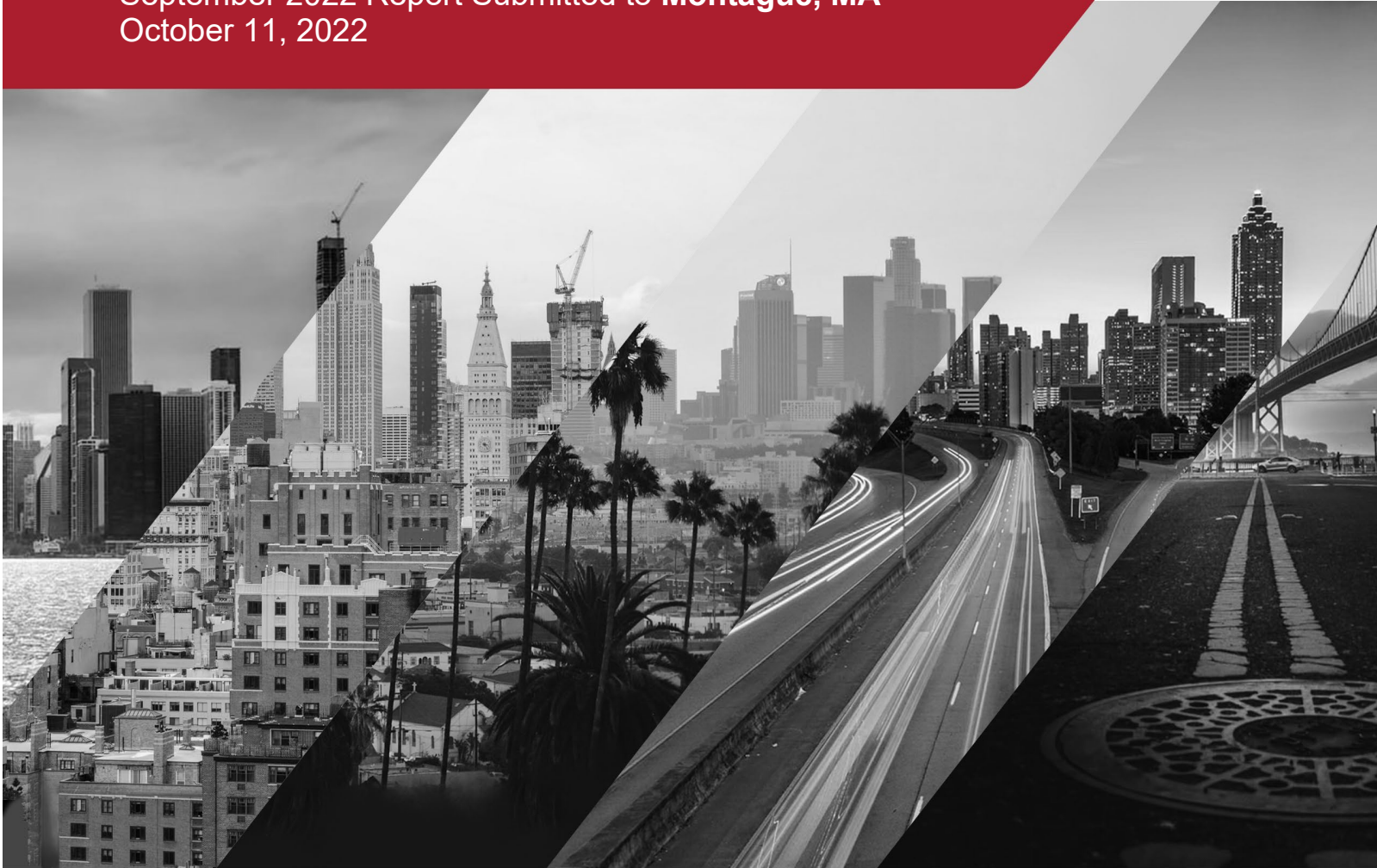


Montague, MA

# Montague, MA

September 2022 Report Submitted to Montague, MA  
October 11, 2022



**ADS** ENVIRONMENTAL SERVICES

340 The Bridge Street, Suite 204  
Huntsville, AL 35806

800-633-7246  
[www.adsenv.com](http://www.adsenv.com)



October 11, 2022

Chelsey Little, BSBS MPH  
Superintendent  
Montague WPCF

**SUBJECT: Montague, MA**

Dear Mrs. Little,

ADS is pleased to submit the report for the Montague, MA completed on behalf of Montague, MA. The metering was conducted at four (4) locations. The study was conducted during the period of Thursday, 01 September 2022 to Friday, 30 September 2022.

The report contains depth, velocity, and quantity hydrographs as well as daily long tables for the metering period. An Excel file containing depth, quantity, and velocity entities for the monitoring location in 5-minute format was provided previously.

In addition, we would be happy to further explain any details about the report that may seem unclear. Should you have any questions or comments, you may contact the Project Manager, Michael Armes at 603-625-1212.

It has been our pleasure to be of service to you in the performance of this project. Thank you for choosing ADS products and services to meet your flow monitoring needs.

Sincerely,

**ADS ENVIRONMENTAL SERVICES**

Melissa Hygom  
Senior Data Analyst, Congers, NY

Thursday, 01 September 2022 to Friday, 30 September 2022



# Montague, MA

## Prepared For:

Chelsey Little, BSBS MPH  
Superintendent  
Montague WPCF

## Prepared By:



ADS, LLC  
340 The Bridge Street, Suite 204  
Huntsville, AL 35806

# 7th\_L\_CSO

## Site Commentary

### SITE INFORMATION

Pipe	Round (14.25 in H)
Silt	0.00 (in)

### OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Thursday, 01 September 2022 to Friday, 30 September 2022**, along with observed minimum and maximum data, are provided in the following table.

Six (6) overflows recorded during the September monitoring period

Observed Flow Conditions		
Item	DFINAL (in)	VFINAL (ft/s)
Average	1.54	2.01
Minimum	0.77	0.46
Maximum	20.62	13.27
Min Time	09/01/2022 4:00:00 AM	09/07/2022 4:15:00 AM
Max Time	09/13/2022 6:55:00 PM	09/13/2022 6:50:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the none average.

