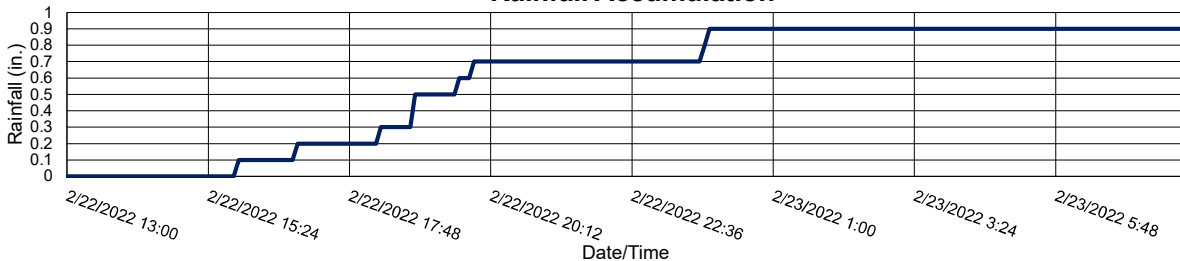
SPP:	340
Analysis Date:	3/14/2022
Event Start Date/Time:	2/22/2022 13:55
Event End Date/Time:	2/23/2022 7:25

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.9 in.
Storm Event Duration:	19 hr.
Storm Type:	Less than one year

Percent Capture	8%
Overflow Volume:	9,163,704 Gal.
Overflow Volume Prevented:	842,282 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	9,163,704 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

**Recommended Operational Changes/Notes:**

Hazelwood RTC Upstream Level started failing to its max level of 9.03 ft. during this event and was not used to calculate storage.

**RTC Storage Performance****RTC Gate Performance****Rainfall Accumulation**

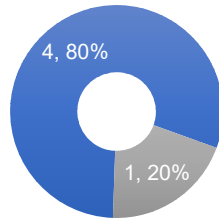
# March 2022 Lang Ave. and Hazelwood RTC KPI Report

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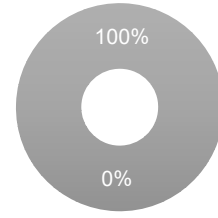


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**Prevented SPP Events**

■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

**Prevented SPP Volume**

■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
4	1	-	809,678
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
3/6/2022	N/A	-	#VALUE!
3/20/2022	N/A	-	#VALUE!
3/23/2022	N/A	809,678	#VALUE!
3/25/2022	N/A	-	#VALUE!
3/29/2022	N/A	-	#VALUE!

March 6, 2022

1

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.53 ft.	- ft.
Return to Normal Depth:	0.70 ft.	- ft.
Time Gate 1 Activated:	3/6/2022 17:50	N/A
Time Gate 2 Activated:	3/6/2022 17:50	N/A
Time Gate 1 Returned to Normal:	3/6/2022 22:20	N/A
Time Gate 2 Returned to Normal:	3/6/2022 22:20	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.11 ft.	8.40 ft.
Volume Stored:	N/A Gal.	N/A Gal.
Unused Storage Volume:	N/A Gal.	N/A Gal.

SPP:	340
Analysis Date:	5/5/2022
Event Start Date/Time:	3/6/2022 17:50
Event End Date/Time:	3/6/2022 21:20

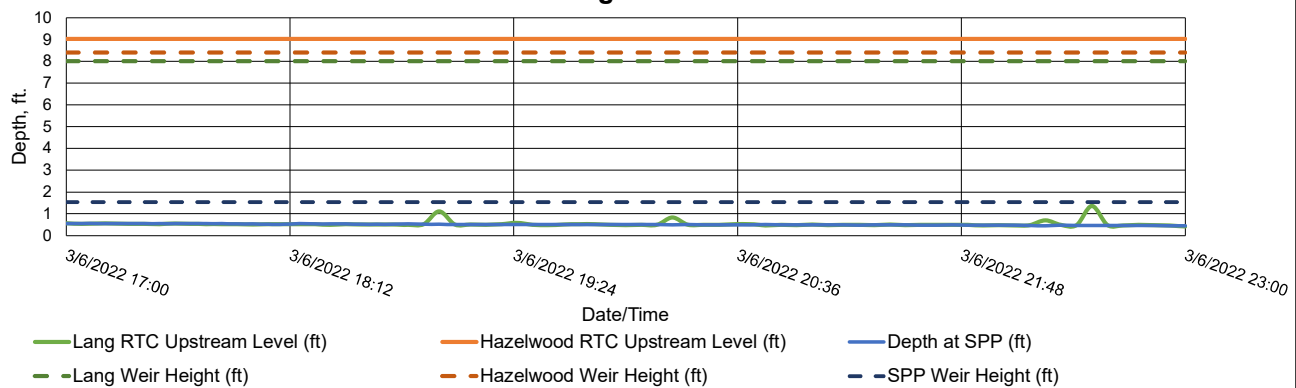
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	6 hr.
Storm Type:	N/A

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	N/A Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	No

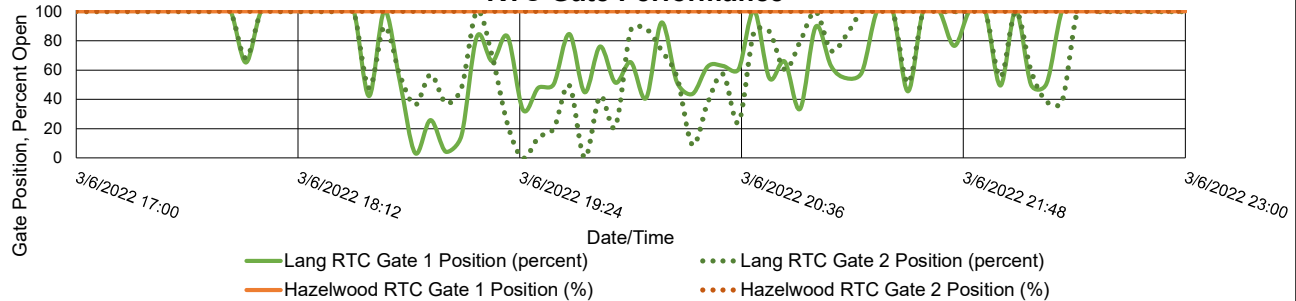
#### Recommended Operational Changes/Notes:

Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and has not been used for storage calculations. Lang RTC Upstream Level was showing bad data around 3/6 due to a waterlogged display and has not been used for storage calculations. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.

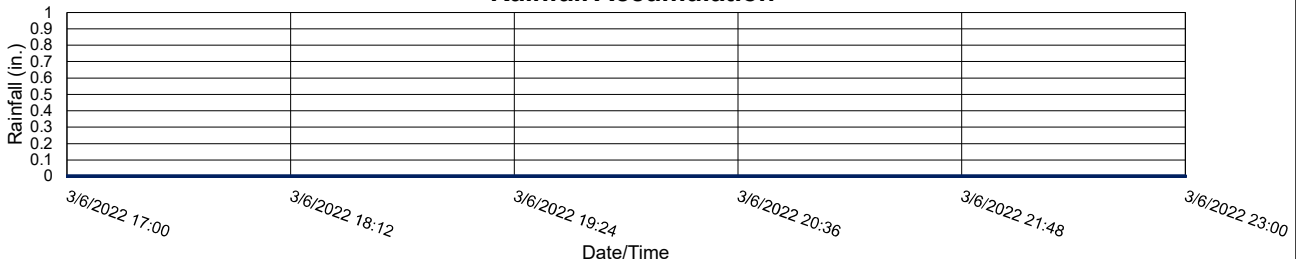
#### RTC Storage Performance



#### RTC Gate Performance



#### Rainfall Accumulation



March 20, 2022

2

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.43 ft.	- ft.
Return to Normal Depth:	(0.79) ft.	- ft.
Time Gate 1 Activated:	3/20/2022 3:15	N/A
Time Gate 2 Activated:	3/20/2022 3:15	N/A
Time Gate 1 Returned to Normal:	3/20/2022 3:55	N/A
Time Gate 2 Returned to Normal:	3/20/2022 3:55	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.12 ft.	8.40 ft.
Volume Stored:	N/A Gal.	N/A Gal.
Unused Storage Volume:	N/A Gal.	N/A Gal.

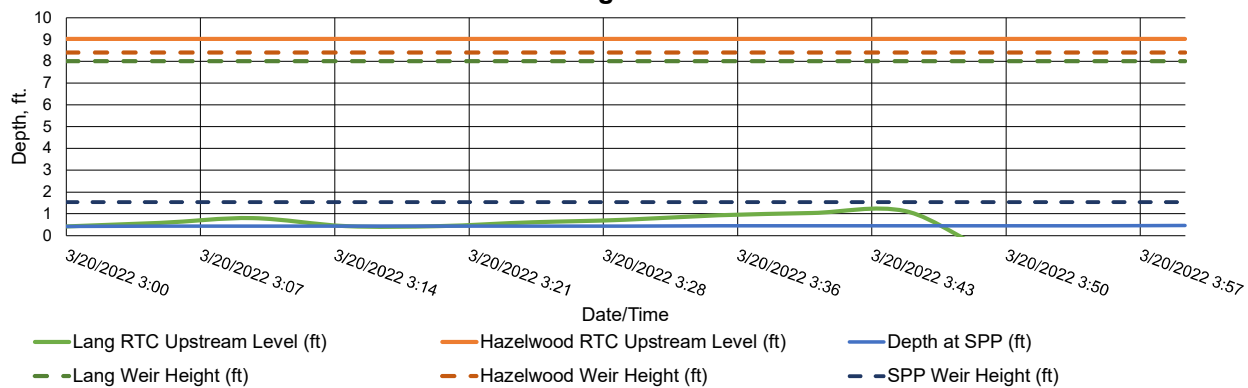
SPP:	340
Analysis Date:	5/3/2022
Event Start Date/Time:	3/20/2022 3:15
Event End Date/Time:	3/20/2022 3:55

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.01 in.
Storm Event Duration:	1 hr.
Storm Type:	Less than one year

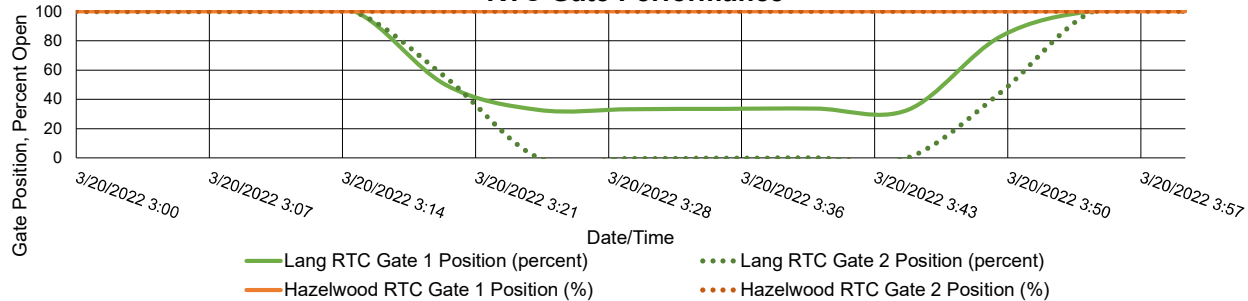
Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	N/A Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	No

**Recommended Operational Changes/Notes:**  
Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and has not been used for storage calculations. Lang RTC Upstream Level was showing bad data around 3/6 due to a waterlogged display and has not been used for storage calculations.

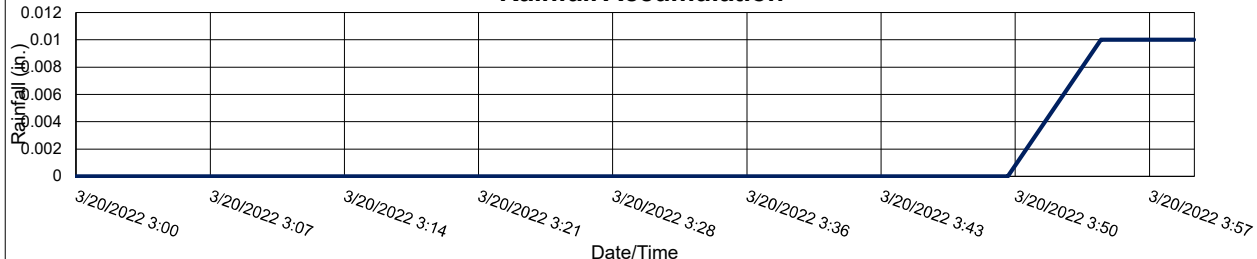
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



# March 23, 2022

# 3

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.51 ft.	9.03 ft.
Return to Normal Depth:	(0.80) ft.	- ft.
Time Gate 1 Activated:	3/23/2022 14:20	N/A
Time Gate 2 Activated:	3/23/2022 14:20	N/A
Time Gate 1 Returned to Normal:	3/24/2022 12:00	N/A
Time Gate 2 Returned to Normal:	3/24/2022 11:55	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.05 ft.	8.40 ft.
Volume Stored:	N/A Gal.	N/A Gal.
Unused Storage Volume:	N/A Gal.	N/A Gal.

SPP:	340
Analysis Date:	5/5/2022
Event Start Date/Time:	3/23/2022 14:20
Event End Date/Time:	3/24/2022 5:25

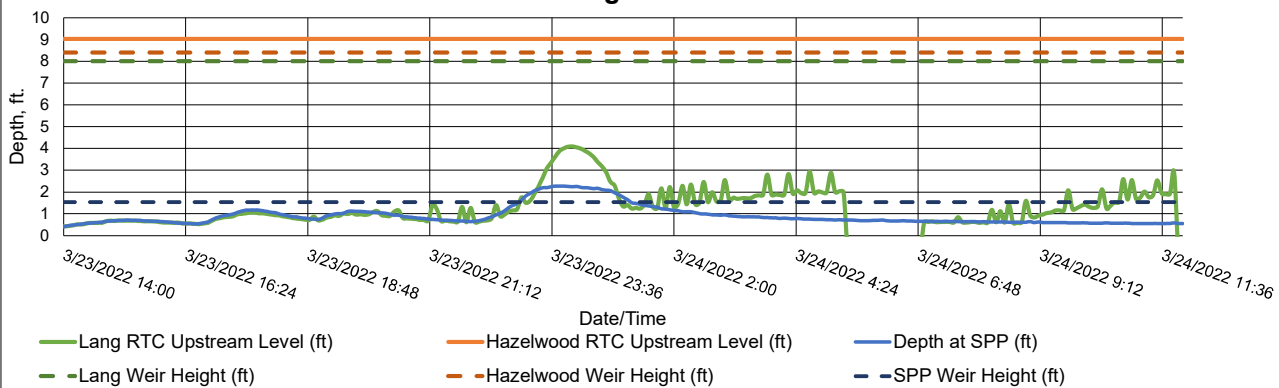
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.6 in.
Storm Event Duration:	22 hr.
Storm Type:	Less than one year

Percent Capture	10%
Overflow Volume:	809,678 Gal.
Overflow Volume Prevented:	N/A Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	809,678 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

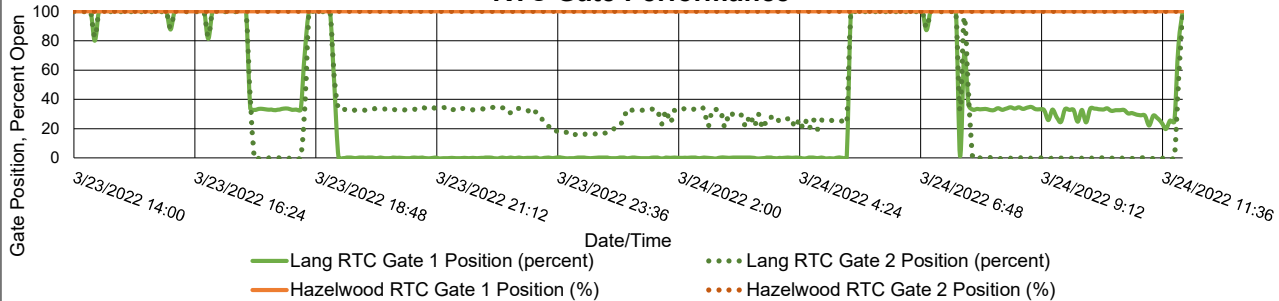
## Recommended Operational Changes/Notes:

Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and has not been used for storage calculations. Lang RTC Upstream Level was showing bad data since 3/6 due to a waterlogged display and has not been used for storage calculations.

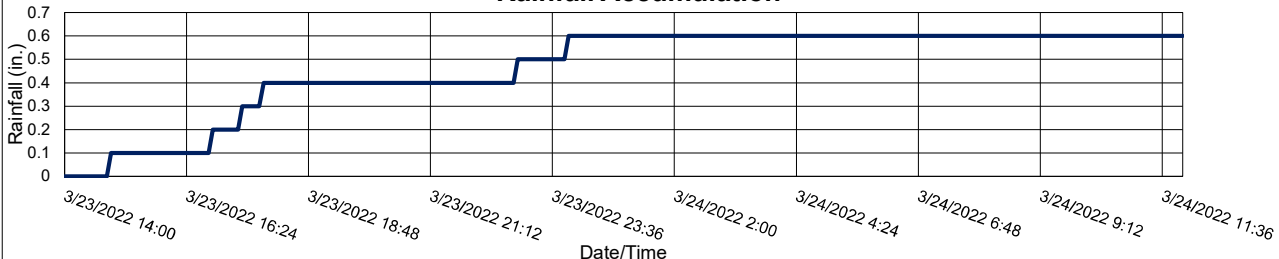
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



March 25, 2022

4

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.83 ft.	- ft.
Return to Normal Depth:	0.51 ft.	- ft.
Time Gate 1 Activated:	3/25/2022 17:30	N/A
Time Gate 2 Activated:	3/25/2022 17:30	N/A
Time Gate 1 Returned to Normal:	3/25/2022 21:00	N/A
Time Gate 2 Returned to Normal:	3/25/2022 21:00	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	2.64 ft.	8.40 ft.
Volume Stored:	N/A Gal.	N/A Gal.
Unused Storage Volume:	N/A Gal.	N/A Gal.

SPP:	340
Analysis Date:	5/5/2022
Event Start Date/Time:	3/25/2022 17:30
Event End Date/Time:	3/25/2022 21:00

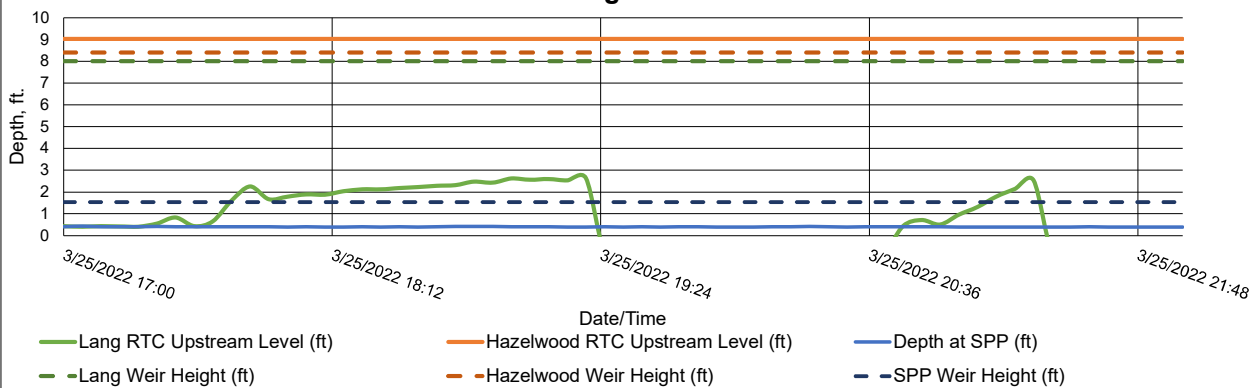
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	5 hr.
Storm Type:	N/A

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	N/A Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	No

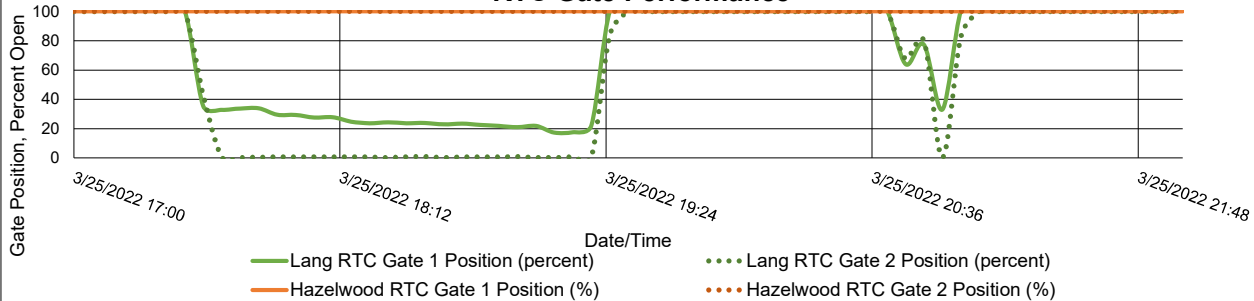
#### Recommended Operational Changes/Notes:

Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and has not been used for storage calculations. Lang RTC Upstream Level was showing bad data since 3/6 due to a waterlogged display and has not been used for storage calculations. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.

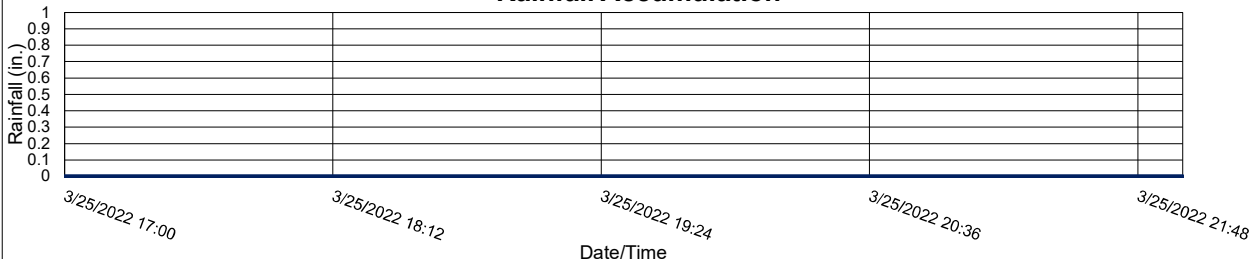
#### RTC Storage Performance



#### RTC Gate Performance



#### Rainfall Accumulation





March 29, 2022

5

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.38 ft.	- ft.
Return to Normal Depth:	0.36 ft.	- ft.
Time Gate 1 Activated:	3/29/2022 20:40	N/A
Time Gate 2 Activated:	3/29/2022 20:40	N/A
Time Gate 1 Returned to Normal:	3/30/2022 8:00	N/A
Time Gate 2 Returned to Normal:	3/30/2022 7:55	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.19 ft.	8.40 ft.
Volume Stored:	N/A Gal.	N/A Gal.
Unused Storage Volume:	N/A Gal.	N/A Gal.

SPP:	340
Analysis Date:	5/5/2022
Event Start Date/Time:	3/29/2022 20:40
Event End Date/Time:	3/30/2022 4:00

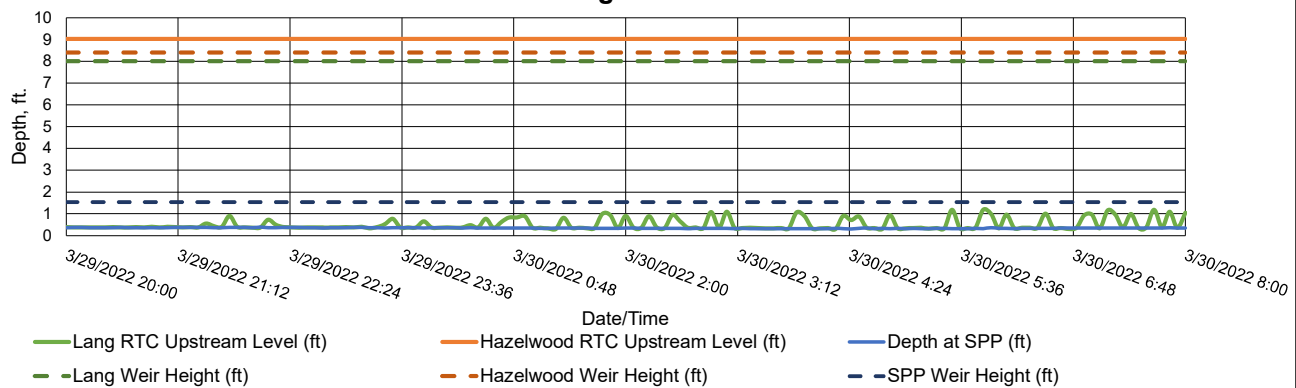
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	12 hr.
Storm Type:	NA

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	N/A Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	No

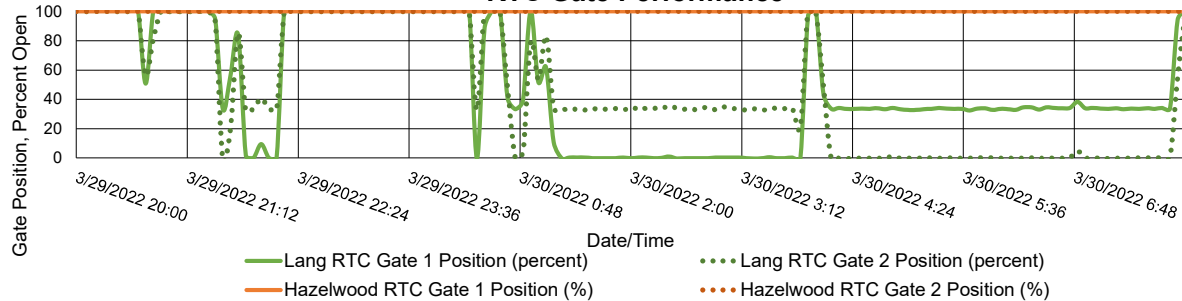
#### Recommended Operational Changes/Notes:

Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and has not been used for storage calculations. Lang RTC Upstream Level was showing bad data since 3/6 due to a waterlogged display and has not been used for storage calculations. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.

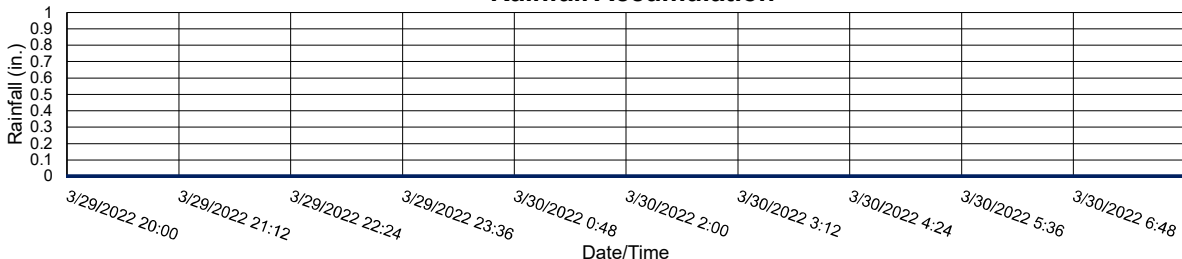
#### RTC Storage Performance



#### RTC Gate Performance



#### Rainfall Accumulation



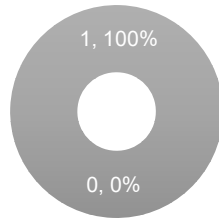
# April 2022 Lang Ave. and Hazelwood RTC KPI Report

**BUFFALO**  
SEWER AUTHORITY

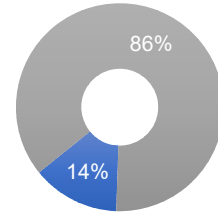


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**Prevented SPP Events**

■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

**Prevented SPP Volume**

■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
0	1	843,092	5,342,541
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
4/25/2022	843,092	5,342,541	14%

April 25, 2022

1

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.94 ft.	- ft.
Return to Normal Depth:	0.78 ft.	- ft.
Time Gate 1 Activated:	4/25/2022 18:15	N/A
Time Gate 2 Activated:	4/25/2022 18:15	N/A
Time Gate 1 Returned to Normal:	4/26/2022 4:10	N/A
Time Gate 2 Returned to Normal:	4/26/2022 4:10	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	7.95 ft.	8.40 ft.
Volume Stored:	843,092 Gal.	N/A Gal.
Unused Storage Volume:	12,267 Gal.	N/A Gal.

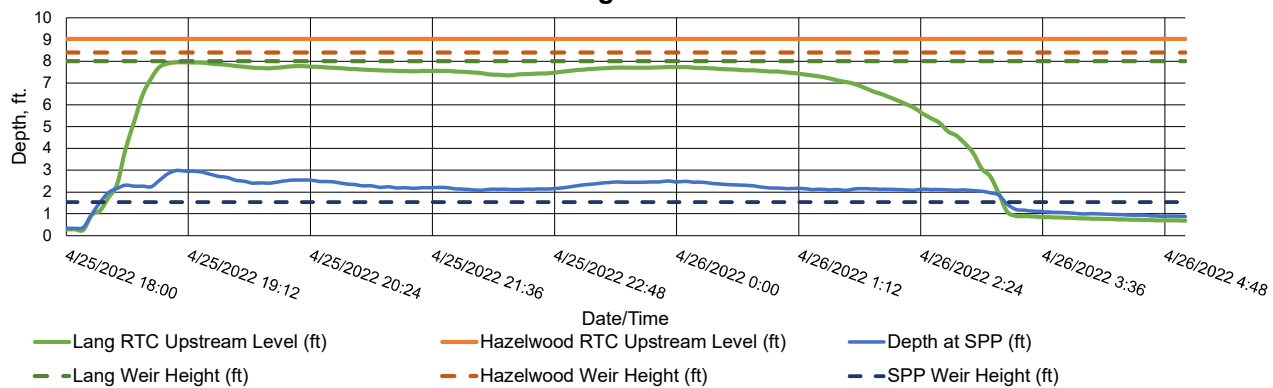
SPP:	340
Analysis Date:	5/10/2022
Event Start Date/Time:	4/25/2022 18:15
Event End Date/Time:	4/26/2022 4:10

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.9 in.
Storm Event Duration:	12 hr.
Storm Type:	Less than two years

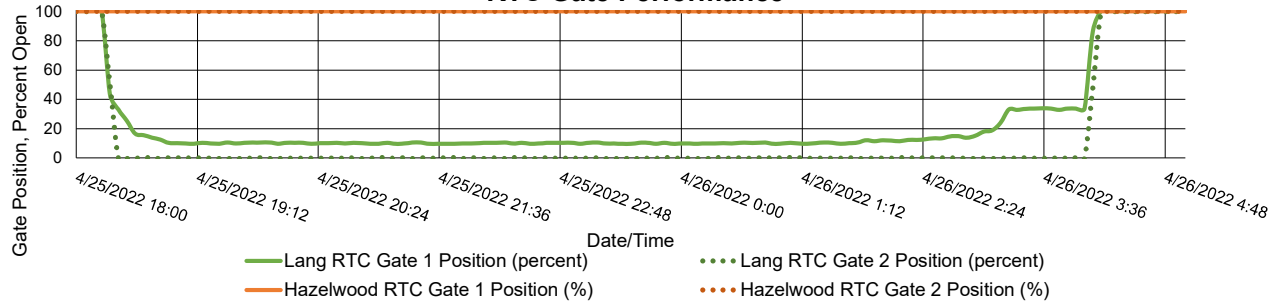
Percent Capture	14%
Overflow Volume:	5,342,541 Gal.
Overflow Volume Prevented:	843,092 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	5,342,541 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

**Recommended Operational Changes/Notes:**  
Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and was not used for storage calculations.

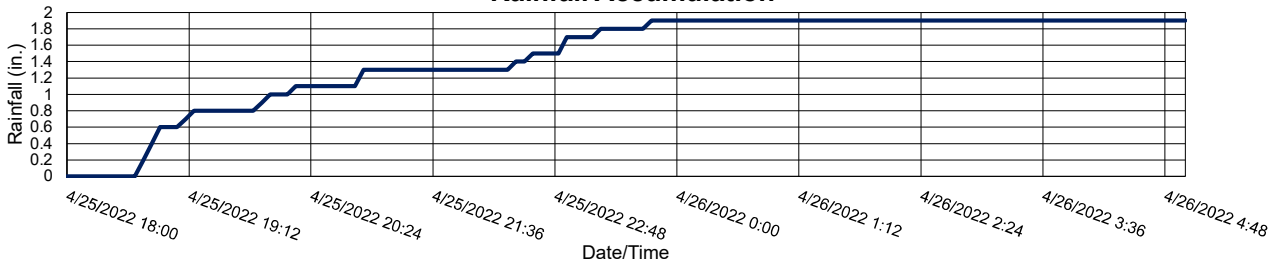
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



# May 2022 Lang Ave. and Hazelwood RTC KPI Report

**BUFFALO**  
SEWER AUTHORITY



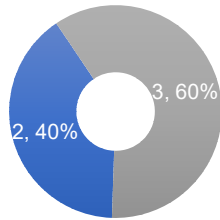
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# Lang Ave & Hazelwood RTC Monthly Performance Report

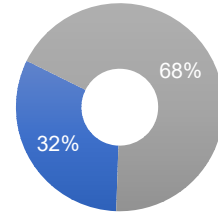
May 2022

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
2	3	700,798	1,502,985
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
5/4/2022	1,556	-	100%
5/16/2022	1,854	-	100%
5/21/2022	677,039	1,389,024	33%
5/26/2022	6,683	16,298	29%
5/27/2022	13,666	97,663	12%

May 4, 2022

1

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.97 ft.	- ft.
Return to Normal Depth:	0.78 ft.	- ft.
Time Gate 1 Activated:	5/4/2022 7:00	N/A
Time Gate 2 Activated:	5/4/2022 7:00	N/A
Time Gate 1 Returned to Normal:	5/4/2022 8:15	N/A
Time Gate 2 Returned to Normal:	5/4/2022 8:15	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.06 ft.	8.40 ft.
Volume Stored:	1,556 Gal.	N/A Gal.
Unused Storage Volume:	853,324 Gal.	N/A Gal.

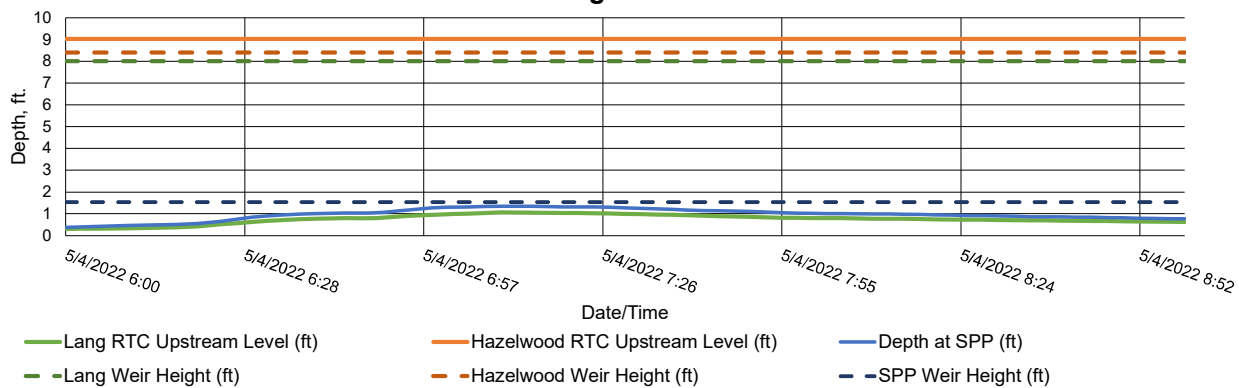
SPP:	340
Analysis Date:	6/13/2022
Event Start Date/Time:	5/4/2022 7:00
Event End Date/Time:	5/4/2022 8:15

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.4 in.
Storm Event Duration:	3 hr.
Storm Type:	Less than one year

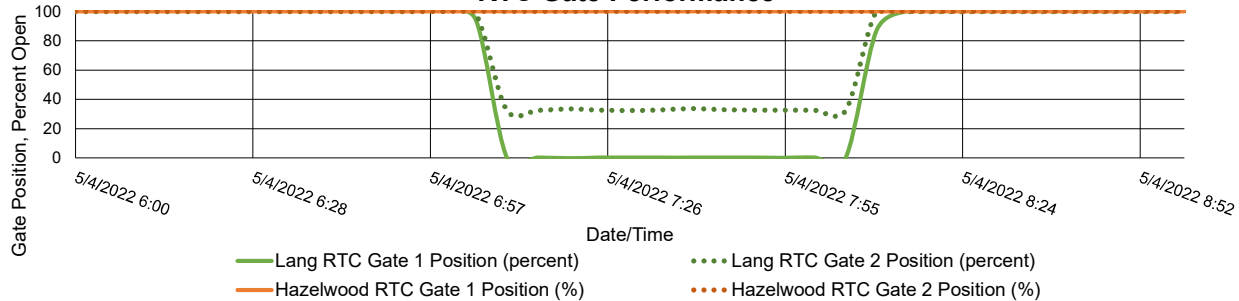
Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	1,556 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

**Recommended Operational Changes/Notes:**  
Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and was not used for storage calculations.

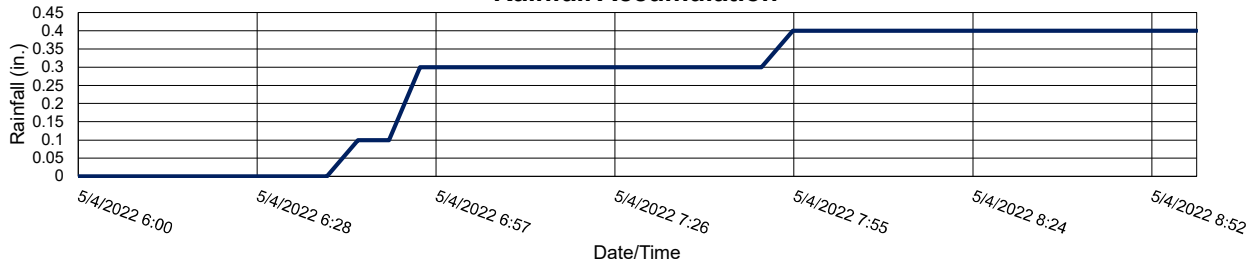
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



May 16, 2022

2

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.94 ft.	- ft.
Return to Normal Depth:	0.79 ft.	- ft.
Time Gate 1 Activated:	5/16/2022 15:35	N/A
Time Gate 2 Activated:	5/16/2022 15:35	N/A
Time Gate 1 Returned to Normal:	5/16/2022 16:40	N/A
Time Gate 2 Returned to Normal:	5/16/2022 16:40	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.05 ft.	8.40 ft.
Volume Stored:	1,854 Gal.	N/A Gal.
Unused Storage Volume:	853,505 Gal.	N/A Gal.

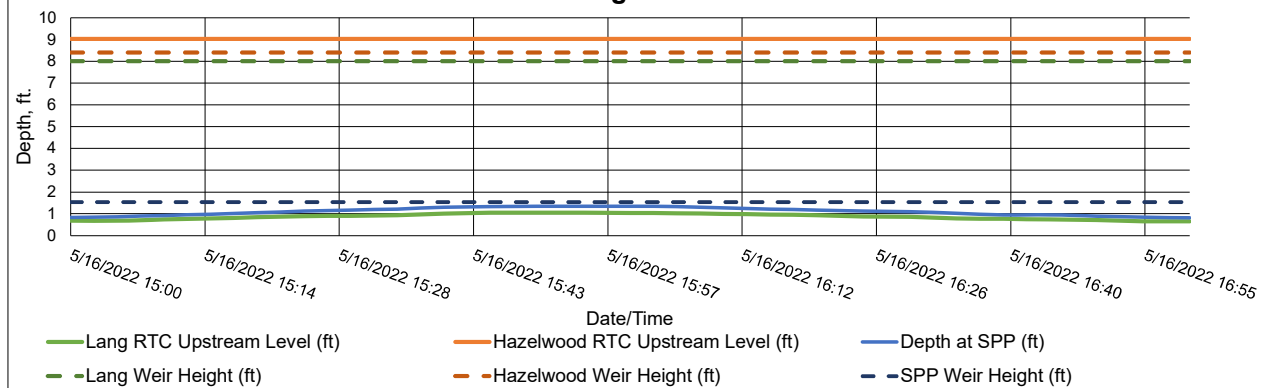
SPP:	340
Analysis Date:	6/13/2022
Event Start Date/Time:	5/16/2022 15:35
Event End Date/Time:	5/16/2022 16:40

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.3 in.
Storm Event Duration:	2 hr.
Storm Type:	Less than one year

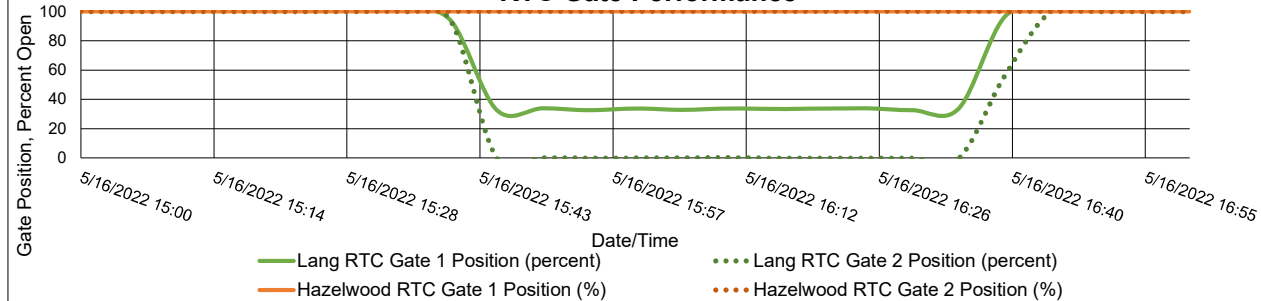
Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	1,854 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

**Recommended Operational Changes/Notes:**  
Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and was not used for storage calculations.

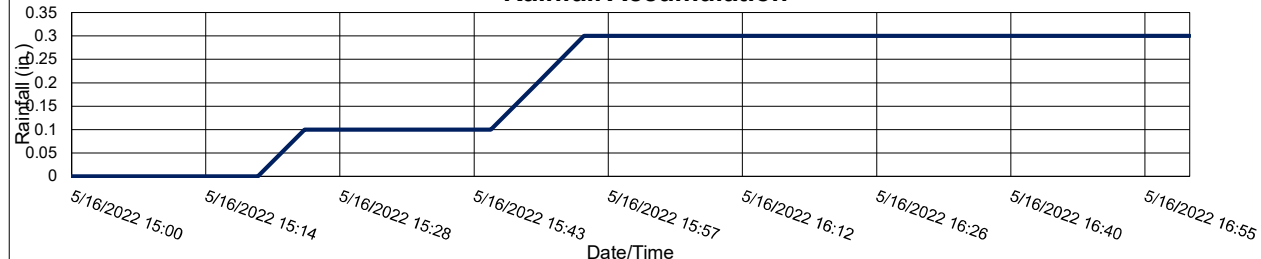
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation





May 21, 2021

3

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.00 ft.	- ft.
Return to Normal Depth:	0.73 ft.	- ft.
Time Gate 1 Activated:	5/21/2022 20:05	N/A
Time Gate 2 Activated:	5/21/2022 20:05	N/A
Time Gate 1 Returned to Normal:	5/22/2022 1:20	N/A
Time Gate 2 Returned to Normal:	5/22/2022 1:20	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	6.49 ft.	8.40 ft.
Volume Stored:	677,039 Gal.	N/A Gal.
Unused Storage Volume:	327,641 Gal.	N/A Gal.

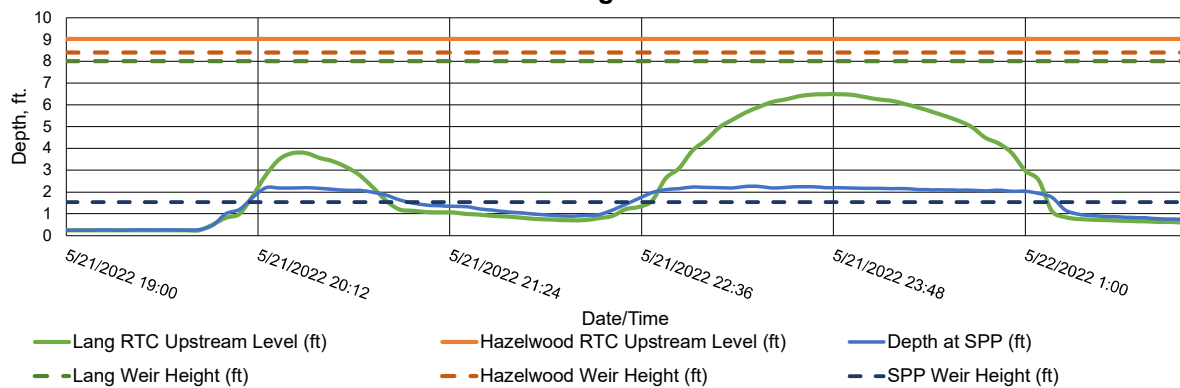
SPP:	340
Analysis Date:	6/13/2022
Event Start Date/Time:	5/21/2022 20:05
Event End Date/Time:	5/22/2022 1:20

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.1 in.
Storm Event Duration:	7 hr.
Storm Type:	Less than one year

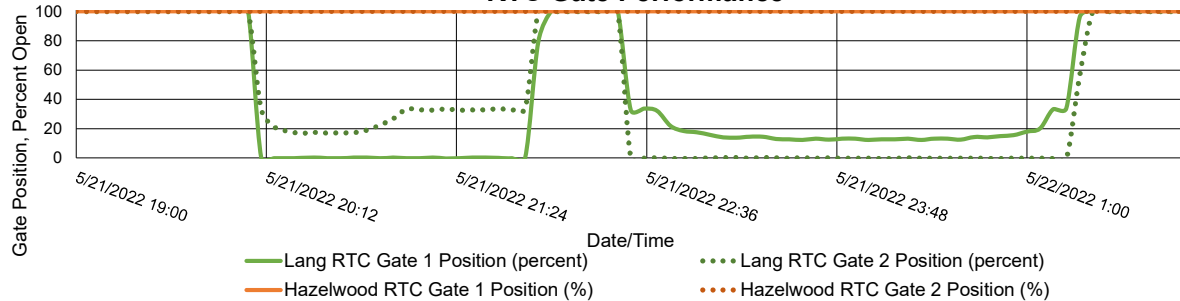
Percent Capture	33%
Overflow Volume:	1,389,024 Gal.
Overflow Volume Prevented:	677,039 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	1,389,024 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

**Recommended Operational Changes/Notes:**  
Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and was not used for storage calculations.

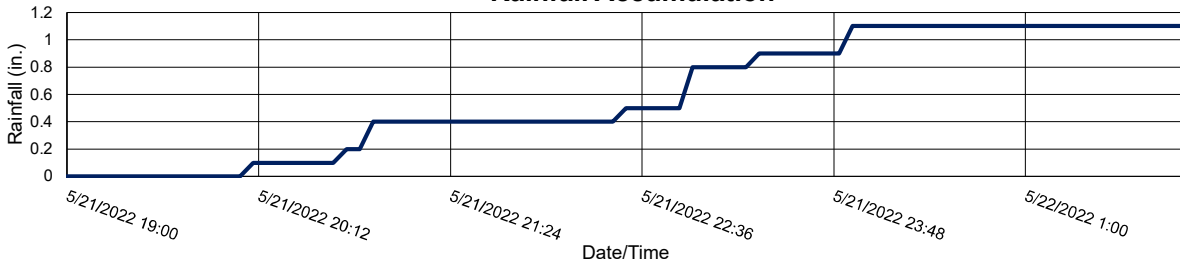
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



May 26, 2022

4

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.95 ft.	- ft.
Return to Normal Depth:	0.76 ft.	- ft.
Time Gate 1 Activated:	5/26/2022 22:10	N/A
Time Gate 2 Activated:	5/26/2022 22:10	N/A
Time Gate 1 Returned to Normal:	5/26/2022 23:15	N/A
Time Gate 2 Returned to Normal:	5/26/2022 23:15	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.29 ft.	8.40 ft.
Volume Stored:	6,683 Gal.	N/A Gal.
Unused Storage Volume:	848,519 Gal.	N/A Gal.

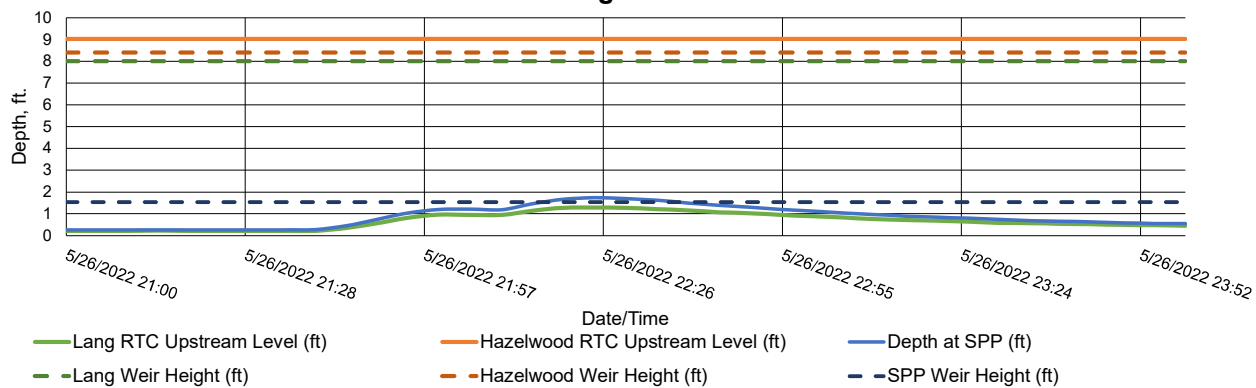
SPP:	340
Analysis Date:	6/13/2022
Event Start Date/Time:	5/26/2022 22:10
Event End Date/Time:	5/26/2022 23:15

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.6 in.
Storm Event Duration:	3 hr.
Storm Type:	Less than one year

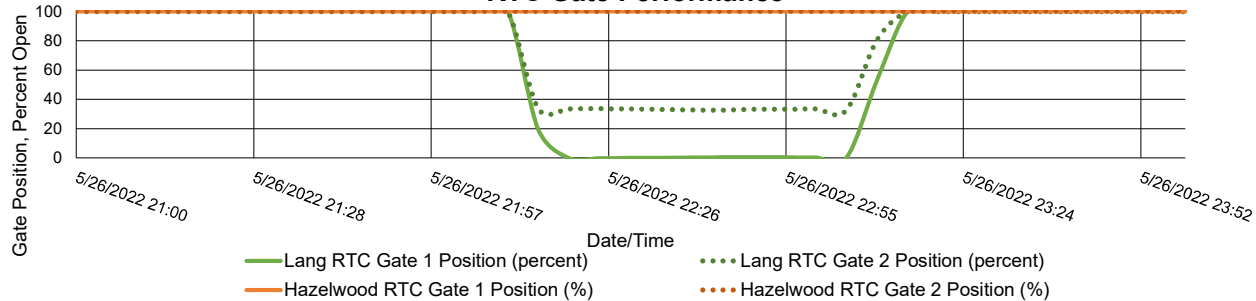
Percent Capture	29%
Overflow Volume:	16,298 Gal.
Overflow Volume Prevented:	6,683 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	16,298 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

**Recommended Operational Changes/Notes:**  
Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and was not used for storage calculations.

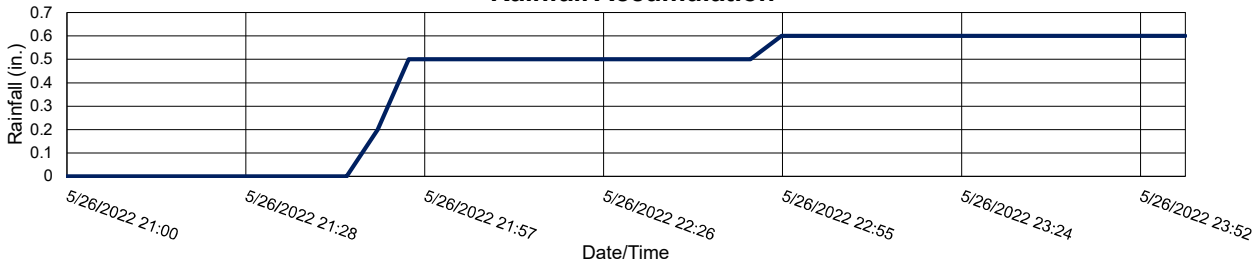
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



May 27, 2021

5

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.00 ft.	- ft.
Return to Normal Depth:	0.78 ft.	- ft.
Time Gate 1 Activated:	5/27/2022 4:25	N/A
Time Gate 2 Activated:	5/27/2022 4:25	N/A
Time Gate 1 Returned to Normal:	5/27/2022 7:55	N/A
Time Gate 2 Returned to Normal:	5/27/2022 7:50	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.44 ft.	8.40 ft.
Volume Stored:	13,666 Gal.	N/A Gal.
Unused Storage Volume:	844,721 Gal.	N/A Gal.

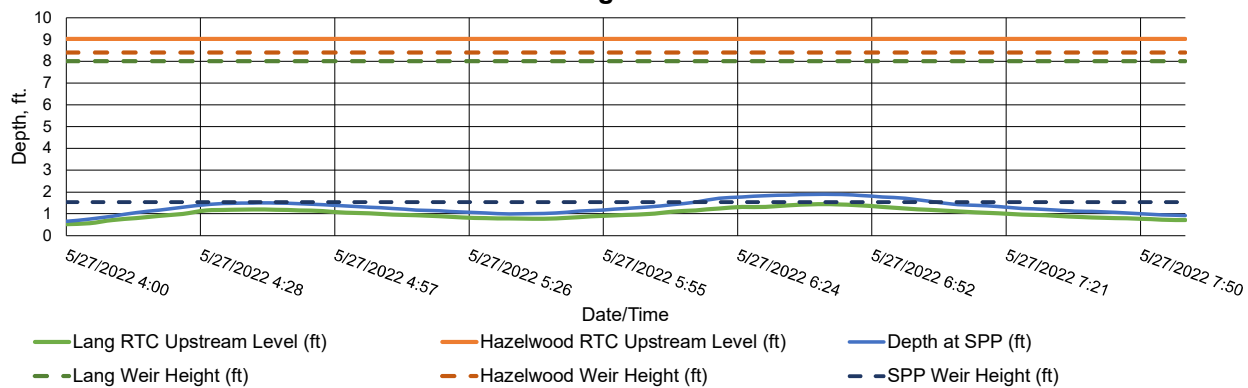
SPP:	340
Analysis Date:	6/13/2022
Event Start Date/Time:	5/27/2022 4:25
Event End Date/Time:	5/27/2022 7:55

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.8 in.
Storm Event Duration:	4 hr.
Storm Type:	Less than one year

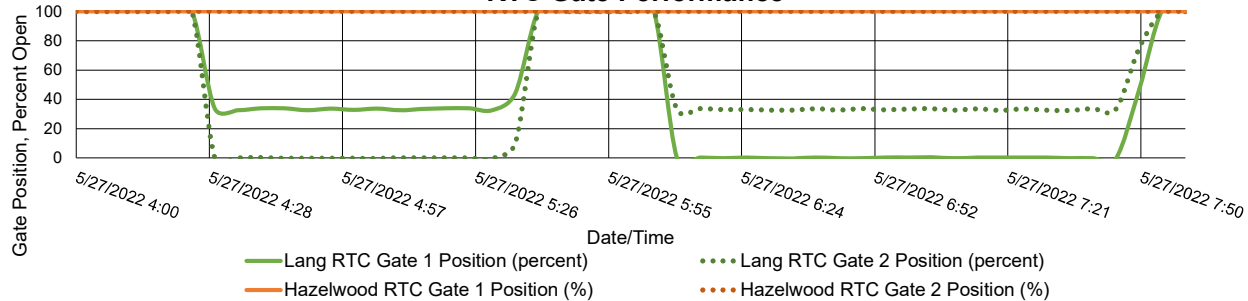
Percent Capture	12%
Overflow Volume:	97,663 Gal.
Overflow Volume Prevented:	13,666 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	97,663 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

**Recommended Operational Changes/Notes:**  
Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and was not used for storage calculations.

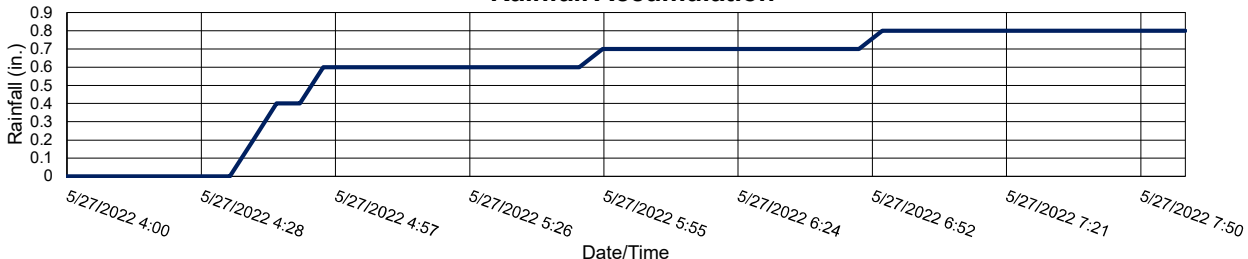
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



# June 2022 Lang Ave. and Hazelwood RTC KPI Report

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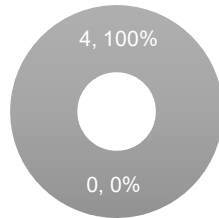
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# Lang Ave & Hazelwood RTC Monthly Performance Report

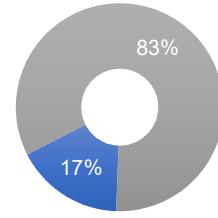
June 2022

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
0	4	2,013,298	9,881,018
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
6/1/2022	354,048	707,623	33%
6/6/2022	223,530	586,721	28%
6/9/2022	857,448	7,653,008	10%
6/22/2022	578,272	933,666	38%

# June 1, 2022

# 1

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.99 ft.	- ft.
Return to Normal Depth:	0.77 ft.	- ft.
Time Gate 1 Activated:	6/1/2022 14:55	N/A
Time Gate 2 Activated:	6/1/2022 14:55	N/A
Time Gate 1 Returned to Normal:	6/1/2022 19:10	N/A
Time Gate 2 Returned to Normal:	6/1/2022 19:10	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	5.47 ft.	8.40 ft.
Volume Stored:	354,048 Gal.	N/A Gal.
Unused Storage Volume:	500,501 Gal.	N/A Gal.

SPP:	340
Analysis Date:	7/7/2022
Event Start Date/Time:	6/1/2022 14:55
Event End Date/Time:	6/1/2022 19:10

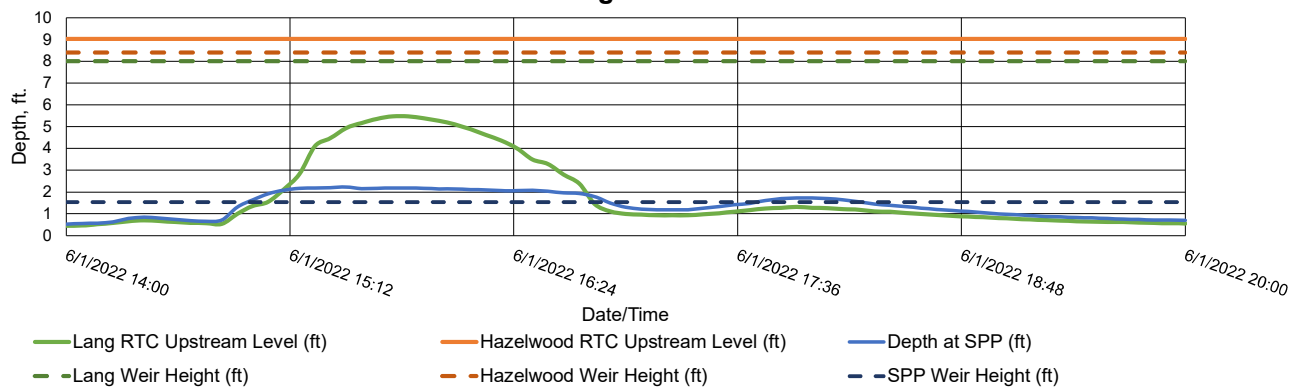
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.51 in.
Storm Event Duration:	6 hr.
Storm Type:	Less than one year

Percent Capture	33%
Overflow Volume:	707,623 Gal.
Overflow Volume Prevented:	354,048 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	707,623 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

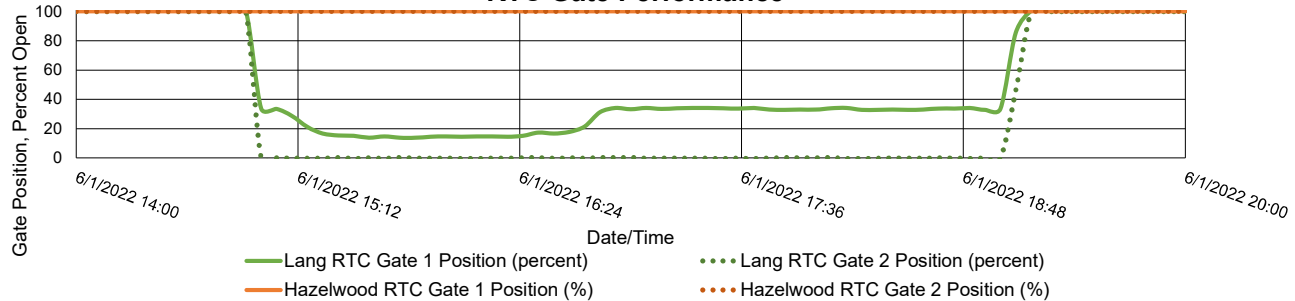
**Recommended Operational Changes/Notes:**

Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and was not used for storage calculations. Rainfall data sourced from BSA rain gauge station at South Buffalo.

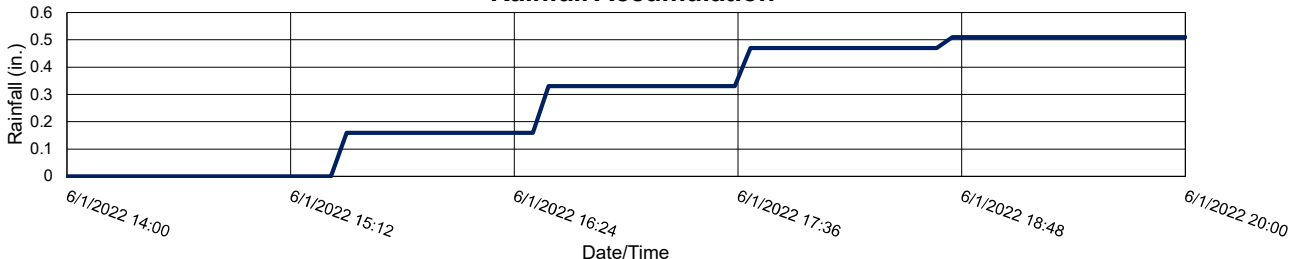
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



June 6, 2021

2

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.96 ft.	9.03 ft.
Return to Normal Depth:	0.78 ft.	- ft.
Time Gate 1 Activated:	6/6/2022 23:05	N/A
Time Gate 2 Activated:	6/6/2022 23:05	N/A
Time Gate 1 Returned to Normal:	6/7/2022 12:50	N/A
Time Gate 2 Returned to Normal:	6/7/2022 12:45	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	4.46 ft.	8.40 ft.
Volume Stored:	223,530 Gal.	N/A Gal.
Unused Storage Volume:	635,260 Gal.	N/A Gal.

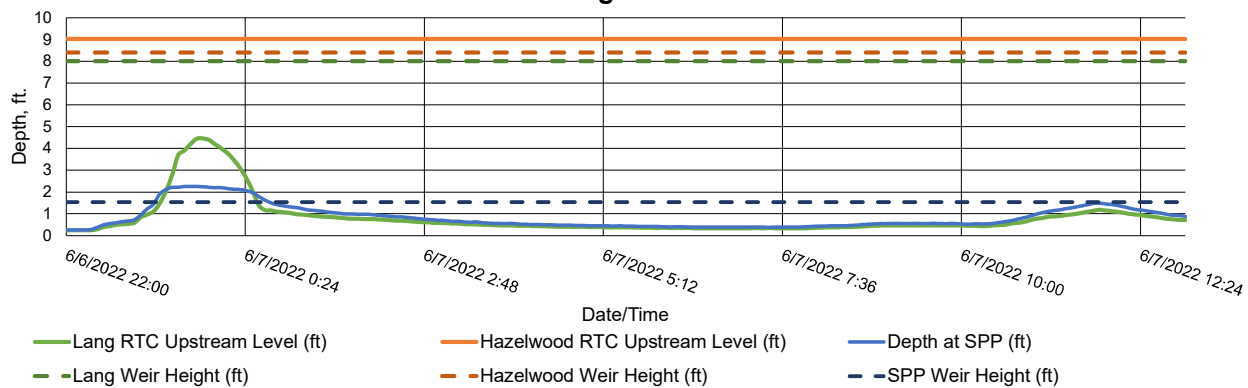
SPP:	340
Analysis Date:	7/7/2022
Event Start Date/Time:	6/6/2022 23:05
Event End Date/Time:	6/7/2022 12:50

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.6 in.
Storm Event Duration:	15 hr.
Storm Type:	Less than one year

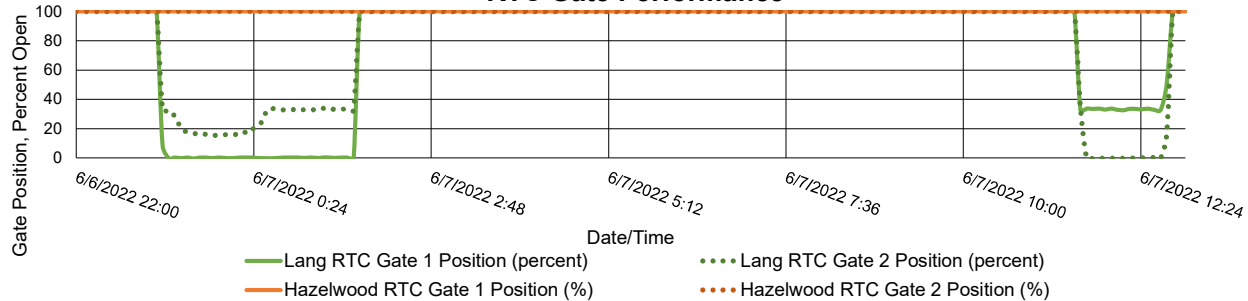
Percent Capture	28%
Overflow Volume:	586,721 Gal.
Overflow Volume Prevented:	223,530 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	586,721 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

**Recommended Operational Changes/Notes:**  
Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and was not used for storage calculations.

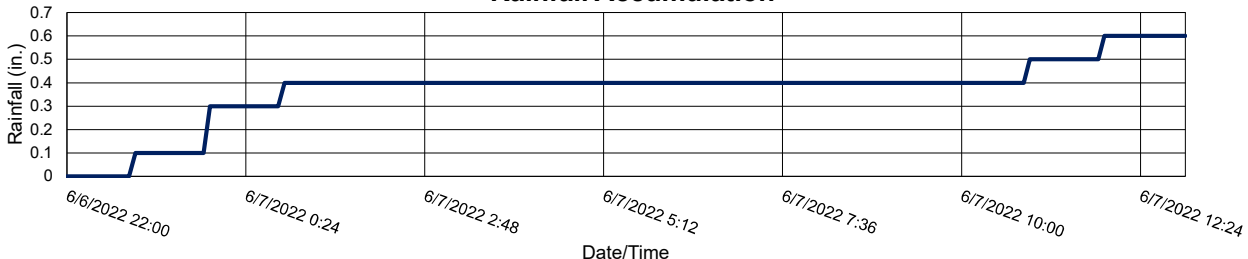
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



June 9, 2021

3

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.96 ft.	- ft.
Return to Normal Depth:	0.79 ft.	- ft.
Time Gate 1 Activated:	6/9/2022 0:40	N/A
Time Gate 2 Activated:	6/9/2022 0:40	N/A
Time Gate 1 Returned to Normal:	6/9/2022 10:45	N/A
Time Gate 2 Returned to Normal:	6/9/2022 10:40	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	8.00 ft.	8.40 ft.
Volume Stored:	857,448 Gal.	N/A Gal.
Unused Storage Volume:	0 Gal.	N/A Gal.

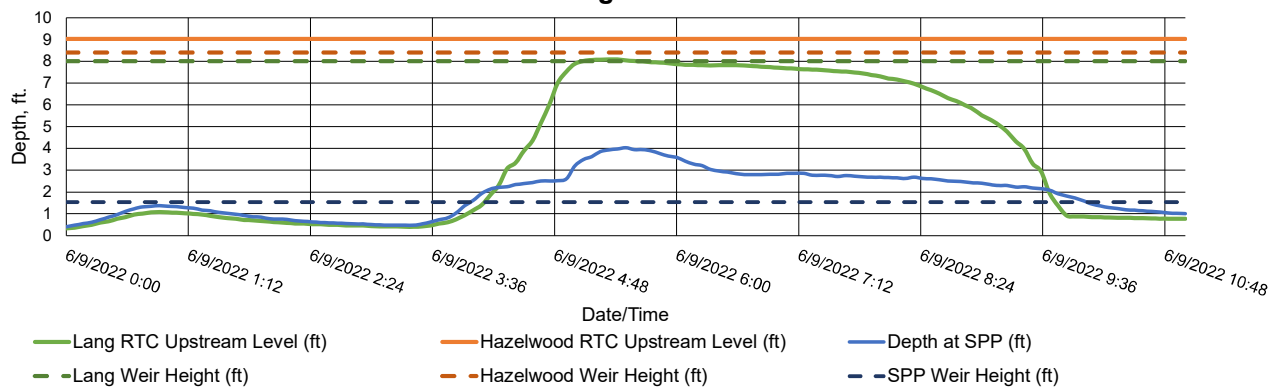
SPP:	340
Analysis Date:	7/7/2022
Event Start Date/Time:	6/9/2022 0:40
Event End Date/Time:	6/9/2022 10:45

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	2.2 in.
Storm Event Duration:	12 hr.
Storm Type:	Less than 5 years

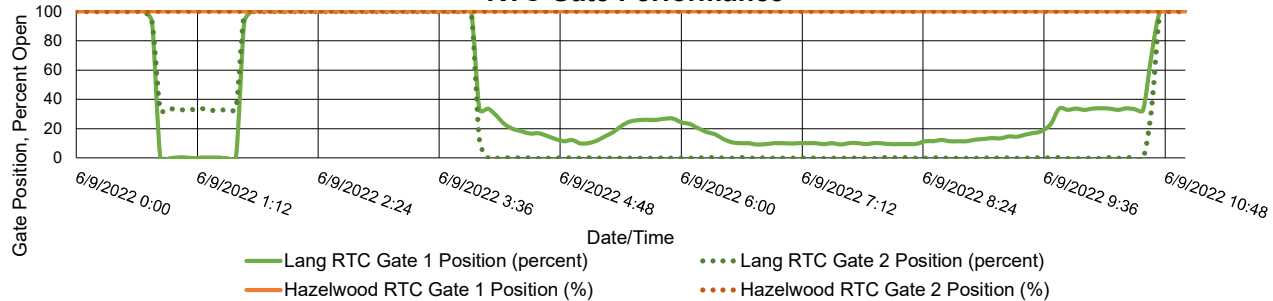
Percent Capture	10%
Overflow Volume:	7,653,008 Gal.
Overflow Volume Prevented:	857,448 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

**Recommended Operational Changes/Notes:**  
Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and was not used for storage calculations.

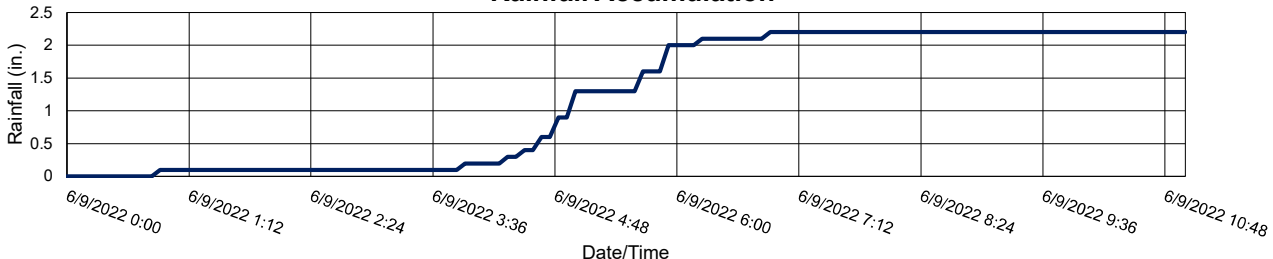
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation





June 22, 2022

4

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.58 ft.	- ft.
Return to Normal Depth:	0.78 ft.	- ft.
Time Gate 1 Activated:	6/22/2022 15:10	N/A
Time Gate 2 Activated:	6/22/2022 15:10	N/A
Time Gate 1 Returned to Normal:	6/22/2022 17:20	N/A
Time Gate 2 Returned to Normal:	6/22/2022 17:20	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	6.73 ft.	8.40 ft.
Volume Stored:	578,272 Gal.	N/A Gal.
Unused Storage Volume:	281,393 Gal.	N/A Gal.

