
***Lake Thunderbird TMDL Monitoring Plan Implementation:
Sample Year (SY) 2020- November Report***



SY2020 Monthly Report

Lake Thunderbird TMDL Monitoring Plan Implementation:

November 2020 Monitoring Report

Oklahoma Water Resources Board
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TABLE OF CONTENTS

Table of Contents..... 3
List of Tables..... 3
List of Figures 3
Summary of November Water Quality Sampling 4
Results..... 4

LIST OF TABLES

TABLE 1 FIELD DATA FORM 5
TABLE 2 LABORATORY ANALYSIS SUMMARY 6
TABLE 3 QA/QC DATA 6
TABLE 4 STATION DISCHARGE SUMMARY 6

LIST OF FIGURES

FIGURE 1 MONITORING STATION MAP 4
FIGURE 2 DISCHARGE MEASUREMENT SUMMARY CC-1..... 7
FIGURE 3 DISCHARGE MEASUREMENT SUMMARY LRC-1 8
FIGURE 4 DISCHARGE MEASUREMENT SUMMARY TG-1 9
FIGURE 5 DISCHARGE MEASUREMENT SUMMARY JB-1 10
FIGURE 6 MONTHLY HYDROGRAPH TG-1 11
FIGURE 7 MONTHLY HYDROGRAPH TE-1 11
FIGURE 8 MONTHLY HYDROGRAPH WC-1..... 12
FIGURE 9 MONTHLY HYDROGRAPH URC-2..... 12
FIGURE 10 MONTHLY HYDROGRAPH LRC-1 13
FIGURE 11 MONTHLY HYDROGRAPH LDB-1 13
FIGURE 12 MONTHLY HYDROGRAPH JB-1 14
FIGURE 13 MONTHLY HYDROGRAPH CC-1 14
FIGURE 14 MONTHLY HYDROGRAPH UDB-1 15
FIGURE 15 NOVEMBER MESONET DATA 16

SUMMARY OF NOVEMBER WATER QUALITY SAMPLING

Sampling for November 2020 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 four locations. Mesonet data shows no precipitation on the seventeenth, in the 72 hours prior to sampling, or in the 72 hours after the sampling event. The total rainfall amount in Norman for the month of November was 1.26 inches. All water level gauges were operational for the month, except for LT-1 and UDB-1 due to equipment malfunction.