### DATA UPTIME

Data uptime observed during **Thursday, 01 September 2022 to Friday, 30 September 2022** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100

<b>7th_L_CSO</b>	<b>Total</b>	<b>Duration</b>	<b>Start</b>	<b>Stop</b>	<b>Rain</b>
<b>W1</b>	67	0:05:00	9/13/22 7:50	9/13/22 7:55	0.91
<b>W2</b>	17,828	0:35:00	9/13/22 18:50	9/13/22 19:25	
<b>W3</b>	547	0:05:00	9/19/22 17:15	9/19/22 17:20	
<b>W4</b>	1,698	1:00:00	9/19/22 18:30	9/19/22 19:30	1.09
<b>W5</b>	56	0:05:00	9/22/22 7:15	9/22/22 7:20	
<b>W6</b>	740	0:20:00	9/22/22 8:05	9/22/22 8:25	0.88
<b>Total</b>	<b>Gals. 20,937</b>	<b>Hrs. 2:10:00</b>	<b>Rain 2.88</b>		

# Hydrograph Report

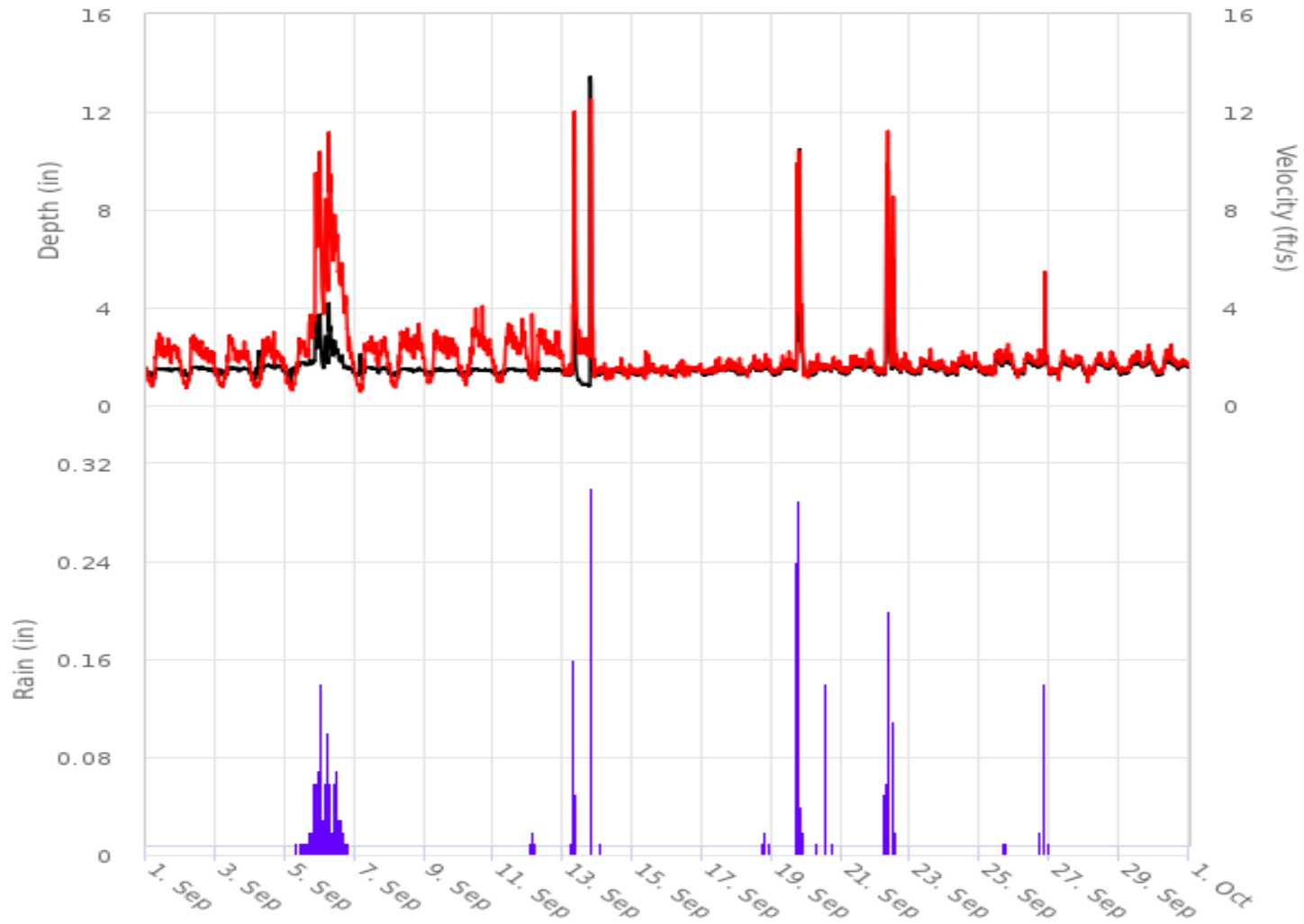
7th\_L\_CSO

Flow Monitor  
7th\_L\_CSO

Pipe Height  
14.25  
in

Report Period  
09/01/2022  
To  
09/30/2022

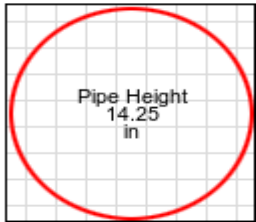
Legend  
— DFINAL  
— RAIN FINAL  
— VFINAL



