Lake Thunderbird TMDL Monitoring Plan Implementation: Sample Year (SY) 2019- December Report

SY2019 Monthly Report

Lake Thunderbird TMDL Monitoring Plan Implementation:

December 2019 Monitoring Report

Oklahoma Water Resources Board
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SUMMARY OF DECEMBER WATER QUALITY SAMPLING

Sampling for December 2019 occurred on the seventeenth and was considered a base flow collection. Water samples were collected at all ten locations, and discharge measurements were collected at nine locations. Mesonet data shows no precipitation occurring on the seventeenth, 0.02 inches of precipitation in the 72 hours prior to sampling, and no precipitation in the 72 hours after the sampling event. The total rainfall amount in Norman for the month of December was 0.58 inches. All water level gauges were operational for the month, with the exception of LT-1 and CC-1 due to equipment malfunction.

RESULTS

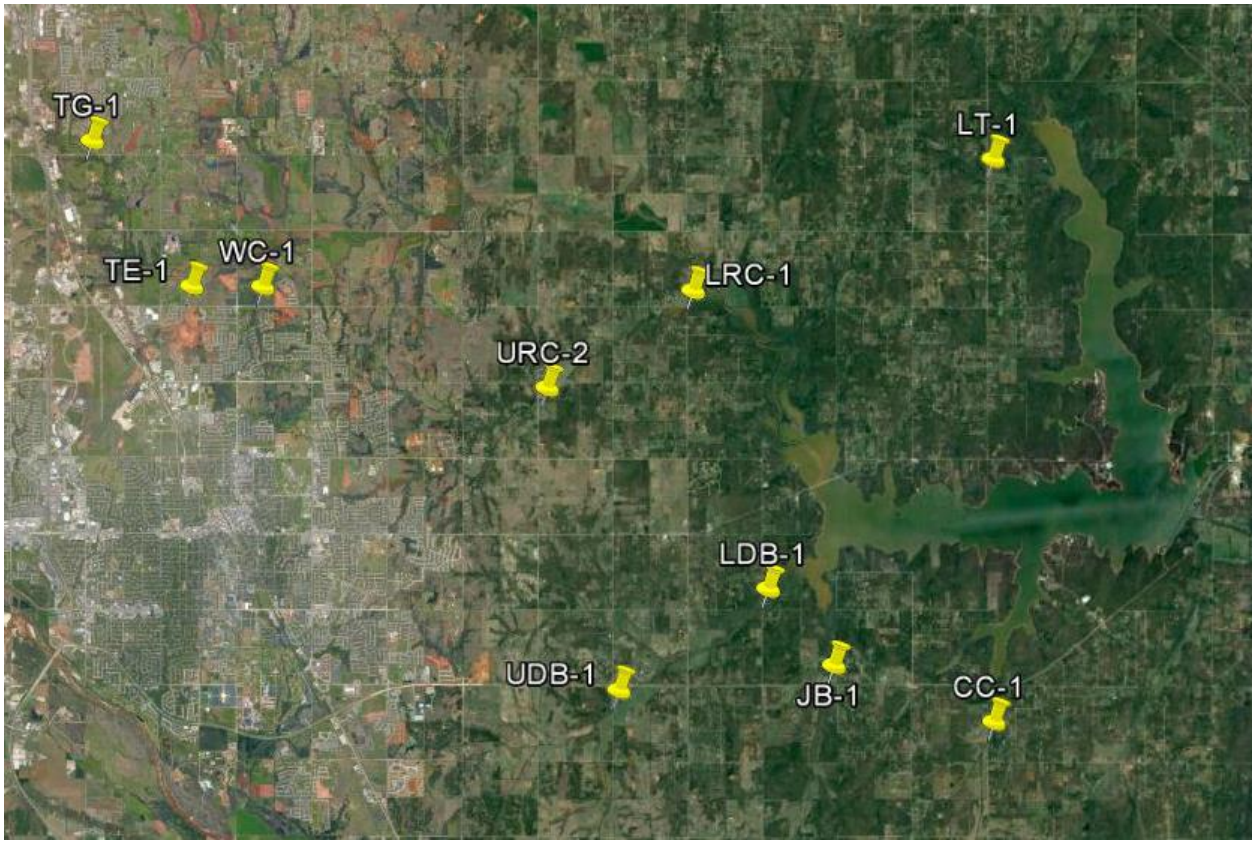

Figure 1 Monitoring Station Map

Monitoring Location ID	Monitoring Location Name	Date	Time	Field Crew	Water Temperature (℃)	Dissolved Oxygen (DO) (mg/l)	pH	Specific Conductance (mS/cm)	Turbidity (NTU)	Notes
CC-1	Clear Creek	12-17-2019	10:10	SD	3.3	13.34	7.93	713	4	None of rps over water, estimated from rp2 which was closest to edge of water
JB-1	Jim Blue Creek	12-17-2019	10:55	SD	2.7	12.42	7.65	961	2	rp1 not over water
LDB-1	Lower Dave Blue Creek	12-17-2019	11:30	SD	4.0	14.03	7.93	890	7	
LRC-1	Lower Rock Creek	12-17-2019	13:00	SD	3.6	12.10	7.61	490	10	
LT-1	Lake Laterals	12-17-2019	12:10	SD	4.9	7.01	7.40	569	2	downstream completely frozen
TE-1	Little River Tributary	12-17-2019	15:00	SD	6.5	13.44	7.90	1137	21	
TG-1	Little River Tributary	12-17-2019	15:45	SD	4.2	14.48	7.90	1205	5	
UDB-1	Upper Dave Blue Creek	12-17-2019	9:05	SD	2.0	11.31	7.68	1003	9	
URC-2	Upper Rock Creek	12-17-2019	13:45	SD	5.1	11.09	7.49	394	11	rp1 not over water, used rp2
WC-1	Woodcrest Creek	12-17-2019	14:30	SD	6.0	7.57	7.54	1082	3	changed dcp

Table 1 Field Data Form

Monitoring Location ID	Monitoring Location Name	Nitrate and Nitrite (mg/l)	Kjeldahl Nitrogen (mg/l)	Phosphorus (mg/l)	Total Suspended Solids (mg/l)
CC-1	Clear Creek	0.16	0.12	0.020	<5.0
JB-1	Jim Blue Creek	<0.05	0.23	0.021	<5.0
LDB-1	Lower Dave Blue Creek	0.06	0.44	0.036	<5.0
LRC-1	Lower Rock Creek	0.32	0.79	0.057	10.0
LT-1	Lake Laterals	<0.05	0.34	0.030	12.0
TE-1	Little River Tributary	<0.05	0.51	0.039	16.0
TG-1	Little River Tributary	0.10	0.32	0.033	12.0
UDB-1	Upper Dave Blue Creek	<0.05	0.13	0.026	<5.0
URC-2	Upper Rock Creek	0.35	0.95	0.054	8.0
WC-1	Woodcrest Creek	<0.05	0.37	0.063	<5.0

Table 2 Laboratory Analysis Summary

Monitoring Location Name	Nitrate and Nitrite (mg/l)	Kjeldahl Nitrogen (mg/l)	Phosphorus (mg/l)	Total Suspended Solids (mg/l)
Field Blank	<0.05	<0.10	<0.010	<5.0
Duplicate	0.16	0.11	0.019	<5.0
Duplicate RPD	0%	8.70%	5.13%	0%

Table 3 QA/QC Data

Quality assurance/quality control (QA/QC) of the data includes a field blank and duplicate sample from each collection event, and is qualified by the OWRB. Relative Percent Difference (RPD) of the duplicate sample can be categorized into four levels, where Level 1 likely has no QA issues and Level 4 has major QA issues, and should be used with caution.

Monitoring Location ID	Monitoring Location Name	Discharge (cfs)	Stream Stage (ft)
CC-1	Clear Creek	0.41	20.39
JB-1	Jim Blue Creek	0.21	15.76
LDB-1	Lower Dave Blue Creek	2.08	16.53
LRC-1	Lower Rock Creek	1.90	18.64
LT-1	Lake Laterals	0.04	4.29
TE-1	Little River Tributary	0.29	11.34
TG-1	Little River Tributary	0.71	9.00
UDB-1	Upper Dave Blue Creek	0.41	17.26
URC-2	Upper Rock Creek	0.44	11.00
WC-1	Woodcrest Creek	0.08	7.73

Table 4 Station Discharge Summary

Discharge Measurement Summary

Date Generated: Wed Dec 18 2019

File Information

File Name	CC121719.WAD
Start Date and Time	2019/12/17 09:55:20

Site Details

Site Name	CC121719
Operator(s)	ZMM

System Information

Sensor Type	FlowTracker
Serial #	P4709
CPU Firmware Version	3.9
Software Ver	2.30
Mounting Correction	0.0%

Units (English Units)

Distance	ft
Velocity	ft/s
Area	ft^2
Discharge	cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.7%	6.6%
Velocity	3.3%	48.3%
Width	0.2%	0.2%
Method	3.5%	-
# Stations	4.6%	-
Overall	**6.8%**	**48.7%**

Summary

Averaging Int.	40	# Stations	11
Start Edge	LEW	Total Width	8.000
Mean SNR	38.8 dB	Total Area	1.600
Mean Temp	37.38 °F	Mean Depth	0.200
Disch. Equation	Mid-Section	Mean Velocity	0.2568
		Total Discharge	**0.4109**

