

Montague, MA

Montague, MA

December 2021 Report Submitted to **Montague, MA**
January 12, 2022



340 The Bridge Street, Suite 204
Huntsville, AL 35806

800-633-7246
www.adsenv.com



January 12, 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 Wednesday, 01 December 2021 to Friday, 31 December 2021.

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
Data Analyst III, Congers, NY

Wednesday, 01 December 2021 to Friday, 31 December 2021



Montague, MA

Prepared For:

Chelsey Little, BSBS MPH
Superintendent
Montague WPCF

Prepared By:



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

Table of Contents

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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 **Wednesday, 01 December 2021 to Friday, 31 December 2021**, along with observed minimum and maximum data, are provided in the following table.

One (1) overflow was observed in the December monitoring period.

Observed Flow Conditions		
Item	DFINAL (in)	VFINAL (ft/s)
Average	1.86	1.80
Minimum	1.10	0.35
Maximum	9.34	9.99
Min Time	12/14/2021 4:15:00 AM	12/25/2021 5:20:00 AM
Max Time	12/11/2021 10:40:00 PM	12/11/2021 10:50:00 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 **Wednesday, 01 December 2021 to Friday, 31 December 2021** is provided in the following table:

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

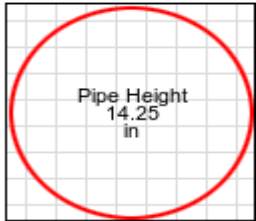
7th_L_CSO	Total	Duration	Start	Stop	Rain
	385	0:15:00	12/11/21 22:40	12/11/21 22:55	0.94