# Scattergraph Report

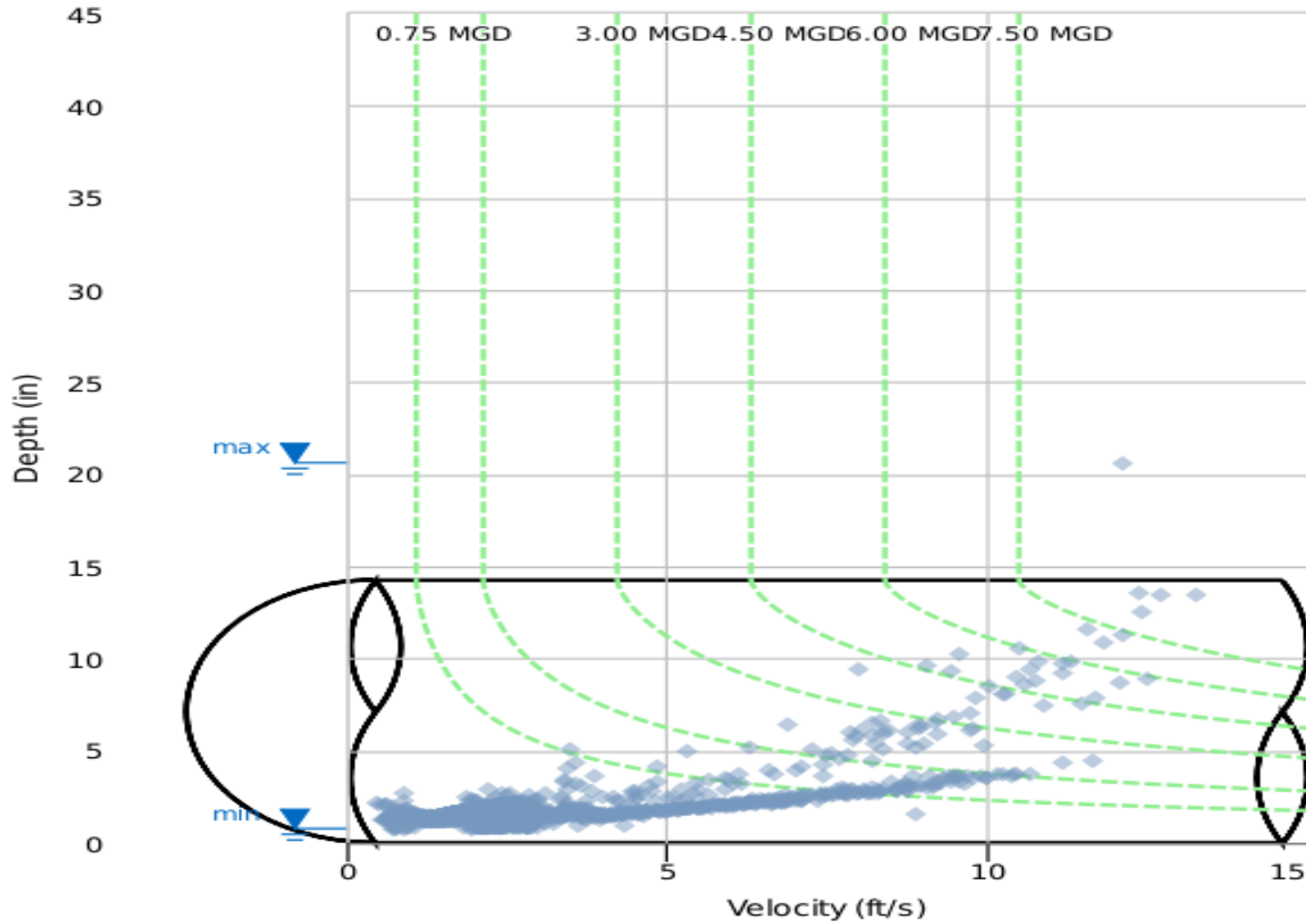
7th\_L\_CSO

Flow Monitor  
7th\_L\_CSO



Report Period  
09/01/2022  
To  
09/30/2022

Legend  
○ DFINAL - VFINAL  
--- Iso-Q™  
▼ Min-Max Depth



## Daily Tabular Report

09/01/2022 00:00 - 09/30/2022 23:59

7th\_L\_CSOPipe: Round (14.25 in H), Silt0.00 in

Date	DFINAL (in)					VFINAL (ft/s)					RAIN FINAL (in)
	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
09/01/2022	04:00	0.77	15:30	1.57	1.40	03:55	0.71	08:45	3.11	1.93	-
09/02/2022	05:25	0.83	14:30	1.62	1.42	03:40	0.62	09:10	3.00	1.87	-
09/03/2022	00:25	1.21	02:40	1.66	1.41	05:00	0.69	09:40	3.35	1.78	-
09/04/2022	03:40	0.77	05:50	2.68	1.49	04:30	0.64	08:35	3.31	1.75	-
09/05/2022	03:40	0.78	23:55	3.69	1.73	04:15	0.52	23:55	10.15	2.78	1.07
09/06/2022	23:55	1.26	06:20	4.40	2.01	23:55	1.42	06:20	11.65	5.29	1.86
09/07/2022	00:15	1.21	04:15	2.13	1.44	04:15	0.46	18:15	2.94	1.88	-
09/08/2022	03:50	1.19	20:35	1.54	1.40	04:00	0.65	20:15	3.46	2.10	-
09/09/2022	04:30	1.19	03:45	1.56	1.39	02:55	0.78	07:10	3.43	2.08	-
09/10/2022	05:50	1.21	18:10	1.52	1.38	04:45	0.74	11:40	4.17	2.15	-
09/11/2022	02:55	1.20	05:45	1.61	1.38	04:15	0.89	19:40	3.89	2.16	-
09/12/2022	05:15	1.21	02:00	1.63	1.40	05:05	0.93	02:35	3.85	2.20	0.06
09/13/2022	18:05	0.78	18:55	20.62	1.73	21:50	1.11	18:50	13.27	2.89	0.91
09/14/2022	00:10	1.21	04:35	2.02	1.36	05:40	0.74	04:35	2.28	1.40	0.01
09/15/2022	04:10	1.20	13:15	1.82	1.37	10:40	1.01	11:10	3.08	1.46	-
09/16/2022	04:25	1.21	09:00	1.85	1.37	05:55	0.75	10:05	2.52	1.46	-
09/17/2022	01:50	1.21	18:20	1.96	1.41	07:15	0.94	11:45	2.83	1.52	-
09/18/2022	06:35	1.22	20:05	2.06	1.44	07:20	0.95	12:20	2.83	1.57	0.04
09/19/2022	23:55	1.20	19:15	11.54	2.09	22:40	0.82	19:15	11.55	2.39	1.09
09/20/2022	00:05	1.20	19:00	2.05	1.46	01:20	0.68	19:00	2.42	1.58	0.20
09/21/2022	04:00	1.22	20:10	2.14	1.53	03:55	1.26	20:10	2.70	1.67	-
09/22/2022	06:05	1.21	08:20	9.86	2.08	01:45	1.24	08:20	11.30	2.58	0.88
09/23/2022	03:00	1.22	07:10	2.12	1.50	01:20	1.27	13:55	2.63	1.62	-
09/24/2022	01:05	1.20	11:50	2.13	1.54	06:05	0.81	11:50	2.65	1.67	-
09/25/2022	06:10	1.22	11:55	2.28	1.58	08:45	0.93	19:00	2.97	1.73	0.02
09/26/2022	01:35	1.21	20:35	2.63	1.61	01:35	0.65	20:35	5.65	1.83	0.17
09/27/2022	00:25	1.23	09:30	2.23	1.56	06:15	0.73	09:30	2.73	1.70	-
09/28/2022	02:10	1.18	09:55	2.17	1.54	02:15	0.68	19:10	2.59	1.67	-
09/29/2022	00:45	1.20	11:25	2.13	1.60	00:40	1.27	20:30	2.67	1.75	-
09/30/2022	02:20	1.20	12:05	2.27	1.59	04:45	1.25	12:05	2.87	1.75	-