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Dec 17 10:01:44 CST 2019	3.000	20.390		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	09:55	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	*10:00*	*1.50*	*0.6*	*0.300*	*0.6*	*0.120*	*0.3471*	*1.00*	*0.3471*	*0.300*	*0.1041*	*25.3*
2	*10:02*	*2.00*	*0.6*	*0.300*	*0.6*	*0.120*	*0.7871*	*1.00*	*0.7871*	*0.150*	*0.1180*	*28.7*
3	*10:02*	*2.50*	*0.6*	*0.300*	*0.6*	*0.120*	*0.0089*	*1.00*	*0.0089*	*0.150*	*0.0013*	*0.3*
4	*10:05*	*3.00*	*0.6*	*0.200*	*0.6*	*0.080*	*0.2749*	*1.00*	*0.2749*	*0.200*	*0.0550*	*13.4*
5	*10:07*	*4.50*	*0.6*	*0.200*	*0.6*	*0.080*	*0.0000*	*1.00*	*0.0000*	*0.200*	*0.0000*	*0.0*
6	*10:09*	*5.00*	*0.6*	*0.200*	*0.6*	*0.080*	*0.5673*	*1.00*	*0.5673*	*0.100*	*0.0568*	*13.8*
7	*10:12*	*5.50*	*0.6*	*0.300*	*0.6*	*0.120*	*0.0075*	*1.00*	*0.0075*	*0.150*	*0.0011*	*0.3*
8	*10:13*	*6.00*	*0.6*	*0.300*	*0.6*	*0.120*	*0.4974*	*1.00*	*0.4974*	*0.150*	*0.0746*	*18.1*
9	*10:14*	*6.50*	*0.6*	*0.200*	*0.6*	*0.080*	*0.0000*	*1.00*	*0.0000*	*0.200*	*0.0000*	*0.0*
10	10:14	8.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Figure 2 Discharge Measurement Summary CC-1

Discharge Measurement Summary

Date Generated: Wed Dec 18 2019

File Information

File Name	JB121719.WAD
Start Date and Time	2019/12/17 10:46:04

Site Details

Site Name	JB121719
Operator(s)	ZMM

System Information

Sensor Type	FlowTracker
Serial #	P4709
CPU Firmware Version	3.9
Software Ver	2.30
Mounting Correction	0.0%

Units	(English Units)
Distance	ft
Velocity	ft/s
Area	ft^2
Discharge	cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.7%	5.6%
Velocity	2.6%	11.4%
Width	0.2%	0.2%
Method	3.6%	-
# Stations	5.8%	-
Overall	**7.4%**	**12.7%**

Summary

Averaging Int.	40	# Stations	9
Start Edge	LEW	Total Width	4.000
Mean SNR	32.6 dB	Total Area	2.200
Mean Temp	36.45 °F	Mean Depth	0.550
Disch. Equation	Mid-Section	Mean Velocity	0.0949
		Total Discharge	**0.2088**

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Dec 17 10:44:12 CST 2019	0.000	15.760		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	10:46	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	*10:47*	*0.50*	*0.6*	*0.200*	*0.6*	*0.080*	*0.0003*	*1.00*	*0.0003*	*0.100*	*0.0000*	*0.0*
2	*10:52*	*1.00*	*0.6*	*0.600*	*0.6*	*0.240*	*0.0000*	*1.00*	*0.0000*	*0.300*	*0.0000*	*0.0*
3	10:53	1.50	0.6	0.800	0.6	0.320	0.0869	1.00	0.0869	0.400	0.0348	16.7
4	10:54	2.00	0.6	0.800	0.6	0.320	0.0932	1.00	0.0932	0.400	0.0373	17.8
5	*10:56*	*2.50*	*0.6*	*0.800*	*0.6*	*0.320*	*0.1440*	*1.00*	*0.1440*	*0.400*	*0.0576*	*27.6*
6	*10:57*	*3.00*	*0.6*	*0.800*	*0.6*	*0.320*	*0.1558*	*1.00*	*0.1558*	*0.400*	*0.0623*	*29.9*
7	*10:59*	*3.50*	*0.6*	*0.400*	*0.6*	*0.160*	*0.0840*	*1.00*	*0.0840*	*0.200*	*0.0168*	*8.0*
8	10:59	4.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Figure 3 Discharge Measurement Summary JB-1

Discharge Measurement Summary

Date Generated: Wed Dec 18 2019

File Information

File Name	UDB1217.WAD
Start Date and Time	2019/12/17 08:51:42

Site Details

Site Name	UDB121719
Operator(s)	ZMM

System Information

Sensor Type	FlowTracker
Serial #	P4709
CPU Firmware Version	3.9
Software Ver	2.30
Mounting Correction	0.0%

Units (English Units)

Distance	ft
Velocity	ft/s
Area	ft^2
Discharge	cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.3%	2.7%
Velocity	1.6%	9.4%
Width	0.1%	0.1%
Method	1.9%	-
# Stations	1.7%	-
Overall	**3.2%**	**9.8%**

Summary

Averaging Int.	40	# Stations	31
Start Edge	LEW	Total Width	15.000
Mean SNR	17.7 dB	Total Area	11.750
Mean Temp	35.19 °F	Mean Depth	0.783
Disch. Equation	Mid-Section	Mean Velocity	0.0347
		Total Discharge	**0.4080**

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Dec 17 09:00:35 CST 2019	4.000	17.260		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	08:51	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	*08:51*	*0.50*	*0.6*	*0.300*	*0.6*	*0.120*	*0.0000*	*1.00*	*0.0000*	*0.150*	*0.0000*	*0.0*
2	*08:53*	*1.00*	*0.6*	*0.400*	*0.6*	*0.160*	*-0.0003*	*1.00*	*-0.0003*	*0.200*	*-0.0001*	*0.0*
3	*08:54*	*1.50*	*0.6*	*0.600*	*0.6*	*0.240*	*0.0000*	*1.00*	*0.0000*	*0.300*	*0.0000*	*0.0*
4	*08:55*	*2.00*	*0.6*	*0.700*	*0.6*	*0.280*	*0.0098*	*1.00*	*0.0098*	*0.350*	*0.0034*	*0.8*
5	*08:56*	*2.50*	*0.6*	*0.800*	*0.6*	*0.320*	*0.0066*	*1.00*	*0.0066*	*0.400*	*0.0026*	*0.6*
6	*08:58*	*3.00*	*0.6*	*1.000*	*0.6*	*0.400*	*0.0167*	*1.00*	*0.0167*	*0.500*	*0.0084*	*2.1*
7	08:59	3.50	0.6	0.700	0.6	0.280	0.0174	1.00	0.0174	0.350	0.0061	1.5
8	*09:00*	*4.00*	*0.6*	*1.000*	*0.6*	*0.400*	*0.0007*	*1.00*	*0.0007*	*0.500*	*0.0003*	*0.1*
9	*09:02*	*4.50*	*0.6*	*1.000*	*0.6*	*0.400*	*0.0207*	*1.00*	*0.0207*	*0.500*	*0.0103*	*2.5*
10	09:03	5.00	0.6	0.800	0.6	0.320	0.0190	1.00	0.0190	0.400	0.0076	1.9
11	09:05	5.50	0.6	1.000	0.6	0.400	0.0269	1.00	0.0269	0.500	0.0135	3.3
12	*09:06*	*6.00*	*0.6*	*0.900*	*0.6*	*0.360*	*0.0223*	*1.00*	*0.0223*	*0.450*	*0.0100*	*2.5*
13	09:07	6.50	0.6	1.200	0.6	0.480	0.0322	1.00	0.0322	0.600	0.0193	4.7
14	09:08	7.00	0.6	1.200	0.6	0.480	0.0551	1.00	0.0551	0.600	0.0331	8.1
15	09:09	7.50	0.6	1.200	0.6	0.480	0.0505	1.00	0.0505	0.600	0.0303	7.4
16	09:10	8.00	0.6	1.200	0.6	0.480	0.0344	1.00	0.0344	0.600	0.0207	5.1
17	*09:11*	*8.50*	*0.6*	*1.100*	*0.6*	*0.440*	*0.0226*	*1.00*	*0.0226*	*0.550*	*0.0125*	*3.1*
18	*09:13*	*9.00*	*0.6*	*1.200*	*0.6*	*0.480*	*0.0627*	*1.00*	*0.0627*	*0.600*	*0.0376*	*9.2*
19	*09:14*	*9.50*	*0.6*	*1.000*	*0.6*	*0.400*	*0.0866*	*1.00*	*0.0866*	*0.500*	*0.0433*	*10.6*
20	09:16	10.00	0.6	0.800	0.6	0.320	0.0390	1.00	0.0390	0.400	0.0156	3.8
21	*09:17*	*10.50*	*0.6*	*0.800*	*0.6*	*0.320*	*0.1178*	*1.00*	*0.1178*	*0.400*	*0.0471*	*11.5*
22	*09:18*	*11.00*	*0.6*	*0.800*	*0.6*	*0.320*	*0.0741*	*1.00*	*0.0741*	*0.400*	*0.0297*	*7.3*
23	*09:19*	*11.50*	*0.6*	*0.700*	*0.6*	*0.280*	*0.0663*	*1.00*	*0.0663*	*0.350*	*0.0232*	*5.7*
24	*09:20*	*12.00*	*0.6*	*0.700*	*0.6*	*0.280*	*0.0505*	*1.00*	*0.0505*	*0.350*	*0.0177*	*4.3*
25	*09:21*	*12.50*	*0.6*	*0.700*	*0.6*	*0.280*	*0.0144*	*1.00*	*0.0144*	*0.350*	*0.0051*	*1.2*
26	*09:23*	*13.00*	*0.6*	*0.500*	*0.6*	*0.200*	*0.0052*	*1.00*	*0.0052*	*0.250*	*0.0013*	*0.3*
27	09:24	13.50	0.6	0.500	0.6	0.200	0.0082	1.00	0.0082	0.250	0.0021	0.5
28	*09:25*	*14.00*	*0.6*	*0.400*	*0.6*	*0.160*	*0.0177*	*1.00*	*0.0177*	*0.200*	*0.0035*	*0.9*
29	09:26	14.50	0.6	0.300	0.6	0.120	0.0256	1.00	0.0256	0.150	0.0038	0.9
30	09:26	15.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Figure 4 Discharge Measurement Summary UDB-1