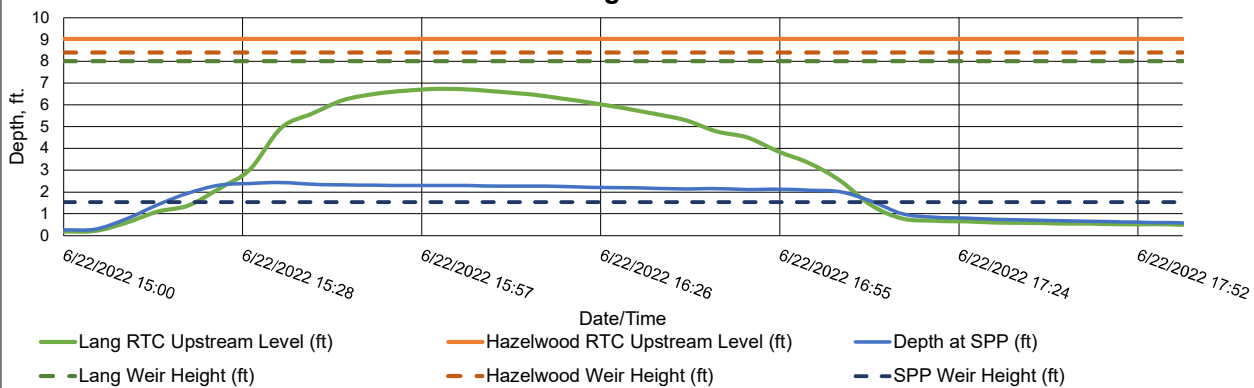
SPP:	340
Analysis Date:	7/7/2022
Event Start Date/Time:	6/22/2022 15:10
Event End Date/Time:	6/22/2022 17:20

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.1 in.
Storm Event Duration:	3 hr.
Storm Type:	Less than one year

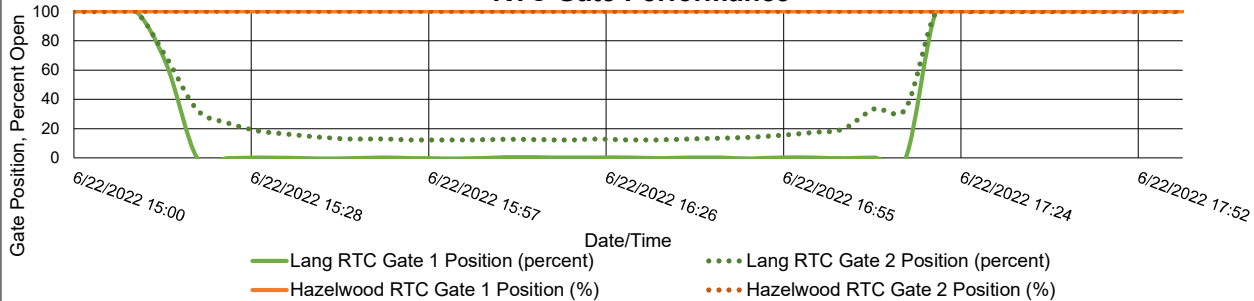
Percent Capture	38%
Overflow Volume:	933,666 Gal.
Overflow Volume Prevented:	578,272 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	933,666 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

**Recommended Operational Changes/Notes:**  
Hazelwood RTC Upstream Level is at an out-of-range value of 9.03 ft and was not used for storage calculations.

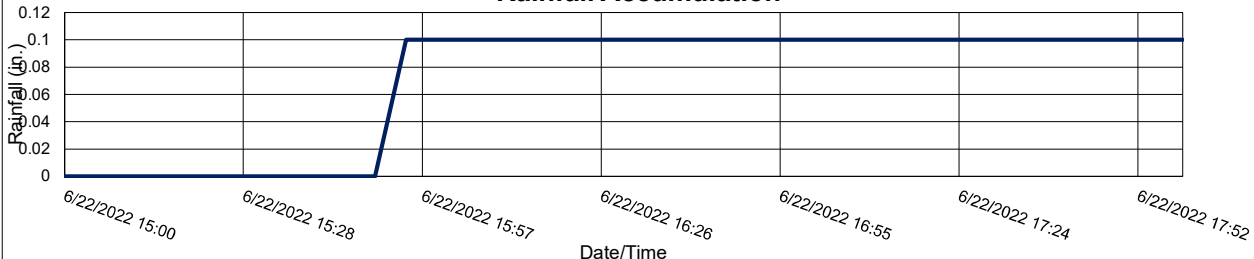
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



# July 2021 Lang Ave. and Hazelwood RTC KPI Report

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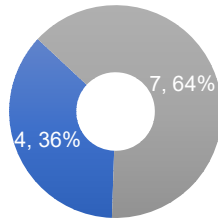
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# Lang Ave & Hazelwood RTC Monthly Performance Report

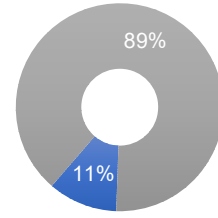
July 2021

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
4	7	4,832,408	40,006,022
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
7/2/2021	1,345,140	3,960,397	25%
7/6/2021	42,124	-	100%
7/8/2021	926,135	3,404,540	21%
7/12/2021	33,085	-	100%
7/13/2021	70,517	209,924	25%
7/14/2021	33,542	-	100%
7/17/2021	1,947,275	30,984,460	6%
7/18/2021	30,752	-	100%
7/20/2021	144,710	331,504	30%
7/27/2021	161,527	839,208	16%
7/29/2021	97,601	275,989	26%

# July 2, 2021

# 1

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.04 ft.	2.13 ft.
Return to Normal Depth:	0.87 ft.	3.31 ft.
Time Gate 1 Activated:	7/2/2021 15:10	7/2/2021 15:35
Time Gate 2 Activated:	7/2/2021 15:10	7/2/2021 15:35
Time Gate 1 Returned to Normal:	7/2/2021 18:50	7/2/2021 17:35
Time Gate 2 Returned to Normal:	7/2/2021 18:50	7/2/2021 17:35
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	7.78 ft.	5.88 ft.
Volume Stored:	800,447 Gal.	544,693 Gal.
Unused Storage Volume:	53,237 Gal.	577,683 Gal.

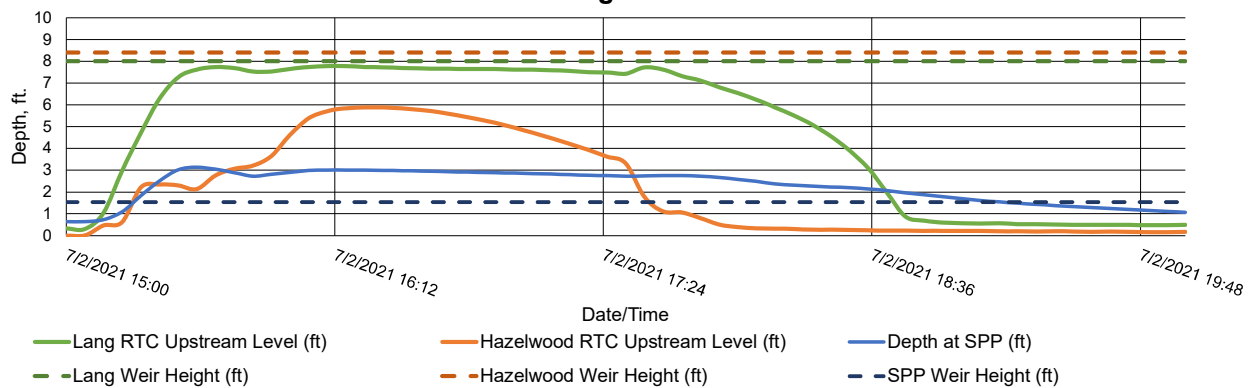
SPP:	340
Analysis Date:	8/13/2021
Event Start Date/Time:	7/2/2021 15:10
Event End Date/Time:	7/2/2021 18:50

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.0 in.
Storm Event Duration:	5 hr.
Storm Type:	Less than one year

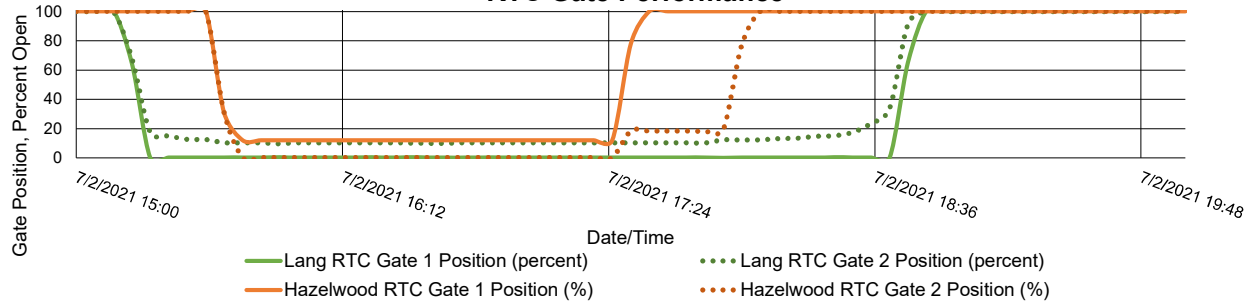
Percent Capture	25%
Overflow Volume:	3,960,397 Gal.
Overflow Volume Prevented:	1,345,140 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	3,960,397 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

## Recommended Operational Changes/Notes:

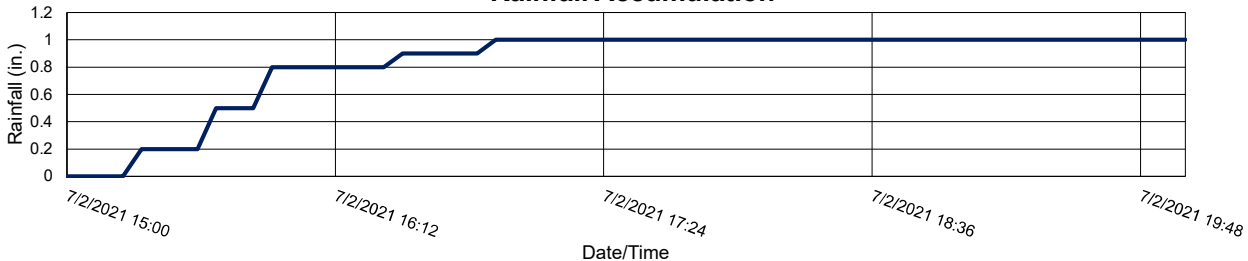
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



July 6, 2021

2

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.07 ft.	- ft.
Return to Normal Depth:	0.82 ft.	- ft.
Time Gate 1 Activated:	7/6/2021 17:45	N/A
Time Gate 2 Activated:	7/6/2021 17:45	N/A
Time Gate 1 Returned to Normal:	7/6/2021 18:55	N/A
Time Gate 2 Returned to Normal:	7/6/2021 18:55	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.11 ft.	0.83 ft.
Volume Stored:	758 Gal.	41,366 Gal.
Unused Storage Volume:	852,381 Gal.	1,224,804 Gal.

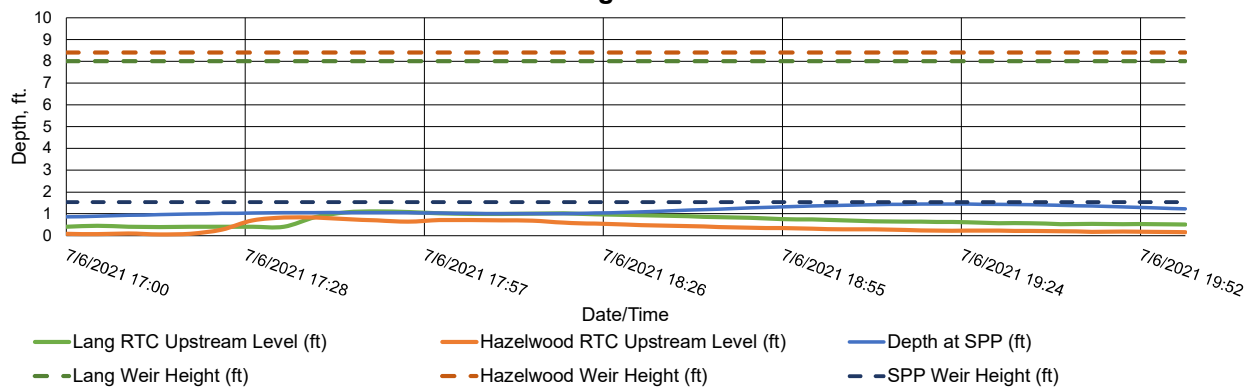
SPP:	340
Analysis Date:	8/13/2021
Event Start Date/Time:	7/6/2021 17:45
Event End Date/Time:	7/6/2021 18:55

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.9 in.
Storm Event Duration:	3 hr.
Storm Type:	Less than one year

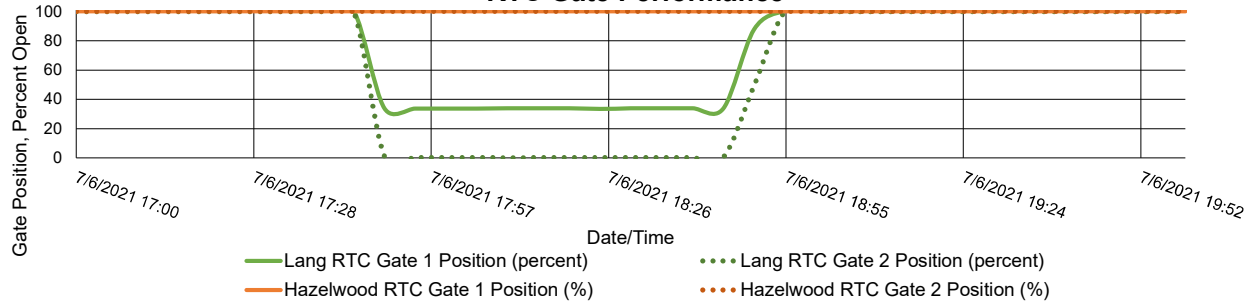
Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	42,124 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

Recommended Operational Changes/Notes:

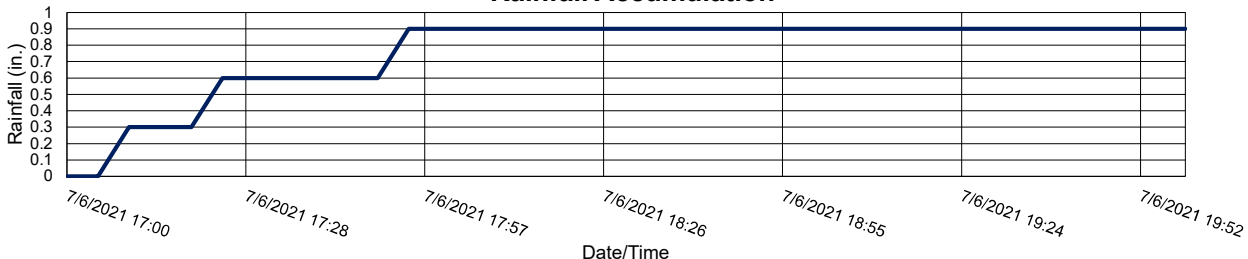
RTC Storage Performance



RTC Gate Performance



Rainfall Accumulation



July 8, 2021

3

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.07 ft.	- ft.
Return to Normal Depth:	- ft.	- ft.
Time Gate 1 Activated:	7/8/2021 13:05	N/A
Time Gate 2 Activated:	7/8/2021 13:05	N/A
Time Gate 1 Returned to Normal:	7/8/2021 19:00	N/A
Time Gate 2 Returned to Normal:	7/8/2021 18:55	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	6.74 ft.	2.05 ft.
Volume Stored:	790,194 Gal.	135,942 Gal.
Unused Storage Volume:	279,419 Gal.	1,130,229 Gal.

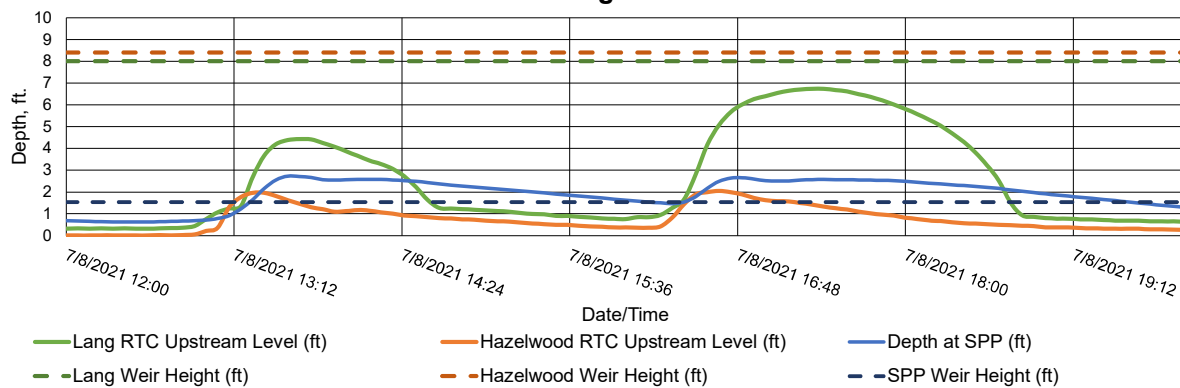
SPP:	340
Analysis Date:	8/13/2021
Event Start Date/Time:	7/8/2021 13:05
Event End Date/Time:	7/8/2021 19:00

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	2.0 in.
Storm Event Duration:	8 hr.
Storm Type:	Less than five years

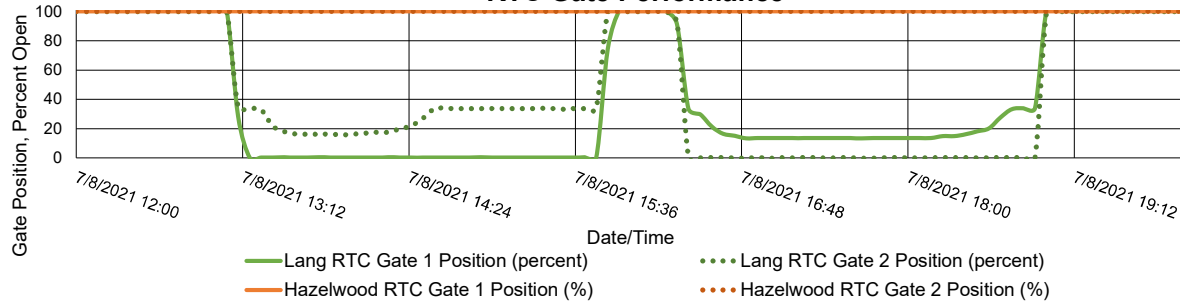
Percent Capture	21%
Overflow Volume:	3,404,540 Gal.
Overflow Volume Prevented:	926,135 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	3,404,540 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

Recommended Operational Changes/Notes:

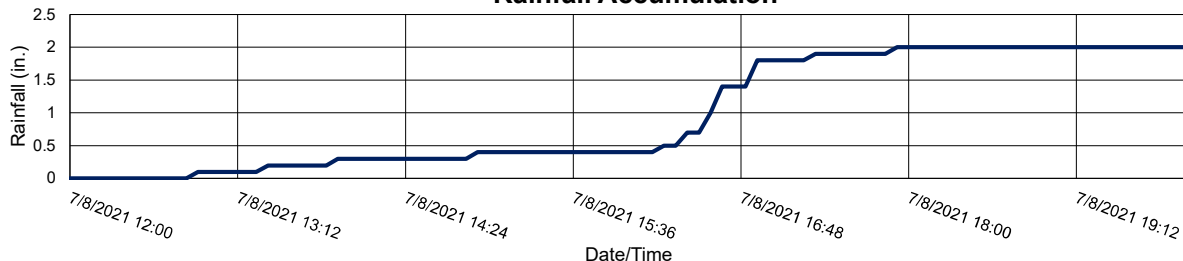
RTC Storage Performance



RTC Gate Performance



Rainfall Accumulation



July 12, 2021

4

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.98 ft.	- ft.
Return to Normal Depth:	0.85 ft.	- ft.
Time Gate 1 Activated:	7/12/2021 0:00	N/A
Time Gate 2 Activated:	7/12/2021 0:00	N/A
Time Gate 1 Returned to Normal:	7/12/2021 2:05	N/A
Time Gate 2 Returned to Normal:	7/12/2021 2:05	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.08 ft.	0.66 ft.
Volume Stored:	1,762 Gal.	31,323 Gal.
Unused Storage Volume:	852,953 Gal.	1,234,848 Gal.

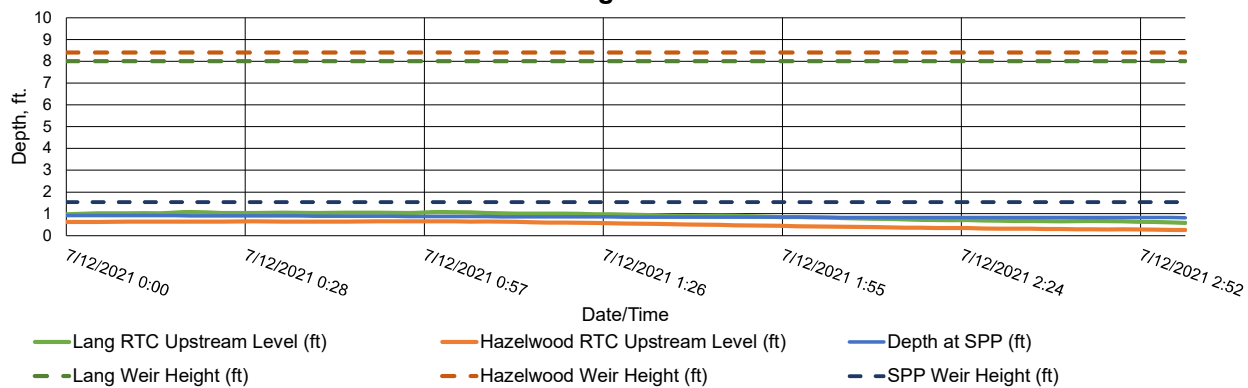
SPP:	340
Analysis Date:	8/13/2021
Event Start Date/Time:	7/12/2021 0:00
Event End Date/Time:	7/12/2021 2:05

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.2 in.
Storm Event Duration:	3 hr.
Storm Type:	Less than one year

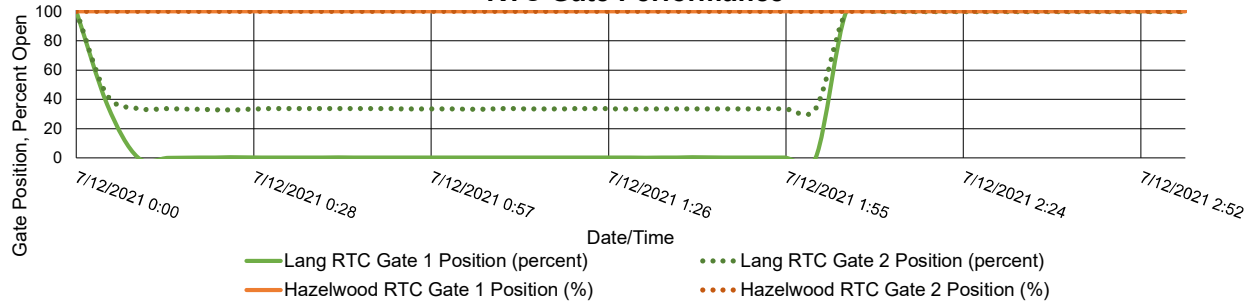
Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	33,085 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

Recommended Operational Changes/Notes:

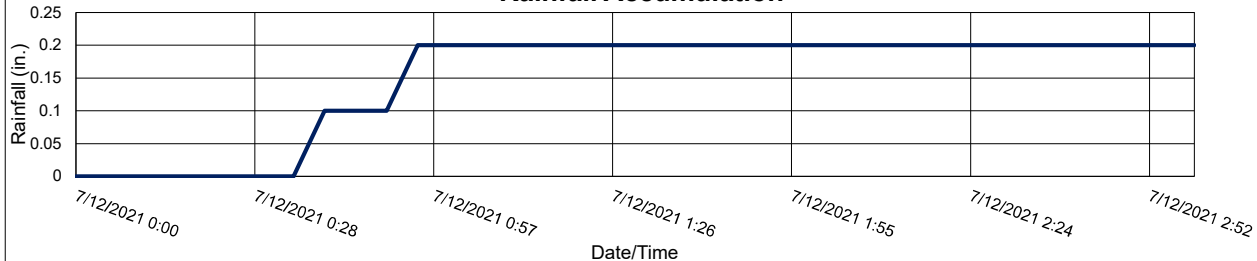
RTC Storage Performance



RTC Gate Performance



Rainfall Accumulation



July 13, 2021

5

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.02 ft.	- ft.
Return to Normal Depth:	0.84 ft.	- ft.
Time Gate 1 Activated:	7/13/2021 14:45	N/A
Time Gate 2 Activated:	7/13/2021 14:45	N/A
Time Gate 1 Returned to Normal:	7/13/2021 20:15	N/A
Time Gate 2 Returned to Normal:	7/13/2021 20:10	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.55 ft.	1.08 ft.
Volume Stored:	12,835 Gal.	57,682 Gal.
Unused Storage Volume:	841,590 Gal.	1,208,488 Gal.

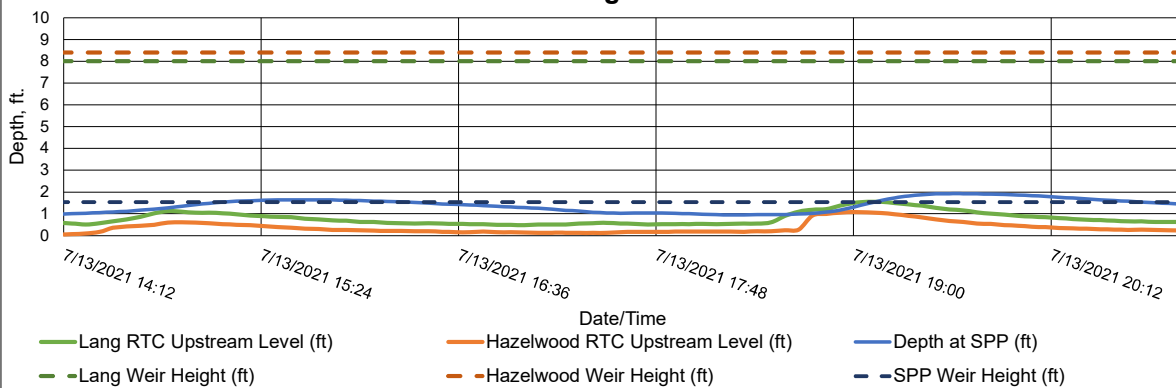
SPP:	340
Analysis Date:	8/13/2021
Event Start Date/Time:	7/13/2021 14:45
Event End Date/Time:	7/13/2021 20:15

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.9 in.
Storm Event Duration:	7 hr.
Storm Type:	Less than five years

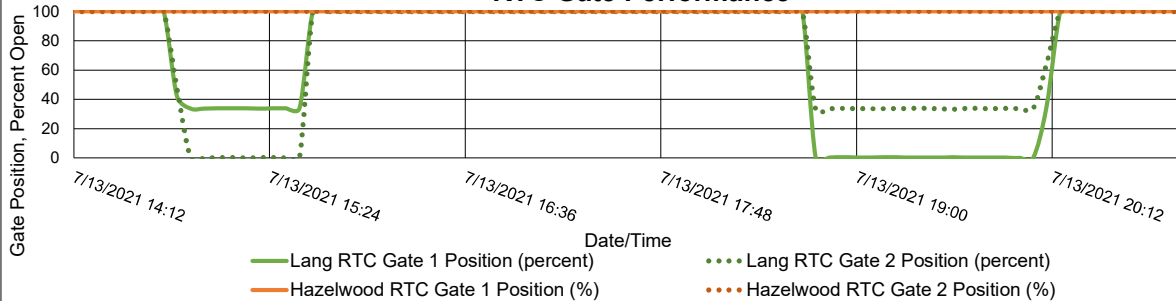
Percent Capture	25%
Overflow Volume:	209,924 Gal.
Overflow Volume Prevented:	70,517 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	209,924 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

Recommended Operational Changes/Notes:

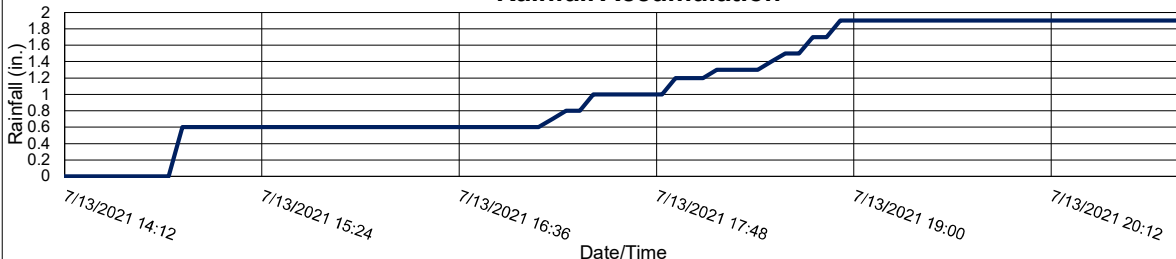
RTC Storage Performance



RTC Gate Performance



Rainfall Accumulation





July 14, 2021

6

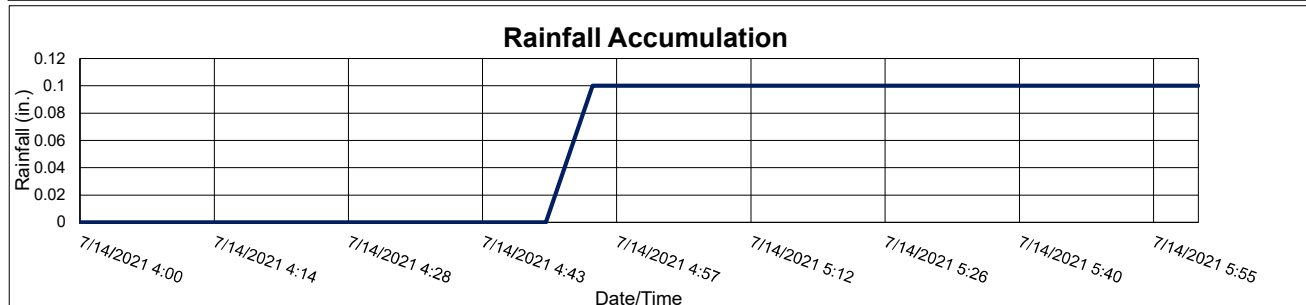
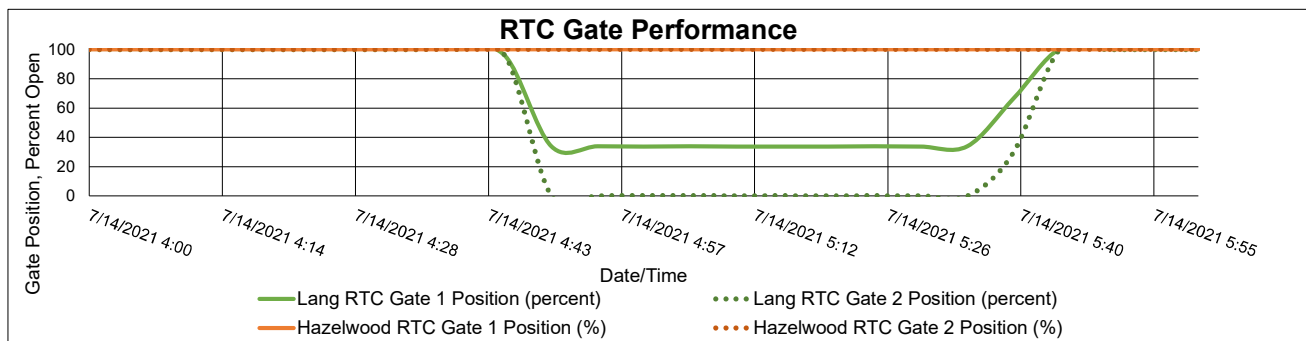
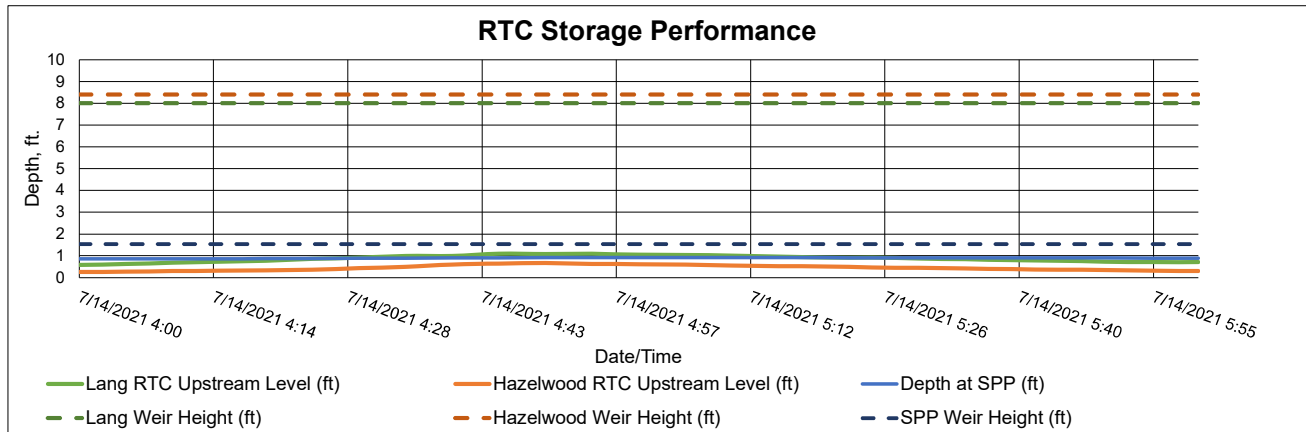
RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.99 ft.	- ft.
Return to Normal Depth:	0.80 ft.	- ft.
Time Gate 1 Activated:	7/14/2021 4:40	N/A
Time Gate 2 Activated:	7/14/2021 4:40	N/A
Time Gate 1 Returned to Normal:	7/14/2021 5:45	N/A
Time Gate 2 Returned to Normal:	7/14/2021 5:45	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.09 ft.	0.66 ft.
Volume Stored:	1,784 Gal.	31,758 Gal.
Unused Storage Volume:	852,765 Gal.	1,234,412 Gal.

SPP:	340
Analysis Date:	8/13/2021
Event Start Date/Time:	7/14/2021 4:40
Event End Date/Time:	7/14/2021 5:45

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.1 in.
Storm Event Duration:	2 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	33,542 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

Recommended Operational Changes/Notes:



July 17, 2021

7

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.04 ft.	2.42 ft.
Return to Normal Depth:	0.82 ft.	4.77 ft.
Time Gate 1 Activated:	7/17/2021 0:05	7/17/2021 9:45
Time Gate 2 Activated:	7/17/2021 0:05	7/17/2021 9:45
Time Gate 1 Returned to Normal:	7/17/2021 22:30	N/A
Time Gate 2 Returned to Normal:	7/17/2021 22:30	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	8.00 ft.	8.40 ft.
Volume Stored:	853,685 Gal.	1,093,590 Gal.
Unused Storage Volume:	0 Gal.	0 Gal.

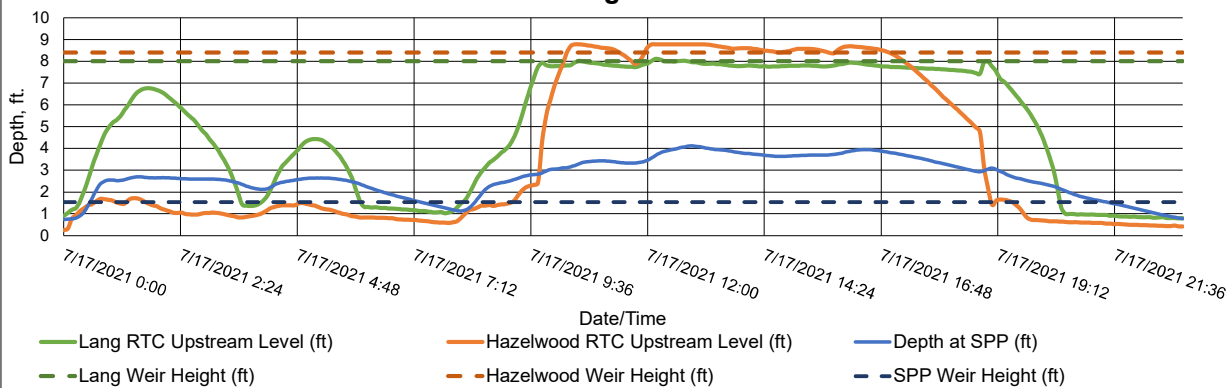
SPP:	340
Analysis Date:	8/13/2021
Event Start Date/Time:	7/17/2021 0:05
Event End Date/Time:	7/17/2021 22:30

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	7.5 in.
Storm Event Duration:	23 hr.
Storm Type:	Less than 1000 years

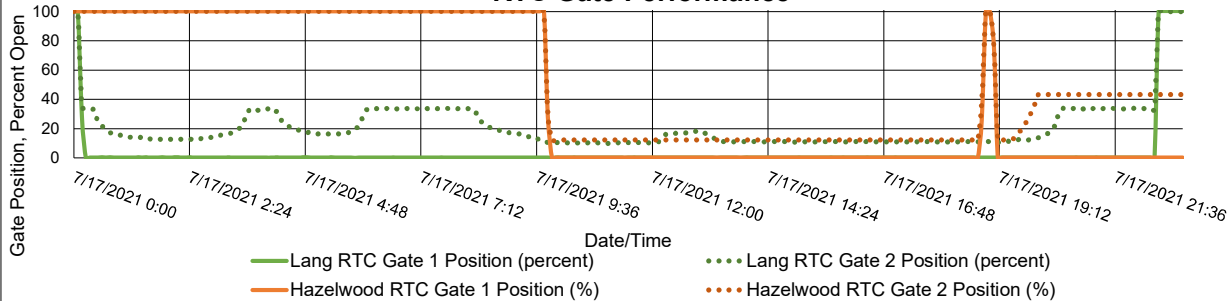
Percent Capture	6%
Overflow Volume:	30,984,460 Gal.
Overflow Volume Prevented:	1,947,275 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

<b>Recommended Operational Changes/Notes:</b>	
Hazelwood Gate 1 stuck at 0.2% open and Hazelwood Gate 2 stuck at 43% open towards the end of this event.	

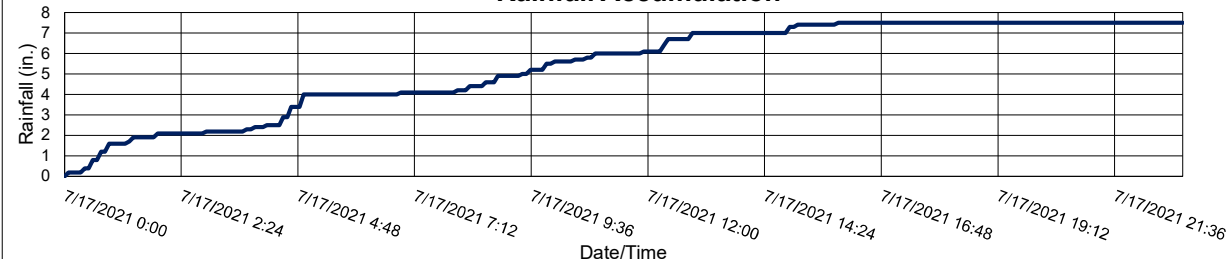
RTC Storage Performance



RTC Gate Performance



Rainfall Accumulation



July 18, 2021

8

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.01 ft.	- ft.
Return to Normal Depth:	0.80 ft.	- ft.
Time Gate 1 Activated:	7/18/2021 5:25	N/A
Time Gate 2 Activated:	7/18/2021 5:25	N/A
Time Gate 1 Returned to Normal:	7/18/2021 6:50	N/A
Time Gate 2 Returned to Normal:	7/18/2021 6:50	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.10 ft.	0.62 ft.
Volume Stored:	1,636 Gal.	29,116 Gal.
Unused Storage Volume:	852,574 Gal.	1,237,054 Gal.

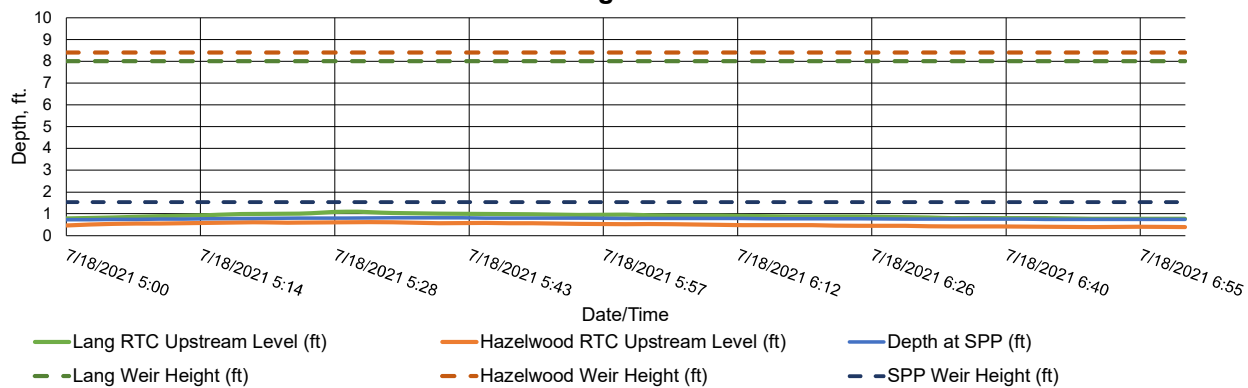
SPP:	340
Analysis Date:	8/13/2021
Event Start Date/Time:	7/18/2021 5:25
Event End Date/Time:	7/18/2021 6:50

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	2 hr.
Storm Type:	N/A

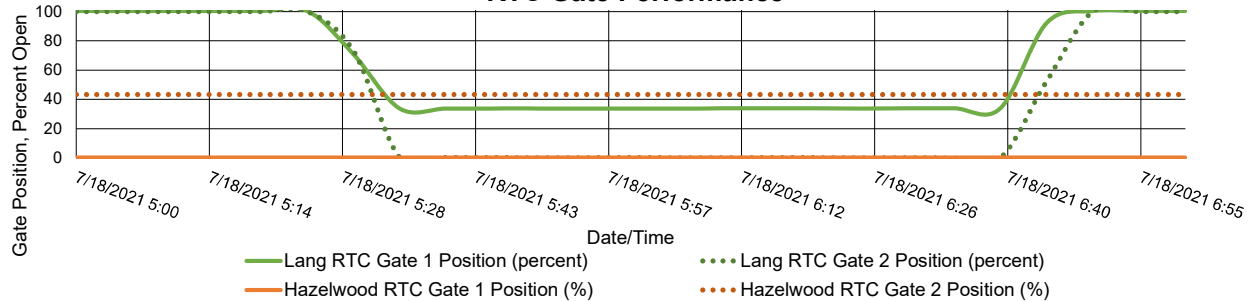
Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	30,752 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

**Recommended Operational Changes/Notes:**  
Hazelwood Gate 1 is stuck at 0.2% open and Hazelwood Gate 2 is stuck at 43% open for the entire event. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.

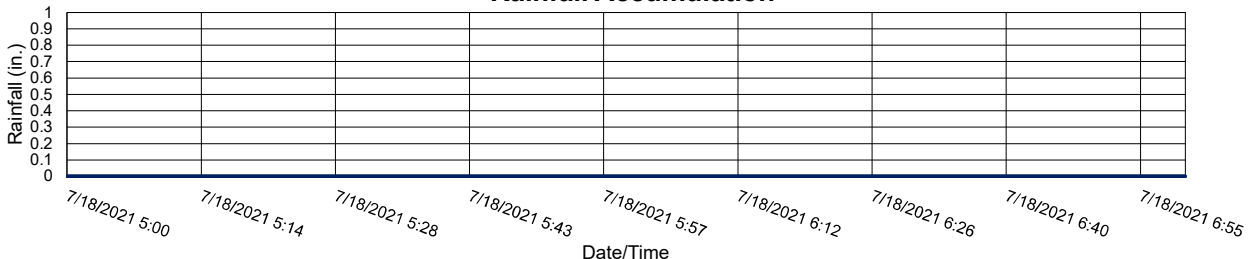
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



July 20, 2021

9

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.00 ft.	- ft.
Return to Normal Depth:	0.83 ft.	- ft.
Time Gate 1 Activated:	7/20/2021 19:20	N/A
Time Gate 2 Activated:	7/20/2021 19:20	N/A
Time Gate 1 Returned to Normal:	7/20/2021 21:00	N/A
Time Gate 2 Returned to Normal:	7/20/2021 21:00	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	2.52 ft.	1.53 ft.
Volume Stored:	53,985 Gal.	90,725 Gal.
Unused Storage Volume:	800,396 Gal.	1,175,445 Gal.

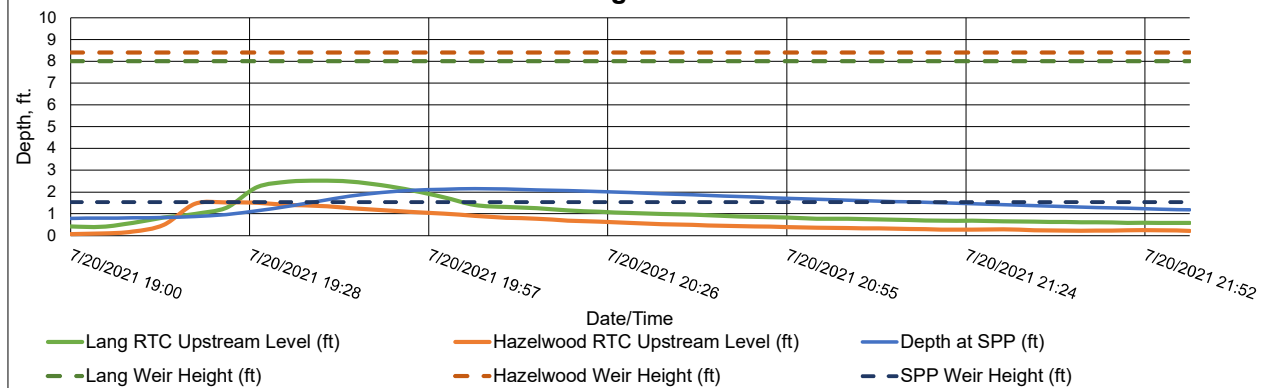
SPP:	340
Analysis Date:	8/13/2021
Event Start Date/Time:	7/20/2021 19:20
Event End Date/Time:	7/20/2021 21:00

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.7 in.
Storm Event Duration:	3 hr.
Storm Type:	Less than five years

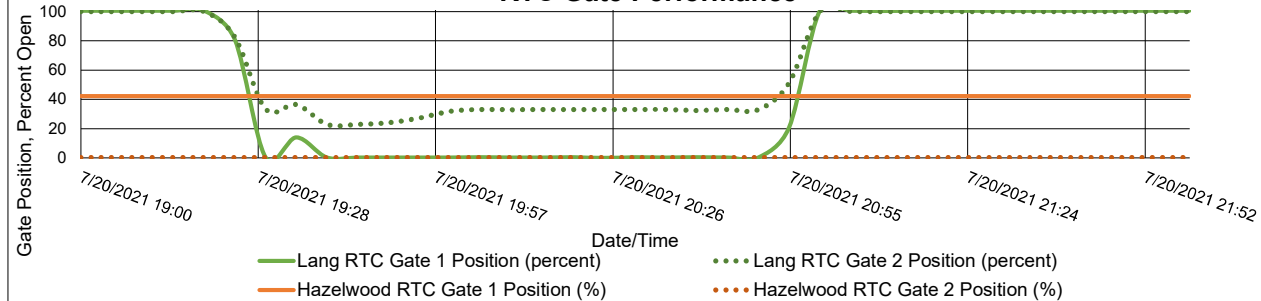
Percent Capture	30%
Overflow Volume:	331,504 Gal.
Overflow Volume Prevented:	144,710 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	331,504 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

Recommended Operational Changes/Notes:	
Hazelwood Gate 1 is stuck at 0.2% open and Hazelwood Gate 2 is stuck at 43% open for the entire event.	

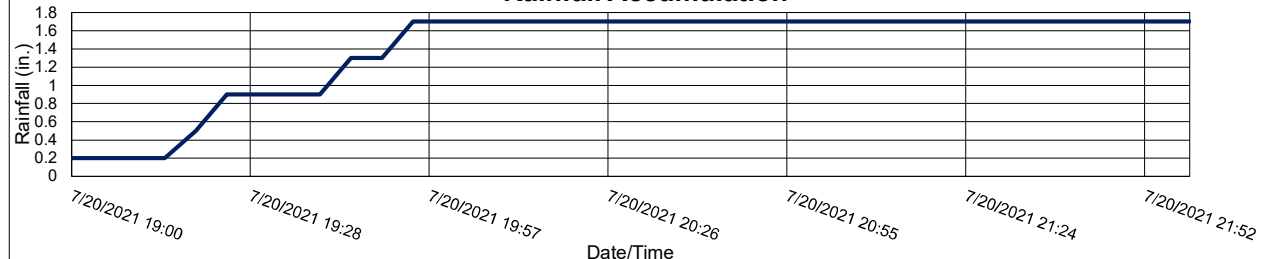
RTC Storage Performance



RTC Gate Performance



Rainfall Accumulation



July 27, 2021

10

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.21 ft.	- ft.
Return to Normal Depth:	0.85 ft.	- ft.
Time Gate 1 Activated:	7/27/2021 20:05	N/A
Time Gate 2 Activated:	7/27/2021 20:05	N/A
Time Gate 1 Returned to Normal:	7/27/2021 21:25	N/A
Time Gate 2 Returned to Normal:	7/27/2021 21:25	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	3.76 ft.	0.44 ft.
Volume Stored:	141,846 Gal.	19,680 Gal.
Unused Storage Volume:	708,482 Gal.	1,246,490 Gal.

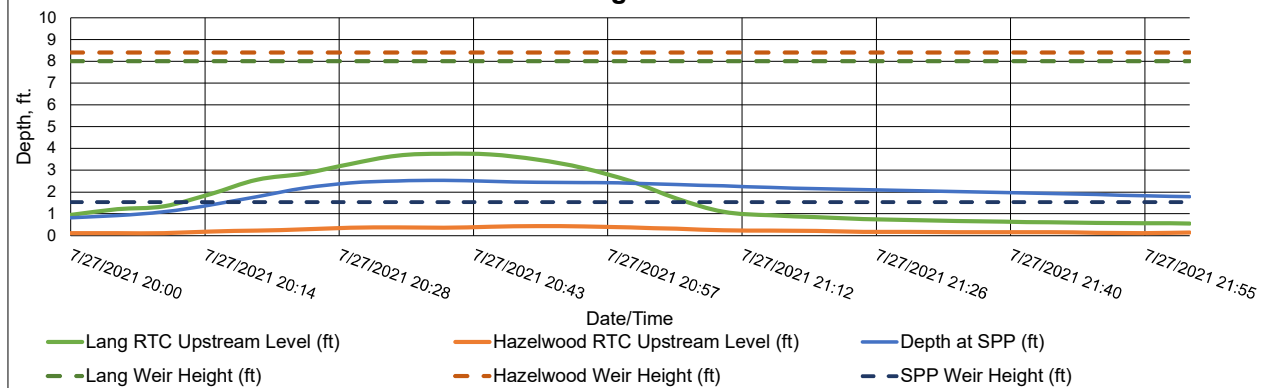
SPP:	340
Analysis Date:	8/13/2021
Event Start Date/Time:	7/27/2021 20:05
Event End Date/Time:	7/27/2021 21:25

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	2 hr.
Storm Type:	N/A

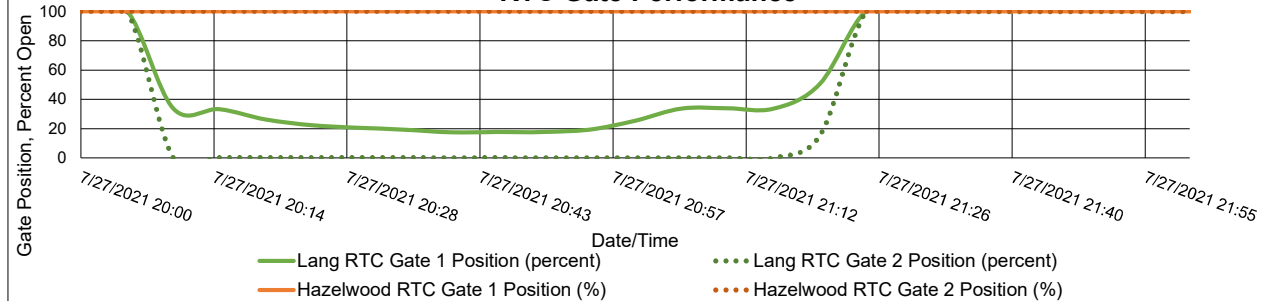
Percent Capture	16%
Overflow Volume:	839,208 Gal.
Overflow Volume Prevented:	161,527 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	839,208 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

**Recommended Operational Changes/Notes:**  
No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.

### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



July 29, 2021

11

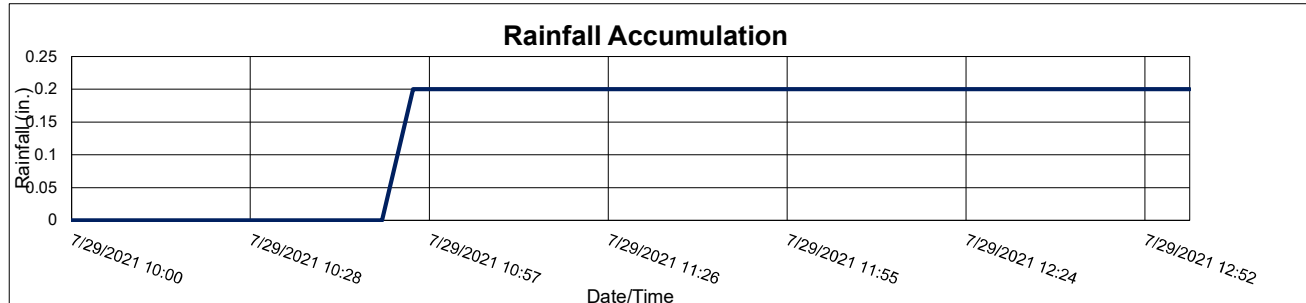
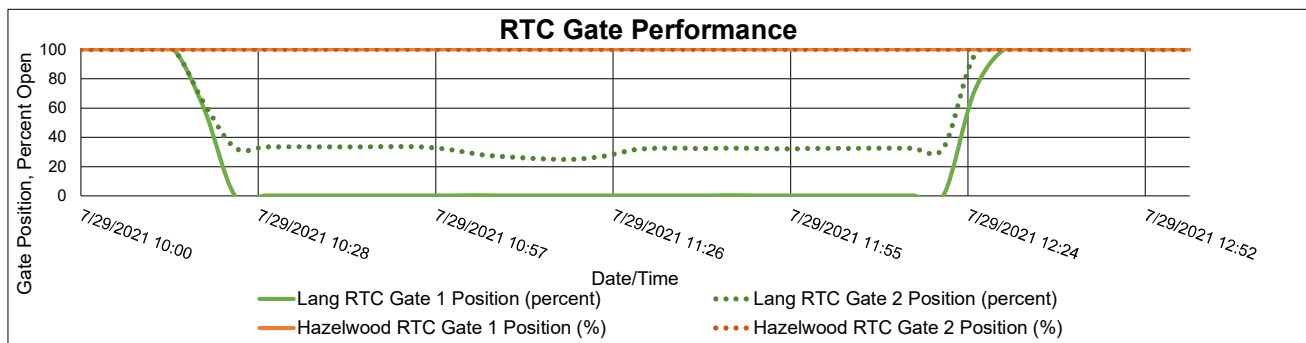
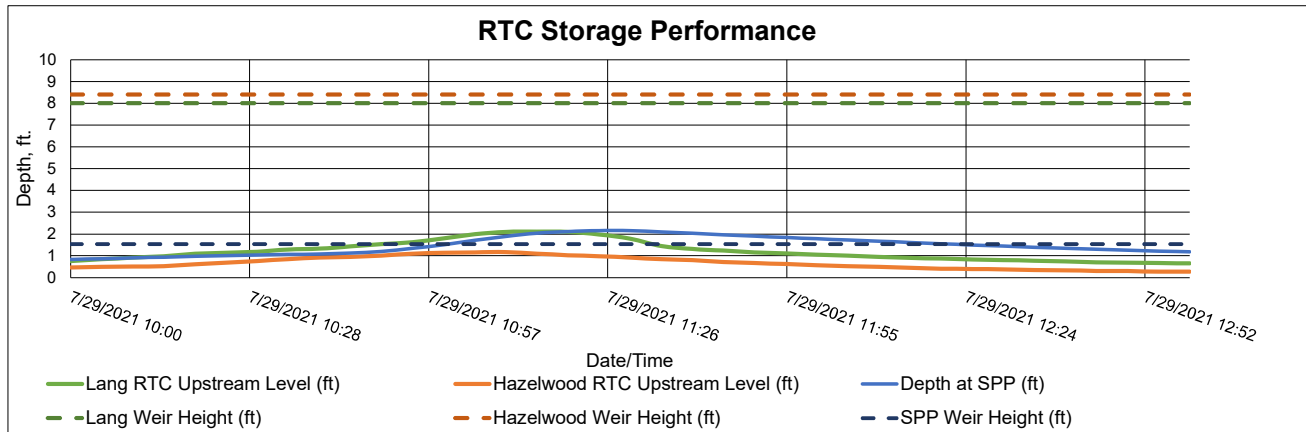
RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.98 ft.	- ft.
Return to Normal Depth:	0.83 ft.	- ft.
Time Gate 1 Activated:	7/29/2021 10:15	N/A
Time Gate 2 Activated:	7/29/2021 10:15	N/A
Time Gate 1 Returned to Normal:	7/29/2021 12:30	N/A
Time Gate 2 Returned to Normal:	7/29/2021 12:30	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	2.11 ft.	1.17 ft.
Volume Stored:	33,828 Gal.	63,772 Gal.
Unused Storage Volume:	820,888 Gal.	1,202,398 Gal.

SPP:	340
Analysis Date:	8/13/2021
Event Start Date/Time:	7/29/2021 10:15
Event End Date/Time:	7/29/2021 12:30

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.2 in.
Storm Event Duration:	3 hr.
Storm Type:	Less than one year

Percent Capture	26%
Overflow Volume:	275,989 Gal.
Overflow Volume Prevented:	97,601 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	275,989 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

Recommended Operational Changes/Notes:



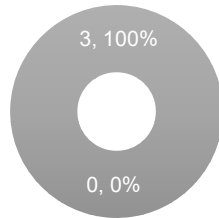
# August 2021 Lang Ave. and Hazelwood RTC KPI Report

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SEWER AUTHORITY

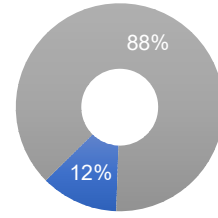


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**Prevented SPP Events**

■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

**Prevented SPP Volume**

■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
0	3	2,656,127	19,429,031
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
8/11/2021	617,877	1,378,820	31%
8/14/2021	1,864,617	17,444,537	10%
8/30/2021	173,633	605,674	22%



# August 11, 2021

# 1

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.19 ft.	- ft.
Return to Normal Depth:	1.05 ft.	- ft.
Time Gate 1 Activated:	8/11/2021 7:20	N/A
Time Gate 2 Activated:	8/11/2021 7:20	N/A
Time Gate 1 Returned to Normal:	8/11/2021 9:15	N/A
Time Gate 2 Returned to Normal:	8/11/2021 9:15	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	6.29 ft.	2.00 ft.
Volume Stored:	486,219 Gal.	131,658 Gal.
Unused Storage Volume:	364,538 Gal.	1,134,512 Gal.

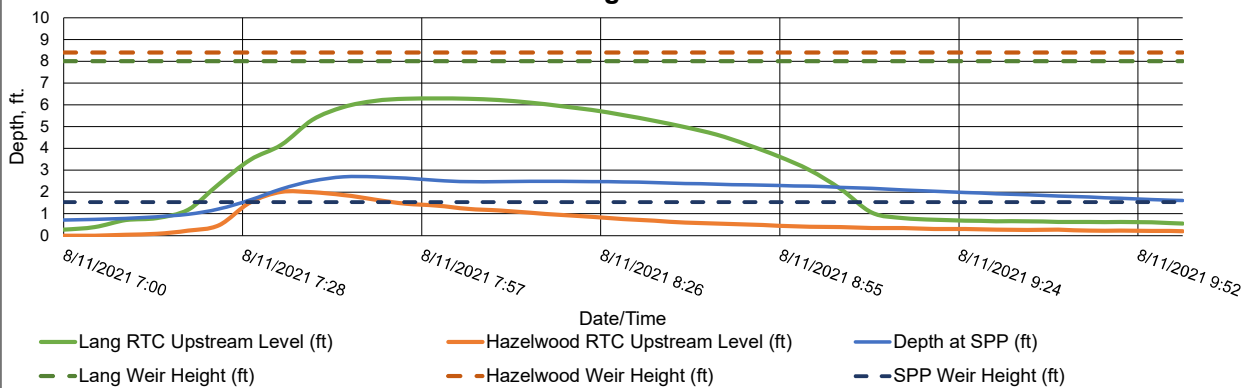
SPP:	340
Analysis Date:	9/11/2021
Event Start Date/Time:	8/11/2021 7:20
Event End Date/Time:	8/11/2021 9:15

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.8 in.
Storm Event Duration:	3 hr.
Storm Type:	Less than one year

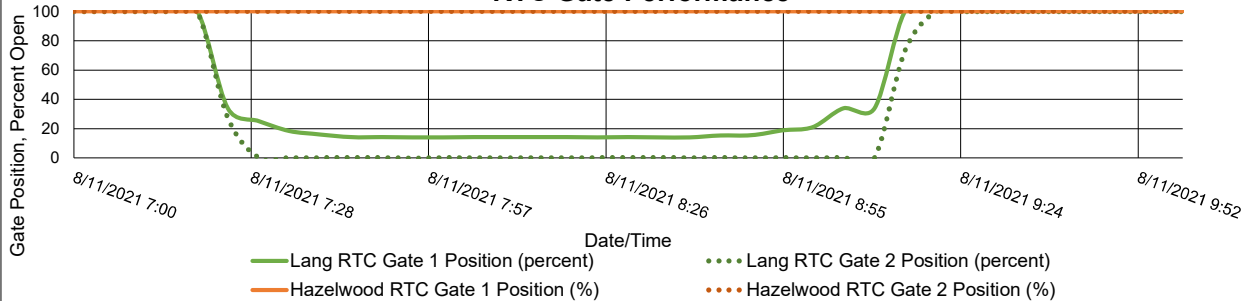
Percent Capture	31%
Overflow Volume:	1,378,820 Gal.
Overflow Volume Prevented:	617,877 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	1,378,820 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

## Recommended Operational Changes/Notes:

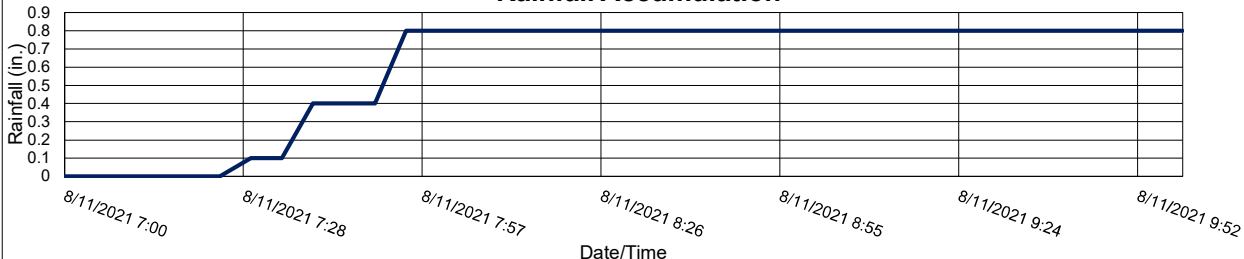
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



August 14, 2021

2

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.40 ft.	3.09 ft.
Return to Normal Depth:	0.84 ft.	- ft.
Time Gate 1 Activated:	8/14/2021 0:00	8/14/2021 0:15
Time Gate 2 Activated:	8/14/2021 0:00	8/14/2021 0:15
Time Gate 1 Returned to Normal:	8/14/2021 5:55	N/A
Time Gate 2 Returned to Normal:	8/14/2021 5:55	8/14/2021 4:20
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	8.00 ft.	8.40 ft.
Volume Stored:	845,787 Gal.	1,018,831 Gal.
Unused Storage Volume:	0 Gal.	0 Gal.

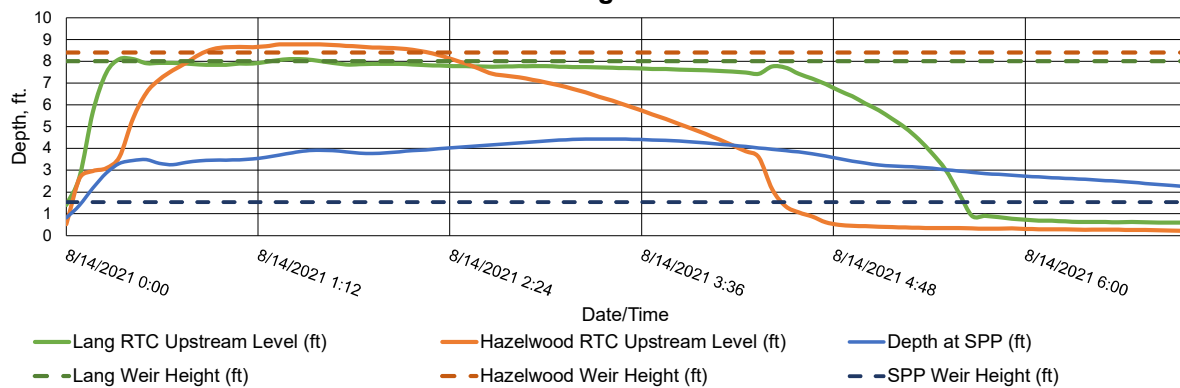
SPP:	340
Analysis Date:	9/11/2021
Event Start Date/Time:	8/14/2021 0:00
Event End Date/Time:	8/14/2021 5:55

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	5.1 in.
Storm Event Duration:	7 hr.
Storm Type:	Less than 500 years

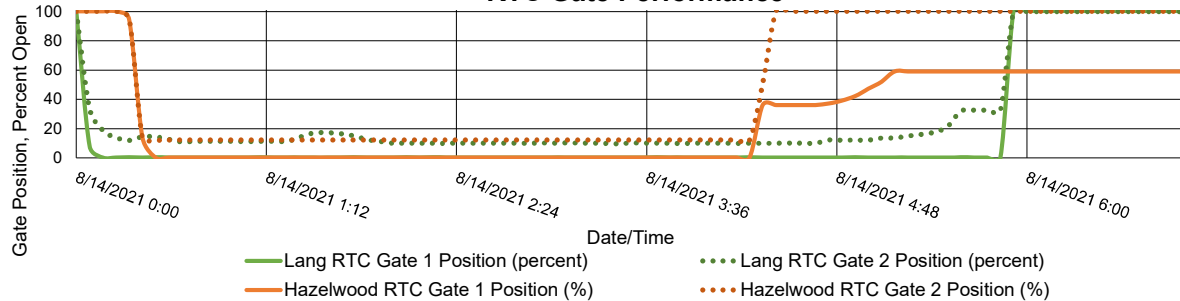
Percent Capture	10%
Overflow Volume:	17,444,537 Gal.
Overflow Volume Prevented:	1,864,617 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

**Recommended Operational Changes/Notes:**  
Hazelwood Gate 1 was stuck at 59% open at the end of the event.

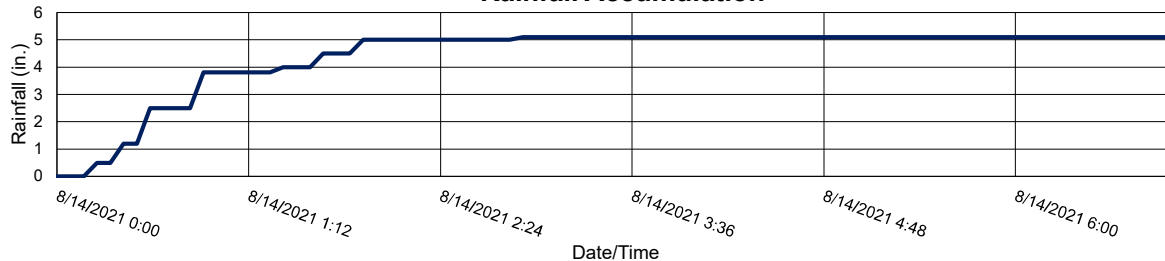
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



# August 30, 2021

# 3

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.09 ft.	- ft.
Return to Normal Depth:	0.82 ft.	- ft.
Time Gate 1 Activated:	8/30/2021 0:25	N/A
Time Gate 2 Activated:	8/30/2021 0:25	N/A
Time Gate 1 Returned to Normal:	8/30/2021 7:45	N/A
Time Gate 2 Returned to Normal:	8/30/2021 7:40	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	2.60 ft.	1.22 ft.
Volume Stored:	106,376 Gal.	67,257 Gal.
Unused Storage Volume:	795,847 Gal.	1,198,913 Gal.

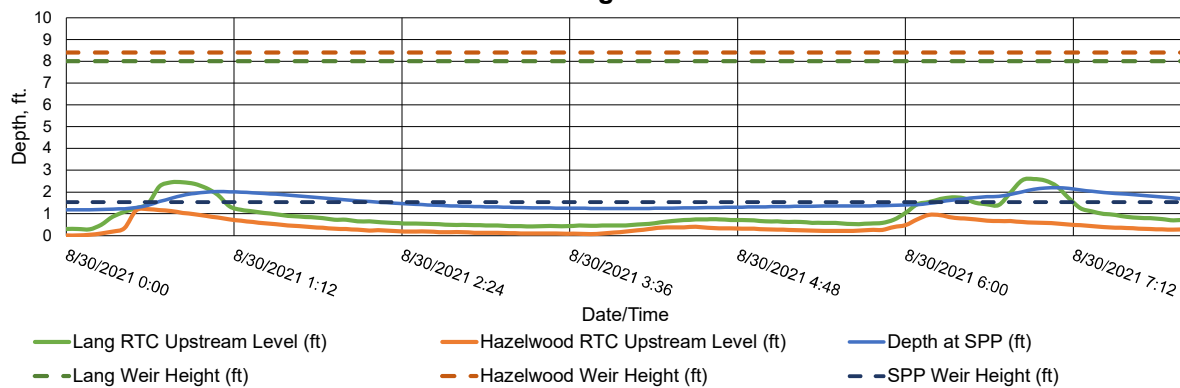
SPP:	340
Analysis Date:	9/11/2021
Event Start Date/Time:	8/30/2021 0:25
Event End Date/Time:	8/30/2021 7:45

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.9 in.
Storm Event Duration:	8 hr.
Storm Type:	Less than one year

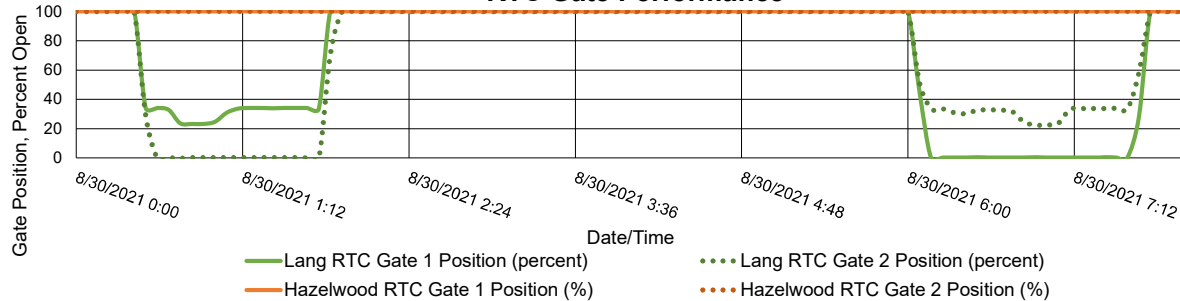
Percent Capture	22%
Overflow Volume:	605,674 Gal.
Overflow Volume Prevented:	173,633 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	605,674 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

## Recommended Operational Changes/Notes:

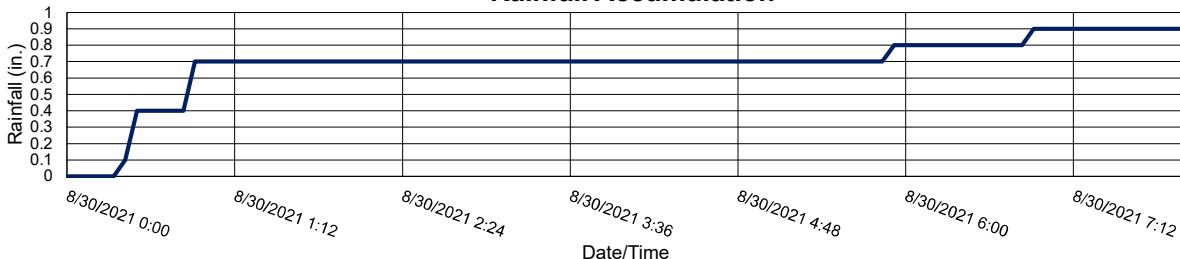
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



# September 2021 Lang Ave. and Hazelwood RTC KPI Report

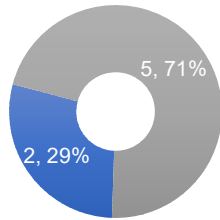
**BUFFALO**  
SEWER AUTHORITY



**ARCADIS**

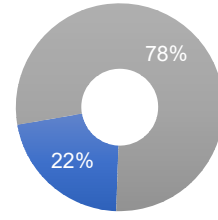
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### Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

### Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
2	5	4,486,185	16,150,741
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
9/6/2021	584,849	922,417	39%
9/7/2021	51,437	-	100%
9/8/2021	1,206,177	3,869,539	24%
9/13/2021	1,450,144	7,014,044	17%
9/13/2021	318,998	773,851	29%
9/15/2021	62,319	-	100%
9/22/2021	812,261	3,570,890	19%

September 6, 2021

1

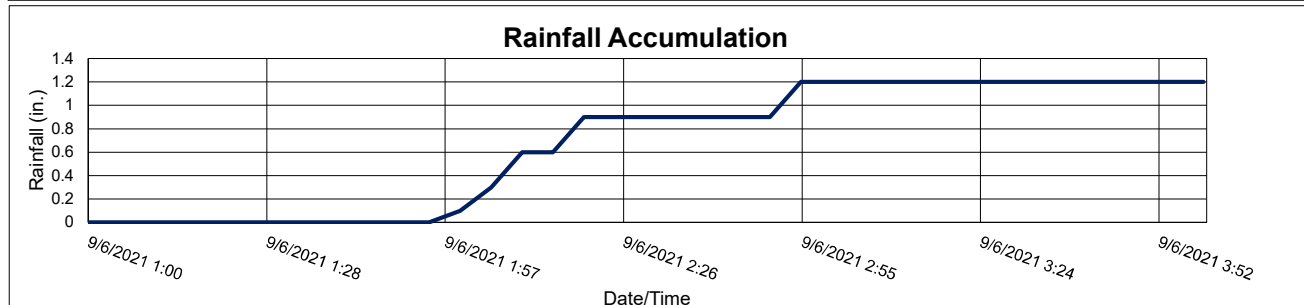
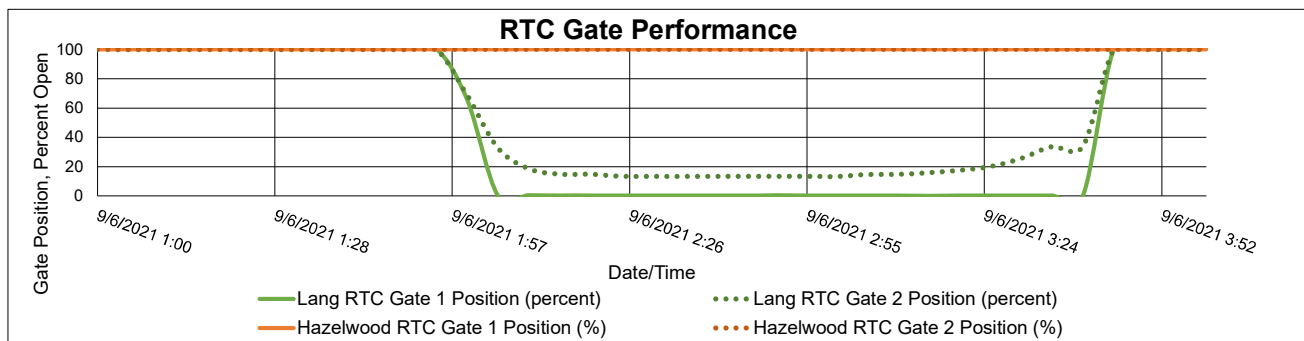
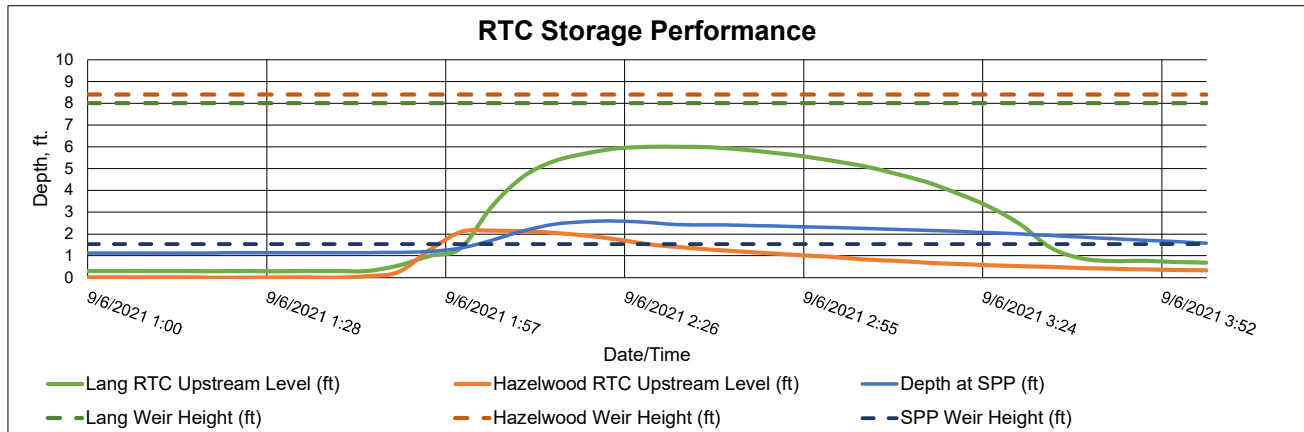
RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.99 ft.	- ft.
Return to Normal Depth:	0.88 ft.	- ft.
Time Gate 1 Activated:	9/6/2021 1:55	N/A
Time Gate 2 Activated:	9/6/2021 1:55	N/A
Time Gate 1 Returned to Normal:	9/6/2021 3:45	N/A
Time Gate 2 Returned to Normal:	9/6/2021 3:45	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	6.00 ft.	2.15 ft.
Volume Stored:	439,134 Gal.	145,715 Gal.
Unused Storage Volume:	415,415 Gal.	1,120,456 Gal.

