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

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**SY2020 Monthly Report**

*Lake Thunderbird TMDL Monitoring Plan Implementation:*

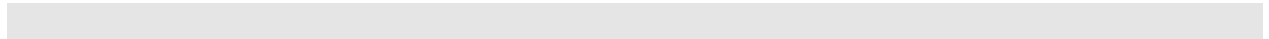
*July 2020 Monitoring Report*

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## SUMMARY OF JULY WATER QUALITY SAMPLING

Sampling for July 2020 occurred on the twentieth and was considered a base flow collection. Water samples were collected at all ten locations, and discharge measurements were collected at eight locations. Mesonet data shows no precipitation on the twentieth, 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 July was 2.65 inches. All water level gauges were operational for the month, except for LT-1, and UDB-1 due to equipment malfunction.

## RESULTS

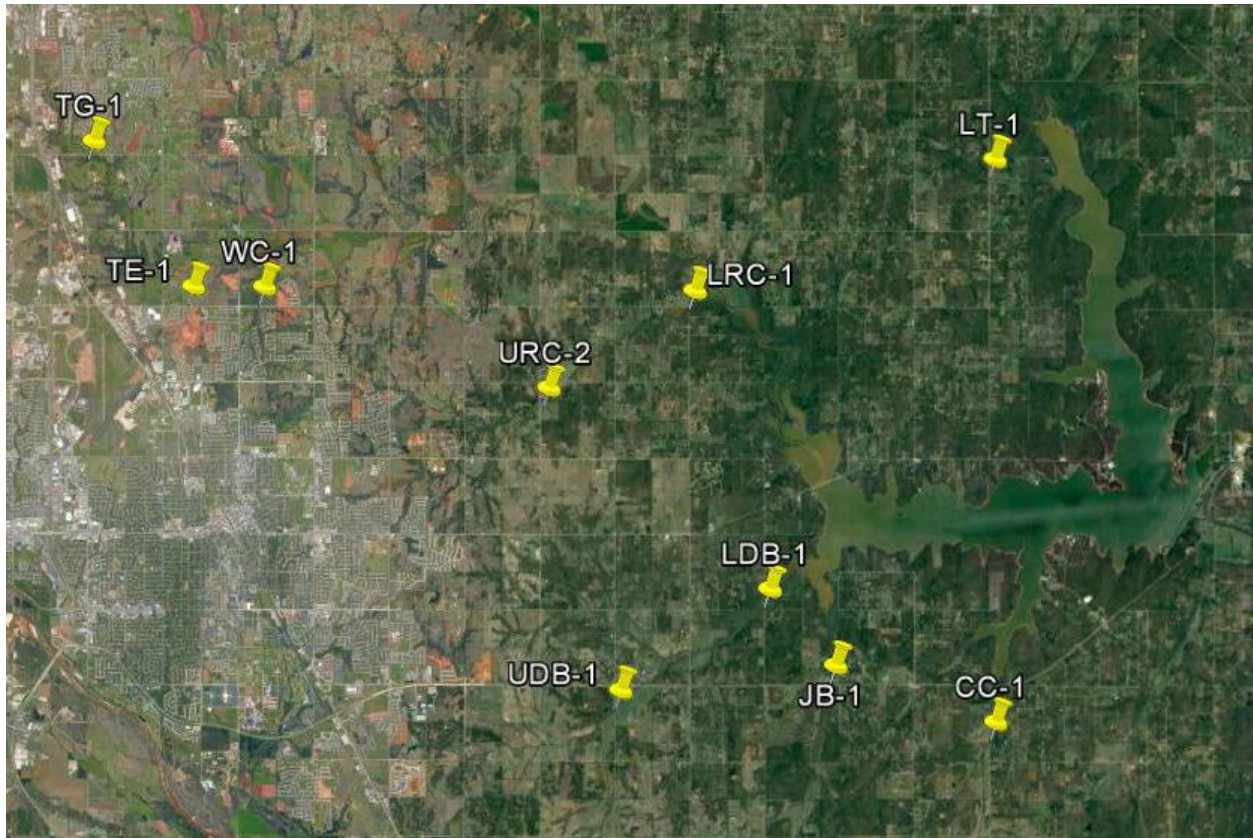


Figure 1 Monitoring Station Map

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	7/20/2020	10:30	SD	26.40	6.58	7.97	693	17	RP3, used DCP for flow
JB-1	Jim Blue Creek	7/20/2020	10:55	SD	26.73	6.38	7.90	910	39	neither RP over water, orifice out of water, used DCP for flow
LDB-1	Lower Dave Blue Creek	7/20/2020	13:00	SD	29.69	6.22	8.19	709	16	
LRC-1	Lower Rock Creek	7/20/2020	12:10	SD	27.03	8.77	7.93	704	5	
LT-1	Lake Laterals	7/20/2020	11:35	SD	27.37	5.52	7.57	260	120	upstream dry, small isolated pool downstream
TE-1	Little River Tributary	7/20/2020	15:05	SD	28.93	4.90	7.84	699	17	
TG-1	Little River Tributary	7/20/2020	15:50	SD	30.67	8.86	7.90	781	3	orifice just under water
UDB-1	Upper Dave Blue Creek	7/20/2020	9:35	SD	25.29	3.73	7.70	935	11	battery dead, bubbler not purging
URC-2	Upper Rock Creek	7/20/2020	13:45	SD	29.32	7.04	7.40	636	15	orifice out of water
WC-1	Woodcrest Creek	7/20/2020	14:30	SD	28.21	6.54	7.66	906	6	

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	0.31	0.56	0.121	15
JB-1	Jim Blue Creek	0.11	0.72	0.113	41
LDB-1	Lower Dave Blue Creek	<0.05	0.67	0.078	12
LRC-1	Lower Rock Creek	0.06	0.24	0.060	<5.0
LT-1	Lake Laterals	<0.05	4.40	0.487	188
TE-1	Little River Tributary	<0.05	0.59	0.039	13
TG-1	Little River Tributary	0.07	0.37	0.049	<5.0
UDB-1	Upper Dave Blue Creek	0.05	0.28	0.047	13
URC-2	Upper Rock Creek	<0.05	1.18	0.104	8
WC-1	Woodcrest Creek	<0.05	0.34	0.065	5

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	0.30	0.54	0.122	14
Duplicate RPD	3.28%	3.64%	0.82%	6.90%

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	0.34	20.46
JB-1	Jim Blue Creek	0.02	15.19
LDB-1	Lower Dave Blue Creek	2.00	16.30
LRC-1	Lower Rock Creek	0.53	17.63
LT-1	Lake Laterals	N/A	N/A
TE-1	Little River Tributary	-0.03	11.16
TG-1	Little River Tributary	0.62	8.89
UDB-1	Upper Dave Blue Creek	0.19	17.15
URC-2	Upper Rock Creek	0.01	10.90
WC-1	Woodcrest Creek	0.01	7.42