Total	Gals.	Hrs.	Rain
	385	0:15:00	0.94

Hydrograph Report

7th_L_CSO

Flow Monitor
7th_L_CSO



Report Period
12/01/2021
To
12/31/2021

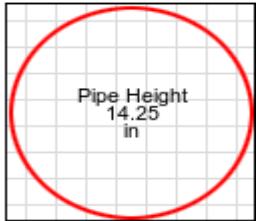
Legend
— DFINAL
— VFINAL
— RAIN FINAL



Scattergraph Report

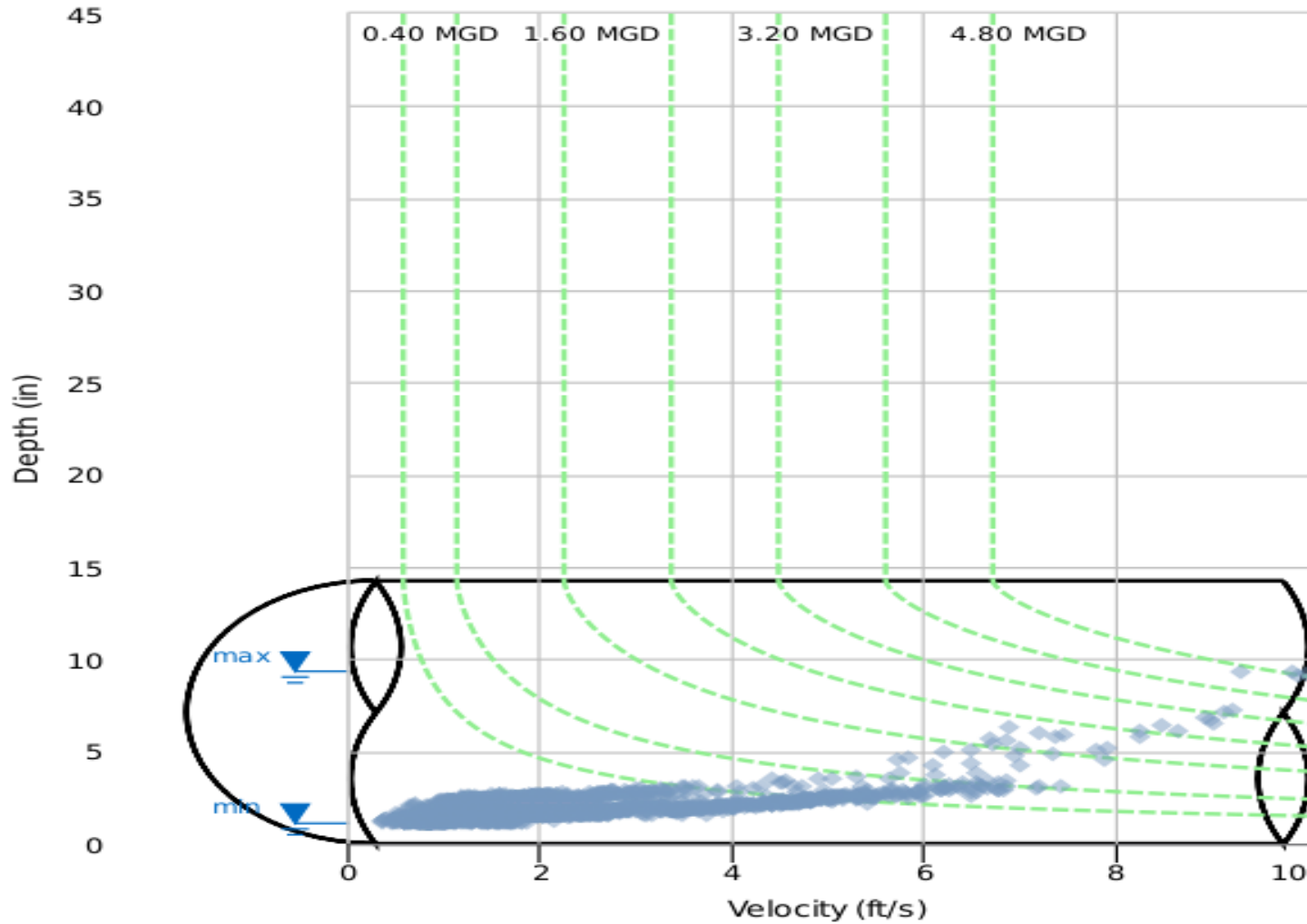
7th_L_CSO

Flow Monitor
7th_L_CSO



Report Period
12/01/2021
To
12/31/2021

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



Daily Tabular Report

12/01/2021 00:00 - 12/31/2021 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	
12/01/2021	04:20	1.78	13:35	2.44	2.19	03:20	0.75	19:20	2.00	1.42	-
12/02/2021	04:15	1.87	21:05	3.10	2.36	04:15	1.00	21:15	3.64	1.82	0.31
12/03/2021	04:35	1.81	19:05	2.48	2.22	04:30	0.63	09:55	1.88	1.42	-
12/04/2021	04:25	1.75	17:30	2.53	2.24	02:00	0.68	10:30	2.44	1.45	-
12/05/2021	03:20	2.09	13:05	2.73	2.36	06:15	0.70	12:00	2.28	1.58	-
12/06/2021	03:55	1.88	09:25	2.88	2.32	03:55	1.01	08:30	3.20	1.74	0.22
12/07/2021	04:40	1.75	19:00	2.42	2.17	04:20	0.87	18:55	2.36	1.43	-
12/08/2021	03:55	1.95	13:10	2.50	2.28	20:40	0.94	17:05	2.42	1.49	-
12/09/2021	04:05	1.96	19:50	2.44	2.26	03:10	0.83	17:45	2.39	1.55	0.03
12/10/2021	05:10	1.78	13:20	2.60	2.27	04:35	0.84	18:35	2.22	1.54	0.07
12/11/2021	21:25	1.75	22:40	9.34	2.56	21:45	1.01	22:50	9.99	2.60	0.94
12/12/2021	05:05	1.13	00:00	2.26	1.52	04:10	0.35	11:25	3.73	1.74	-