SPP:	340
Analysis Date:	10/9/2021
Event Start Date/Time:	9/6/2021 1:55
Event End Date/Time:	9/6/2021 3:45

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.2 in.
Storm Event Duration:	3 hr.
Storm Type:	Less than two years

Percent Capture	39%
Overflow Volume:	922,417 Gal.
Overflow Volume Prevented:	584,849 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	922,417 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

Recommended Operational Changes/Notes:



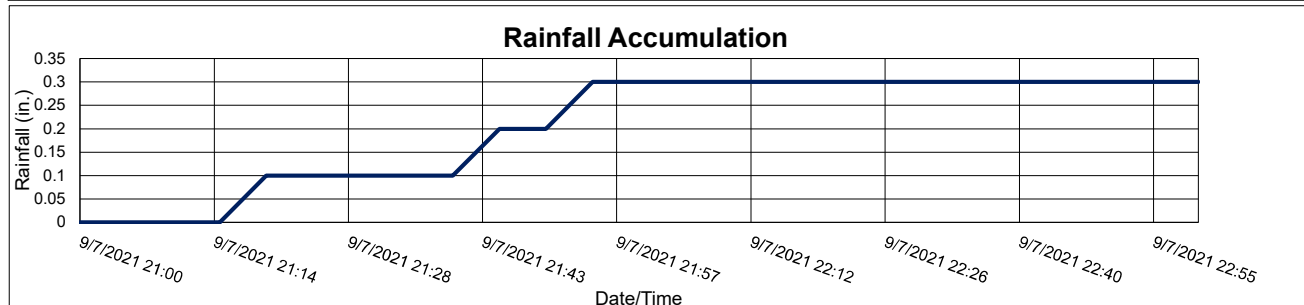
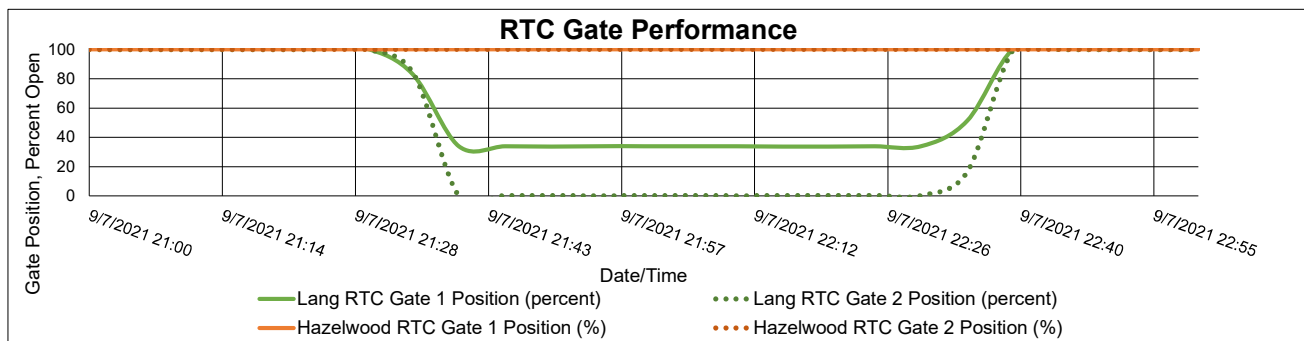
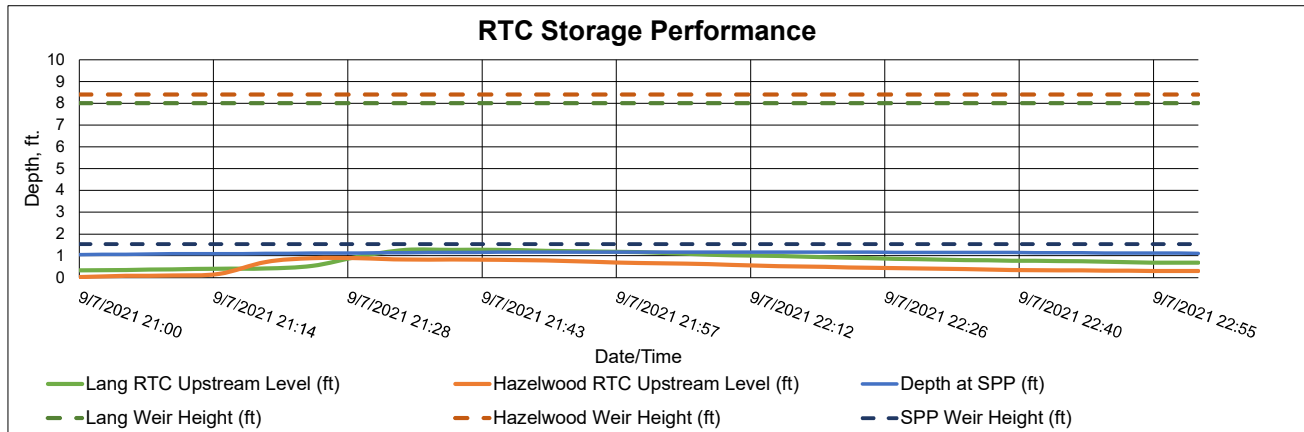
RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.97 ft.	- ft.
Return to Normal Depth:	0.81 ft.	- ft.
Time Gate 1 Activated:	9/7/2021 21:30	N/A
Time Gate 2 Activated:	9/7/2021 21:30	N/A
Time Gate 1 Returned to Normal:	9/7/2021 22:40	N/A
Time Gate 2 Returned to Normal:	9/7/2021 22:40	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.28 ft.	0.89 ft.
Volume Stored:	6,126 Gal.	45,310 Gal.
Unused Storage Volume:	848,754 Gal.	1,220,860 Gal.

SPP:	340
Analysis Date:	10/9/2021
Event Start Date/Time:	9/7/2021 21:30
Event End Date/Time:	9/7/2021 22:40

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.3 in.
Storm Event Duration:	2 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	51,437 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

## Recommended Operational Changes/Notes:



September 8, 2021

3

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.22 ft.	2.62 ft.
Return to Normal Depth:	0.87 ft.	- ft.
Time Gate 1 Activated:	9/8/2021 7:30	9/8/2021 7:55
Time Gate 2 Activated:	9/8/2021 7:30	9/8/2021 7:55
Time Gate 1 Returned to Normal:	9/8/2021 11:20	N/A
Time Gate 2 Returned to Normal:	9/8/2021 11:20	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	7.89 ft.	5.28 ft.
Volume Stored:	823,253 Gal.	382,925 Gal.
Unused Storage Volume:	26,857 Gal.	690,116 Gal.

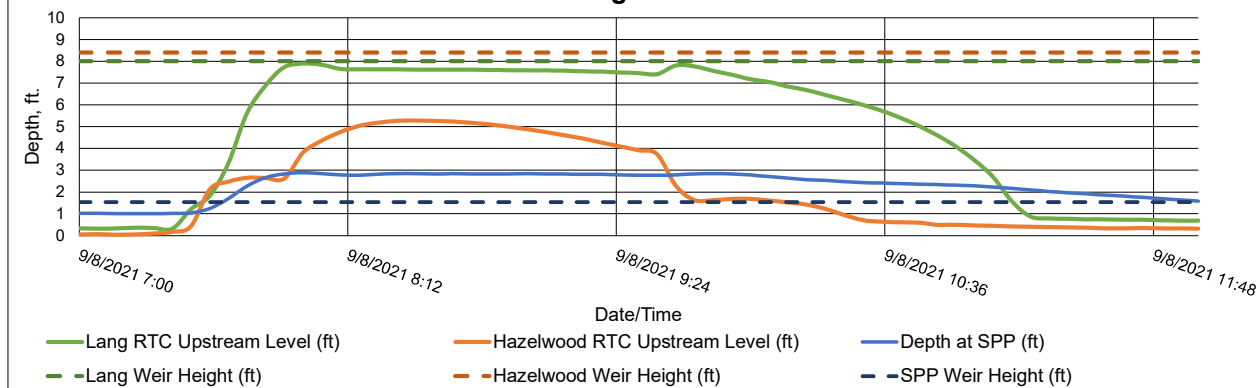
SPP:	340
Analysis Date:	10/9/2021
Event Start Date/Time:	9/8/2021 7:30
Event End Date/Time:	9/8/2021 11:20

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.1 in.
Storm Event Duration:	5 hr.
Storm Type:	Less than one year

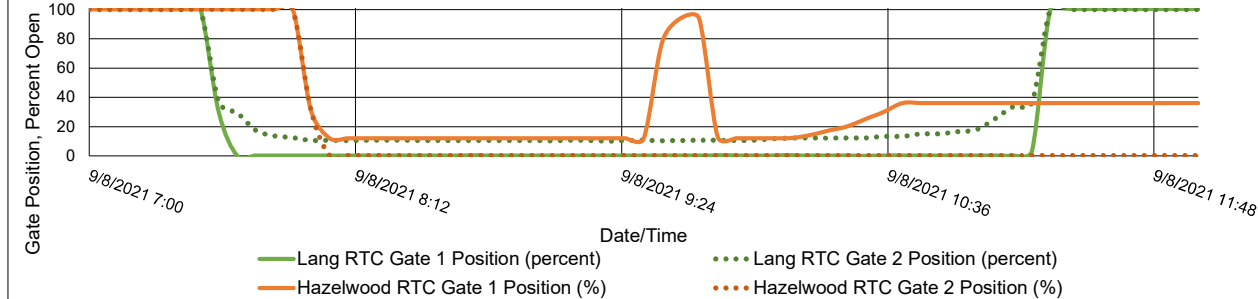
Percent Capture	24%
Overflow Volume:	3,869,539 Gal.
Overflow Volume Prevented:	1,206,177 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	3,869,539 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

Recommended Operational Changes/Notes:	
Hazelwood Gate 1 was stuck at 36% open and Hazelwood Gate 1 was completely open at the end of the event.	

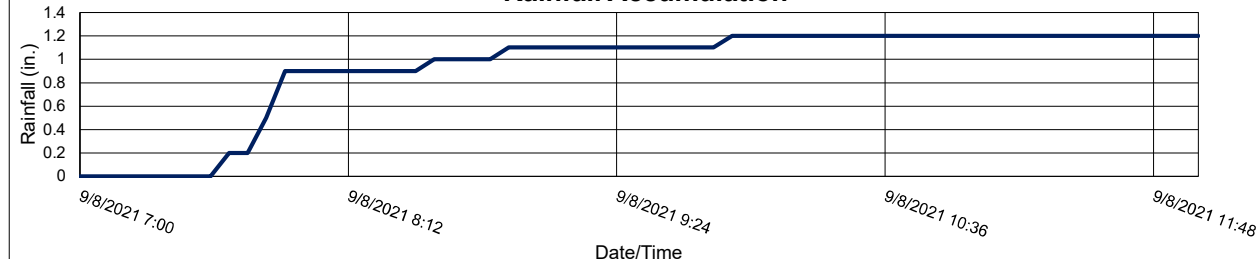
RTC Storage Performance



RTC Gate Performance



Rainfall Accumulation





September 13, 2021

4

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.11 ft.	1.71 ft.
Return to Normal Depth:	1.22 ft.	0.74 ft.
Time Gate 1 Activated:	9/13/2021 0:10	9/13/2021 1:40
Time Gate 2 Activated:	9/13/2021 0:10	9/13/2021 0:35
Time Gate 1 Returned to Normal:	9/13/2021 3:50	9/13/2021 3:05
Time Gate 2 Returned to Normal:	9/13/2021 3:50	9/13/2021 3:05
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	8.00 ft.	5.95 ft.
Volume Stored:	852,381 Gal.	597,762 Gal.
Unused Storage Volume:	0 Gal.	562,608 Gal.

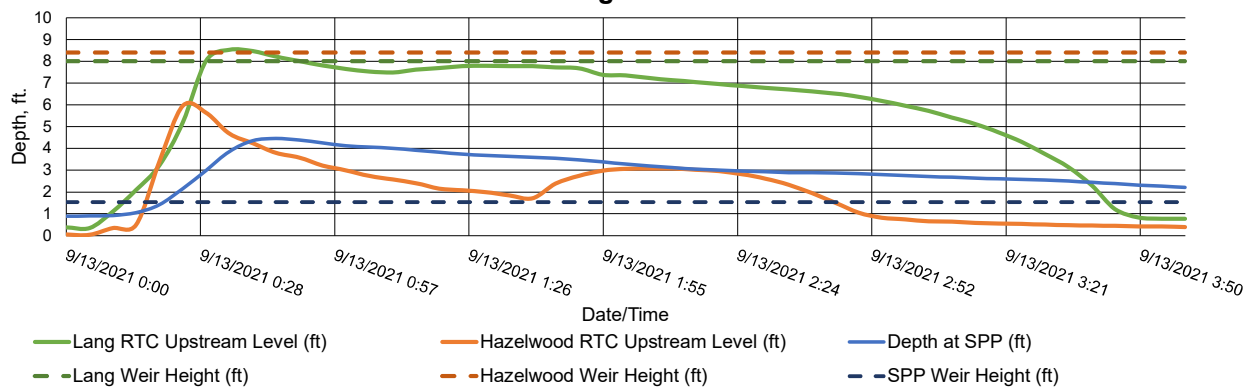
SPP:	340
Analysis Date:	10/9/2021
Event Start Date/Time:	9/13/2021 0:10
Event End Date/Time:	9/13/2021 3:50

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	2.2 in.
Storm Event Duration:	4 hr.
Storm Type:	Less than 25 years

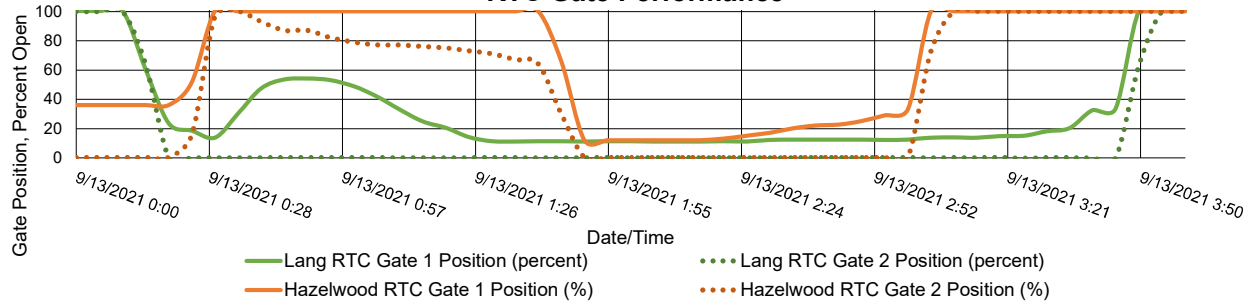
Percent Capture	17%
Overflow Volume:	7,014,044 Gal.
Overflow Volume Prevented:	1,450,144 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	7,014,044 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

**Recommended Operational Changes/Notes:**  
Hazelwood Gate 1 was stuck at 36% open and Hazelwood Gate 1 was completely open at the beginning of the event.

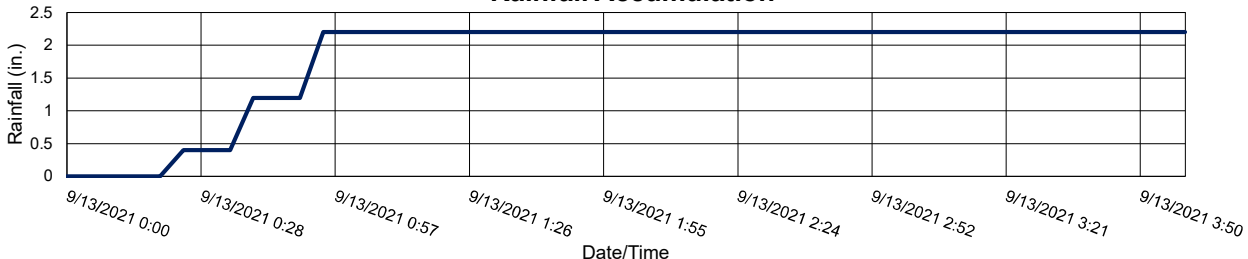
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



September 13, 2021

5

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.10 ft.	- ft.
Return to Normal Depth:	0.81 ft.	- ft.
Time Gate 1 Activated:	9/13/2021 21:35	N/A
Time Gate 2 Activated:	9/13/2021 21:35	N/A
Time Gate 1 Returned to Normal:	9/14/2021 3:45	N/A
Time Gate 2 Returned to Normal:	9/14/2021 3:45	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	4.40 ft.	1.75 ft.
Volume Stored:	210,406 Gal.	108,592 Gal.
Unused Storage Volume:	642,168 Gal.	1,157,579 Gal.

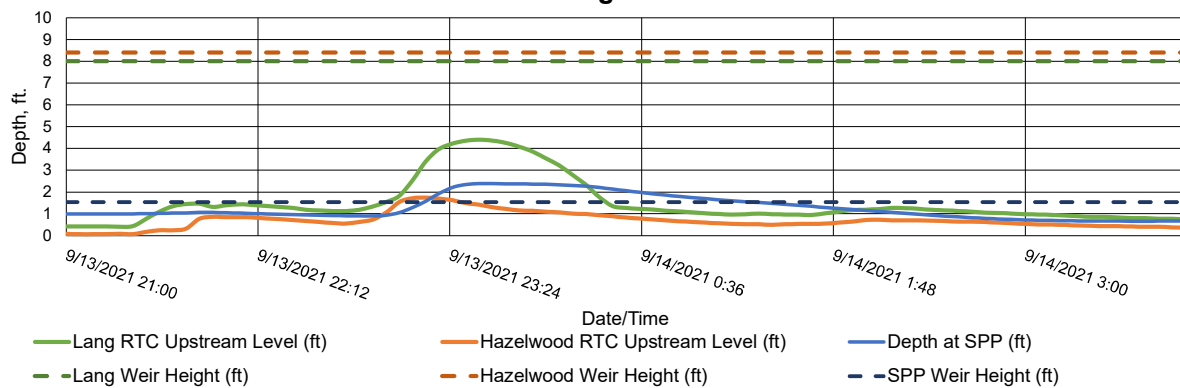
SPP:	340
Analysis Date:	10/9/2021
Event Start Date/Time:	9/13/2021 21:35
Event End Date/Time:	9/14/2021 3:45

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.6 in.
Storm Event Duration:	7 hr.
Storm Type:	Less than one year

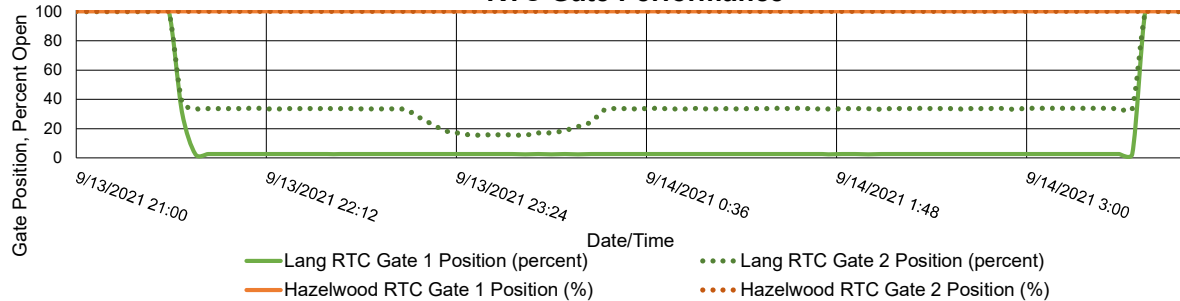
Percent Capture	29%
Overflow Volume:	773,851 Gal.
Overflow Volume Prevented:	318,998 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	773,851 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

Recommended Operational Changes/Notes:

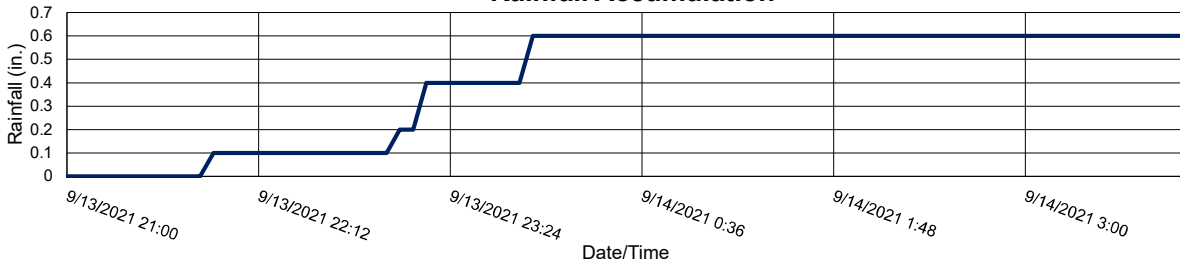
RTC Storage Performance



RTC Gate Performance



Rainfall Accumulation



September 15, 2021

6

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.01 ft.	- ft.
Return to Normal Depth:	0.80 ft.	- ft.
Time Gate 1 Activated:	9/15/2021 2:40	N/A
Time Gate 2 Activated:	9/15/2021 2:40	N/A
Time Gate 1 Returned to Normal:	9/15/2021 8:25	N/A
Time Gate 2 Returned to Normal:	9/15/2021 8:25	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.49 ft.	0.99 ft.
Volume Stored:	10,875 Gal.	51,444 Gal.
Unused Storage Volume:	843,335 Gal.	1,214,726 Gal.

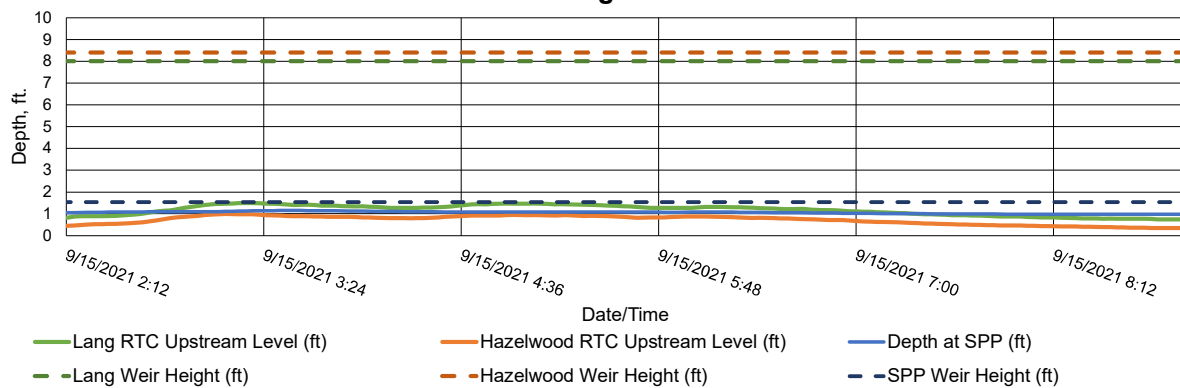
SPP:	340
Analysis Date:	10/9/2021
Event Start Date/Time:	9/15/2021 2:40
Event End Date/Time:	9/15/2021 8:25

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.5 in.
Storm Event Duration:	7 hr.
Storm Type:	Less than one year

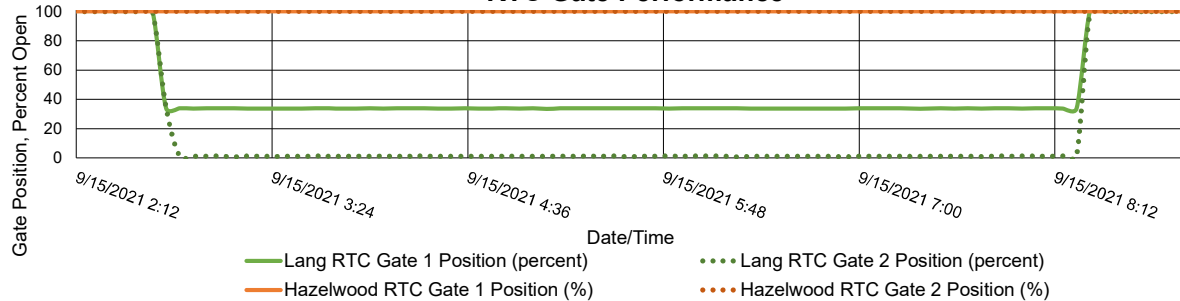
Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	62,319 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

Recommended Operational Changes/Notes:

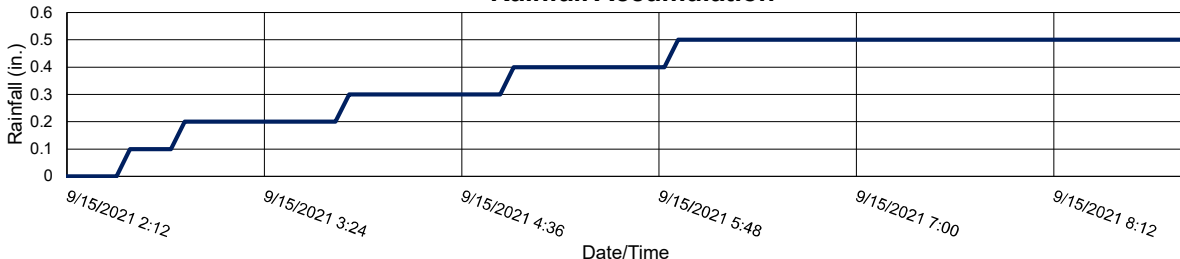
RTC Storage Performance



RTC Gate Performance



Rainfall Accumulation



September 22, 2021

7

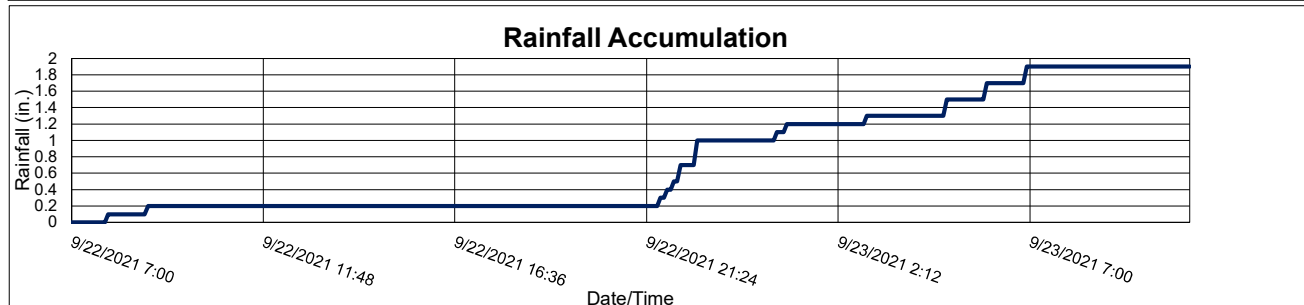
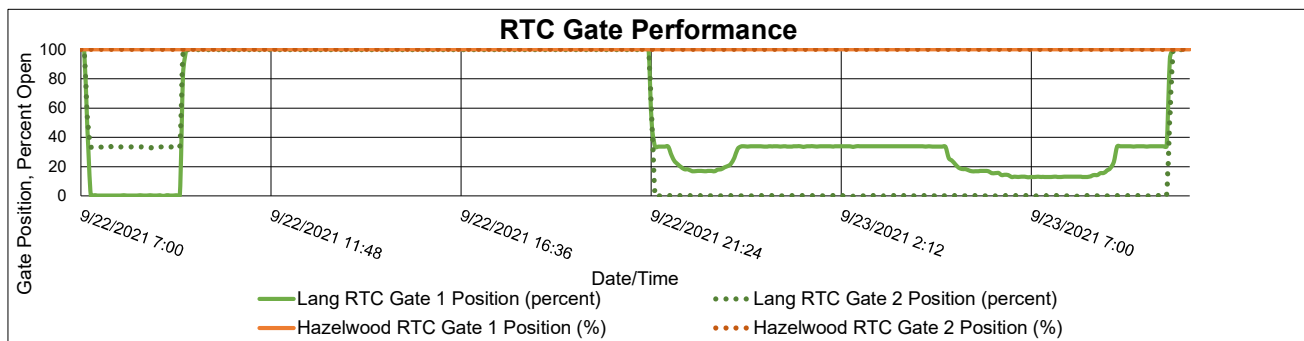
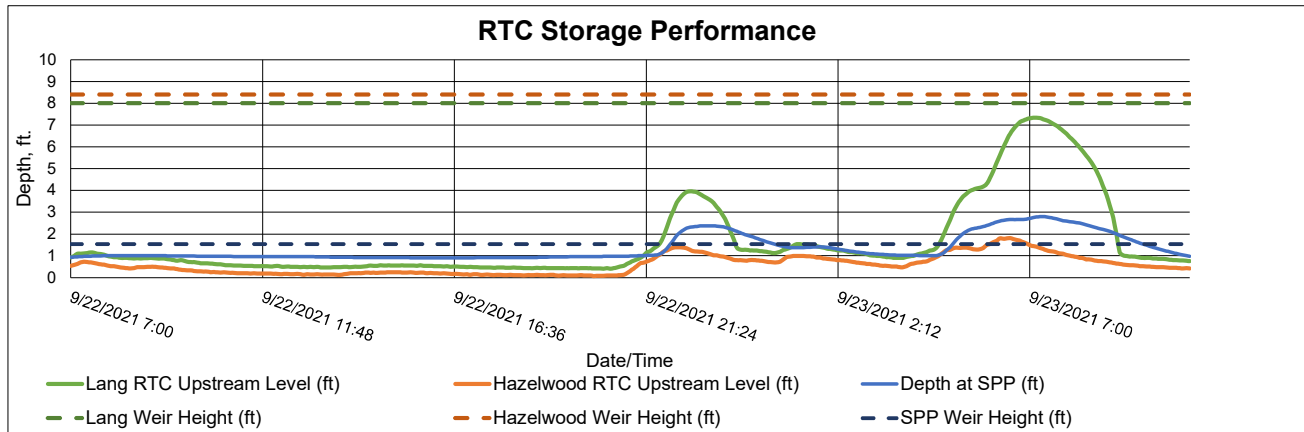
RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.99 ft.	0.09 ft.
Return to Normal Depth:	0.82 ft.	- ft.
Time Gate 1 Activated:	9/22/2021 7:05	N/A
Time Gate 2 Activated:	9/22/2021 7:05	N/A
Time Gate 1 Returned to Normal:	9/23/2021 10:35	N/A
Time Gate 2 Returned to Normal:	9/23/2021 10:30	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	7.33 ft.	1.82 ft.
Volume Stored:	701,153 Gal.	111,108 Gal.
Unused Storage Volume:	156,224 Gal.	1,151,293 Gal.

SPP:	340
Analysis Date:	10/9/2021
Event Start Date/Time:	9/22/2021 7:05
Event End Date/Time:	9/23/2021 10:35

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.9 in.
Storm Event Duration:	28 hr.
Storm Type:	Less than one year

Percent Capture	19%
Overflow Volume:	3,570,890 Gal.
Overflow Volume Prevented:	812,261 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	3,570,890 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

Recommended Operational Changes/Notes:



# October 2021 Lang Ave. and Hazelwood RTC KPI Report

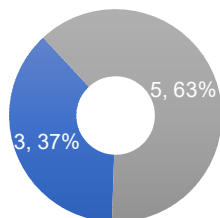
**BUFFALO**  
SEWER AUTHORITY



**ARCADIS**

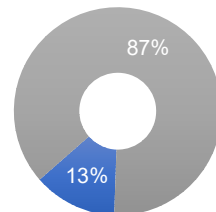
Design & Consultancy  
for natural and  
built assets

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
3	5	5,956,207	39,849,842
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
10/3/2021	3,161,560	21,244,296	13%
10/15/2021	1,258,004	6,741,807	16%
10/16/2021	64,904	12,608	84%
10/16/2021	48,339	-	100%
10/21/2021	54,232	110	100%
10/25/2021	42,709	-	100%
10/26/2021	58,356	-	100%
10/29/2021	1,268,103	11,851,021	10%

# October 3, 2021

# 1

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.91 ft.	3.15 ft.
Return to Normal Depth:	0.84 ft.	1.92 ft.
Time Gate 1 Activated:	10/3/2021 13:30	10/3/2021 22:35
Time Gate 2 Activated:	10/3/2021 13:30	10/3/2021 22:35
Time Gate 1 Returned to Normal:	10/4/2021 14:45	10/4/2021 4:40
Time Gate 2 Returned to Normal:	10/4/2021 14:40	10/4/2021 4:35
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.25 ft.	8.40 ft.
Volume Stored:	955,981 Gal.	2,205,578 Gal.
Unused Storage Volume:	0 Gal.	0 Gal.

SPP:	340
Analysis Date:	11/13/2021
Event Start Date/Time:	10/3/2021 13:30
Event End Date/Time:	10/4/2021 14:45

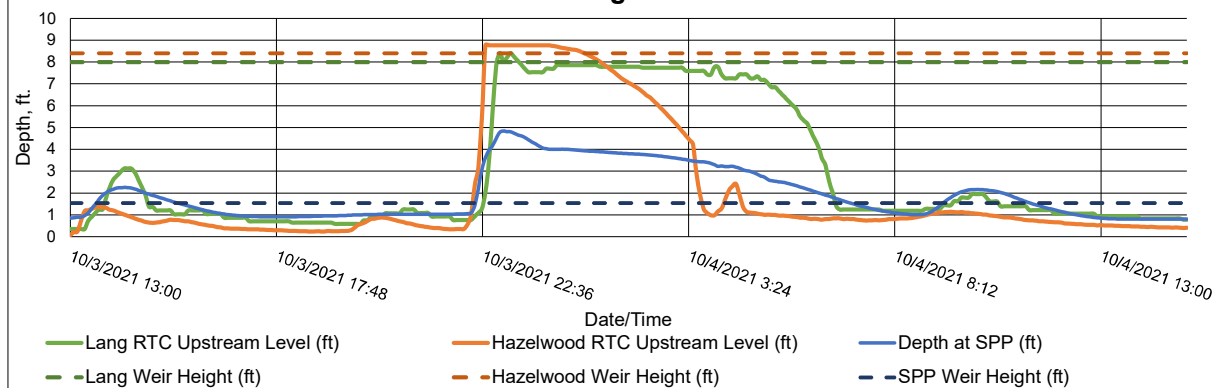
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	3.4 in.
Storm Event Duration:	26 hr.
Storm Type:	Less than 10 years

Percent Capture	13%
Overflow Volume:	21,244,296 Gal.
Overflow Volume Prevented:	3,161,560 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

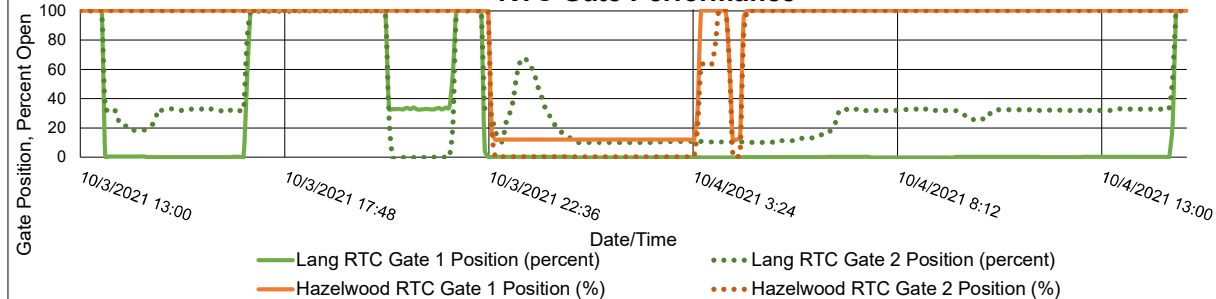
## Recommended Operational Changes/Notes:

The Lang data was obtained from the Ovation Gateway. The Hazelwood data was obtained from the EmNet Gateway.

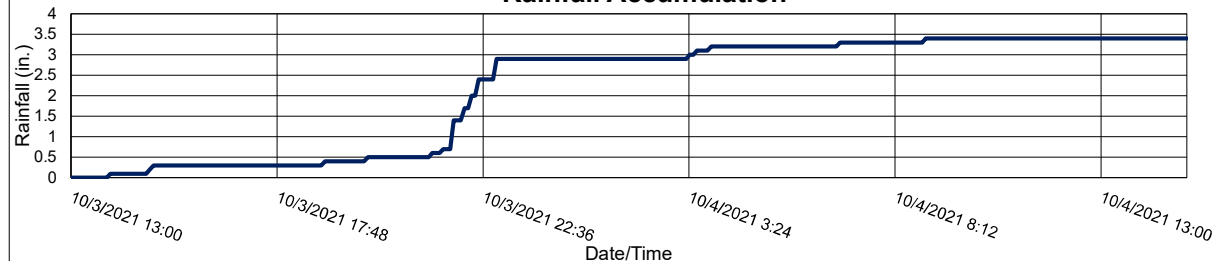
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



October 15, 2021

2

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.73 ft.	2.43 ft.
Return to Normal Depth:	1.00 ft.	- ft.
Time Gate 1 Activated:	10/15/2021 17:35	10/15/2021 17:40
Time Gate 2 Activated:	10/15/2021 17:35	10/15/2021 17:40
Time Gate 1 Returned to Normal:	10/15/2021 21:35	N/A
Time Gate 2 Returned to Normal:	10/15/2021 21:35	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	7.84 ft.	5.47 ft.
Volume Stored:	819,280 Gal.	438,725 Gal.
Unused Storage Volume:	38,907 Gal.	654,520 Gal.

SPP:	340
Analysis Date:	11/13/2021
Event Start Date/Time:	10/15/2021 17:35
Event End Date/Time:	10/15/2021 21:35

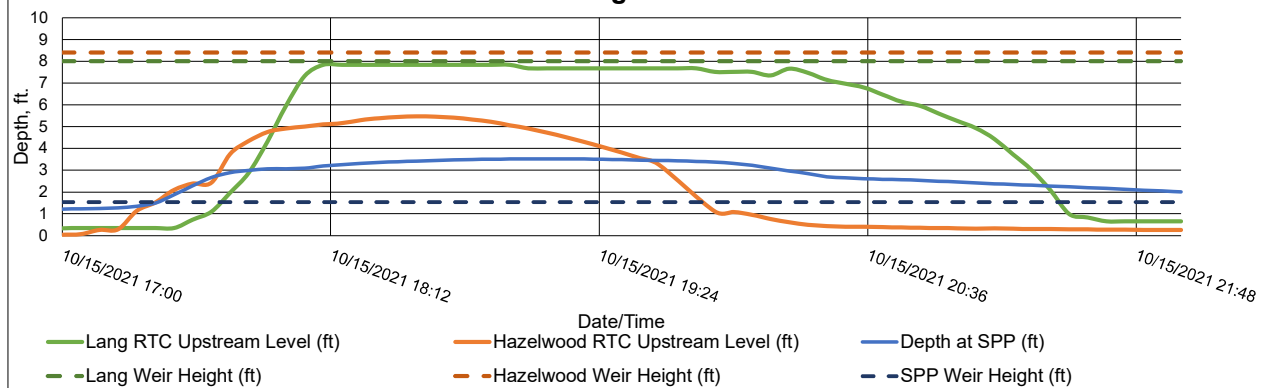
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.8 in.
Storm Event Duration:	5 hr.
Storm Type:	Less than one year

Percent Capture	16%
Overflow Volume:	6,741,807 Gal.
Overflow Volume Prevented:	1,258,004 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	6,741,807 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

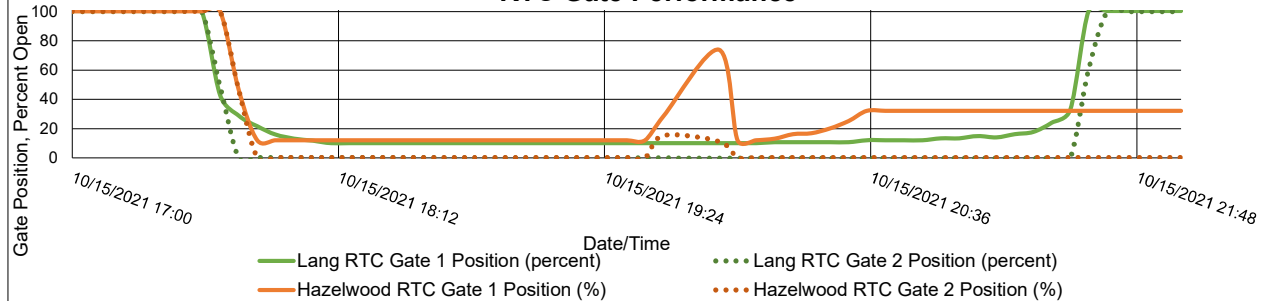
#### Recommended Operational Changes/Notes:

Hazelwood RTC Gate 1 is stuck at 32% open at the end of the event. The Lang data was obtained from the Ovation Gateway. The Hazelwood data was obtained from the EmNet Gateway.

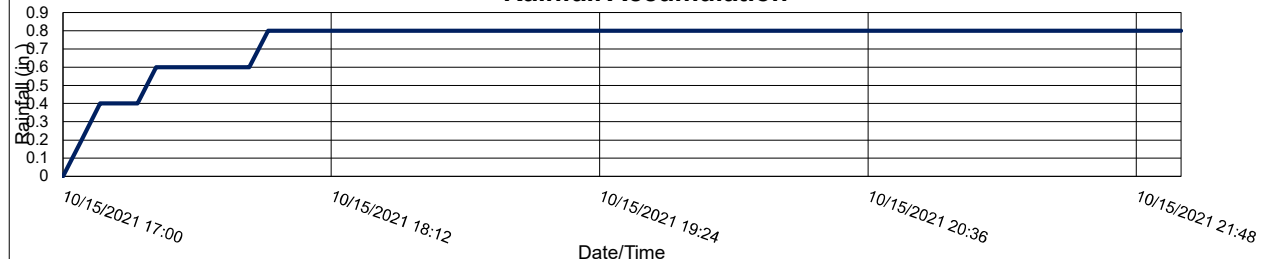
#### RTC Storage Performance



#### RTC Gate Performance



#### Rainfall Accumulation





October 16, 2021

3

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.84 ft.	- ft.
Return to Normal Depth:	0.85 ft.	- ft.
Time Gate 1 Activated:	10/16/2021 3:45	N/A
Time Gate 2 Activated:	10/16/2021 3:45	N/A
Time Gate 1 Returned to Normal:	10/16/2021 6:40	N/A
Time Gate 2 Returned to Normal:	10/16/2021 6:40	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.36 ft.	1.04 ft.
Volume Stored:	10,006 Gal.	54,898 Gal.
Unused Storage Volume:	846,814 Gal.	1,211,273 Gal.

SPP:	340
Analysis Date:	11/13/2021
Event Start Date/Time:	10/16/2021 3:45
Event End Date/Time:	10/16/2021 6:40

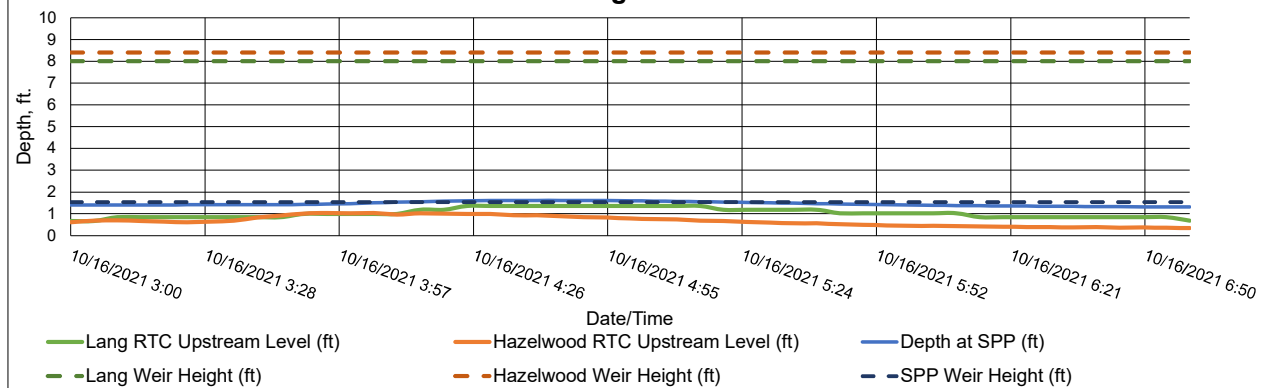
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.1 in.
Storm Event Duration:	4 hr.
Storm Type:	Less than one year

Percent Capture	84%
Overflow Volume:	12,608 Gal.
Overflow Volume Prevented:	64,904 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	12,608 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

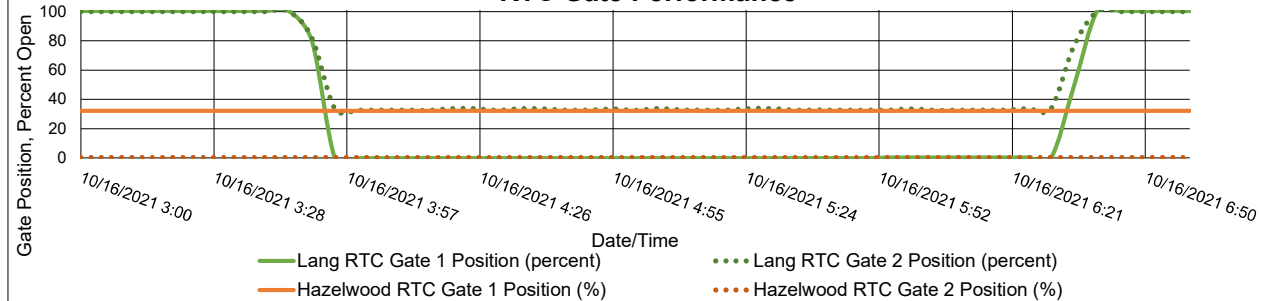
#### Recommended Operational Changes/Notes:

Hazelwood RTC Gate 1 is stuck at 32% open during the event. The Lang data was obtained from the Ovation Gateway. The Hazelwood data was obtained from the EmNet Gateway.

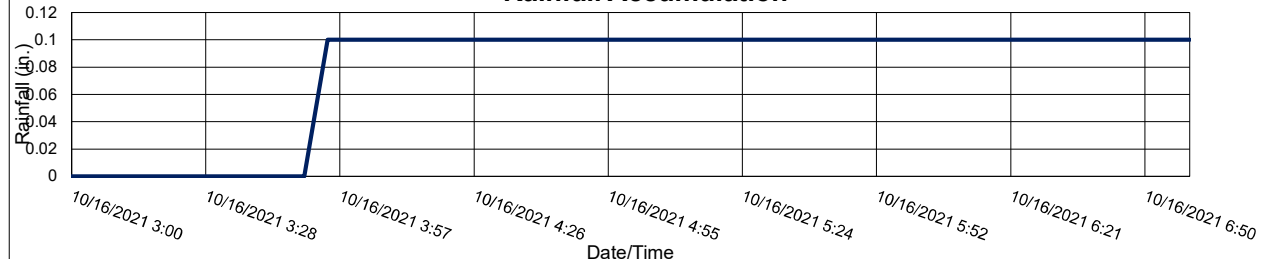
#### RTC Storage Performance



#### RTC Gate Performance



#### Rainfall Accumulation



October 16, 2021

4

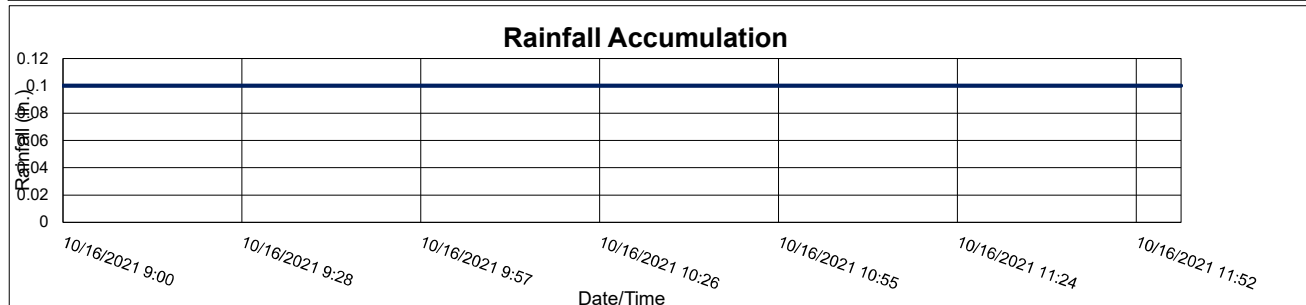
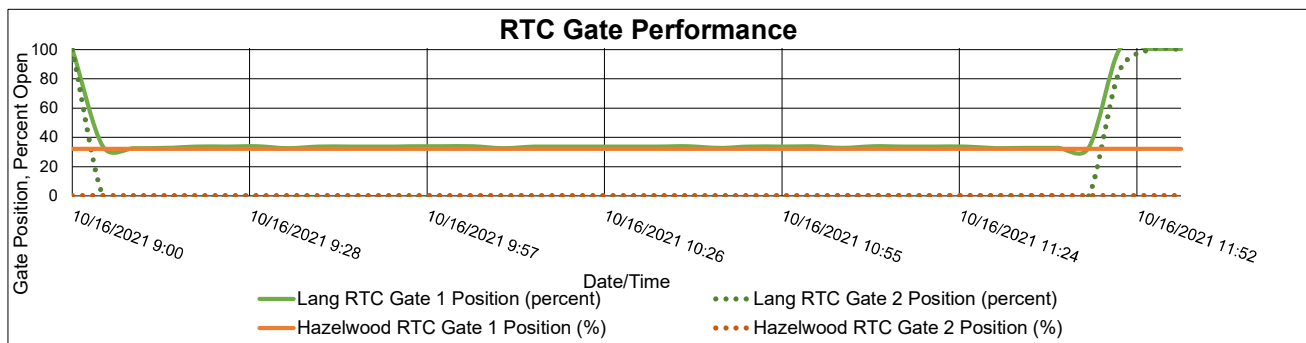
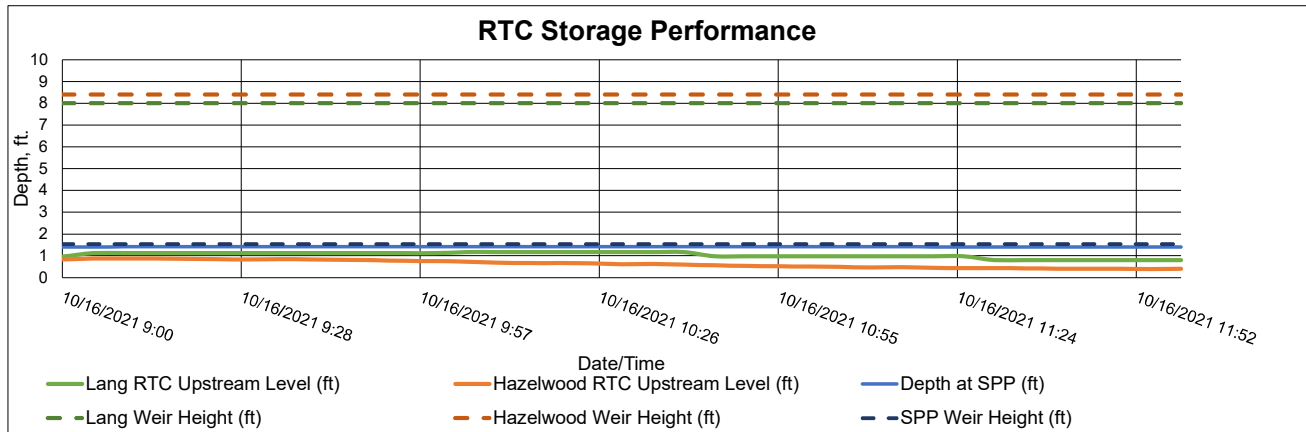
RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.96 ft.	- ft.
Return to Normal Depth:	0.81 ft.	- ft.
Time Gate 1 Activated:	10/16/2021 9:00	N/A
Time Gate 2 Activated:	10/16/2021 9:00	N/A
Time Gate 1 Returned to Normal:	10/16/2021 11:50	N/A
Time Gate 2 Returned to Normal:	10/16/2021 11:50	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.17 ft.	0.88 ft.
Volume Stored:	3,865 Gal.	44,474 Gal.
Unused Storage Volume:	851,177 Gal.	1,221,697 Gal.

SPP:	340
Analysis Date:	11/13/2021
Event Start Date/Time:	10/16/2021 9:00
Event End Date/Time:	10/16/2021 11:50

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.1 in.
Storm Event Duration:	3 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	48,339 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

**Recommended Operational Changes/Notes:**  
Hazelwood RTC Gate 1 is stuck at 32% open during the event. The Lang data was obtained from the Ovation Gateway. The Hazelwood data was obtained from the EmNet Gateway.



October 21, 2021

5

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.72 ft.	- ft.
Return to Normal Depth:	0.89 ft.	- ft.
Time Gate 1 Activated:	10/21/2021 21:05	N/A
Time Gate 2 Activated:	10/21/2021 21:05	N/A
Time Gate 1 Returned to Normal:	10/21/2021 22:20	N/A
Time Gate 2 Returned to Normal:	10/21/2021 22:20	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.24 ft.	0.90 ft.
Volume Stored:	8,632 Gal.	45,600 Gal.
Unused Storage Volume:	849,667 Gal.	1,220,570 Gal.

SPP:	340
Analysis Date:	11/13/2021
Event Start Date/Time:	10/21/2021 21:05
Event End Date/Time:	10/21/2021 22:20

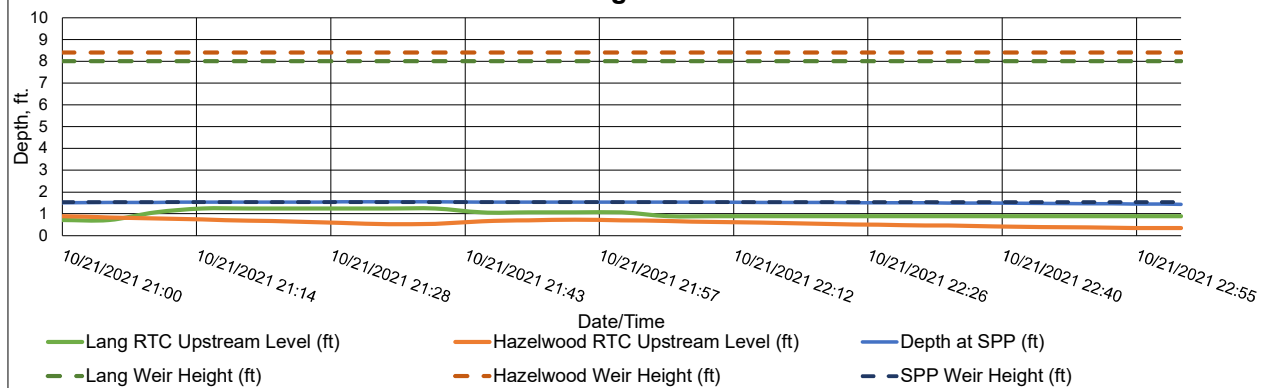
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.02 in.
Storm Event Duration:	2 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	110 Gal.
Overflow Volume Prevented:	54,232 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	110 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

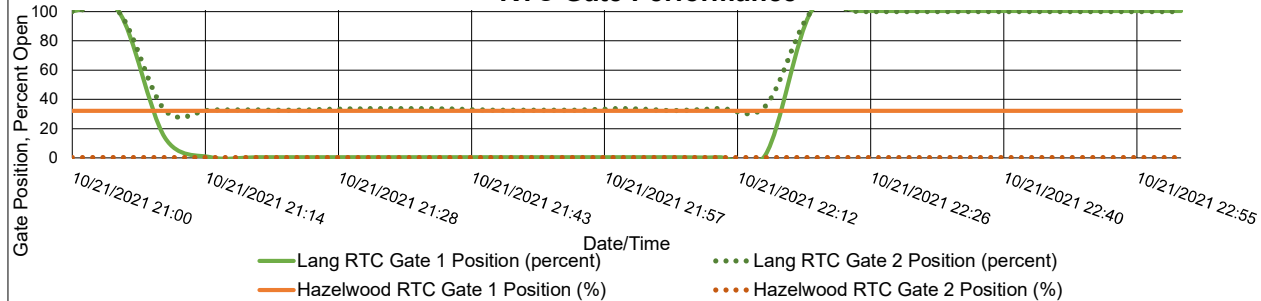
#### Recommended Operational Changes/Notes:

Hazelwood RTC Gate 1 is stuck at 32% open during the event. The Lang data was obtained from the Ovation Gateway. The Hazelwood data was obtained from the EmNet Gateway.

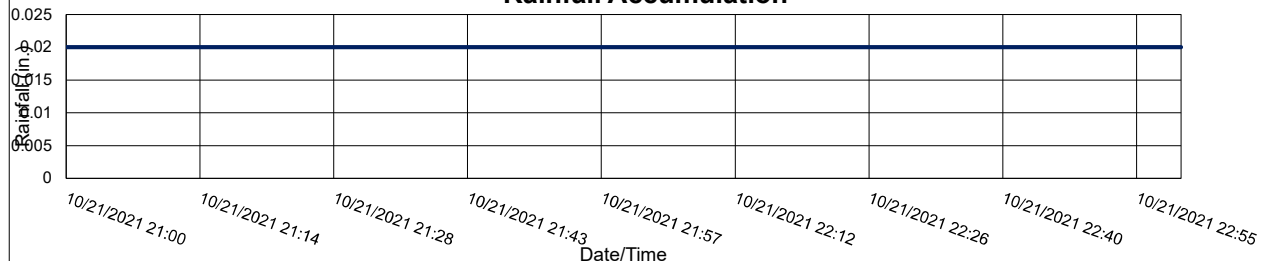
#### RTC Storage Performance



#### RTC Gate Performance



#### Rainfall Accumulation



October 25, 2021

6

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.86 ft.	- ft.
Return to Normal Depth:	0.78 ft.	- ft.
Time Gate 1 Activated:	10/25/2021 2:50	N/A
Time Gate 2 Activated:	10/25/2021 2:50	N/A
Time Gate 1 Returned to Normal:	10/25/2021 4:20	N/A
Time Gate 2 Returned to Normal:	10/25/2021 4:20	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.03 ft.	0.81 ft.
Volume Stored:	2,683 Gal.	40,027 Gal.
Unused Storage Volume:	853,862 Gal.	1,226,144 Gal.

SPP:	340
Analysis Date:	11/13/2021
Event Start Date/Time:	10/25/2021 2:50
Event End Date/Time:	10/25/2021 4:20

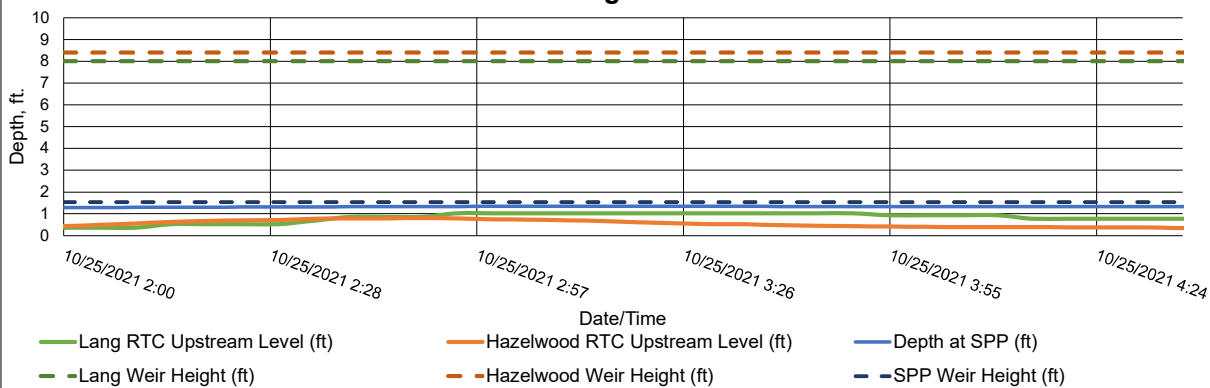
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.1 in.
Storm Event Duration:	3 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	42,709 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

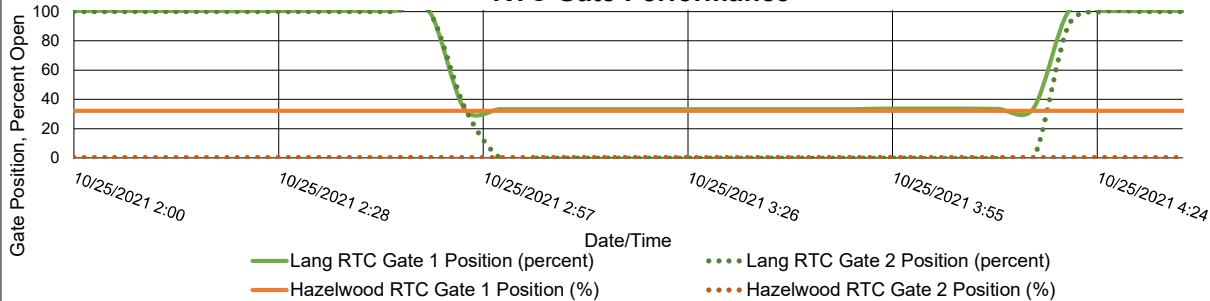
#### Recommended Operational Changes/Notes:

Hazelwood RTC Gate 1 is stuck at 32% open during the event. The Lang data was obtained from the Ovation Gateway. The Hazelwood data was obtained from the EmNet Gateway.

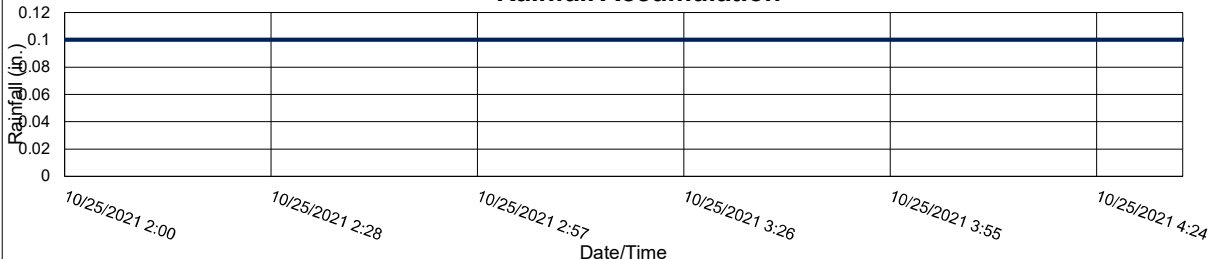
#### RTC Storage Performance



#### RTC Gate Performance



#### Rainfall Accumulation



October 26, 2021

7

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.84 ft.	- ft.
Return to Normal Depth:	0.87 ft.	- ft.
Time Gate 1 Activated:	10/26/2021 11:05	N/A
Time Gate 2 Activated:	10/26/2021 11:05	N/A
Time Gate 1 Returned to Normal:	10/27/2021 4:24	N/A
Time Gate 2 Returned to Normal:	10/27/2021 4:24	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.25 ft.	0.98 ft.
Volume Stored:	7,378 Gal.	50,978 Gal.
Unused Storage Volume:	849,442 Gal.	1,215,192 Gal.

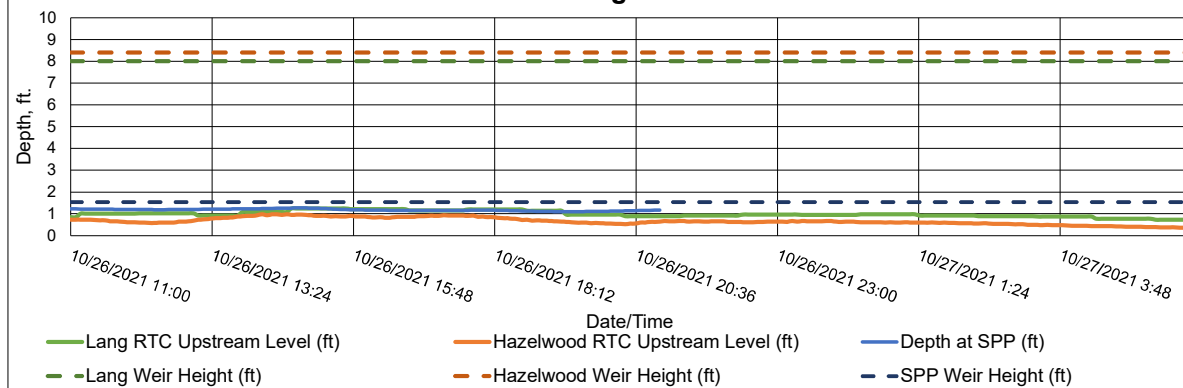
SPP:	340
Analysis Date:	11/13/2021
Event Start Date/Time:	10/26/2021 11:05
Event End Date/Time:	10/27/2021 4:24

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.3 in.
Storm Event Duration:	20 hr.
Storm Type:	Less than one year

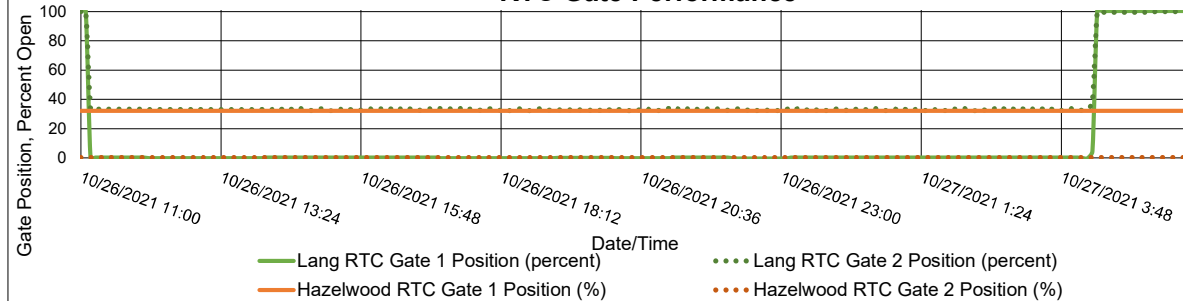
Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	58,356 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

**Recommended Operational Changes/Notes:**  
Hazelwood RTC Gate 1 is stuck at 32% open during the event. The Lang data was obtained from the Ovation Gateway. The Hazelwood data was obtained from the EmNet Gateway.

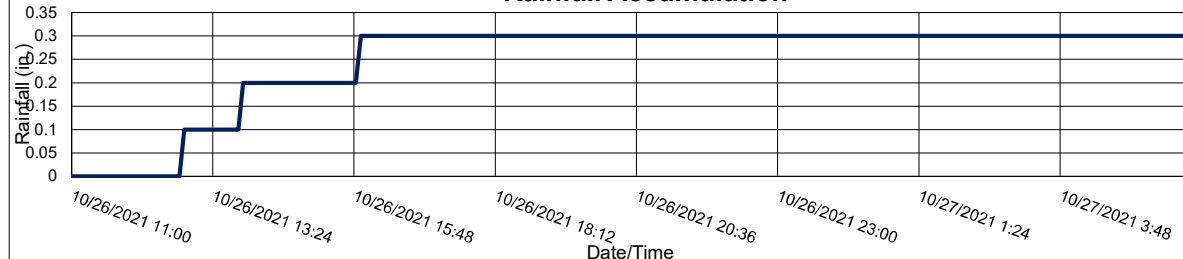
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.91 ft.	2.23 ft.
Return to Normal Depth:	0.82 ft.	0.89 ft.
Time Gate 1 Activated:	10/29/2021 16:30	10/29/2021 18:20
Time Gate 2 Activated:	10/29/2021 16:30	10/29/2021 17:45
Time Gate 1 Returned to Normal:	10/30/2021 8:15	10/29/2021 21:20
Time Gate 2 Returned to Normal:	10/30/2021 8:15	10/29/2021 21:50
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	7.89 ft.	5.37 ft.
Volume Stored:	828,963 Gal.	439,141 Gal.
Unused Storage Volume:	26,857 Gal.	673,818 Gal.

SPP:	340
Analysis Date:	11/13/2021
Event Start Date/Time:	10/29/2021 16:30
Event End Date/Time:	10/30/2021 8:15

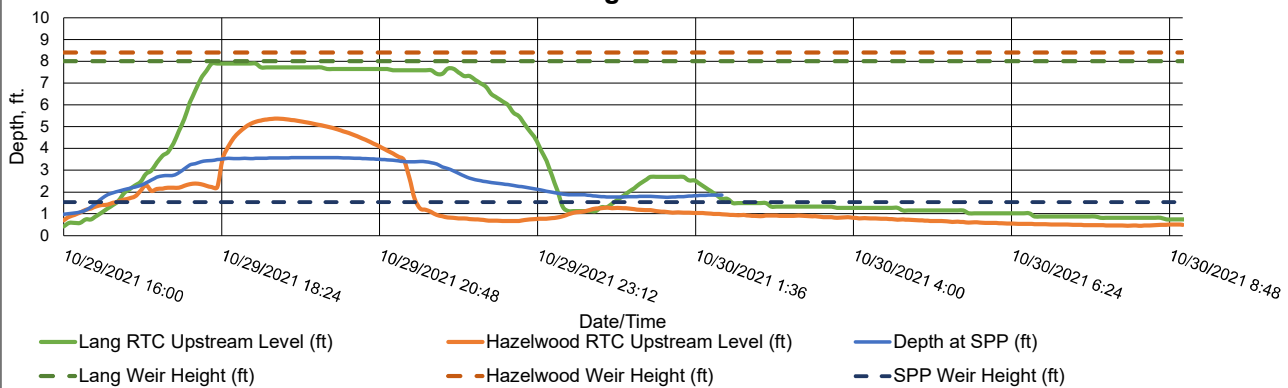
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.9 in.
Storm Event Duration:	17 hr.
Storm Type:	Less than one year

Percent Capture	10%
Overflow Volume:	11,851,021 Gal.
Overflow Volume Prevented:	1,268,103 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	11,851,021 Gal.
If No, could SPP activation have been prevented?	No
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

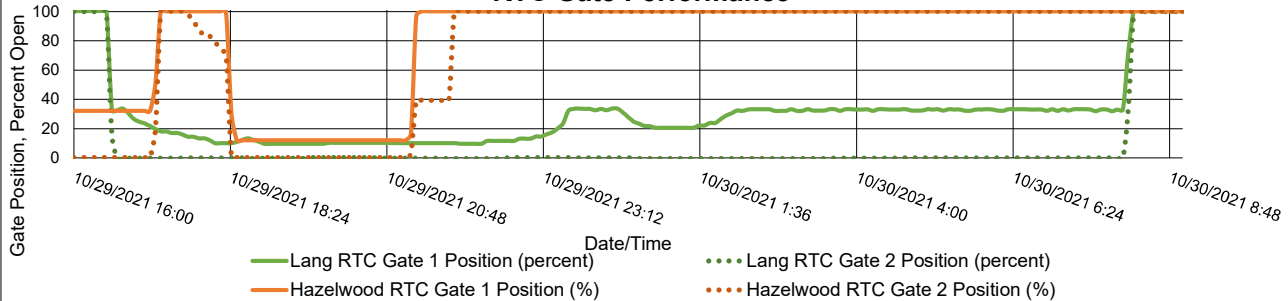
#### Recommended Operational Changes/Notes:

Hazelwood Gate 1 was stuck at 32% open at the beginning of the event. The Lang data was obtained from the Ovation Gateway. The Hazelwood data was obtained from the EmNet Gateway.

