
***Lake Thunderbird TMDL Monitoring Plan Implementation:
Sample Year (SY) 2018- July Report***



SY2018 Monthly Report

Lake Thunderbird TMDL Monitoring Plan Implementation:

July 2018 Monitoring Report

Oklahoma Water Resources Board
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SUMMARY OF JULY WATER QUALITY SAMPLING

Sampling for July 2018 occurred on the second and was considered a base flow collection. Water samples were collected at nine locations, with the exception of CC-1 due to inaccessibility from road construction. Discharge was not measured this month as a result of low water levels, where the stage measurements were at or below base flow conditions. Mesonet data shows no precipitation occurring on the second, no precipitation in the 72 hours prior to sampling, and 0.26 inches of precipitation in the 72 hours after the sampling event. The total rainfall amount in Norman for the month of July was 2.28 inches. All water level gauges were operational for the month, with the exception of LT-1 and CC-1 as a result of road construction activity.

RESULTS

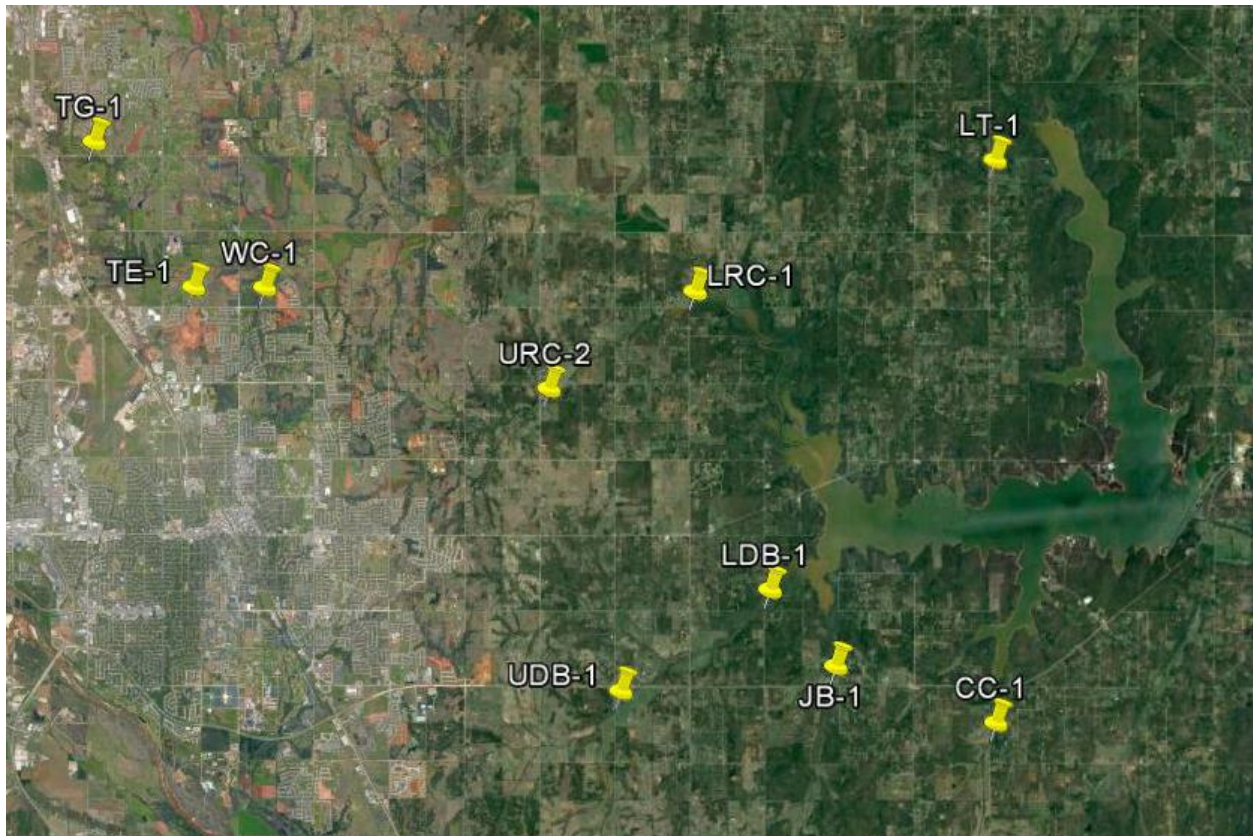


Figure 1 Monitoring Station Map

Field Data Form

Field Measurement Record

Reviewed By: JM

Station	Date	Time	Field Crew	Temp C°	DO mg/L	SpC µS	pH	Turb (NTU)	Notes
cc-1	7/2/2018	N/A	SD	N/A	N/A	N/A	N/A	N/A	construction activity on road/bridge. Not able to access water for sampling
lt-1	7/2/2018	9:15	SD	25.4	4.7	523.0	7.8	14.0	barely connected to us, sampled from pool on ds side.
jb-1	7/2/2018	10:30	SD	24.6	0.9	538.0	7.3	60.0	
udb-1	7/2/2018	11:00	SD	25.3	3.6	820.0	7.8	10.0	very scummy in us pool under bridge
ldb-1	7/2/2018	11:20	SD	26.8	3.6	427.0	7.9	38.0	
tg-1	7/2/2018	14:20	SD	28.6	9.1	604.0	7.9	9.0	
te-1	7/2/2018	13:40	SD	28.7	7.3	645.0	7.7	17.0	
wc-1	7/2/2018	13:15	SD	26.7	7.7	707.0	7.7	19.0	
lrc-1	7/2/2018	12:00	SD	26.3	5.2	601.0	7.7	14.0	bubbler almost out of water
urc-2	7/2/2018	12:35	SD	26.5	3.8	410.0	7.5	16.0	changed dcp. Used rp2