09/01/2022 00:00 - 09/30/2022 23:59

	DFINAL (in)	VFINAL (ft/s)	RAIN FINAL (in)
Total			6.31
Average	1.54	2.01	



# Ave A CSO

## Site Commentary

### SITE INFORMATION

Pipe	Round (21 in H)
Silt	0.00 (in)

### OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Thursday, 01 September 2022 to Friday, 30 September 2022**, along with observed minimum and maximum data, are provided in the following table.

Two (2) overflows recorded during the September monitoring period

Observed Flow Conditions	
Item	DFINAL (in)
Average	3.18
Minimum	1.71
Maximum	64.61
Min Time	09/30/2022 4:25:00 AM
Max Time	09/13/2022 6:50:00 PM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the none average.

### DATA UPTIME

Data uptime observed during **Thursday, 01 September 2022 to Friday, 30 September 2022** is provided in the following table:

Percent Uptime	
DFINAL (in)	100

<b>Ave_A_CSO</b>	<b>Total</b>	<b>Duration</b>	<b>Start</b>	<b>Stop</b>	<b>Rain</b>
<b>W1</b>	104,118	0:25:00	9/13/22 18:50	9/13/22 19:15	0.91
<b>W2</b>	270	0:05:00	9/19/22 19:15	9/19/22 19:20	1.09

	<b>Gals.</b>	<b>Hrs.</b>	<b>Rain</b>
<b>Total</b>	<b>104,388</b>	<b>0:30:00</b>	<b>2</b>