12/13/2021	02:40	1.15	20:10	1.74	1.52	00:30	0.39	18:45	2.69	1.65	-
12/14/2021	04:15	1.10	19:50	1.70	1.51	07:15	0.50	18:20	2.45	1.66	-
12/15/2021	03:10	1.12	23:35	2.32	1.58	04:55	0.64	23:30	4.82	1.82	0.16
12/16/2021	23:55	1.43	05:10	3.13	1.81	23:55	1.25	05:35	7.44	2.60	0.45
12/17/2021	05:05	1.20	15:40	1.76	1.57	04:55	0.58	08:30	2.31	1.64	-
12/18/2021	03:30	1.16	22:50	2.51	1.74	04:55	0.78	23:00	5.46	2.44	0.54
12/19/2021	06:30	1.39	00:00	2.39	1.73	06:30	1.03	00:00	4.79	2.07	0.11
12/20/2021	04:55	1.11	14:35	1.77	1.57	04:50	0.75	18:15	2.41	1.67	-
12/21/2021	04:00	1.12	09:10	1.77	1.54	03:15	0.76	09:10	2.56	1.75	-
12/22/2021	02:30	1.11	08:25	3.44	1.79	03:00	0.79	08:30	6.86	2.36	0.43
12/23/2021	03:45	1.20	11:45	1.77	1.58	02:50	0.60	09:45	2.35	1.60	-
12/24/2021	06:30	1.17	10:00	1.80	1.56	03:20	0.61	10:50	2.59	1.68	-
12/25/2021	05:10	1.11	13:50	2.75	1.77	05:20	0.35	13:45	5.80	2.43	0.51
12/26/2021	06:30	1.52	01:10	3.16	1.84	06:30	1.14	01:00	6.67	2.47	0.16
12/27/2021	04:35	1.14	10:15	1.78	1.60	04:40	0.65	19:10	2.53	1.62	-
12/28/2021	02:35	1.18	07:00	2.06	1.57	04:30	0.66	13:35	2.64	1.63	0.02
12/29/2021	04:05	1.13	18:30	1.77	1.56	04:00	0.63	10:35	2.46	1.65	0.01
12/30/2021	08:25	1.11	14:30	1.80	1.52	06:30	0.51	10:55	2.57	1.62	0.04
12/31/2021	08:45	1.12	15:50	1.83	1.53	04:25	0.39	12:55	2.94	1.61	0.02