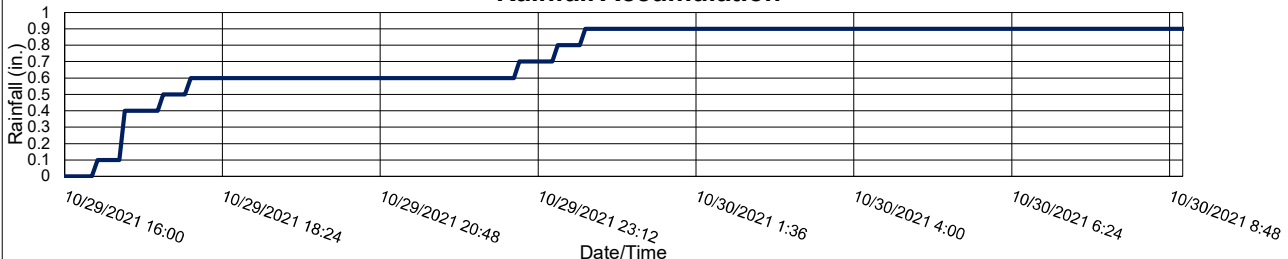
#### RTC Storage Performance



#### RTC Gate Performance



#### Rainfall Accumulation



# November 2021 Lang Ave. and Hazelwood RTC KPI Report

**BUFFALO**  
SEWER AUTHORITY



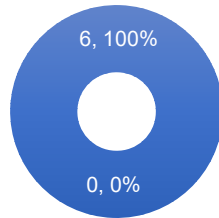
**ARCADIS**

Design & Consultancy  
for natural and  
built assets

# Lang Ave & Hazelwood RTC Monthly Performance Report

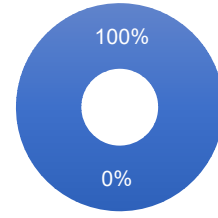
November 2021

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
6	0	384,382	-
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
11/12/2021	45,566	-	100%
11/13/2021	155,480	-	100%
11/14/2021	31,413	-	100%
11/15/2021	67,239	-	100%
11/22/2021	38,258	-	100%
11/26/2021	46,426	-	100%



# November 12, 2021

# 1

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.86 ft.	- ft.
Return to Normal Depth:	0.86 ft.	- ft.
Time Gate 1 Activated:	11/12/2021 2:35	N/A
Time Gate 2 Activated:	11/12/2021 2:35	N/A
Time Gate 1 Returned to Normal:	11/12/2021 3:50	N/A
Time Gate 2 Returned to Normal:	11/12/2021 3:50	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.21 ft.	0.79 ft.
Volume Stored:	6,217 Gal.	39,349 Gal.
Unused Storage Volume:	850,328 Gal.	1,226,821 Gal.

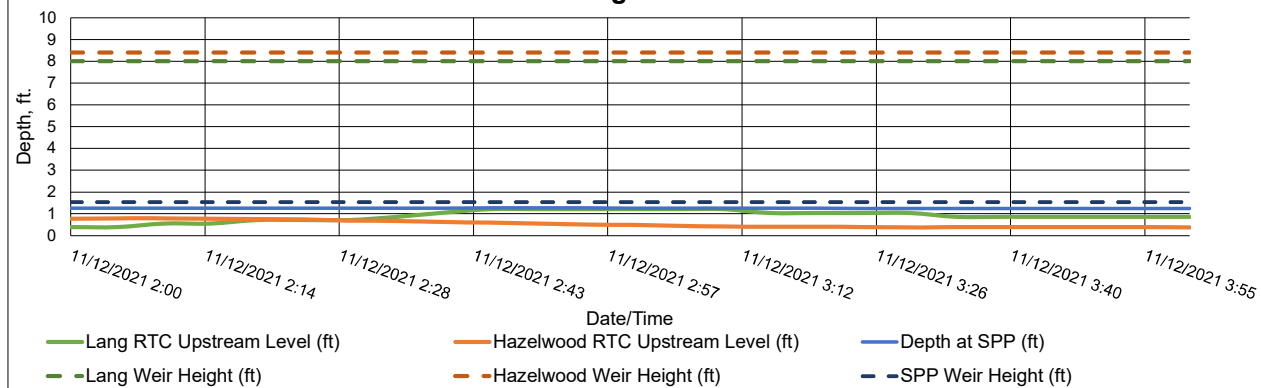
SPP:	340
Analysis Date:	1/8/2022
Event Start Date/Time:	11/12/2021 2:35
Event End Date/Time:	11/12/2021 3:50

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.5 in.
Storm Event Duration:	2 hr.
Storm Type:	Less than one year

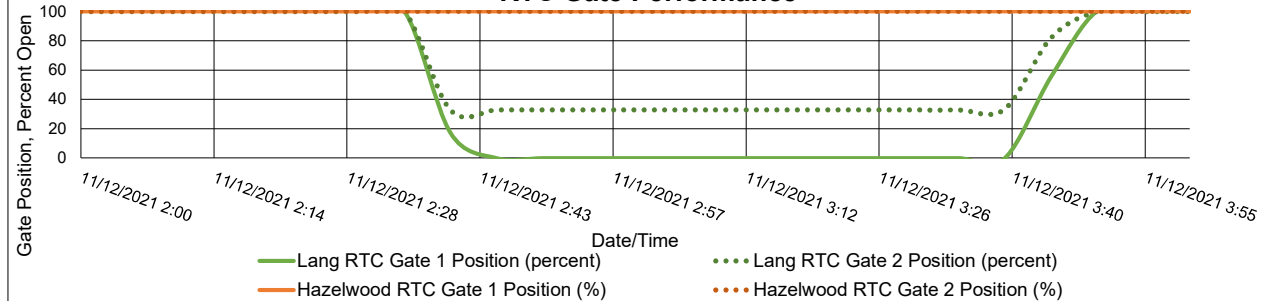
Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	45,566 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

**Recommended Operational Changes/Notes:**  
 The Lang data was obtained from the Ovation Gateway. The Hazelwood data was obtained from the EmNet Gateway.

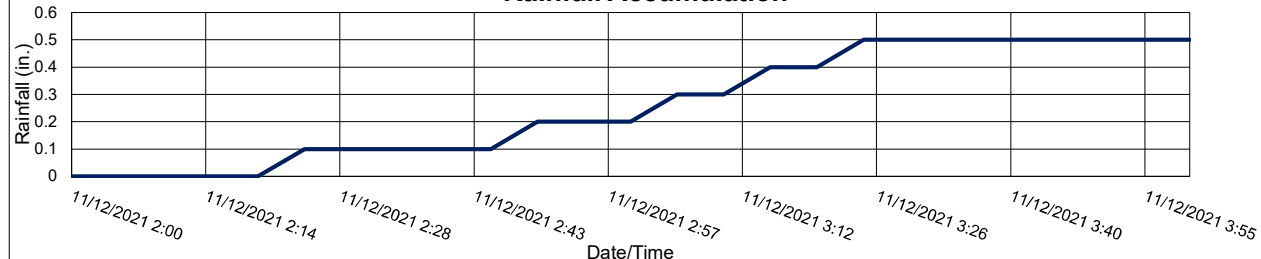
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



November 13, 2021

2

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.96 ft.	- ft.
Return to Normal Depth:	0.87 ft.	- ft.
Time Gate 1 Activated:	11/13/2021 4:40	N/A
Time Gate 2 Activated:	11/13/2021 4:40	N/A
Time Gate 1 Returned to Normal:	11/13/2021 18:30	N/A
Time Gate 2 Returned to Normal:	11/13/2021 18:30	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	2.99 ft.	1.28 ft.
Volume Stored:	84,031 Gal.	71,450 Gal.
Unused Storage Volume:	771,011 Gal.	1,194,721 Gal.

SPP:	340
Analysis Date:	1/8/2022
Event Start Date/Time:	11/13/2021 4:40
Event End Date/Time:	11/13/2021 18:30

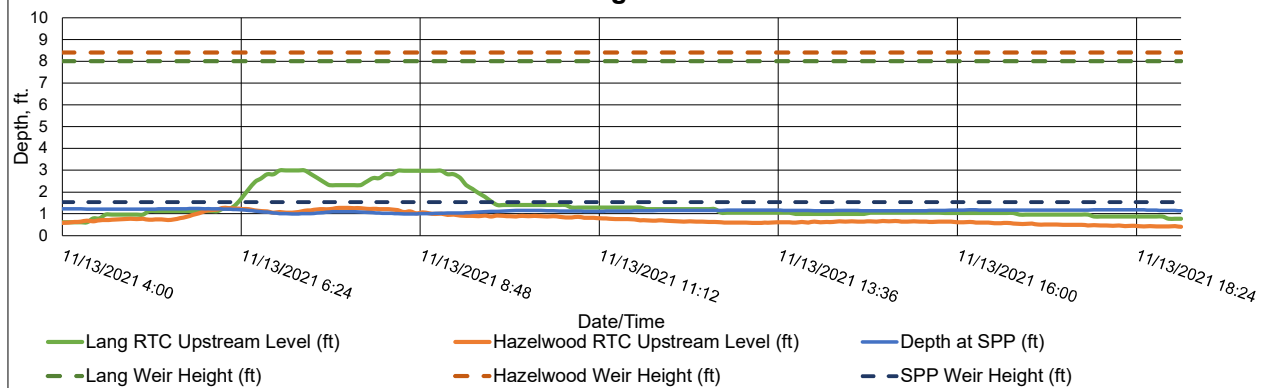
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.7 in.
Storm Event Duration:	15 hr.
Storm Type:	Less than one year

Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	155,480 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

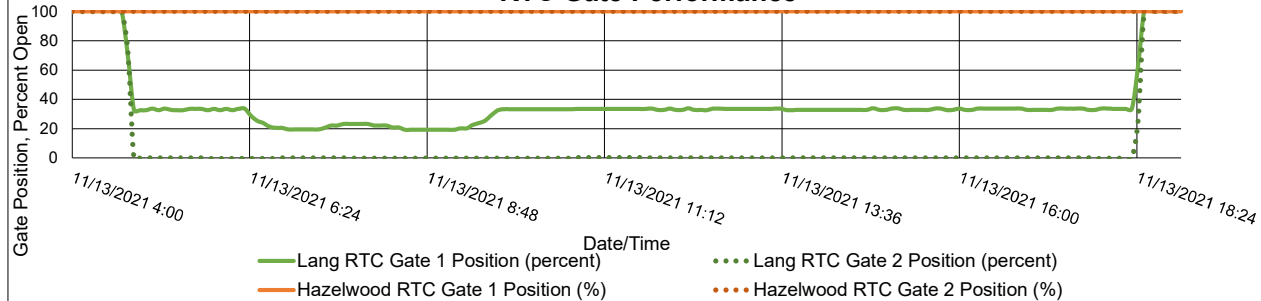
#### Recommended Operational Changes/Notes:

The Lang data was obtained from the Ovation Gateway. The Hazelwood data was obtained from the EmNet Gateway.

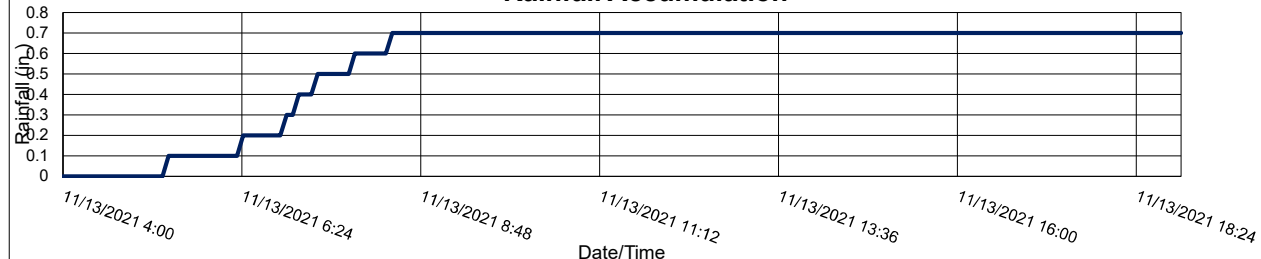
#### RTC Storage Performance



#### RTC Gate Performance



#### Rainfall Accumulation



November 14, 2021

3

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.97 ft.	- ft.
Return to Normal Depth:	0.96 ft.	- ft.
Time Gate 1 Activated:	11/14/2021 9:15	N/A
Time Gate 2 Activated:	11/14/2021 9:15	N/A
Time Gate 1 Returned to Normal:	11/14/2021 11:05	N/A
Time Gate 2 Returned to Normal:	11/14/2021 11:05	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	0.97 ft.	0.66 ft.
Volume Stored:	0 Gal.	31,413 Gal.
Unused Storage Volume:	854,880 Gal.	1,234,757 Gal.

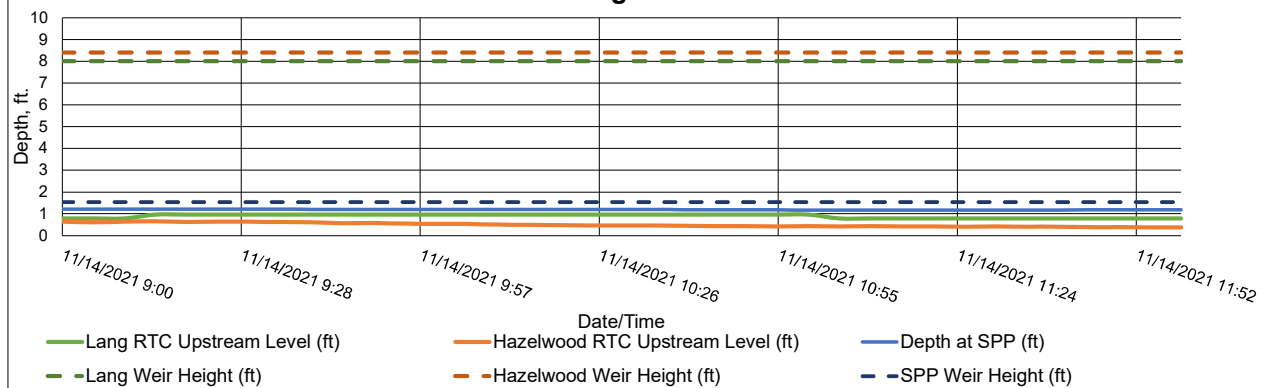
SPP:	340
Analysis Date:	1/8/2022
Event Start Date/Time:	11/14/2021 9:15
Event End Date/Time:	11/14/2021 11:05

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.2 in.
Storm Event Duration:	3 hr.
Storm Type:	Less than one year

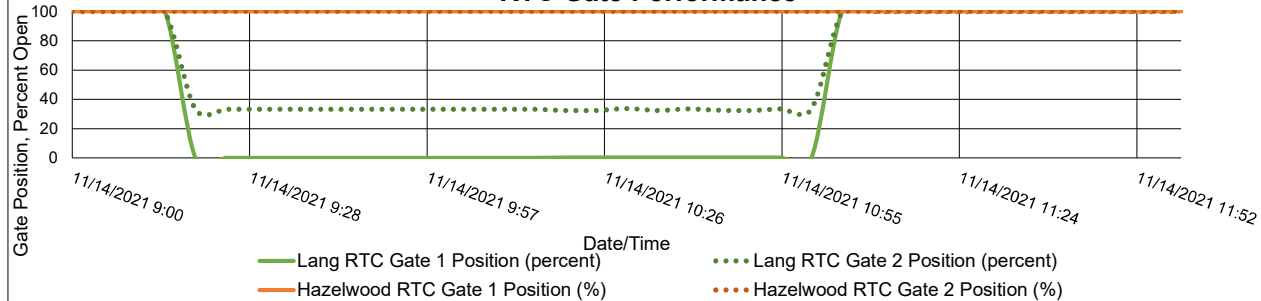
Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	31,413 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

**Recommended Operational Changes/Notes:**  
 The Lang data was obtained from the Ovation Gateway. The Hazelwood data was obtained from the EmNet Gateway.

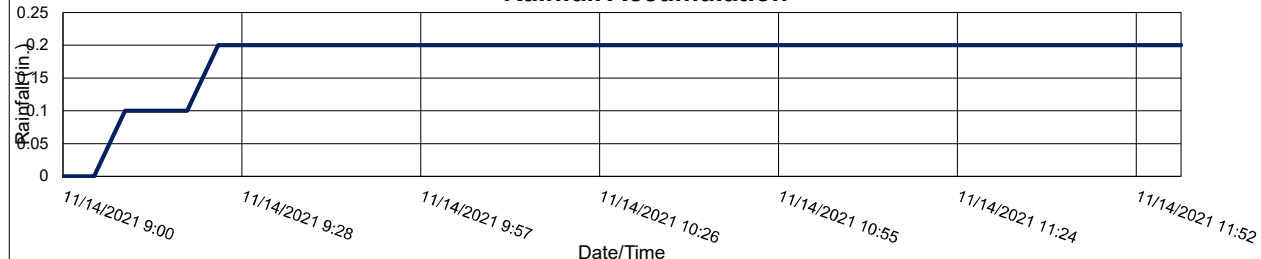
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



# November 15, 2021

# 4

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.92 ft.	- ft.
Return to Normal Depth:	0.82 ft.	- ft.
Time Gate 1 Activated:	11/14/2021 23:45	N/A
Time Gate 2 Activated:	11/14/2021 23:45	N/A
Time Gate 1 Returned to Normal:	11/15/2021 15:25	N/A
Time Gate 2 Returned to Normal:	11/15/2021 15:25	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.49 ft.	1.04 ft.
Volume Stored:	12,334 Gal.	54,906 Gal.
Unused Storage Volume:	843,335 Gal.	1,211,265 Gal.

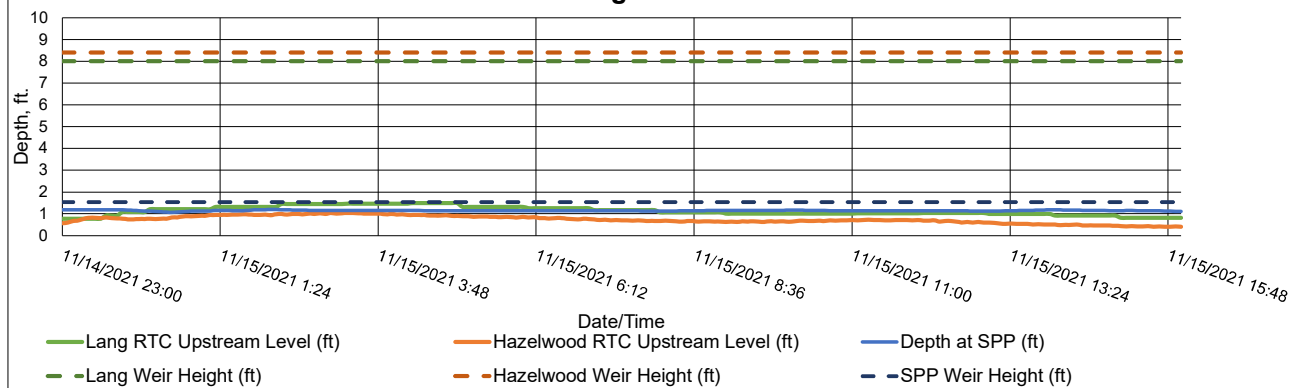
SPP:	340
Analysis Date:	1/8/2022
Event Start Date/Time:	11/14/2021 23:45
Event End Date/Time:	11/15/2021 15:25

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.3 in.
Storm Event Duration:	17 hr.
Storm Type:	Less than one year

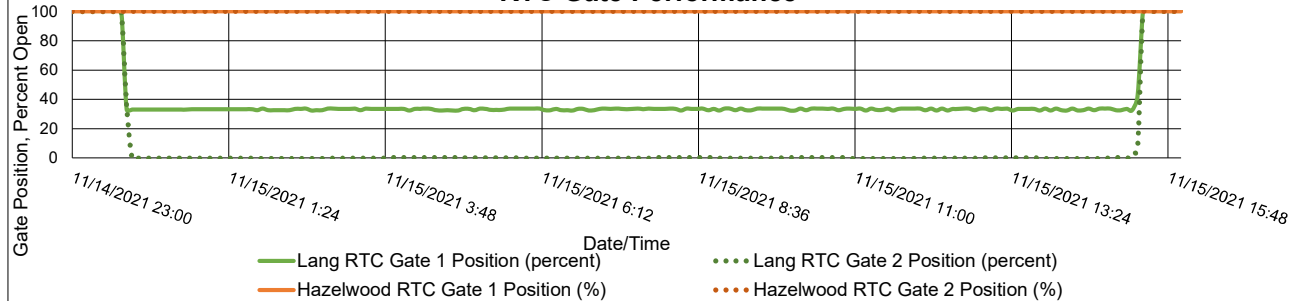
Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	67,239 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

**Recommended Operational Changes/Notes:**  
 The Lang data was obtained from the Ovation Gateway. The Hazelwood data was obtained from the EmNet Gateway.

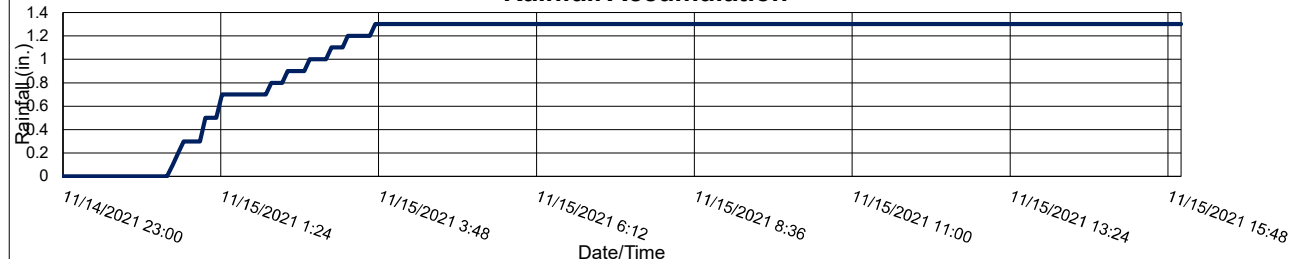
## RTC Storage Performance



## RTC Gate Performance



## Rainfall Accumulation



November 22, 2021

5

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.91 ft.	- ft.
Return to Normal Depth:	0.91 ft.	- ft.
Time Gate 1 Activated:	11/22/2021 0:30	N/A
Time Gate 2 Activated:	11/22/2021 0:30	N/A
Time Gate 1 Returned to Normal:	11/22/2021 1:50	N/A
Time Gate 2 Returned to Normal:	11/22/2021 1:50	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.07 ft.	0.73 ft.
Volume Stored:	2,680 Gal.	35,578 Gal.
Unused Storage Volume:	853,140 Gal.	1,230,593 Gal.

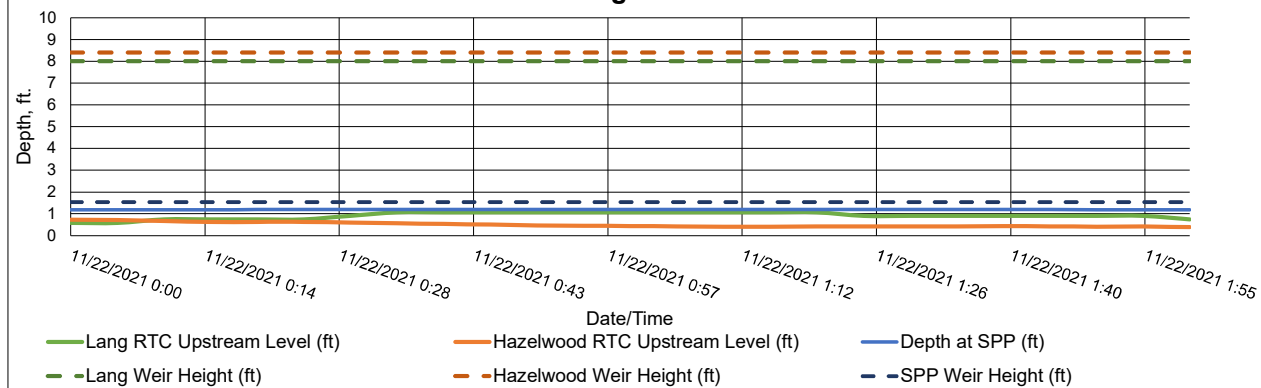
SPP:	340
Analysis Date:	1/8/2022
Event Start Date/Time:	11/22/2021 0:30
Event End Date/Time:	11/22/2021 1:50

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.04 in.
Storm Event Duration:	2 hr.
Storm Type:	Less than one year

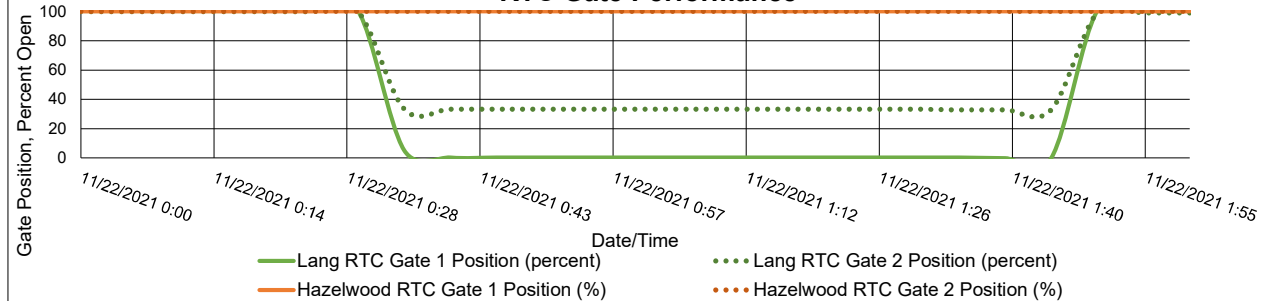
Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	38,258 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

**Recommended Operational Changes/Notes:**  
The Lang data was obtained from the Ovation Gateway. The Hazelwood data was obtained from the EmNet Gateway.

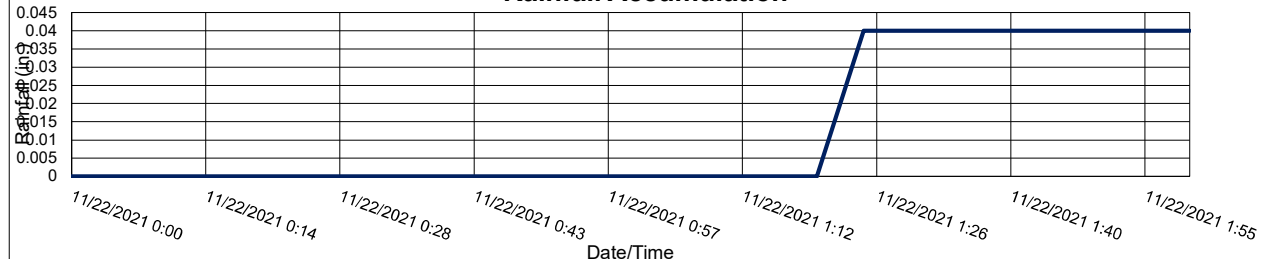
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



November 26, 2021

6

RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.80 ft.	- ft.
Return to Normal Depth:	0.84 ft.	- ft.
Time Gate 1 Activated:	11/26/2021 1:00	N/A
Time Gate 2 Activated:	11/26/2021 1:00	N/A
Time Gate 1 Returned to Normal:	11/26/2021 4:55	N/A
Time Gate 2 Returned to Normal:	11/26/2021 4:55	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.15 ft.	0.82 ft.
Volume Stored:	5,758 Gal.	40,667 Gal.
Unused Storage Volume:	851,587 Gal.	1,225,503 Gal.

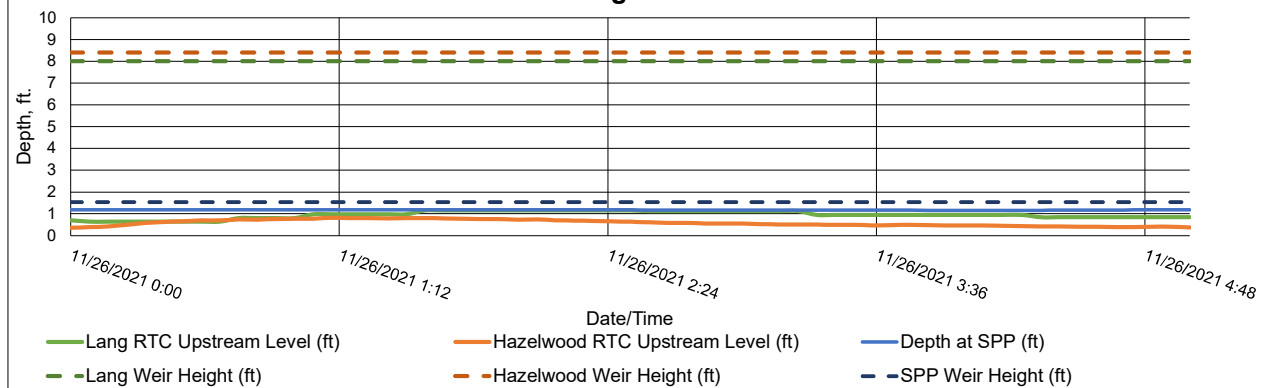
SPP:	340
Analysis Date:	1/8/2022
Event Start Date/Time:	11/26/2021 1:00
Event End Date/Time:	11/26/2021 4:55

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.4 in.
Storm Event Duration:	5 hr.
Storm Type:	Less than one year

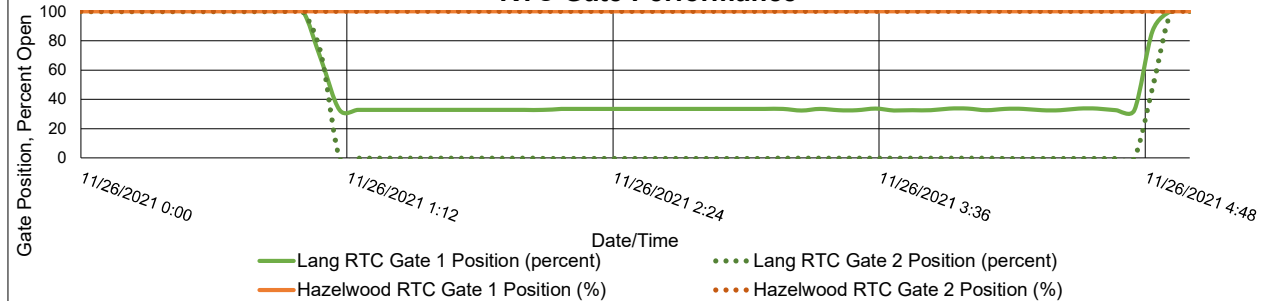
Percent Capture	100%
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	46,426 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available upstream?	NA Gal.
If No, could SPP activation have been prevented?	NA
If Yes, could SPP activation have been prevented without Hazelwood storage?	Yes

**Recommended Operational Changes/Notes:**  
 The Lang data was obtained from the Ovation Gateway. The Hazelwood data was obtained from the EmNet Gateway.

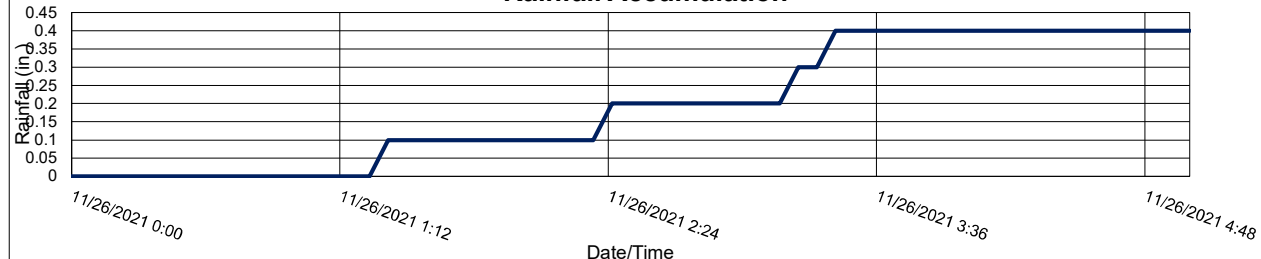
### RTC Storage Performance



### RTC Gate Performance



### Rainfall Accumulation



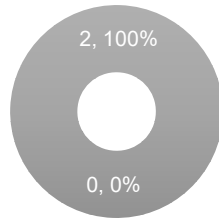
# December 2021 Lang Ave. and Hazelwood RTC KPI Report

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SEWER AUTHORITY

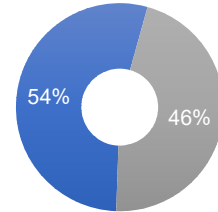


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**Prevented SPP Events**

■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

**Prevented SPP Volume**

■ Prevented SPP Overflow Volume (Gal.) ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
0	2	479,363	412,382
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
12/11/2021	118,259	325,410	27%
12/25/2021	361,104	86,972	81%



December 11, 2021

1

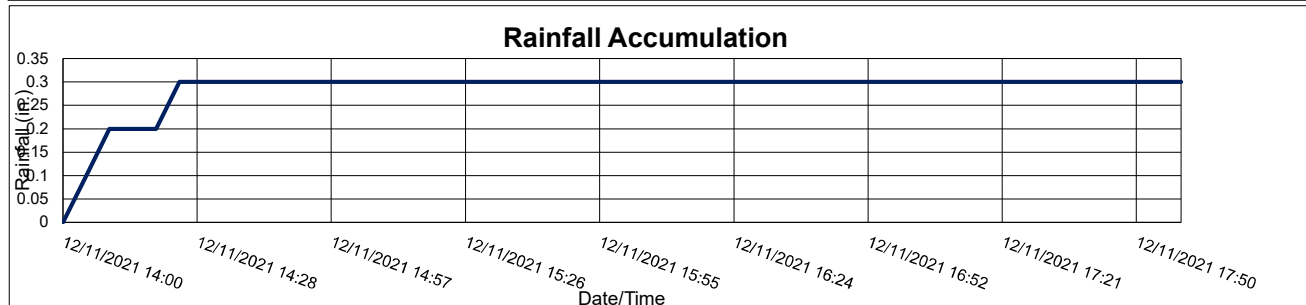
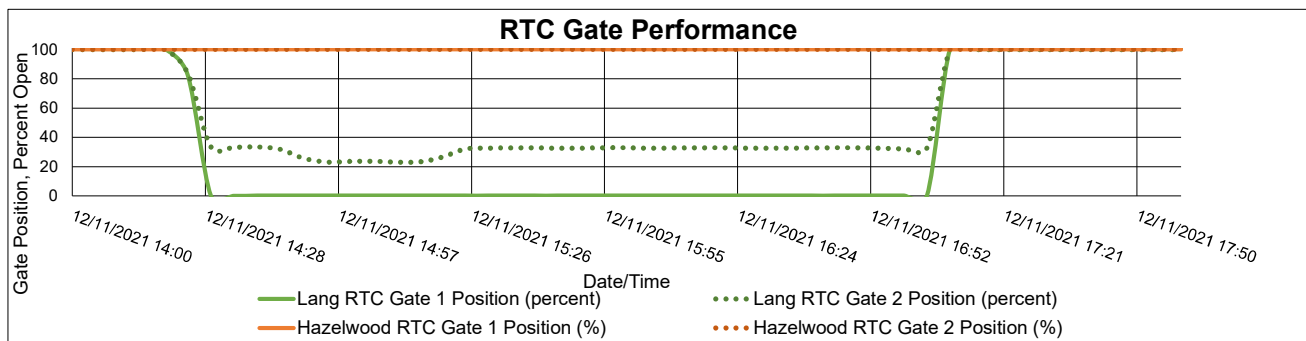
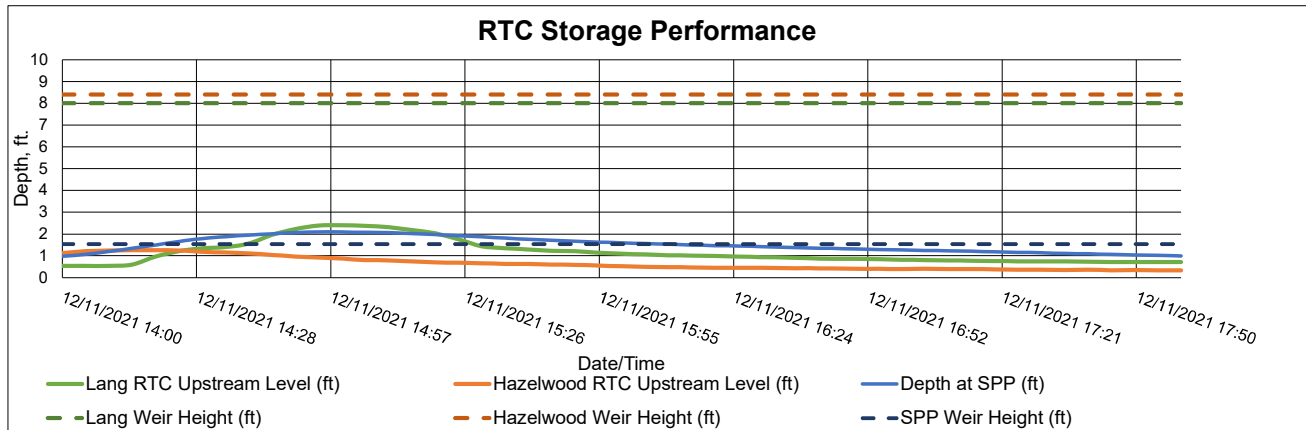
RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	0.97 ft.	- ft.
Return to Normal Depth:	0.81 ft.	- ft.
Time Gate 1 Activated:	12/11/2021 14:20	N/A
Time Gate 2 Activated:	12/11/2021 14:20	N/A
Time Gate 1 Returned to Normal:	12/11/2021 17:10	N/A
Time Gate 2 Returned to Normal:	12/11/2021 17:10	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	2.40 ft.	1.26 ft.
Volume Stored:	48,002 Gal.	70,257 Gal.
Unused Storage Volume:	806,878 Gal.	1,195,914 Gal.

SPP:	340
Analysis Date:	1/14/2022
Event Start Date/Time:	12/11/2021 14:20
Event End Date/Time:	12/11/2021 17:10

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.3 in.
Storm Event Duration:	4 hr.
Storm Type:	Less than one year

Percent Capture	27%
Overflow Volume:	325,410 Gal.
Overflow Volume Prevented:	118,259 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	325,410 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

#### Recommended Operational Changes/Notes:



December 25, 2021

2

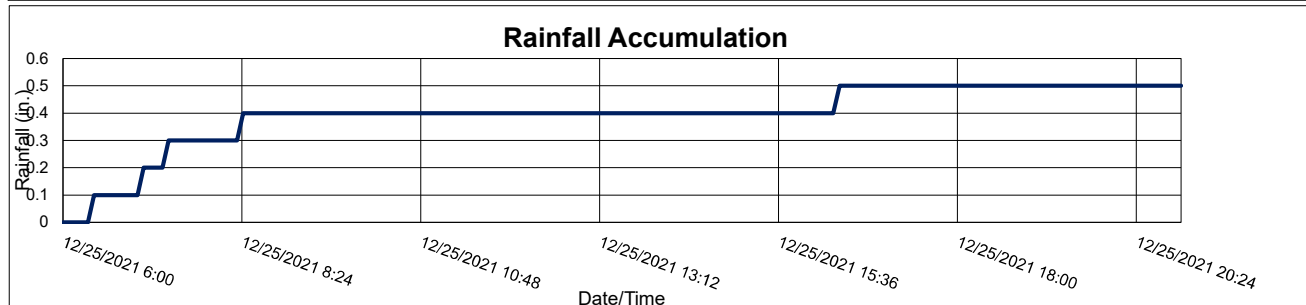
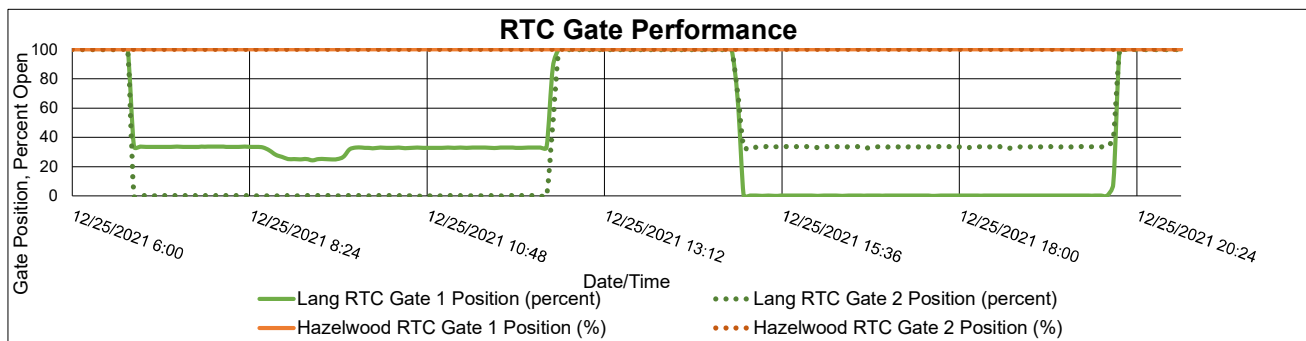
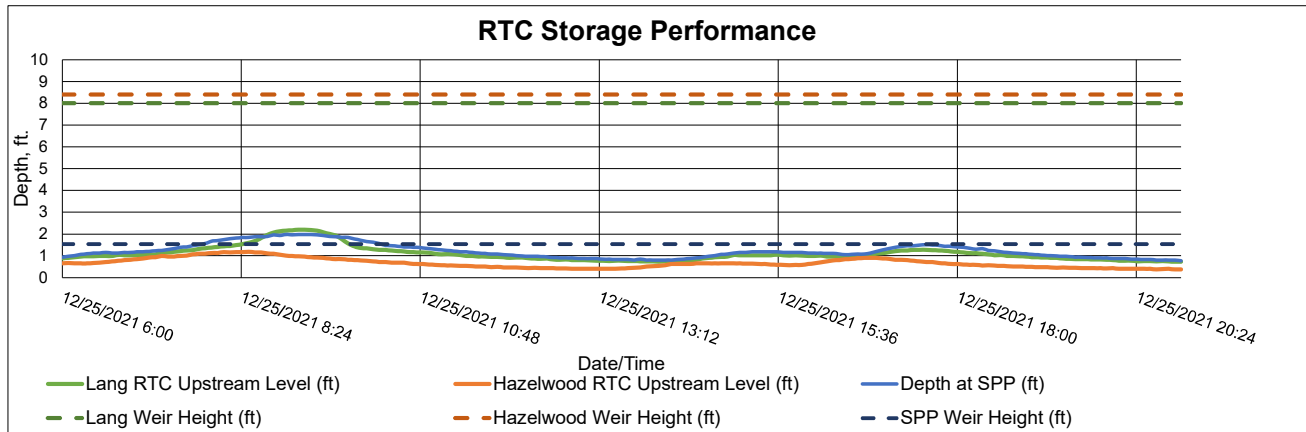
RTC Site	Lang	Hazelwood
Gate Activation Trigger Depth:	1.04 ft.	0.46 ft.
Return to Normal Depth:	0.81 ft.	- ft.
Time Gate 1 Activated:	12/25/2021 6:45	N/A
Time Gate 2 Activated:	12/25/2021 6:45	N/A
Time Gate 1 Returned to Normal:	12/25/2021 20:10	N/A
Time Gate 2 Returned to Normal:	12/25/2021 20:05	N/A
Depth of Weir	8.00 ft.	8.40 ft.
Maximum Depth Reached:	1.28 ft.	1.18 ft.
Volume Stored:	43,186 Gal.	43,786 Gal.
Unused Storage Volume:	816,787 Gal.	1,201,630 Gal.

SPP:	340
Analysis Date:	1/14/2022
Event Start Date/Time:	12/25/2021 6:45
Event End Date/Time:	12/25/2021 20:10

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.5 in.
Storm Event Duration:	15 hr.
Storm Type:	Less than one year

Percent Capture	19%
Overflow Volume:	361,104 Gal.
Overflow Volume Prevented:	86,972 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available upstream?	361,104 Gal.
If No, could SPP activation have been prevented?	Yes
If Yes, could SPP activation have been prevented without Hazelwood storage?	NA

Recommended Operational Changes/Notes:



# January 2022 North Bailey RTC KPI Report

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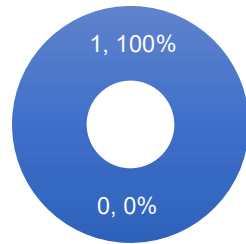
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# North Bailey RTC Monthly Performance Report

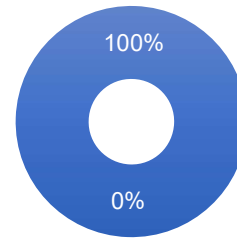
January 2022

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.)  
■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
1	0	176,856	-
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
1/9/2022	176,856	-	100%

Site:	North Bailey RTC
Analysis Date:	2/11/2022
Event Start Date/Time:	1/9/2022 10:30
Event End Date/Time:	1/9/2022 15:45

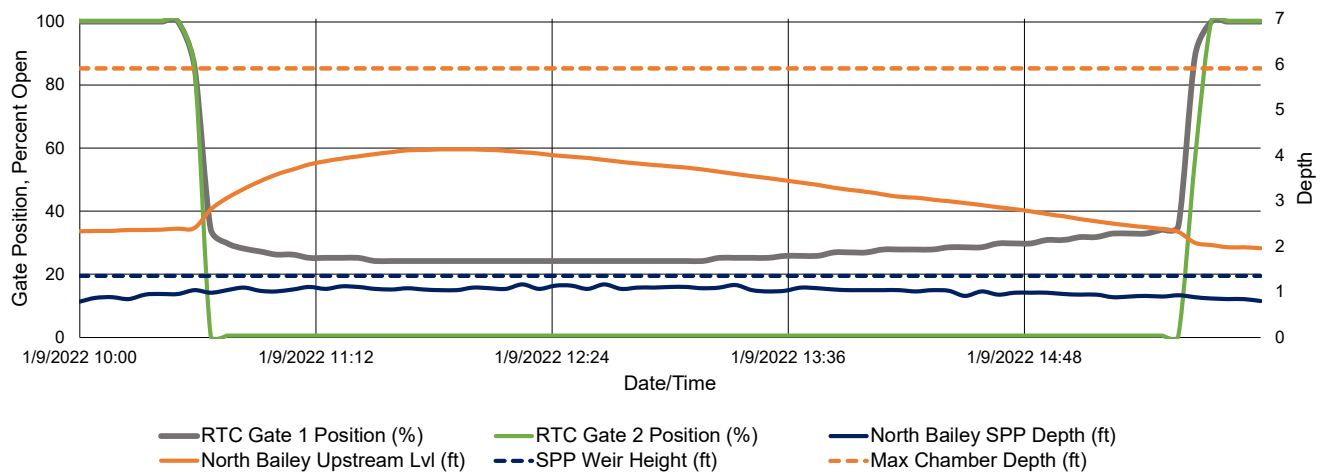
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.02 in.
Storm Event Duration:	6 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.39 ft.
Return to Normal Depth:	2.08 ft.
Time Gate 1 Activated:	1/9/2022 10:30
Time Gate 2 Activated:	1/9/2022 10:30
Time Gate 1 Returned to Normal:	1/9/2022 15:45
Time Gate 2 Returned to Normal:	1/9/2022 15:40
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	4.13 ft.
Volume Stored:	176,856 Gal.
Unused Storage Volume:	220,772 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	176,856 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

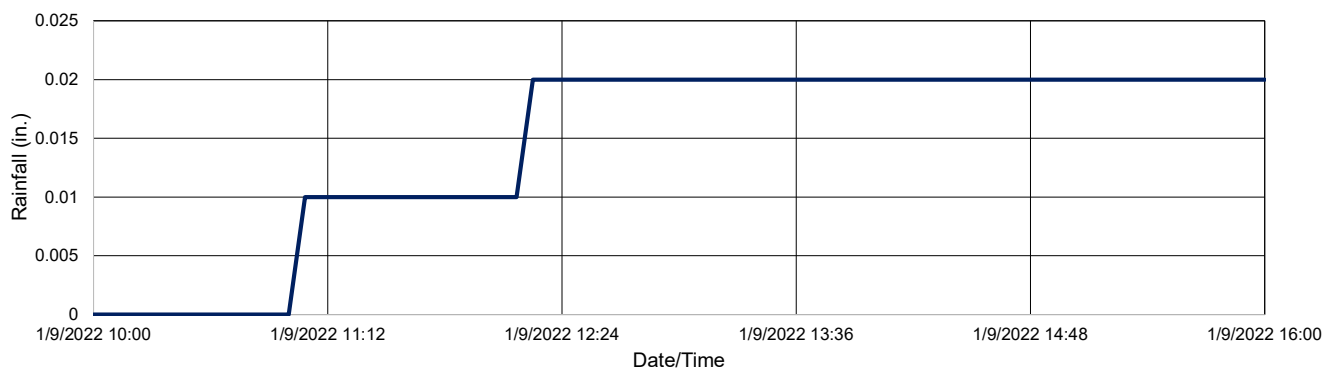
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



# February 2022 North Bailey RTC KPI Report

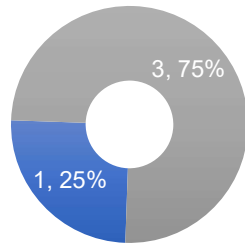
**BUFFALO**  
SEWER AUTHORITY



**ARCADIS**

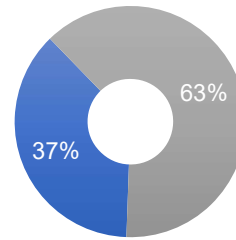
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### Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

### Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.)  
■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
1	3	1,591,417	2,689,383
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
2/2/2022	397,629	-	100%
2/11/2022	396,722	60,318	87%
2/17/2022	397,629	1,998,983	17%
2/22/2022	399,437	630,082	39%

Site:	North Bailey RTC
Analysis Date:	3/14/2022
Event Start Date/Time:	2/2/2022 18:45
Event End Date/Time:	2/3/2022 0:20

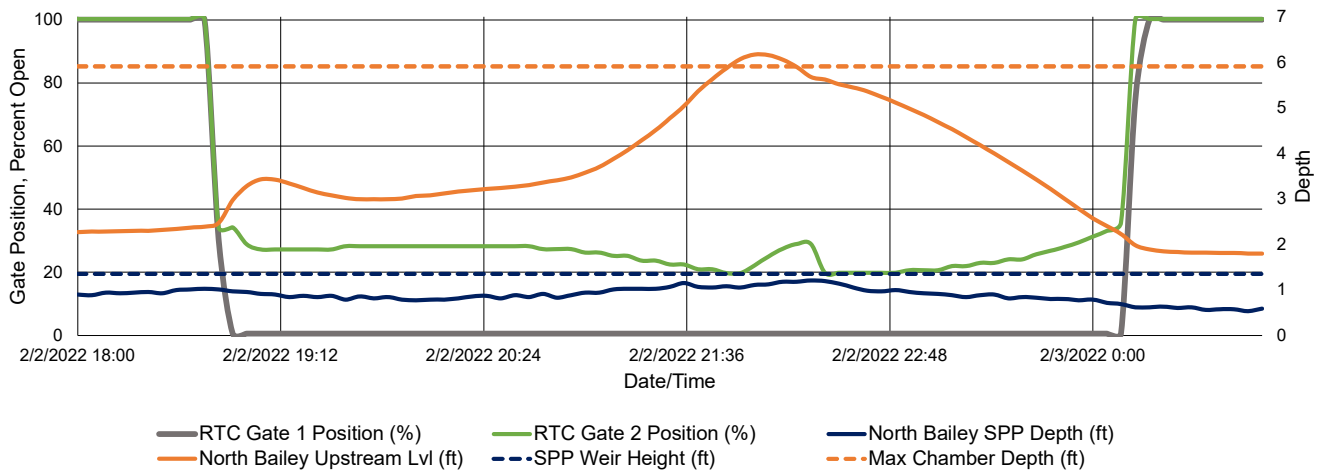
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.35 in.
Storm Event Duration:	6 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.39 ft.
Return to Normal Depth:	1.98 ft.
Time Gate 1 Activated:	2/2/2022 18:45
Time Gate 2 Activated:	2/2/2022 18:45
Time Gate 1 Returned to Normal:	2/3/2022 0:20
Time Gate 2 Returned to Normal:	2/3/2022 0:10
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	397,629 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	397,629 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

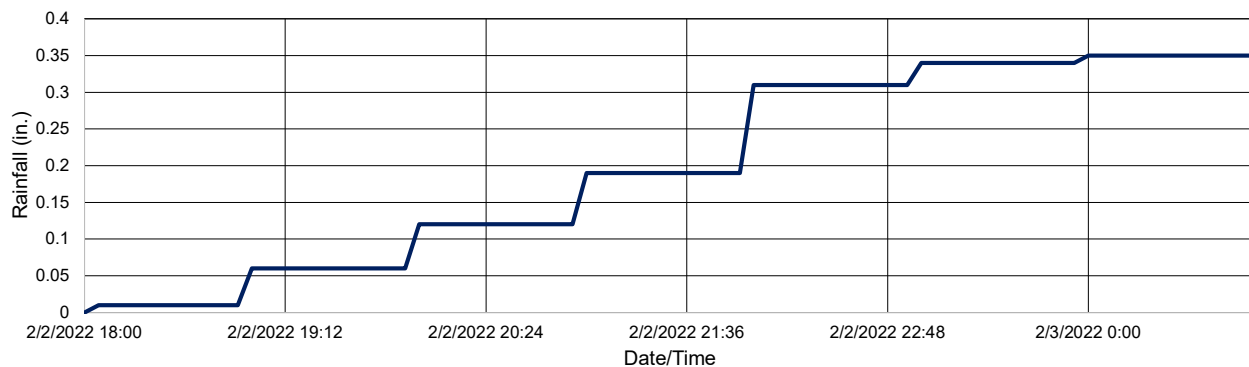
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation





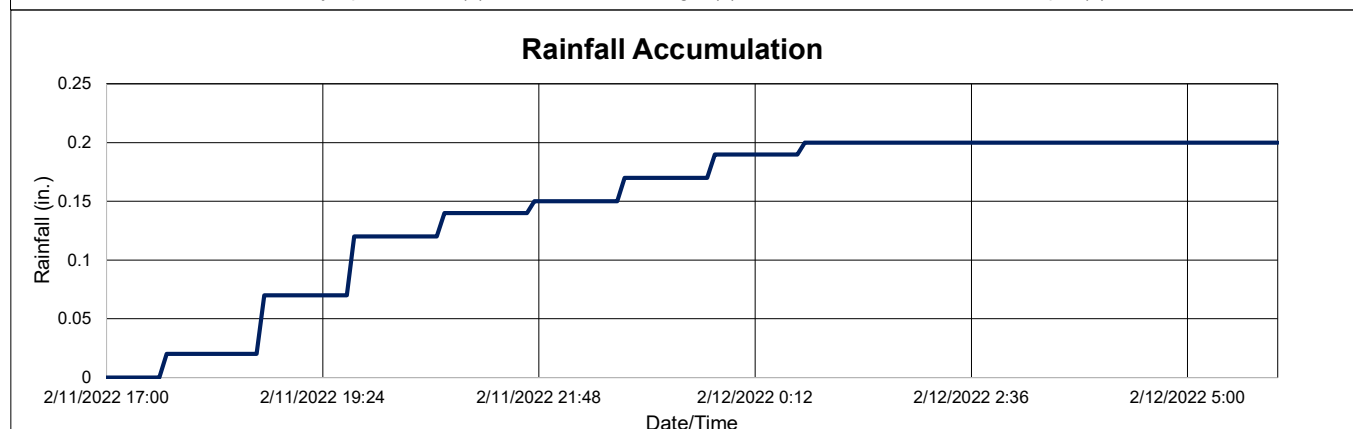
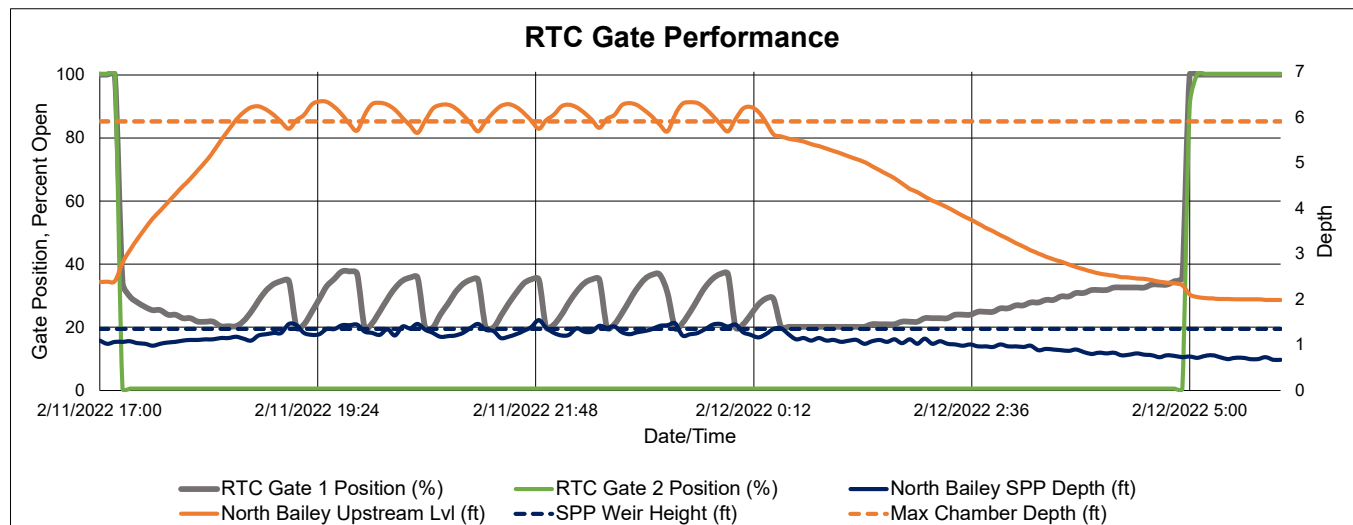
Site:	North Bailey RTC
Analysis Date:	3/14/2022
Event Start Date/Time:	2/11/2022 17:10
Event End Date/Time:	2/12/2022 5:00

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.2 in.
Storm Event Duration:	11 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.40 ft.
Return to Normal Depth:	2.31 ft.
Time Gate 1 Activated:	2/11/2022 17:10
Time Gate 2 Activated:	2/11/2022 17:10
Time Gate 1 Returned to Normal:	2/12/2022 5:00
Time Gate 2 Returned to Normal:	2/12/2022 5:00
Percent Capture	87%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	396,722 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	60,318 Gal.
Overflow Volume Prevented:	396,722 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.



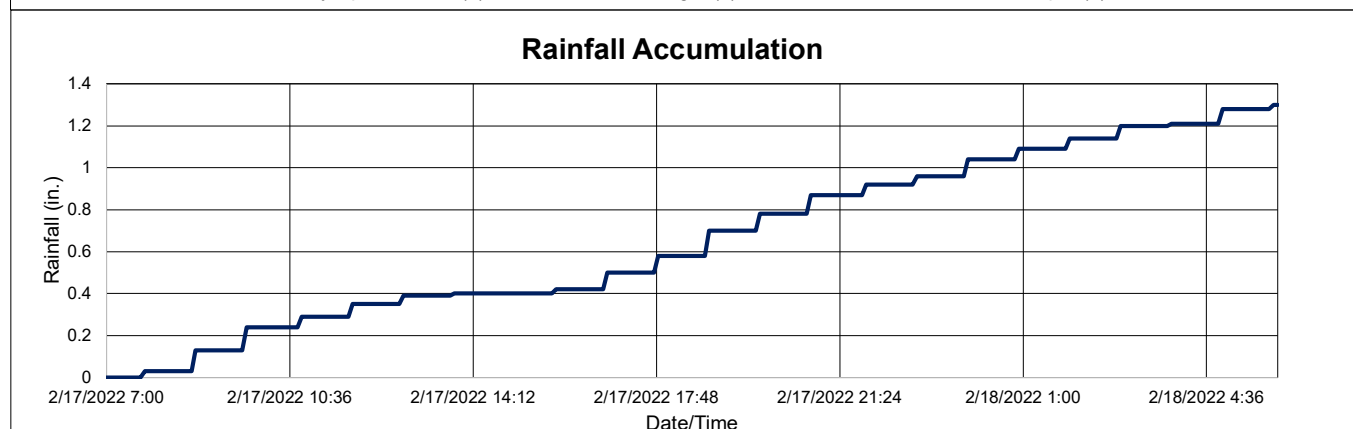
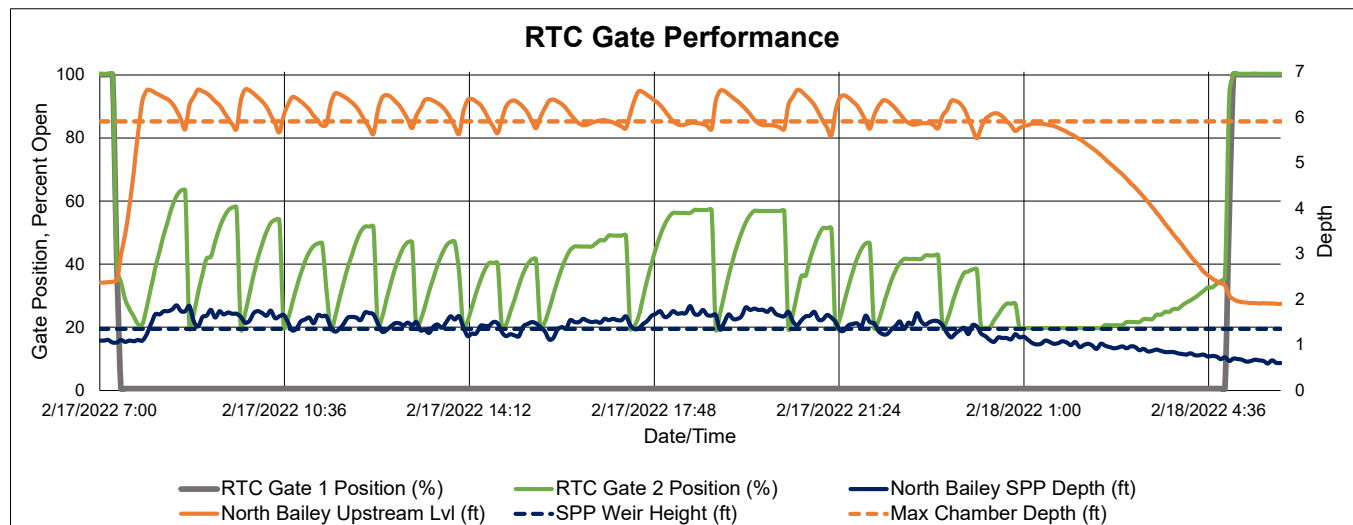
Site:	North Bailey RTC
Analysis Date:	3/14/2022
Event Start Date/Time:	2/17/2022 7:15
Event End Date/Time:	2/18/2022 5:04

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.3 in.
Storm Event Duration:	23 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.39 ft.
Return to Normal Depth:	2.08 ft.
Time Gate 1 Activated:	2/17/2022 7:15
Time Gate 2 Activated:	2/17/2022 7:15
Time Gate 1 Returned to Normal:	2/18/2022 5:04
Time Gate 2 Returned to Normal:	2/18/2022 4:59
Percent Capture	17%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	397,629 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	1,998,983 Gal.
Overflow Volume Prevented:	397,629 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.



Site:	North Bailey RTC
Analysis Date:	3/14/2022
Event Start Date/Time:	2/22/2022 14:40
Event End Date/Time:	2/23/2022 4:20

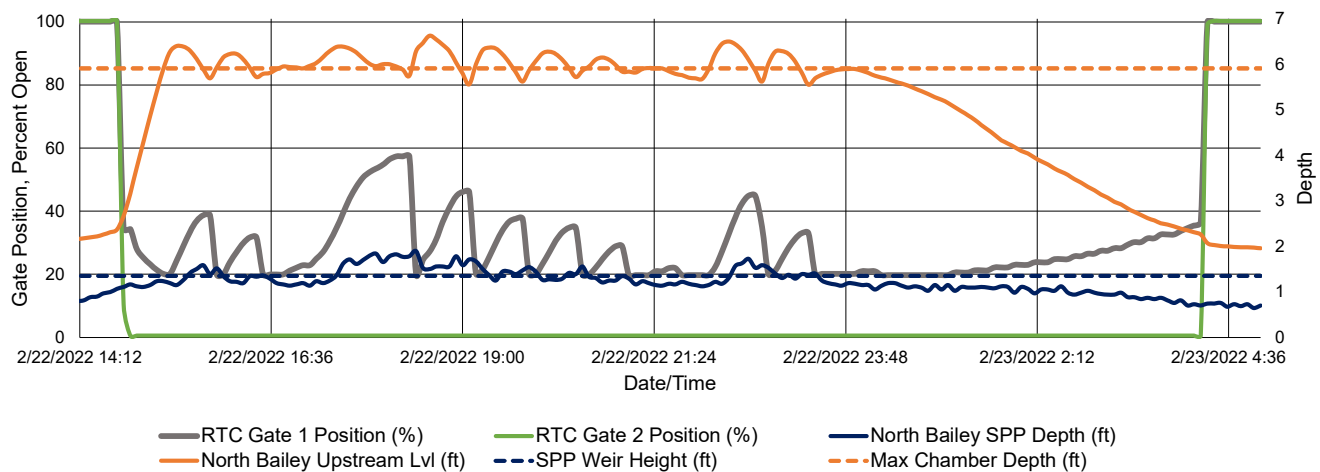
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.54 in.
Storm Event Duration:	15 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.37 ft.
Return to Normal Depth:	2.26 ft.
Time Gate 1 Activated:	2/22/2022 14:40
Time Gate 2 Activated:	2/22/2022 14:40
Time Gate 1 Returned to Normal:	2/23/2022 4:20
Time Gate 2 Returned to Normal:	2/23/2022 4:15
Percent Capture	39%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	399,437 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	630,082 Gal.
Overflow Volume Prevented:	399,437 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

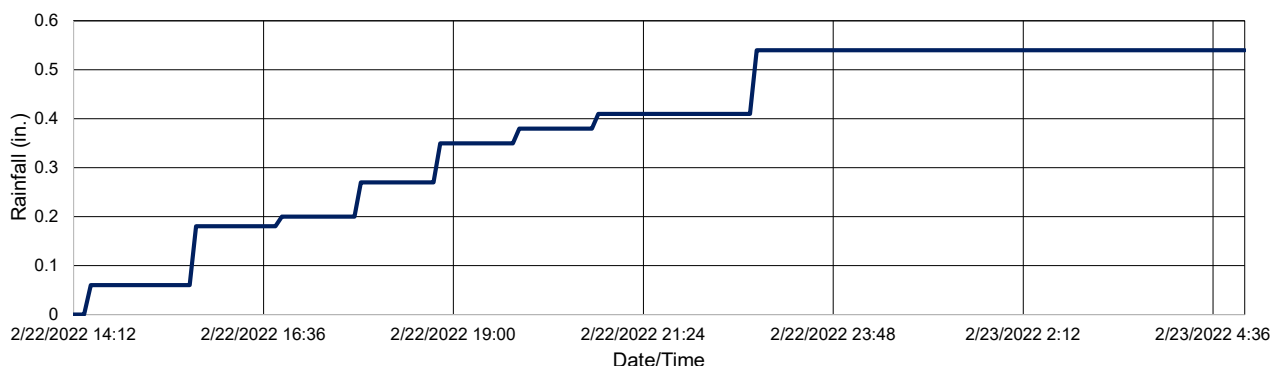
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



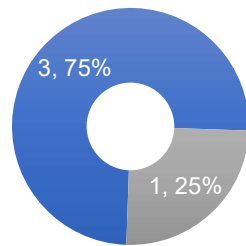
# March 2022 North Bailey RTC KPI Report

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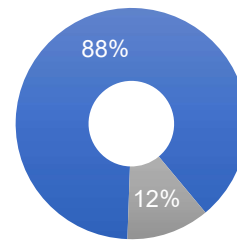
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### Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

### Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.)  
■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
3	1	1,235,718	162,156
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
3/7/2022	343,120	-	100%
3/19/2022	75,818	-	100%
3/23/2022	412,842	162,156	72%
3/31/2022	403,938	-	100%

# March 7, 2022

# 1

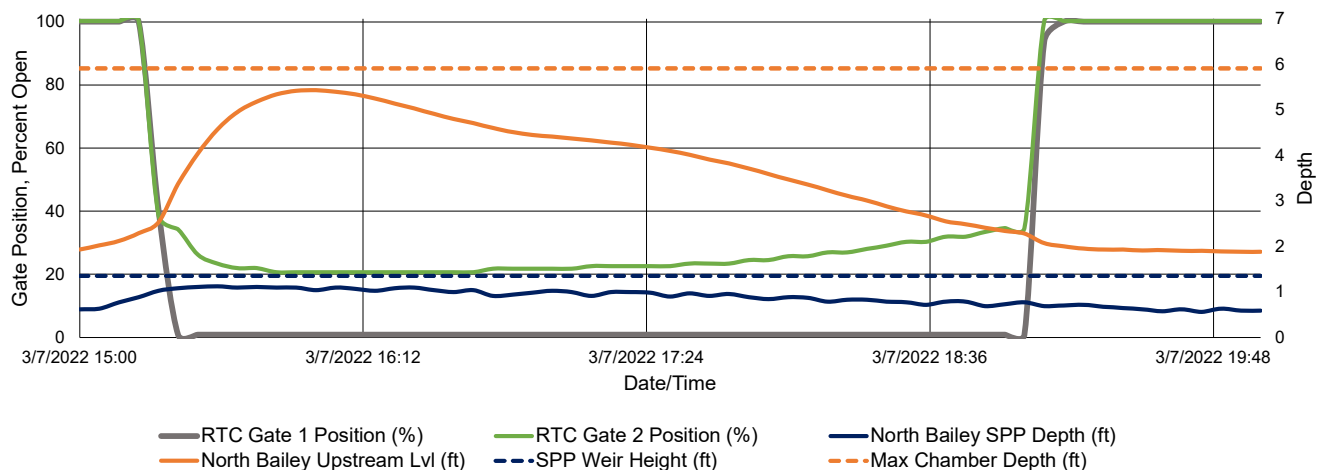
Site:	North Bailey RTC
Analysis Date:	4/28/2022
Event Start Date/Time:	3/7/2022 15:15
Event End Date/Time:	3/7/2022 19:10

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.17 in.
Storm Event Duration:	5 hr.
Storm Type:	< 1 yr.

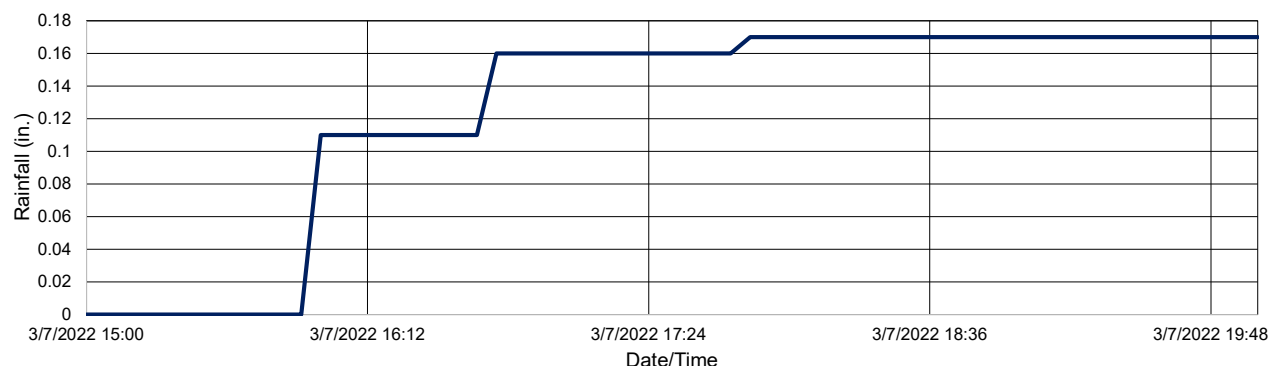
Gate Activation Trigger Depth:	2.29 ft.
Return to Normal Depth:	2.07 ft.
Time Gate 1 Activated:	3/7/2022 15:15
Time Gate 2 Activated:	3/7/2022 15:15
Time Gate 1 Returned to Normal:	3/7/2022 19:10
Time Gate 2 Returned to Normal:	3/7/2022 19:00
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.43 ft.
Volume Stored:	343,120 Gal.
Unused Storage Volume:	63,503 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	343,120 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.