Discharge Measurement Summary

Date Generated: Wed Dec 18 2019

File Information

File Name	LT121719.WAD
Start Date and Time	2019/12/17 12:10:53

Site Details

Site Name	LT121719
Operator(s)	ZMM

System Information

Sensor Type	FlowTracker
Serial #	P4709
CPU Firmware Version	3.9
Software Ver	2.30
Mounting Correction	0.0%

Units	(English Units)
Distance	ft
Velocity	ft/s
Area	ft^2
Discharge	cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.7%	1.7%
Velocity	3.6%	31.7%
Width	0.2%	0.2%
Method	3.3%	-
# Stations	4.2%	-
Overall	**6.6%**	**31.8%**

Summary

Averaging Int.	40	# Stations	12
Start Edge	LEW	Total Width	6.500
Mean SNR	37.4 dB	Total Area	2.100
Mean Temp	40.78 °F	Mean Depth	0.323
Disch. Equation	Mid-Section	Mean Velocity	0.0197
		Total Discharge	**0.0413**

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Dec 17 12:08:20 CST 2019	0.000	4.290		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	12:10	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	*12:10*	*1.50*	*0.6*	*0.300*	*0.6*	*0.120*	*0.0236*	*1.00*	*0.0236*	*0.300*	*0.0071*	*17.2*
2	12:12	2.00	0.6	0.400	0.6	0.160	0.0299	1.00	0.0299	0.200	0.0060	14.5
3	*12:13*	*2.50*	*0.6*	*0.400*	*0.6*	*0.160*	*0.0016*	*1.00*	*0.0016*	*0.200*	*0.0003*	*0.8*
4	*12:14*	*3.00*	*0.6*	*0.400*	*0.6*	*0.160*	*0.0046*	*1.00*	*0.0046*	*0.200*	*0.0009*	*2.2*
5	*12:15*	*3.50*	*0.6*	*0.400*	*0.6*	*0.160*	*0.0003*	*1.00*	*0.0003*	*0.200*	*0.0001*	*0.2*
6	*12:17*	*4.00*	*0.6*	*0.400*	*0.6*	*0.160*	*-0.0007*	*1.00*	*-0.0007*	*0.200*	*-0.0001*	*-0.3*
7	*12:19*	*4.50*	*0.6*	*0.400*	*0.6*	*0.160*	*0.0394*	*1.00*	*0.0394*	*0.200*	*0.0079*	*19.1*
8	*12:21*	*5.00*	*0.6*	*0.400*	*0.6*	*0.160*	*0.0545*	*1.00*	*0.0545*	*0.200*	*0.0109*	*26.4*
9	*12:23*	*5.50*	*0.6*	*0.400*	*0.6*	*0.160*	*0.0003*	*1.00*	*0.0003*	*0.200*	*0.0001*	*0.2*
10	*12:25*	*6.00*	*0.6*	*0.400*	*0.6*	*0.160*	*0.0410*	*1.00*	*0.0410*	*0.200*	*0.0082*	*19.9*
11	12:25	6.50	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Figure 5 Discharge Measurement Summary LT-1

Discharge Measurement Summary

Date Generated: Wed Dec 18 2019

File Information

File Name	LRC1217.WAD
Start Date and Time	2019/12/17 12:49:57

Site Details

Site Name	LRC121719
Operator(s)	ZMM

System Information

Sensor Type	FlowTracker
Serial #	P4709
CPU Firmware Version	3.9
Software Ver	2.30
Mounting Correction	0.0%

Units	(English Units)
Distance	ft
Velocity	ft/s
Area	ft^2
Discharge	cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.2%	1.1%
Velocity	0.8%	4.5%
Width	0.2%	0.2%
Method	2.3%	-
# Stations	2.1%	-
Overall	**3.3%**	**4.7%**

Summary

Averaging Int.	40	# Stations	24
Start Edge	LEW	Total Width	24.000
Mean SNR	29.3 dB	Total Area	17.050
Mean Temp	38.24 °F	Mean Depth	0.710
Disch. Equation	Mid-Section	Mean Velocity	0.1112
		Total Discharge	**1.8960**

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Dec 17 12:49:14 CST 2019	0.000	18.640		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	12:49	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	*12:49*	*1.00*	*0.6*	*0.400*	*0.6*	*0.160*	*-0.0085*	*1.00*	*-0.0085*	*0.400*	*-0.0034*	*-0.2*
2	*12:51*	*2.00*	*0.6*	*0.500*	*0.6*	*0.200*	*0.0033*	*1.00*	*0.0033*	*0.500*	*0.0016*	*0.1*
3	*12:53*	*3.00*	*0.6*	*0.600*	*0.6*	*0.240*	*0.0000*	*1.00*	*0.0000*	*0.600*	*0.0000*	*0.0*
4	12:54	4.00	0.6	0.800	0.6	0.320	0.0886	1.00	0.0886	0.800	0.0709	3.7
5	*12:55*	*5.00*	*0.6*	*0.900*	*0.6*	*0.360*	*0.1106*	*1.00*	*0.1106*	*0.900*	*0.0995*	*5.2*
6	*12:56*	*6.00*	*0.6*	*1.000*	*0.6*	*0.400*	*0.1424*	*1.00*	*0.1424*	*1.000*	*0.1424*	*7.5*
7	*12:57*	*7.00*	*0.6*	*1.100*	*0.6*	*0.440*	*0.1558*	*1.00*	*0.1558*	*1.100*	*0.1714*	*9.0*
8	*12:58*	*8.00*	*0.6*	*1.100*	*0.6*	*0.440*	*0.1923*	*1.00*	*0.1923*	*1.100*	*0.2115*	*11.2*
9	*12:59*	*9.00*	*0.6*	*1.100*	*0.6*	*0.440*	*0.1818*	*1.00*	*0.1818*	*1.100*	*0.1999*	*10.5*
10	*13:00*	*10.00*	*0.6*	*1.100*	*0.6*	*0.440*	*0.2001*	*1.00*	*0.2001*	*1.100*	*0.2202*	*11.6*
11	*13:01*	*11.00*	*0.6*	*1.100*	*0.6*	*0.440*	*0.2096*	*1.00*	*0.2096*	*1.100*	*0.2306*	*12.2*
12	*13:02*	*12.00*	*0.6*	*1.000*	*0.6*	*0.400*	*0.2028*	*1.00*	*0.2028*	*1.000*	*0.2028*	*10.7*
13	*13:03*	*13.00*	*0.6*	*1.000*	*0.6*	*0.400*	*0.1755*	*1.00*	*0.1755*	*1.000*	*0.1755*	*9.3*
14	*13:05*	*14.00*	*0.6*	*0.900*	*0.6*	*0.360*	*0.0587*	*1.00*	*0.0587*	*0.900*	*0.0529*	*2.8*
15	*13:06*	*15.00*	*0.6*	*0.800*	*0.6*	*0.320*	*0.0056*	*1.00*	*0.0056*	*0.800*	*0.0045*	*0.2*
16	*13:07*	*16.00*	*0.6*	*0.800*	*0.6*	*0.320*	*-0.0121*	*1.00*	*-0.0121*	*0.800*	*-0.0097*	*-0.5*
17	*13:08*	*17.00*	*0.6*	*0.600*	*0.6*	*0.240*	*0.0476*	*1.00*	*0.0476*	*0.600*	*0.0285*	*1.5*
18	*13:10*	*18.00*	*0.6*	*0.600*	*0.6*	*0.240*	*0.0400*	*1.00*	*0.0400*	*0.600*	*0.0240*	*1.3*
19	13:11	19.00	0.6	0.500	0.6	0.200	0.0410	1.00	0.0410	0.500	0.0205	1.1
20	*13:13*	*20.00*	*0.6*	*0.400*	*0.6*	*0.160*	*-0.0003*	*1.00*	*-0.0003*	*0.400*	*-0.0001*	*0.0*
21	*13:14*	*21.00*	*0.6*	*0.300*	*0.6*	*0.120*	*0.0689*	*1.00*	*0.0689*	*0.300*	*0.0207*	*1.1*
22	13:15	22.00	0.6	0.300	0.6	0.120	0.0709	1.00	0.0709	0.450	0.0319	1.7
23	13:15	24.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Figure 6 Discharge Measurement Summary LRC-1

Discharge Measurement Summary

Date Generated: Wed Dec 18 2019

File Information

File Name	TE121719.WAD
Start Date and Time	2019/12/17 14:50:47

Site Details

Site Name	TE121719
Operator(s)	ZMM

System Information

Sensor Type	FlowTracker
Serial #	P4709
CPU Firmware Version	3.9
Software Ver	2.30
Mounting Correction	0.0%

Units (English Units)

Distance	ft
Velocity	ft/s
Area	ft^2
Discharge	cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.2%	1.8%
Velocity	1.0%	4.7%
Width	0.1%	0.1%
Method	2.1%	-
# Stations	2.3%	-
Overall	**3.4%**	**5.1%**

Summary

Averaging Int.	40	# Stations	22
Start Edge	LEW	Total Width	14.000
Mean SNR	38.4 dB	Total Area	9.050
Mean Temp	43.06 °F	Mean Depth	0.646
Disch. Equation	Mid-Section	Mean Velocity	0.0321
		Total Discharge	**0.2909**