12/01/2021 00:00 - 12/31/2021 23:59

	DFINAL (in)	VFINAL (ft/s)	RAIN FINAL (in)
Total			4.02
Average	1.86	1.80	

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 **Wednesday, 01 December 2021 to Friday, 31 December 2021**, along with observed minimum and maximum data, are provided in the following table.

Zero (0) overflows were observed in the December monitoring period.

Observed Flow Conditions	
Item	DFINAL (in)
Average	2.43
Minimum	1.40
Maximum	16.10
Min Time	12/27/2021 1:50:00 AM
Max Time	12/11/2021 10:50:00 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 **Wednesday, 01 December 2021 to Friday, 31 December 2021** is provided in the following table:

Percent Uptime	
DFINAL (in)	100

Hydrograph Report

Ave_A_CSO

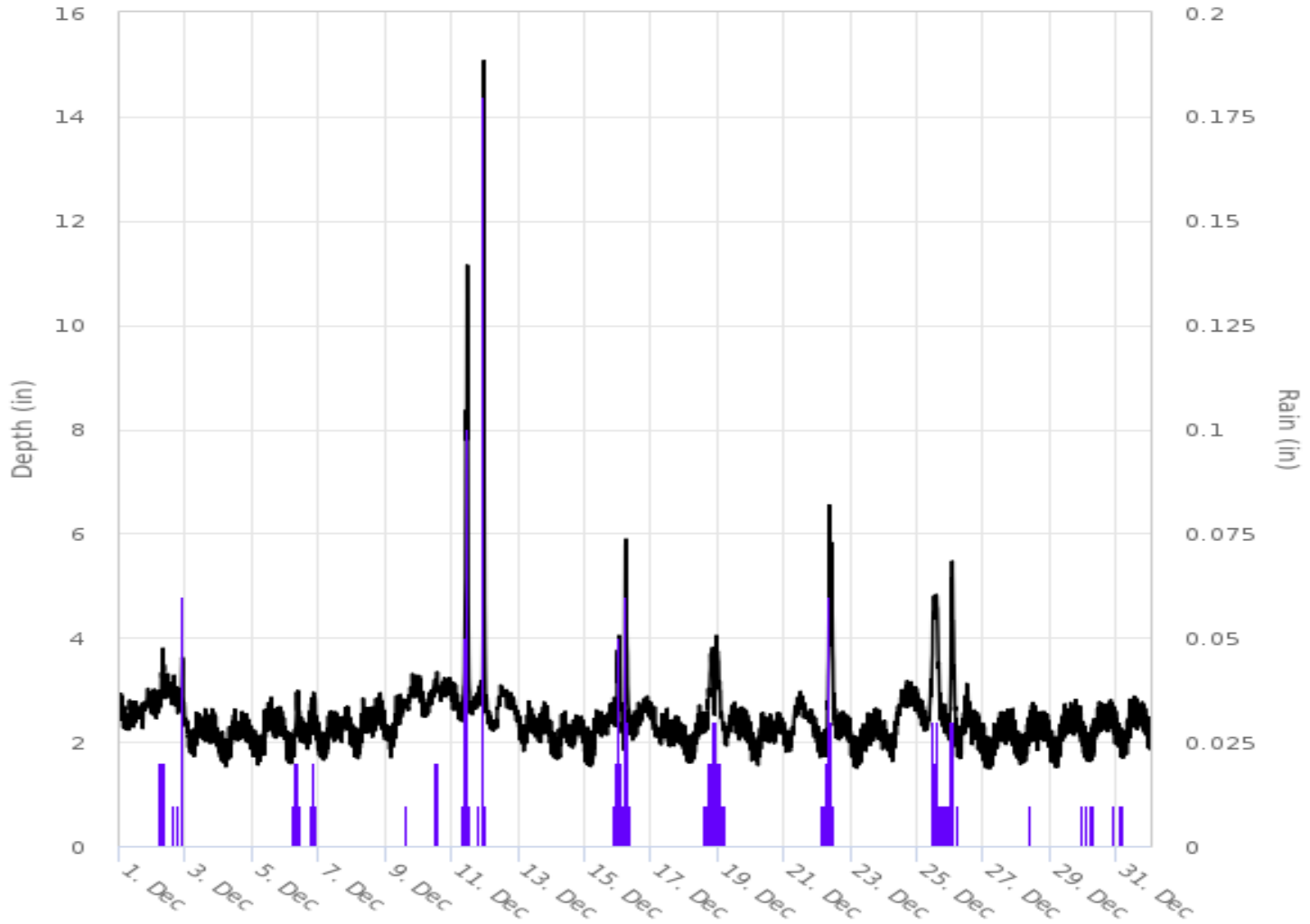
Flow Monitor
Ave_A_CSO

Pipe Height
21.00
in

Report Period
12/01/2021
To
12/31/2021

Legend
— DFINAL
— VFINAL
— RAIN FINAL

ABS ENVIRONMENTAL SERVICES



Daily Tabular Report

12/01/2021 00:00 - 12/31/2021 23:59

Ave_A_CSOPipe: Round (21 in H), Silt0.00 in

Date	DFINAL (in)					RAIN FINAL (in)
	Time	Min	Time	Max	Avg	
12/01/2021	04:25	1.68	19:30	3.51	2.60	-
12/02/2021	23:40	1.85	07:10	4.37	2.93	0.31