## RTC Gate Performance



## Rainfall Accumulation

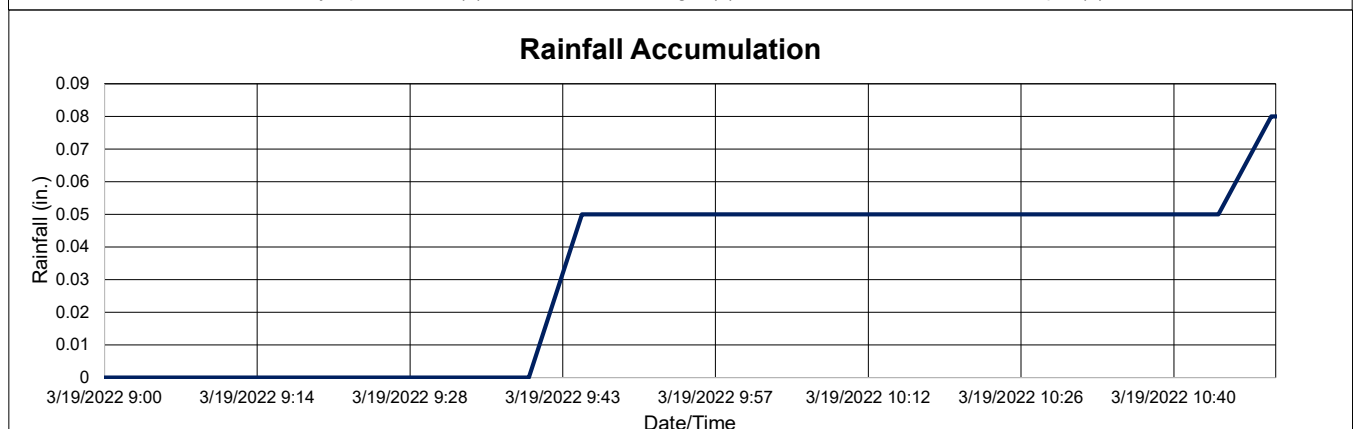
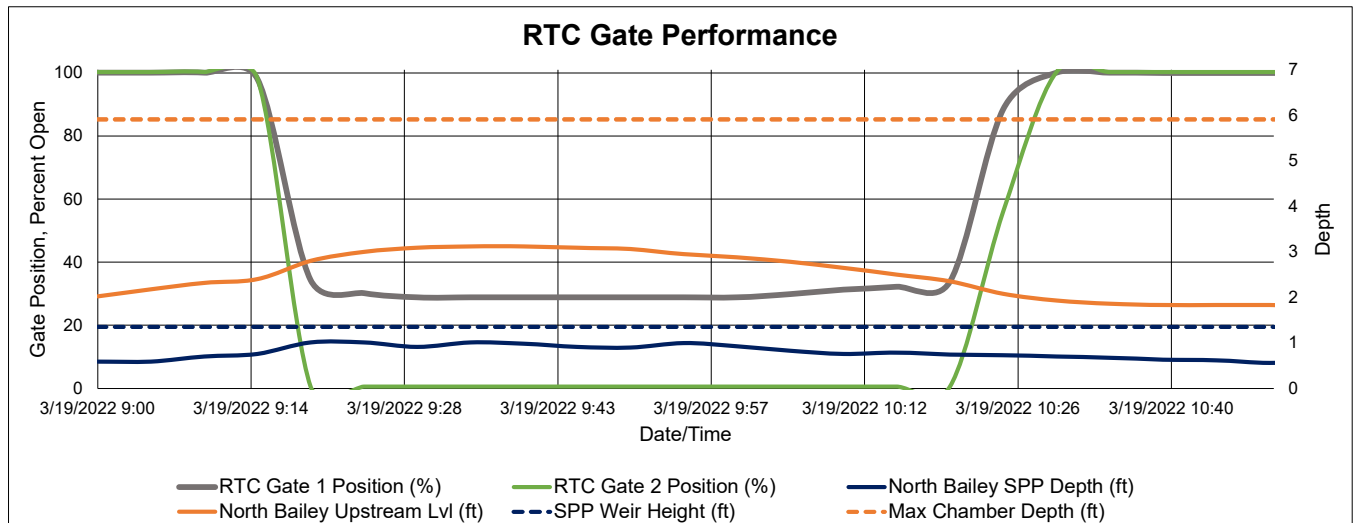


Site:	North Bailey RTC
Analysis Date:	4/28/2022
Event Start Date/Time:	3/19/2022 9:15
Event End Date/Time:	3/19/2022 10:30

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.08 in.
Storm Event Duration:	2 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.32 ft.
Return to Normal Depth:	2.08 ft.
Time Gate 1 Activated:	3/19/2022 9:15
Time Gate 2 Activated:	3/19/2022 9:15
Time Gate 1 Returned to Normal:	3/19/2022 10:30
Time Gate 2 Returned to Normal:	3/19/2022 10:25
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	3.12 ft.
Volume Stored:	75,818 Gal.
Unused Storage Volume:	328,120 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	75,818 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



# March 23, 2021

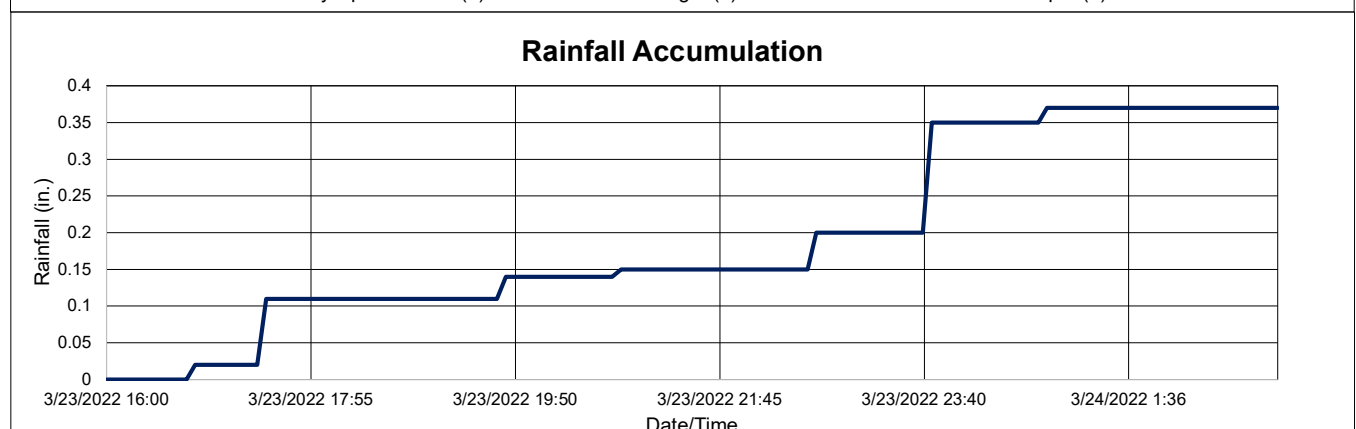
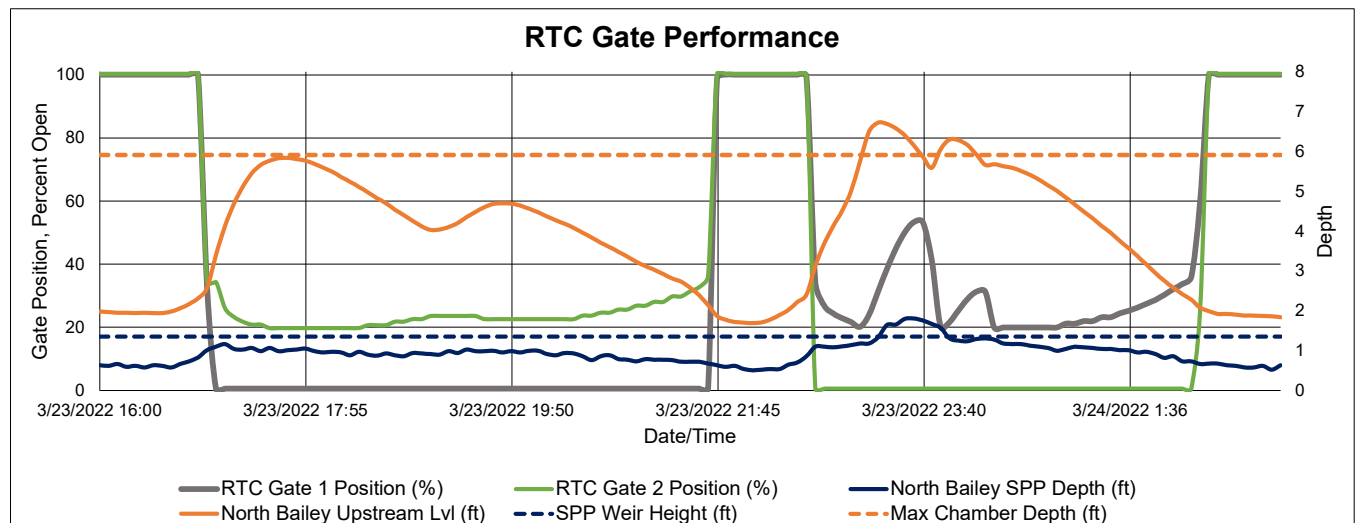
# 3

Site:	North Bailey RTC
Analysis Date:	4/28/2022
Event Start Date/Time:	3/23/2022 16:55
Event End Date/Time:	3/24/2022 2:20

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.37 in.
Storm Event Duration:	11 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.31 ft.
Return to Normal Depth:	2.08 ft.
Time Gate 1 Activated:	3/23/2022 16:55
Time Gate 2 Activated:	3/23/2022 16:55
Time Gate 1 Returned to Normal:	3/24/2022 2:20
Time Gate 2 Returned to Normal:	3/24/2022 2:15
Percent Capture	71%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	412,842 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	162,156 Gal.
Overflow Volume Prevented:	412,842 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	162,156
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



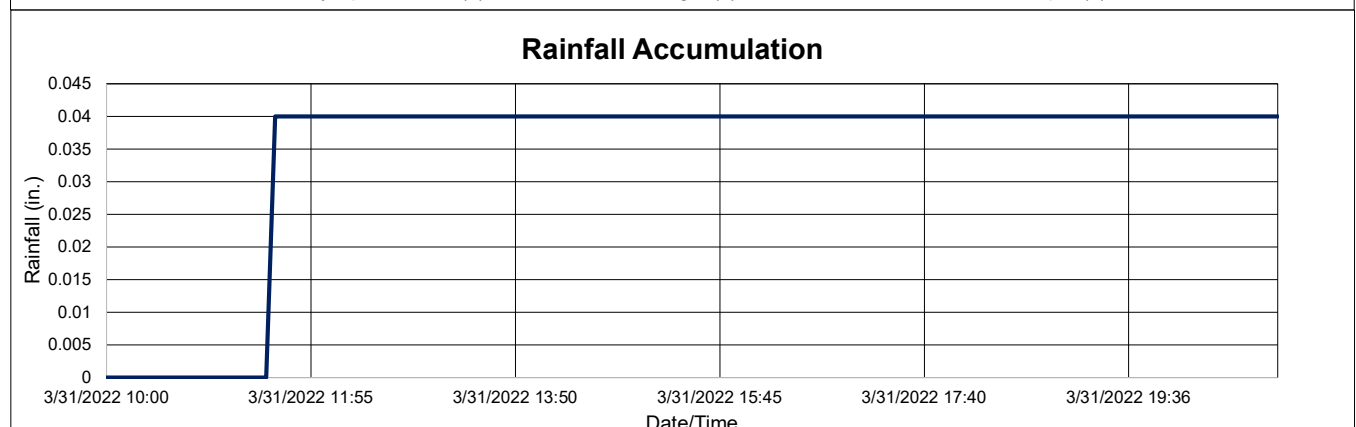
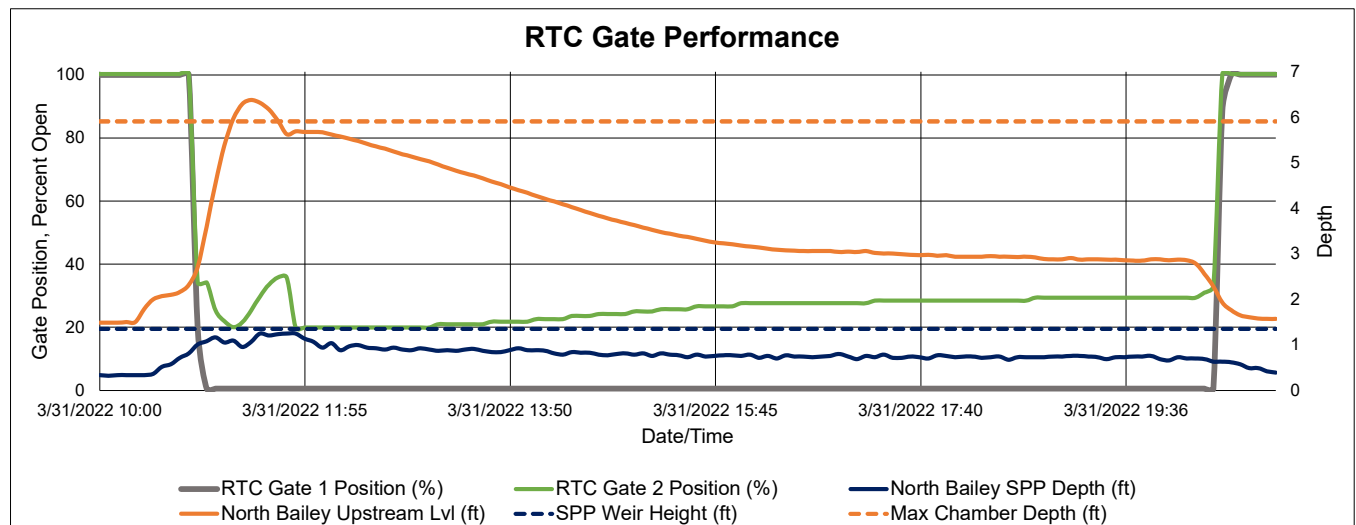


Site:	North Bailey RTC
Analysis Date:	4/28/2022
Event Start Date/Time:	3/31/2022 10:50
Event End Date/Time:	3/31/2022 20:35

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.04 in.
Storm Event Duration:	11 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.32 ft.
Return to Normal Depth:	1.93 ft.
Time Gate 1 Activated:	3/31/2022 10:50
Time Gate 2 Activated:	3/31/2022 10:50
Time Gate 1 Returned to Normal:	3/31/2022 20:35
Time Gate 2 Returned to Normal:	3/31/2022 20:25
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	403,938 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	403,938 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



# April 2022 North Bailey RTC KPI Report

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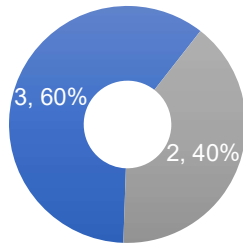
# May 2022 North Bailey RTC KPI Report

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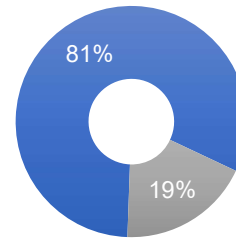
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### Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

### Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.)  
■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
3	2	1,909,079	434,942
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
5/4/2022	283,308	-	100%
5/16/2022	401,241	-	100%
5/21/2022	419,875	434,132	49%
5/26/2022	394,470	-	100%
5/27/2022	410,185	810	100%

# May 4, 2022

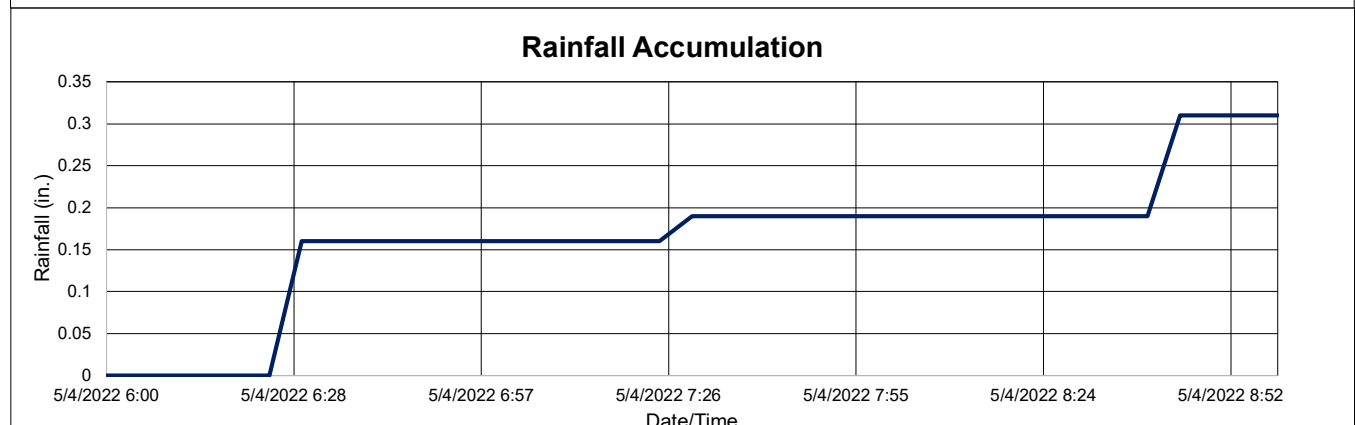
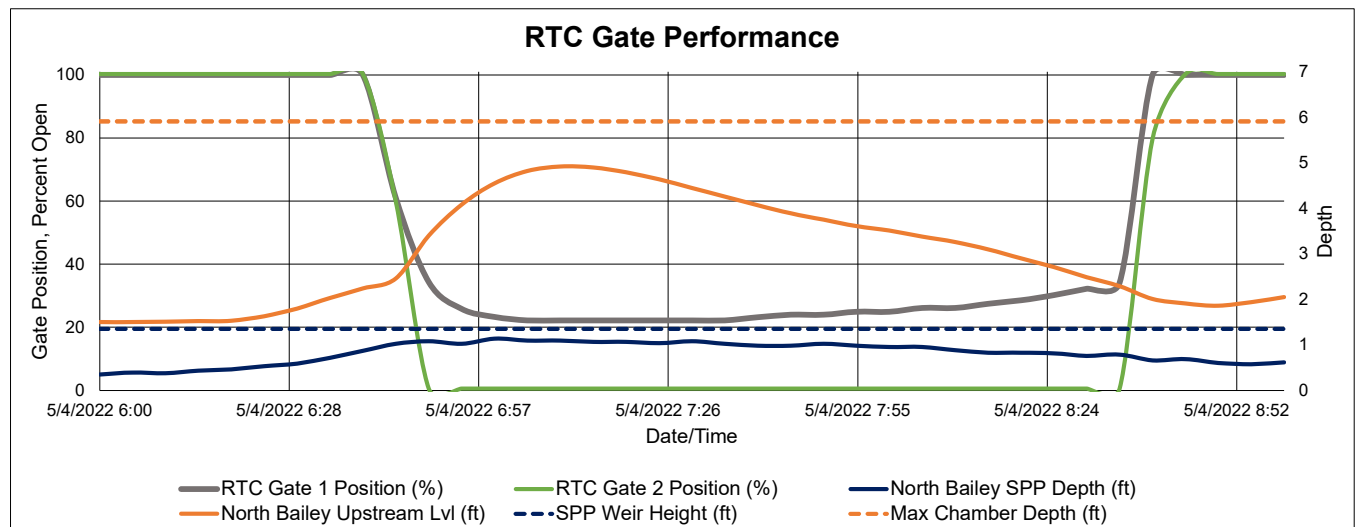
# 1

Site:	North Bailey RTC
Analysis Date:	6/6/2022
Event Start Date/Time:	5/4/2022 6:40
Event End Date/Time:	5/4/2022 8:40

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.31 in.
Storm Event Duration:	3 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.24 ft.
Return to Normal Depth:	2.29 ft.
Time Gate 1 Activated:	5/4/2022 6:40
Time Gate 2 Activated:	5/4/2022 6:40
Time Gate 1 Returned to Normal:	5/4/2022 8:40
Time Gate 2 Returned to Normal:	5/4/2022 8:40
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	4.92 ft.
Volume Stored:	283,308 Gal.
Unused Storage Volume:	127,763 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	283,308 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



May 16, 2022

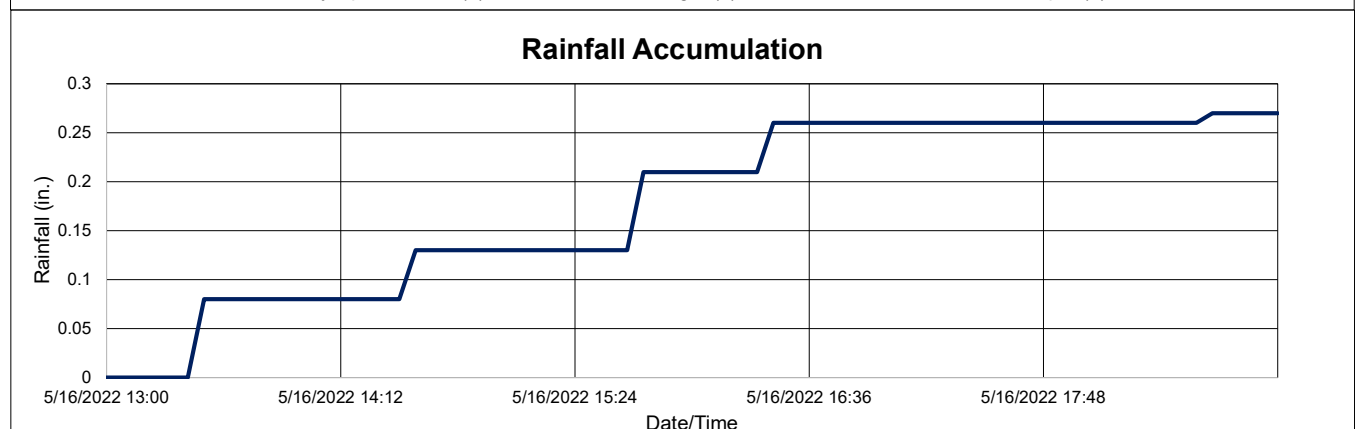
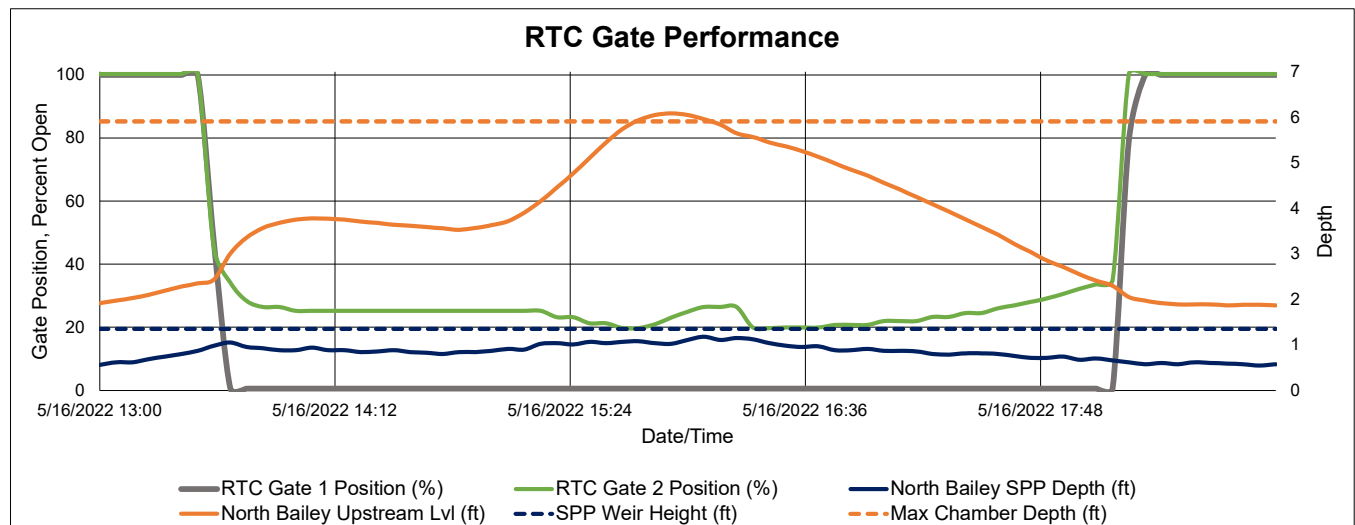
2

Site:	North Bailey RTC
Analysis Date:	6/6/2022
Event Start Date/Time:	5/16/2022 13:30
Event End Date/Time:	5/16/2022 18:20

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.27 in.
Storm Event Duration:	6 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.35 ft.
Return to Normal Depth:	2.05 ft.
Time Gate 1 Activated:	5/16/2022 13:30
Time Gate 2 Activated:	5/16/2022 13:30
Time Gate 1 Returned to Normal:	5/16/2022 18:20
Time Gate 2 Returned to Normal:	5/16/2022 18:10
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	401,241 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	401,241 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



May 21, 2022

3

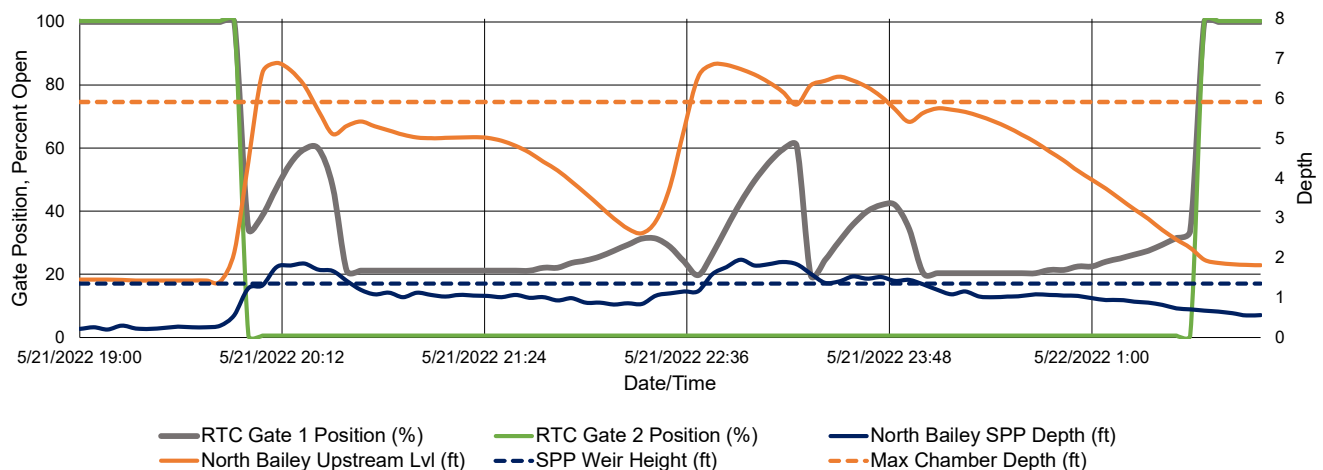
Site:	North Bailey RTC
Analysis Date:	6/6/2022
Event Start Date/Time:	5/21/2022 19:55
Event End Date/Time:	5/22/2022 1:40

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.7 in.
Storm Event Duration:	7 hr.
Storm Type:	< 1 yr.

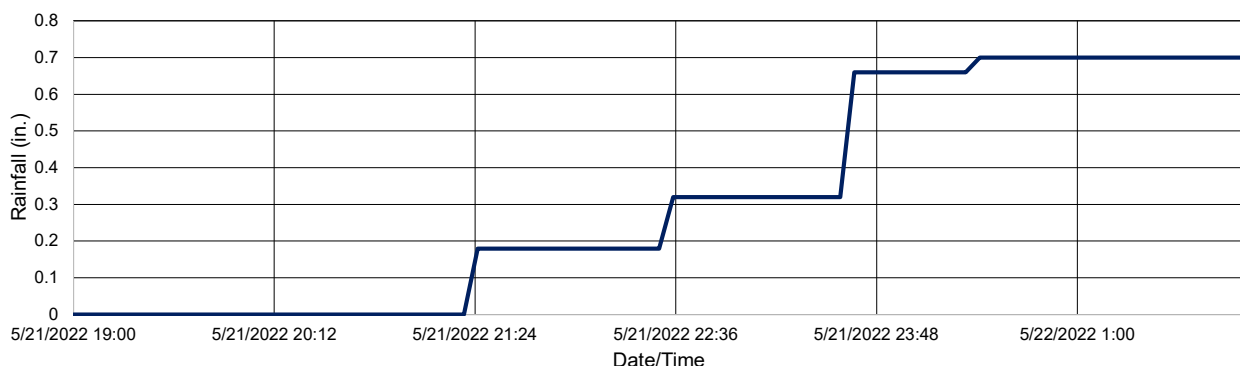
Gate Activation Trigger Depth:	2.14 ft.
Return to Normal Depth:	2.25 ft.
Time Gate 1 Activated:	5/21/2022 19:55
Time Gate 2 Activated:	5/21/2022 19:55
Time Gate 1 Returned to Normal:	5/22/2022 1:40
Time Gate 2 Returned to Normal:	5/22/2022 1:35
Percent Capture	49%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	419,875 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	434,132 Gal.
Overflow Volume Prevented:	419,875 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.

RTC Gate Performance



Rainfall Accumulation



May 26, 2022

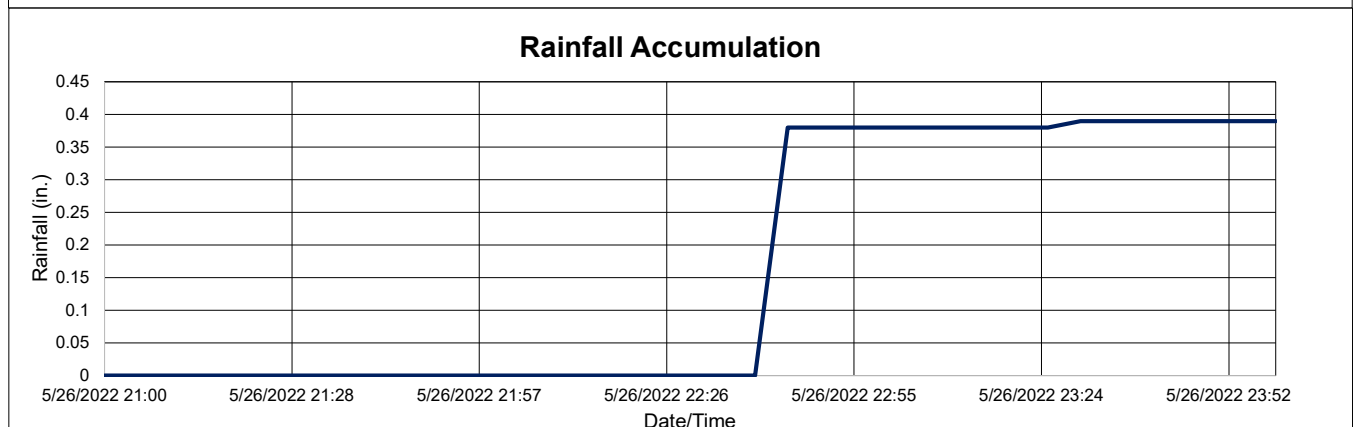
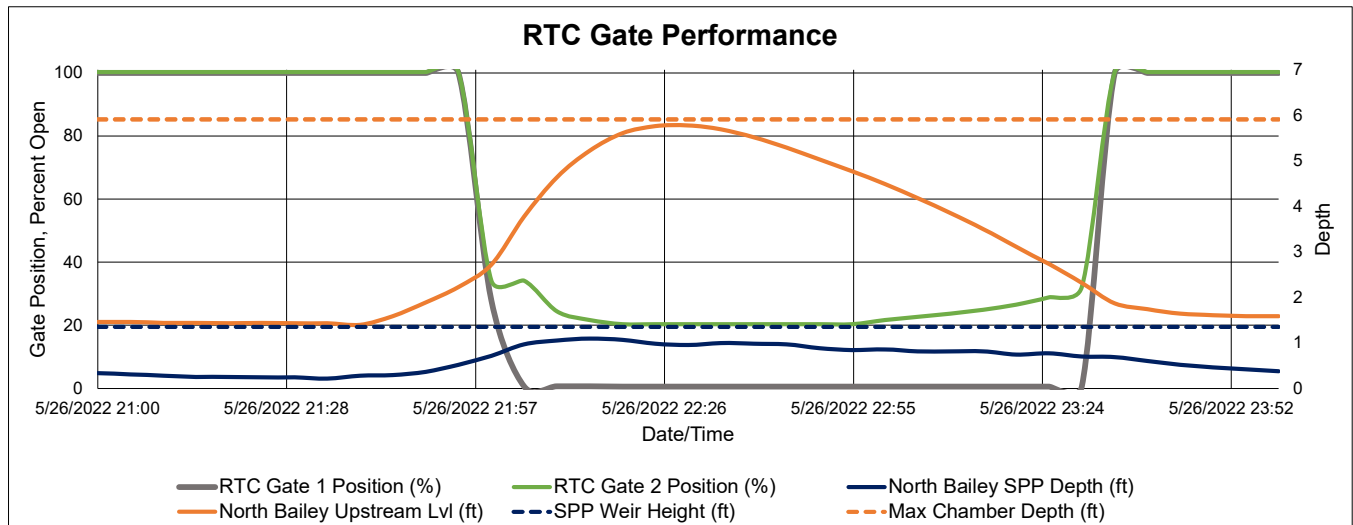
4

Site:	North Bailey RTC
Analysis Date:	6/6/2022
Event Start Date/Time:	5/26/2022 21:55
Event End Date/Time:	5/26/2022 23:35

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.39 in.
Storm Event Duration:	3 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.23 ft.
Return to Normal Depth:	2.32 ft.
Time Gate 1 Activated:	5/26/2022 21:55
Time Gate 2 Activated:	5/26/2022 21:55
Time Gate 1 Returned to Normal:	5/26/2022 23:35
Time Gate 2 Returned to Normal:	5/26/2022 23:30
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.78 ft.
Volume Stored:	394,470 Gal.
Unused Storage Volume:	17,488 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	394,470 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.





May 27, 2021

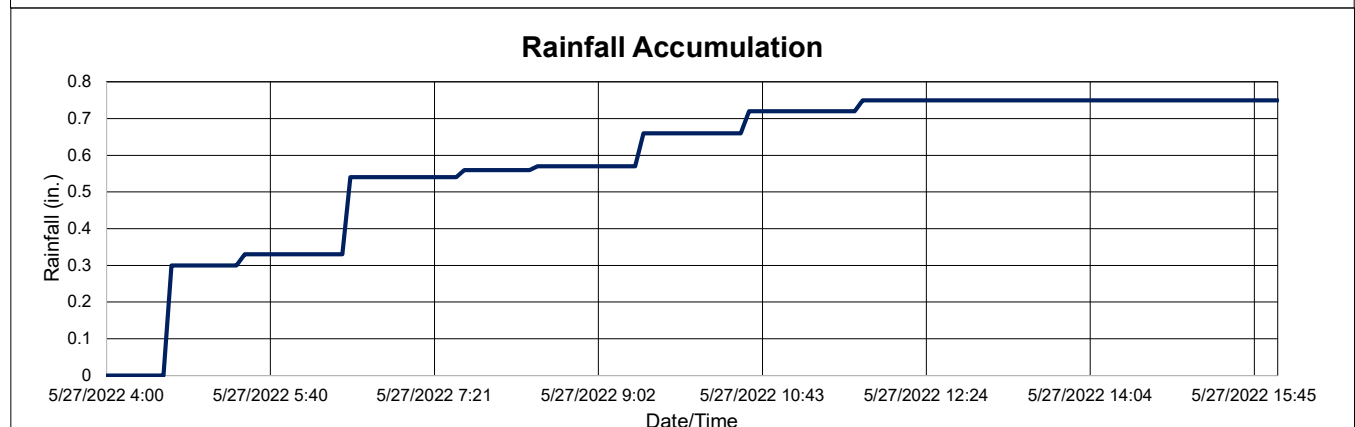
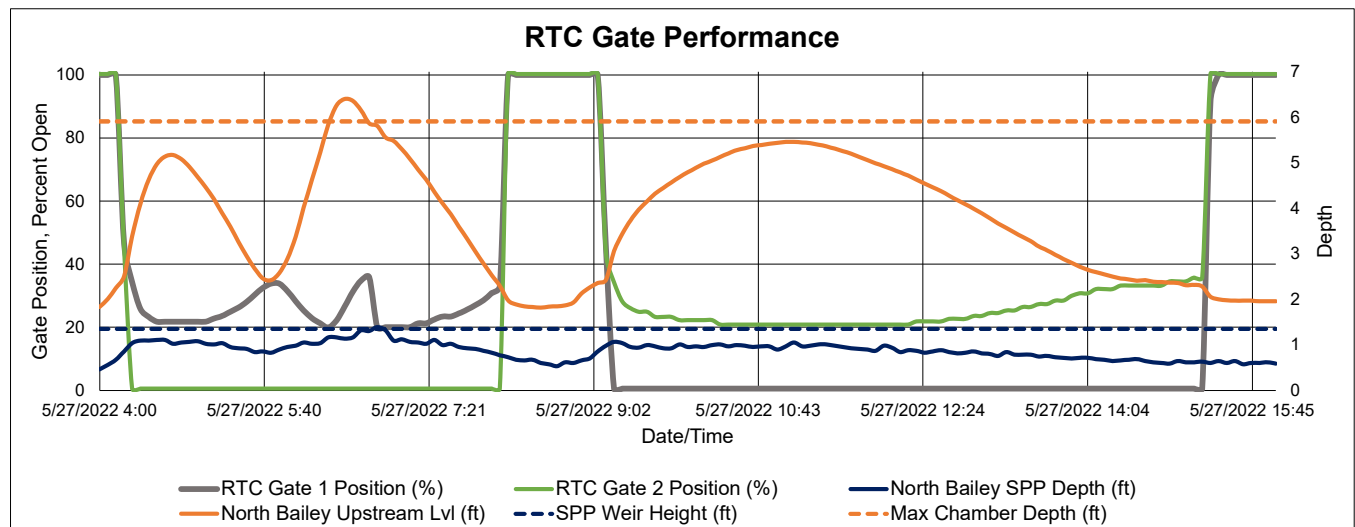
5

Site:	North Bailey RTC
Analysis Date:	6/6/2022
Event Start Date/Time:	5/27/2022 4:10
Event End Date/Time:	5/27/2022 15:25

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.75 in.
Storm Event Duration:	12 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.25 ft.
Return to Normal Depth:	2.06 ft.
Time Gate 1 Activated:	5/27/2022 4:10
Time Gate 2 Activated:	5/27/2022 4:10
Time Gate 1 Returned to Normal:	5/27/2022 15:25
Time Gate 2 Returned to Normal:	5/27/2022 15:15
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.46 ft.
Volume Stored:	410,184 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	851 Gal.
Overflow Volume Prevented:	410,184 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.

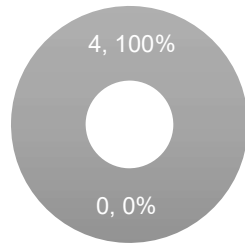


# June 2022 North Bailey RTC KPI Report

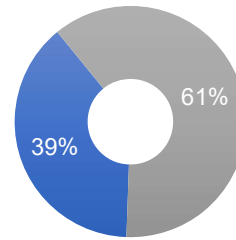
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**Prevented SPP Events**

■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

**Prevented SPP Volume**

■ Prevented SPP Overflow Volume (Gal.)  
 ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
0	4	1,697,535	2,703,775
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
6/1/2022	433,695	138,447	76%
6/6/2022	414,608	86,805	83%
6/9/2022	417,247	1,677,255	20%
6/22/2022	431,985	801,268	35%

# June 1, 2022

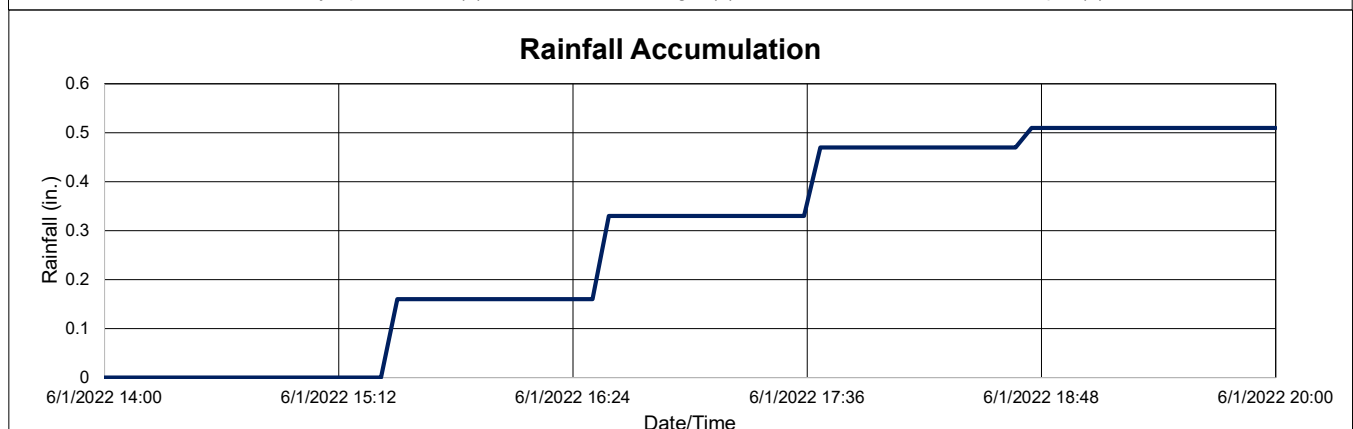
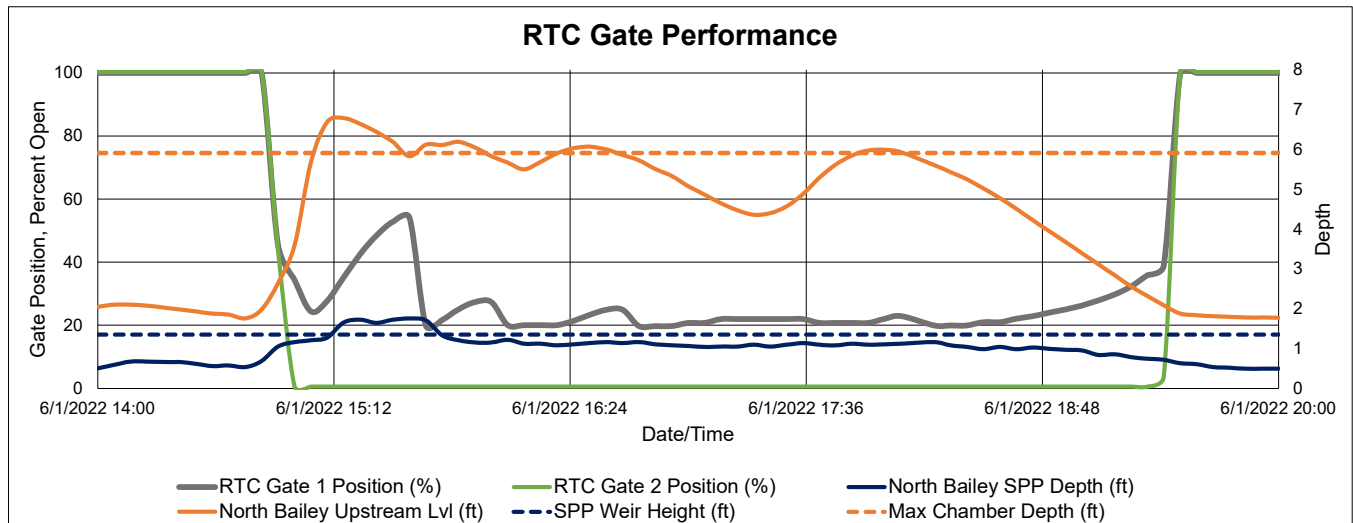
# 1

Site:	North Bailey RTC
Analysis Date:	7/13/2022
Event Start Date/Time:	6/1/2022 14:50
Event End Date/Time:	6/1/2022 19:30

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.51 in.
Storm Event Duration:	6 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	1.98 ft.
Return to Normal Depth:	2.09 ft.
Time Gate 1 Activated:	6/1/2022 14:50
Time Gate 2 Activated:	6/1/2022 14:50
Time Gate 1 Returned to Normal:	6/1/2022 19:30
Time Gate 2 Returned to Normal:	6/1/2022 19:25
Percent Capture	76%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	433,695 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	138,447 Gal.
Overflow Volume Prevented:	433,695 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



# June 6, 2021

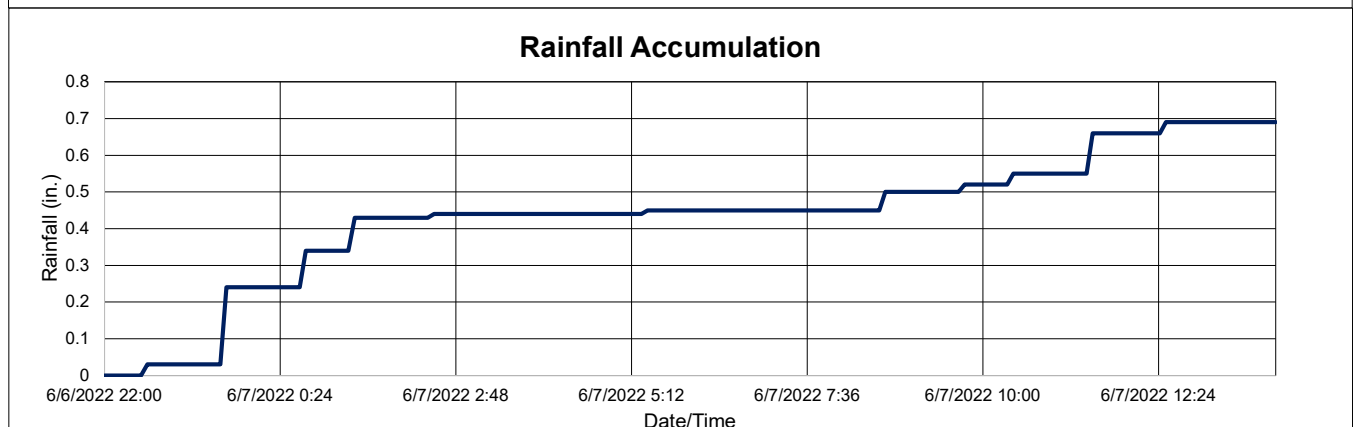
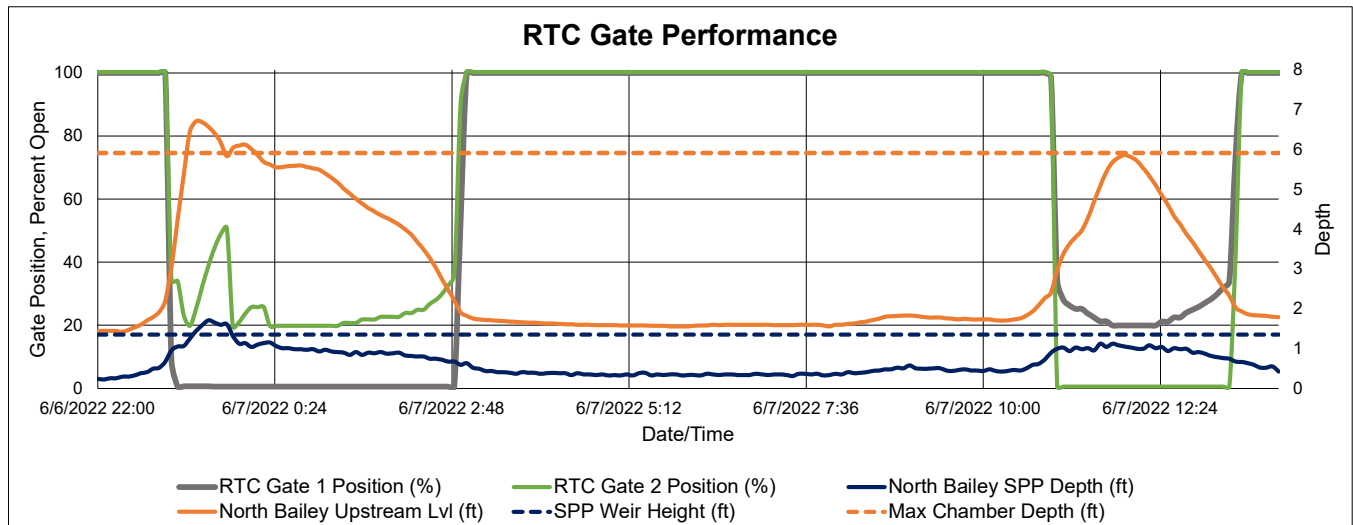
# 2

Site:	North Bailey RTC
Analysis Date:	6/6/2022
Event Start Date/Time:	6/6/2022 22:55
Event End Date/Time:	6/7/2022 13:30

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.69 in.
Storm Event Duration:	16 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.20 ft.
Return to Normal Depth:	2.03 ft.
Time Gate 1 Activated:	6/6/2022 22:55
Time Gate 2 Activated:	6/6/2022 22:55
Time Gate 1 Returned to Normal:	6/7/2022 13:30
Time Gate 2 Returned to Normal:	6/7/2022 13:25
Percent Capture	83%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	414,608 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	86,805 Gal.
Overflow Volume Prevented:	414,608 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



# June 9, 2021

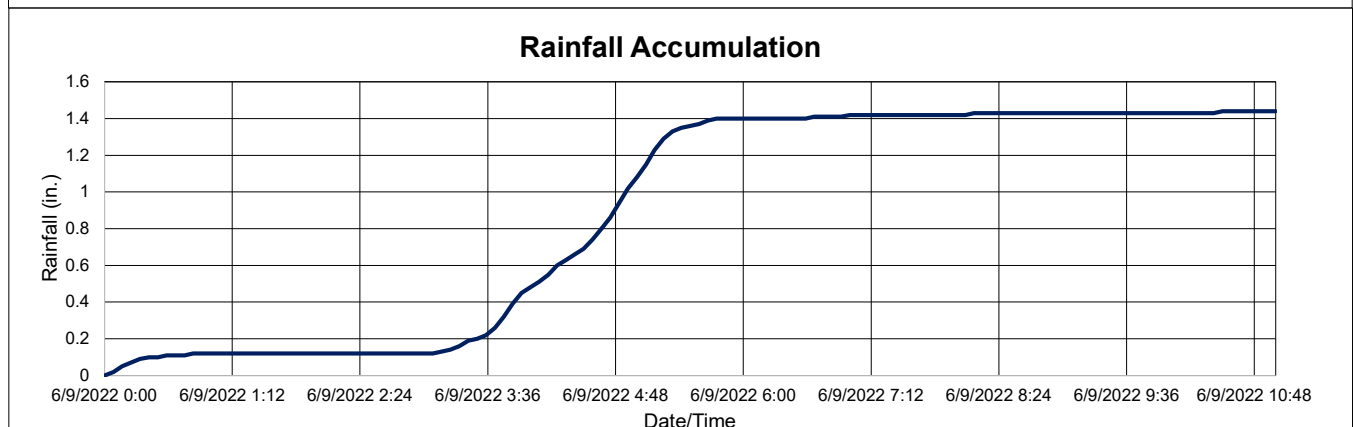
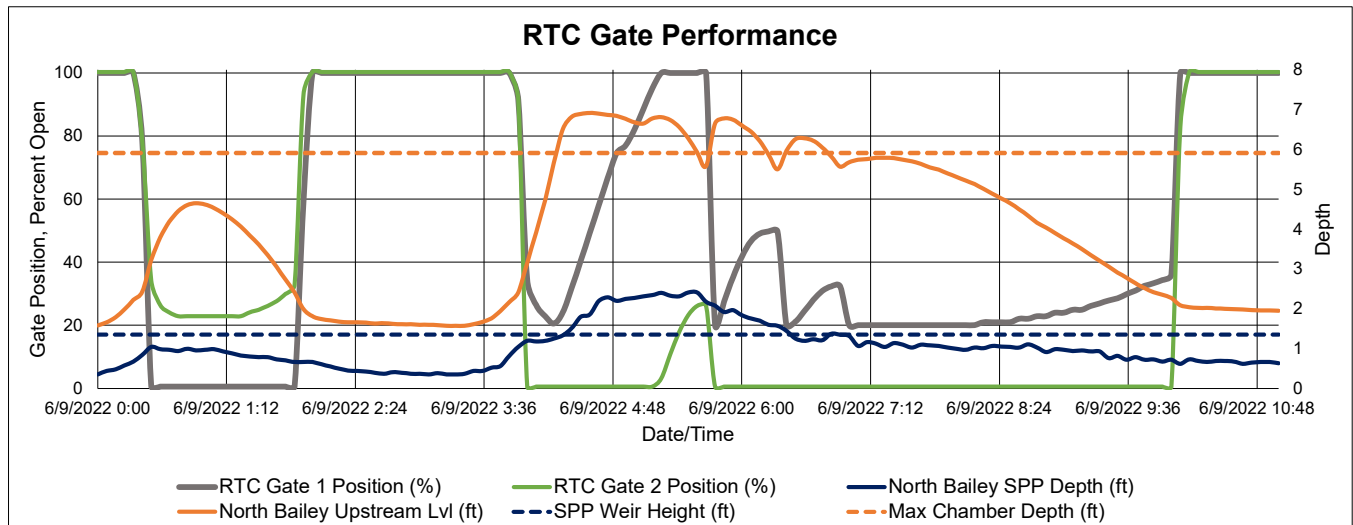
# 3

Site:	North Bailey RTC
Analysis Date:	7/13/2022
Event Start Date/Time:	6/9/2022 0:20
Event End Date/Time:	6/9/2022 10:05

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.44 in.
Storm Event Duration:	11 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.22 ft.
Return to Normal Depth:	2.27 ft.
Time Gate 1 Activated:	6/9/2022 0:20
Time Gate 2 Activated:	6/9/2022 0:20
Time Gate 1 Returned to Normal:	6/9/2022 10:05
Time Gate 2 Returned to Normal:	6/9/2022 10:05
Percent Capture	20%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	417,247 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	1,677,255 Gal.
Overflow Volume Prevented:	417,247 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	1,677,255
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from Science Museum rain gauge station.



Site:	North Bailey RTC
Analysis Date:	7/13/2022
Event Start Date/Time:	6/22/2022 15:10
Event End Date/Time:	6/22/2022 19:15

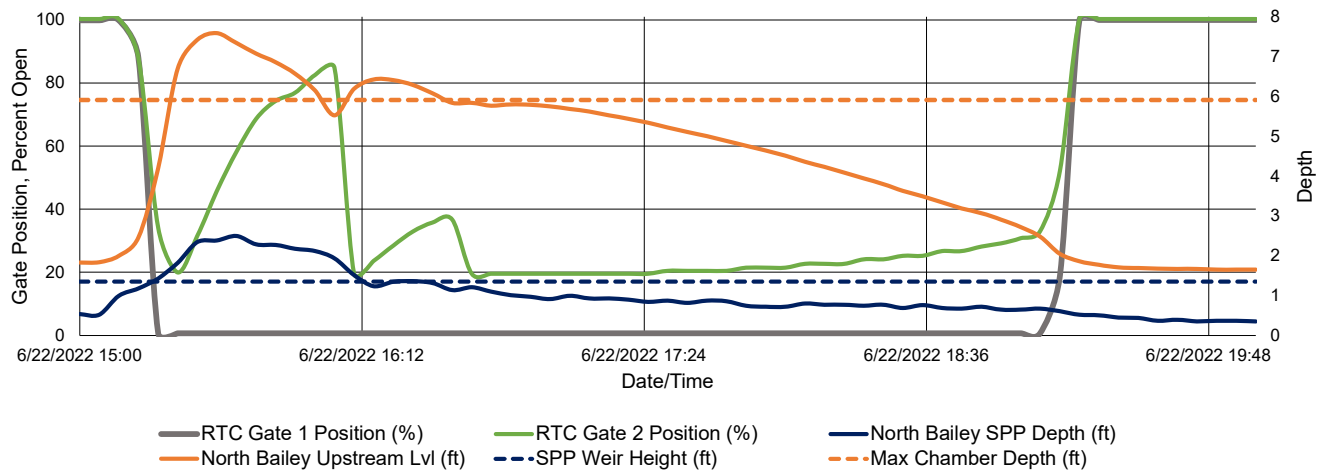
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.25 in.
Storm Event Duration:	6 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.00 ft.
Return to Normal Depth:	2.05 ft.
Time Gate 1 Activated:	6/22/2022 15:10
Time Gate 2 Activated:	6/22/2022 15:10
Time Gate 1 Returned to Normal:	6/22/2022 19:15
Time Gate 2 Returned to Normal:	6/22/2022 19:10
Percent Capture	35%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	431,985 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	801,268 Gal.
Overflow Volume Prevented:	431,985 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

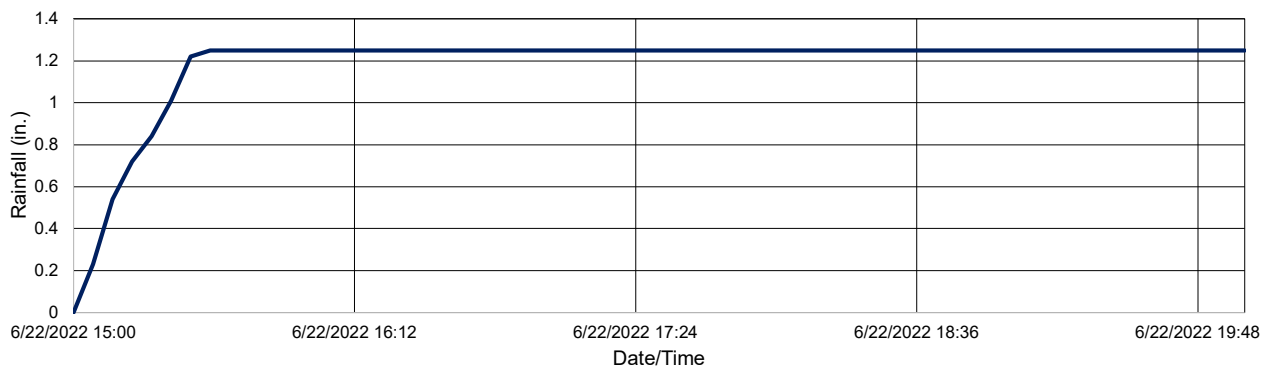
#### Recommended Operational Changes/Notes:

Rainfall data sourced from the Science Museum rain gauge station.

#### RTC Gate Performance



#### Rainfall Accumulation



# July 2021 North Bailey RTC KPI Report

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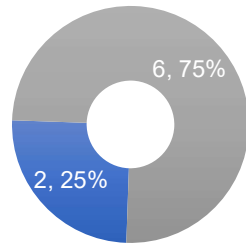
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# North Bailey RTC Monthly Performance Report

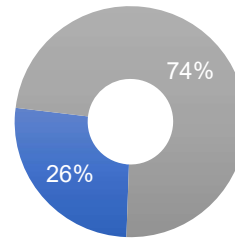
July 2021

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.)  
■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
2	6	3,031,652	8,476,243
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
7/2/2021	408,406	1,019,177	29%
7/8/2021	431,129	763,958	36%
7/13/2021	406,622	-	100%
7/17/2021	426,699	6,513,619	6%
7/18/2021	122,092	-	100%
7/20/2021	429,411	19,087	96%
7/27/2021	407,856	159,297	72%
7/29/2021	399,437	1,105	100%

# July 2, 2021

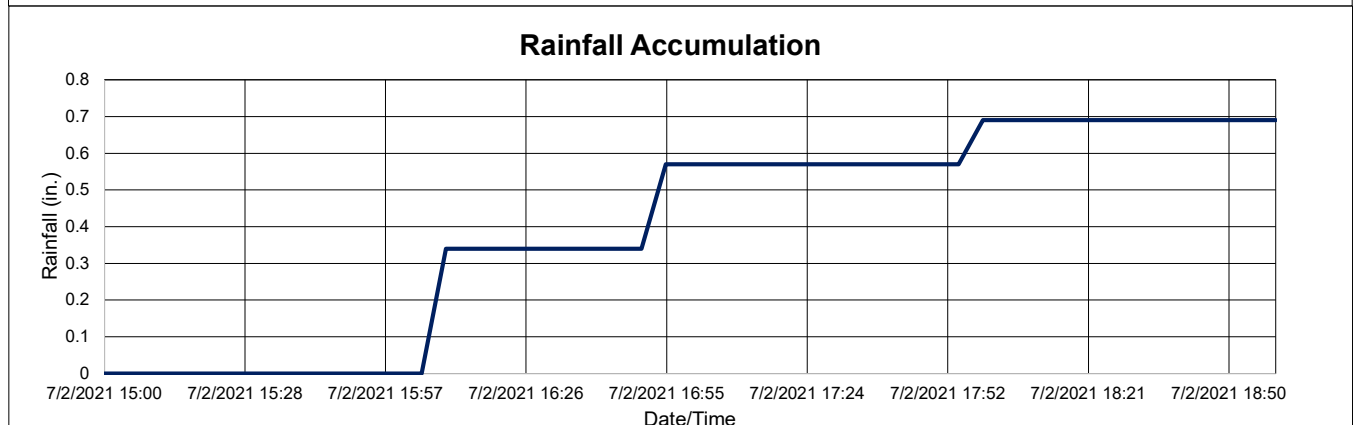
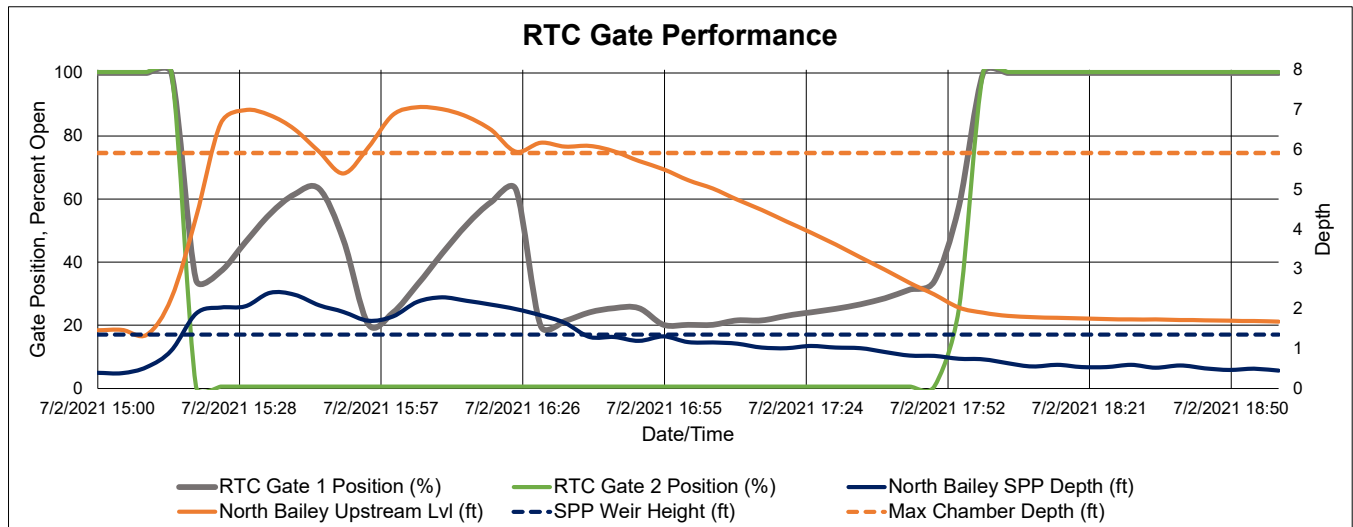
# 1

Site:	North Bailey RTC
Analysis Date:	8/12/2021
Event Start Date/Time:	7/2/2021 15:15
Event End Date/Time:	7/2/2021 18:00

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.69 in.
Storm Event Duration:	4 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.27 ft.
Return to Normal Depth:	2.03 ft.
Time Gate 1 Activated:	7/2/2021 15:15
Time Gate 2 Activated:	7/2/2021 15:15
Time Gate 1 Returned to Normal:	7/2/2021 18:00
Time Gate 2 Returned to Normal:	7/2/2021 17:55
Percent Capture	29%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	408,406 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	1,019,177 Gal.
Overflow Volume Prevented:	408,406 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



# July 8, 2021

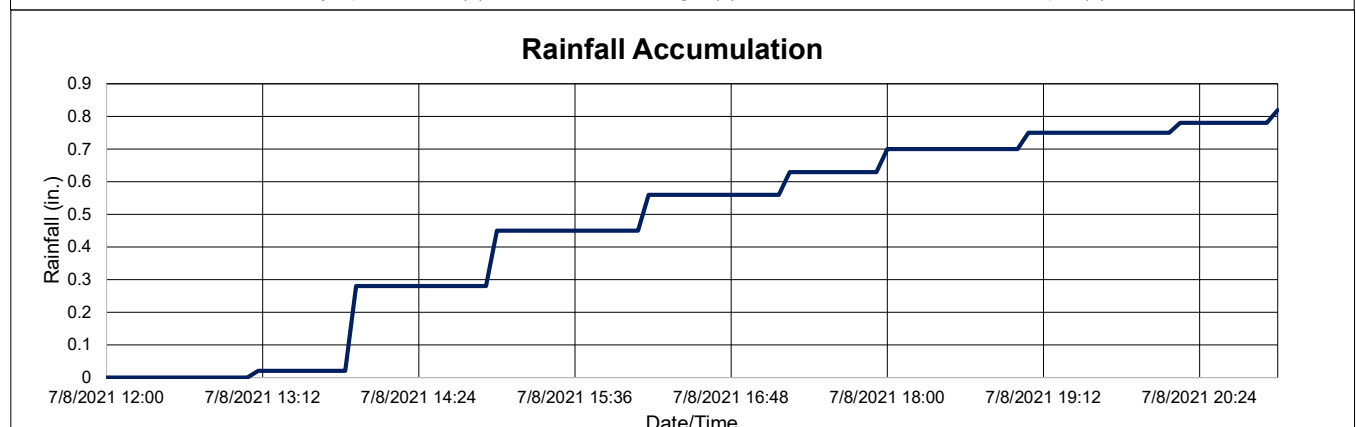
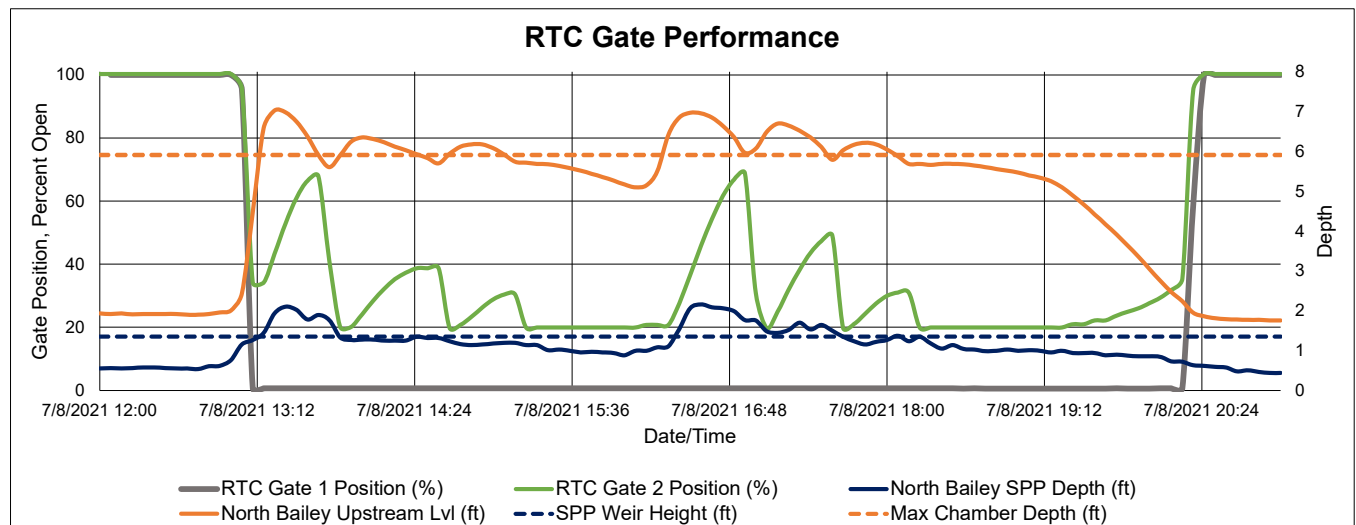
# 2

Site:	North Bailey RTC
Analysis Date:	8/12/2021
Event Start Date/Time:	7/8/2021 13:00
Event End Date/Time:	7/8/2021 20:25

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.82 in.
Storm Event Duration:	9 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.01 ft.
Return to Normal Depth:	1.95 ft.
Time Gate 1 Activated:	7/8/2021 13:00
Time Gate 2 Activated:	7/8/2021 13:00
Time Gate 1 Returned to Normal:	7/8/2021 20:25
Time Gate 2 Returned to Normal:	7/8/2021 20:25
Percent Capture	36%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	431,129 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	763,958 Gal.
Overflow Volume Prevented:	431,129 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



July 13, 2021

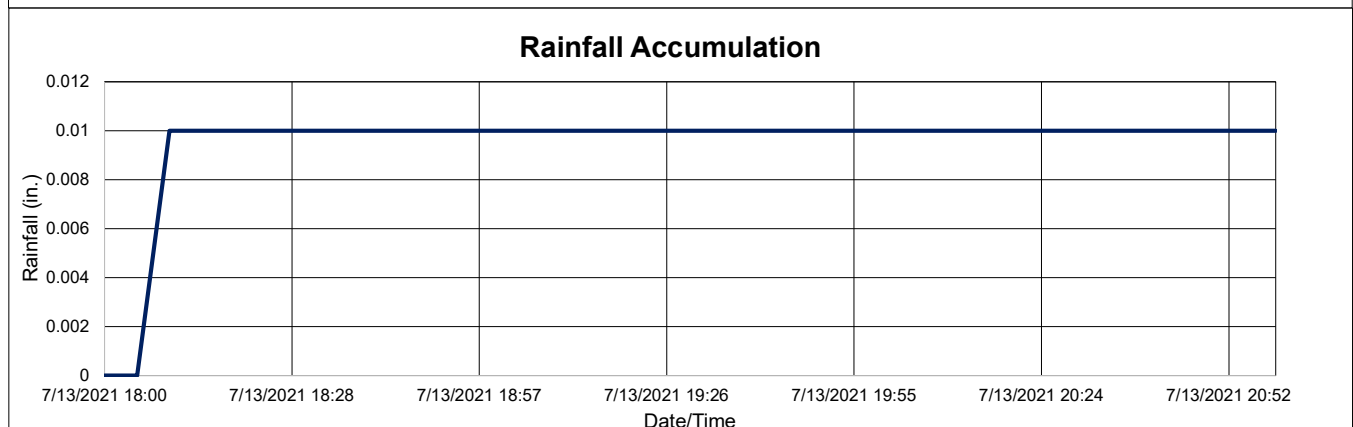
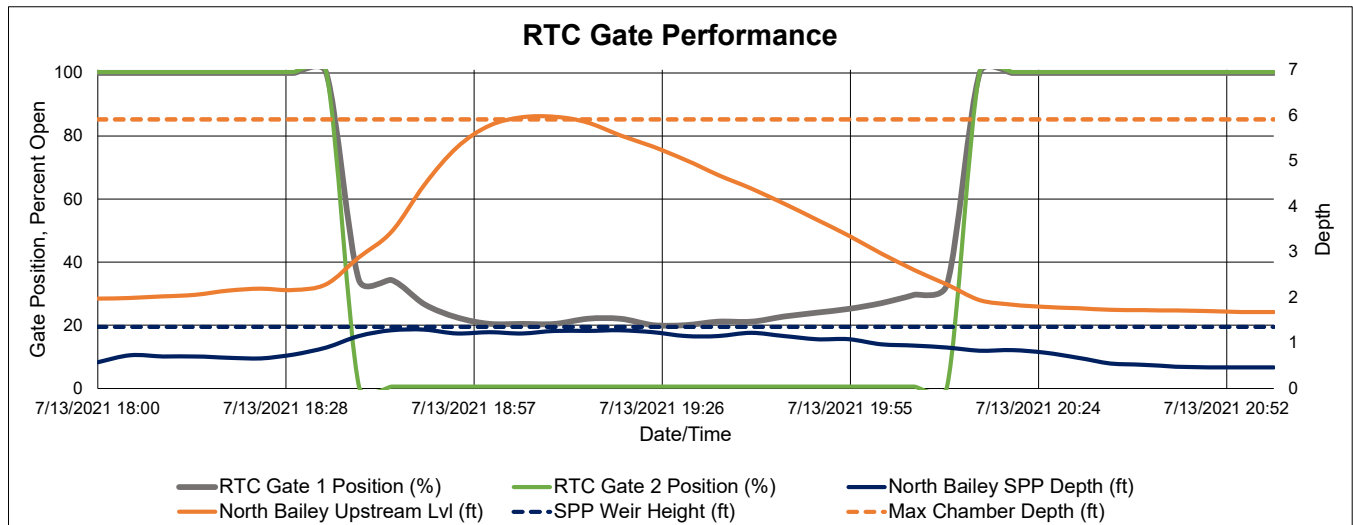
3

Site:	North Bailey RTC
Analysis Date:	8/12/2021
Event Start Date/Time:	7/13/2021 18:35
Event End Date/Time:	7/13/2021 20:15

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.01 in.
Storm Event Duration:	3 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.29 ft.
Return to Normal Depth:	2.28 ft.
Time Gate 1 Activated:	7/13/2021 18:35
Time Gate 2 Activated:	7/13/2021 18:35
Time Gate 1 Returned to Normal:	7/13/2021 20:15
Time Gate 2 Returned to Normal:	7/13/2021 20:10
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	406,622 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	406,622 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



July 17, 2021

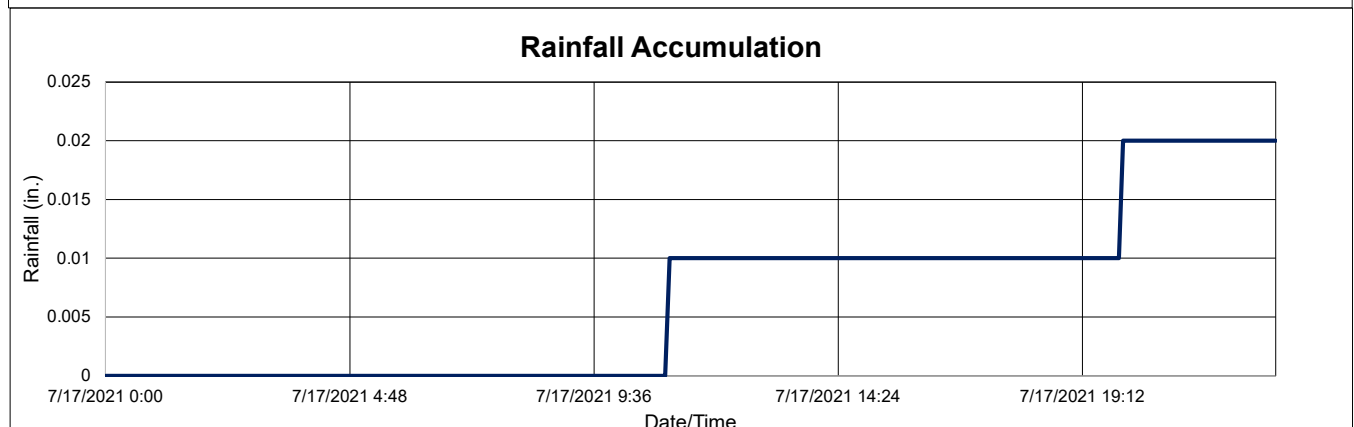
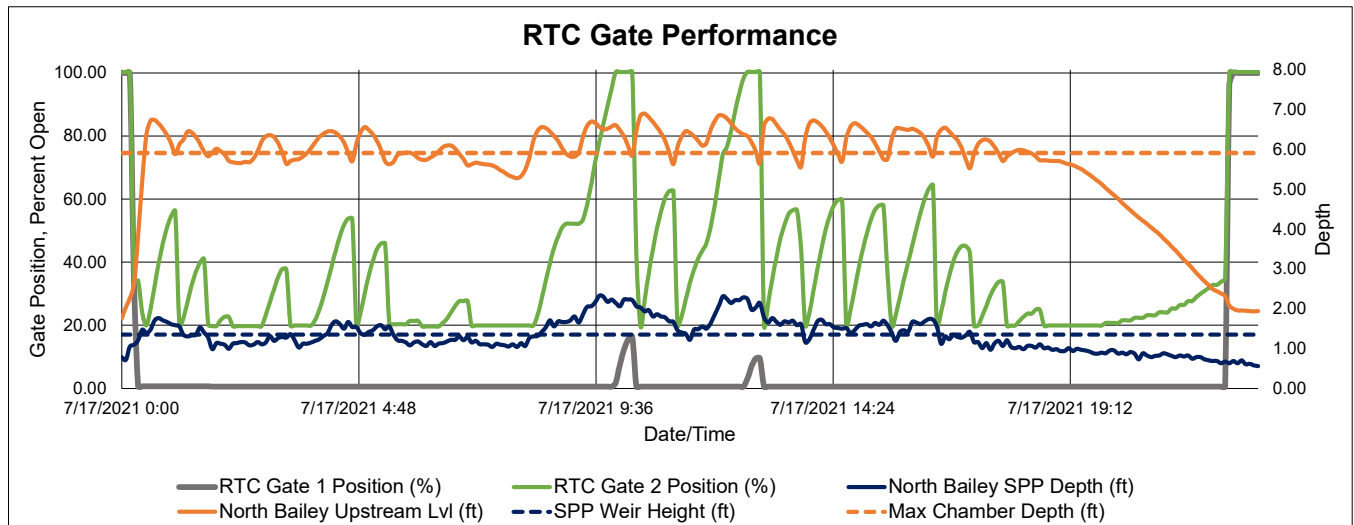
4

Site:	North Bailey RTC
Analysis Date:	8/12/2021
Event Start Date/Time:	7/17/2021 0:10
Event End Date/Time:	7/17/2021 22:30

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.02 in.
Storm Event Duration:	23 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.26 ft.
Return to Normal Depth:	2.00 ft.
Time Gate 1 Activated:	7/17/2021 0:10
Time Gate 2 Activated:	7/17/2021 0:10
Time Gate 1 Returned to Normal:	7/17/2021 22:30
Time Gate 2 Returned to Normal:	7/17/2021 22:30
Percent Capture	6%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	426,699 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	6,513,619 Gal.
Overflow Volume Prevented:	426,699 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



July 18, 2021

5

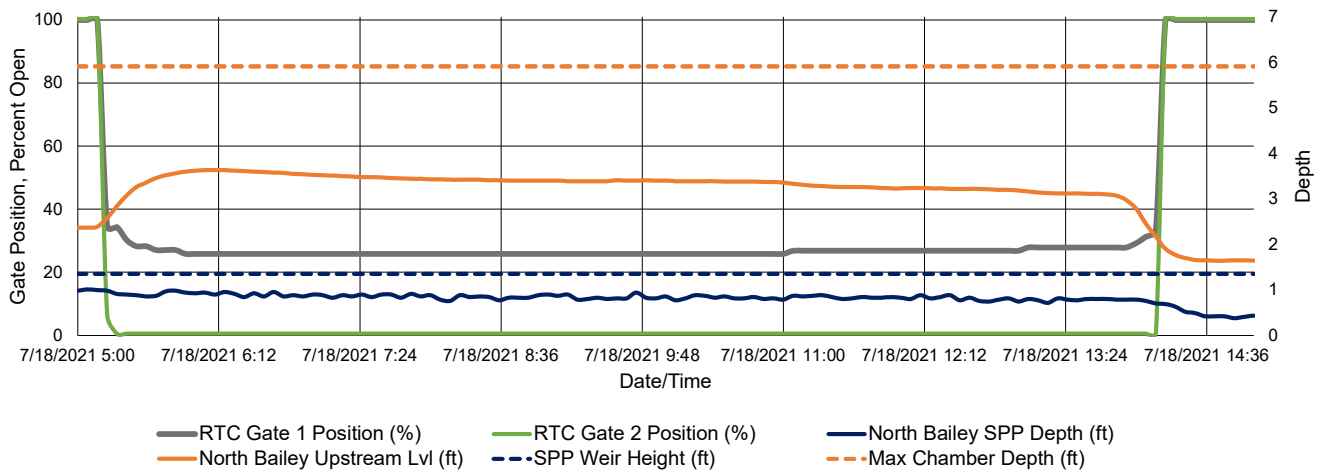
Site:	North Bailey RTC
Analysis Date:	8/12/2021
Event Start Date/Time:	7/18/2021 5:10
Event End Date/Time:	7/18/2021 14:15

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.02 in.
Storm Event Duration:	10 hr.
Storm Type:	< 1 yr.