# Hydrograph Report

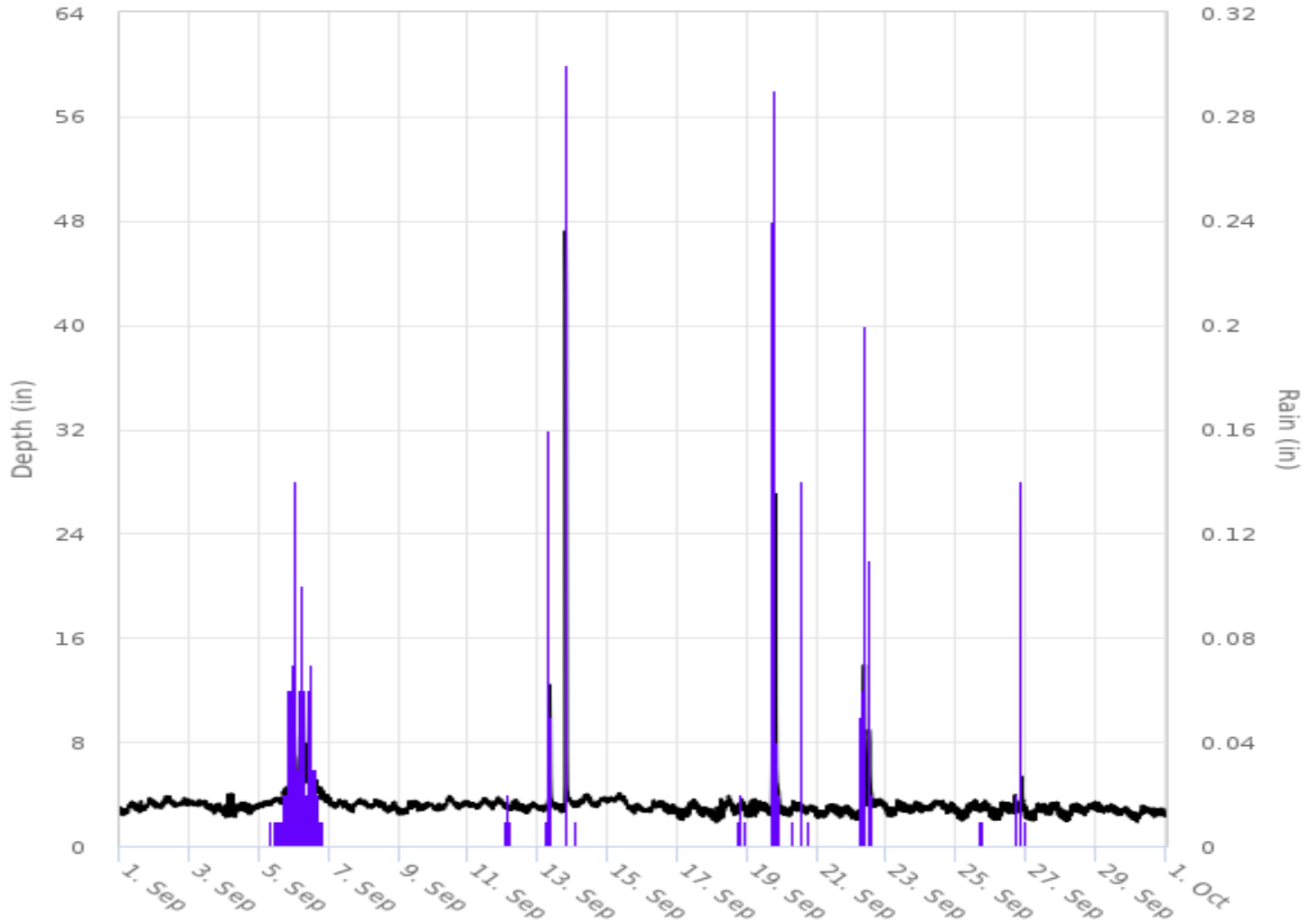
Ave\_A\_CSO

Flow Monitor  
**Ave\_A\_CSO**

Pipe Height  
21.00  
in

Report Period  
09/01/2022  
To  
09/30/2022

Legend  
— DFINAL  
— RAIN FINAL  
— VFINAL



## Daily Tabular Report

09/01/2022 00:00 - 09/30/2022 23:59

Ave\_A\_CSOPipe: Round (21 in H), Silt0.00 in

Date	DFINAL (in)					RAIN FINAL (in)
	Time	Min	Time	Max	Avg	Total
09/01/2022	04:15	2.00	14:35	4.39	2.98	-
09/02/2022	03:40	2.29	07:55	4.54	3.28	-
09/03/2022	23:45	2.19	09:45	4.15	3.12	-
09/04/2022	04:35	1.83	06:40	5.56	2.91	-
09/05/2022	00:30	2.46	21:20	9.22	4.01	1.07
09/06/2022	23:50	2.73	06:15	11.59	4.99	1.86
09/07/2022	15:45	2.41	00:35	5.13	3.20	-
09/08/2022	23:55	2.20	08:45	4.23	3.09	-
09/09/2022	00:45	2.14	08:20	4.08	2.99	-
09/10/2022	05:40	2.20	11:10	4.72	3.18	-
09/11/2022	06:10	2.27	20:15	4.64	3.27	-
09/12/2022	15:10	2.20	02:35	4.15	3.04	0.06
09/13/2022	01:05	2.24	18:50	64.61	4.55	0.91
09/14/2022	01:30	2.45	10:55	4.53	3.43	0.01
09/15/2022	16:45	2.13	11:10	4.42	3.31	-
09/16/2022	01:10	2.00	11:25	4.39	2.94	-
09/17/2022	06:00	1.92	10:50	4.17	2.71	-
09/18/2022	02:30	1.76	11:05	4.34	2.79	0.04
09/19/2022	04:05	1.79	19:15	28.62	3.88	1.09
09/20/2022	02:00	2.11	07:20	4.12	2.83	0.20
09/21/2022	00:20	2.08	10:10	3.95	2.64	-
09/22/2022	01:55	1.95	08:20	16.57	3.85	0.88
09/23/2022	02:20	2.11	07:25	4.21	2.91	-
09/24/2022	06:00	2.10	11:25	4.22	3.04	-
09/25/2022	03:35	1.91	13:25	4.14	2.80	0.02
09/26/2022	04:55	1.95	20:35	5.90	2.88	0.17
09/27/2022	04:10	1.91	18:35	4.02	2.73	-
09/28/2022	03:05	1.88	23:25	4.00	2.75	-
09/29/2022	05:15	2.01	08:10	3.96	2.80	-
09/30/2022	04:25	1.71	09:20	3.89	2.56	-

09/01/2022 00:00 - 09/30/2022 23:59

	DFINAL (in)	RAIN FINAL (in)
Total		6.31
Average	3.18	

# Greenfield\_M1

## Site Commentary

### SITE INFORMATION

Pipe	Round (36 in H)
Silt	0.00 (in)

### OBSERVATIONS

Average flow depth, velocity, and quantity data observed during **Thursday, 01 September 2022 to Friday, 30 September 2022**, along with observed minimum and maximum data, are provided in the following table.

Two (2) overflows recorded during the September monitoring period

Observed Flow Conditions		
Item	DFINAL (in)	VFINAL (ft/s)
Average	3.47	2.13
Minimum	1.61	0.70
Maximum	43.44	3.40
Min Time	09/04/2022 6:35:00 AM	09/13/2022 8:40:00 AM
Max Time	09/13/2022 7:40:00 PM	09/06/2022 8:50:00 AM

Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Values in the Observed Flow Conditions and data on the graphical reports are based on the none average.

### DATA UPTIME

Data uptime observed during **Thursday, 01 September 2022 to Friday, 30 September 2022** is provided in the following table:

Percent Uptime	
DFINAL (in)	100
VFINAL (ft/s)	100

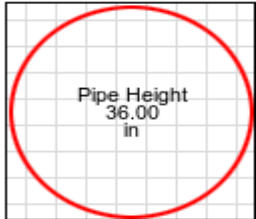
<b>GFLD_CSO</b>	<b>Total</b>	<b>Duration</b>	<b>Start</b>	<b>Stop</b>	<b>Rain</b>
<b>W1</b>	797	0:25:00	9/13/22 19:35	9/13/22 20:00	0.6
<b>W2</b>	22	0:08:00	9/19/22 19:56	9/19/22 20:04	1.09

	<b>Gals.</b>	<b>Hrs.</b>	<b>Rain</b>
<b>Total</b>	<b>819</b>	<b>0:33:00</b>	<b>1.69</b>