12/03/2021	05:10	1.59	09:25	3.24	2.21	-
12/04/2021	04:30	1.42	16:20	3.16	2.07	-
12/05/2021	05:50	1.49	11:25	3.25	2.21	-
12/06/2021	02:20	1.44	08:40	3.60	2.20	0.22
12/07/2021	04:50	1.53	08:50	3.23	2.20	-
12/08/2021	02:25	1.65	20:05	3.67	2.36	-
12/09/2021	03:55	1.60	20:05	3.96	2.62	0.03
12/10/2021	04:40	1.77	13:00	3.92	2.94	0.07
12/11/2021	04:45	1.91	22:50	16.10	3.60	0.94
12/12/2021	05:45	1.62	00:20	3.75	2.66	-
12/13/2021	02:15	1.60	20:10	3.47	2.30	-
12/14/2021	04:35	1.56	22:40	3.18	2.09	-
12/15/2021	02:35	1.47	23:25	4.03	2.29	0.16
12/16/2021	03:55	1.58	05:00	6.80	2.73	0.45
12/17/2021	04:40	1.52	07:55	3.25	2.23	-
12/18/2021	04:00	1.54	22:50	4.21	2.47	0.54
12/19/2021	04:35	1.71	00:10	3.85	2.41	0.11
12/20/2021	02:10	1.45	18:55	3.19	2.16	-
12/21/2021	03:35	1.48	09:25	3.63	2.40	-
12/22/2021	02:00	1.51	08:20	7.31	2.59	0.43
12/23/2021	04:20	1.43	15:15	3.13	2.11	-
12/24/2021	05:55	1.44	18:30	3.70	2.53	-
12/25/2021	07:00	1.70	11:45	5.12	2.94	0.51
12/26/2021	23:55	1.59	01:00	5.99	2.53	0.16
12/27/2021	01:50	1.40	20:30	3.33	2.06	-
12/28/2021	02:20	1.47	19:15	3.34	2.17	0.02
12/29/2021	03:40	1.44	17:25	3.41	2.24	0.01
12/30/2021	03:30	1.52	16:30	3.41	2.30	0.04
12/31/2021	05:45	1.65	18:15	3.45	2.31	0.02