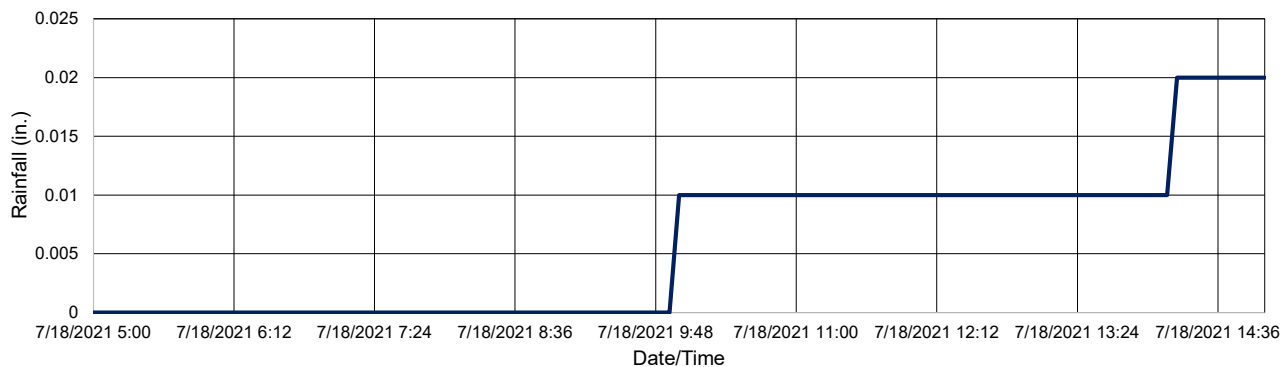
Gate Activation Trigger Depth:	2.39 ft.
Return to Normal Depth:	2.17 ft.
Time Gate 1 Activated:	7/18/2021 5:10
Time Gate 2 Activated:	7/18/2021 5:10
Time Gate 1 Returned to Normal:	7/18/2021 14:15
Time Gate 2 Returned to Normal:	7/18/2021 14:10
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	3.63 ft.
Volume Stored:	122,092 Gal.
Unused Storage Volume:	275,536 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	122,092 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.

RTC Gate Performance



Rainfall Accumulation



July 20, 2021

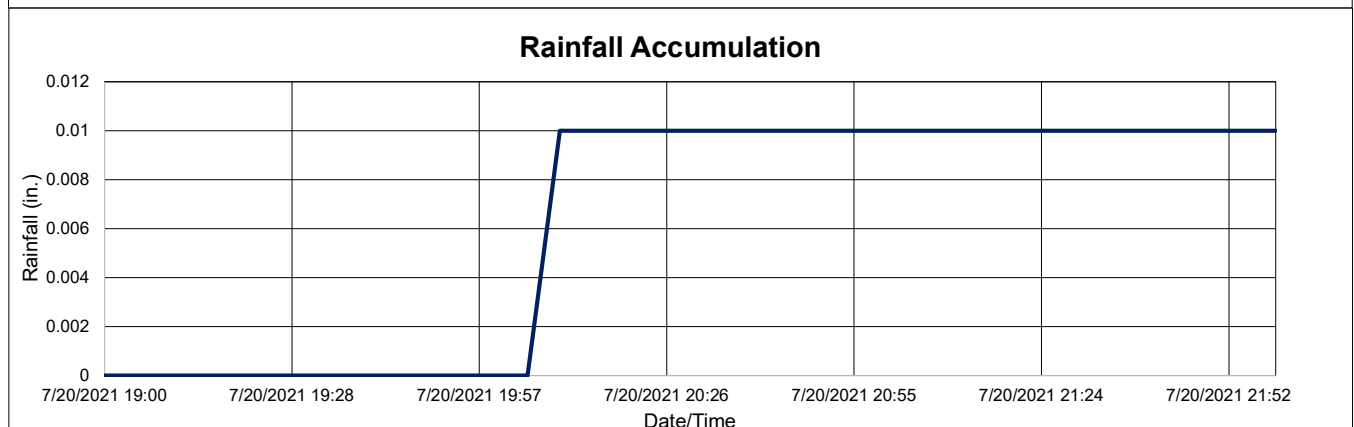
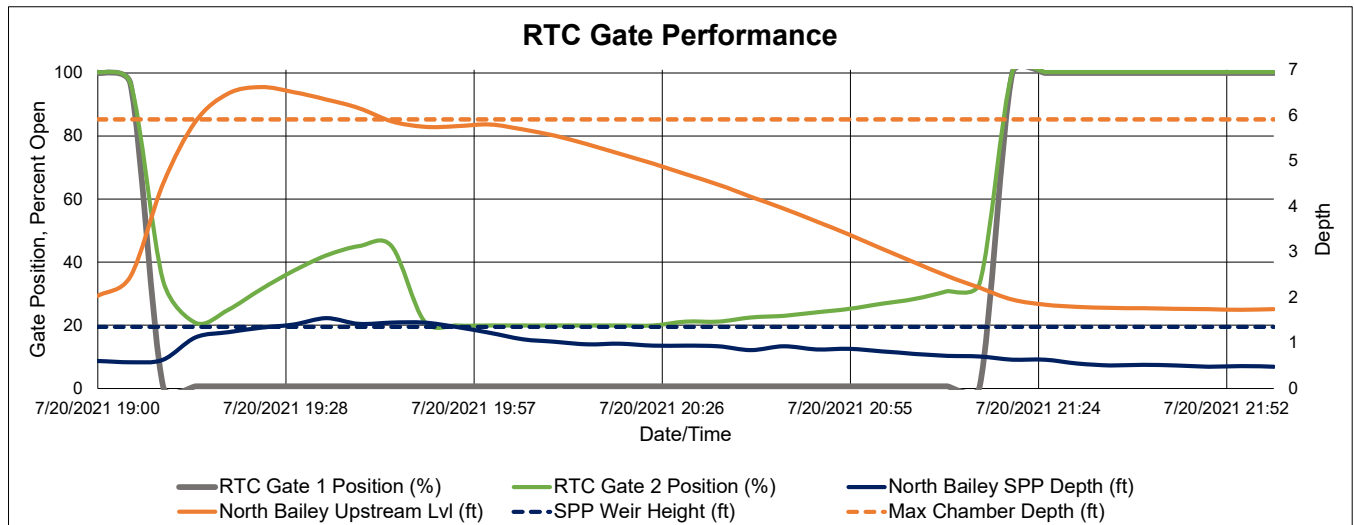
6

Site:	North Bailey RTC
Analysis Date:	8/12/2021
Event Start Date/Time:	7/20/2021 19:00
Event End Date/Time:	7/20/2021 21:20

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.01 in.
Storm Event Duration:	4 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.03 ft.
Return to Normal Depth:	2.21 ft.
Time Gate 1 Activated:	7/20/2021 19:00
Time Gate 2 Activated:	7/20/2021 19:00
Time Gate 1 Returned to Normal:	7/20/2021 21:20
Time Gate 2 Returned to Normal:	7/20/2021 21:15
Percent Capture	96%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	429,411 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	19,087 Gal.
Overflow Volume Prevented:	429,411 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



July 27, 2021

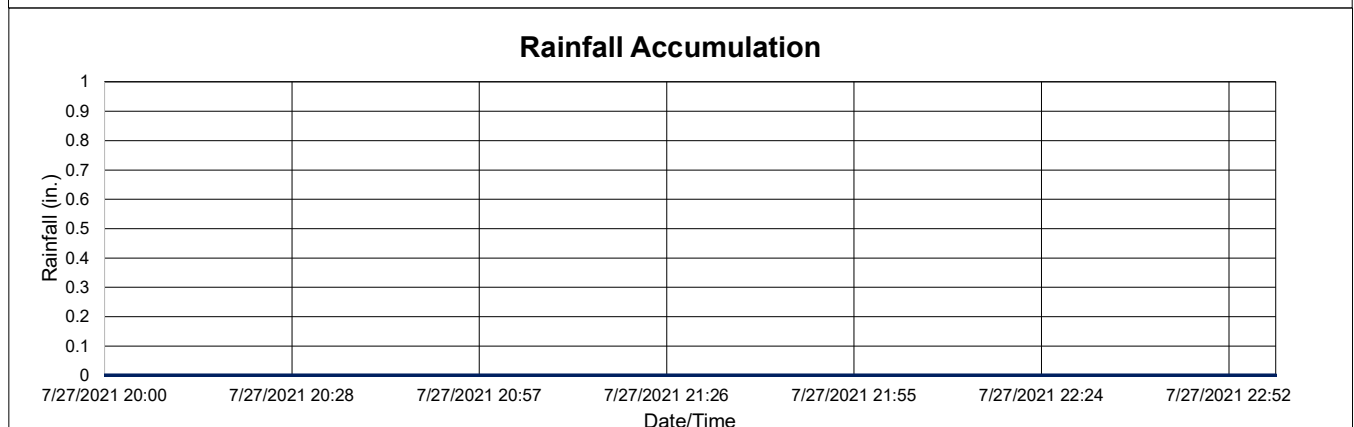
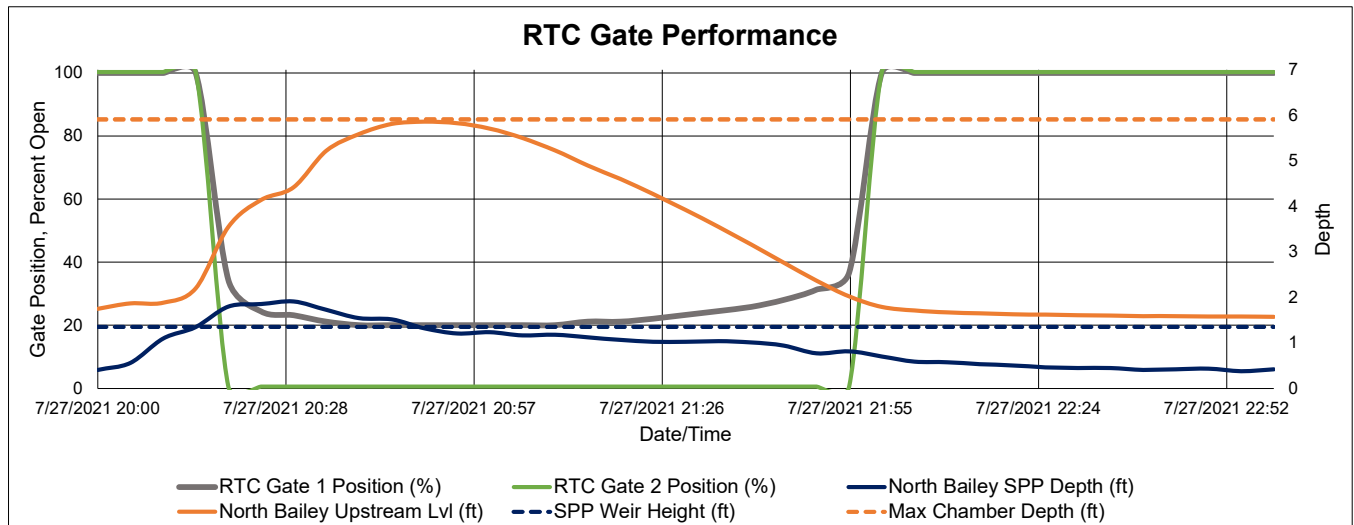
7

Site:	North Bailey RTC
Analysis Date:	8/12/2021
Event Start Date/Time:	7/27/2021 20:15
Event End Date/Time:	7/27/2021 22:00

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	3 hr.
Storm Type:	N/A

Gate Activation Trigger Depth:	2.20 ft.
Return to Normal Depth:	2.02 ft.
Time Gate 1 Activated:	7/27/2021 20:15
Time Gate 2 Activated:	7/27/2021 20:15
Time Gate 1 Returned to Normal:	7/27/2021 22:00
Time Gate 2 Returned to Normal:	7/27/2021 21:55
Percent Capture	72%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.86 ft.
Volume Stored:	407,856 Gal.
Unused Storage Volume:	6,752 Gal.
Overflow Volume:	159,297 Gal.
Overflow Volume Prevented:	407,856 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	159297.0799
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.





# July 29, 2021

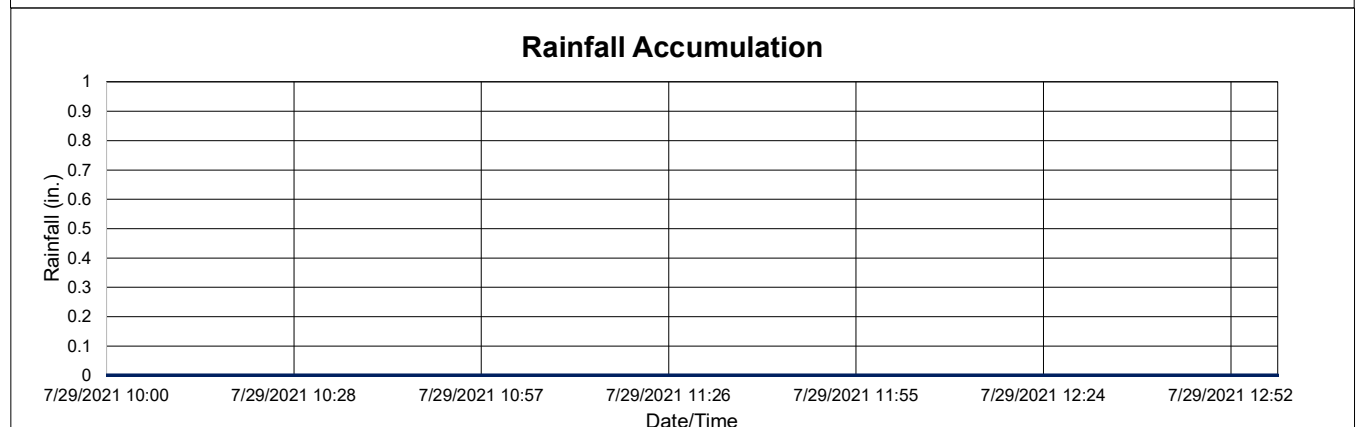
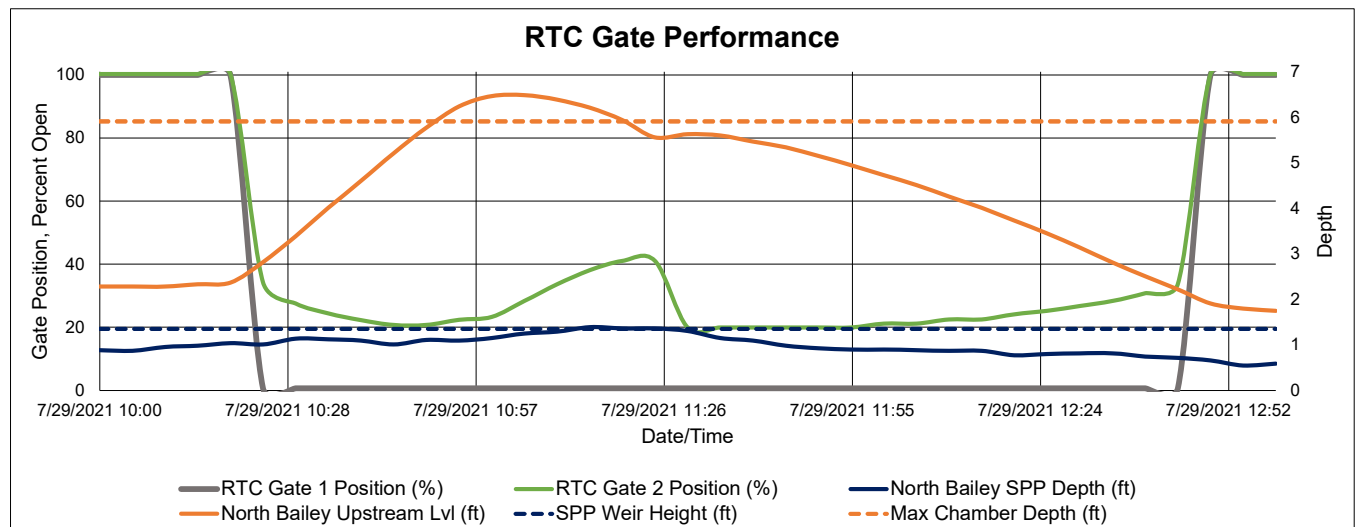
8

Site:	North Bailey RTC
Analysis Date:	8/12/2021
Event Start Date/Time:	7/29/2021 10:20
Event End Date/Time:	7/29/2021 12:50

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	3 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.37 ft.
Return to Normal Depth:	2.22 ft.
Time Gate 1 Activated:	7/29/2021 10:20
Time Gate 2 Activated:	7/29/2021 10:20
Time Gate 1 Returned to Normal:	7/29/2021 12:50
Time Gate 2 Returned to Normal:	7/29/2021 12:45
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	399,437 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	1,105 Gal.
Overflow Volume Prevented:	399,437 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.



# August 2021 North Bailey RTC KPI Report

**BUFFALO**  
SEWER AUTHORITY

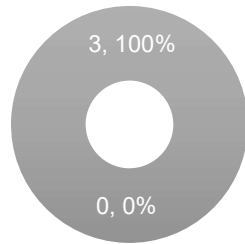


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# North Bailey RTC Monthly Performance Report

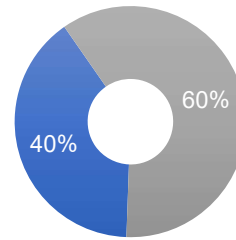
August 2021

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.)  
■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
0	3	1,353,513	2,049,919
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
8/11/2021	447,190	46,646	91%
8/13/2021	469,224	1,971,786	19%
8/30/2021	437,099	31,487	93%

Site:	North Bailey RTC
Analysis Date:	9/10/2021
Event Start Date/Time:	8/11/2021 7:25
Event End Date/Time:	8/11/2021 9:20

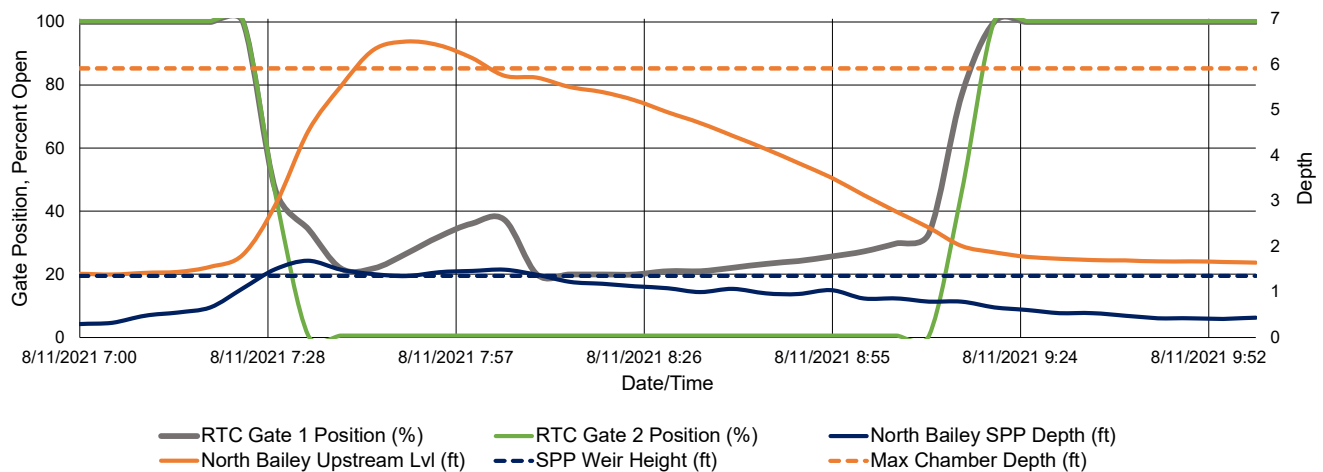
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	3 hr.
Storm Type:	NA

Gate Activation Trigger Depth:	1.82 ft.
Return to Normal Depth:	2.01 ft.
Time Gate 1 Activated:	8/11/2021 7:25
Time Gate 2 Activated:	8/11/2021 7:25
Time Gate 1 Returned to Normal:	8/11/2021 9:20
Time Gate 2 Returned to Normal:	8/11/2021 9:15
Percent Capture	91%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	447,190 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	46,646 Gal.
Overflow Volume Prevented:	447,190 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

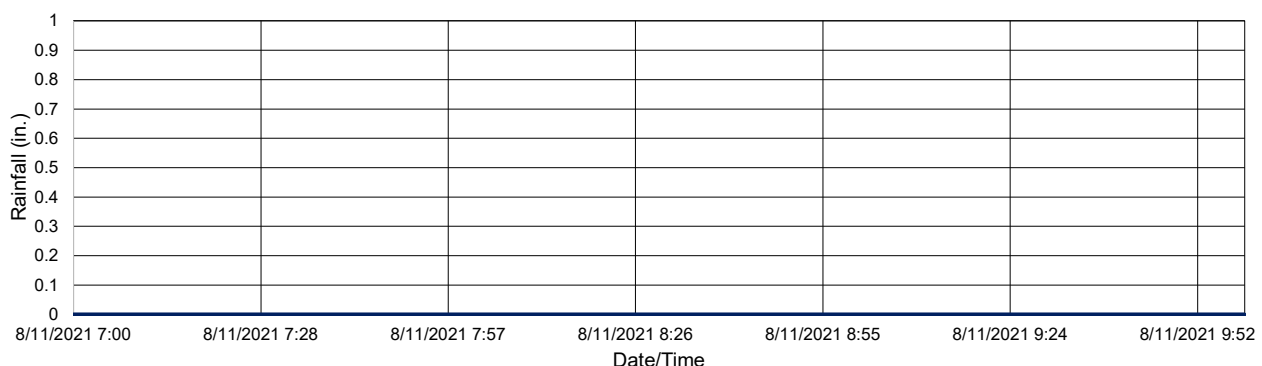
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.

#### RTC Gate Performance



#### Rainfall Accumulation



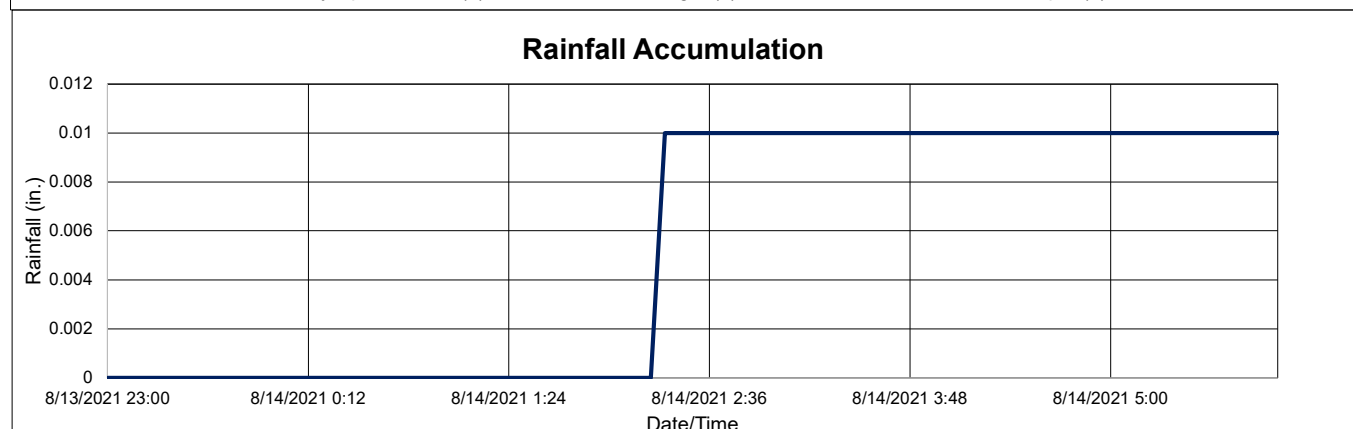
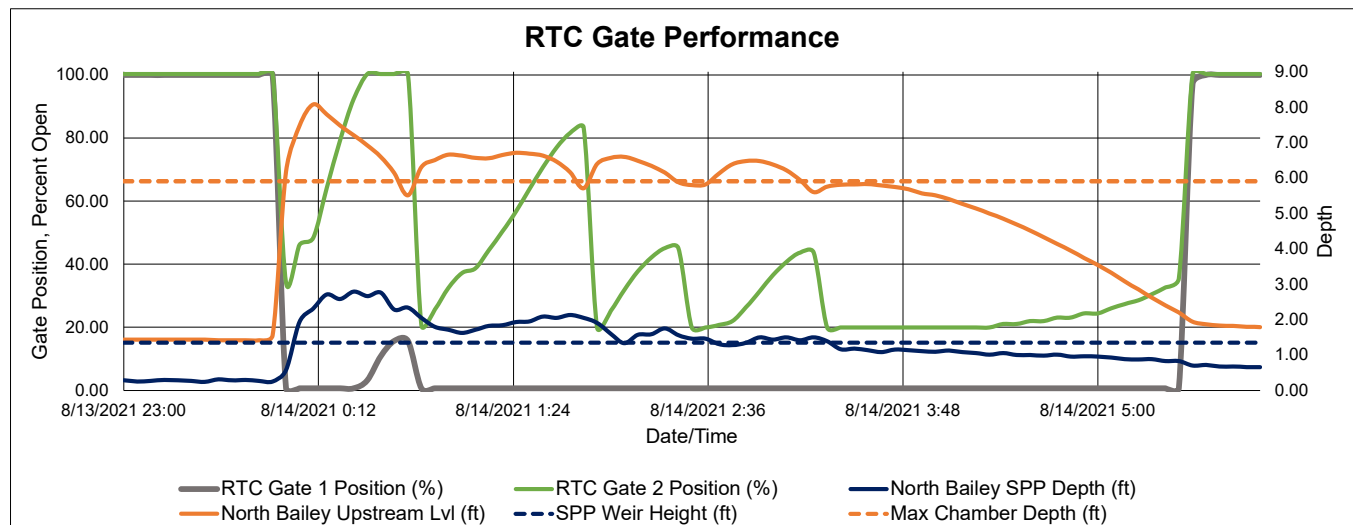
Site:	North Bailey RTC
Analysis Date:	9/10/2021
Event Start Date/Time:	8/13/2021 23:55
Event End Date/Time:	8/14/2021 5:40

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.01 in.
Storm Event Duration:	7 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	1.55 ft.
Return to Normal Depth:	1.87 ft.
Time Gate 1 Activated:	8/13/2021 23:55
Time Gate 2 Activated:	8/13/2021 23:55
Time Gate 1 Returned to Normal:	8/14/2021 5:40
Time Gate 2 Returned to Normal:	8/14/2021 5:30
Percent Capture	19%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	469,224 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	1,971,786 Gal.
Overflow Volume Prevented:	469,224 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.



Site:	North Bailey RTC
Analysis Date:	9/10/2021
Event Start Date/Time:	8/30/2021 0:20
Event End Date/Time:	8/30/2021 7:35

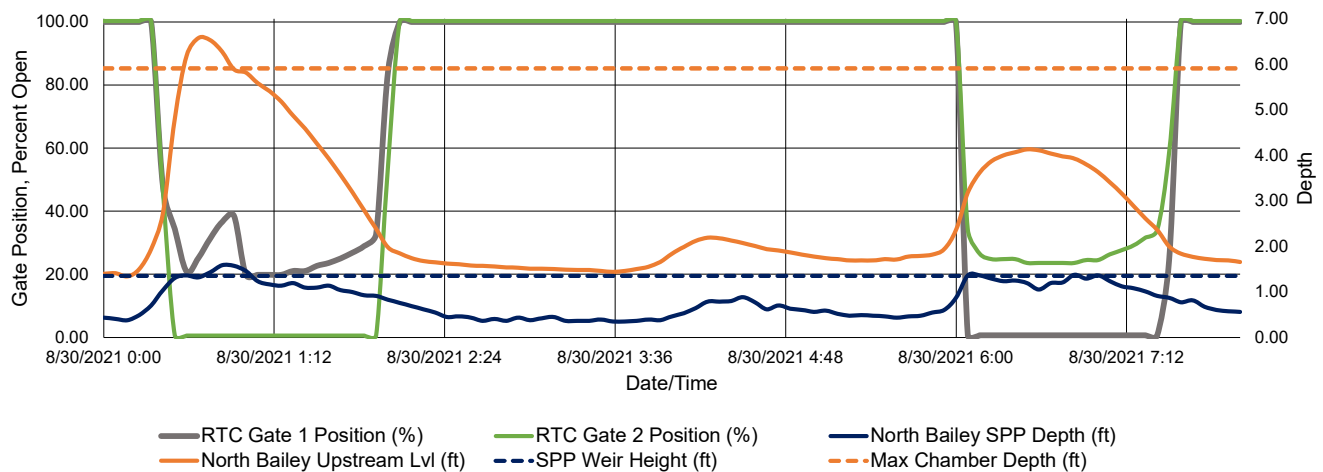
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	8 hr.
Storm Type:	NA

Gate Activation Trigger Depth:	1.94 ft.
Return to Normal Depth:	2.00 ft.
Time Gate 1 Activated:	8/30/2021 0:20
Time Gate 2 Activated:	8/30/2021 0:20
Time Gate 1 Returned to Normal:	8/30/2021 7:35
Time Gate 2 Returned to Normal:	8/30/2021 7:30
Percent Capture	93%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	437,099 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	31,487 Gal.
Overflow Volume Prevented:	437,099 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

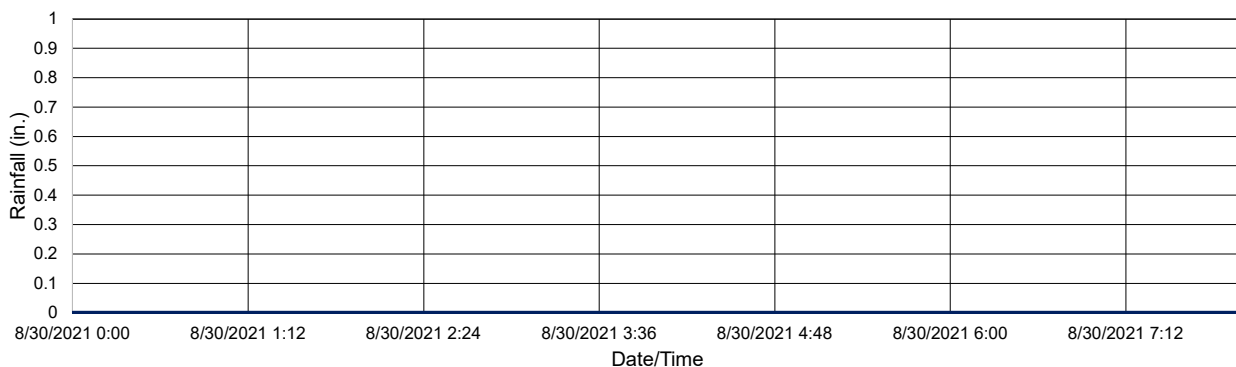
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.

#### RTC Gate Performance



#### Rainfall Accumulation



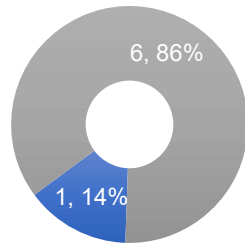
# September 2021 North Bailey RTC KPI Report

**BUFFALO**  
SEWER AUTHORITY

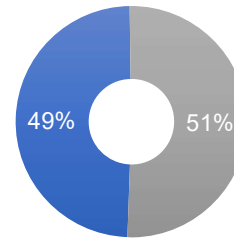


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**Prevented SPP Events**

■ Number of Prevented SPP Overflow Events  
 ■ Number of Occurred SPP Overflow Events

**Prevented SPP Volume**

■ Prevented SPP Overflow Volume (Gal.)  
 ■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
1	6	2,833,463	2,926,817
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
9/6/2021	403,938	196,200	67%
9/7/2021	417,247	-	100%
9/8/2021	403,040	920,976	30%
9/13/2021	394,906	1,597,949	20%
9/13/2021	416,369	190,926	69%
9/15/2021	401,241	16,792	96%
9/22/2021	396,722	3,974	99%

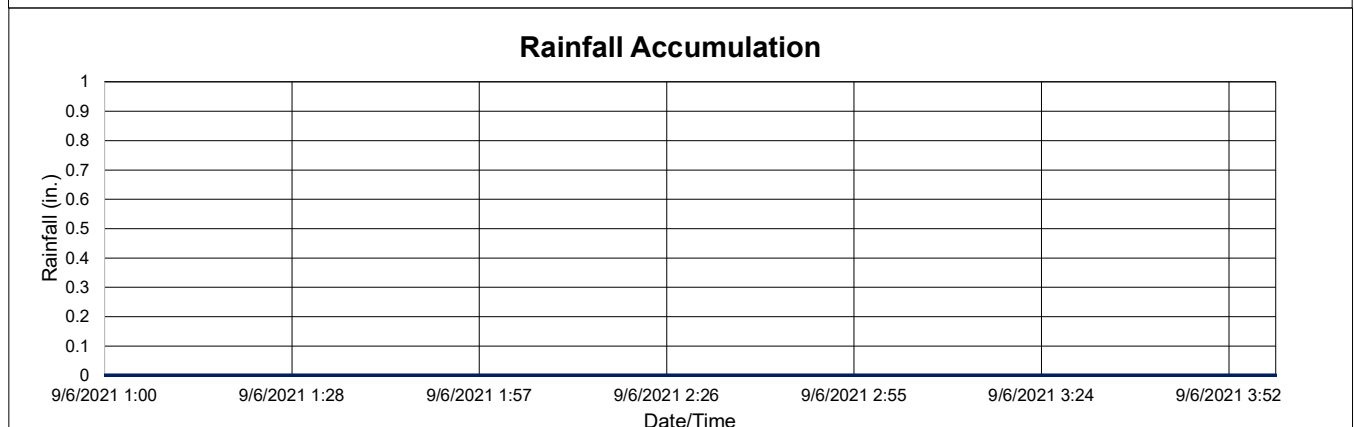
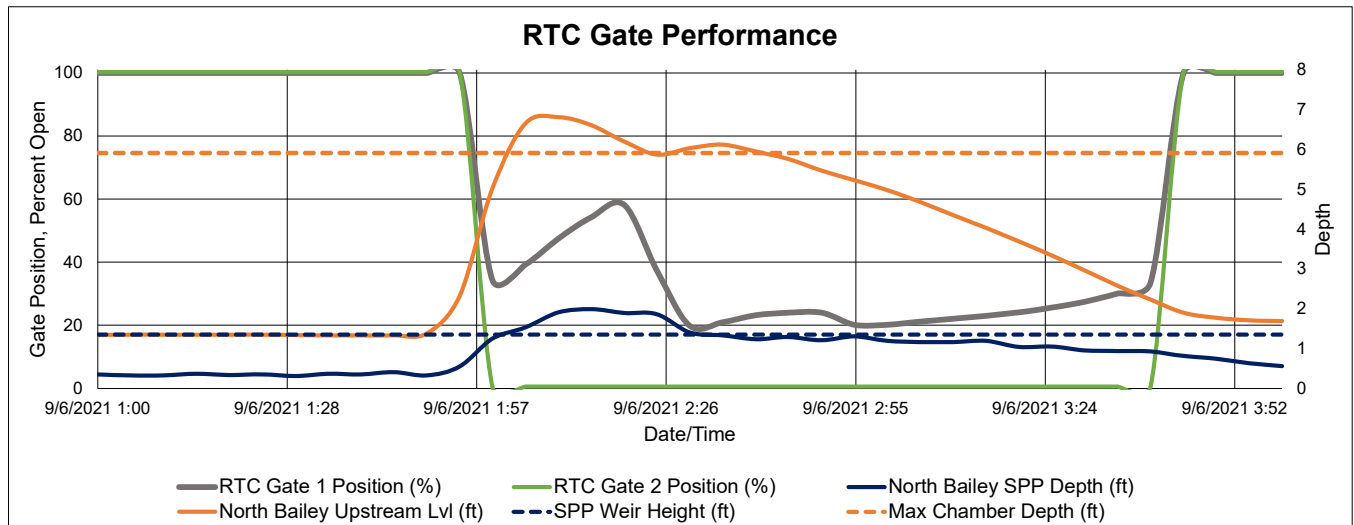


Site:	North Bailey RTC
Analysis Date:	9/10/2021
Event Start Date/Time:	9/6/2021 1:55
Event End Date/Time:	9/6/2021 3:45

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	3 hr.
Storm Type:	NA

Gate Activation Trigger Depth:	2.32 ft.
Return to Normal Depth:	2.23 ft.
Time Gate 1 Activated:	9/6/2021 1:55
Time Gate 2 Activated:	9/6/2021 1:55
Time Gate 1 Returned to Normal:	9/6/2021 3:45
Time Gate 2 Returned to Normal:	9/6/2021 3:40
Percent Capture	67%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	403,938 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	196,200 Gal.
Overflow Volume Prevented:	403,938 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.

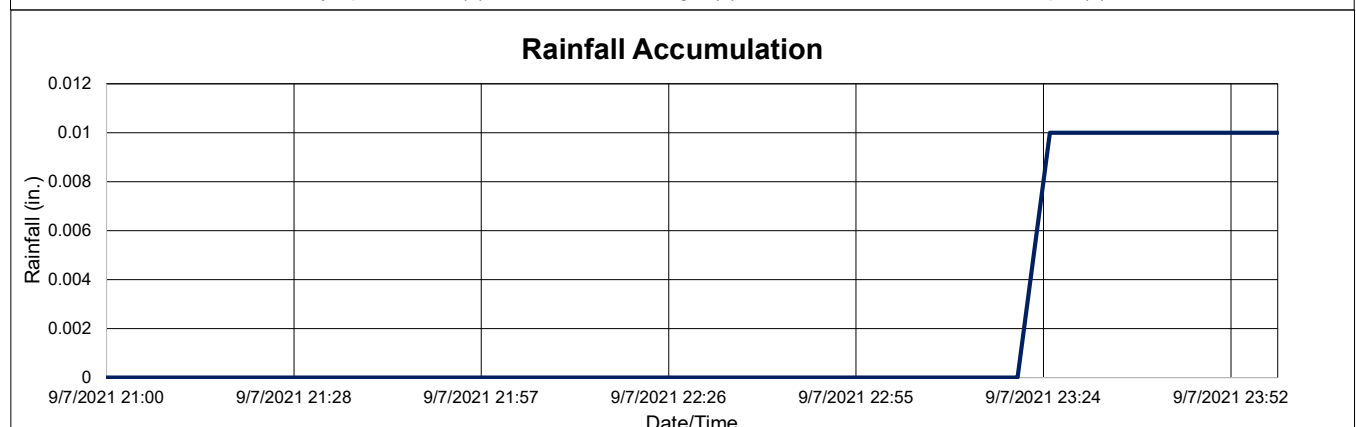
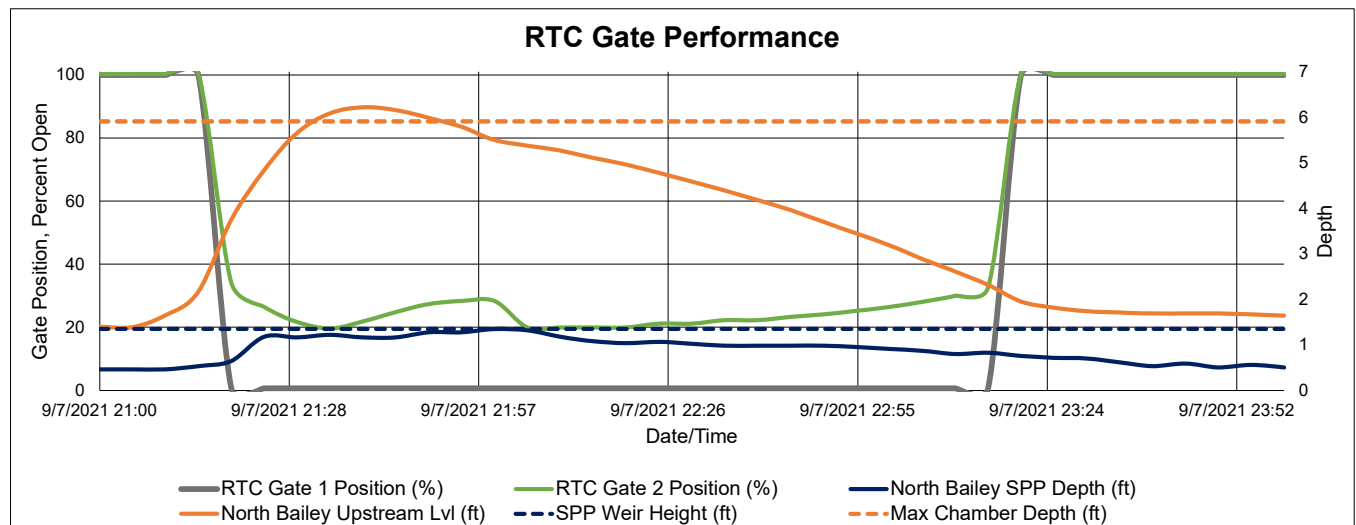


Site:	North Bailey RTC
Analysis Date:	9/10/2021
Event Start Date/Time:	9/7/2021 21:15
Event End Date/Time:	9/7/2021 23:20

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.01 in.
Storm Event Duration:	3 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.17 ft.
Return to Normal Depth:	2.32 ft.
Time Gate 1 Activated:	9/7/2021 21:15
Time Gate 2 Activated:	9/7/2021 21:15
Time Gate 1 Returned to Normal:	9/7/2021 23:20
Time Gate 2 Returned to Normal:	9/7/2021 23:15
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	417,247 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	417,247 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.

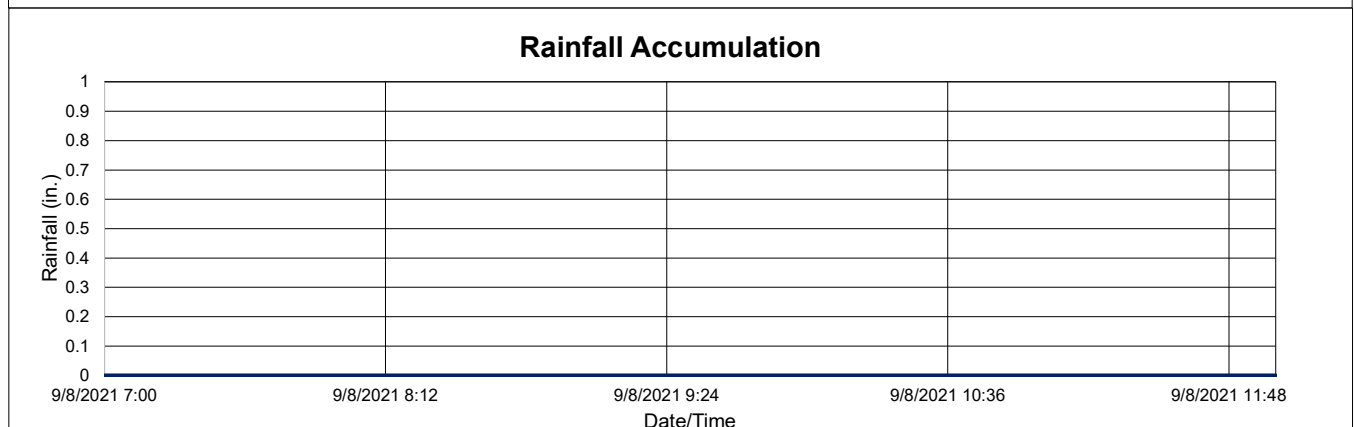
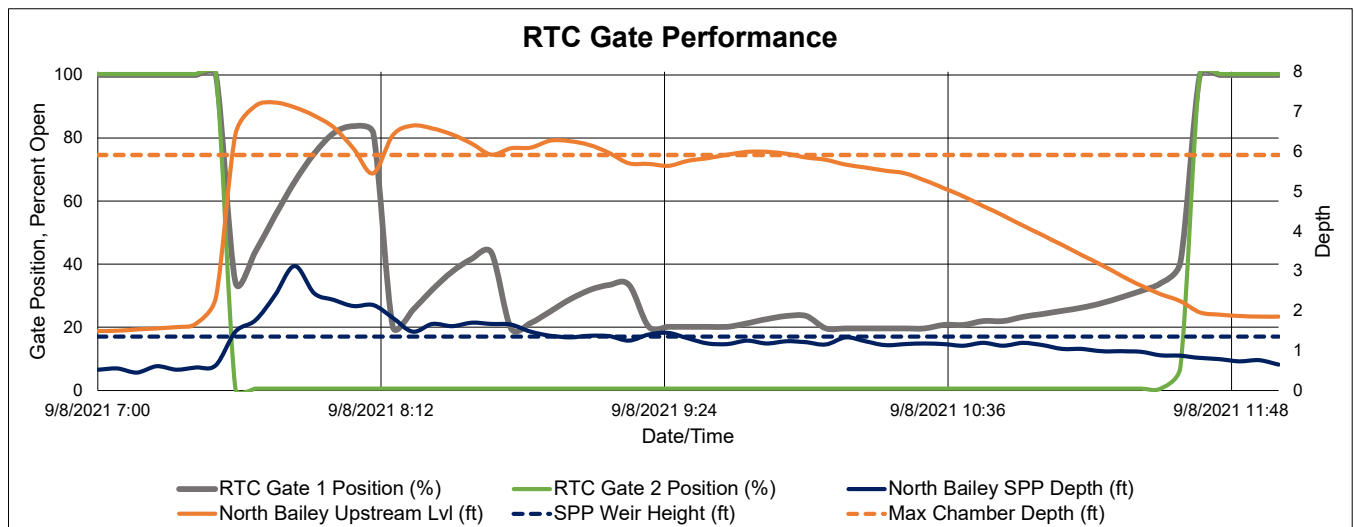


Site:	North Bailey RTC
Analysis Date:	9/10/2021
Event Start Date/Time:	9/8/2021 7:30
Event End Date/Time:	9/8/2021 11:40

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	5 hr.
Storm Type:	NA

Gate Activation Trigger Depth:	2.33 ft.
Return to Normal Depth:	2.24 ft.
Time Gate 1 Activated:	9/8/2021 7:30
Time Gate 2 Activated:	9/8/2021 7:30
Time Gate 1 Returned to Normal:	9/8/2021 11:40
Time Gate 2 Returned to Normal:	9/8/2021 11:35
Percent Capture	30%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	403,040 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	920,976 Gal.
Overflow Volume Prevented:	403,040 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.



Site:	North Bailey RTC
Analysis Date:	9/10/2021
Event Start Date/Time:	9/13/2021 0:15
Event End Date/Time:	9/13/2021 4:05

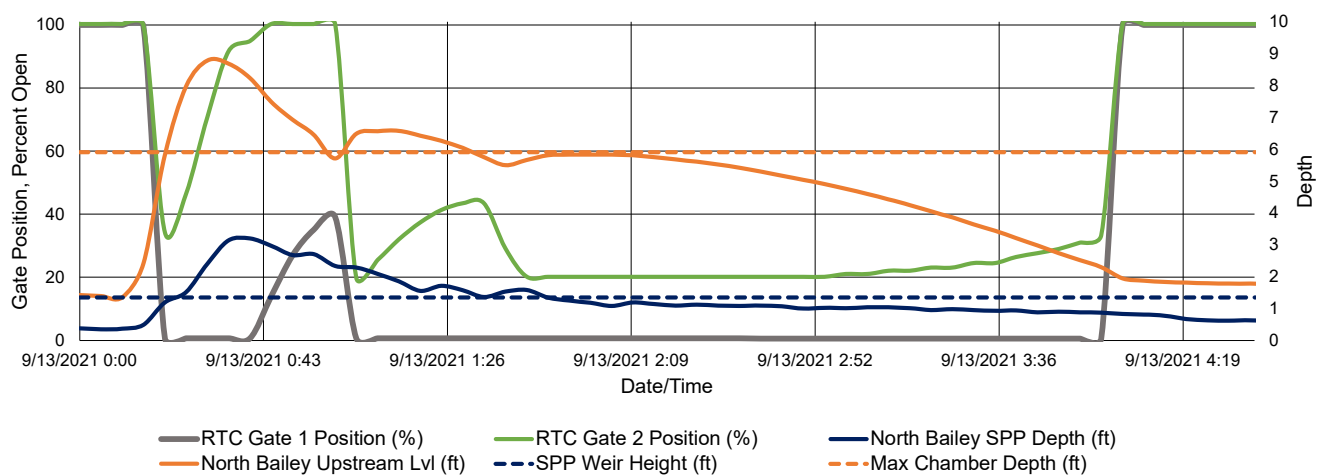
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.01 in.
Storm Event Duration:	5 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.42 ft.
Return to Normal Depth:	2.30 ft.
Time Gate 1 Activated:	9/13/2021 0:15
Time Gate 2 Activated:	9/13/2021 1:00
Time Gate 1 Returned to Normal:	9/13/2021 4:05
Time Gate 2 Returned to Normal:	9/13/2021 4:05
Percent Capture	20%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	394,906 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	1,597,949 Gal.
Overflow Volume Prevented:	394,906 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

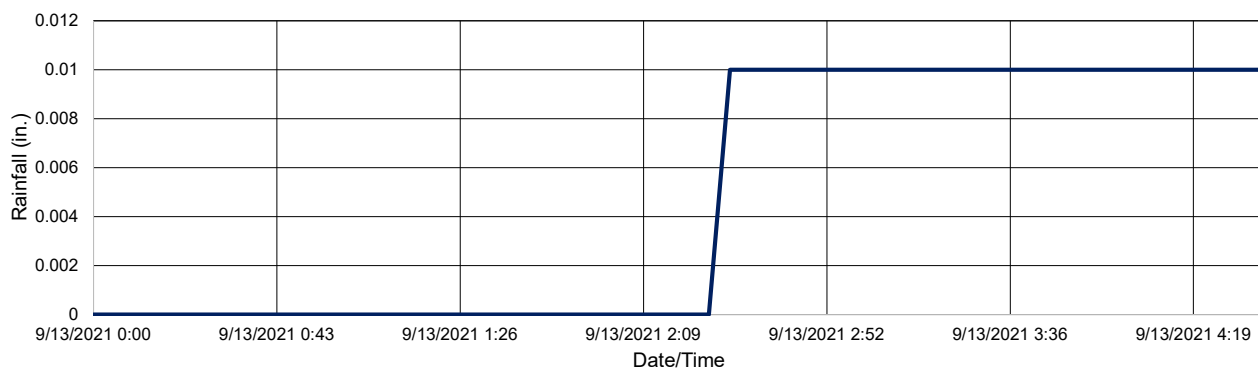
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	North Bailey RTC
Analysis Date:	9/10/2021
Event Start Date/Time:	9/13/2021 21:40
Event End Date/Time:	9/14/2021 3:30

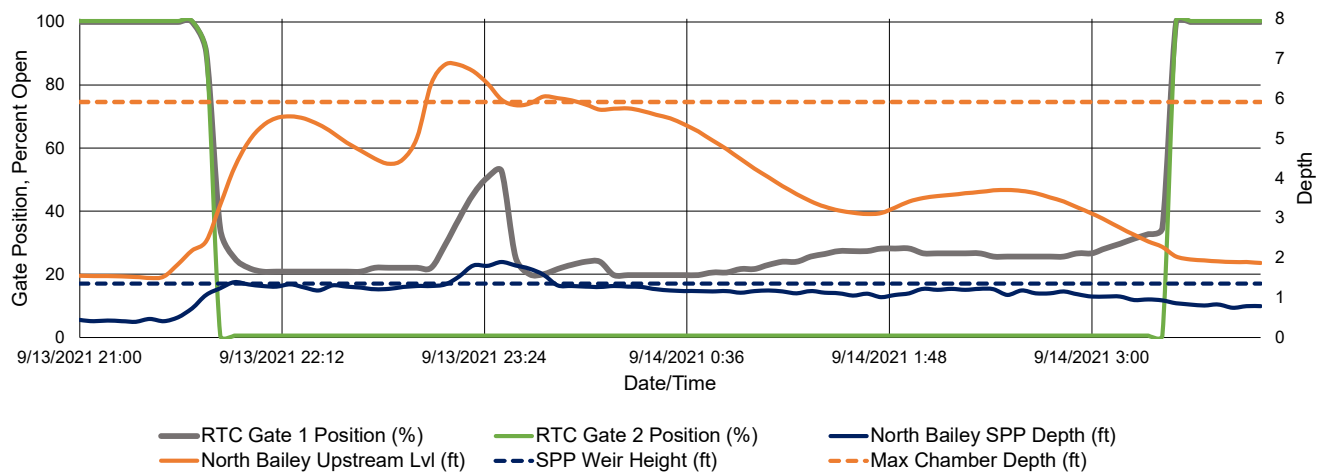
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.02 in.
Storm Event Duration:	7 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.18 ft.
Return to Normal Depth:	2.27 ft.
Time Gate 1 Activated:	9/13/2021 21:40
Time Gate 2 Activated:	9/13/2021 21:40
Time Gate 1 Returned to Normal:	9/14/2021 3:30
Time Gate 2 Returned to Normal:	9/14/2021 3:25
Percent Capture	69%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	416,369 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	190,926 Gal.
Overflow Volume Prevented:	416,369 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

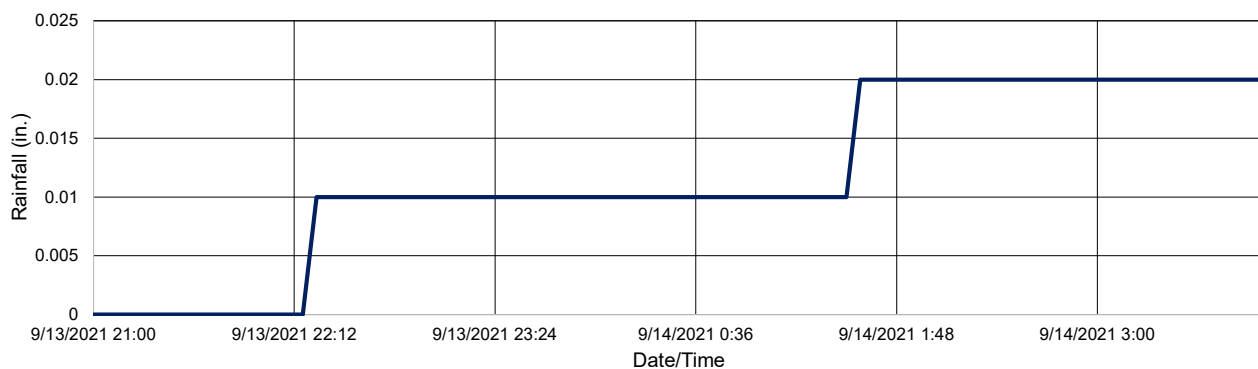
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation

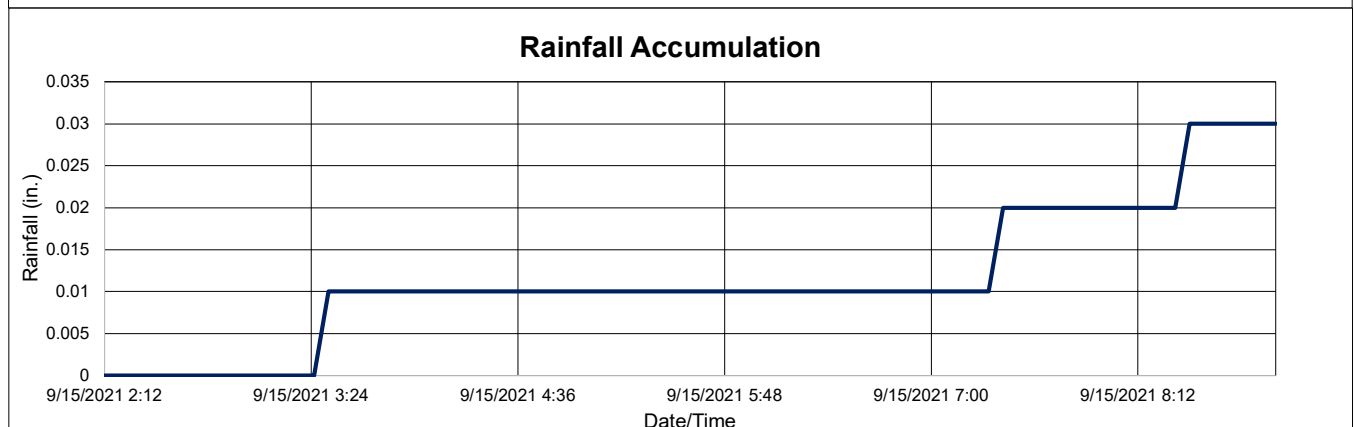
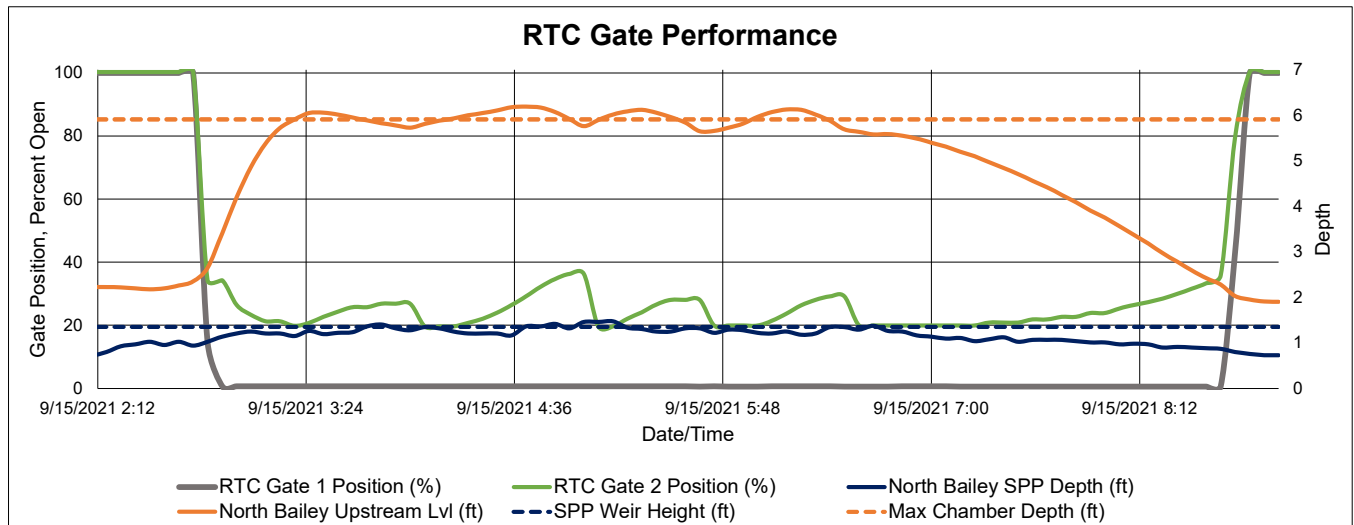


Site:	North Bailey RTC
Analysis Date:	9/10/2021
Event Start Date/Time:	9/15/2021 2:45
Event End Date/Time:	9/15/2021 8:50

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.03 in.
Storm Event Duration:	7 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.35 ft.
Return to Normal Depth:	2.03 ft.
Time Gate 1 Activated:	9/15/2021 2:45
Time Gate 2 Activated:	9/15/2021 2:45
Time Gate 1 Returned to Normal:	9/15/2021 8:50
Time Gate 2 Returned to Normal:	9/15/2021 8:45
Percent Capture	96%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	401,241 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	16,792 Gal.
Overflow Volume Prevented:	401,241 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.

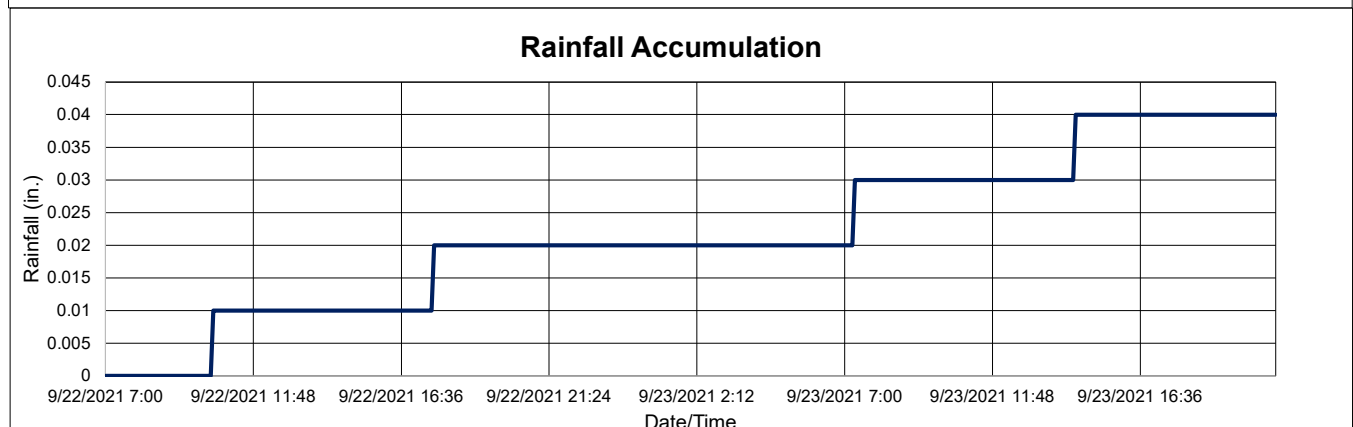
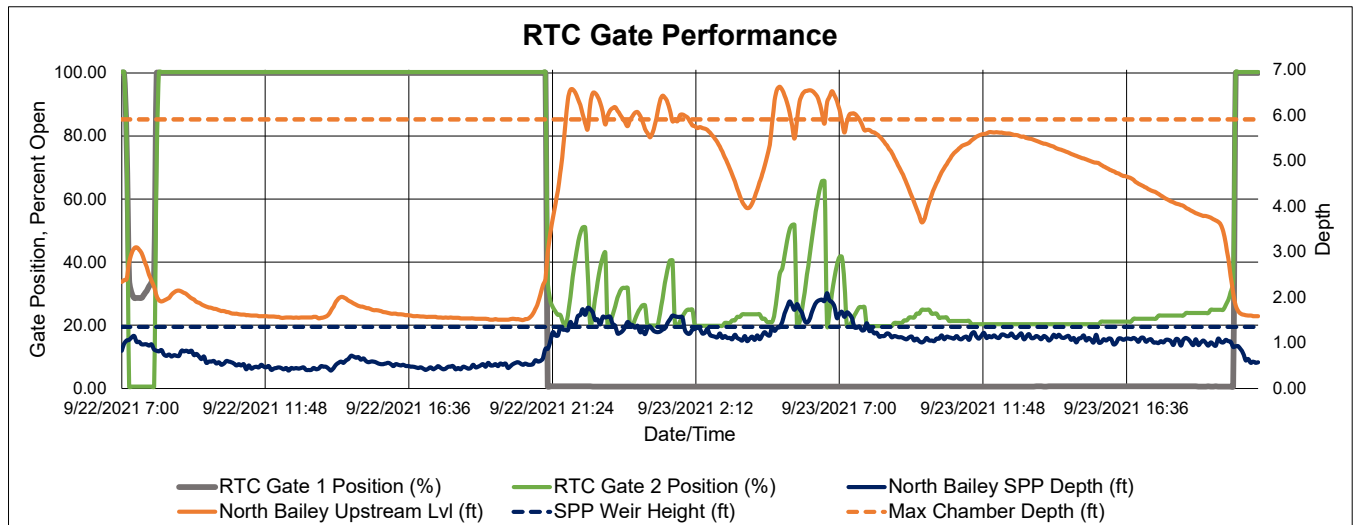


Site:	North Bailey RTC
Analysis Date:	10/9/2021
Event Start Date/Time:	9/22/2021 7:05
Event End Date/Time:	9/23/2021 20:15

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.04 in.
Storm Event Duration:	38 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.38 ft.
Return to Normal Depth:	2.09 ft.
Time Gate 1 Activated:	9/22/2021 7:05
Time Gate 2 Activated:	9/22/2021 7:05
Time Gate 1 Returned to Normal:	9/23/2021 20:15
Time Gate 2 Returned to Normal:	9/23/2021 20:10
Percent Capture	99%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	3.10 ft.
Volume Stored:	396,722 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	3,974 Gal.
Overflow Volume Prevented:	396,722 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	3,974
Could SPP activation have been prevented?	Yes

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



# October 2021 North Bailey RTC KPI Report

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**ARCADIS**

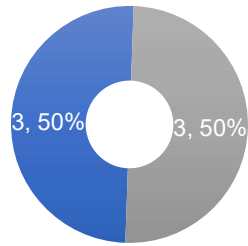
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# North Bailey RTC Monthly Performance Report

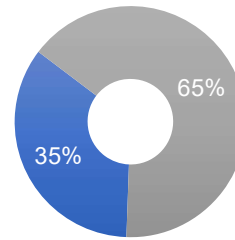
October 2021

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.)  
■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
3	3	2,240,361	4,199,438
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
10/3/2021	407,515	2,578,098	14%
10/15/2021	413,726	747,681	36%
10/16/2021	397,629	-	100%
10/21/2021	421,620	-	100%
10/25/2021	186,145	-	100%
10/29/2021	413,726	873,659	32%

# October 3, 2021

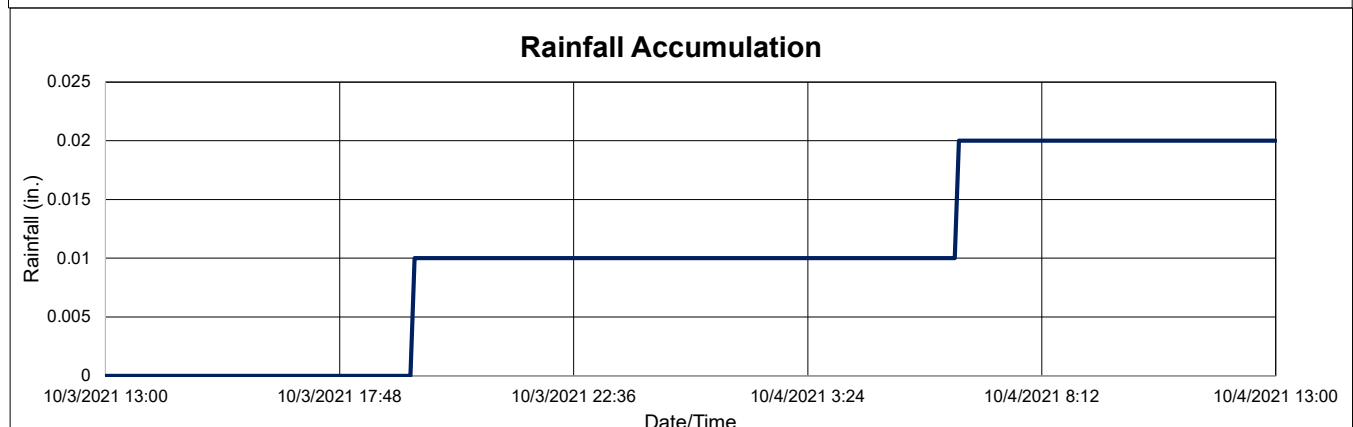
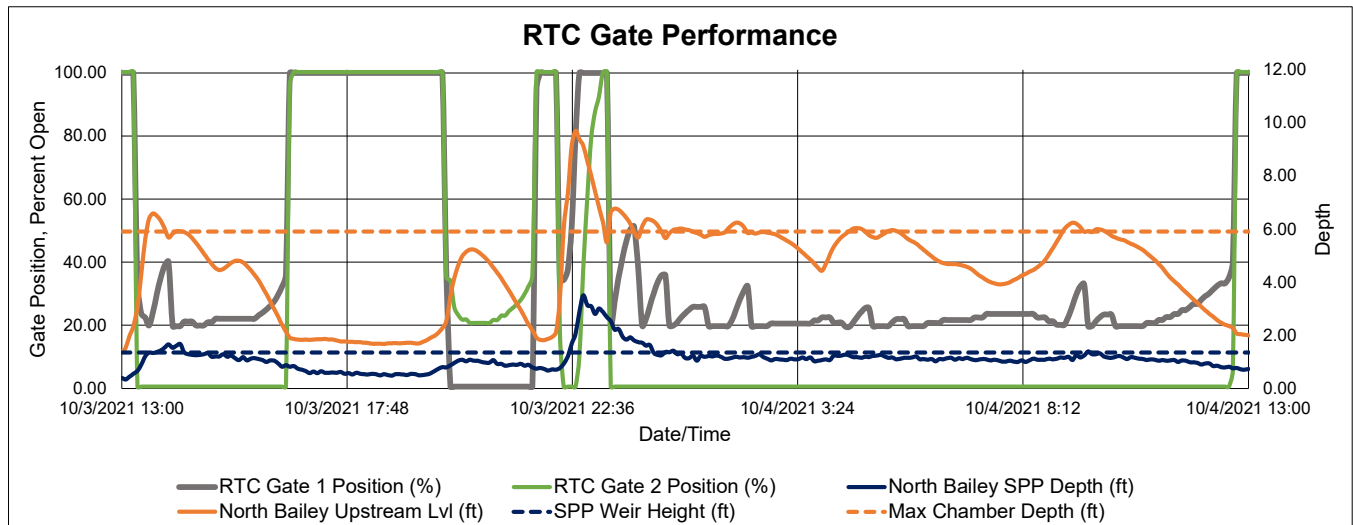
# 1

Site:	North Bailey RTC
Analysis Date:	11/15/2021
Event Start Date/Time:	10/3/2021 13:15
Event End Date/Time:	10/4/2021 12:45

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.02 in.
Storm Event Duration:	24 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.33 ft.
Return to Normal Depth:	2.28 ft.
Time Gate 1 Activated:	10/3/2021 13:15
Time Gate 2 Activated:	10/3/2021 13:15
Time Gate 1 Returned to Normal:	10/4/2021 12:45
Time Gate 2 Returned to Normal:	10/4/2021 12:40
Percent Capture	14%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	407,515 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	2,578,098 Gal.
Overflow Volume Prevented:	407,515 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



Site:	North Bailey RTC
Analysis Date:	11/15/2021
Event Start Date/Time:	10/15/2021 17:10
Event End Date/Time:	10/15/2021 20:55

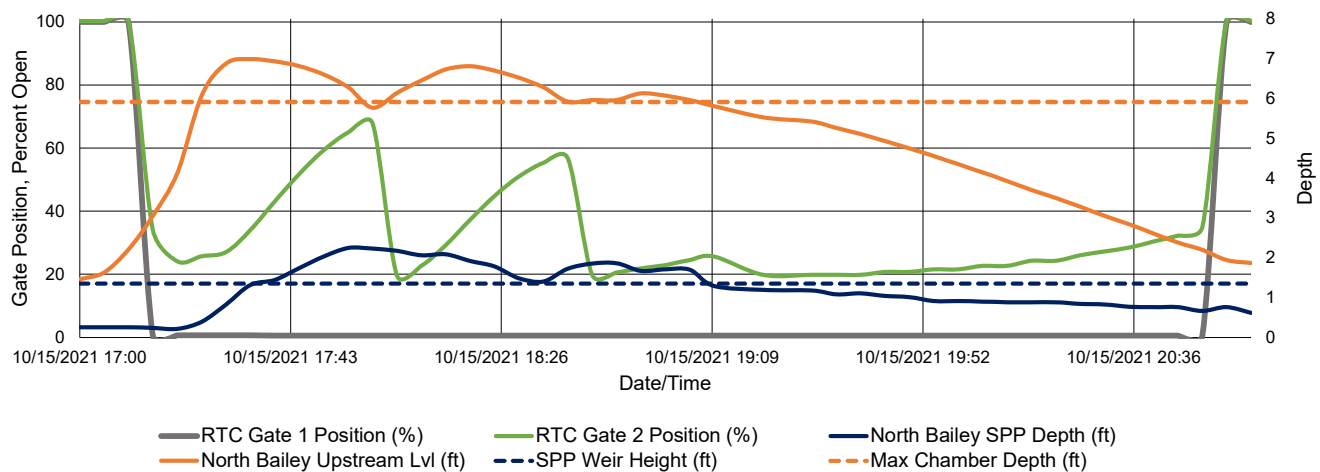
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	4 hr.
Storm Type:	NA

Gate Activation Trigger Depth:	2.21 ft.
Return to Normal Depth:	2.20 ft.
Time Gate 1 Activated:	10/15/2021 17:10
Time Gate 2 Activated:	10/15/2021 17:10
Time Gate 1 Returned to Normal:	10/15/2021 20:55
Time Gate 2 Returned to Normal:	10/15/2021 20:50
Percent Capture	36%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	413,726 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	747,681 Gal.
Overflow Volume Prevented:	413,726 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

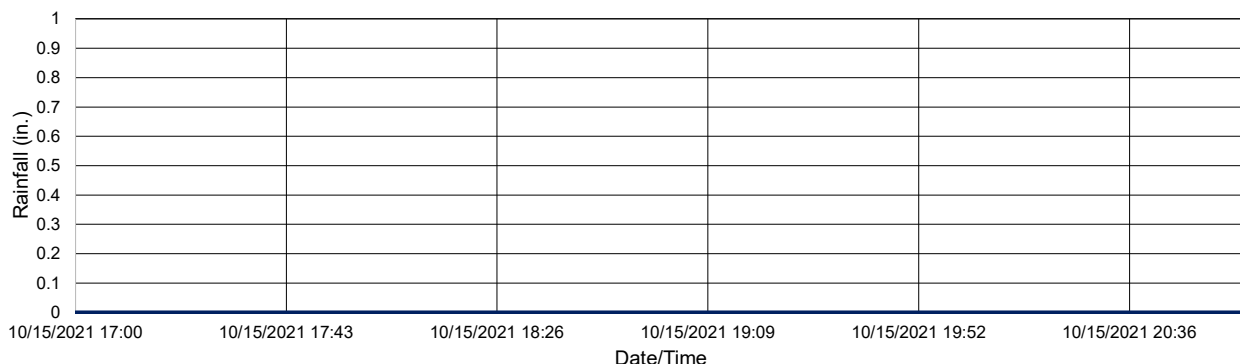
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.