Table 4 Station Discharge Summary

# Discharge Measurement Summary

Date Generated: Thu Aug 20 2020

File Information				Site Details								
File Name	URC0720.WAD			Site Name	URC							
Start Date and Time	2020/07/20 12:33:31			Operator(s)	LEO							
System Information				Units (English Units)		Discharge Uncertainty						
Sensor Type	FlowTracker			Distance	ft		Category	ISO	Stats			
Serial #	P4713			Velocity	ft/s		Accuracy	1.0%	1.0%			
CPU Firmware Version	3.9			Area	ft^2		Depth	2.4%	19.9%			
Software Ver	2.30			Discharge	cfs		Velocity	15.4%	113.8%			
Mounting Correction	0.0%											
Width												
Method												
# Stations												
<b>Overall</b>				<b>20.2%</b> <b>115.5%</b>								
Summary												
Averaging Int.	40	# Stations	10									
Start Edge	LEW	Total Width	4.500									
Mean SNR	56.8 dB	Total Area	1.750									
Mean Temp	84.64 °F	Mean Depth	0.389									
Disch. Equation	Mid-Section	Mean Velocity	0.0078									
		<b>Total Discharge</b>	<b>0.0137</b>									
Supplemental Data												
#	Time	Location	Gauge Height	Rated Flow	Comments							
1	Mon Jul 20 12:31:02 CDT 2020	0.000	10.900									
Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	12:33	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	12:33	0.50	0.6	0.200	0.6	0.080	0.0000	1.00	0.0000	0.100	0.0000	0.0
2	12:34	1.00	0.6	0.500	0.6	0.200	0.0003	1.00	0.0003	0.250	0.0001	0.6
3	12:35	1.50	0.6	0.500	0.6	0.200	0.0043	1.00	0.0043	0.250	0.0011	7.8
4	12:36	2.00	0.6	0.500	0.6	0.200	0.0367	1.00	0.0367	0.250	0.0092	67.0
5	12:37	2.50	0.6	0.500	0.6	0.200	0.0269	1.00	0.0269	0.250	0.0067	49.0
6	12:38	3.00	0.6	0.500	0.6	0.200	-0.0341	1.00	-0.0341	0.250	-0.0085	-62.2
7	12:39	3.50	0.6	0.400	0.6	0.160	-0.0427	1.00	-0.0427	0.200	-0.0085	-62.2
8	12:41	4.00	0.6	0.400	0.6	0.160	0.0686	1.00	0.0686	0.200	0.0137	100.0
9	12:41	4.50	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 2 Discharge Measurement Summary URC-2

# Discharge Measurement Summary

Date Generated: Thu Aug 20 2020

File Information				Site Details								
File Name	CC0720.WAD			Site Name	CC							
Start Date and Time	2020/07/20 08:58:44			Operator(s)	LEO							
System Information				Units (English Units)		Discharge Uncertainty						
Sensor Type	FlowTracker			Distance	ft		Category	ISO	Stats			
Serial #	P4713			Velocity	ft/s		Accuracy	1.0%	1.0%			
CPU Firmware Version	3.9			Area	ft^2		Depth	0.6%	8.6%			
Software Ver	2.30			Discharge	cfs		Velocity	1.4%	12.2%			
Mounting Correction	0.0%											
						Width	0.2%	0.2%				
						Method	3.2%	-				
						# Stations	3.9%	-				
						<b>Overall</b>	<b>5.3%</b>	<b>15.0%</b>				
Summary												
Averaging Int.	40	# Stations	13									
Start Edge	LEW	Total Width	6.500									
Mean SNR	48.8 dB	Total Area	1.600									
Mean Temp	78.29 °F	Mean Depth	0.246									
Disch. Equation	Mid-Section	Mean Velocity	0.2135									
		<b>Total Discharge</b>	<b>0.3416</b>									
Supplemental Data												
#	Time	Location	Gauge Height	Rated Flow	Comments							
1	Mon Jul 20 09:13:09 CDT 2020	6.500	20.460									
Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	08:58	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>08:58</i>	<i>1.00</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.0000</i>	<i>1.00</i>	<i>0.0000</i>	<i>0.150</i>	<i>0.0000</i>	<i>0.0</i>
<i>2</i>	<i>08:59</i>	<i>1.50</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.0269</i>	<i>1.00</i>	<i>0.0269</i>	<i>0.100</i>	<i>0.0027</i>	<i>0.8</i>
<i>3</i>	<i>09:01</i>	<i>2.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.0856</i>	<i>1.00</i>	<i>0.0856</i>	<i>0.150</i>	<i>0.0128</i>	<i>3.8</i>
<i>4</i>	<i>09:03</i>	<i>2.50</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.3898</i>	<i>1.00</i>	<i>0.3898</i>	<i>0.150</i>	<i>0.0584</i>	<i>17.1</i>
5	09:05	3.00	0.6	0.400	0.6	0.160	0.3553	1.00	0.3553	0.200	0.0711	20.8
6	09:06	3.50	0.6	0.300	0.6	0.120	0.4547	1.00	0.4547	0.150	0.0682	20.0
7	09:07	4.00	0.6	0.300	0.6	0.120	0.5131	1.00	0.5131	0.150	0.0769	22.5
8	09:08	4.50	0.6	0.300	0.6	0.120	0.2867	1.00	0.2867	0.150	0.0430	12.6
9	09:09	5.00	0.6	0.400	0.6	0.160	-0.0003	1.00	-0.0003	0.200	-0.0001	0.0
10	09:10	5.50	0.6	0.200	0.6	0.080	0.0709	1.00	0.0709	0.100	0.0071	2.1
11	09:11	6.00	0.6	0.200	0.6	0.080	0.0148	1.00	0.0148	0.100	0.0015	0.4
12	09:11	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 CC-1