12/01/2021 00:00 - 12/31/2021 23:59

	DFINAL (in)	VFINAL (ft/s)		RAIN FINAL (in)
Total				4.02
Average	2.43			

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 **Wednesday, 01 December 2021 to Friday, 31 December 2021**, along with observed minimum and maximum data, are provided in the following table.

Zero (0) overflows were observed in the December monitoring period.

Observed Flow Conditions		
Item	DFINAL (in)	VFINAL (ft/s)
Average	5.12	2.26
Minimum	3.42	0.73
Maximum	32.08	3.14
Min Time	12/04/2021 6:35:00 AM	12/11/2021 11:45:00 AM
Max Time	12/11/2021 11:35:00 AM	12/16/2021 6:35:00 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

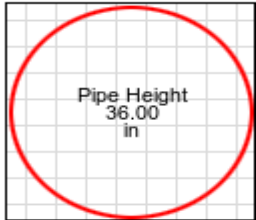
Data uptime observed during **Wednesday, 01 December 2021 to Friday, 31 December 2021** is provided in the following table:

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

Hydrograph Report

Greenfield_M1

Flow Monitor
Greenfield_M1



Report Period
12/01/2021
To
12/31/2021

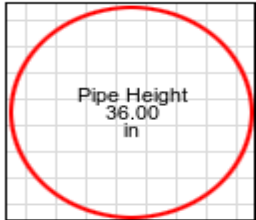
Legend
— DFINAL
— VFINAL
— RAIN FINAL



Scattergraph Report

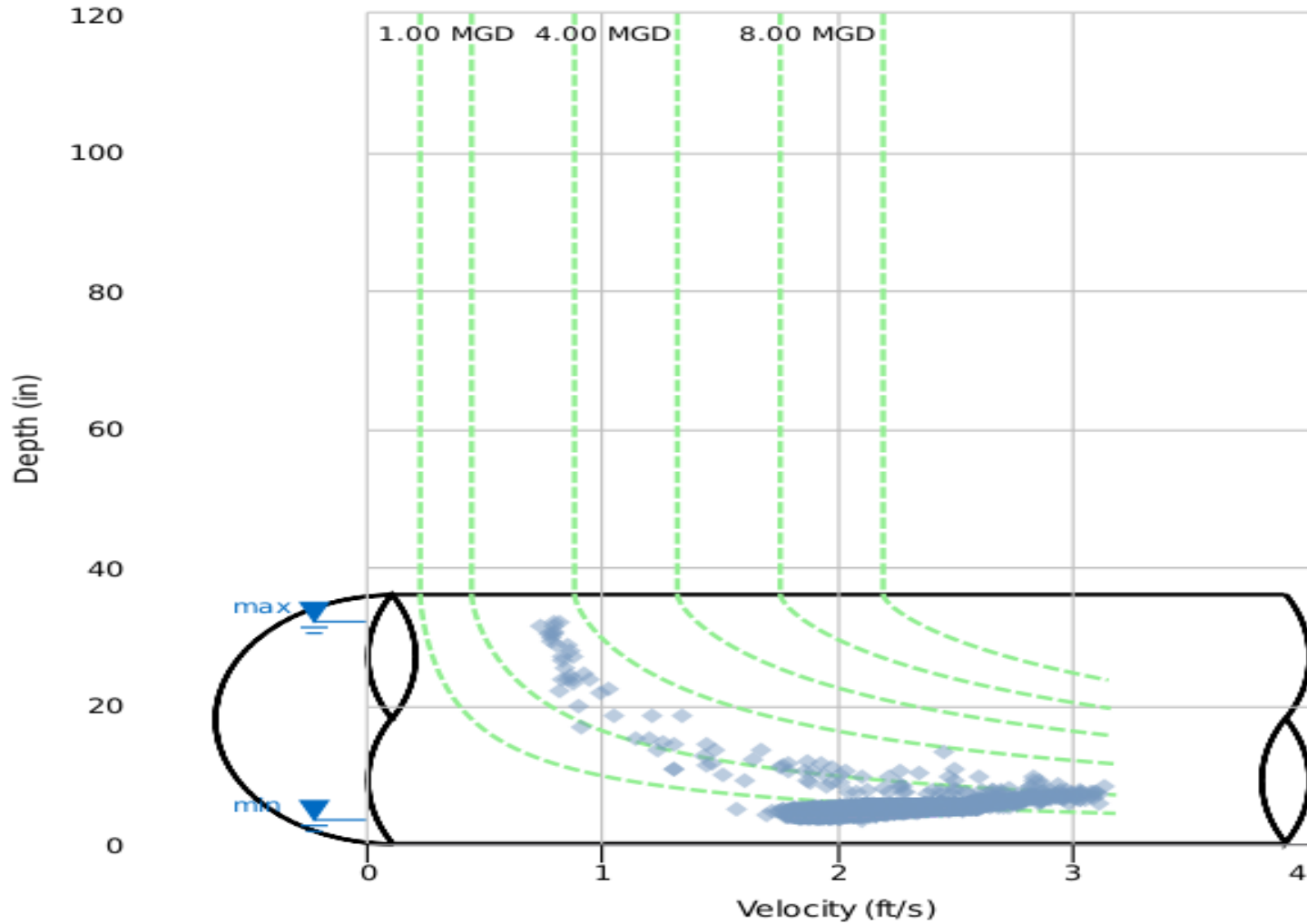
Greenfield_M1

Flow Monitor
Greenfield_M1



Report Period
12/01/2021
To
12/31/2021

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



Daily Tabular Report

12/01/2021 00:00 - 12/31/2021 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	
12/01/2021	05:35	4.42	20:55	5.40	4.99	02:25	2.00	08:05	2.60	2.34	-
12/02/2021	04:50	4.77	08:25	6.14	5.38	05:05	2.14	08:15	2.87	2.48	0.31
12/03/2021	05:30	4.16	17:25	5.38	4.82	05:15	1.88	18:45	2.45	2.24	-
12/04/2021	06:35	3.42	09:35	5.28	4.54	04:55	1.84	12:05	2.51	2.15	-
12/05/2021	03:50	3.60	13:40	5.14	4.53	02:15	1.80	13:15	2.56	2.15	-
12/06/2021	06:00	3.53	09:45	5.48	4.69	04:35	1.78	09:40	2.59	2.21	0.22
12/07/2021	03:40	3.87	19:05	5.34	4.72	04:45	1.70	20:55	2.50	2.20	-
12/08/2021	05:45	3.82	15:20	5.26	4.80	05:20	1.89	14:05	2.54	2.23	-