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Dec 17 14:56:55 CST 2019	5.500	11.340		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	14:50	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	14:50	3.50	0.6	0.400	0.6	0.160	-0.0036	1.00	-0.0036	0.800	-0.0029	-1.0
2	14:53	4.00	0.6	0.500	0.6	0.200	0.0207	1.00	0.0207	0.250	0.0052	1.8
3	*14:54*	*4.50*	*0.6*	*0.800*	*0.6*	*0.320*	*0.0423*	*1.00*	*0.0423*	*0.400*	*0.0169*	*5.8*
4	14:56	5.00	0.6	1.000	0.6	0.400	0.0384	1.00	0.0384	0.500	0.0192	6.6
5	*14:57*	*5.50*	*0.6*	*0.900*	*0.6*	*0.360*	*0.0404*	*1.00*	*0.0404*	*0.450*	*0.0182*	*6.2*
6	*14:58*	*6.00*	*0.6*	*1.000*	*0.6*	*0.400*	*0.0492*	*1.00*	*0.0492*	*0.500*	*0.0246*	*8.5*
7	*14:59*	*6.50*	*0.6*	*1.000*	*0.6*	*0.400*	*0.0594*	*1.00*	*0.0594*	*0.500*	*0.0297*	*10.2*
8	15:00	7.00	0.6	1.100	0.6	0.440	0.0443	1.00	0.0443	0.550	0.0244	8.4
9	*15:01*	*7.50*	*0.6*	*1.300*	*0.6*	*0.520*	*0.0440*	*1.00*	*0.0440*	*0.650*	*0.0286*	*9.8*
10	*15:02*	*8.00*	*0.6*	*1.400*	*0.6*	*0.560*	*0.0476*	*1.00*	*0.0476*	*0.700*	*0.0333*	*11.4*
11	*15:03*	*8.50*	*0.6*	*1.300*	*0.6*	*0.520*	*0.0262*	*1.00*	*0.0262*	*0.650*	*0.0171*	*5.9*
12	15:04	9.00	0.6	1.000	0.6	0.400	0.0279	1.00	0.0279	0.500	0.0139	4.8
13	15:05	9.50	0.6	0.800	0.6	0.320	0.0253	1.00	0.0253	0.400	0.0101	3.5
14	15:06	10.00	0.6	0.800	0.6	0.320	0.0440	1.00	0.0440	0.400	0.0176	6.0
15	15:07	10.50	0.6	0.700	0.6	0.280	0.0413	1.00	0.0413	0.350	0.0145	5.0
16	15:08	11.00	0.6	0.700	0.6	0.280	0.0344	1.00	0.0344	0.350	0.0121	4.1
17	15:09	11.50	0.6	0.600	0.6	0.240	0.0187	1.00	0.0187	0.300	0.0056	1.9
18	15:10	12.00	0.6	0.600	0.6	0.240	0.0197	1.00	0.0197	0.300	0.0059	2.0
19	15:11	12.50	0.6	0.400	0.6	0.160	0.0030	1.00	0.0030	0.200	0.0006	0.2
20	15:12	13.00	0.6	0.400	0.6	0.160	-0.0118	1.00	-0.0118	0.300	-0.0035	-1.2
21	15:12	14.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Figure 7 Discharge Measurement Summary TE-1

Discharge Measurement Summary

Date Generated: Wed Dec 18 2019

File Information

File Name	TG121719.WAD
Start Date and Time	2019/12/17 15:32:23

Site Details

Site Name	TG121719
Operator(s)	ZMM

System Information

Sensor Type	FlowTracker
Serial #	P4709
CPU Firmware Version	3.9
Software Ver	2.30
Mounting Correction	0.0%

Units	(English Units)
Distance	ft
Velocity	ft/s
Area	ft^2
Discharge	cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.2%	1.8%
Velocity	1.3%	6.8%
Width	0.2%	0.2%
Method	2.5%	-
# Stations	2.6%	-
Overall	**4.0%**	**7.2%**

Summary

Averaging Int.	40	# Stations	19
Start Edge	LEW	Total Width	18.000
Mean SNR	23.4 dB	Total Area	16.701
Mean Temp	39.07 °F	Mean Depth	0.928
Disch. Equation	Mid-Section	Mean Velocity	0.0424
		Total Discharge	**0.7073**

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Dec 17 15:45:33 CST 2019	13.000	9.000		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	15:32	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	*15:32*	*1.00*	*0.6*	*0.500*	*0.6*	*0.200*	*-0.0636*	*1.00*	*-0.0636*	*0.500*	*-0.0318*	*-4.5*
2	*15:33*	*2.00*	*0.6*	*0.800*	*0.6*	*0.320*	*-0.0341*	*1.00*	*-0.0341*	*0.800*	*-0.0273*	*-3.9*
3	*15:34*	*3.00*	*0.6*	*1.000*	*0.6*	*0.400*	*0.0456*	*1.00*	*0.0456*	*1.000*	*0.0456*	*6.4*
4	*15:36*	*4.00*	*0.6*	*1.200*	*0.6*	*0.480*	*0.0771*	*1.00*	*0.0771*	*1.200*	*0.0925*	*13.1*
5	*15:37*	*5.00*	*0.6*	*1.100*	*0.6*	*0.440*	*0.0686*	*1.00*	*0.0686*	*1.100*	*0.0754*	*10.7*
6	*15:38*	*6.00*	*0.6*	*1.100*	*0.6*	*0.440*	*0.0702*	*1.00*	*0.0702*	*1.100*	*0.0772*	*10.9*
7	*15:39*	*7.00*	*0.6*	*1.100*	*0.6*	*0.440*	*0.0748*	*1.00*	*0.0748*	*1.100*	*0.0823*	*11.6*
8	*15:40*	*8.00*	*0.6*	*1.200*	*0.6*	*0.480*	*0.0627*	*1.00*	*0.0627*	*1.200*	*0.0752*	*10.6*
9	*15:41*	*9.00*	*0.6*	*1.100*	*0.6*	*0.440*	*0.0656*	*1.00*	*0.0656*	*1.100*	*0.0722*	*10.2*
10	*15:42*	*10.00*	*0.6*	*1.200*	*0.6*	*0.480*	*0.0482*	*1.00*	*0.0482*	*1.200*	*0.0579*	*8.2*
11	*15:43*	*11.00*	*0.6*	*1.100*	*0.6*	*0.440*	*0.0407*	*1.00*	*0.0407*	*1.100*	*0.0448*	*6.3*
12	*15:44*	*12.00*	*0.6*	*1.000*	*0.6*	*0.400*	*0.0561*	*1.00*	*0.0561*	*1.000*	*0.0561*	*7.9*
13	*15:45*	*13.00*	*0.6*	*1.000*	*0.6*	*0.400*	*0.0531*	*1.00*	*0.0531*	*1.000*	*0.0531*	*7.5*
14	*15:46*	*14.00*	*0.6*	*1.000*	*0.6*	*0.400*	*0.0361*	*1.00*	*0.0361*	*1.000*	*0.0361*	*5.1*
15	*15:47*	*15.00*	*0.6*	*0.900*	*0.6*	*0.360*	*-0.0010*	*1.00*	*-0.0010*	*0.900*	*-0.0009*	*-0.1*
16	*15:48*	*16.00*	*0.6*	*0.700*	*0.6*	*0.280*	*0.0098*	*1.00*	*0.0098*	*0.700*	*0.0069*	*1.0*
17	*15:49*	*17.00*	*0.6*	*0.700*	*0.6*	*0.280*	*-0.0115*	*1.00*	*-0.0115*	*0.700*	*-0.0080*	*-1.1*
18	15:49	18.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Figure 8 Discharge Measurement Summary TG-1

Discharge Measurement Summary

Date Generated: Wed Dec 18 2019

File Information

File Name	URC1217.WAD
Start Date and Time	2019/12/17 13:35:38

Site Details

Site Name	URC121719
Operator(s)	ZMM

System Information

Sensor Type	FlowTracker
Serial #	P4709
CPU Firmware Version	3.9
Software Ver	2.30
Mounting Correction	0.0%

Units	(English Units)
Distance	ft
Velocity	ft/s
Area	ft^2
Discharge	cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.7%	3.1%
Velocity	2.8%	8.6%
Width	0.2%	0.2%
Method	3.6%	-
# Stations	3.9%	-
Overall	**6.1%**	**9.2%**

Summary

Averaging Int.	40	# Stations	13
Start Edge	LEW	Total Width	6.000
Mean SNR	40.9 dB	Total Area	2.800
Mean Temp	40.70 °F	Mean Depth	0.467
Disch. Equation	Mid-Section	Mean Velocity	0.1569
		Total Discharge	**0.4393**