# Discharge Measurement Summary

Date Generated: Thu Aug 20 2020

File Information				Site Details								
File Name	JB0720.WAD			Site Name	JB							
Start Date and Time	2020/07/20 09:43:23			Operator(s)	LEO							
System Information				Units (English Units)		Discharge Uncertainty						
Sensor Type	FlowTracker			Distance	ft		<b>Category</b>	<b>ISO</b>	<b>Stats</b>			
Serial #	P4713			Velocity	ft/s		Accuracy	1.0%	1.0%			
CPU Firmware Version	3.9			Area	ft^2		Depth	0.9%	4.6%			
Software Ver	2.30			Discharge	cfs		Velocity	8.1%	25.9%			
Mounting Correction	0.0%											
						Method			4.5%	-		
						# Stations			5.8%	-		
						<b>Overall</b>			<b>11.0%</b>	<b>26.3%</b>		
Summary												
Averaging Int.	40	# Stations	9									
Start Edge	LEW	Total Width	4.000									
Mean SNR	50.9 dB	Total Area	1.675									
Mean Temp	79.74 °F	Mean Depth	0.419									
Disch. Equation	Mid-Section	Mean Velocity	0.0136									
		<b>Total Discharge</b>	<b>0.0228</b>									
Supplemental Data												
#	Time	Location	Gauge Height	Rated Flow	Comments							
1	Mon Jul 20 09:56:11 CDT 2020	4.500	15.190									
Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	09:43	0.50	None	0.300	0.0	0.0	0.0000	1.00	0.0246	0.075	0.0018	8.1
1	09:43	1.00	0.6	0.300	0.6	0.120	0.0246	1.00	0.0246	0.150	0.0037	16.2
2	09:44	1.50	0.6	0.400	0.6	0.160	0.0131	1.00	0.0131	0.200	0.0026	11.5
<i>3</i>	<i>09:45</i>	<i>2.00</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.0325</i>	<i>1.00</i>	<i>0.0325</i>	<i>0.200</i>	<i>0.0065</i>	<i>28.5</i>
<i>4</i>	<i>09:46</i>	<i>2.50</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.0420</i>	<i>1.00</i>	<i>0.0420</i>	<i>0.200</i>	<i>0.0084</i>	<i>36.8</i>
<i>5</i>	<i>09:47</i>	<i>3.00</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>0.0226</i>	<i>1.00</i>	<i>0.0226</i>	<i>0.250</i>	<i>0.0057</i>	<i>24.8</i>
6	09:48	3.50	0.6	0.600	0.6	0.240	-0.0079	1.00	-0.0079	0.300	-0.0024	-10.4
7	09:49	4.00	0.6	0.600	0.6	0.240	-0.0118	1.00	-0.0118	0.300	-0.0035	-15.5
8	09:49	4.50	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 4 Discharge Measurement Summary JB-1

# Discharge Measurement Summary

Date Generated: Thu Aug 20 2020

File Information				Site Details			
File Name	LRC0720.WAD			Site Name	LRC		
Start Date and Time	2020/07/20 10:55:55			Operator(s)	LEO		

System Information		Units (English Units)		Discharge Uncertainty		
Sensor Type	FlowTracker	Distance	ft	Category	ISO	Stats
Serial #	P4713	Velocity	ft/s	Accuracy	1.0%	1.0%
CPU Firmware Version	3.9	Area	ft <sup>2</sup>	Depth	0.5%	2.3%
Software Ver	2.30	Discharge	cfs	Velocity	0.8%	7.1%
Mounting Correction	0.0%			Width	0.2%	0.2%
				Method	2.3%	-
				# Stations	3.6%	-
				<b>Overall</b>	<b>4.5%</b>	<b>7.6%</b>

Summary			
Averaging Int.	40	# Stations	14
Start Edge	LEW	Total Width	13.000
Mean SNR	31.9 dB	Total Area	5.600
Mean Temp	79.40 °F	Mean Depth	0.431
Disch. Equation	Mid-Section	Mean Velocity	0.0951
		<b>Total Discharge</b>	<b>0.5326</b>

Supplemental Data (Gauge Height Change = 0.000ft)					
#	Time	Location	Gauge Height	Rated Flow	Comments
1	Mon Jul 20 10:54:36 CDT 2020	0.000	17.630		
2	Mon Jul 20 11:12:22 CDT 2020	13.000	17.630		

Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	10:55	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	10:55	1.00	0.6	0.400	0.6	0.160	0.0984	1.00	0.0984	0.400	0.0394	7.4
2	10:57	2.00	0.6	0.500	0.6	0.200	0.1230	1.00	0.1230	0.500	0.0615	11.5
3	10:58	3.00	0.6	0.600	0.6	0.240	0.0577	1.00	0.0577	0.600	0.0346	6.5
4	10:59	4.00	0.6	0.600	0.6	0.240	0.1145	1.00	0.1145	0.600	0.0687	12.9
5	11:00	5.00	0.6	0.500	0.6	0.200	0.1083	1.00	0.1083	0.500	0.0541	10.2
6	11:01	6.00	0.6	0.500	0.6	0.200	0.1155	1.00	0.1155	0.500	0.0577	10.8
7	11:02	7.00	0.6	0.500	0.6	0.200	0.0899	1.00	0.0899	0.500	0.0449	8.4
8	11:03	8.00	0.6	0.500	0.6	0.200	0.1004	1.00	0.1004	0.500	0.0502	9.4
9	11:04	9.00	0.6	0.500	0.6	0.200	0.0932	1.00	0.0932	0.500	0.0466	8.7
10	11:05	10.00	0.6	0.500	0.6	0.200	0.0915	1.00	0.0915	0.500	0.0458	8.6
11	11:06	11.00	0.6	0.300	0.6	0.120	0.0600	1.00	0.0600	0.300	0.0180	3.4
12	11:07	12.00	0.6	0.200	0.6	0.080	0.0551	1.00	0.0551	0.200	0.0110	2.1
13	11:07	13.00	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 5 Discharge Measurement Summary LRC-1

# Discharge Measurement Summary

Date Generated: Thu Aug 20 2020

File Information				Site Details			
File Name	IDK.WAD			Site Name	IDK		
Start Date and Time	2020/07/20 13:14:24			Operator(s)	LEO		

System Information		Units (English Units)		Discharge Uncertainty		
Sensor Type	FlowTracker	Distance	ft	Category	ISO	Stats
Serial #	P4713	Velocity	ft/s	Accuracy	1.0%	1.0%
CPU Firmware Version	3.9	Area	ft^2	Depth	2.0%	24.3%
Software Ver	2.30	Discharge	cfs	Velocity	19.3%	132.7%
Mounting Correction	0.0%			Width	0.7%	0.7%
				Method	10.1%	-
				# Stations	4.6%	-
				<b>Overall</b>	<b>22.4%</b>	<b>134.9%</b>

Summary			
Averaging Int.	40	# Stations	11
Start Edge	LEW	Total Width	10.000
Mean SNR	43.4 dB	Total Area	2.500
Mean Temp	87.04 °F	Mean Depth	0.250
Disch. Equation	Mid-Section	Mean Velocity	0.0041
		<b>Total Discharge</b>	<b>0.0102</b>

Supplemental Data					
#	Time	Location	Gauge Height	Rated Flow	Comments
1	Mon Jul 20 13:23:02 CDT 2020	9.000	7.420		

Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	13:14	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>13:14</i>	<i>1.00</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.0095</i>	<i>1.00</i>	<i>0.0095</i>	<i>0.200</i>	<i>0.0019</i>	<i>18.6</i>
<i>2</i>	<i>13:15</i>	<i>2.00</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.0167</i>	<i>1.00</i>	<i>0.0167</i>	<i>0.200</i>	<i>0.0033</i>	<i>32.7</i>
<i>3</i>	<i>13:16</i>	<i>3.00</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.0033</i>	<i>1.00</i>	<i>0.0033</i>	<i>0.200</i>	<i>0.0007</i>	<i>6.4</i>
<i>4</i>	<i>13:17</i>	<i>4.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>0.0069</i>	<i>1.00</i>	<i>0.0069</i>	<i>0.300</i>	<i>0.0021</i>	<i>20.2</i>
<i>5</i>	<i>13:19</i>	<i>5.00</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.0266</i>	<i>1.00</i>	<i>0.0266</i>	<i>0.200</i>	<i>0.0053</i>	<i>51.9</i>
<i>6</i>	<i>13:20</i>	<i>6.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>-0.0007</i>	<i>1.00</i>	<i>-0.0007</i>	<i>0.300</i>	<i>-0.0002</i>	<i>-1.9</i>
<i>7</i>	<i>13:21</i>	<i>7.00</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>-0.0066</i>	<i>1.00</i>	<i>-0.0066</i>	<i>0.400</i>	<i>-0.0026</i>	<i>-25.6</i>
<i>8</i>	<i>13:22</i>	<i>8.00</i>	<i>0.6</i>	<i>0.400</i>	<i>0.6</i>	<i>0.160</i>	<i>0.0203</i>	<i>1.00</i>	<i>0.0203</i>	<i>0.400</i>	<i>0.0081</i>	<i>79.4</i>
<i>9</i>	<i>13:23</i>	<i>9.00</i>	<i>0.6</i>	<i>0.300</i>	<i>0.6</i>	<i>0.120</i>	<i>-0.0279</i>	<i>1.00</i>	<i>-0.0279</i>	<i>0.300</i>	<i>-0.0084</i>	<i>-81.6</i>
10	13:23	10.00	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 WC-1

# Discharge Measurement Summary

Date Generated: Thu Aug 20 2020

File Information				Site Details								
File Name	UDB0720.WAD			Site Name	UDB							
Start Date and Time	2020/07/20 08:10:40			Operator(s)	LEO							
System Information				Units (English Units)		Discharge Uncertainty						
Sensor Type	FlowTracker			Distance	ft		<b>Category</b>	<b>ISO</b>	<b>Stats</b>			
Serial #	P4713			Velocity	ft/s		Accuracy	1.0%	1.0%			
CPU Firmware Version	3.9			Area	ft^2		Depth	0.5%	3.9%			
Software Ver	2.30			Discharge	cfs		Velocity	2.0%	18.4%			
Mounting Correction	0.0%						Width	0.2%	0.2%			
							Method	2.6%	-			
							# Stations	2.8%	-			
							<b>Overall</b>	<b>4.4%</b>	<b>18.8%</b>			
Summary												
Averaging Int.	40	# Stations	18									
Start Edge	LEW	Total Width	12.000									
Mean SNR	32.4 dB	Total Area	4.975									
Mean Temp	76.66 °F	Mean Depth	0.415									
Disch. Equation	Mid-Section	Mean Velocity	0.0391									
		<b>Total Discharge</b>	<b>0.1943</b>									
Supplemental Data												
#	Time	Location	Gauge Height	Rated Flow	Comments							
1	Mon Jul 20 08:10:11 CDT 2020	0.000	17.150									
Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	08:10	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>08:10</i>	<i>1.50</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>-0.0243</i>	<i>1.00</i>	<i>-0.0243</i>	<i>0.200</i>	<i>-0.0049</i>	<i>-2.5</i>
2	08:12	2.00	0.6	0.200	0.6	0.080	0.0102	1.00	0.0102	0.100	0.0010	0.5
<i>3</i>	<i>08:13</i>	<i>2.50</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.0043</i>	<i>1.00</i>	<i>0.0043</i>	<i>0.100</i>	<i>0.0004</i>	<i>0.2</i>
<i>4</i>	<i>08:15</i>	<i>3.00</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.0023</i>	<i>1.00</i>	<i>0.0023</i>	<i>0.150</i>	<i>0.0003</i>	<i>0.2</i>
<i>5</i>	<i>08:16</i>	<i>4.00</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>0.0200</i>	<i>1.00</i>	<i>0.0200</i>	<i>0.500</i>	<i>0.0100</i>	<i>5.2</i>
6	08:18	5.00	0.6	0.400	0.6	0.160	0.1027	1.00	0.1027	0.300	0.0308	15.9
7	08:28	5.50	0.6	0.400	0.6	0.160	0.1260	1.00	0.1260	0.200	0.0252	13.0
8	08:19	6.00	0.6	0.500	0.6	0.200	0.1250	1.00	0.1250	0.250	0.0313	16.1
<i>9</i>	<i>08:29</i>	<i>6.50</i>	<i>0.6</i>	<i>0.700</i>	<i>0.6</i>	<i>0.280</i>	<i>0.0082</i>	<i>1.00</i>	<i>0.0082</i>	<i>0.350</i>	<i>0.0029</i>	<i>1.5</i>
10	08:20	7.00	0.6	0.800	0.6	0.320	0.0545	1.00	0.0545	0.400	0.0218	11.2
11	08:31	7.50	0.6	0.800	0.6	0.320	0.0358	1.00	0.0358	0.400	0.0143	7.4
<i>12</i>	<i>08:21</i>	<i>8.00</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>0.0495</i>	<i>1.00</i>	<i>0.0495</i>	<i>0.400</i>	<i>0.0198</i>	<i>10.2</i>
<i>13</i>	<i>08:32</i>	<i>8.50</i>	<i>0.6</i>	<i>0.800</i>	<i>0.6</i>	<i>0.320</i>	<i>0.0315</i>	<i>1.00</i>	<i>0.0315</i>	<i>0.400</i>	<i>0.0126</i>	<i>6.5</i>
14	08:23	9.00	0.6	0.700	0.6	0.280	0.0463	1.00	0.0463	0.525	0.0243	12.5
<i>15</i>	<i>08:24</i>	<i>10.00</i>	<i>0.6</i>	<i>0.500</i>	<i>0.6</i>	<i>0.200</i>	<i>0.0079</i>	<i>1.00</i>	<i>0.0079</i>	<i>0.500</i>	<i>0.0039</i>	<i>2.0</i>
<i>16</i>	<i>08:25</i>	<i>11.00</i>	<i>0.6</i>	<i>0.200</i>	<i>0.6</i>	<i>0.080</i>	<i>0.0026</i>	<i>1.00</i>	<i>0.0026</i>	<i>0.200</i>	<i>0.0005</i>	<i>0.3</i>
17	08:25	12.00	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 UDB-1

# Discharge Measurement Summary

Date Generated: Thu Aug 20 2020

File Information				Site Details			
File Name	TG0720.WAD			Site Name	TG		
Start Date and Time	2020/07/20 14:34:12			Operator(s)	LEO		