RESULTS

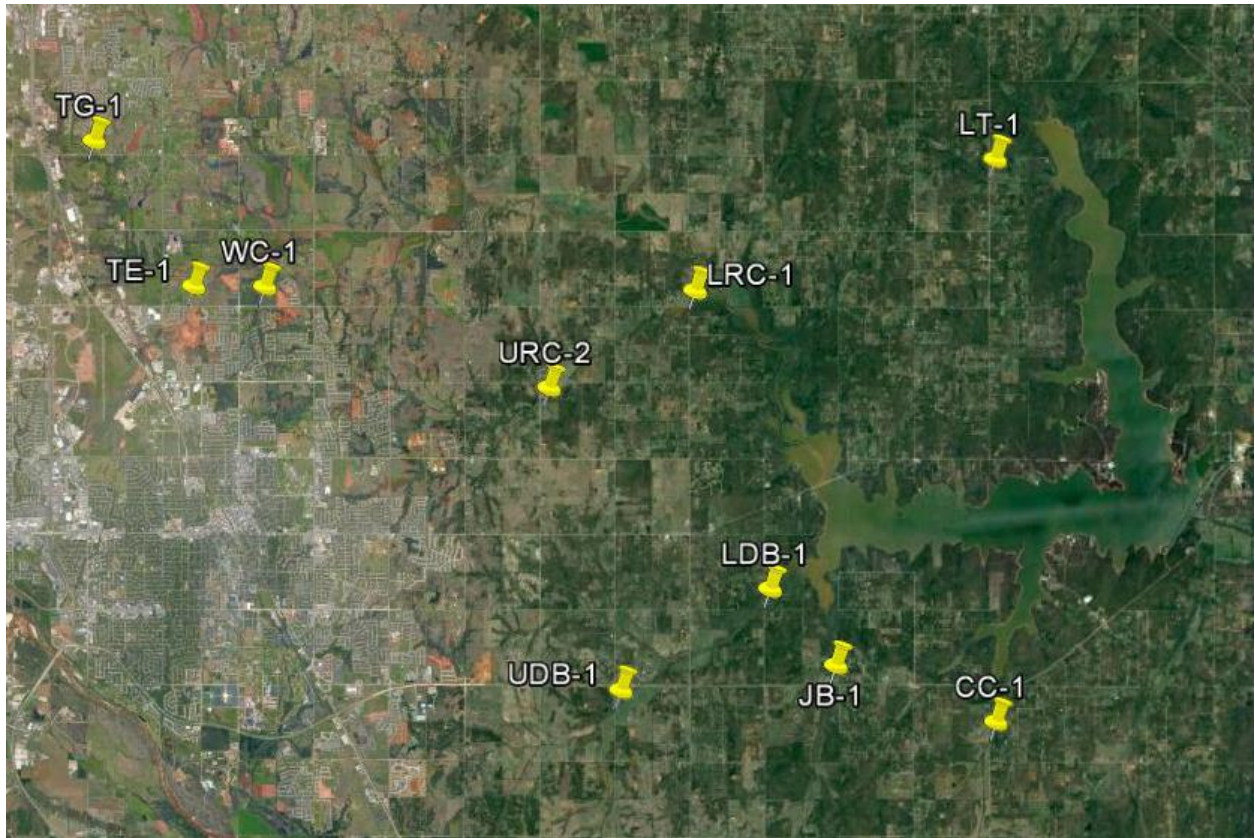


Figure 1 Monitoring Station Map

Monitoring Location ID	Monitoring Location Name	Date	Time	Field Crew	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/l)	pH	Specific Conductance (mS/cm)	Turbidity (NTU)	Notes
CC-1	Clear Creek	11/17/2020	9:50	SD	9.27	10.03	7.96	702	6	RP2 over water with visible flow, RP3 also over water, orifice clear, changed DCP
JB-1	Jim Blue Creek	11/17/2020	11:05	SD	9.37	7.78	7.67	943	5	Neither RP over water, orifice not in water, visible flow
LDB-1	Lower Dave Blue Creek	11/17/2020	12:00	SD	9.91	7.18	8.01	983	4	Some visual flow, water level lower than expected
LRC-1	Lower Rock Creek	11/17/2020	13:30	SD	9.44	9.12	7.86	751	6	Lower stage than expected, flow borderline low/normal
LT-1	Lake Laterals	11/17/2020	12:35	SD	11.63	1.75	7.45	789	5	No DCP. Channel connected but no visible flow. More floating debris/scum upstream of bridge than downstream
TE-1	Little River Tributary	11/17/2020	16:00	SD	13.77	9.80	7.76	1003	7	Small beaver dam upstream, leaf debris/scum upstream of dam, clear below dam. Orifice clear, changed DCP
TG-1	Little River Tributary	11/17/2020	16:35	SD	11.51	8.96	7.84	1077	4	Small scum area on downstream of bridge (possibly from dead animal filled trash bag dumped off bridge). Less filamentous algae than last visit
UDB-1	Upper Dave Blue Creek	11/17/2020	9:05	SD	7.61	8.29	7.88	981	3	No bubbler/radar. Tree debris dumped in middle of channel
URC-2	Upper Rock Creek	11/17/2020	14:20	SD	13.32	2.12	7.40	745	14	Orifice just barely in water. Looks as if someone hit the Jobox
WC-1	Woodcrest Creek	11/17/2020	15:15	SD	12.95	4.03	7.42	1055	9	No visual flow. Lots of tree debris/leaves/scum

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	0.09	0.22	0.032	<5.0
JB-1	Jim Blue Creek	<0.05	0.24	0.032	<5.0
LDB-1	Lower Dave Blue Creek	<0.05	0.32	0.050	<5.0
LRC-1	Lower Rock Creek	<0.05	0.24	0.043	<5.0
LT-1	Lake Laterals	<0.05	0.74	0.120	<5.0
TE-1	Little River Tributary	<0.05	0.48	0.026	<5.0
TG-1	Little River Tributary	<0.05	0.37	0.051	<5.0
UDB-1	Upper Dave Blue Creek	<0.05	0.27	0.040	<5.0
URC-2	Upper Rock Creek	<0.05	0.70	0.157	<5.0
WC-1	Woodcrest Creek	<0.05	0.40	0.096	<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	0.09	0.19	0.032	<5.0
Duplicate RPD	0%	14.63%	0%	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	0.62	21.02
JB-1	Jim Blue Creek	0.05	15.21
LDB-1	Lower Dave Blue Creek	2.12	16.39
LRC-1	Lower Rock Creek	0.45	17.97
LT-1	Lake Laterals	0.23	4.52
TE-1	Little River Tributary	0.43	11.27
TG-1	Little River Tributary	0.38	9.12
UDB-1	Upper Dave Blue Creek	0.79	17.55
URC-2	Upper Rock Creek	0.01	11.01
WC-1	Woodcrest Creek	0.01	7.71

Table 4 Station Discharge Summary

Discharge Measurement Summary

Date Generated: Mon Nov 23 2020

File Information				Site Details			
File Name	CC1117.WAD			Site Name	CC		
Start Date and Time	2020/11/17 11:13:33			Operator(s)	SCD		

System Information		Units (English Units)		Discharge Uncertainty		
Sensor Type	FlowTracker	Distance	ft	Category	ISO	Stats
Serial #	P4709	Velocity	ft/s	Accuracy	1.0%	1.0%
CPU Firmware Version	3.9	Area	ft ²	Depth	0.5%	2.7%
Software Ver	2.30	Discharge	cfs	Velocity	2.4%	14.0%
Mounting Correction	0.0%			Width	0.2%	0.2%
				Method	2.4%	-
				# Stations	2.6%	-
				Overall	4.5%	14.3%

Summary			
Averaging Int.	40	# Stations	19
Start Edge	LEW	Total Width	9.000
Mean SNR	21.8 dB	Total Area	4.025
Mean Temp	48.80 °F	Mean Depth	0.447
Disch. Equation	Mid-Section	Mean Velocity	0.1547
		Total Discharge	0.6225

Supplemental Data					
#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Nov 17 11:33:55 CST 2020	9.000	21.020		

Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	11:13	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	11:13	0.50	0.6	0.400	0.6	0.160	0.4019	1.00	0.4019	0.200	0.0804	12.9
2	11:14	1.00	0.6	0.300	0.6	0.120	0.1115	1.00	0.1115	0.150	0.0167	2.7
3	11:16	1.50	0.6	0.300	0.6	0.120	0.4400	1.00	0.4400	0.150	0.0660	10.6
4	11:17	2.00	0.6	0.300	0.6	0.120	0.4485	1.00	0.4485	0.150	0.0672	10.8
5	11:18	2.50	0.6	0.300	0.6	0.120	0.4278	1.00	0.4278	0.150	0.0641	10.3
6	11:19	3.00	0.6	0.300	0.6	0.120	0.4026	1.00	0.4026	0.150	0.0604	9.7
7	11:21	3.50	0.6	0.300	0.6	0.120	0.4459	1.00	0.4459	0.150	0.0669	10.7
8	11:22	4.00	0.6	0.350	0.6	0.140	0.2638	1.00	0.2638	0.175	0.0462	7.4
9	11:24	4.50	0.6	0.400	0.6	0.160	0.2254	1.00	0.2254	0.200	0.0451	7.2
10	11:25	5.00	0.6	0.500	0.6	0.200	0.1896	1.00	0.1896	0.250	0.0474	7.6
11	11:26	5.50	0.6	0.700	0.6	0.280	0.1293	1.00	0.1293	0.350	0.0453	7.3
12	11:27	6.00	0.6	0.750	0.6	0.300	0.1480	1.00	0.1480	0.375	0.0555	8.9
13	11:28	6.50	0.6	0.750	0.6	0.300	-0.0003	1.00	-0.0003	0.375	-0.0001	0.0
14	11:29	7.00	0.6	0.650	0.6	0.260	0.0059	1.00	0.0059	0.325	0.0019	0.3
15	11:30	7.50	0.6	0.650	0.6	0.260	0.0049	1.00	0.0049	0.325	0.0016	0.3
16	11:31	8.00	0.6	0.600	0.6	0.240	-0.0814	1.00	-0.0814	0.300	-0.0244	-3.9
17	11:32	8.50	0.6	0.500	0.6	0.200	-0.0702	1.00	-0.0702	0.250	-0.0176	-2.8
18	11:32	9.00	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: Mon Nov 23 2020