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Dec 17 13:36:53 CST 2019	1.000	11.000		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	13:35	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	*13:35*	*0.50*	*0.6*	*0.300*	*0.6*	*0.120*	*-0.0558*	*1.00*	*-0.0558*	*0.150*	*-0.0084*	*-1.9*
2	*13:36*	*1.00*	*0.6*	*0.500*	*0.6*	*0.200*	*-0.0449*	*1.00*	*-0.0449*	*0.250*	*-0.0112*	*-2.6*
3	*13:38*	*1.50*	*0.6*	*0.600*	*0.6*	*0.240*	*-0.0479*	*1.00*	*-0.0479*	*0.300*	*-0.0144*	*-3.3*
4	13:39	2.00	0.6	0.700	0.6	0.280	0.0174	1.00	0.0174	0.350	0.0061	1.4
5	*13:39*	*2.50*	*0.6*	*0.700*	*0.6*	*0.280*	*0.2087*	*1.00*	*0.2087*	*0.350*	*0.0730*	*16.6*
6	*13:41*	*3.00*	*0.6*	*0.600*	*0.6*	*0.240*	*0.3681*	*1.00*	*0.3681*	*0.300*	*0.1104*	*25.1*
7	*13:42*	*3.50*	*0.6*	*0.600*	*0.6*	*0.240*	*0.4534*	*1.00*	*0.4534*	*0.300*	*0.1360*	*31.0*
8	*13:43*	*4.00*	*0.6*	*0.500*	*0.6*	*0.200*	*0.2959*	*1.00*	*0.2959*	*0.250*	*0.0740*	*16.8*
9	*13:44*	*4.50*	*0.6*	*0.400*	*0.6*	*0.160*	*0.2402*	*1.00*	*0.2402*	*0.200*	*0.0480*	*10.9*
10	13:45	5.00	0.6	0.400	0.6	0.160	0.1411	1.00	0.1411	0.200	0.0282	6.4
11	13:46	5.50	0.6	0.300	0.6	0.120	-0.0171	1.00	-0.0171	0.150	-0.0026	-0.6
12	13:46	6.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Figure 9 Discharge Measurement Summary URC-2

Discharge Measurement Summary

Date Generated: Wed Dec 18 2019

File Information

File Name	WC121719.WAD
Start Date and Time	2019/12/17 14:15:58

Site Details

Site Name	WC121719
Operator(s)	ZMM

System Information

Sensor Type	FlowTracker
Serial #	P4709
CPU Firmware Version	3.9
Software Ver	2.30
Mounting Correction	0.0%

Units (English Units)

Distance	ft
Velocity	ft/s
Area	ft^2
Discharge	cfs

Discharge Uncertainty

Category	ISO	Stats
Accuracy	1.0%	1.0%
Depth	0.6%	7.3%
Velocity	2.7%	29.6%
Width	0.2%	0.2%
Method	3.2%	-
# Stations	3.9%	-
Overall	**5.8%**	**30.5%**

Summary

Averaging Int.	40	# Stations	13
Start Edge	LEW	Total Width	7.000
Mean SNR	30.6 dB	Total Area	1.950
Mean Temp	42.38 °F	Mean Depth	0.279
Disch. Equation	Mid-Section	Mean Velocity	0.0389
		Total Discharge	**0.0758**

Supplemental Data

#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Dec 17 14:26:19 CST 2019	5.000	7.730		

Measurement Results

St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	14:15	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	14:15	1.50	0.6	0.200	0.6	0.080	0.0705	1.00	0.0705	0.200	0.0141	18.6
2	*14:17*	*2.00*	*0.6*	*0.200*	*0.6*	*0.080*	*0.1516*	*1.00*	*0.1516*	*0.100*	*0.0152*	*20.0*
3	*14:18*	*2.50*	*0.6*	*0.200*	*0.6*	*0.080*	*0.1437*	*1.00*	*0.1437*	*0.100*	*0.0144*	*19.0*
4	*14:19*	*3.00*	*0.6*	*0.400*	*0.6*	*0.160*	*-0.0003*	*1.00*	*-0.0003*	*0.200*	*-0.0001*	*-0.1*
5	*14:23*	*3.50*	*0.6*	*0.400*	*0.6*	*0.160*	*0.0279*	*1.00*	*0.0279*	*0.200*	*0.0056*	*7.4*
6	*14:24*	*4.00*	*0.6*	*0.400*	*0.6*	*0.160*	*0.0535*	*1.00*	*0.0535*	*0.200*	*0.0107*	*14.1*
7	14:25	4.50	0.6	0.400	0.6	0.160	0.0614	1.00	0.0614	0.200	0.0123	16.2
8	14:26	5.00	0.6	0.400	0.6	0.160	0.0194	1.00	0.0194	0.200	0.0039	5.1
9	*14:28*	*5.50*	*0.6*	*0.400*	*0.6*	*0.160*	*0.0351*	*1.00*	*0.0351*	*0.200*	*0.0070*	*9.3*
10	*14:28*	*6.00*	*0.6*	*0.400*	*0.6*	*0.160*	*-0.0282*	*1.00*	*-0.0282*	*0.200*	*-0.0056*	*-7.4*
11	*14:30*	*6.50*	*0.6*	*0.300*	*0.6*	*0.120*	*-0.0108*	*1.00*	*-0.0108*	*0.150*	*-0.0016*	*-2.1*
12	14:30	7.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0

Rows in italics indicate a QC warning. See the Quality Control page of this report for more information.