System Information		Units (English Units)		Discharge Uncertainty		
Sensor Type	FlowTracker	Distance	ft	Category	ISO	Stats
Serial #	P4713	Velocity	ft/s	Accuracy	1.0%	1.0%
CPU Firmware Version	3.9	Area	ft <sup>2</sup>	Depth	0.6%	4.9%
Software Ver	2.30	Discharge	cfs	Velocity	2.4%	30.3%
Mounting Correction	0.0%			Width	0.2%	0.2%
				Method	2.9%	-
				# Stations	3.3%	-
				<b>Overall</b>	<b>5.1%</b>	<b>30.7%</b>

Summary			
Averaging Int.	40	# Stations	15
Start Edge	LEW	Total Width	13.000
Mean SNR	32.5 dB	Total Area	4.400
Mean Temp	85.37 °F	Mean Depth	0.338
Disch. Equation	Mid-Section	Mean Velocity	0.1403
		<b>Total Discharge</b>	<b>0.6175</b>

Supplemental Data					
#	Time	Location	Gauge Height	Rated Flow	Comments
1	Mon Jul 20 14:44:02 CDT 2020	10.000	8.890		

Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	14:34	0.00	None	0.000	0.0	0.0	0.0000	1.00	0.0000	0.000	0.0000	0.0
1	14:34	1.00	0.6	0.200	0.6	0.080	0.1437	1.00	0.1437	0.200	0.0288	4.7
2	14:35	2.00	0.6	0.400	0.6	0.160	0.0922	1.00	0.0922	0.400	0.0369	6.0
3	14:36	3.00	0.6	0.400	0.6	0.160	0.1854	1.00	0.1854	0.400	0.0741	12.0
4	14:37	4.00	0.6	0.600	0.6	0.240	0.2221	1.00	0.2221	0.600	0.1333	21.6
5	14:38	5.00	0.6	0.500	0.6	0.200	0.1578	1.00	0.1578	0.500	0.0789	12.8
6	14:39	6.00	0.6	0.400	0.6	0.160	0.0597	1.00	0.0597	0.400	0.0239	3.9
7	14:40	7.00	0.6	0.400	0.6	0.160	0.0213	1.00	0.0213	0.400	0.0085	1.4
8	14:42	8.00	0.6	0.400	0.6	0.160	0.0748	1.00	0.0748	0.300	0.0224	3.6
9	14:48	8.50	0.6	0.400	0.6	0.160	0.1132	1.00	0.1132	0.200	0.0226	3.7
10	14:43	9.00	0.6	0.400	0.6	0.160	0.4915	1.00	0.4915	0.300	0.1474	23.9
11	14:44	10.00	0.6	0.300	0.6	0.120	0.0039	1.00	0.0039	0.300	0.0012	0.2
12	14:45	11.00	0.6	0.200	0.6	0.080	0.1696	1.00	0.1696	0.200	0.0339	5.5
13	14:46	12.00	0.6	0.200	0.6	0.080	0.0276	1.00	0.0276	0.200	0.0055	0.9
14	14:46	13.00	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: Thu Aug 20 2020

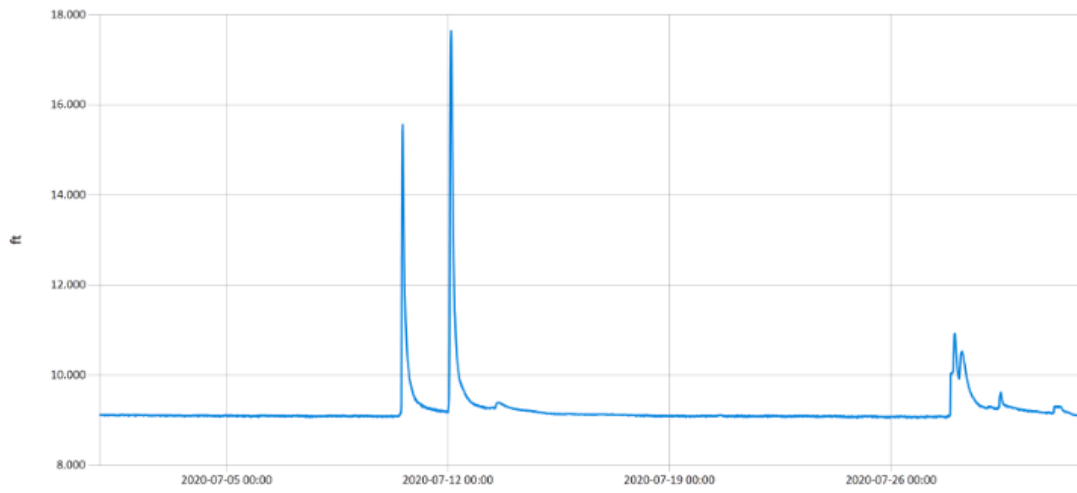
File Information				Site Details								
File Name	TE.WAD			Site Name	TE							
Start Date and Time	2020/07/20 13:50:18			Operator(s)	LEO							
System Information				Units (English Units)		Discharge Uncertainty						
Sensor Type	FlowTracker			Distance	ft		<b>Category</b>	<b>ISO</b>	<b>Stats</b>			
Serial #	P4713			Velocity	ft/s		Accuracy	1.0%	1.0%			
CPU Firmware Version	3.9			Area	ft^2		Depth	0.9%	8.0%			
Software Ver	2.30			Discharge	cfs		Velocity	14.7%	88.5%			
Mounting Correction	0.0%											
						Width			0.4%	0.4%		
						Method			6.4%	-		
						# Stations			3.3%	-		
						<b>Overall</b>			<b>16.4%</b>	<b>88.8%</b>		
Summary												
Averaging Int.	40	# Stations				15						
Start Edge	LEW	Total Width				8.500						
Mean SNR	46.3 dB	Total Area				6.800						
Mean Temp	83.54 °F	Mean Depth				0.800						
Disch. Equation	Mid-Section	Mean Velocity				-0.0043						
		<b>Total Discharge</b>				<b>-0.0293</b>						
Supplemental Data												
#	Time	Location	Gauge Height	Rated Flow	Comments							
1	Mon Jul 20 13:59:01 CDT 2020	9.000	11.160									
Measurement Results												
St	Clock	Loc	Method	Depth	%Dep	MeasD	Vel	CorrFact	MeanV	Area	Flow	%Q
0	13:50	1.00	None	0.700	0.0	0.0	0.0000	1.00	0.0052	0.175	0.0009	-3.1
1	13:50	1.50	0.6	0.900	0.6	0.360	0.0052	1.00	0.0052	0.450	0.0024	-8.1
2	13:51	2.00	0.6	0.900	0.6	0.360	-0.0092	1.00	-0.0092	0.450	-0.0041	14.1
3	14:00	2.50	0.6	0.900	0.6	0.360	-0.0148	1.00	-0.0148	0.450	-0.0066	22.7
4	13:52	3.00	0.6	0.900	0.6	0.360	-0.0217	1.00	-0.0217	0.450	-0.0097	33.3
5	14:02	3.50	0.6	1.000	0.6	0.400	-0.0351	1.00	-0.0351	0.500	-0.0176	59.9
6	13:53	4.00	0.6	1.200	0.6	0.480	-0.0046	1.00	-0.0046	0.900	-0.0041	14.1
7	13:54	5.00	0.6	1.200	0.6	0.480	-0.0046	1.00	-0.0046	1.200	-0.0055	18.8
8	13:55	6.00	0.6	0.800	0.6	0.320	0.0098	1.00	0.0098	0.800	0.0079	-26.9
9	13:57	7.00	0.6	0.700	0.6	0.280	0.0033	1.00	0.0033	0.525	0.0017	-5.9
10	14:03	7.50	0.6	0.500	0.6	0.200	-0.0082	1.00	-0.0082	0.250	-0.0021	7.0
11	13:58	8.00	0.6	0.500	0.6	0.200	0.0223	1.00	0.0223	0.250	0.0056	-19.0
12	14:04	8.50	0.6	0.400	0.6	0.160	0.0000	1.00	0.0000	0.200	0.0000	0.0
13	13:59	9.00	0.6	0.400	0.6	0.160	0.0102	1.00	0.0102	0.200	0.0020	-6.9
14	13:59	9.50	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 9 Discharge Measurement Summary TE-1