File Information				Site Details			
File Name	LRC11172.WAD			Site Name	LRC		
Start Date and Time	2020/11/17 14:45:23			Operator(s)	SCD		

System Information		Units (English Units)		Discharge Uncertainty		
Sensor Type	FlowTracker	Distance	ft	Category	ISO	Stats
Serial #	P4709	Velocity	ft/s	Accuracy	1.0%	1.0%
CPU Firmware Version	3.9	Area	ft^2	Depth	0.5%	0.7%
Software Ver	2.30	Discharge	cfs	Velocity	1.5%	10.4%
Mounting Correction	0.0%			Width	0.2%	0.2%
				Method	2.6%	-
				# Stations	3.6%	-
				Overall	4.8%	10.5%

Summary			
Averaging Int.	40	# Stations	14
Start Edge	LEW	Total Width	6.500
Mean SNR	18.6 dB	Total Area	5.050
Mean Temp	49.16 °F	Mean Depth	0.777
Disch. Equation	Mid-Section	Mean Velocity	0.0882
		Total Discharge	0.4452

Supplemental Data					
#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Nov 17 14:57:33 CST 2020	6.500	17.970		

Measurement Results													
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q	
0	14:45	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0	
<i>1</i>	<i>14:45</i>	<i>0.50</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>0.0000</i>	<i>1.00</i>	<i>0.0000</i>	<i>0.400</i>	<i>0.0000</i>	<i>0.0</i>	
<i>2</i>	<i>14:46</i>	<i>1.00</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>0.0098</i>	<i>1.00</i>	<i>0.0098</i>	<i>0.450</i>	<i>0.0044</i>	<i>1.0</i>	
<i>3</i>	<i>14:47</i>	<i>1.50</i>	<i>0.6</i>	<i>0.950</i>	<i>0.6</i>	<i>0.380</i>	<i>0.0669</i>	<i>1.00</i>	<i>0.0669</i>	<i>0.475</i>	<i>0.0318</i>	<i>7.1</i>	
<i>4</i>	<i>14:48</i>	<i>2.00</i>	<i>0.6</i>	<i>0.950</i>	<i>0.6</i>	<i>0.380</i>	<i>0.1378</i>	<i>1.00</i>	<i>0.1378</i>	<i>0.475</i>	<i>0.0655</i>	<i>14.7</i>	
<i>5</i>	<i>14:49</i>	<i>2.50</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>0.1188</i>	<i>1.00</i>	<i>0.1188</i>	<i>0.450</i>	<i>0.0534</i>	<i>12.0</i>	
<i>6</i>	<i>14:50</i>	<i>3.00</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>0.1289</i>	<i>1.00</i>	<i>0.1289</i>	<i>0.450</i>	<i>0.0580</i>	<i>13.0</i>	
<i>7</i>	<i>14:51</i>	<i>3.50</i>	<i>0.6</i>	<i>0.900</i>	<i>0.6</i>	<i>0.360</i>	<i>0.0630</i>	<i>1.00</i>	<i>0.0630</i>	<i>0.450</i>	<i>0.0283</i>	<i>6.4</i>	
<i>8</i>	<i>14:52</i>	<i>4.00</i>	<i>0.6</i>	<i>0.850</i>	<i>0.6</i>	<i>0.340</i>	<i>0.1322</i>	<i>1.00</i>	<i>0.1322</i>	<i>0.425</i>	<i>0.0562</i>	<i>12.6</i>	
<i>9</i>	<i>14:53</i>	<i>4.50</i>	<i>0.6</i>	<i>0.850</i>	<i>0.6</i>	<i>0.340</i>	<i>0.1916</i>	<i>1.00</i>	<i>0.1916</i>	<i>0.425</i>	<i>0.0814</i>	<i>18.3</i>	
<i>10</i>	<i>14:54</i>	<i>5.00</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>0.0928</i>	<i>1.00</i>	<i>0.0928</i>	<i>0.400</i>	<i>0.0371</i>	<i>8.3</i>	
<i>11</i>	<i>14:55</i>	<i>5.50</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>0.0502</i>	<i>1.00</i>	<i>0.0502</i>	<i>0.350</i>	<i>0.0176</i>	<i>3.9</i>	
<i>12</i>	<i>14:56</i>	<i>6.00</i>	<i>0.6</i>	<i>0.600</i>	<i>0.6</i>	<i>0.240</i>	<i>0.0381</i>	<i>1.00</i>	<i>0.0381</i>	<i>0.300</i>	<i>0.0114</i>	<i>2.6</i>	
13	14:56	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 3 Discharge Measurement Summary LRC-1

Discharge Measurement Summary

Date Generated: Mon Nov 23 2020

File Information		Site Details	
File Name	TG1117.WAD	Site Name	TG
Start Date and Time	2020/11/17 17:42:41	Operator(s)	SCD

System Information		Units (English Units)		Discharge Uncertainty		
Sensor Type	FlowTracker	Distance	ft	Category	ISO	Stats
Serial #	P4709	Velocity	ft/s	Accuracy	1.0%	1.0%
CPU Firmware Version	3.9	Area	ft ²	Depth	0.3%	1.6%
Software Ver	2.30	Discharge	cfs	Velocity	1.2%	6.5%
Mounting Correction	0.0%			Width	0.2%	0.2%
				Method	2.3%	-
				# Stations	1.7%	-
				Overall	3.2%	6.8%