#### RTC Gate Performance



#### Rainfall Accumulation

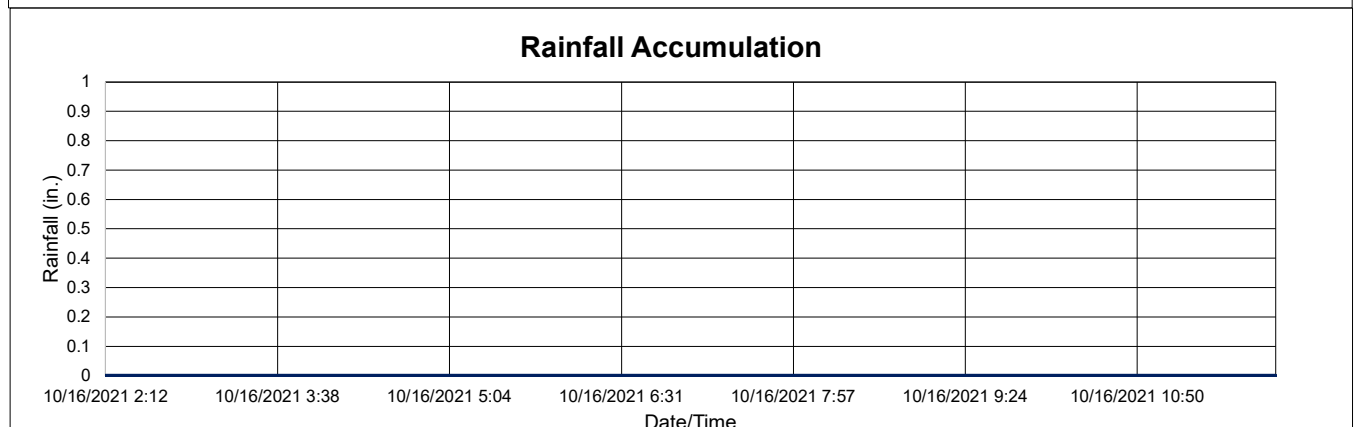
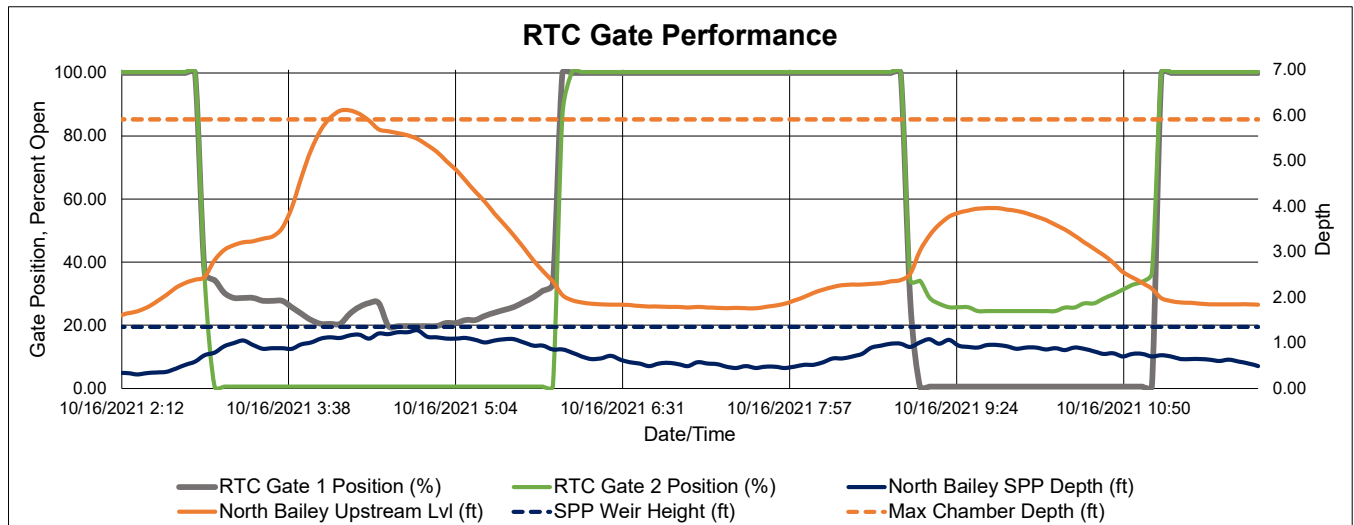


Site:	North Bailey RTC
Analysis Date:	11/15/2021
Event Start Date/Time:	10/16/2021 2:50
Event End Date/Time:	10/16/2021 11:10

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	10 hr.
Storm Type:	NA

Gate Activation Trigger Depth:	2.39 ft.
Return to Normal Depth:	2.19 ft.
Time Gate 1 Activated:	10/16/2021 2:50
Time Gate 2 Activated:	10/16/2021 2:50
Time Gate 1 Returned to Normal:	10/16/2021 11:10
Time Gate 2 Returned to Normal:	10/16/2021 11:05
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	397,629 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	397,629 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm.

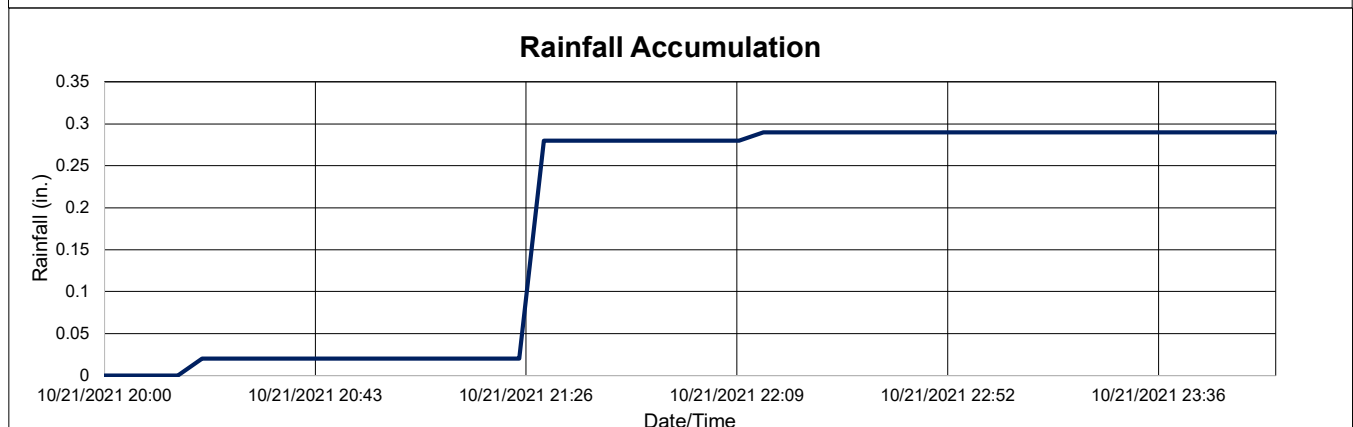
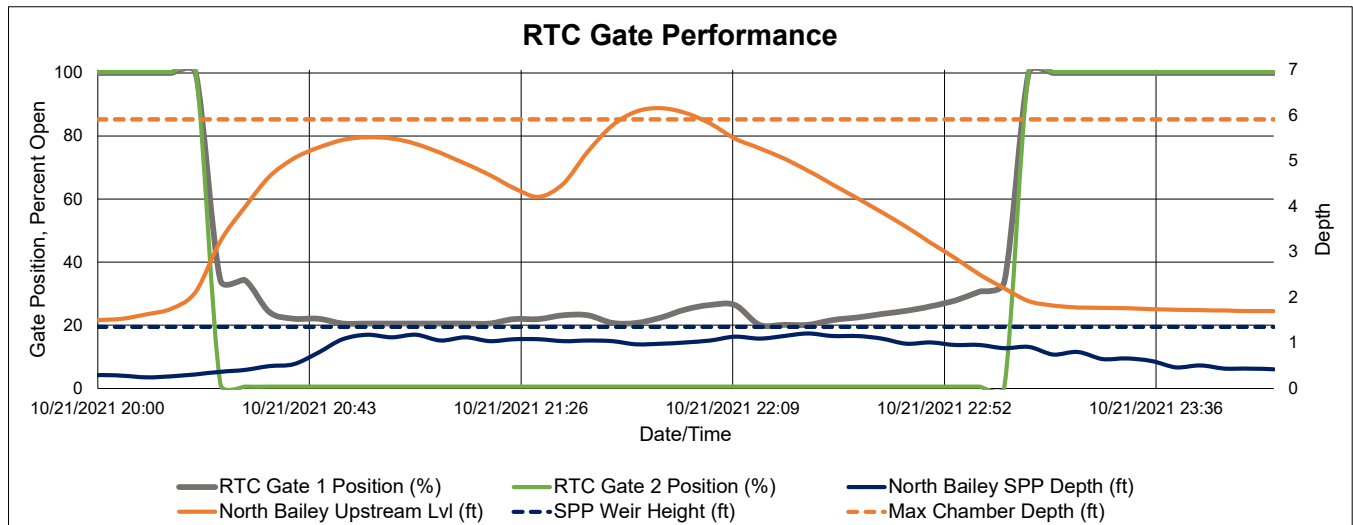


Site:	North Bailey RTC
Analysis Date:	11/15/2021
Event Start Date/Time:	10/21/2021 20:20
Event End Date/Time:	10/21/2021 23:10

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.29 in.
Storm Event Duration:	4 hr.
Storm Type:	<1 yr

Gate Activation Trigger Depth:	2.12 ft.
Return to Normal Depth:	2.20 ft.
Time Gate 1 Activated:	10/21/2021 20:20
Time Gate 2 Activated:	10/21/2021 20:20
Time Gate 1 Returned to Normal:	10/21/2021 23:10
Time Gate 2 Returned to Normal:	10/21/2021 23:05
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	421,620 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	421,620 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.

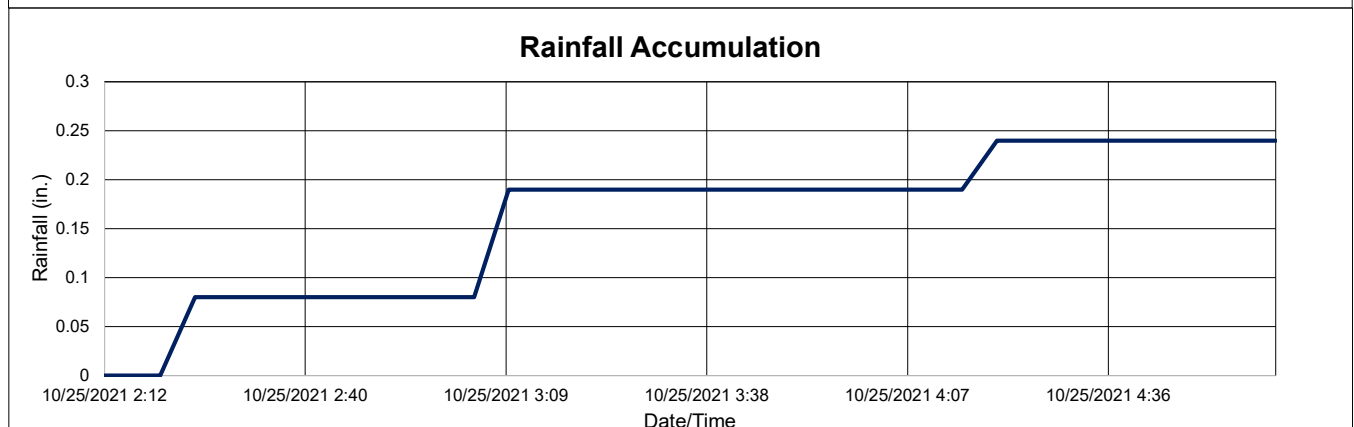
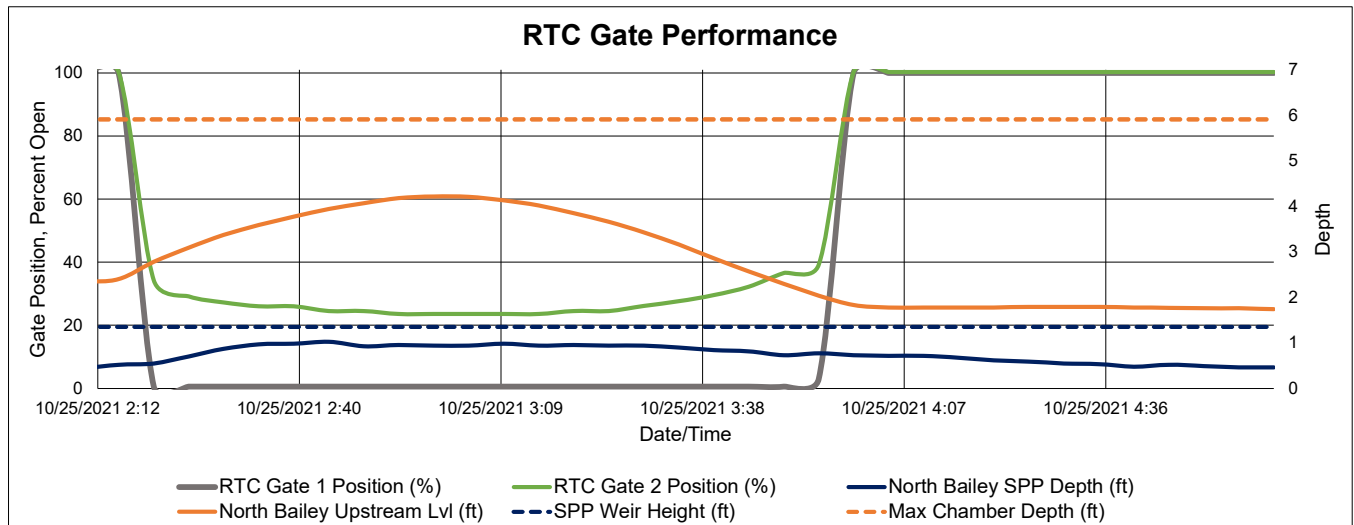


Site:	North Bailey RTC
Analysis Date:	11/15/2021
Event Start Date/Time:	10/25/2021 2:15
Event End Date/Time:	10/25/2021 4:00

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.24 in.
Storm Event Duration:	3 hr.
Storm Type:	<1 yr

Gate Activation Trigger Depth:	2.40 ft.
Return to Normal Depth:	2.04 ft.
Time Gate 1 Activated:	10/25/2021 2:15
Time Gate 2 Activated:	10/25/2021 2:15
Time Gate 1 Returned to Normal:	10/25/2021 4:00
Time Gate 2 Returned to Normal:	10/25/2021 3:55
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	4.22 ft.
Volume Stored:	186,145 Gal.
Unused Storage Volume:	210,577 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	186,145 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.

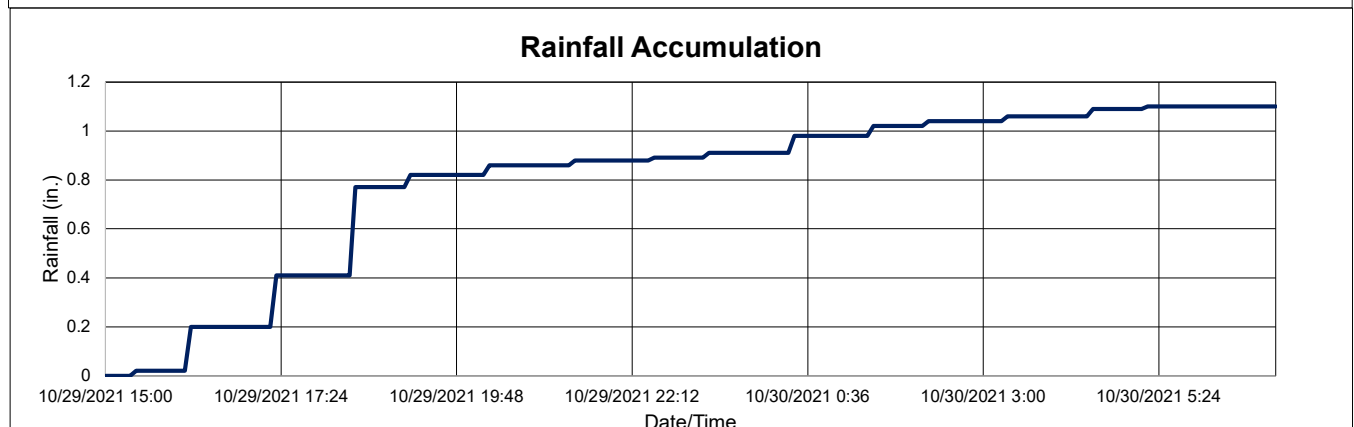
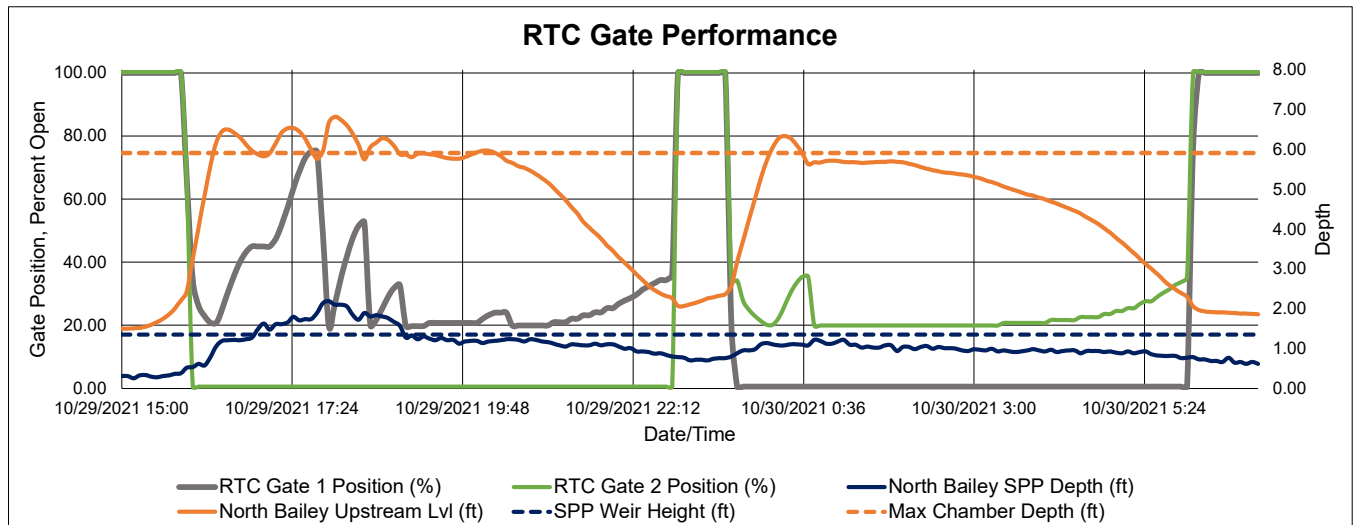


Site:	North Bailey RTC
Analysis Date:	11/15/2021
Event Start Date/Time:	10/29/2021 15:50
Event End Date/Time:	10/30/2021 6:10

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	1.1 in.
Storm Event Duration:	28 hr.
Storm Type:	<1 yr

Gate Activation Trigger Depth:	2.21 ft.
Return to Normal Depth:	2.06 ft.
Time Gate 1 Activated:	10/29/2021 15:50
Time Gate 2 Activated:	10/29/2021 15:50
Time Gate 1 Returned to Normal:	10/30/2021 6:10
Time Gate 2 Returned to Normal:	10/30/2021 6:00
Percent Capture	32%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	413,726 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	873,659 Gal.
Overflow Volume Prevented:	413,726 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	NA
Could SPP activation have been prevented?	No

<b>Recommended Operational Changes/Notes:</b>
Rainfall data sourced from BSA rain gauge station at South Buffalo.



# November 2021 North Bailey RTC KPI Report

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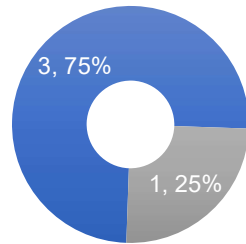
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# North Bailey RTC Monthly Performance Report

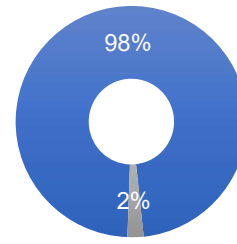
November 2021

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.)  
■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
3	1	1,207,894	27,986
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
11/12/2021	225,738	-	100%
11/13/2021	401,241	27,986	93%
11/14/2021	531,393	-	100%
11/21/2021	49,522	-	100%

Site:	North Bailey RTC
Analysis Date:	12/12/2021
Event Start Date/Time:	11/12/2021 1:45
Event End Date/Time:	11/12/2021 3:10

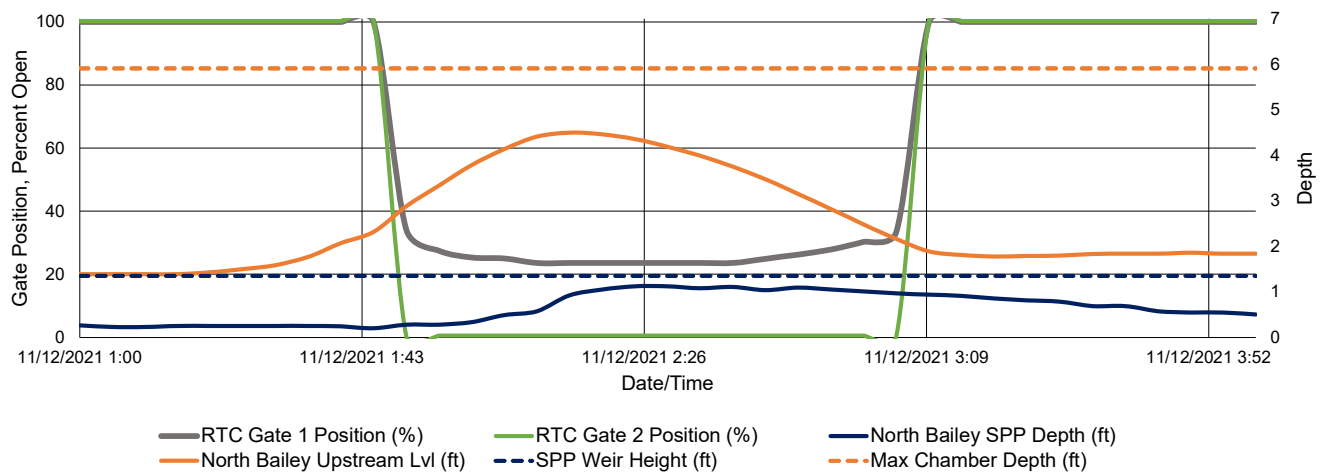
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0 in.
Storm Event Duration:	3 hr.
Storm Type:	NA

Gate Activation Trigger Depth:	2.32 ft.
Return to Normal Depth:	2.16 ft.
Time Gate 1 Activated:	11/12/2021 1:45
Time Gate 2 Activated:	11/12/2021 1:45
Time Gate 1 Returned to Normal:	11/12/2021 3:10
Time Gate 2 Returned to Normal:	11/12/2021 3:05
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	4.50 ft.
Volume Stored:	225,738 Gal.
Unused Storage Volume:	178,199 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	225,738 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

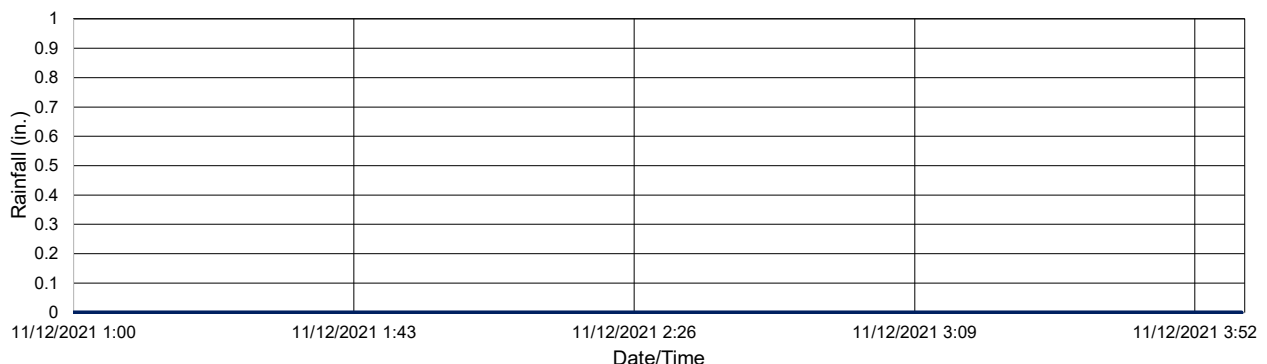
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo. No rainfall recorded at South Buffalo rain gauge during this storm event. This event was likely caused by a localized storm or probable snow melt.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	North Bailey RTC
Analysis Date:	12/12/2021
Event Start Date/Time:	11/13/2021 0:00
Event End Date/Time:	11/13/2021 15:45

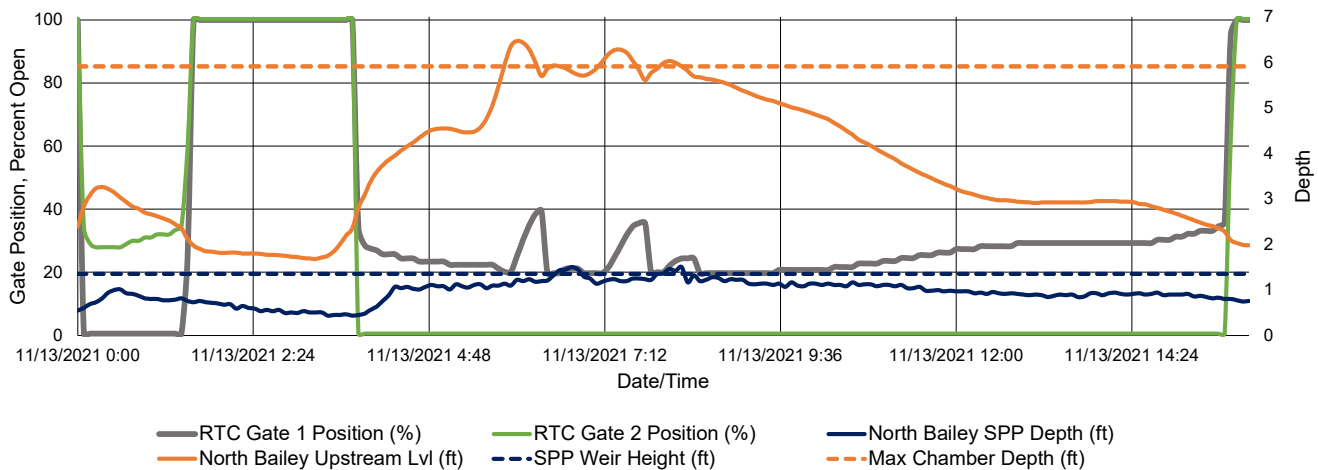
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.01 in.
Storm Event Duration:	16 hr.
Storm Type:	<1 yr

Gate Activation Trigger Depth:	2.39 ft.
Return to Normal Depth:	2.09 ft.
Time Gate 1 Activated:	11/13/2021 0:00
Time Gate 2 Activated:	11/13/2021 0:00
Time Gate 1 Returned to Normal:	11/13/2021 15:45
Time Gate 2 Returned to Normal:	11/13/2021 15:45
Percent Capture	93%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	401,241 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	27,986 Gal.
Overflow Volume Prevented:	401,241 Gal.
SPP Activation Prevented:	No
If No, what is the overflow volume when storage was available?	27,986
Could SPP activation have been prevented?	Yes

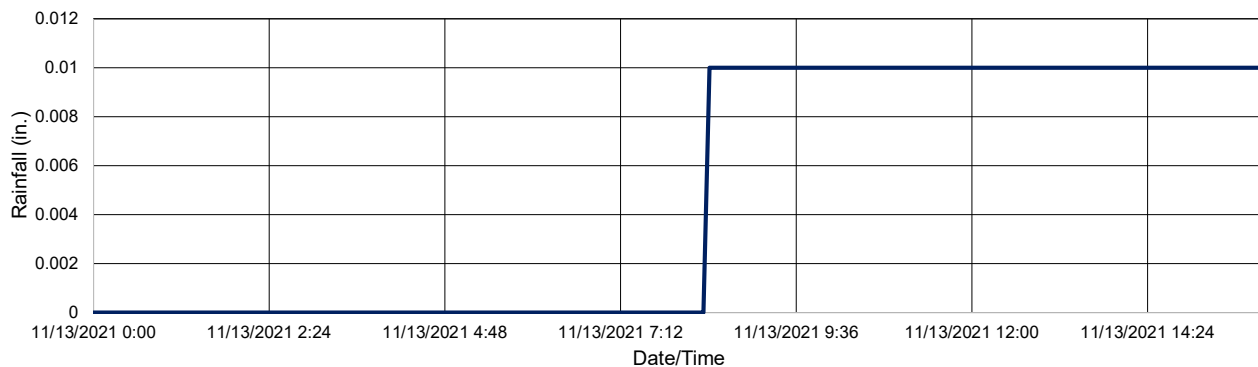
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	North Bailey RTC
Analysis Date:	12/12/2021
Event Start Date/Time:	11/14/2021 23:05
Event End Date/Time:	11/15/2021 20:05

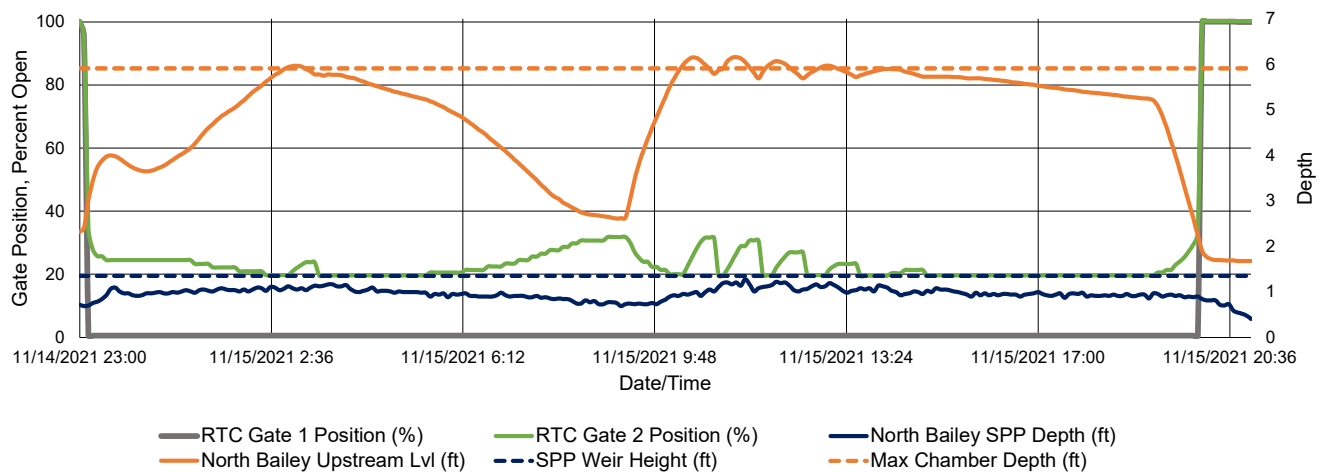
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.02 in.
Storm Event Duration:	22 hr.
Storm Type:	<1 yr

Gate Activation Trigger Depth:	0.72 ft.
Return to Normal Depth:	2.25 ft.
Time Gate 1 Activated:	11/14/2021 23:05
Time Gate 2 Activated:	11/14/2021 23:05
Time Gate 1 Returned to Normal:	11/15/2021 20:05
Time Gate 2 Returned to Normal:	11/15/2021 20:00
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	531,393 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	531,393 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

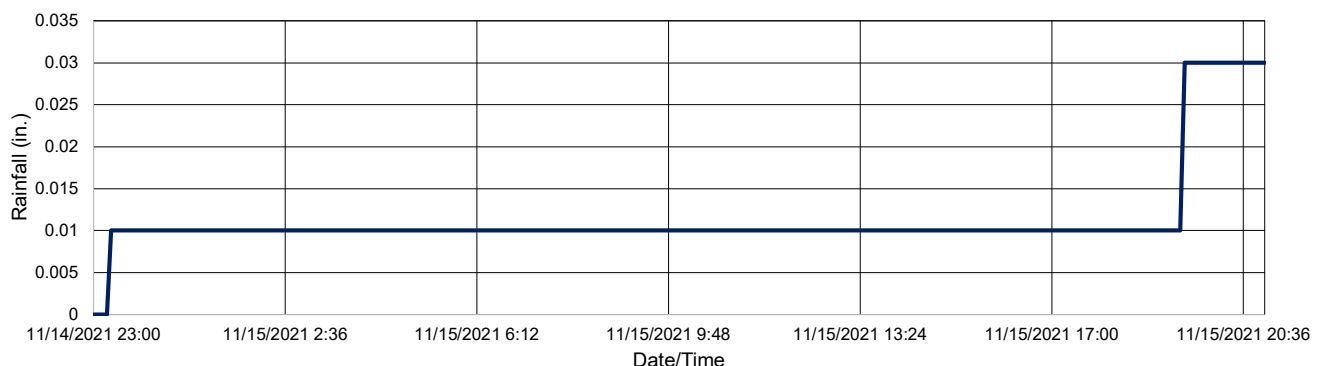
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



Site:	North Bailey RTC
Analysis Date:	12/12/2021
Event Start Date/Time:	11/21/2021 23:45
Event End Date/Time:	11/22/2021 0:30

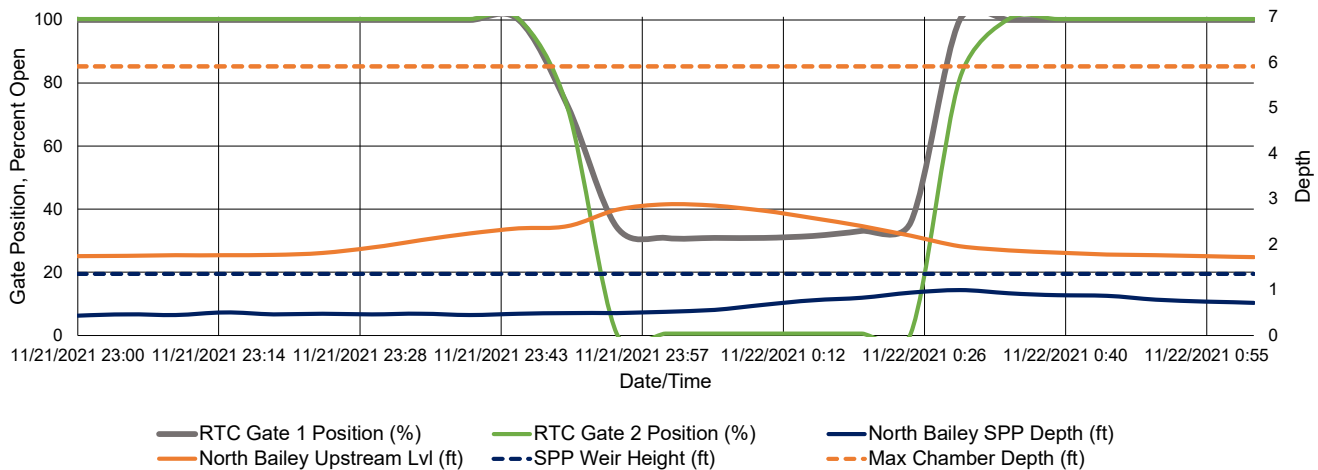
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.03 in.
Storm Event Duration:	2 hr.
Storm Type:	<1 yr

Gate Activation Trigger Depth:	2.35 ft.
Return to Normal Depth:	2.19 ft.
Time Gate 1 Activated:	11/21/2021 23:45
Time Gate 2 Activated:	11/21/2021 23:45
Time Gate 1 Returned to Normal:	11/22/2021 0:30
Time Gate 2 Returned to Normal:	11/22/2021 0:30
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	2.88 ft.
Volume Stored:	49,522 Gal.
Unused Storage Volume:	351,720 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	49,522 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

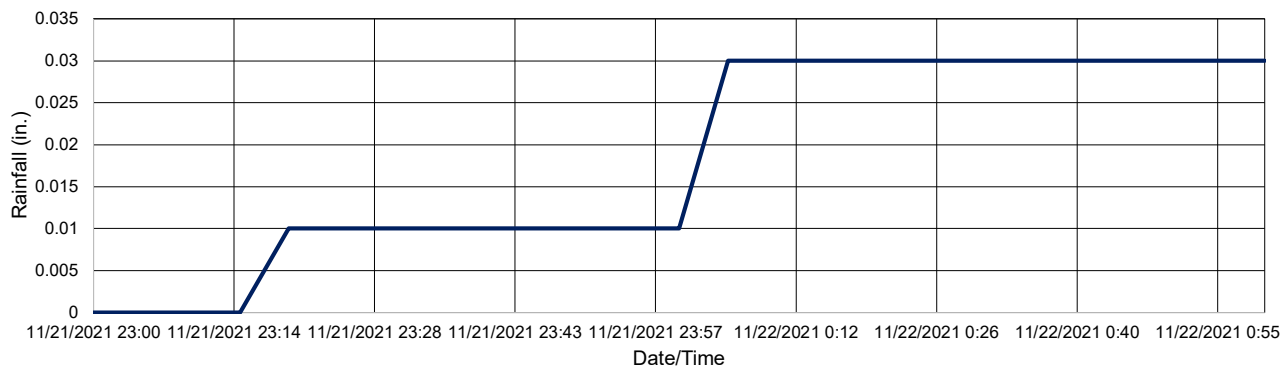
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



# December 2021 North Bailey RTC KPI Report

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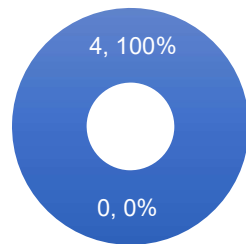


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# North Bailey RTC Monthly Performance Report

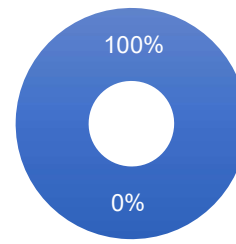
December 2021

## Prevented SPP Events



■ Number of Prevented SPP Overflow Events  
■ Number of Occurred SPP Overflow Events

## Prevented SPP Volume



■ Prevented SPP Overflow Volume (Gal.)  
■ Occurred SPP Overflow Volume (Gal.)

Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (Gal.)	Occurred SPP Overflow Volume (Gal.)
4	0	896,764	-
Event Date	SPP Overflow Volume Prevented	SPP Overflow Volume Occurred	Percent Capture
12/5/2021	119,657	-	100%
12/6/2021	56,635	-	100%
12/11/2021	322,843	-	100%
12/25/2021	397,629	-	100%

Site:	North Bailey RTC
Analysis Date:	1/11/2022
Event Start Date/Time:	12/5/2021 22:45
Event End Date/Time:	12/6/2021 0:20

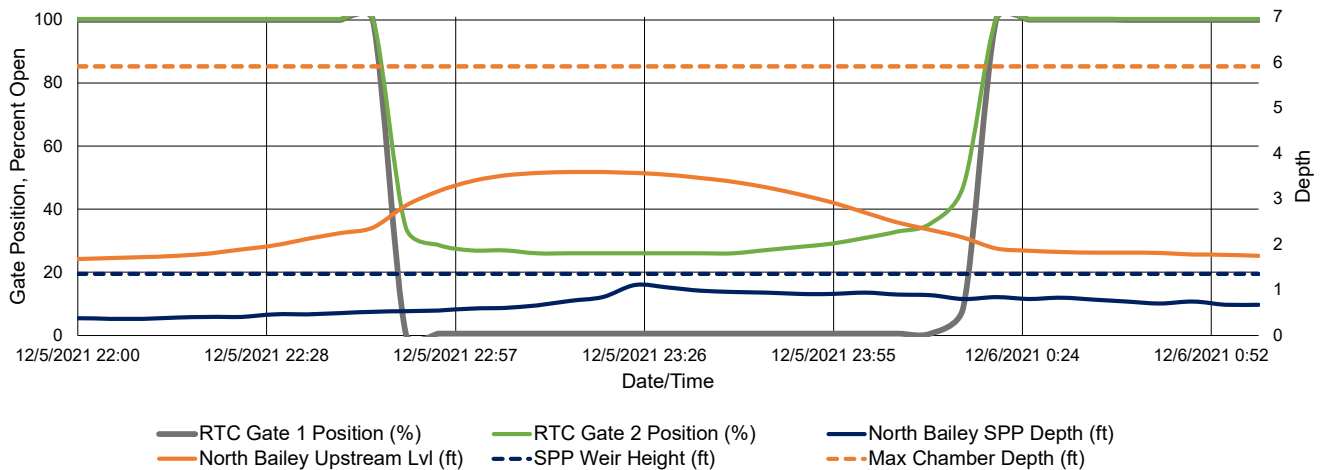
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.14 in.
Storm Event Duration:	3 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.37 ft.
Return to Normal Depth:	2.15 ft.
Time Gate 1 Activated:	12/5/2021 22:45
Time Gate 2 Activated:	12/5/2021 22:45
Time Gate 1 Returned to Normal:	12/6/2021 0:20
Time Gate 2 Returned to Normal:	12/6/2021 0:15
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	3.59 ft.
Volume Stored:	119,657 Gal.
Unused Storage Volume:	279,780 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	119,657 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

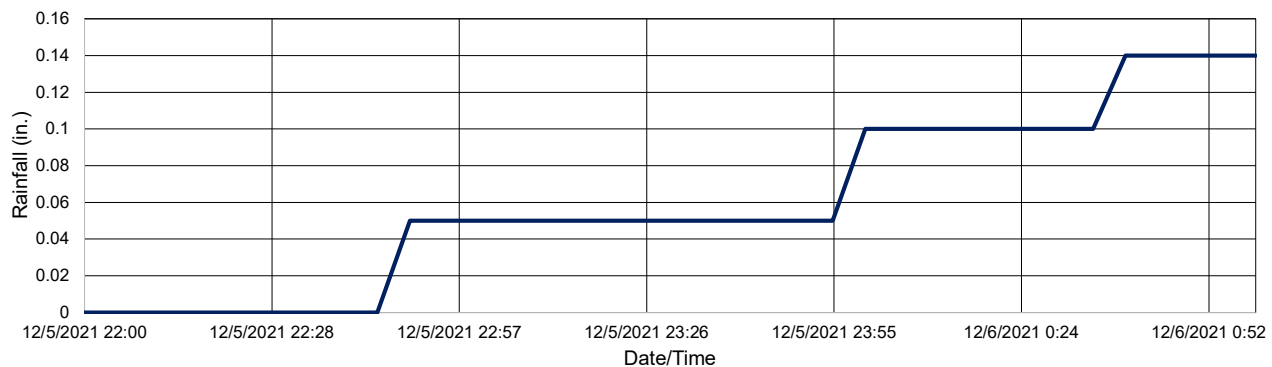
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation





Site:	North Bailey RTC
Analysis Date:	1/11/2022
Event Start Date/Time:	12/6/2021 7:00
Event End Date/Time:	12/6/2021 7:55

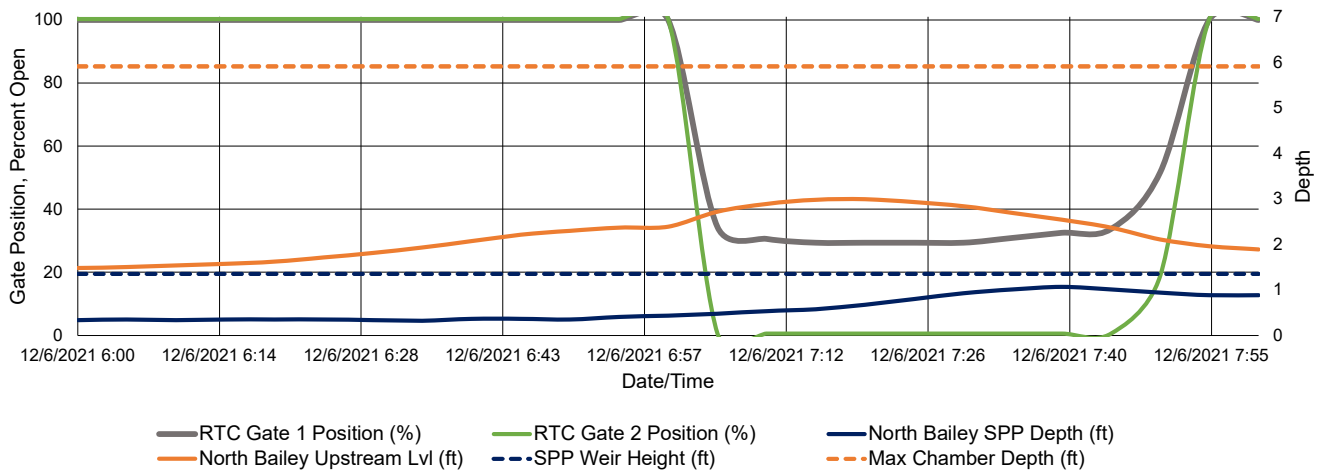
Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.12 in.
Storm Event Duration:	2 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.39 ft.
Return to Normal Depth:	2.11 ft.
Time Gate 1 Activated:	12/6/2021 7:00
Time Gate 2 Activated:	12/6/2021 7:00
Time Gate 1 Returned to Normal:	12/6/2021 7:55
Time Gate 2 Returned to Normal:	12/6/2021 7:50
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	2.99 ft.
Volume Stored:	56,635 Gal.
Unused Storage Volume:	340,994 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	56,635 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

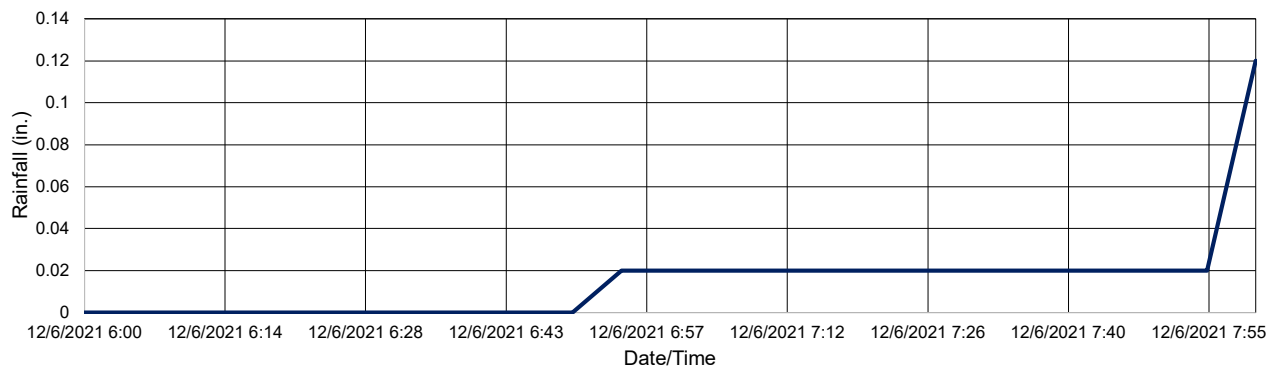
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.

#### RTC Gate Performance



#### Rainfall Accumulation



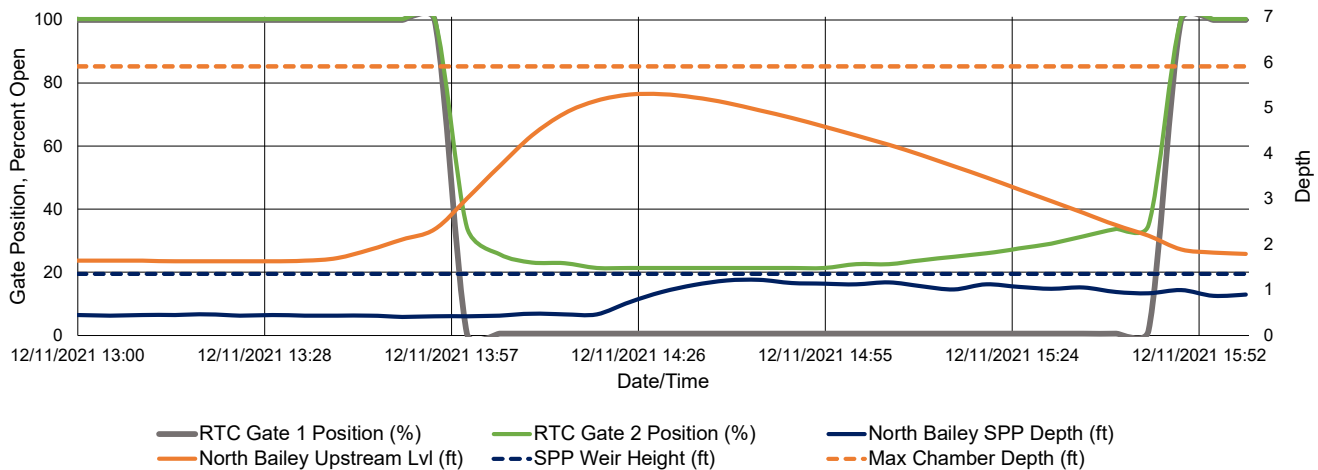
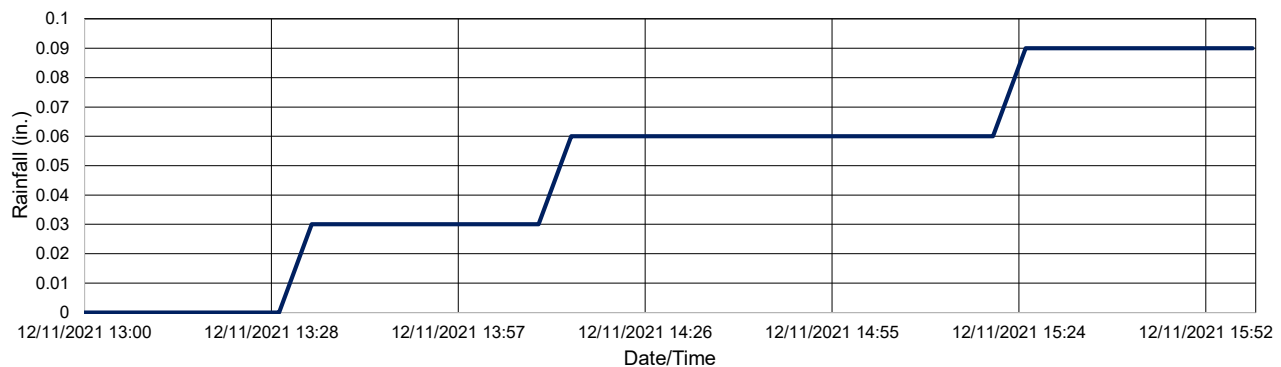
Site:	North Bailey RTC
Analysis Date:	1/11/2022
Event Start Date/Time:	12/11/2021 13:55
Event End Date/Time:	12/11/2021 15:50

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.09 in.
Storm Event Duration:	3 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.33 ft.
Return to Normal Depth:	2.19 ft.
Time Gate 1 Activated:	12/11/2021 13:55
Time Gate 2 Activated:	12/11/2021 13:55
Time Gate 1 Returned to Normal:	12/11/2021 15:50
Time Gate 2 Returned to Normal:	12/11/2021 15:45
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.30 ft.
Volume Stored:	322,843 Gal.
Unused Storage Volume:	80,197 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	322,843 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

**Recommended Operational Changes/Notes:**

Rainfall data sourced from BSA rain gauge station at South Buffalo.

**RTC Gate Performance****Rainfall Accumulation**

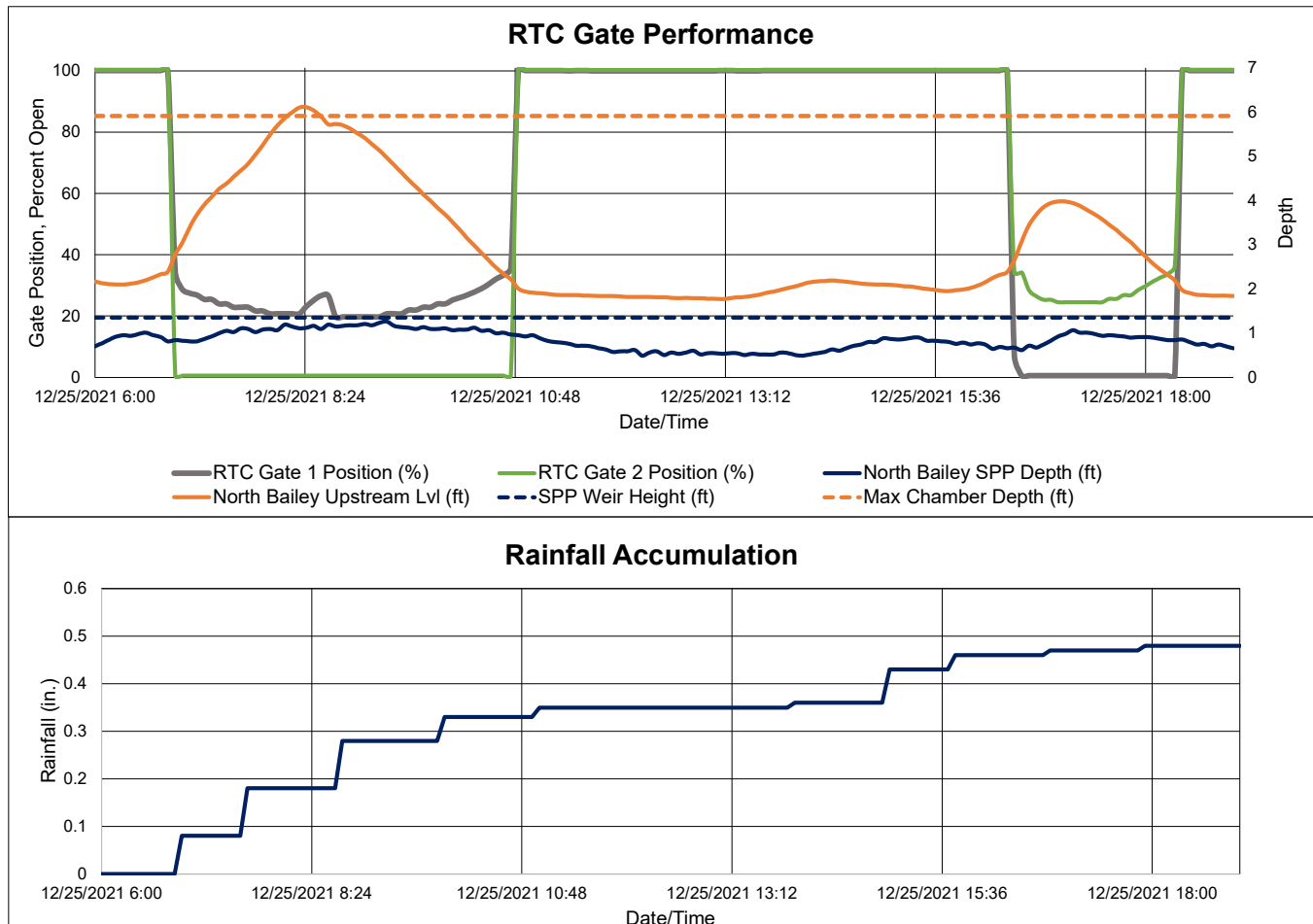
Site:	North Bailey RTC
Analysis Date:	1/11/2022
Event Start Date/Time:	12/25/2021 6:50
Event End Date/Time:	12/25/2021 18:25

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.48 in.
Storm Event Duration:	12 hr.
Storm Type:	< 1 yr.

Gate Activation Trigger Depth:	2.39 ft.
Return to Normal Depth:	2.19 ft.
Time Gate 1 Activated:	12/25/2021 6:50
Time Gate 2 Activated:	12/25/2021 6:50
Time Gate 1 Returned to Normal:	12/25/2021 18:25
Time Gate 2 Returned to Normal:	12/25/2021 18:20
Percent Capture	100%
Depth of Weir	5.91 ft.
Maximum Depth Reached:	5.91 ft.
Volume Stored:	397,629 Gal.
Unused Storage Volume:	0 Gal.
Overflow Volume:	0 Gal.
Overflow Volume Prevented:	397,629 Gal.
SPP Activation Prevented:	Yes
If No, what is the overflow volume when storage was available?	N/A
Could SPP activation have been prevented?	N/A

#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA rain gauge station at South Buffalo.



# July 2021 Smith St. RTC KPI Report

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# Smith St. RTC Monthly Performance Report

July 2021

Event Date	Volume Captured (gal)	Did a seiche occur during wet weather? (Note: if a seiche occurs during wet weather, volume captured will be slightly overestimated due to the inclusion of the seiche)	Event drain flow threshold (MGD)
7/8/2021	3,718,779	No	1.25
7/11/2021	317,779	No	1.25
7/13/2021	2,812,372	No	1.25
7/17/2021	1,865,480	No	1.25
7/25/2021	260,766	No	1.25
7/29/2021	866,372	No	1.25
<b>Total Volume Captured (gal)</b>	<b>9,841,548</b>		

Site:	Smith RTC
Analysis Date:	8/12/2021
Event Start Date/Time:	7/8/2021 13:45
Event End Date/Time:	7/9/2021 3:10

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.92 in.
Storm Event Duration:	15 hrs.
Storm Type:	< 1 yr.

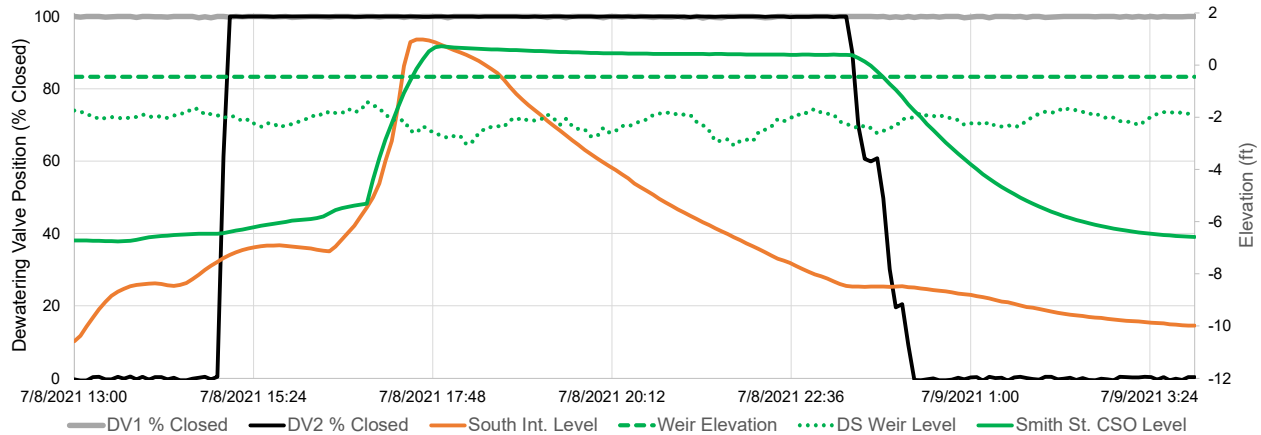
Time Lead Dewatering Valve Closed	7/8/2021 15:00
Time Lead Dewatering Valve Opened	7/8/2021 23:25
Elevation of Weir	-0.45 ft.
Maximum Elevation Reached of Smith St. CSO:	0.72 ft.
Event Drain Flow Threshold	1.25 MGD
Total Volume Captured	3,718,779 Gal.
Did seiche occur during wet weather?	No

\*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

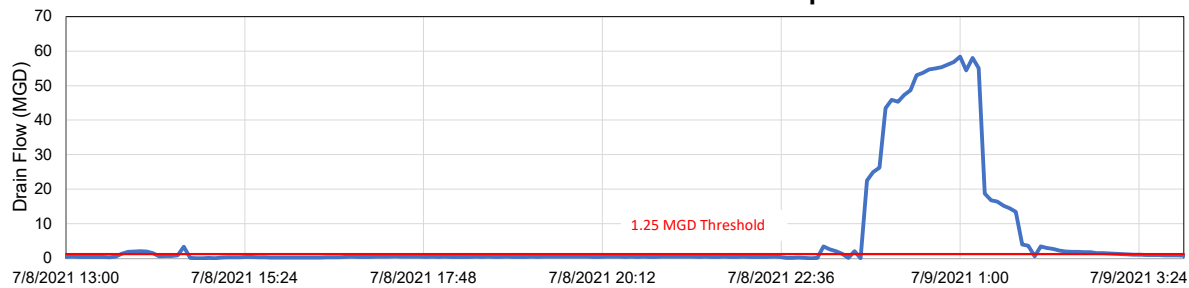
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA's South Buffalo rain gauge.

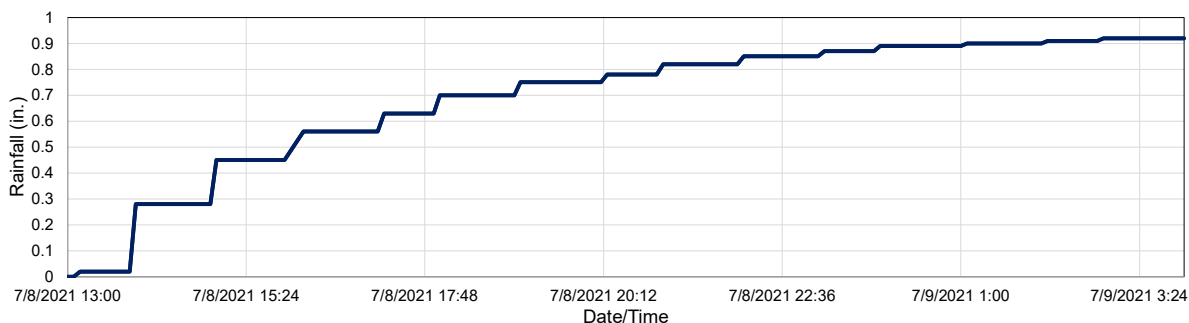
#### RTC Structure Performance



#### Drain Flow to South Interceptor



#### Rainfall Accumulation



Site:	Smith RTC
Analysis Date:	8/12/2021
Event Start Date/Time:	7/11/2021 23:50
Event End Date/Time:	7/12/2021 12:40

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.01 in.
Storm Event Duration:	14 hrs.
Storm Type:	< 1 yr.

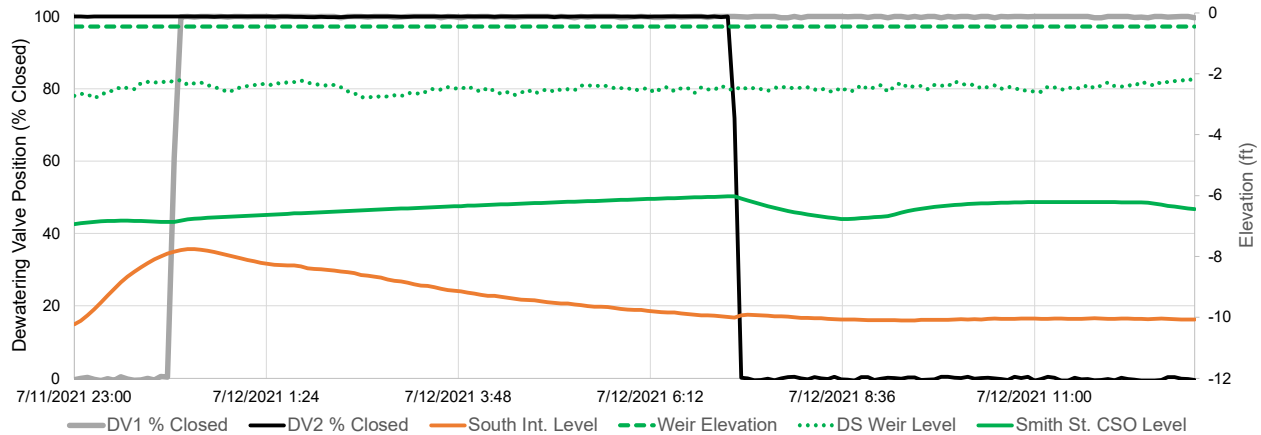
Time Lead Dewatering Valve Closed	7/12/2021 0:15
Time Lead Dewatering Valve Opened	7/12/2021 7:15
Elevation of Weir	-0.45 ft.
Maximum Elevation Reached of Smith St. CSO:	-6.02 ft.
Event Drain Flow Threshold	1.25 MGD
Total Volume Captured	317,779 Gal.
Did seiche occur during wet weather?	No

\*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

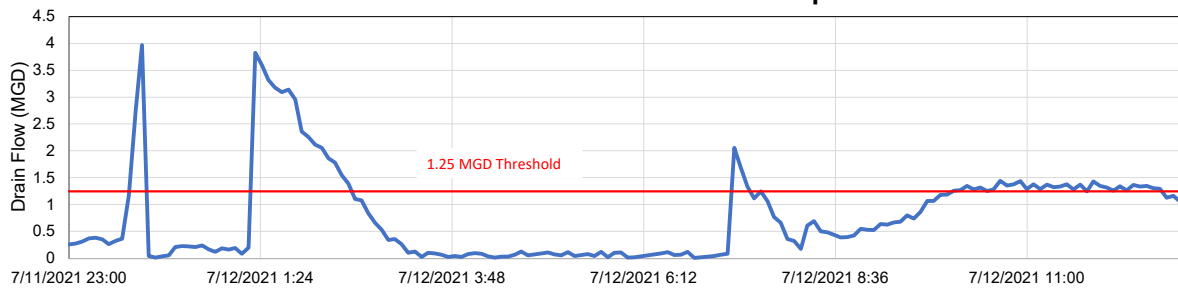
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA's South Buffalo rain gauge.

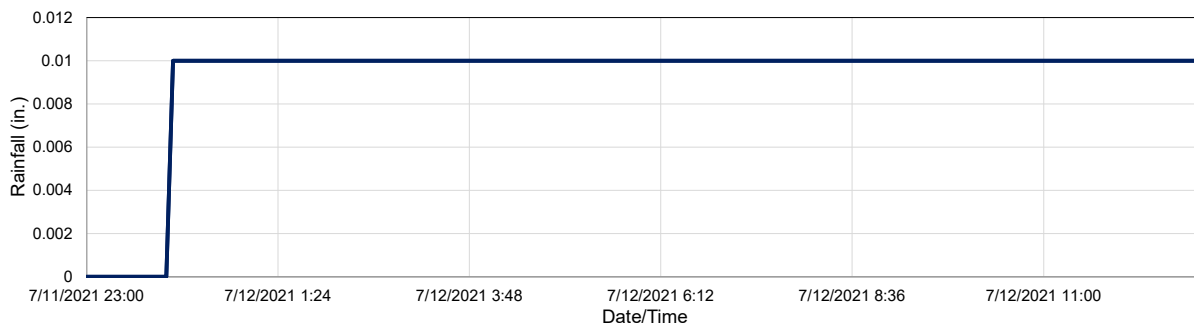
#### RTC Structure Performance



#### Drain Flow to South Interceptor



#### Rainfall Accumulation



Site:	Smith RTC
Analysis Date:	8/12/2021
Event Start Date/Time:	7/13/2021 23:40
Event End Date/Time:	7/15/2021 22:05

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.03 in.
Storm Event Duration:	48 hrs.
Storm Type:	< 1 yr.

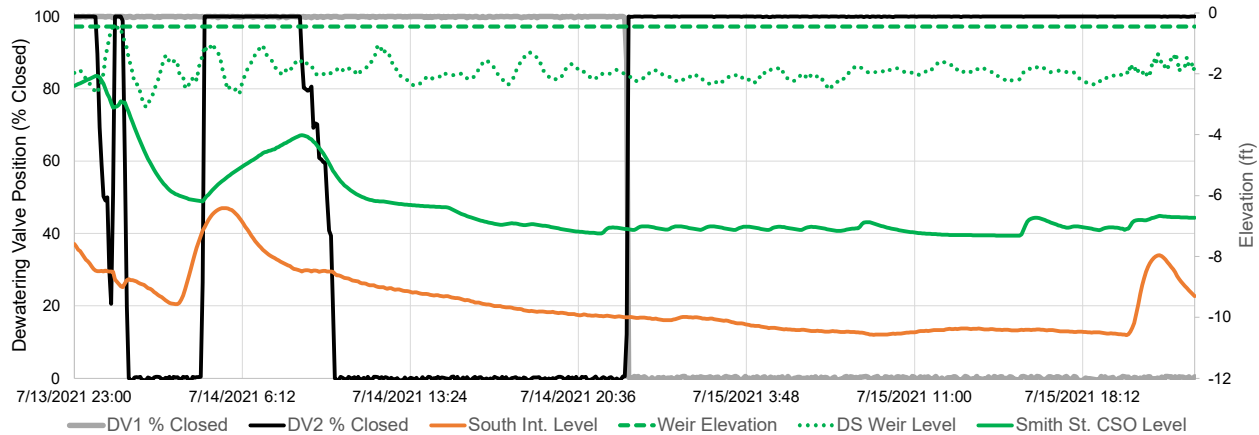
Time Lead Dewatering Valve Closed	7/13/2021 23:00
Time Lead Dewatering Valve Opened	7/14/2021 22:40
Elevation of Weir	-0.45 ft.
Maximum Elevation Reached of Smith St. CSO:	-2.07 ft.
Event Drain Flow Threshold	1.25 MGD
Total Volume Captured	2,812,372 Gal.
Did seiche occur during wet weather?	No

\*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

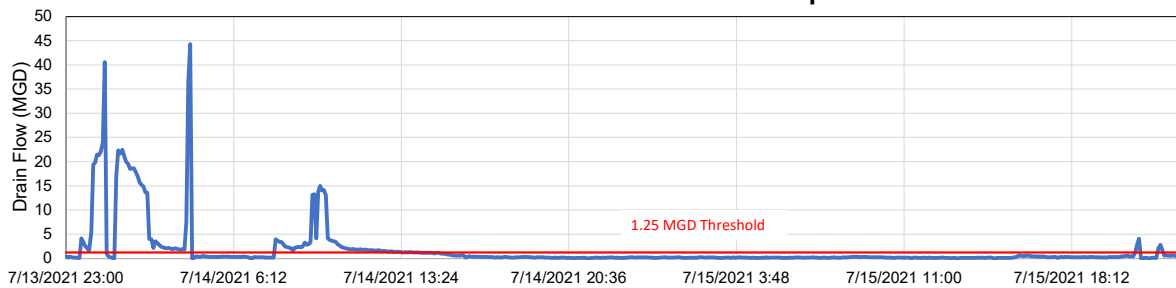
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA's South Buffalo rain gauge.