Period Selected: 2020-07-01 00:00 - 2020-07-31 23:59

UTC Offset: -06:00

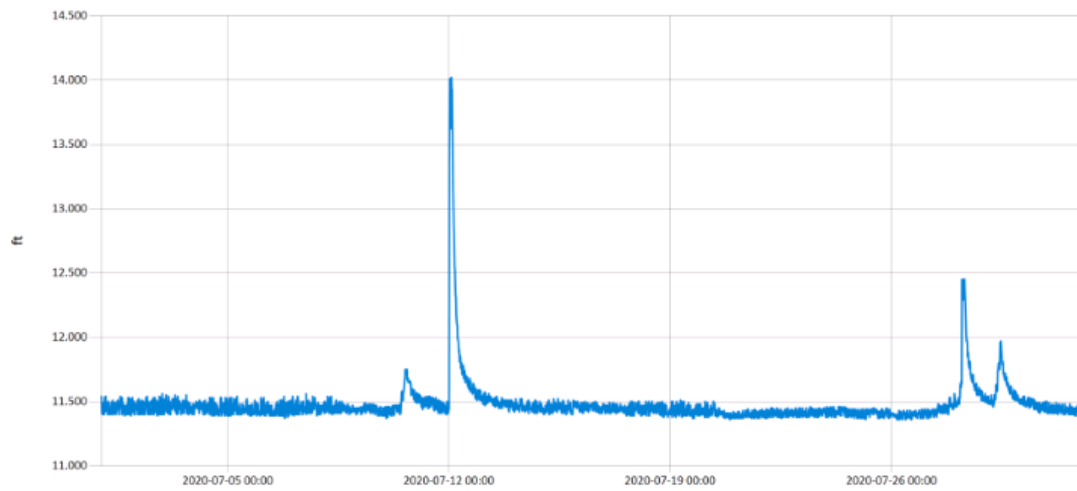


— Stage@TG

Figure 10 Monthly Hydrograph TG-1

Period Selected: 2020-07-01 00:00 - 2020-07-31 23:59

UTC Offset: -06:00



— Stage@TE

Figure 11 Monthly Hydrograph TE-1

Period Selected: 2020-07-01 00:00 - 2020-07-31 23:59

UTC Offset: -06:00

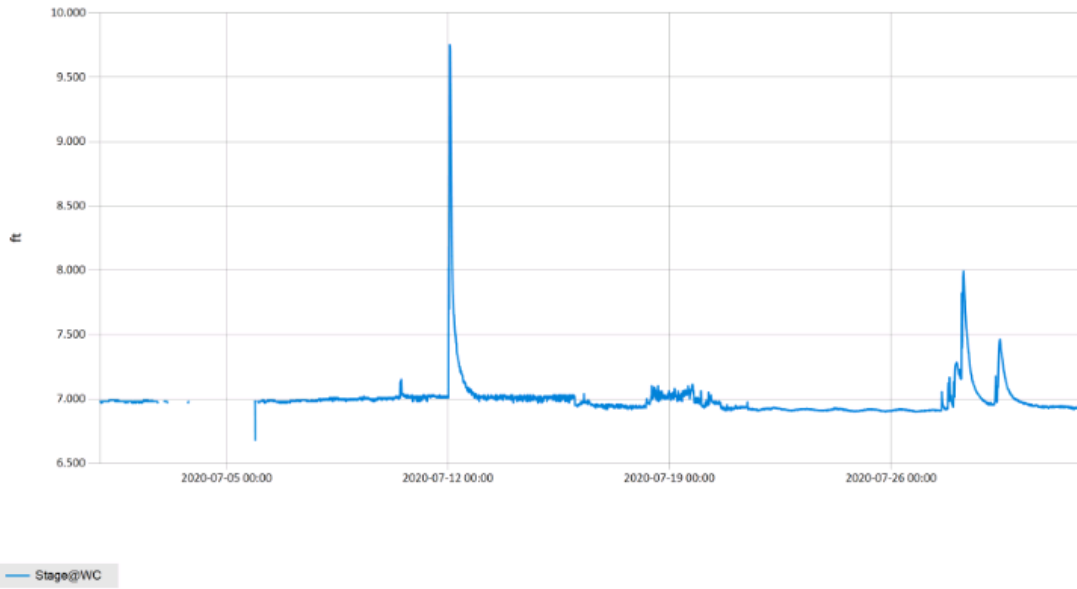


Figure 12 Monthly Hydrograph WC-1