Summary			
Averaging Int.	40	# Stations	31
Start Edge	LEW	Total Width	20.000
Mean SNR	26.0 dB	Total Area	14.100
Mean Temp	51.77 °F	Mean Depth	0.705
Disch. Equation	Mid-Section	Mean Velocity	0.0271
		Total Discharge	0.3827

Supplemental Data					
#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Nov 17 18:11:58 CST 2020	20.000	9.120		

Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	17:42	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	17:42	1.00	0.6	0.400	0.6	0.160	-0.1047	1.00	-0.1047	0.400	-0.0419	-10.9
2	17:43	2.00	0.6	0.500	0.6	0.200	-0.0492	1.00	-0.0492	0.500	-0.0246	-6.4
3	17:44	3.00	0.6	0.800	0.6	0.320	0.0062	1.00	0.0062	0.800	0.0050	1.3
4	17:45	4.00	0.6	1.100	0.6	0.440	0.0308	1.00	0.0308	0.825	0.0254	6.6
5	17:46	4.50	0.6	1.200	0.6	0.480	0.0610	1.00	0.0610	0.600	0.0366	9.6
6	17:47	5.00	0.6	1.200	0.6	0.480	0.0505	1.00	0.0505	0.600	0.0303	7.9
7	17:48	5.50	0.6	1.200	0.6	0.480	0.0449	1.00	0.0449	0.600	0.0270	7.0
8	17:49	6.00	0.6	1.100	0.6	0.440	0.0528	1.00	0.0528	0.550	0.0291	7.6
9	17:50	6.50	0.6	1.100	0.6	0.440	0.0417	1.00	0.0417	0.550	0.0229	6.0
10	17:51	7.00	0.6	1.100	0.6	0.440	0.0512	1.00	0.0512	0.550	0.0282	7.4
11	17:52	7.50	0.6	1.100	0.6	0.440	0.0515	1.00	0.0515	0.550	0.0283	7.4
12	17:53	8.00	0.6	1.000	0.6	0.400	0.0554	1.00	0.0554	0.500	0.0277	7.2
13	17:54	8.50	0.6	1.000	0.6	0.400	0.0351	1.00	0.0351	0.500	0.0176	4.6
14	17:55	9.00	0.6	1.100	0.6	0.440	0.0308	1.00	0.0308	0.550	0.0170	4.4
15	17:56	9.50	0.6	1.000	0.6	0.400	0.0453	1.00	0.0453	0.500	0.0226	5.9
16	17:57	10.00	0.6	1.000	0.6	0.400	0.0459	1.00	0.0459	0.500	0.0230	6.0
17	17:58	10.50	0.6	0.900	0.6	0.360	0.0466	1.00	0.0466	0.450	0.0210	5.5
18	17:59	11.00	0.6	0.900	0.6	0.360	0.0410	1.00	0.0410	0.450	0.0185	4.8
19	18:00	11.50	0.6	0.800	0.6	0.320	0.0443	1.00	0.0443	0.400	0.0177	4.6
20	18:01	12.00	0.6	0.800	0.6	0.320	0.0509	1.00	0.0509	0.400	0.0203	5.3
21	18:02	12.50	0.6	0.700	0.6	0.280	0.0266	1.00	0.0266	0.350	0.0093	2.4
22	18:03	13.00	0.6	0.650	0.6	0.260	0.0285	1.00	0.0285	0.325	0.0093	2.4
23	18:04	13.50	0.6	0.600	0.6	0.240	0.0141	1.00	0.0141	0.300	0.0042	1.1
24	18:05	14.00	0.6	0.600	0.6	0.240	0.0377	1.00	0.0377	0.450	0.0170	4.4
25	18:06	15.00	0.6	0.500	0.6	0.200	0.0144	1.00	0.0144	0.500	0.0072	1.9
26	18:07	16.00	0.6	0.500	0.6	0.200	0.0052	1.00	0.0052	0.500	0.0026	0.7
27	18:08	17.00	0.6	0.400	0.6	0.160	-0.0249	1.00	-0.0249	0.400	-0.0100	-2.6
28	18:09	18.00	0.6	0.300	0.6	0.120	-0.0279	1.00	-0.0279	0.300	-0.0084	-2.2
29	18:11	19.00	0.6	0.200	0.6	0.080	-0.0013	1.00	-0.0013	0.200	-0.0003	-0.1
30	18:11	20.00	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 TG-1

Discharge Measurement Summary

Date Generated: Mon Nov 23 2020

File Information		Site Details	
File Name	JB1117.WAD	Site Name	JB
Start Date and Time	2020/11/17 12:26:40	Operator(s)	SCD

System Information		Units (English Units)	Discharge Uncertainty	
Sensor Type	FlowTracker	Distance	ft	
Serial #	P4709	Velocity	ft/s	
CPU Firmware Version	3.9	Area	ft ²	
Software Ver	2.30	Discharge	cfs	
Mounting Correction	0.0%			

Summary			
Averaging Int.	40	# Stations	6
Start Edge	LEW	Total Width	2.500
Mean SNR	31.0 dB	Total Area	0.600
Mean Temp	48.97 °F	Mean Depth	0.240
Disch. Equation	Mid-Section	Mean Velocity	0.0760
		Total Discharge	0.0456

Supplemental Data					
#	Time	Location	Gauge Height	Rated Flow	Comments
1	Tue Nov 17 12:30:32 CST 2020	2.500	15.210		