Figure 10 Discharge Measurement Summary WC-1

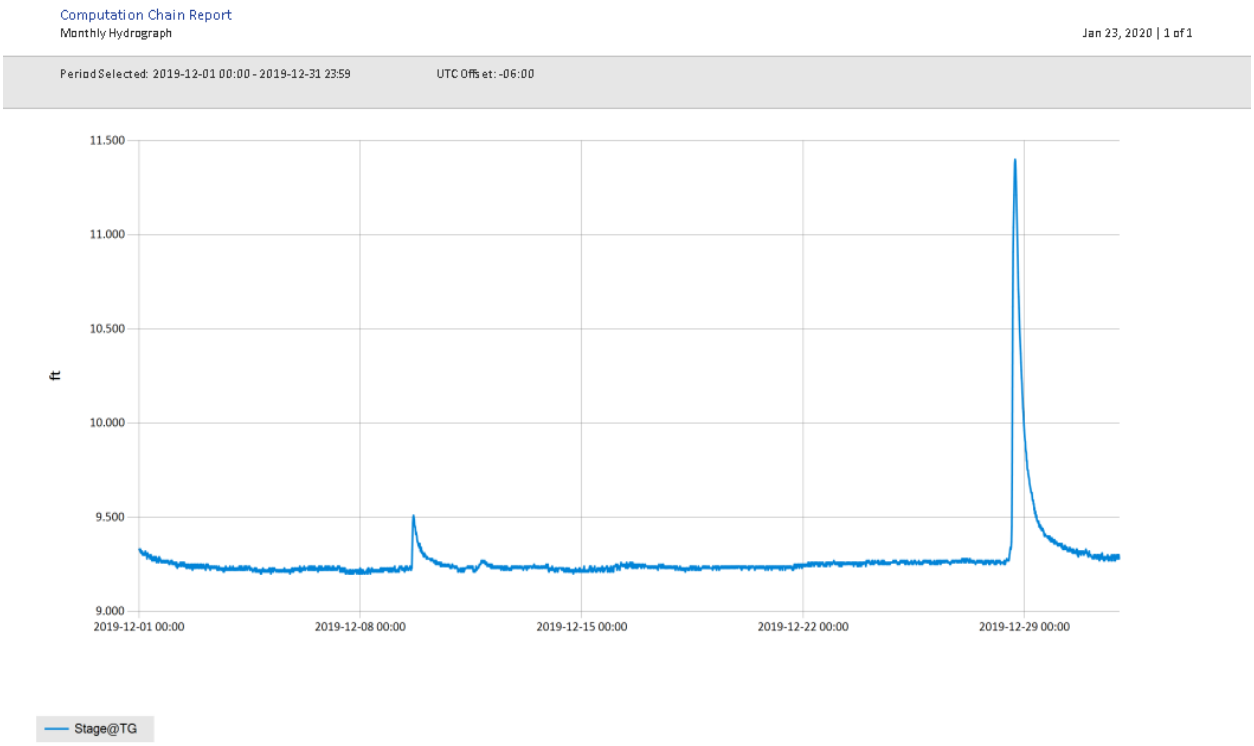

Figure 11 Monthly Hydrograph TG-1

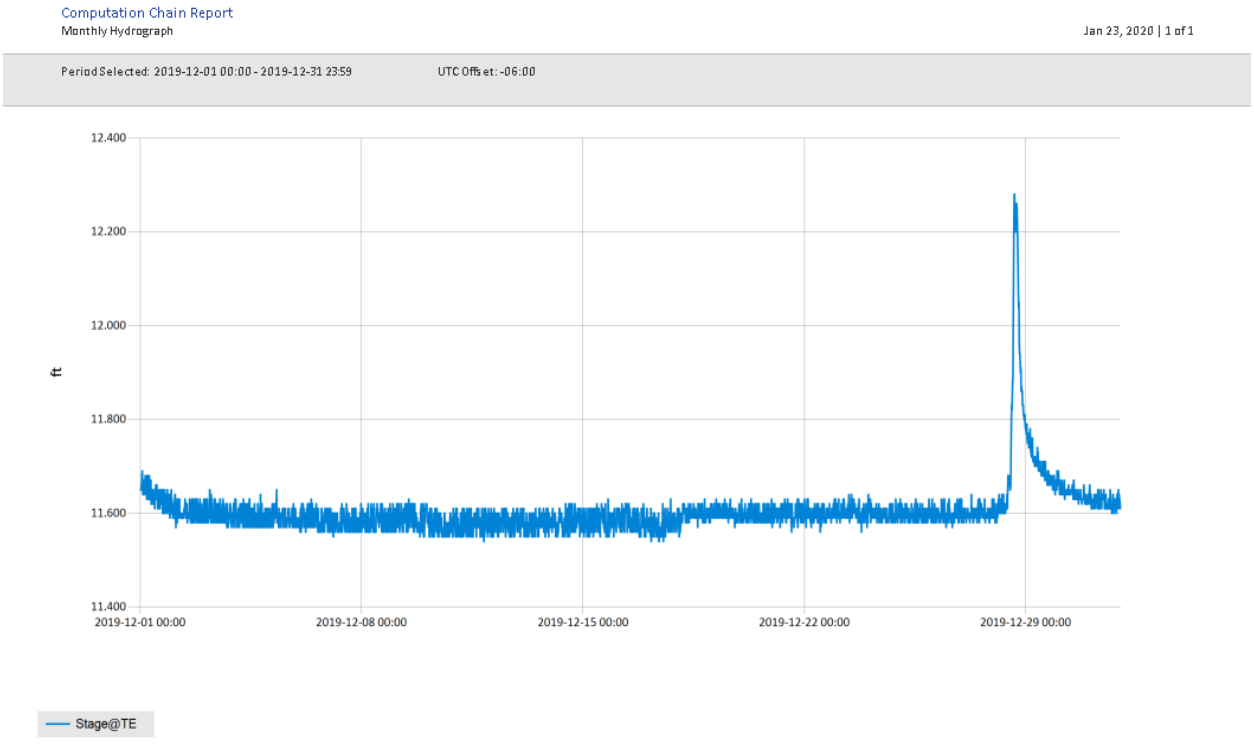

Figure 12 Monthly Hydrograph TE-1

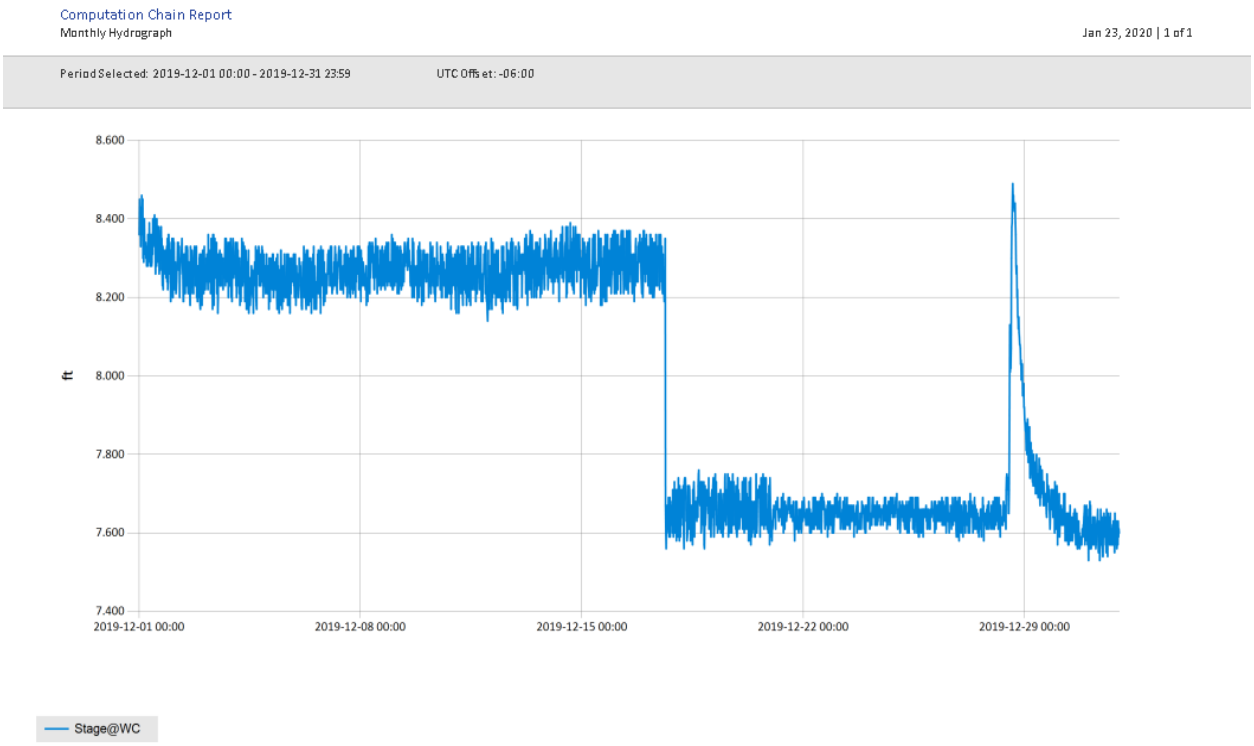

Figure 13 Monthly Hydrograph WC-1

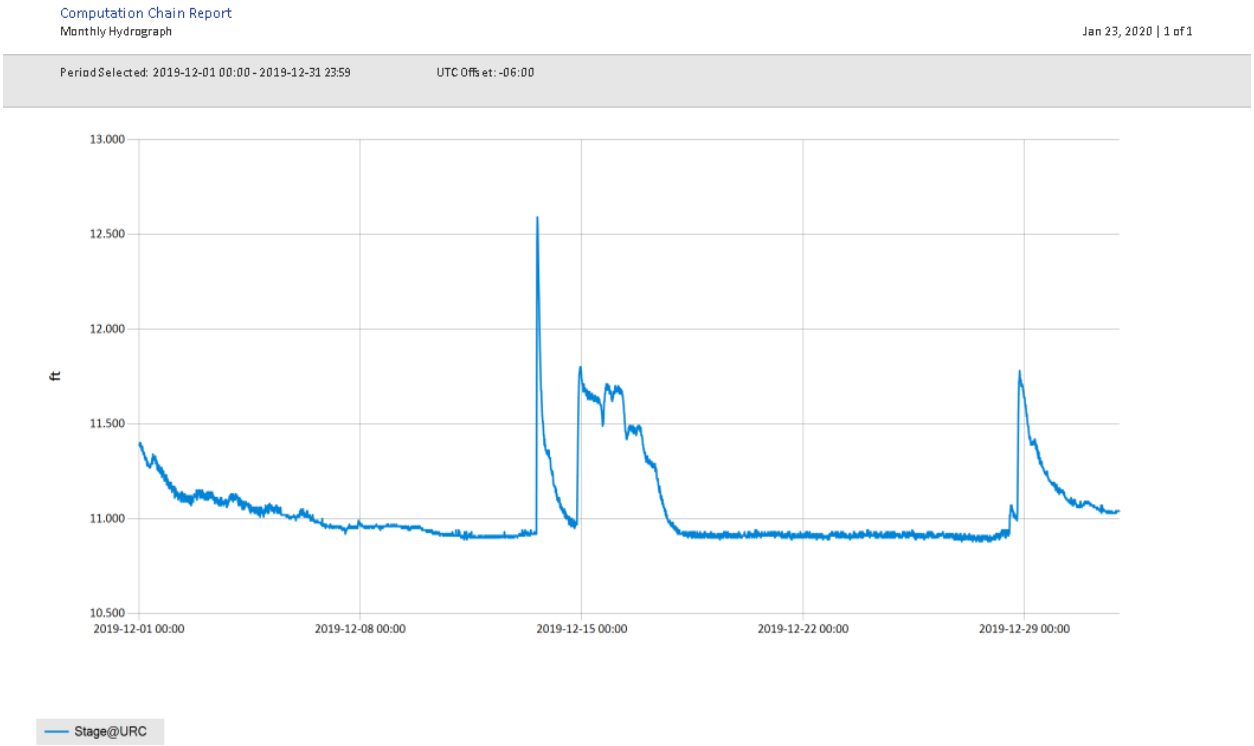

Figure 14 Monthly Hydrograph URC-2

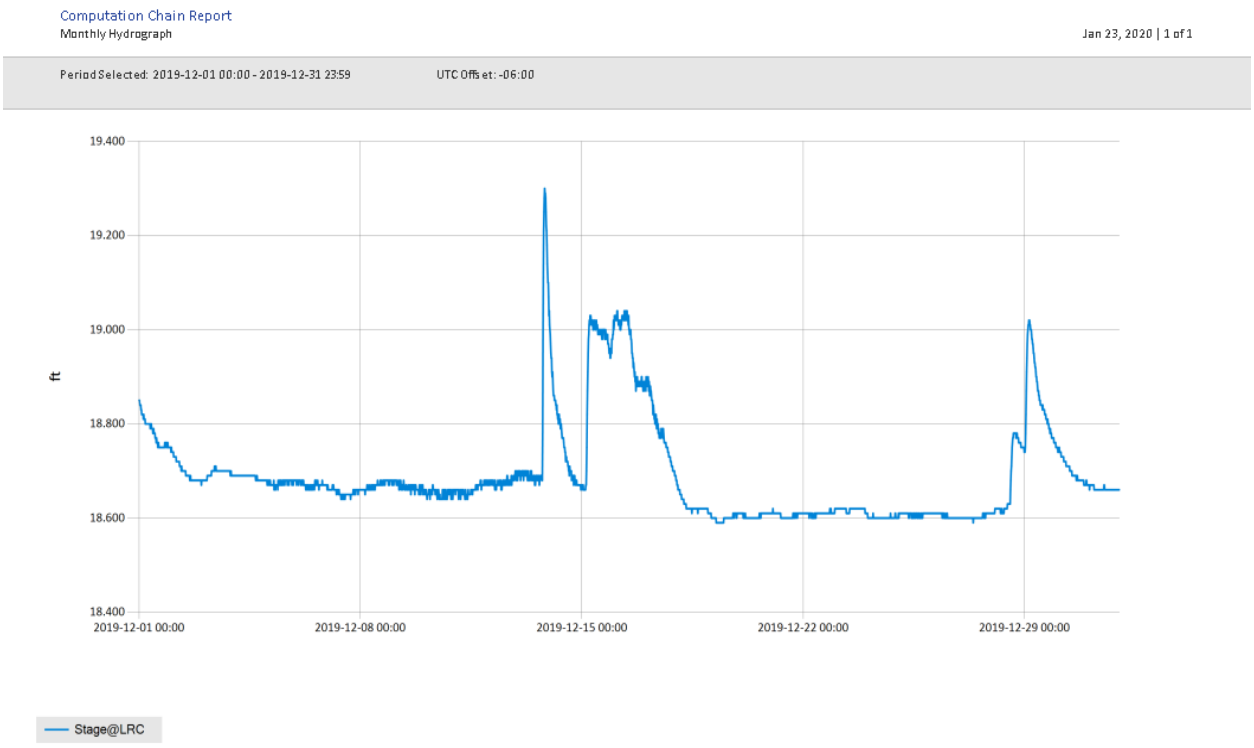

Figure 15 Monthly Hydrograph LRC-1

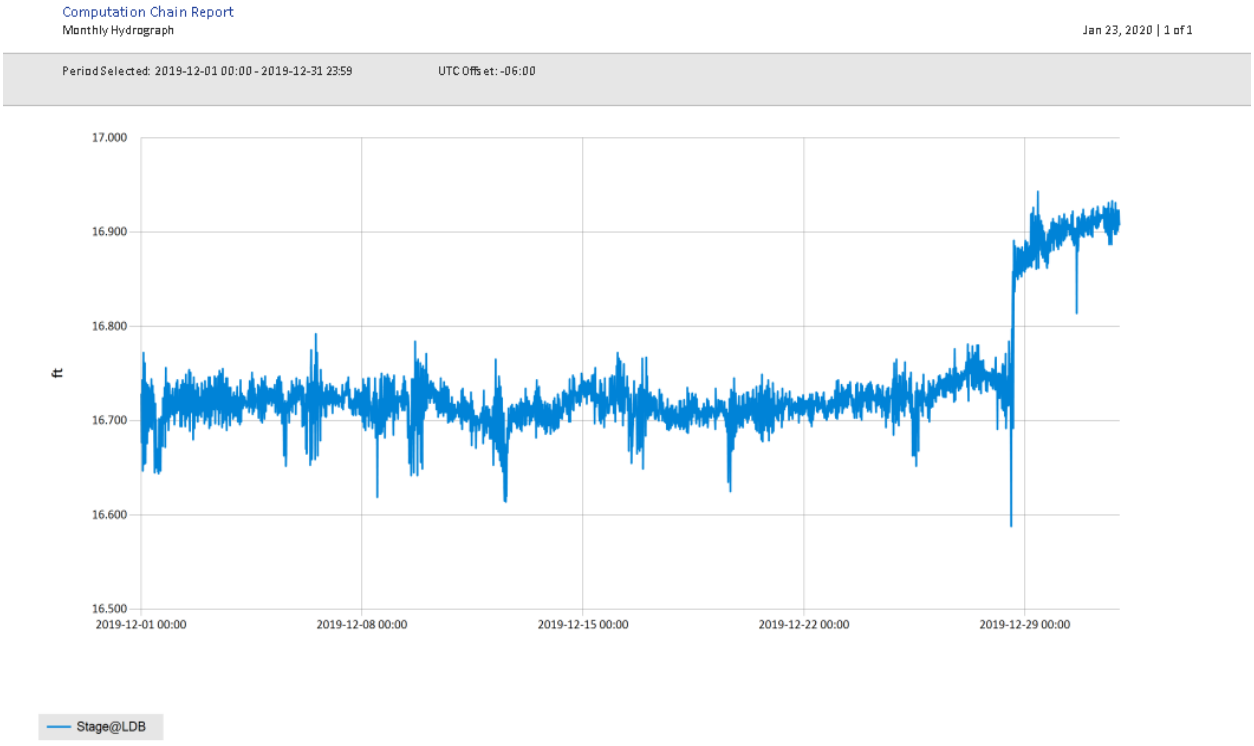

Figure 16 Monthly Hydrograph LDB-1

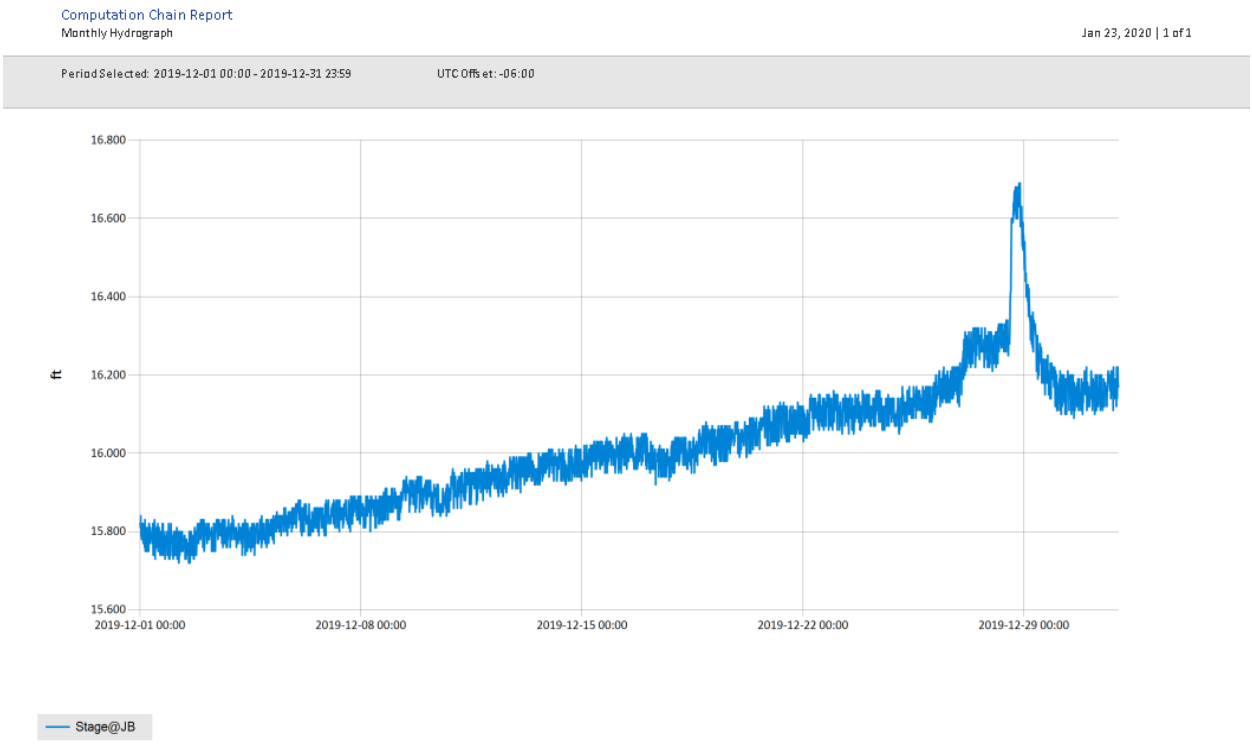

Figure 17 Monthly Hydrograph JB-1

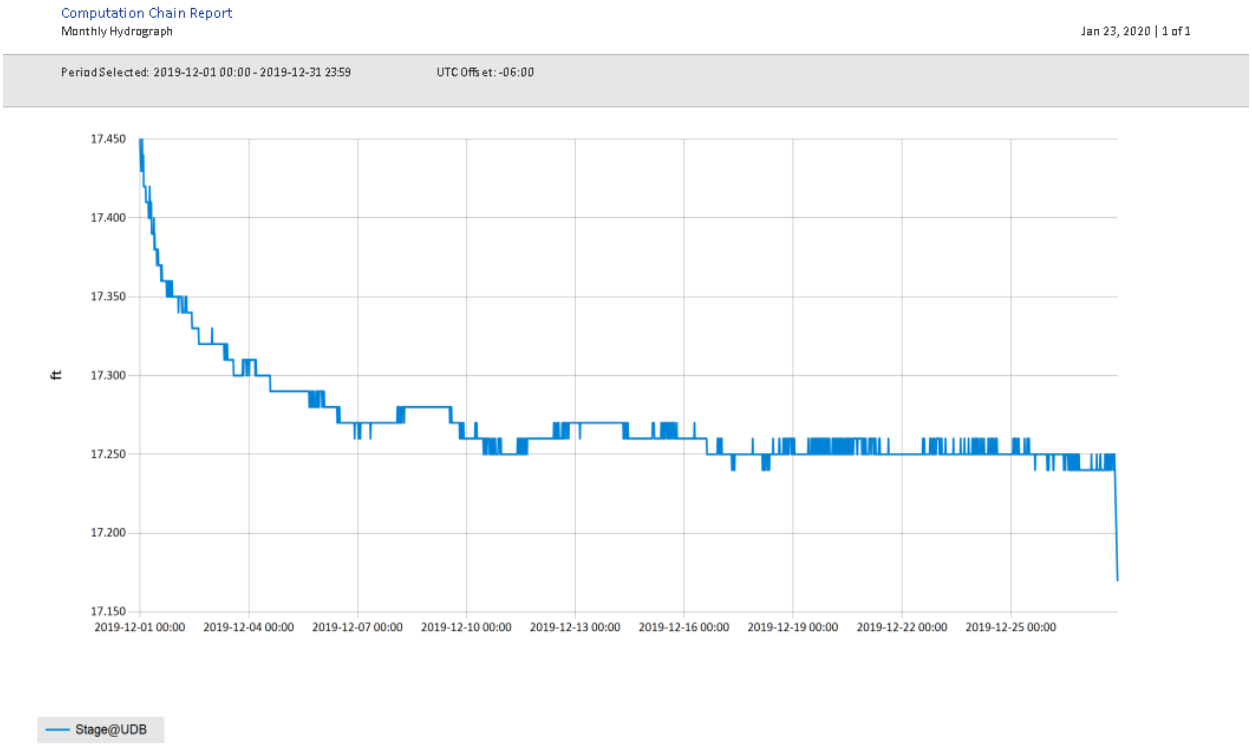

Figure 18 Monthly Hydrograph UDB-1

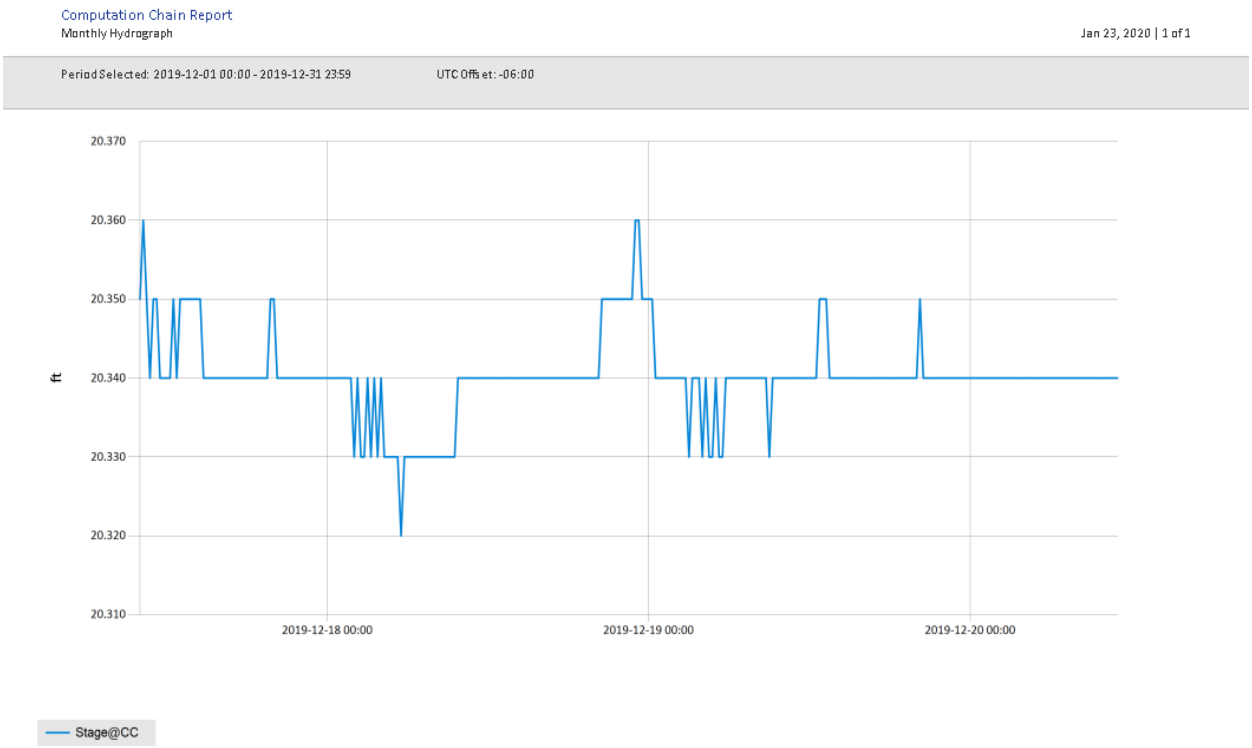

Figure 19 Monthly Hydrograph CC-1

MESONET CLIMATOLOGICAL DATA SUMMARY — December 2019 — Time Zone: Midnight-Midnight CST

(NRMN) Norman — Nearest City: 2.1 NW Norman — County: Cleveland

Latitude: 35-14-09 — Longitude: 97-27-53 — Elevation: 1171 feet

DAY	TEMPERATURE (°F) MAX	MIN	AVG	DEWPT	DEG DAYS HDD	CDD	HUMIDITY (%) MAX	MIN	AVG	RAIN (in)	PRESSURE (in) STN	MSL	WIND DIR	SPEED AVG	(mph) MAX	SOLAR (MJ/m^2)	4" SOIL TEMPERATURES SOD	BARE	MAX	MIN
1	51	35	41.4	22.5	22	0	58	35	47	0.00	28.84	30.09	NW	16.4	34.9	12.62	46.1	45.1	49	42
2	51	28	39.9	24.0	25	0	84	34	55	0.00	28.95	30.21	SSE	6.0	18.6	9.36	45.2	42.4	47	39
3	62	36	46.1	30.4	16	0	82	29	56	0.00	28.72	29.97	S	6.2	17.2	11.62	46.0	43.4	49	39