# Hydrograph Report

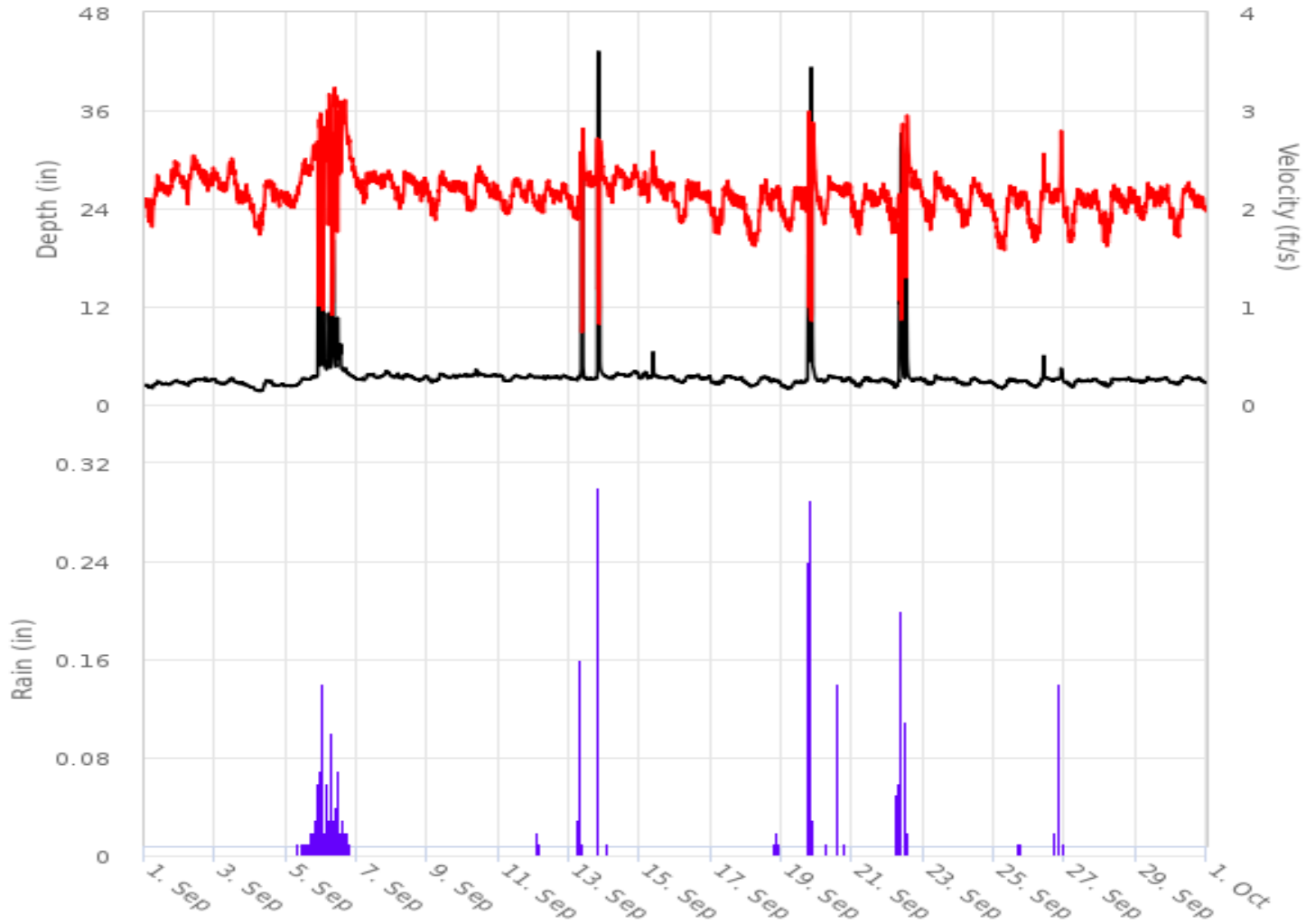
Greenfield\_M1

Flow Monitor  
**Greenfield\_M1**



Report Period  
09/01/2022  
To  
09/30/2022

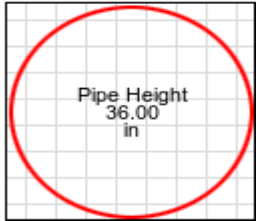
Legend  
— DFINAL  
— RAIN FINAL  
— VFINAL