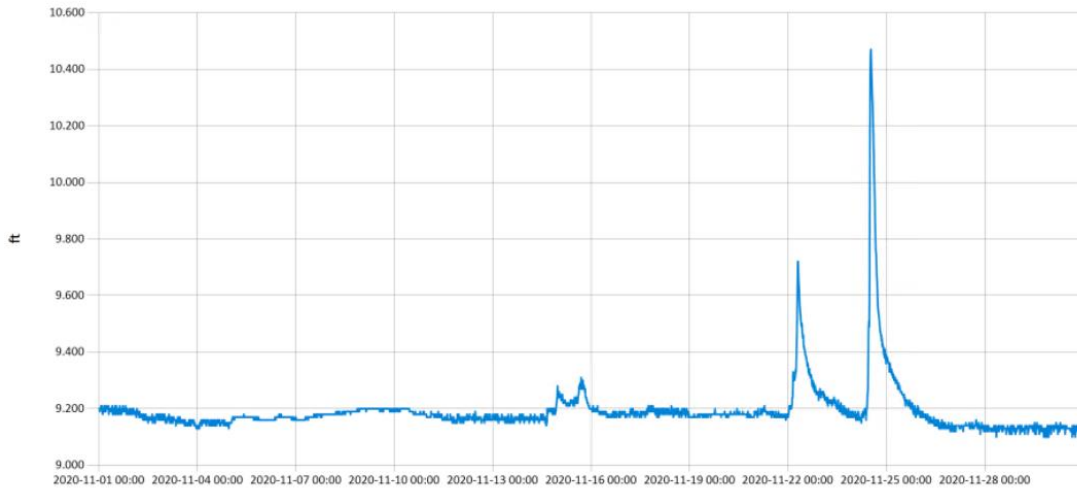
Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	12:26	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	12:26	0.50	0.6	0.300	0.6	0.120	-0.0161	1.00	-0.0161	0.150	-0.0024	-5.3
2	12:27	1.00	0.6	0.300	0.6	0.120	0.0732	1.00	0.0732	0.150	0.0110	24.1
3	12:28	1.50	0.6	0.300	0.6	0.120	0.2201	1.00	0.2201	0.150	0.0330	72.4
4	12:29	2.00	0.6	0.300	0.6	0.120	0.0269	1.00	0.0269	0.150	0.0040	8.8
5	12:29	2.50	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 JB-1