4	64	31	49.4	33.1	18	0	90	31	57	0.00	28.79	30.04	SSE	4.0	11.6	8.81	46.1	44.3	49	38
5	71	49	57.6	39.2	5	0	75	36	51	0.00	28.62	29.87	SSE	8.3	19.9	11.51	49.2	49.0	54	45
6	55	35	44.7	34.3	20	0	78	55	67	0.00	28.99	30.25	N	12.8	33.6	11.23	48.9	47.4	50	44
7	60	28	43.8	28.4	21	0	93	22	61	0.00	28.97	30.22	SSE	5.1	19.5	11.06	46.6	43.9	49	39
8	67	46	55.4	44.3	9	0	84	45	68	0.00	28.54	29.78	S	10.7	26.0	6.31	48.5	47.2	51	44
9	59	33	45.4	30.6	19	0	74	46	56	0.00	28.62	29.87	N	13.9	34.6	3.86	48.8	46.3	49	41
10	47	28	36.0	14.2	27	0	62	23	42	0.00	29.06	30.32	NNE	4.8	16.3	10.61	45.5	41.4	47	38
11	54	27	39.8	26.7	24	0	81	43	60	0.00	29.13	30.39	S	8.7	21.6	11.79	44.1	41.1	46	38
12	56	38	45.7	33.0	18	0	77	43	62	0.00	28.88	30.13	S	9.7	25.8	11.81	45.5	43.3	48	40
13	60	32	44.7	35.9	19	0	97	42	74	0.00	28.64	29.88	W	2.5	10.8	10.77	46.2	44.9	51	40
14	50	34	41.2	32.3	23	0	91	50	71	0.00	28.63	29.87	NE	6.2	14.8	5.30	45.6	43.3	47	41
15	38	32	34.4	33.1	30	0	98	90	95	0.02	28.61	29.85	NNW	9.0	23.3	1.78	44.4	40.8	42	40
16	33	26	30.2	27.1	35	0	98	80	89	0.00	28.85	30.10	NNW	14.1	29.0	2.18	42.7	38.5	40	37
17	48	19	31.8	21.8	31	0	94	35	70	0.00	29.11	30.37	NW	6.4	17.7	11.98	41.2	37.5	41	35
18	57	23	38.2	15.9	25	0	78	16	45	0.00	29.07	30.33	SW	3.9	12.1	12.16	40.2	37.6	42	34
19	57	30	42.7	17.0	22	0	63	17	38	0.00	29.00	30.25	S	8.2	24.5	11.59	40.8	38.6	43	35
20	51	39	43.3	30.2	20	0	88	44	61	0.00	29.01	30.26	SSE	8.5	18.9	5.80	42.5	40.8	44	38