# Scattergraph Report

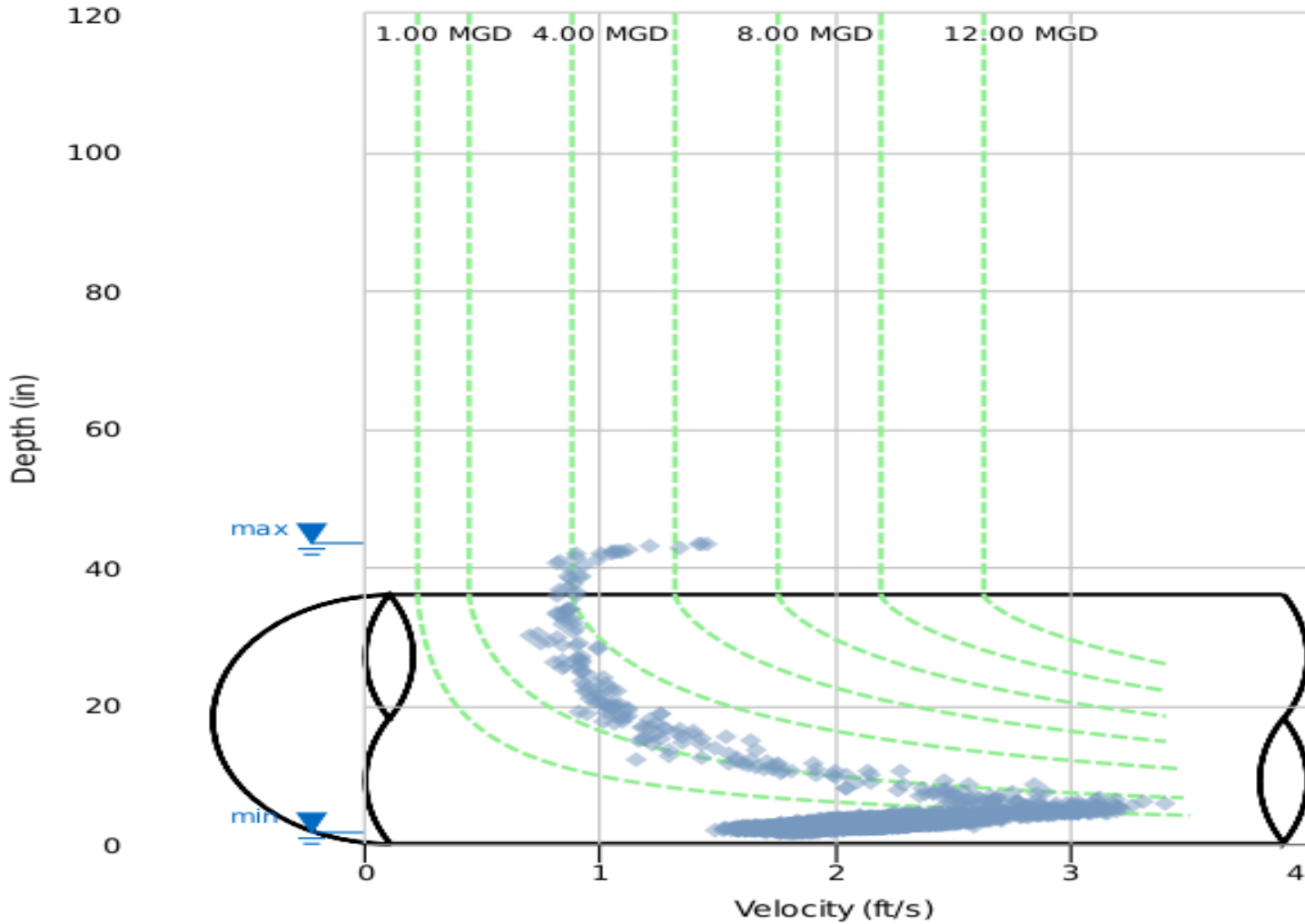
Greenfield\_M1

Flow Monitor  
**Greenfield\_M1**



Report Period  
09/01/2022  
To  
09/30/2022

Legend  
○ DFINAL - VFINAL  
--- Iso-Q™  
▼ Min-Max Depth





## Daily Tabular Report

09/01/2022 00:00 - 09/30/2022 23:59

Greenfield\_M1Pipe: Round (36 in H), Silt0.00 in

Date	DFINAL (in)					VFINAL (ft/s)					RAIN FINAL (in)
	Time	Min	Time	Max	Avg	Time	Min	Time	Max	Avg	Total
09/01/2022	05:20	1.98	22:05	3.07	2.53	05:00	1.78	21:35	2.52	2.19	-
09/02/2022	05:25	2.26	17:00	3.33	2.88	05:10	1.95	08:45	2.59	2.32	-
09/03/2022	23:55	2.11	11:15	3.35	2.66	23:55	1.97	11:05	2.55	2.23	-
09/04/2022	06:30	1.61	10:35	3.04	2.27	06:05	1.66	15:55	2.59	2.06	-
09/05/2022	03:20	2.20	21:55	19.12	3.58	21:50	0.91	23:20	3.21	2.28	1.07
09/06/2022	23:50	3.05	07:05	25.64	6.59	07:05	0.90	08:50	3.40	2.50	1.86
09/07/2022	04:50	2.94	20:05	4.19	3.46	05:05	2.02	17:05	2.50	2.27	-
09/08/2022	19:05	2.90	03:45	3.86	3.33	19:30	1.76	12:05	2.42	2.22	-
09/09/2022	02:55	2.65	08:30	3.81	3.32	05:05	1.81	09:30	2.40	2.18	-
09/10/2022	03:00	3.37	08:55	4.32	3.59	04:50	1.94	11:15	2.48	2.19	-
09/11/2022	06:10	2.87	21:05	3.79	3.30	05:45	1.89	11:45	2.36	2.14	-
09/12/2022	07:25	3.02	20:00	3.72	3.35	04:45	1.93	20:40	2.34	2.13	0.06
09/13/2022	05:30	2.92	19:40	43.44	6.10	08:40	0.70	09:20	2.88	2.12	0.91
09/14/2022	05:00	3.10	21:00	4.16	3.60	05:25	2.04	21:00	2.55	2.29	0.01
09/15/2022	23:55	2.94	09:00	6.87	3.47	23:45	1.99	08:55	2.69	2.23	-
09/16/2022	04:15	2.73	15:10	3.73	3.22	02:40	1.79	10:00	2.33	2.09	-
09/17/2022	02:45	2.47	11:55	3.58	3.04	05:20	1.67	11:35	2.38	2.02	-
09/18/2022	03:15	2.14	13:00	3.50	2.81	05:50	1.54	17:40	2.39	1.98	0.04
09/19/2022	05:40	1.94	20:00	42.37	5.24	20:20	0.82	18:30	3.03	2.01	1.09
09/20/2022	23:05	2.57	08:25	3.62	3.12	04:40	1.77	08:05	2.36	2.13	0.20
09/21/2022	04:50	2.14	09:50	3.42	2.85	04:45	1.71	20:50	2.31	2.06	-
09/22/2022	04:50	2.03	09:00	33.88	5.02	09:08	0.81	07:45	3.16	2.10	0.88
09/23/2022	04:45	2.44	08:40	3.62	3.01	04:50	1.74	12:05	2.45	2.11	-
09/24/2022	05:45	2.34	10:05	3.30	2.75	03:15	1.78	10:20	2.34	2.07	-
09/25/2022	05:35	1.97	10:50	3.31	2.64	05:00	1.48	12:55	2.26	1.97	0.02
09/26/2022	05:15	2.12	10:00	6.49	2.97	03:30	1.60	21:35	2.81	2.05	0.17
09/27/2022	04:40	2.10	20:40	3.23	2.79	04:40	1.60	10:05	2.29	2.01	-
09/28/2022	05:00	2.12	19:40	3.42	2.86	04:30	1.57	20:00	2.32	2.01	-
09/29/2022	23:50	2.65	20:20	3.42	3.00	05:05	1.82	21:30	2.33	2.08	-
09/30/2022	05:00	2.41	11:15	3.52	2.97	03:00	1.65	12:25	2.29	2.04	-