Period Selected: 2020-11-01 00:00 - 2020-11-30 23:59

UTC Offset: -06:00

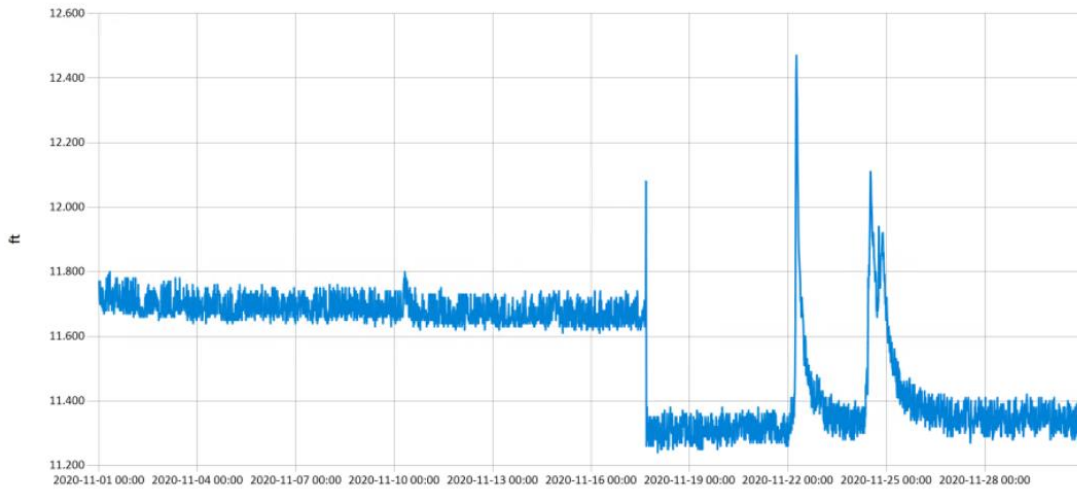


— Stage@TG

Figure 6 Monthly Hydrograph TG-1

Period Selected: 2020-11-01 00:00 - 2020-11-30 23:59

UTC Offset: -06:00

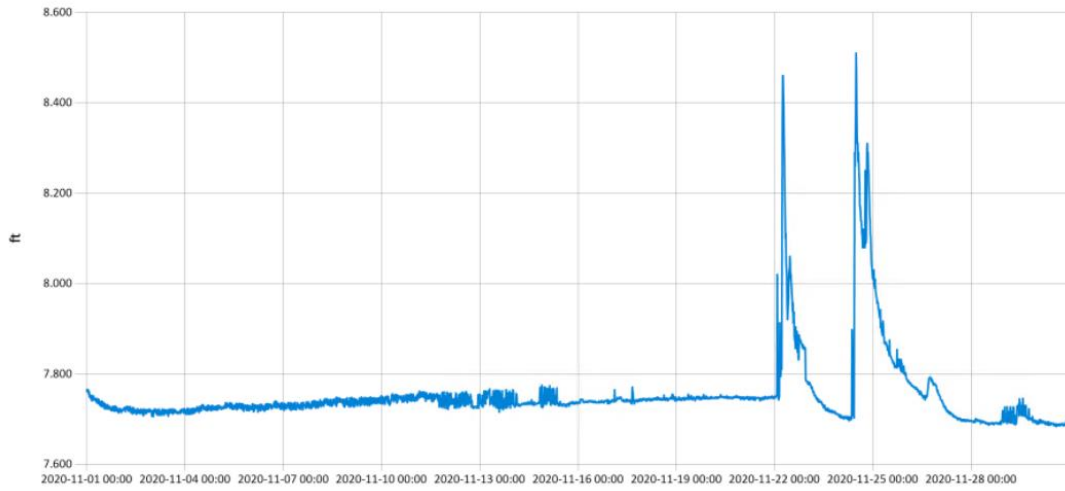


— Stage@TE

Figure 7 Monthly Hydrograph TE-1

Period Selected: 2020-11-01 00:00 - 2020-11-30 23:59

UTC Offs et: -06:00

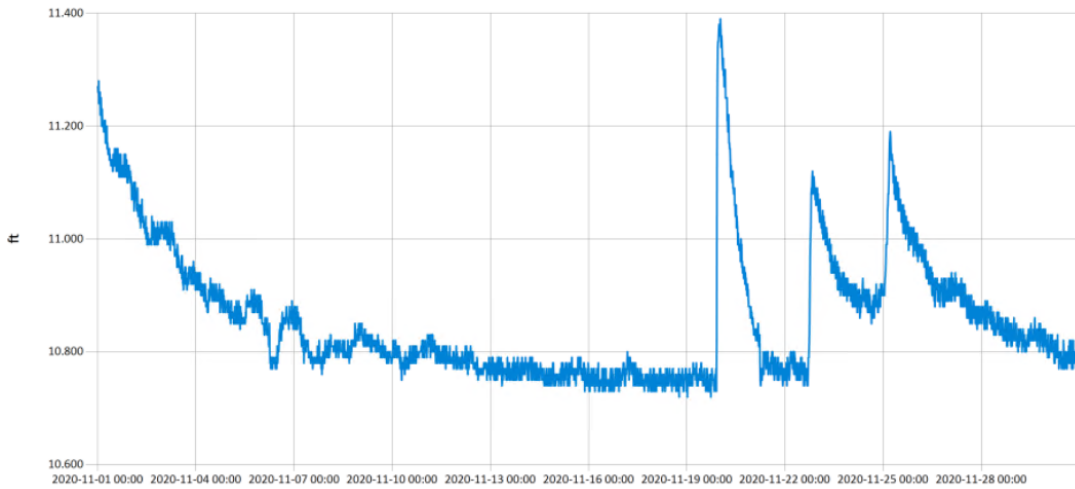


— Stage@WC

Figure 8 Monthly Hydrograph WC-1

Period Selected: 2020-11-01 00:00 - 2020-11-30 23:59

UTC Offs et: -06:00

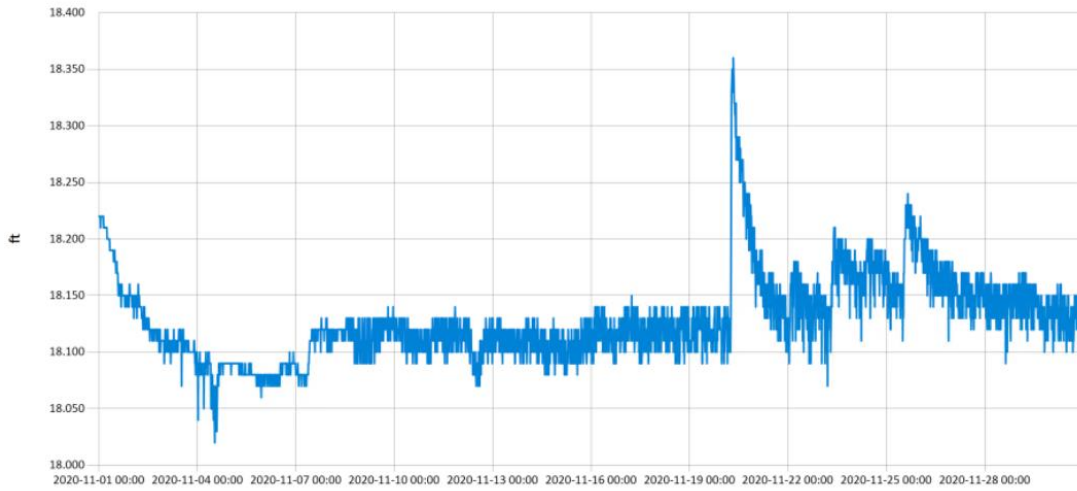


— Stage@URC

Figure 9 Monthly Hydrograph URC-2

Period Selected: 2020-11-01 00:00 - 2020-11-30 23:59

UTC Offs et: -06:00

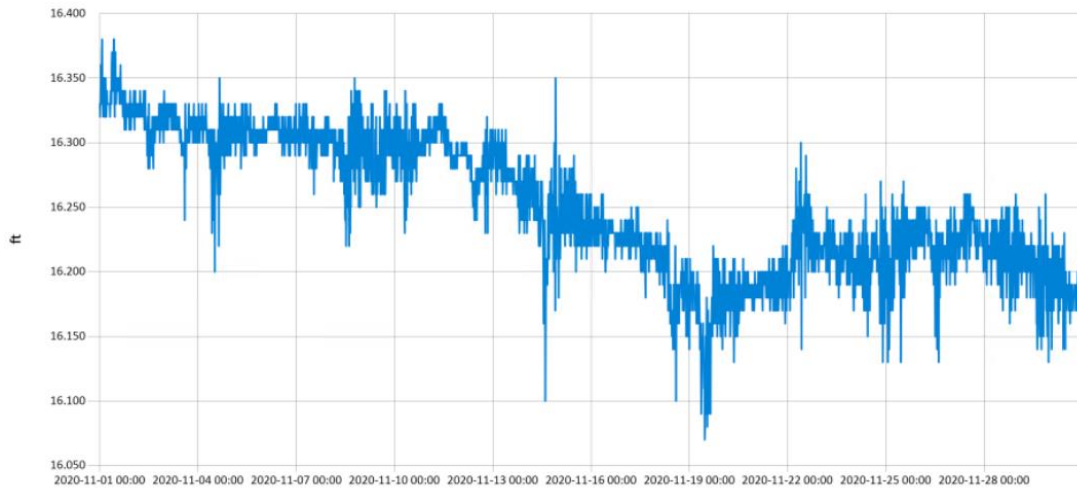


— Stage@LRC

Figure 10 Monthly Hydrograph LRC-1

Period Selected: 2020-11-01 00:00 - 2020-11-30 23:59

UTC Offs et: -06:00

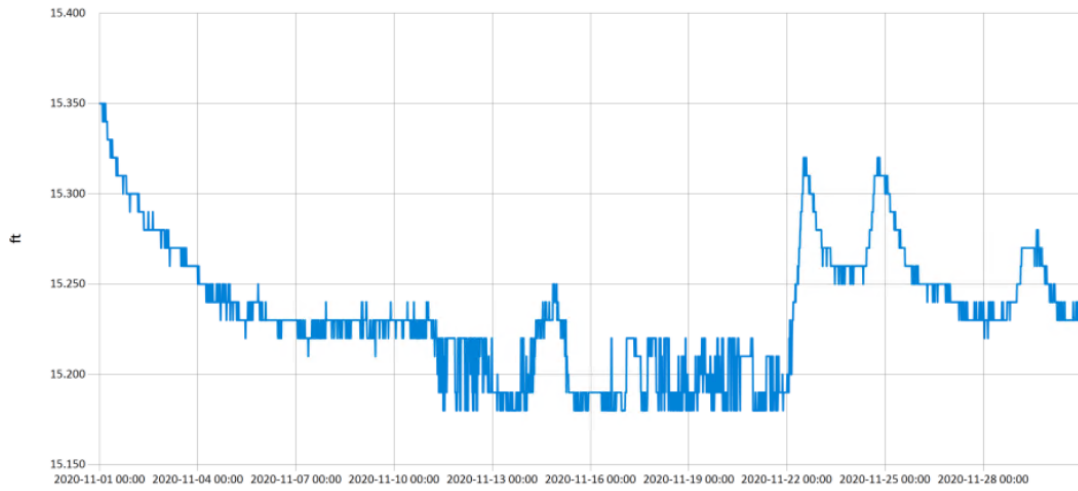


— Stage@LDB

Figure 11 Monthly Hydrograph LDB-1

Period Selected: 2020-11-01 00:00 - 2020-11-30 23:59

UTC Offs et: -06:00

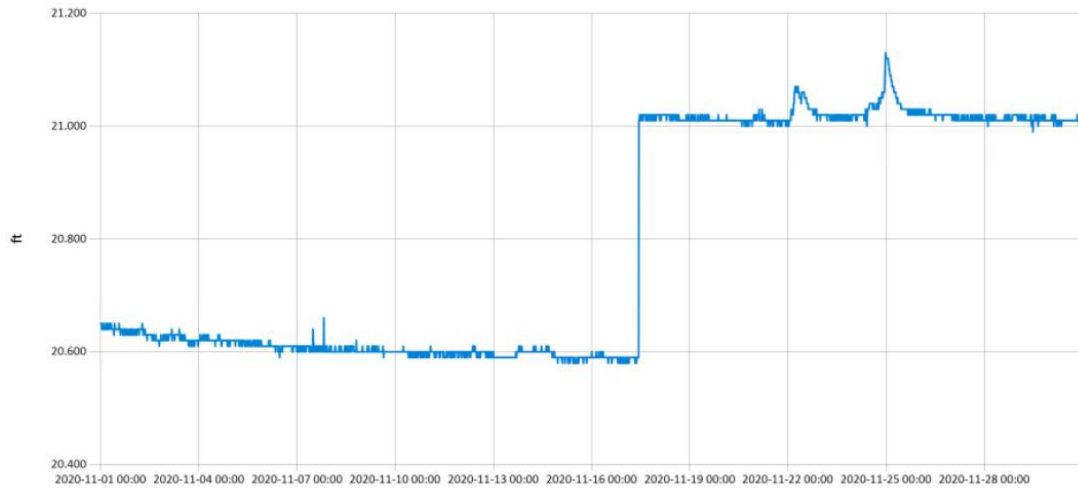


— Stage@JB

Figure 12 Monthly Hydrograph JB-1

Period Selected: 2020-11-01 00:00 - 2020-11-30 23:59

UTC Offs et: -06:00



— Stage@CC

Figure 13 Monthly Hydrograph CC-1

Period Selected: 2020-11-01 00:00 - 2020-11-30 23:59 UTC Offs et: -06:00

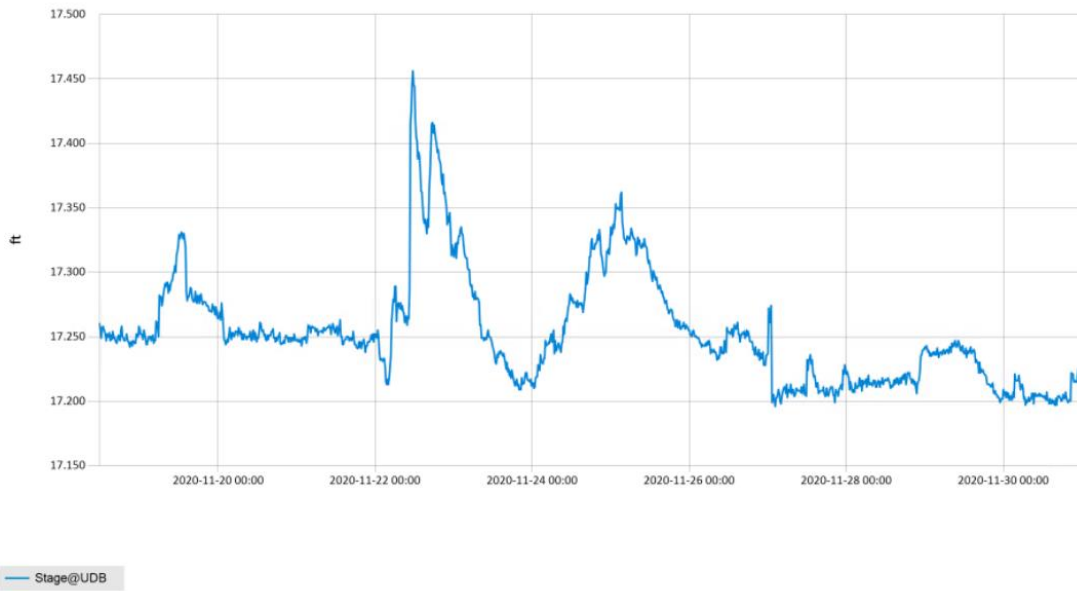


Figure 14 Monthly Hydrograph UDB-1

MESONET CLIMATOLOGICAL DATA SUMMARY				November 2020				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)				DEG DAYS		HUMIDITY (%)			RAIN		PRESSURE (in)			WIND SPEED (mph)		SOLAR (MJ/m ²)	4" SOIL TEMPERATURES			