12/09/2021	05:15	4.13	21:35	5.40	4.88	05:00	1.91	13:10	2.54	2.26	0.03
12/10/2021	05:25	4.48	19:20	5.45	5.03	05:00	2.07	19:10	2.68	2.37	0.07
12/11/2021	05:35	4.35	11:35	32.08	7.48	11:45	0.73	23:00	3.11	2.18	0.94
12/12/2021	07:15	4.08	00:00	18.38	5.16	00:00	1.34	00:20	2.96	2.37	-
12/13/2021	03:45	3.79	09:45	5.24	4.80	03:35	1.96	19:05	2.58	2.28	-
12/14/2021	05:40	4.03	08:20	5.42	4.79	05:40	1.85	08:05	2.59	2.28	-
12/15/2021	05:20	4.10	23:55	5.37	4.87	05:05	1.91	10:20	2.59	2.32	0.16
12/16/2021	05:00	4.52	06:15	11.20	5.61	06:20	1.75	06:35	3.14	2.44	0.45
12/17/2021	04:55	4.54	11:35	5.34	5.01	06:45	1.96	11:35	2.49	2.27	-
12/18/2021	06:30	3.72	23:55	6.81	5.10	05:35	1.78	23:40	2.91	2.26	0.54
12/19/2021	06:00	4.60	00:00	6.84	5.23	05:35	2.05	00:55	2.86	2.32	0.11
12/20/2021	01:55	4.49	19:15	5.49	5.08	03:35	1.95	11:30	2.42	2.22	-
12/21/2021	04:55	4.57	13:55	5.75	5.26	23:45	1.93	11:55	2.66	2.30	-
12/22/2021	04:50	4.57	09:10	15.31	5.74	09:10	1.15	10:25	2.96	2.27	0.43
12/23/2021	08:05	4.39	12:00	5.42	5.07	04:25	1.98	08:45	2.54	2.25	-
12/24/2021	06:30	4.37	13:15	5.72	5.12	05:35	1.84	19:20	2.65	2.28	-
12/25/2021	06:25	4.53	14:30	8.06	5.39	04:50	2.03	12:20	3.11	2.40	0.51
12/26/2021	07:50	4.43	01:45	10.54	5.30	01:40	1.79	01:05	3.01	2.32	0.16
12/27/2021	04:50	4.23	14:20	5.35	4.83	19:25	1.57	12:55	2.58	2.18	-
12/28/2021	05:05	4.35	12:50	5.67	4.97	05:05	1.93	10:20	2.54	2.20	0.02
12/29/2021	04:50	4.66	18:15	5.69	5.17	05:05	1.84	14:10	2.39	2.16	0.01
12/30/2021	04:40	4.51	13:25	5.65	5.16	06:00	1.72	09:00	2.32	2.07	0.04
12/31/2021	05:25	4.66	13:45	5.84	5.14	05:15	1.74	13:20	2.26	1.97	0.02

12/01/2021 00:00 - 12/31/2021 23:59

	DFINAL (in)	VFINAL (ft/s)	RAIN FINAL (in)
Total			4.02
Average	5.12	2.26	

RG1

Site Commentary

DATA UPTIME

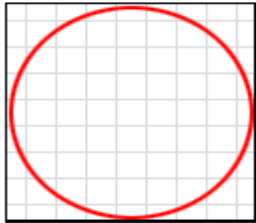
Data uptime observed during **Wednesday, 01 December 2021 to Friday, 31 December 2021** is provided in the following table:

Percent Uptime	
Rainfall (in)	100

Hydrograph Report

RG1

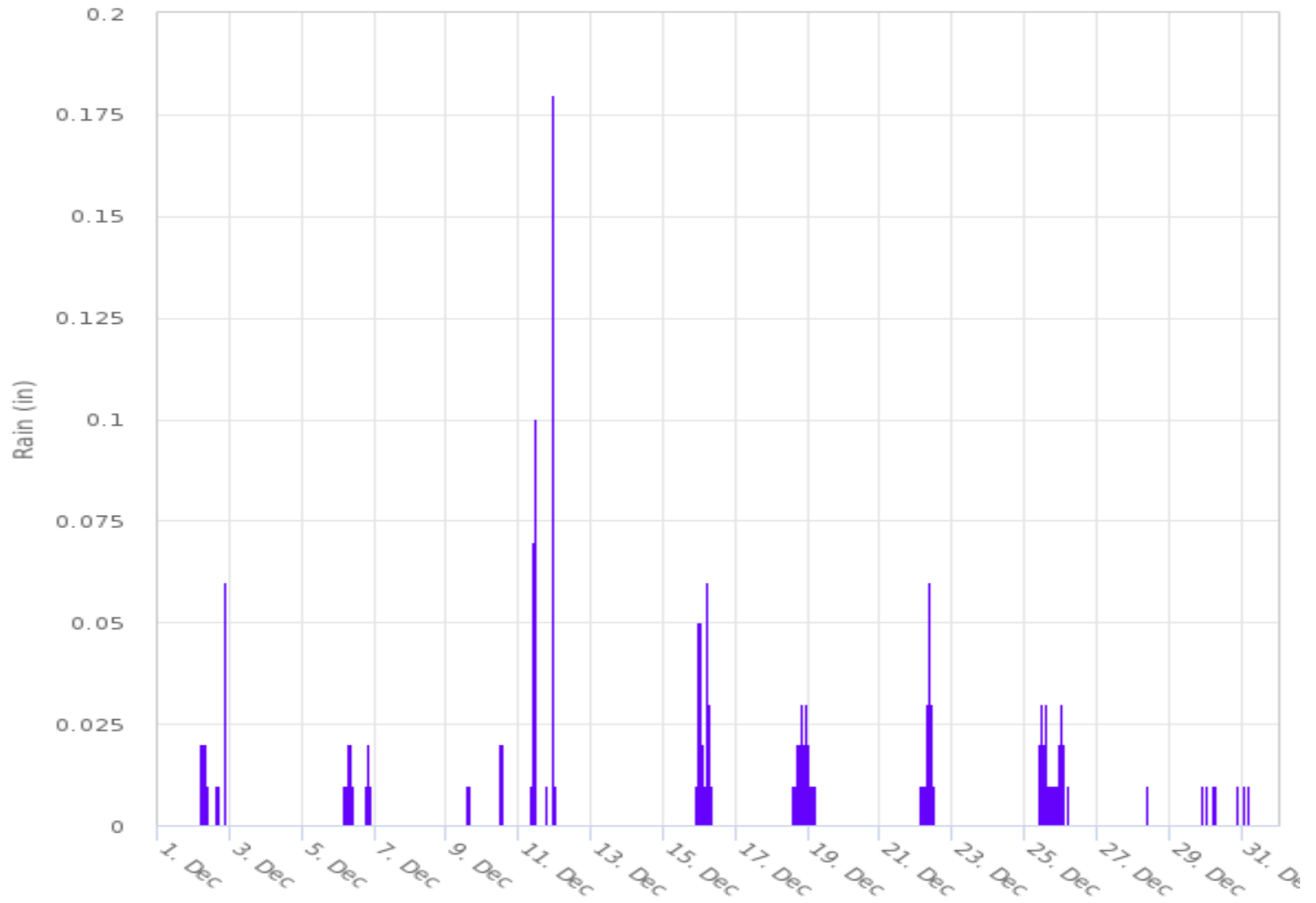
Rain Gauge
RG1



Report Period
12/01/2021
To
12/31/2021

Legend
— RAIN FINAL

ABS ENVIRONMENTAL SERVICES



Daily Tabular Report

12/01/2021 00:00 - 12/31/2021 23:59
RG1Rain Gauge: Unknown (0 H x 0 W), Silt0.00

	RAIN FINAL (in)
Date	Total
12/01/2021	-
12/02/2021	0.31
12/03/2021	-
12/04/2021	-
12/05/2021	-
12/06/2021	0.22
12/07/2021	-
12/08/2021	-
12/09/2021	0.03
12/10/2021	0.07
12/11/2021	0.94
12/12/2021	-
12/13/2021	-
12/14/2021	-
12/15/2021	0.16
12/16/2021	0.45
12/17/2021	-
12/18/2021	0.54
12/19/2021	0.11
12/20/2021	-
12/21/2021	-
12/22/2021	0.43
12/23/2021	-
12/24/2021	-
12/25/2021	0.51
12/26/2021	0.16
12/27/2021	-
12/28/2021	0.02
12/29/2021	0.01
12/30/2021	0.04
12/31/2021	0.02

12/01/2021 00:00 - 12/31/2021 23:59

	RAIN FINAL (in)
Total	4.02