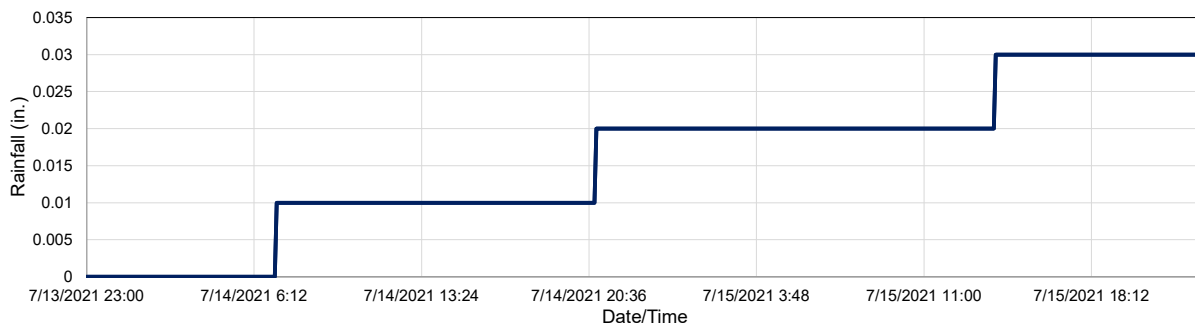
#### RTC Structure Performance



#### Drain Flow to South Interceptor



#### Rainfall Accumulation





Site:	Smith RTC
Analysis Date:	8/12/2021
Event Start Date/Time:	7/17/2021 0:25
Event End Date/Time:	7/18/2021 23:25

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.06 in.
Storm Event Duration:	48 hrs.
Storm Type:	< 1 yr.

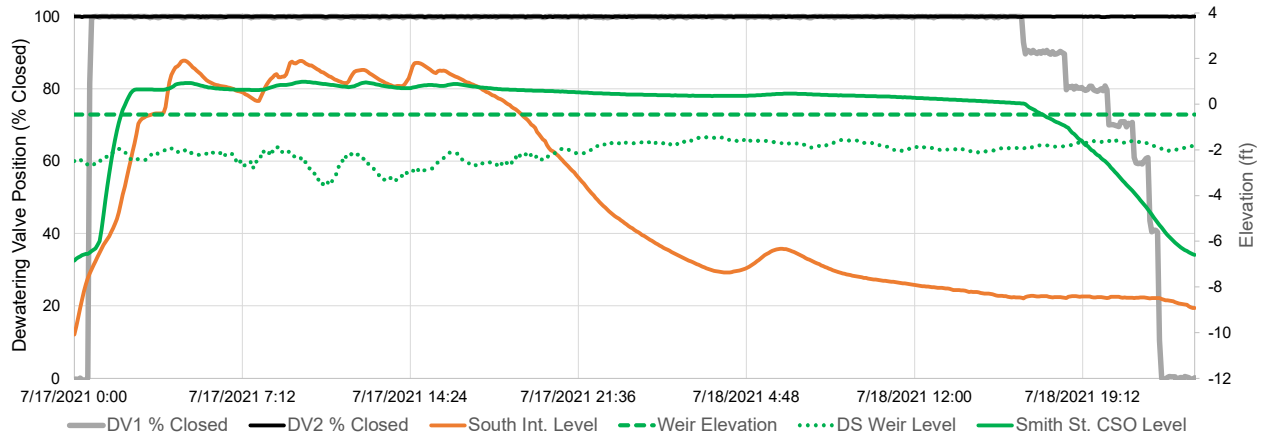
Time Lead Dewatering Valve Closed	7/17/2021 0:40
Time Lead Dewatering Valve Opened	7/18/2021 16:40
Elevation of Weir	-0.45 ft.
Maximum Elevation Reached of Smith St. CSO:	0.98 ft.
Event Drain Flow Threshold	1.25 MGD
Total Volume Captured	1,865,480 Gal.
Did seiche occur during wet weather?	No

\*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

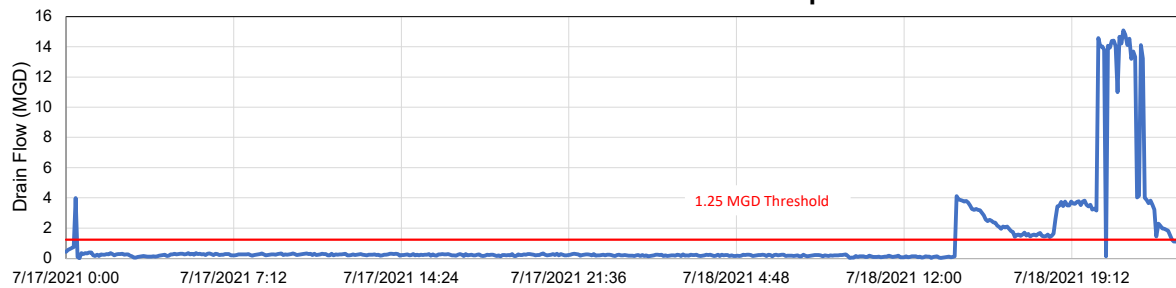
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA's South Buffalo rain gauge.

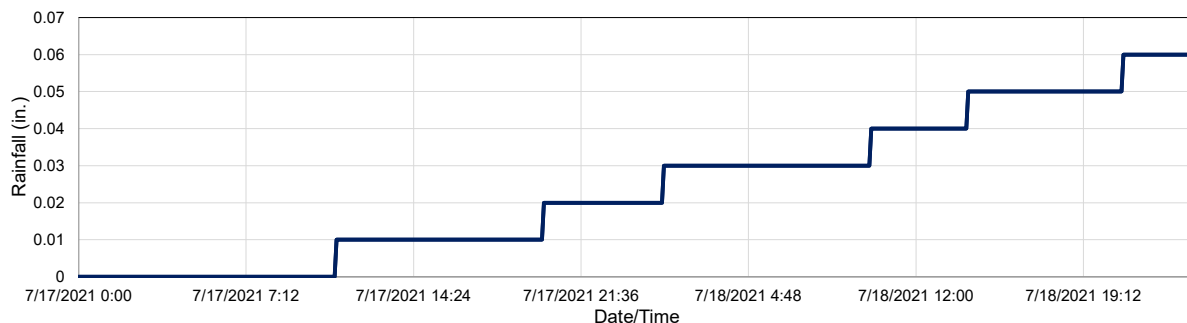
#### RTC Structure Performance



#### Drain Flow to South Interceptor



#### Rainfall Accumulation



Site:	Smith RTC
Analysis Date:	8/12/2021
Event Start Date/Time:	7/25/2021 8:45
Event End Date/Time:	7/28/2021 0:30

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.03 in.
Storm Event Duration:	66 hrs.
Storm Type:	< 1 yr.

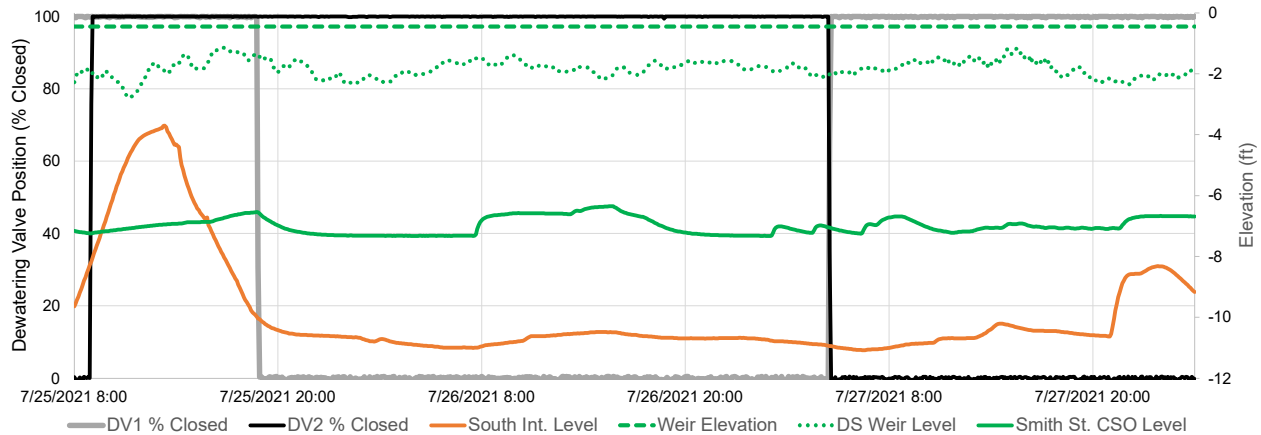
Time Lead Dewatering Valve Closed	7/25/2021 9:00
Time Lead Dewatering Valve Opened	7/25/2021 18:50
Elevation of Weir	-0.45 ft.
Maximum Elevation Reached of Smith St. CSO:	-6.35 ft.
Event Drain Flow Threshold	1.25 MGD
Total Volume Captured	260,766 Gal.
Did seiche occur during wet weather?	No

\*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

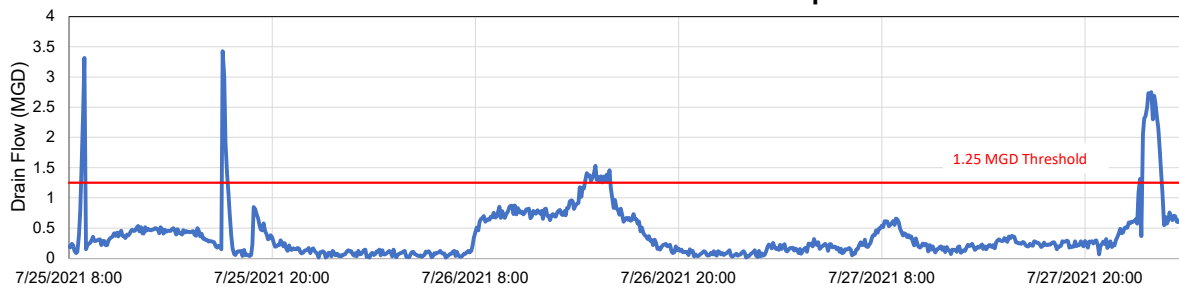
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA's South Buffalo rain gauge.

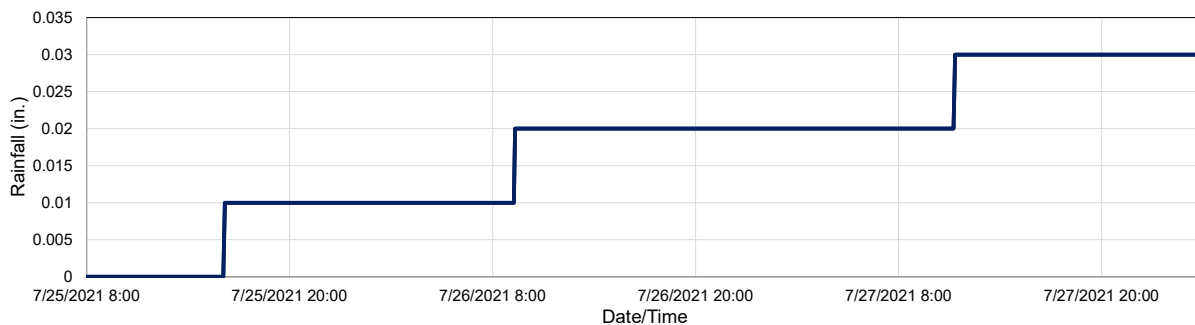
#### RTC Structure Performance



#### Drain Flow to South Interceptor



#### Rainfall Accumulation



Site:	Smith RTC
Analysis Date:	8/12/2021
Event Start Date/Time:	7/29/2021 11:00
Event End Date/Time:	7/29/2021 20:05

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.01 in.
Storm Event Duration:	11 hrs.
Storm Type:	< 1 yr.

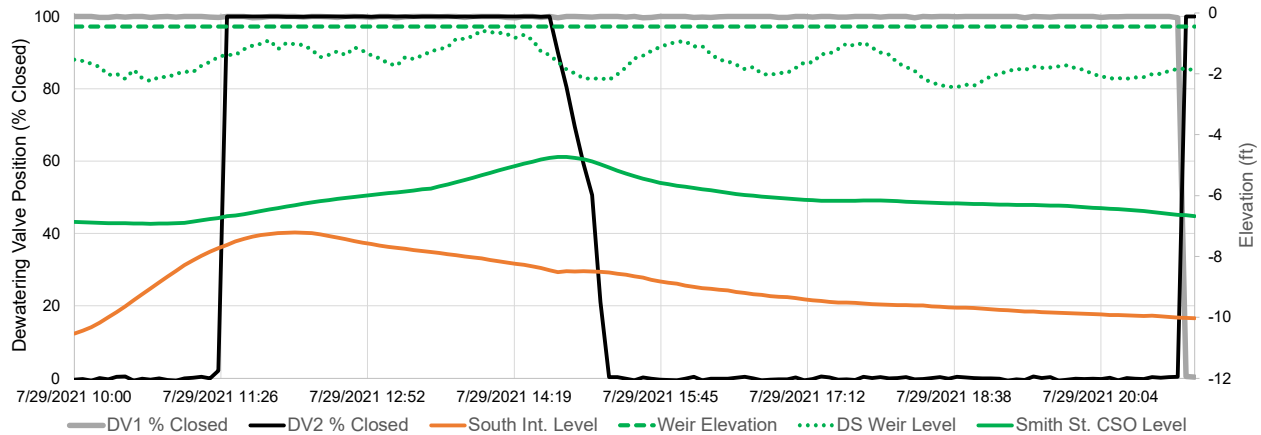
Time Lead Dewatering Valve Closed	7/29/2021 11:25
Time Lead Dewatering Valve Opened	7/29/2021 20:55
Elevation of Weir	-0.45 ft.
Maximum Elevation Reached of Smith St. CSO:	-4.73 ft.
Event Drain Flow Threshold	1.25 MGD
Total Volume Captured	866,372 Gal.
Did seiche occur during wet weather?	No

\*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

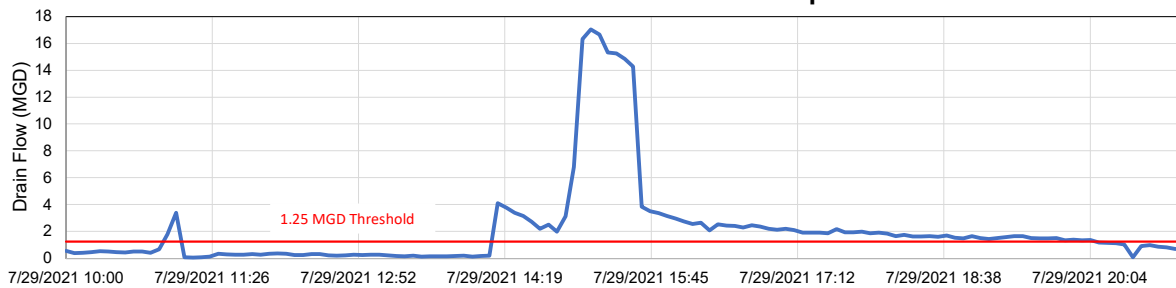
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA's South Buffalo rain gauge.

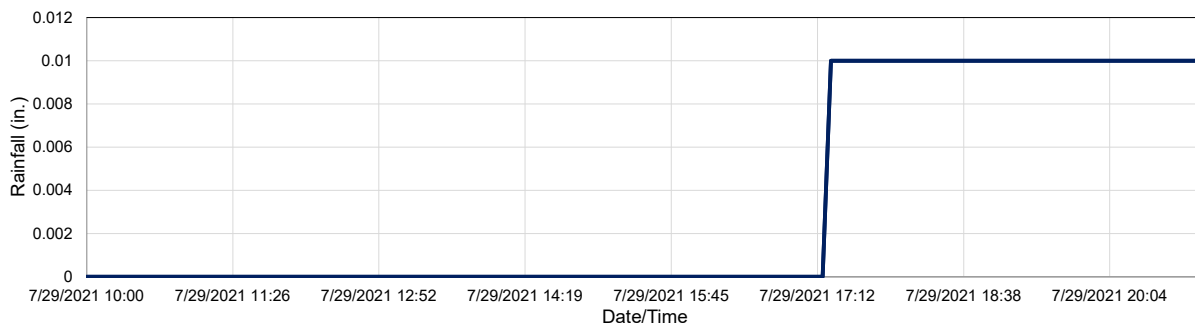
#### RTC Structure Performance



#### Drain Flow to South Interceptor



#### Rainfall Accumulation



# August 2021 Smith St. RTC KPI Report

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# Smith St. RTC Monthly Performance Report

August 2021

Event Date	Volume Captured (gal)	Did a seiche occur during wet weather? (Note: if a seiche occurs during wet weather, volume captured will be slightly overestimated due to the inclusion of the seiche)	
		Event drain flow threshold (MGD)	
8/11/2021	4,686,819	Yes	1.25
8/14/2021	3,141,746	Yes	1.25
8/30/2021	5,215,629	Yes	1.25
<b>Total Volume Captured (gal)</b>	<b>13,044,194</b>		

Site:	Smith RTC
Analysis Date:	9/10/2021
Event Start Date/Time:	8/11/2021 7:45
Event End Date/Time:	8/12/2021 2:05

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.01 in.
Storm Event Duration:	20 hrs.
Storm Type:	< 1 yr.

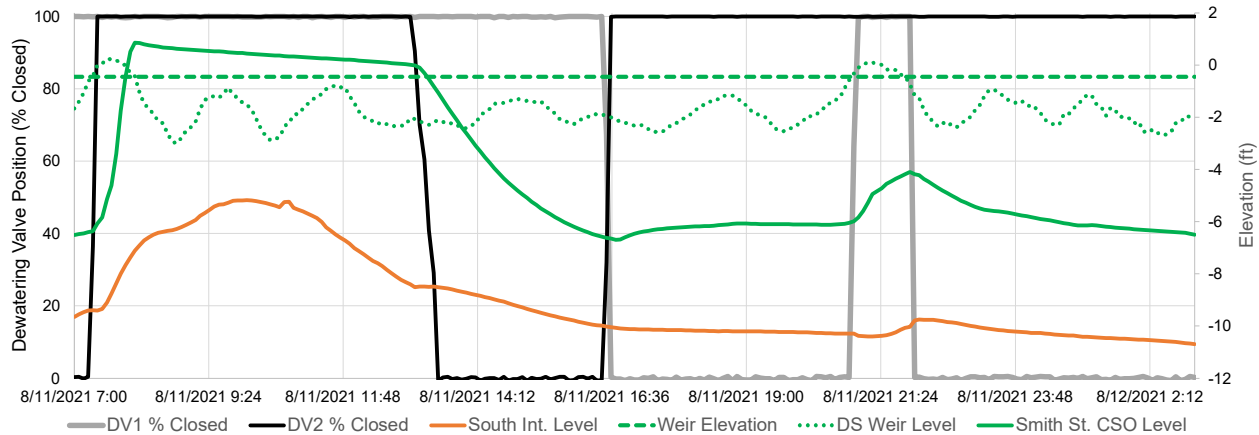
Time Lead Dewatering Valve Closed	8/11/2021 7:20
Time Lead Dewatering Valve Opened	8/11/2021 22:00
Elevation of Weir	-0.45 ft.
Maximum Elevation Reached of Smith St. CSO:	0.85 ft.
Event Drain Flow Threshold	1.25 MGD
Total Volume Captured	4,686,819 Gal.
Did seiche occur during wet weather?	Yes

\*Note: if seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

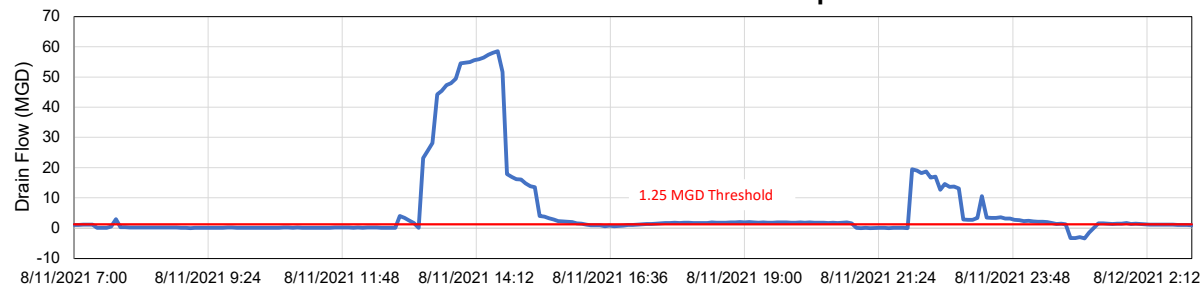
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA's South Buffalo rain gauge.

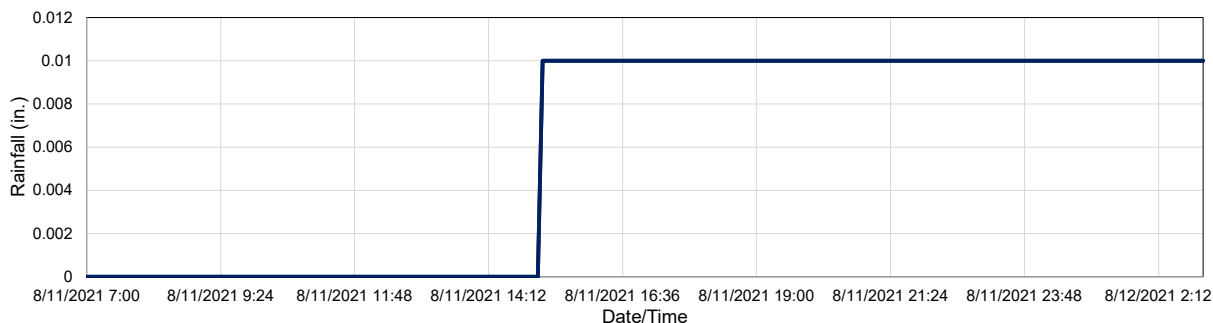
#### RTC Structure Performance



#### Drain Flow to South Interceptor



#### Rainfall Accumulation



Site:	Smith RTC
Analysis Date:	9/10/2021
Event Start Date/Time:	8/14/2021 0:25
Event End Date/Time:	8/15/2021 3:15

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.01 in.
Storm Event Duration:	28 hrs.
Storm Type:	< 1 yr.

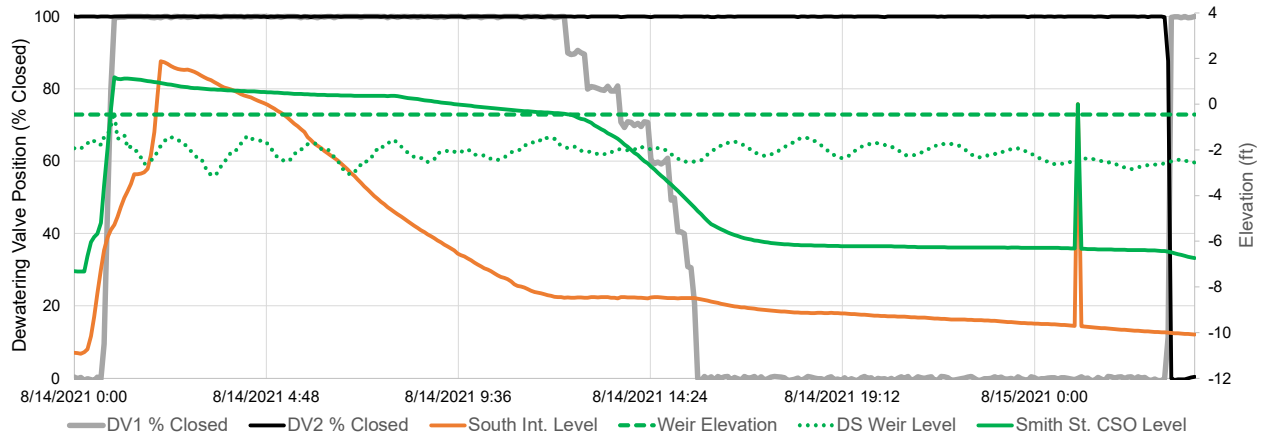
Time Lead Dewatering Valve Closed	8/14/2021 0:45
Time Lead Dewatering Valve Opened	8/15/2021 1:10
Elevation of Weir	-0.45 ft.
Maximum Elevation Reached of Smith St. CSO:	1.18 ft.
Event Drain Flow Threshold	1.25 MGD
Total Volume Captured	3,141,746 Gal.
Did seiche occur during wet weather?	Yes

\*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

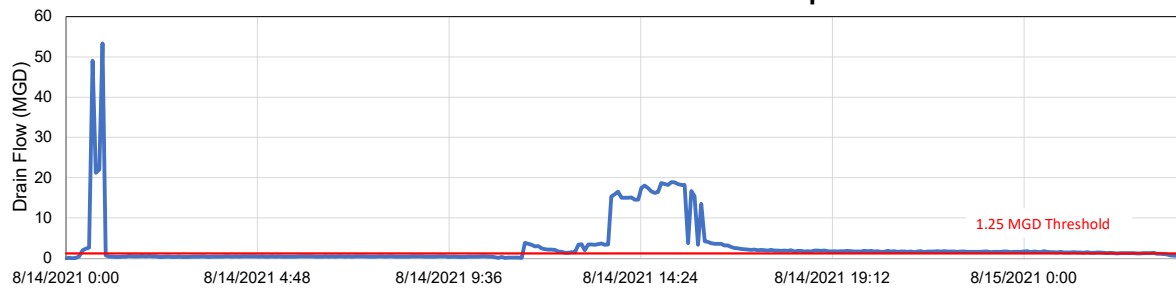
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA's South Buffalo rain gauge.

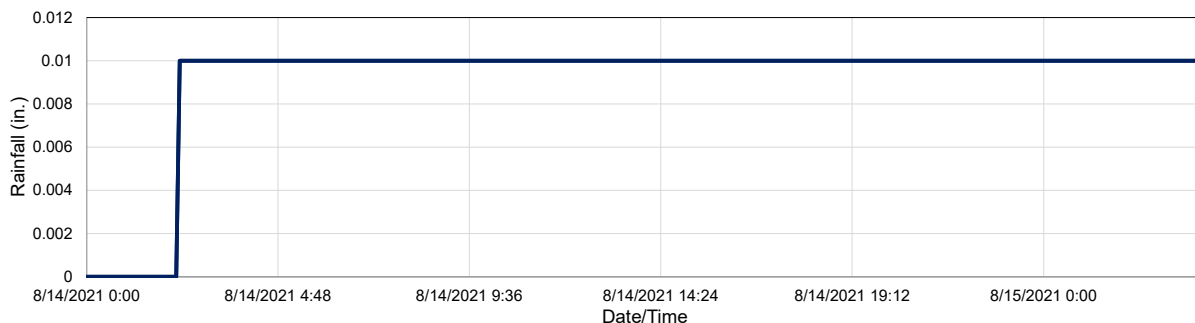
#### RTC Structure Performance



#### Drain Flow to South Interceptor



#### Rainfall Accumulation



Site:	Smith RTC
Analysis Date:	9/10/2021
Event Start Date/Time:	8/30/2021 1:10
Event End Date/Time:	8/31/2021 16:30

Analyst Name, Organization:	Rucha Shah, Arcadis
Total Rainfall Accumulation:	0.01 in.
Storm Event Duration:	42 hrs.
Storm Type:	< 1 yr.

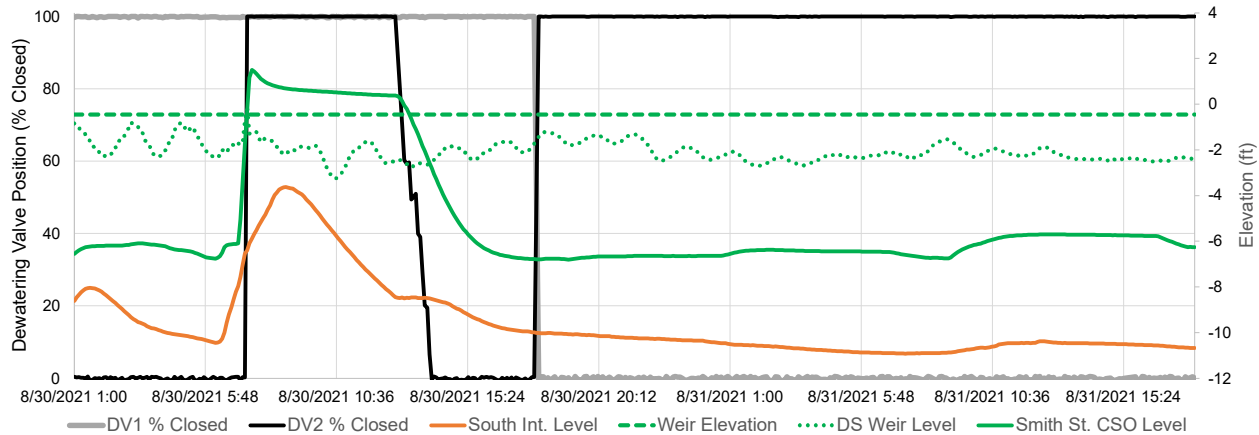
Time Lead Dewatering Valve Closed	8/30/2021 7:20
Time Lead Dewatering Valve Opened	8/30/2021 17:55
Elevation of Weir	-0.45 ft.
Maximum Elevation Reached of Smith St. CSO:	1.50 ft.
Event Drain Flow Threshold	1.25 MGD
Total Volume Captured	5,215,629 Gal.
Did seiche occur during wet weather?	Yes

\*Note: If seiche occurred during wet weather, volume captured will be slightly overestimated due to inclusion of the seiche.

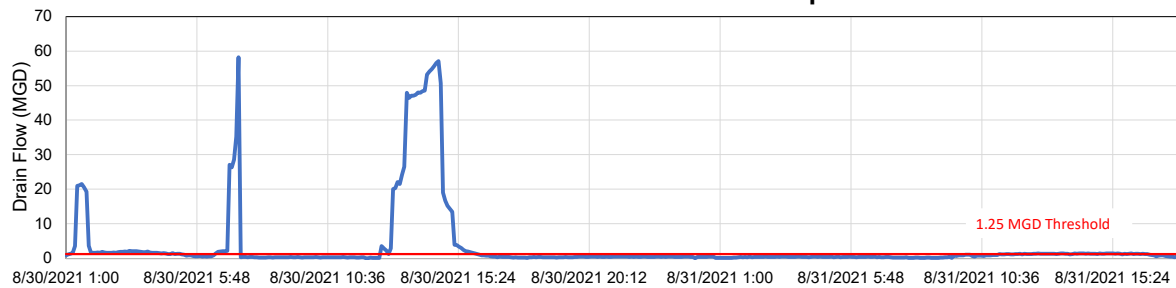
#### Recommended Operational Changes/Notes:

Rainfall data sourced from BSA's South Buffalo rain gauge.

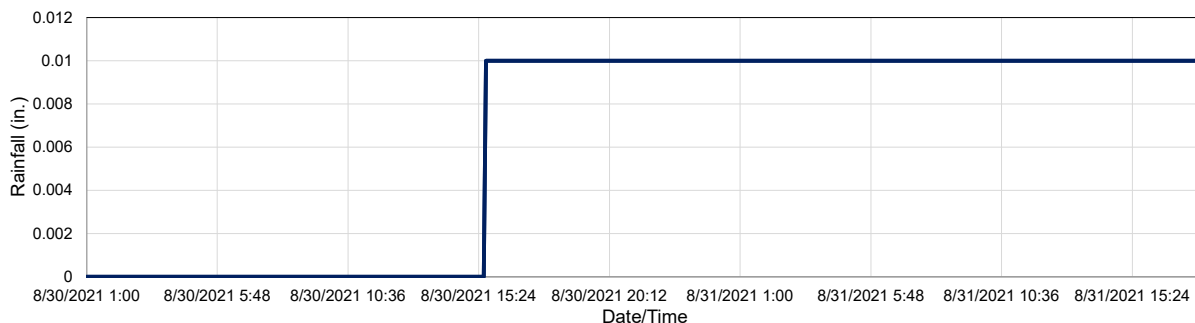
#### RTC Structure Performance



#### Drain Flow to South Interceptor



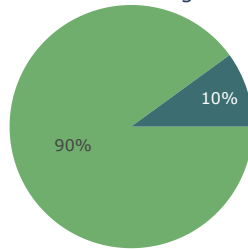
#### Rainfall Accumulation



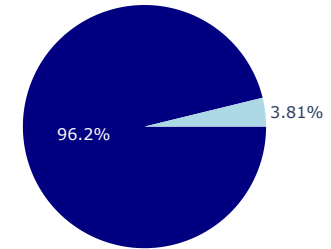


# Apr2022 KPI Report for SmithSt RTC Site(s) Smith Perry

SPP Event Categories



SPP Volume

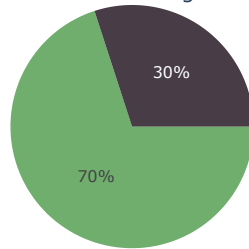


Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (MG)	Occurred SPP Overflow Volume (MG)	Total Rain Observed at Science Museum (in)
8	2	29.124	1.155	3.43

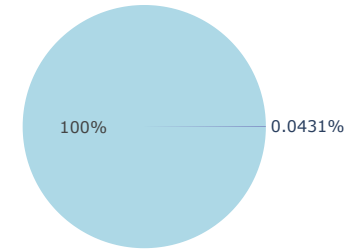
Event	Total Rain at Science Museum (in)	Overflow Volume (MG)	Overflow Volume Prevented (MG)	Percent Captured (%)	Seiche in Wet Weather	Data Quality
April 06, 2022	0.61	0.0	0.908	0	N/A	Poor
April 11, 2022	0.34	0.0	0.61	0	N/A	Poor
April 14, 2022	0.03	0.58	4.221	0	No	Poor
April 15, 2022	0.38	0.0	0.929	0	N/A	Poor
April 18, 2022	0.37	0.0	0.221	0	N/A	Poor
April 19, 2022	0.03	0.0	0.026	0	N/A	Poor
April 21, 2022	0.15	0.0	0.009	0	N/A	Poor

## Feb2022 KPI Report for SmithSt RTC Site(s) Smith Perry

SPP Event Categories



SPP Volume

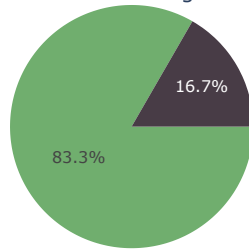


Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (MG)	Occurred SPP Overflow Volume (MG)	Total Rain Observed at Science Museum (in)
5	5	1.579	3,658.823	2.85

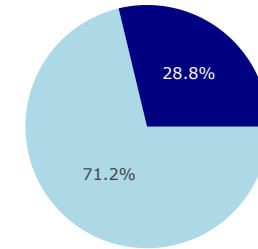
Event	Total Rain at Science Museum (in)	Overflow Volume (MG)	Overflow Volume Prevented (MG)	Percent Captured (%)	Seiche in Wet Weather	Data Quality
February 02, 2022	0.31	0.0	0.129	0	N/A	Poor
February 09, 2022	0.0	3,600.283	0.177	0	Yes	Poor
February 11, 2022	0.31	1.055	0.042	0	N/A	Poor
February 12, 2022	0.0	0.0	0.245	0	N/A	Poor
February 16, 2022	0.0	1.1	0.253	0	N/A	Poor
February 17, 2022	1.2	40.206	0.006	0	Yes	Poor
February 18, 2022	0.0	0.0	0.397	0	N/A	Poor

# Jan2022 KPI Report for SmithSt RTC Site(s) Smith Perry

SPP Event Categories



SPP Volume

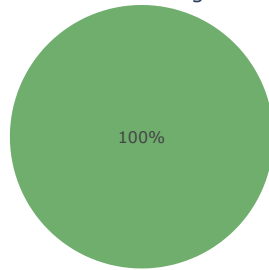


Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (MG)	Occurred SPP Overflow Volume (MG)	Total Rain Observed at Science Museum (in)
5	1	24.404	60.473	0.99

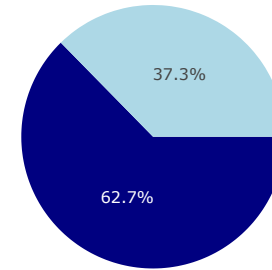
Event	Total Rain at Science Museum (in)	Overflow Volume (MG)	Overflow Volume Prevented (MG)	Percent Captured (%)	Seiche in Wet Weather	Data Quality
January 01, 2022	0.21	0.0	0.446	0	N/A	Poor
January 05, 2022	0.02	60.473	11.263	0	Yes	Poor
January 06, 2022	0.0	0.0	0.04	0	N/A	Poor
January 09, 2022	0.2	0.0	12.573	0	N/A	Poor
January 17, 2022	0.0	0.0	0.013	0	N/A	Poor
January 27, 2022	0.0	0.0	0.069	0	N/A	Poor

# Jun2022 KPI Report for SmithSt RTC Site(s) Smith Perry

SPP Event Categories



SPP Volume

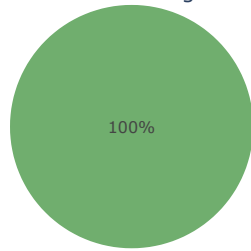


Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (MG)	Occurred SPP Overflow Volume (MG)	Total Rain Observed at Science Museum (in)
4	2	21.029	12.533	4.35

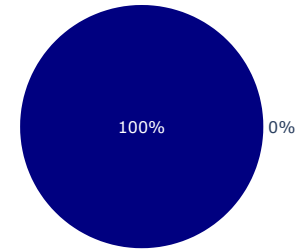
Event	Total Rain at Science Museum (in)	Overflow Volume (MG)	Overflow Volume Prevented (MG)	Percent Captured (%)	Seiche in Wet Weather	Data Quality
June 01, 2022	0.32	0.0	1.179	0	N/A	Poor
June 04, 2022	0.0	0.0	1.261	0	N/A	Poor
June 06, 2022	0.94	0.0	10.473	0	N/A	Poor
June 08, 2022	1.66	8.412	0.082	0	N/A	Poor
June 10, 2022	0.0	0.0	5.148	0	N/A	Poor
June 22, 2022	1.32	4.121	2.886	0	N/A	Poor

# Mar2022 KPI Report for SmithSt RTC Site(s) Smith Perry

SPP Event Categories



SPP Volume

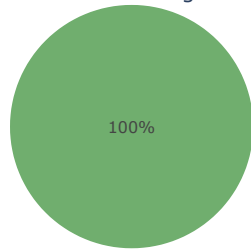


Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (MG)	Occurred SPP Overflow Volume (MG)	Total Rain Observed at Science Museum (in)
3	0	17.256	0.0	2.12

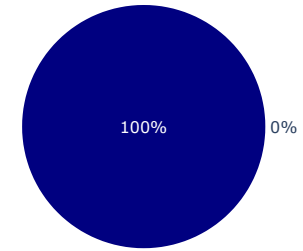
Event	Total Rain at Science Museum (in)	Overflow Volume (MG)	Overflow Volume Prevented (MG)	Percent Captured (%)	Seiche in Wet Weather	Data Quality
March 19, 2022	0.6	0.0	0.099	0	N/A	Poor
March 23, 2022	0.71	0.0	17.035	0	N/A	Poor
March 31, 2022	0.19	0.0	0.122	0	N/A	Poor

# May2022 KPI Report for SmithSt RTC Site(s) Smith Perry

SPP Event Categories



SPP Volume



Number of Prevented SPP Overflow Events	Number of Occurred SPP Overflow Events	Prevented SPP Overflow Volume (MG)	Occurred SPP Overflow Volume (MG)	Total Rain Observed at Science Museum (in)
5	0	28.530	0.0	3.11

Event	Total Rain at Science Museum (in)	Overflow Volume (MG)	Overflow Volume Prevented (MG)	Percent Captured (%)	Seiche in Wet Weather	Data Quality
May 01, 2022	0.3	0.0	0.183	0	N/A	Poor
May 03, 2022	0.35	0.0	4.466	0	N/A	Poor
May 16, 2022	0.33	0.0	0.219	0	N/A	Poor
May 21, 2022	0.98	0.0	6.079	0	N/A	Poor
May 26, 2022	0.96	0.0	17.583	0	N/A	Poor

## **SUNY University at Buffalo**

Niagara Street GI Progress Report, August 2022

Christopher Lowry, Banu Bayraktar, Jason Hanania

### **Groundwater Flow Modeling-**

Groundwater flow models are being built in HYDRUS 2D to evaluate the storage properties of the various rain garden designs on Niagara Street. Design parameters being evaluated include rain garden length, depth, soil type, inlet location, and the presence/absence of vegetation and geomembrane. The models are being run under a variety of antecedent moisture conditions and storm intensities. Representative storm intensities are determined using NOAA Atlas 14 precipitation frequency estimates for Buffalo, NY.

*Preliminary results suggest that:*

- An increase in soil depth will increase the lag time and reduce peak flux out of the underdrain.
- A lower initial water content reduces the peak flux out of the underdrain significantly.
- The presence of vegetation is relatively insignificant to reducing underdrain outflow.

### **Soil Moisture Monitoring-**

Soil moisture probes were installed in May 2022 at a rain garden in front of 1416 Niagara Street (Buffalo Office Interiors). The probes were installed at 15, 30, & 45 cm depth near the inlet dissipator, and 15 & 30 cm depth ~ 4 meters north of the inlet. The probes and logger will be removed in October 2022 and we plan to use the data to determine the extent of the soil wetting front during storm events.

# Assessing the effectiveness of Green Infrastructure in the Niagara River Greenway (Buffalo, NY)

**Project Partners:** U.S. Geological Survey, Buffalo Sewer Authority, State University of New York University at Buffalo, U.S. Environmental Protection Agency – Office of Research and Development

**Project Leads:** Michael McHale and Mike Antidormi

**Location:** Niagara Street, Buffalo, NY

**Period of Project:** October 2016 to September 2023



**Background:** This study examines stormwater runoff along a 50-block corridor of Niagara Street in Buffalo, NY before and after installation of Green Infrastructure stormwater-control measures. Combined sewer overflows impacting the Niagara River Area of Concern have focused interest on stormwater reductions within the City of Buffalo and the Niagara River Greenway Project. Replacing aging infrastructure provides the potential to install stormwater control measures to reduce peak storm flows. The U.S. Geological Survey began monitoring stormflow along the corridor in 2016, the City of Buffalo began to install green infrastructure storm water control measures in 2018 and the work was completed in June 2021. Those measure include sand filters and stormwater planters/rain gardens to reduce stormflow to the local storm sewers and the Niagara River.

**Objective:** The objective of this study is to assess the effectiveness of green infrastructure installed along the 50-block corridor to reduce flows within the storm sewer system and ultimately to the Niagara River. The U.S. Geological Survey is monitoring flow and water quality (chloride, bromide, and iodide) into and out of rain gardens and 1 sand filter within 1 city block of the project as well as at 2 storm sewer outlets within the project. The goal is to quantify reductions in storm water runoff and chloride (during winter and spring melt) resulting from the green infrastructure practices. The effectiveness of the green infrastructure practices throughout the entire 50 block corridor is being assessed by monitoring runoff in 2 storm sewers, one at Delavan Avenue and another adjacent to Scajaquada Creek. The effectiveness of individual practices is being evaluated with intensive monitoring along a 1 block section and through rainfall experiments at several locations.

**Progress (May 2020 to June 2022):** Pre-construction monitoring began in 2016, construction began in 2018 and the installation of green infrastructure practices was completed in June 2021. The USGS is currently monitoring flow and specific conductance into and out of the rain gardens and one sand filter as well as at the outlets of the storm sewer system at Delavan Avenue and in a storm sewer adjacent to Scajaquada Creek. Obtaining accurate discharge measurements has proven difficult at the inlets to the rain gardens as well as the sand filter. The inlets clog with sediment, sludge and garbage affecting the stage-discharge rating curves. The sand filter clogs so that no water can enter it causing most of the flow to bypass the entire structure. During 2021-2022 we began conducting rainfall experiments by delivering water to specific rain gardens either with sprinklers or directly with hoses from fire hydrants. The flow from each hydrant is monitored with a flow meter and flow rates are restricted to rates that mimic natural rainfall. The experiments allow a much more accurate assessment of the effectiveness of the green infrastructure practices by delivering a known amount of water into the structures and measuring the timing and volume of the outflow from each. These experiments are not confined to the intensively monitored section of Niagara Street, they are being conducted at several rain gardens within the 50-block renovation. During the past 12 months, all flow data were quality assured from October 1, 2016 to September 30, 2021 and we have been



*The finished bike path and rain gardens looking north along Niagara Street*





*A rainfall experiment at a series of rain gardens along Niagara Street, Buffalo, NY.*

amount of runoff measured in the storm sewer for equivalent amounts of rainfall before and after the practices were installed. These results likely indicate that the rain gardens are attenuating storm flow along Niagara Street decreasing peak stormflow as well as total stormflow in the storm sewers along Niagara Street.

**Products:** A website providing a background, objectives, approach, and list of cooperators is available at: [https://www.usgs.gov/centers/umid-water/science/assessing-stormwater-reduction-using-green-infrastructure-niagara-river?qt-science\\_center\\_objects=0#qt-science\\_center\\_objects](https://www.usgs.gov/centers/umid-water/science/assessing-stormwater-reduction-using-green-infrastructure-niagara-river?qt-science_center_objects=0#qt-science_center_objects) Annual project updates will be submitted throughout the project, 3 journal articles are planned for the project as described in the Plans section and project results will be presented to the Buffalo Sewer Authority and other City of Buffalo Departments as requested. The results will also be presented at 1-2 national conferences.

using those data to evaluate the effectiveness of the rain gardens at reducing stormflow to the storm sewer along Niagara Street.

**Plans (July 2022 to September 2023):** Project data collection will end on September 30, 2022. A journal article focused on the flow reduction estimates for the project is nearly complete and will be submitted in the fall of 2022. A second paper focused on the results of the rainfall experiments and modeling of individual rain gardens is planned for the spring of 2023 and a third paper examining the changes in chemistry as water flowed through the rain gardens will be finalized in the fall of 2023 at the completion of the project.

**Significant Findings:** There has been a substantial reduction in flow in the storm sewer at Delavan Avenue since the installation of the green infrastructure practices along Niagara Street, although there has been no change in the amount of rainfall and in fact annual rainfall increased slightly during 2020 and 2021. Peak stormflows have also decreased since the project was completed. Results show a marked decrease in the



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March 17, 2021  
Technical Memorandum

## Buffalo Sewer Authority

## Wet Weather Operational Optimization

# Real Time Control KPI Dashboards

### Introduction

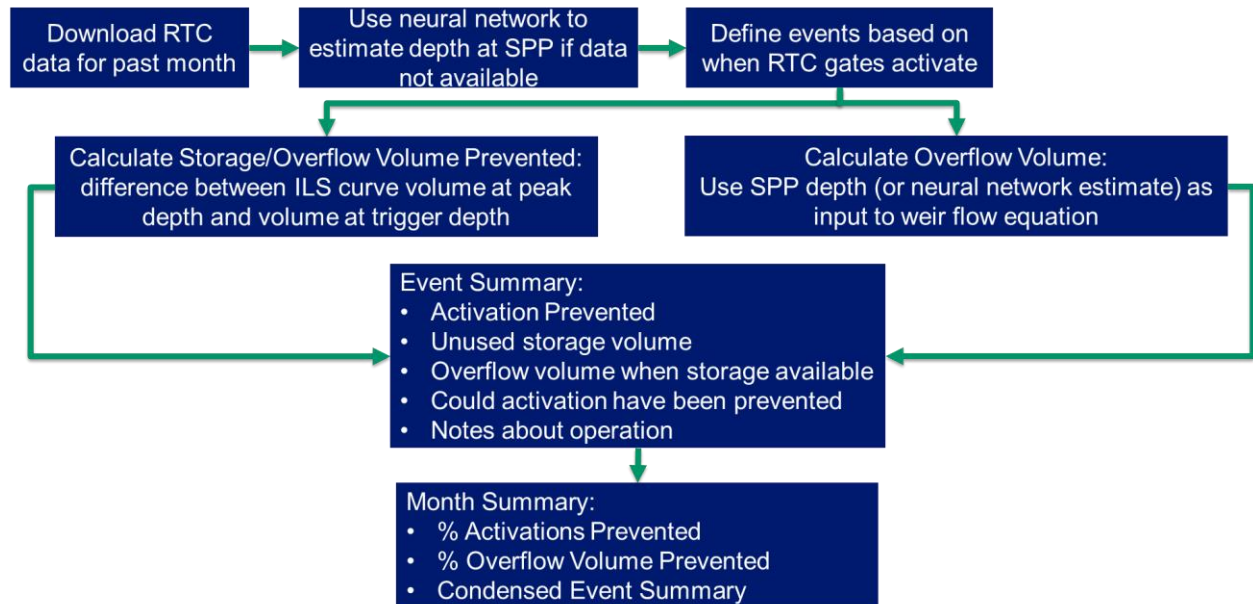
The Buffalo Sewer Authority (BSA) implemented a Real Time Control (RTC) system to optimize available in-line storage (ILS) within its collection system and is continuously seeking ways to improve system performance while additional projects are being constructed. There are six fully operational RTC sites – Bird Ave., Lang Ave., Smith St. (Smith Perry), Hazelwood Ave., North Bailey, and Hertel at Deer. Babcock Pump Station RTC is in post-construction tuning, while Smith Eagle is finishing construction. Two more sites, Broadway Oak and Mill Race, are about to begin construction. More RTC projects are planned to meet the objective of BSA's Long Term Control Plan (LTCP).

As the BSA RTC system has grown, the need for accurate, automated Key Performance Indicator (KPI) reporting has become more apparent. The RTC KPIs allow BSA to track the benefits and effectiveness of the RTC system in preventing overflows and bringing the collection system in compliance with the LTCP. The KPIs will also support the optimization of operational and maintenance activities to ensure the system is managed effectively. The methodology for RTC KPI reporting was originally presented in the technical memo titled *Real Time Control KPI Development* (EmNet, now Xylem, June 30, 2017). This memo notes the updates that were made to the KPI calculations to accommodate automated reporting and interactive KPI dashboards that are now available via the BLU-X platform.

### Automated KPI Calculations

The level of control defined in the LTCP is related to the number of Sewer Patrol Point (SPP) activations. The intent of the new interactive KPI dashboards is to automate trend analysis to highlight operational issues and allow BSA to track trends in activation trigger depths, unused

storage volume during SPP activations, and occurred overflow volume. The flow chart in Figure 1 shows the manual process that was used to generate previous KPI reports for in-line storage locations.



**Figure 1. In-line storage RTC KPI manual reporting process**

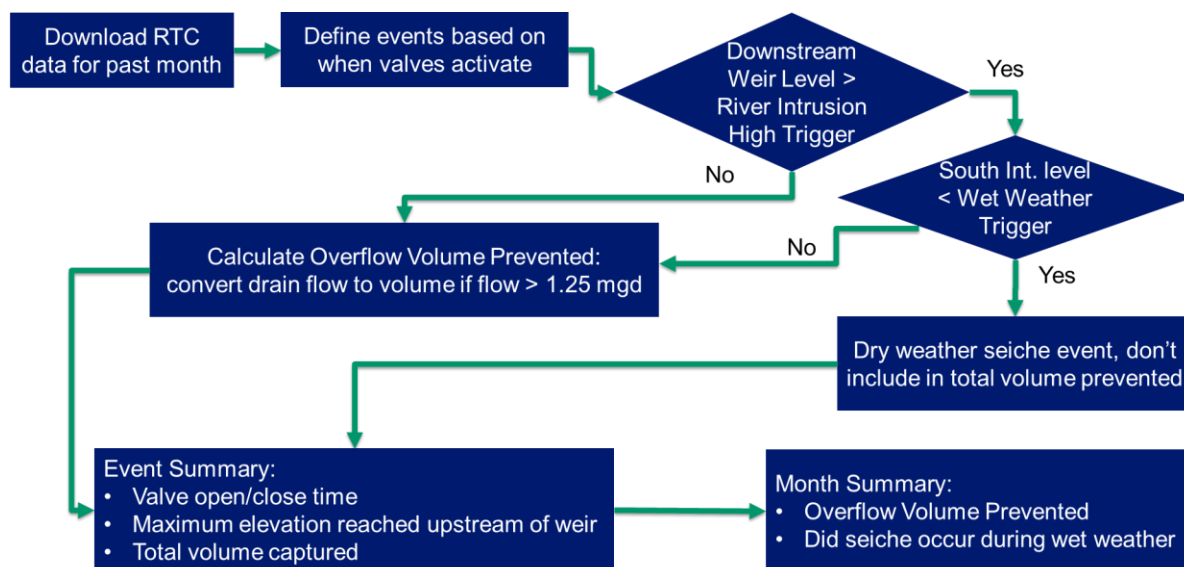
The automated KPI process will generally follow the same workflow as the manual process, but will use Python instead of Excel to automatically download data, perform KPI calculations, generate plots, and push them to the BLU-X portal. The assumptions applied in the KPI reporting process are as follows:

- Events are defined based on when RTC gates activate
  - The KPI report is not an overflow report
  - If gates don't activate but an overflow occurs downstream, the event is not included in the report
- All volume stored at the ILS site above the RTC wet weather trigger depth could have become overflow volume
- Overflow prevented applies to the first local SPP downstream of the RTC site
  - It is possible for RTC operations to impact SPPs elsewhere in the system, but applying it to the local SPP simplifies reporting

The automated KPI process will include the following updates to the ILS KPI calculations:

- Buffer calculations by 6 hours before gate activation and 6 hours after return to normal
- Only count volume stored if gates activated

The KPI calculation process for RTC interception sites such as Smith St. (Smith Perry) and the new Mill Race project is shown in Figure 2. These are calculated differently because it is assumed that all flow sent to the South Interceptor (South Int.) counts as overflow volume prevented because all the inflow to the RTC site would have become overflow previously.



**Figure 2. RTC interception KPI manual reporting process**

Overflow volume at the SPPs downstream of the ILS locations (or directly at the chamber for the RTC interception sites) is calculated using the following rectangular weir flow equation:

$$Q = C_d(B - 0.2H)H^{\frac{3}{2}}$$

Where Q = flow over weir(cfs)

H = head above the weir (ft) = Current Depth (ft) – Weir Height (ft)

B = length of the weir (ft)

Cd = discharge coefficient, assume 3.33

The input variables for sites where the weir equation was used to calculate overflow volume are listed in Table 1.

**Table 1. Overflow rate equation input variables**

Site	Sensor ID	Sensor Name	Weir Height, ft.	Weir Length, ft.
<b>SPP013</b>	16105_1	10196	3.67	7.75
<b>SPP338</b>	13156_1	North Bailey SPP	1.35	14.79
<b>SPP001</b>	13167_1	Hertel SPP Depth	7.18	310
<b>SPP340</b>	13134_1	Lang SPP Depth	1.54	10
<b>Smith St. (Smith Perry)</b>	13140_2	Smith St. CSO Level	0.55 (BSA Datum)	138

If depth data is unavailable at the SPPs in Table 2, a neural network model will be used to estimate the depth and corresponding overflow at the SPP.

**Table 2. Neural Network SPP Depth Models**

Site	Neural Network Input Name	Neural Network Input Sensor ID	Model Tag
<b>SPP013</b>	Bird RTC Downstream Level	13120_1	fd87af17-1d03-4a82-9aae-995eaf90732b
<b>SPP340</b>	Lang RTC Downstream Level, Hazelwood RTC Downstream Level	13110_1, 13151_1	06284068-e810-4526-9a66-faa400de4d61

Since the RTC data is sampled at five-minute intervals, overflow volume is calculated with the following conversion:

$$V = Q * \frac{60 \text{ s}}{1 \text{ min}} \times 5 \text{ min}$$

Where V = Overflow volume, ft<sup>3</sup>

Q = Flow over weir (cfs)

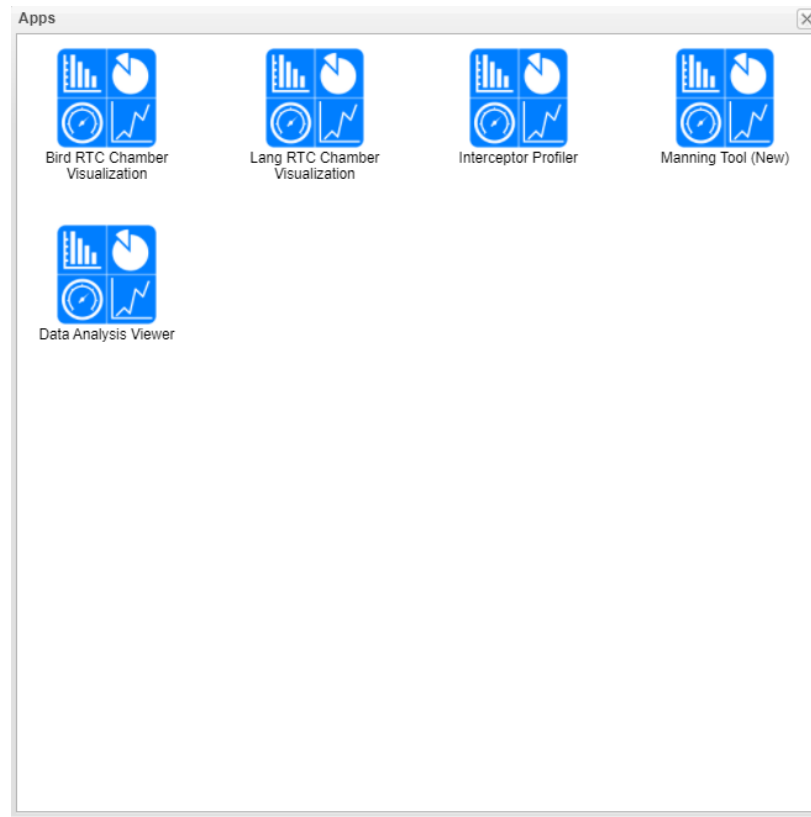
This flow conversion also applies to calculating volume captured at RTC interception sites (Smith Perry) based on data collected by the Drain Flow sensor. For ILS sites, storage volume is calculated using a curve of depth vs. upstream system storage volume. These curves were generated using results from the BSA SWMM model. The curve equations correlate depth upstream of the chamber weir to volume stored by using the SWMM model to total the available storage upstream of the gate at increasing depths.

**Table 3. In-line storage curves**

ILS Location	Sensor ID	Sensor Name	Storage Curve, gal	ILS Weir Height, ft.	Corresponding SPP
<b>Bird Ave.</b>	13120_2	Bird RTC Upstream Level	18790x <sup>2</sup> - 16191x	8.15	013
<b>North Bailey</b>	13160_2	North Bailey RTC Upstream Level	(850.23x <sup>2</sup> +8044x) * 7.48052	5.91	338
<b>Hertel at Deer (North Barrel)</b>	13170_1	Hertel RTC North Upstream Level	39392 x <sup>2</sup> - 33399x	7.7	001
<b>Hertel at Deer (South Barrel)</b>	13170_3	Hertel RTC South Upstream Level	55980x <sup>2</sup> - 80280x	6.5	001
<b>Lang Ave.</b>	13110_2	Lang RTC Upstream Level	7418.4x <sup>2.2867</sup>	8.00	340
<b>Hazelwood Ave.</b>	13150_2	Hazelwood RTC Upstream Level	(1778.2 x <sup>2</sup> + 5213.4x + 51648) *7.48052	8.40	340

## Accessing KPI Dashboards

The new interactive KPI reports can be accessed via the BLU-X platform (<https://portal.emnet.net/dataportal/>). To navigate to the KPI reports, open the “Data Analysis Viewer” under “Apps”.



**Figure 2. BLU-X Apps as of 3/17/22**

Within the Data Analysis Viewer, the reports are organized by SPP name (Figure 3). Note that both Lang Ave. and Hazelwood Ave. data are included on the SPP340 reports. The Version Number column will update based on the current automated KPI reporting tool version that is being used to generate the reports.

A screenshot of the "Data Analysis Viewer" web application. At the top, it says "Cities » BSA". Below that is the heading "BSA". There is a table with two columns: "Report" and "Version Number". The table contains six rows of data. At the bottom of the screenshot, there is a pagination bar showing "Page 1 of 1", "Go to page: 1", and "Show 20".

Report	Version Number
<a href="#">Smith St KPI Reports</a>	0.2.0-SmithSt
<a href="#">SPP001 KPI Reports</a>	0.2.0-SPP001
<a href="#">SPP340 KPI Reports</a>	0.2.0-SPP340
<a href="#">SPP338 KPI Reports</a>	0.2.0-SPP338
<a href="#">SPP013 KPI Reports</a>	0.2.0-SPP013
<a href="#">Systemwide KPI Reports</a>	0.2.0-Systemwide

**Figure 3. Main Data Analysis Viewer Page**

The individual directories contain 3 different reports:

1. Year-to-Date Report, SPPx\_year.html
2. Monthly Report, SPP\_month.html
3. Event Report, SPP\_month\_date.html

Data Analysis Viewer

[Cities](#) » [BSA](#) » SPP340 KPI Reports (0.2.0-SPP340)

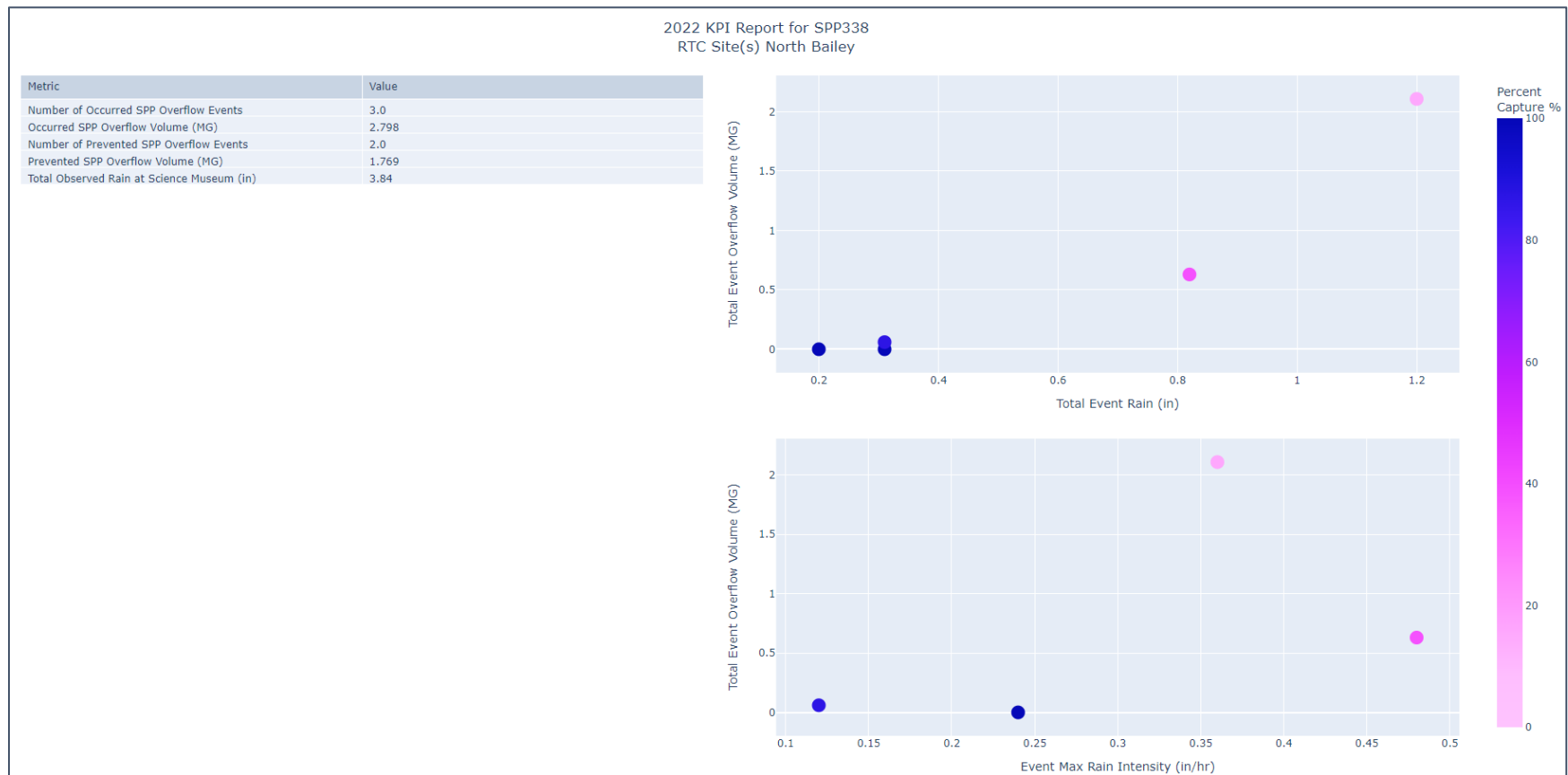
### BSA

Name ^	File Type ⇅	Last Modified ⇅	File Size ⇅	Download
<a href="#">SPP340_2022.html</a>	html	2022-03-16T19:35:50	3.5 MB	<a href="#">Download</a>
<a href="#">SPP340_Feb2022.html</a>	html	2022-03-16T19:35:47	3.5 MB	<a href="#">Download</a>
<a href="#">SPP340_Feb2022_2022-02-02.html</a>	html	2022-03-16T19:35:48	3.67 MB	<a href="#">Download</a>
<a href="#">SPP340_Feb2022_2022-02-11.html</a>	html	2022-03-16T19:35:48	3.83 MB	<a href="#">Download</a>
<a href="#">SPP340_Feb2022_2022-02-16.html</a>	html	2022-03-16T19:35:49	4.04 MB	<a href="#">Download</a>
<a href="#">SPP340_Feb2022_2022-02-22.html</a>	html	2022-03-16T19:35:50	3.82 MB	<a href="#">Download</a>
<a href="#">SPP340_Jan2022.html</a>	html	2022-03-16T19:35:46	3.5 MB	<a href="#">Download</a>
<a href="#">SPP340_Jan2022_2022-01-09.html</a>	html	2022-03-16T19:35:47	3.75 MB	<a href="#">Download</a>

<< < > >> Page 1 of 1 | Go to page: 1 Show 20 ▾

**Figure 4. SPP Reports**

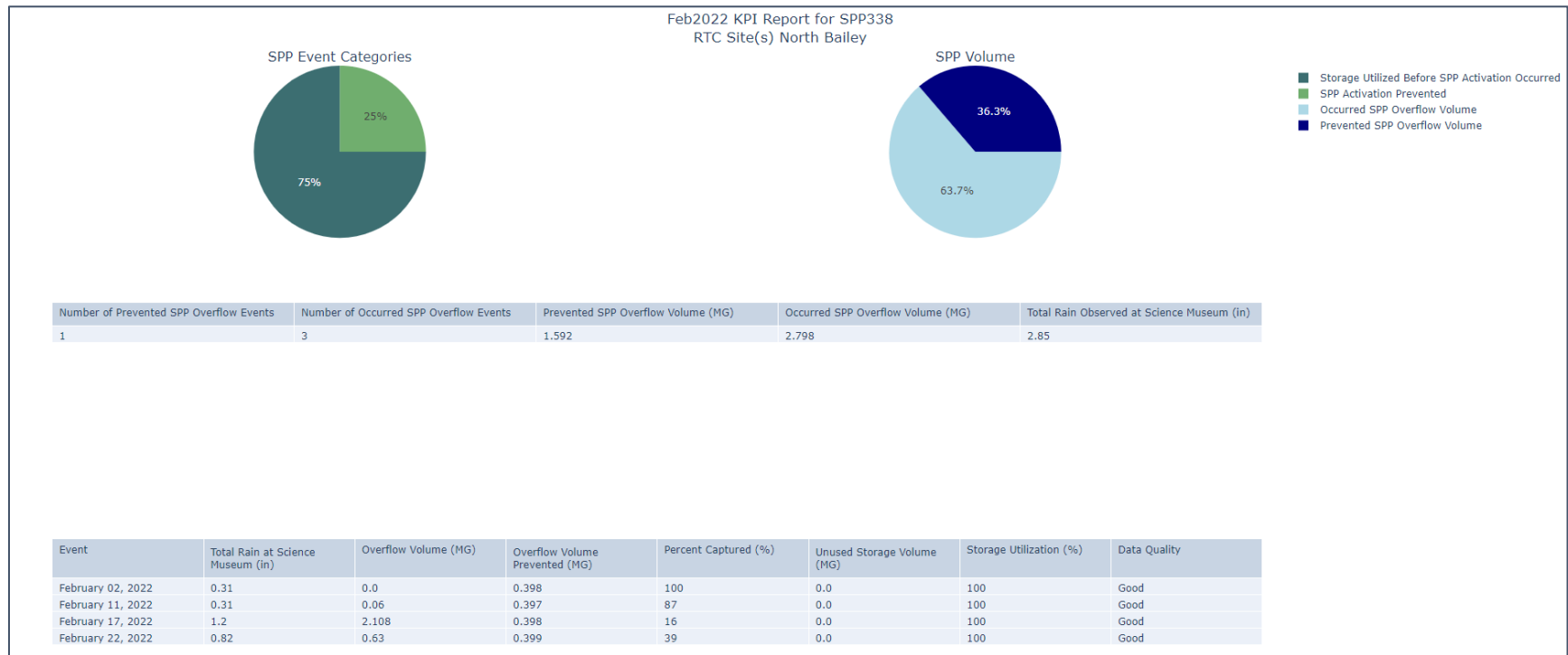
The Year-to-Date report summarizes the number and volume of SPP overflow events occurred and prevented by the upstream RTC sites. The plots display the total rain or maximum rainfall intensity vs. overflow volume on an event basis. The points are colored by the percent of overflow volume captured for each event, with dark blue indicating 100% capture, and light pink indicating 0% capture. For the example in Figure 5, overflow volume tends to increase and percent capture decreases with total event rainfall. These reports will be updated each month to assess performance during different types of storm events.



**Figure 5. Example year-to-date report for SPP338 (Data Under Review)**



The monthly report provides a summary of all the storage events during that month (Figure 6). The pie charts at the top of the report show the proportion of events and overflow volume that was prevented vs. occurred. The first summary table is the same as the year-to-date report. The second table provides individual event details.



**Figure 6. Example monthly report for SPP338 (Data Under Review)**

Individual event reports provide details about events where the gates/valves at the RTC site activated. The report includes:

- Event Data – start and end time, rainfall summary, and storm return frequency defined by NOAA Atlas 14 Point Precipitation Frequency Estimates ([https://hdsc.nws.noaa.gov/hdsc/pfds/pfds\\_map\\_cont.html](https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html))
- Overflow Data – overflow volume prevented, storage utilization, whether an activation could have been prevented with the available storage
- Gate/Valve Activation Data – when gates activated and returned to normal state
- Storage Summary – maximum storage volume, unused storage volume, and whether overflow occurred before gate activation or before the storage was full
- Timeseries Plots – depth at RTC site and at downstream SPP, gate positions, and rainfall accumulation at local rain gauge

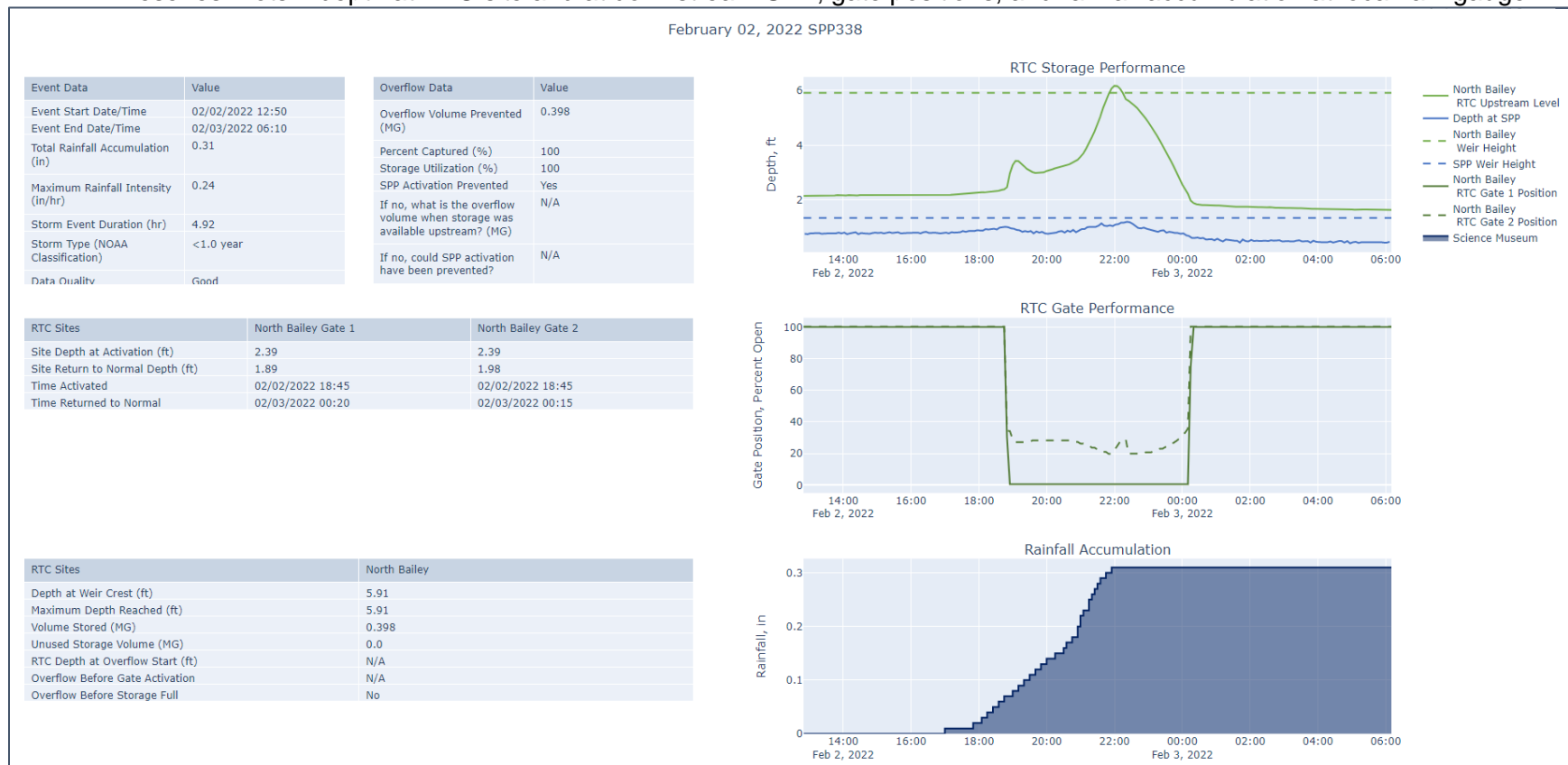


Figure 7. Example Event Report for SPP338 (Data Under Review)

A systemwide year-to-date summary report is also available under the “Systemwide KPI Reports” directory. This report includes a bar chart of the total overflow prevented at each SPP per month compared to the maximum total rainfall observed at a rain gauge for that month. Scrolling down reveals this data in tabular format.



**Figure 8. Example Systemwide Year-to-Date Report (Data Under Review)**

## Conclusion

The new automated KPI reporting system will provide BSA with additional insights about trends in RTC performance and the impact of the RTC program on combined sewer overflows across the BSA collection system. The reports will be used to identify opportunities to improve performance and resolve operational issues as necessary. The format and content of the reports can be adjusted in the future based on what information is most useful to BSA and its stakeholders.