	MAX	MIN	AVG	DEWPT	HDD	CDD	MAX	MIN	AVG	(in)	STN	MSL	DIR	AVG	MAX	SOD		BARE	MAX	MIN	
1	65	39	52.4	34.2	13	0	84	25	54	0.00	29.21	30.47	NNE	6.8	22.9	15.88	53.1	51.5	57	47	
2	68	36	52.6	32.8	13	0	87	26	51	0.00	29.14	30.40	S	6.6	22.2	15.65	52.6	50.1	56	44	
3	76	44	59.9	36.8	5	0	77	19	47	0.00	28.94	30.19	S	8.6	25.4	15.76	53.9	51.7	58	46	
4	74	52	62.3	42.1	2	0	65	32	48	0.00	28.87	30.13	S	10.4	24.7	11.53	55.4	53.3	58	49	
5	75	50	62.3	51.7	3	0	95	45	70	0.00	28.89	30.14	SSE	5.2	17.7	14.57	57.1	57.0	64	51	
6	76	56	64.3	56.3	0	1	97	52	77	0.00	28.86	30.11	SSE	8.1	21.1	13.63	58.7	59.2	64	55	
7	74	56	63.6	50.7	0	0	82	42	64	0.00	28.78	30.03	SSE	10.0	21.5	14.11	59.6	59.9	65	56	
8	73	58	64.6	57.6	0	0	93	59	79	0.00	28.69	29.94	SSE	13.3	31.1	9.23	60.2	60.7	65	58	
9	72	63	66.7	60.1	0	2	92	65	80	0.00	28.63	29.87	S	12.0	30.6	5.77	61.4	62.5	65	60	
10	66	40	53.8	43.8	12	0	91	41	70	0.01	28.65	29.90	NW	9.1	27.1	13.50	60.7	60.8	64	55	
11	65	34	48.4	34.2	16	0	93	31	62	0.00	28.76	30.01	E	5.1	15.5	14.54	56.8	54.6	61	49	
12	73	43	56.6	40.4	7	0	71	37	56	0.00	28.77	30.01	SSE	11.2	26.0	11.75	56.6	56.1	63	51	
13	60	32	48.1	34.9	19	0	87	34	63	0.00	28.89	30.15	NNE	7.3	18.3	11.49	55.9	55.0	60	49	
14	80	54	63.1	46.6	0	2	93	22	60	0.00	28.53	29.77	SSW	14.5	46.8	8.45	57.8	59.1	64	56	
15	60	38	49.5	19.0	16	0	63	13	32	0.00	28.97	30.23	NNW	7.6	32.8	14.40	56.2	56.7	62	52	
16	70	40	52.1	24.9	10	0	67	16	38	0.00	29.04	30.30	S	4.8	18.9	13.87	54.3	53.9	61	48	
17	71	36	53.9	30.1	12	0	84	18	46	0.00	29.15	30.41	SSE	5.2	21.6	13.72	53.9	54.1	61	48	
18	72	48	59.6	34.7	5	0	62	20	42	0.00	28.99	30.24	S	13.1	34.1	13.37	54.6	55.6	61	51	