Period Selected: 2020-07-01 00:00 - 2020-07-31 23:59

UTC Offset: -06:00

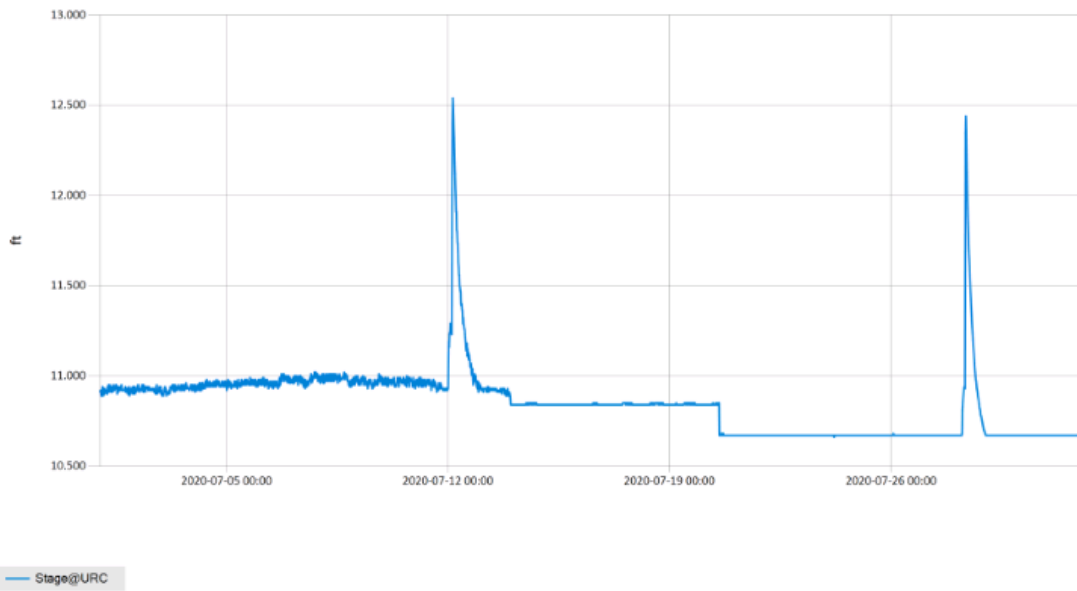


Figure 13 Monthly Hydrograph URC-2



Period Selected: 2020-07-01 00:00 - 2020-07-31 23:59

UTC Offset: -06:00



Figure 14 Monthly Hydrograph LRC-1

Period Selected: 2020-07-01 00:00 - 2020-07-31 23:59

UTC Offset: -06:00

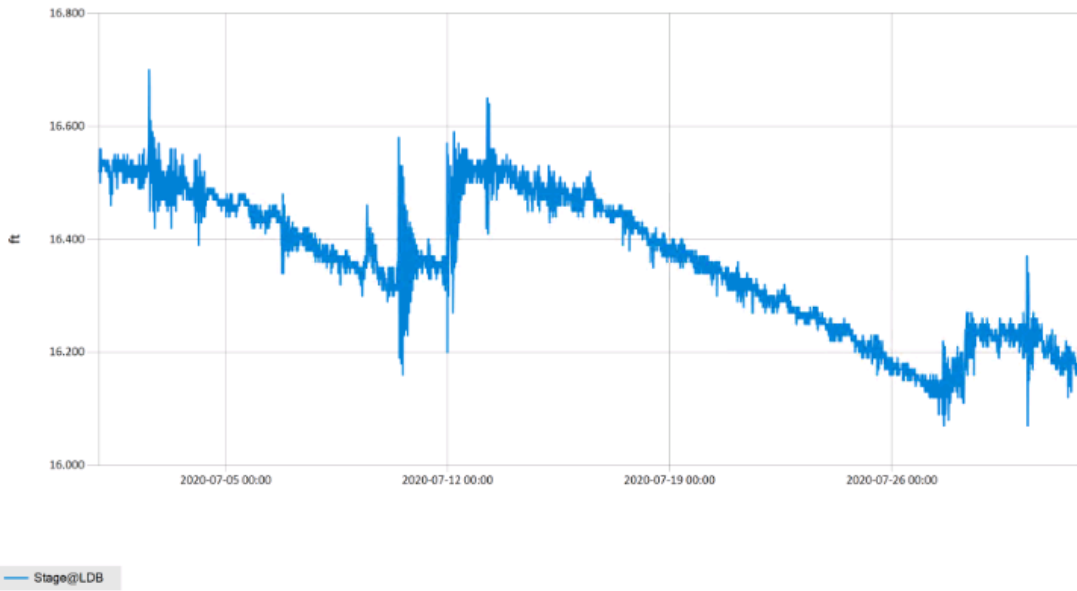
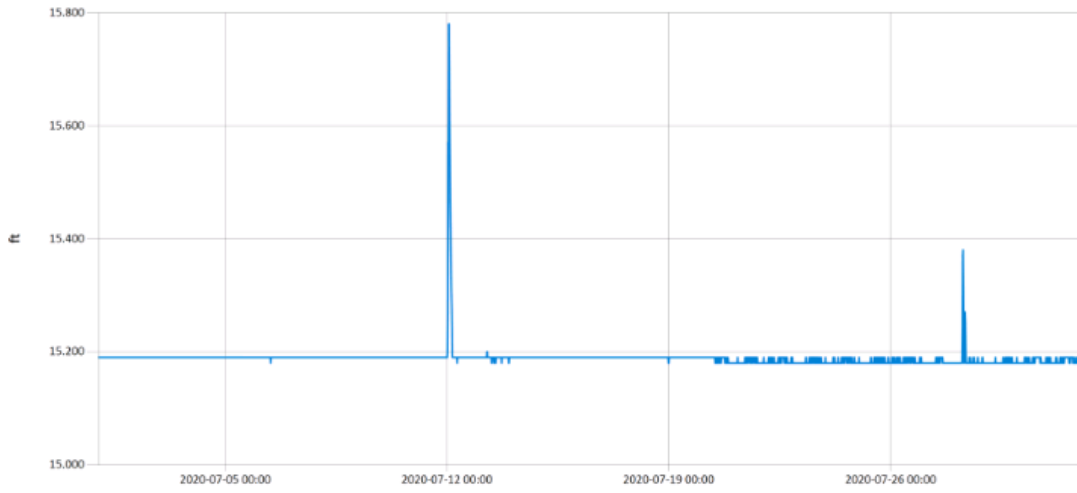