09/01/2022 00:00 - 09/30/2022 23:59

	DFINAL (in)	VFINAL (ft/s)	RAIN FINAL (in)
Total			6.31
Average	3.41	2.14	

# RG1

## Site Commentary

### DATA UPTIME

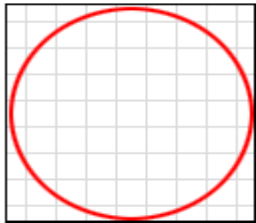
Data uptime observed during **Thursday, 01 September 2022 to Friday, 30 September 2022** is provided in the following table:

Percent Uptime	
RAINFINAL (in)	100

# Hydrograph Report

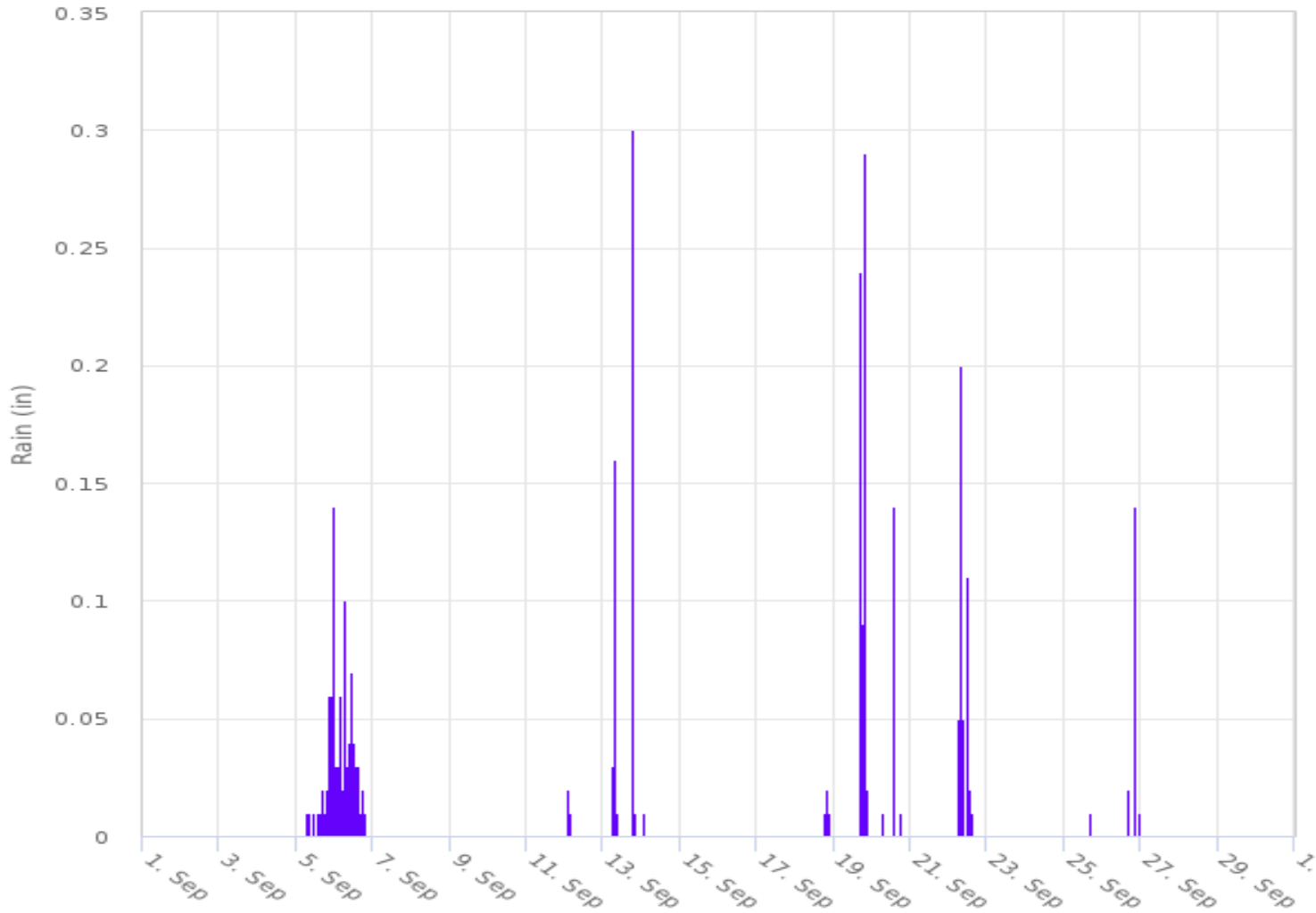
RG1

Rain Gauge  
**RG1**



Report Period  
09/01/2022  
To  
09/30/2022

Legend  
— DFINAL  
— RAIN FINAL  
— VFINAL



## Daily Tabular Report

09/01/2022 00:00 - 09/30/2022 23:59

RG1RainGauge: Unknown (0 H x 0 W), Silt0.00

Date	RAIN FINAL (in) Total
09/01/2022	-
09/02/2022	-
09/03/2022	-
09/04/2022	-
09/05/2022	1.07
09/06/2022	1.86
09/07/2022	-
09/08/2022	-
09/09/2022	-
09/10/2022	-
09/11/2022	-
09/12/2022	0.06
09/13/2022	0.91
09/14/2022	0.01
09/15/2022	-
09/16/2022	-
09/17/2022	-
09/18/2022	0.04
09/19/2022	1.09
09/20/2022	0.20
09/21/2022	-
09/22/2022	0.88
09/23/2022	-
09/24/2022	-
09/25/2022	0.02
09/26/2022	0.17
09/27/2022	-
09/28/2022	-
09/29/2022	-
09/30/2022	-

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	RAIN FINAL (in)
Total	6.31