19	72	56	63.8	49.7	1	0	77	50	61	0.00	28.84	30.09	S	15.4	34.4	12.38	56.3	58.6	63	55	
20	75	58	66.6	54.4	0	2	80	51	65	0.00	28.94	30.20	S	8.5	21.1	11.92	58.5	61.6	66	57	
21	66	49	57.7	52.9	8	0	94	68	84	0.00	29.00	30.26	N	6.6	17.1	4.45	59.5	61.9	64	59	
22	53	36	45.9	41.7	21	0	97	65	86	0.71	29.08	30.34	N	10.0	25.5	6.26	56.6	54.9	59	50	
23	54	34	46.2	40.5	21	0	98	69	82	0.01	28.94	30.19	SSE	8.1	22.8	6.35	53.8	49.5	52	46	
24	63	43	53.8	51.2	12	0	98	72	91	0.47	28.57	29.81	SSE	14.0	28.6	1.26	55.2	53.6	56	52	
25	57	37	45.3	31.0	18	0	87	30	60	0.00	28.74	29.99	WNW	10.1	34.2	13.20	53.7	50.3	54	47	
26	67	40	51.6	35.6	12	0	74	38	56	0.00	28.70	29.95	SSE	8.4	28.0	11.94	52.2	48.0	53	43	
27	59	39	46.5	35.0	16	0	88	43	66	0.00	28.91	30.17	NNE	10.8	24.1	11.65	52.1	47.7	52	44	
28	48	33	41.7	33.1	24	0	90	56	72	0.05	28.94	30.20	NNE	5.7	15.1	3.33	50.8	44.6	46	42	
29	50	35	43.1	33.7	22	0	88	43	71	0.01	28.94	30.20	N	12.1	39.1	5.33	50.9	45.9	49	42	
30	47	24	35.7	16.7	29	0	76	25	48	0.00	29.07	30.33	NNW	8.7	25.6	13.20	48.3	41.4	46	39	
	66	43	54.4	40.2	<- Monthly Averages ->					28.88	30.13	SSE	9.2	46.8	11.08	55.6	54.3	59	50		
Temperature - Highest: 80					Degree Days - Total HDD: 316					Number of Days With:											
Lowest: 24					Total CDD: 7					Tmax ≥ 90: 0					Rainfall ≥ 0.01 inch: 6						
Rainfall: Monthly Total: 1.26 in.					Humidity - Highest: 98					Tmax ≤ 32: 0					Rainfall ≥ 0.10 inch: 2						
Greatest 24 Hr: 0.71 in.					Lowest: 13					Tmin ≤ 32: 2					Avg Wind Speed ≥ 10 mph: 13						
										Tmin ≤ 0: 0					Max Wind Speed ≥ 30 mph: 8						

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* Denotes incomplete record

Figure 15 November Mesonet Data