Figure 15 Monthly Hydrograph LDB-1

Period Selected: 2020-07-01 00:00 - 2020-07-31 23:59

UTC Offset: -06:00

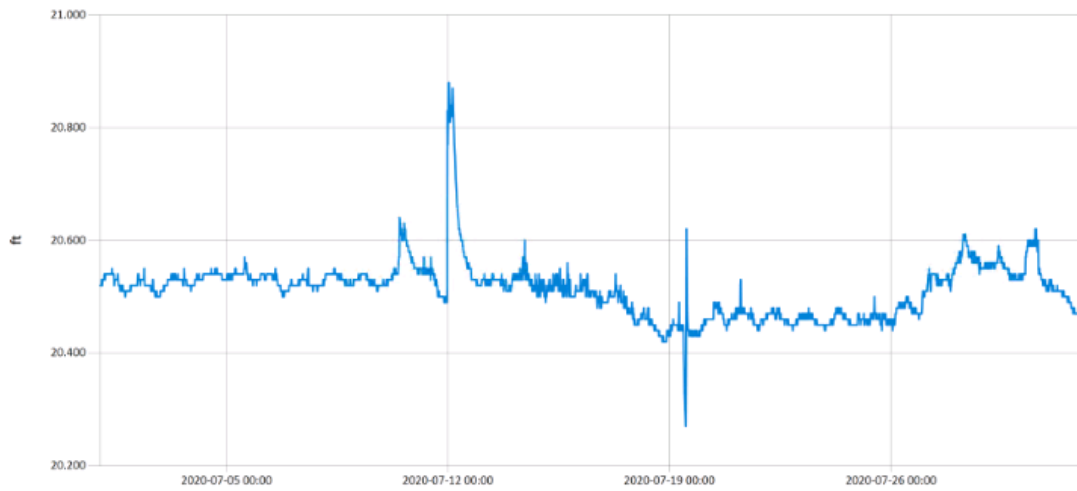


— Stage@JB

Figure 16 Monthly Hydrograph JB-1

Period Selected: 2020-07-01 00:00 - 2020-07-31 23:59

UTC Offset: -06:00



— Stage@CC

Figure 17 Monthly Hydrograph CC-1

MESONET CLIMATOLOGICAL DATA SUMMARY				July 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 <sup>2</sup> )	4" SOIL TEMPERATURES			
	MAX	MIN	AVG	DEWPT	HDD	CDD	MAX	MIN	AVG	(in)	STN	MSL	DIR	AVG	MAX	SOD		BARE	MAX	MIN	
1	95	76	85.1	74.7	0	21	86	55	72	0.00	28.57	29.81	S	9.8	23.3	24.45	81.1	86.9	93	81	
2	96	75	83.3	71.4	0	20	93	40	70	0.00	28.70	29.94	SSE	7.6	30.0	27.73	82.1	88.6	95	82	
3	96	72	83.5	70.9	0	19	91	44	68	0.00	28.74	29.98	ESE	5.6	21.8	26.86	82.1	89.0	96	82	
4	91	73	81.4	69.3	0	17	90	44	68	0.00	28.70	29.94	ENE	4.9	20.9	26.79	83.0	89.9	97	84	
5	90	71	81.3	71.0	0	16	97	51	73	0.00	28.66	29.91	ENE	4.9	17.3	23.53	82.4	88.9	95	83	
6	91	71	80.4	69.8	0	16	94	42	72	0.00	28.70	29.94	E	6.7	35.1	26.91	82.4	88.9	95	83	
7	91	69	79.9	69.8	0	15	99	47	74	0.00	28.72	29.96	SE	6.1	16.8	24.41	81.4	87.9	94	82	
8	94	74	83.8	72.7	0	19	95	49	71	0.00	28.64	29.88	SSE	7.8	21.3	24.96	82.0	88.7	94	83	
9	91	78	84.1	74.1	0	19	85	57	72	0.00	28.62	29.86	ESE	11.3	26.0	24.98	82.5	89.0	94	84	
10	86	68	78.1	71.9	0	12	98	61	82	0.47	28.76	30.01	ESE	8.3	55.9	12.16	80.1	83.7	88	80	
11	100	70	86.2	74.0	0	20	98	41	70	0.90	28.72	29.96	S	9.1	77.8	27.42	81.1	84.9	94	77	
12	94	69	83.0	69.1	0	17	92	42	65	0.04	28.70	29.95	ESE	7.7	27.9	27.36	81.3	83.7	89	78	
13	94	71	83.4	73.1	0	17	91	51	73	0.00	28.62	29.86	SE	10.6	37.4	24.12	81.4	84.1	91	78	
14	96	80	86.6	71.4	0	23	83	44	62	0.00	28.56	29.80	SSE	11.0	26.8	22.88	81.6	86.7	93	81	
15	90	78	83.3	72.3	0	19	85	56	70	0.00	28.66	29.90	SSE	5.7	19.5	13.34	80.7	85.3	89	82	
16	93	76	83.8	73.4	0	19	95	52	72	0.01	28.75	30.00	SE	6.9	18.2	18.22	81.2	85.6	90	81	
17	97	76	86.2	71.3	0	22	82	40	63	0.00	28.77	30.02	SSE	8.0	22.8	26.60	81.6	87.8	95	81	
18	93	75	84.3	71.0	0	19	87	48	66	0.00	28.74	29.99	S	10.0	24.5	27.68	81.8	88.7	95	83	
19	94	75	84.1	69.6	0	19	84	43	63	0.00	28.74	29.98	S	7.4	21.1	25.42	81.9	88.7	95	83	
20	96	75	85.1	68.4	0	20	80	40	59	0.00	28.70	29.95	SSE	8.5	24.5	25.57	81.8	88.9	95	83	
21	92	73	82.2	70.4	0	17	90	46	69	0.00	28.72	29.97	SSE	6.1	17.1	21.52	81.9	88.7	95	83	
22	93	73	82.0	71.1	0	18	93	47	71	0.00	28.74	29.99	SE	6.8	19.9	22.76	82.1	88.7	95	83	
23	92	74	82.5	73.1	0	18	95	54	75	0.00	28.77	30.01	SE	7.9	18.9	19.25	82.3	88.3	93	84	
24	94	74	84.5	70.9	0	19	92	41	66	0.00	28.77	30.02	SE	7.9	19.7	26.13	82.8	89.1	96	83	
25	91	75	82.3	71.7	0	18	91	53	71	0.00	28.77	30.02	SE	7.8	20.2	21.98	82.6	88.8	94	84	
26	93	75	83.3	71.1	0	19	89	46	68	0.00	28.79	30.04	SSE	7.0	21.5	22.24	82.6	88.7	94	83	
27	91	74	78.2	71.3	0	18	97	47	81	0.45	28.77	30.01	S	7.3	29.4	14.05	81.7	86.3	92	83	
28	82	71	76.5	72.7	0	11	98	72	89	0.50	28.71	29.95	SSE	5.4	14.1	9.43	79.6	80.7	83	79	
29	89	75	80.4	73.9	0	17	97	64	82	0.28	28.65	29.89	S	6.6	19.0	15.59	80.3	80.7	85	78	
30	93	72	80.6	69.6	0	17	91	49	70	0.00	28.65	29.89	S	7.6	48.9	22.73	81.4	81.0	87	76	
31	86	69	76.9	64.2	0	12	86	42	67	0.00	28.74	29.98	NNW	10.7	26.0	26.40	81.0	81.5	89	75	
	92	73	82.5	71.2	<- Monthly Averages ->					28.70	29.95	SSE	7.7	77.8	22.69	81.7	86.7	93	81		
Temperature - Highest: 100 Lowest: 68							Degree Days - Total HDD: 0 Total CDD: 555					Number of Days With: Tmax ≥ 90: 27      Rainfall ≥ 0.01 inch: 7 Tmax ≤ 32: 0      Rainfall ≥ 0.10 inch: 5 Tmin ≤ 32: 0      Avg Wind Speed ≥ 10 mph: 5 Tmin ≤ 0: 0      Max Wind Speed ≥ 30 mph: 6									
Rainfall: Monthly Total: 2.65 in. Greatest 24 Hr: 0.90 in.							Humidity - Highest: 99 Lowest: 40														

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\* Denotes incomplete record

Figure 18 July Mesonet Data