21	44	40	42.4	39.8	23	0	98	84	91	0.00	29.07	30.33	SSE	3.4	9.3	1.73	44.4	43.4	44	43
22	51	30	39.1	36.5	24	0	100	60	91	0.00	28.99	30.24	SW	4.4	12.6	7.64	44.8	43.8	48	41
23	62	24	44.7	33.1	22	0	100	35	69	0.01	28.83	30.08	SSE	6.0	17.8	10.04	43.4	42.4	48	37
24	69	39	53.9	34.3	11	0	80	24	51	0.00	28.69	29.94	SSE	9.1	21.6	11.26	45.6	46.1	51	41
25	71	48	57.9	40.1	5	0	80	31	54	0.00	28.61	29.85	S	10.5	26.2	11.32	47.7	49.6	55	45
26	67	40	51.2	41.7	12	0	100	28	75	0.00	28.78	30.03	S	5.8	16.1	8.32	49.2	50.9	55	48
27	55	37	45.2	40.3	19	0	94	76	83	0.02	28.82	30.07	ENE	7.3	17.0	3.64	48.0	48.3	50	47
28	60	47	56.3	54.1	12	0	97	86	92	0.53	28.46	29.70	SSE	11.1	33.0	0.92	50.8	51.7	54	49
29	47	33	39.7	30.7	25	0	92	45	72	0.00	28.59	29.83	WNW	11.1	27.2	9.94	48.3	45.7	50	42
30	49	30	37.0	22.6	26	0	83	31	59	0.00	28.84	30.09	WNW	10.3	28.5	12.29	44.7	40.8	45	38
31	52	26	38.2	19.7	26	0	79	20	52	0.00	28.90	30.16	WNW	6.2	17.1	12.48	42.6	39.9	45	37
	55	34	43.8	31.2	<- Monthly Averages ->						28.83	30.08	SSE	8.1	34.9	8.77	45.6	43.9	48	41

Temperature - Highest: 71
Lowest: 19

Degree Days - Total HDD: 635
Total CDD: 0

Number of Days With:
Tmax ≥ 90: 0 — Rainfall ≥ 0.01 inch: 4
Tmax ≤ 32: 0 — Rainfall ≥ 0.10 inch: 1
Tmin ≤ 32: 15 — Avg Wind Speed ≥ 10 mph: 9
Tmin ≤ 0: 0 — Max Wind Speed ≥ 30 mph: 4

Rainfall: Monthly Total: 0.58 in.
Greatest 24 Hr: 0.53 in.

Humidity - Highest: 100
Lowest: 16

* Denotes incomplete record

Figure 20 December Mesonet Data