Table 1 Field Data Form

Site Name	TKN (mg/L)	Nitrate/Nitrite (mg/L)	TP (mg/L)	TSS (mg/L)
TG-1	0.44	0.26	0.081	<5.0
CC-1	N/A	N/A	N/A	N/A
JB-1	1.30	0.06	0.225	10.0
UDB-1	0.90	0.13	0.071	<5.0
LDB-1	0.94	0.12	0.096	16.0
LRC-1	0.55	<0.05	0.053	<5.0
URC-2	0.82	<0.05	0.085	6.0
WC-1	0.70	0.14	0.101	<5.0
TE-1	0.68	0.09	0.067	<5.0
LT-1	0.88	<0.05	0.051	<5.0

Table 2 Laboratory Analysis Summary

Site Name	TKN	Nitrate/Nitrite	TP	TSS
Field Blank	<0.10 mg/L	<0.05 mg/L	<0.010 mg/L	<5.0 mg/L

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.

SITE	TG-1	CC-1	JB-1	UDB-1	LDB-1	LRC-1	URC-2	WC-1	TE-1	LT-1
STAGE (ft)	9.14	N/A	16.92	17.48	17.03	17.52	11.73	8.38	11.57	N/A
DISCHARGE (ft ³ /s)	0.81	N/A	1.0	0.19	32.34	<0.5	<0.5	<0.5	<0.5	0

Table 4 Station Discharge Summary

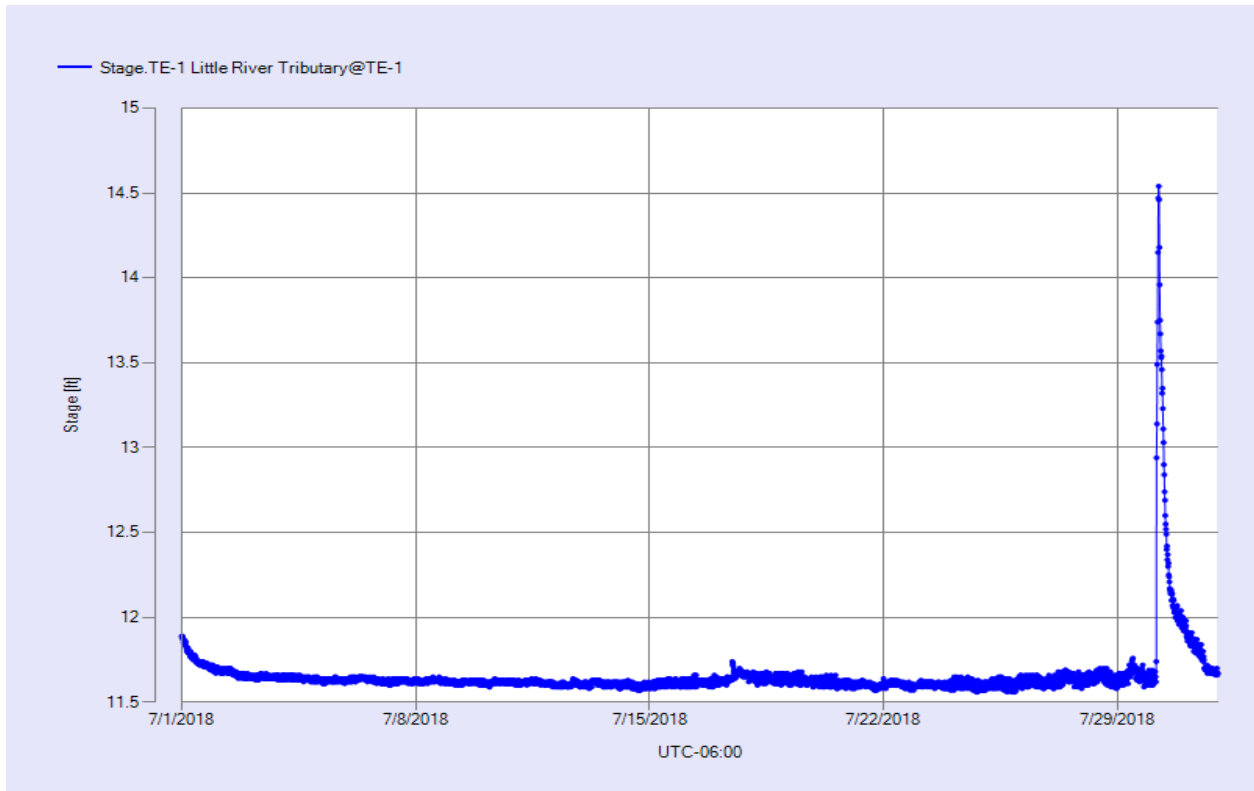


Figure 2 Monthly Hydrograph TE-1

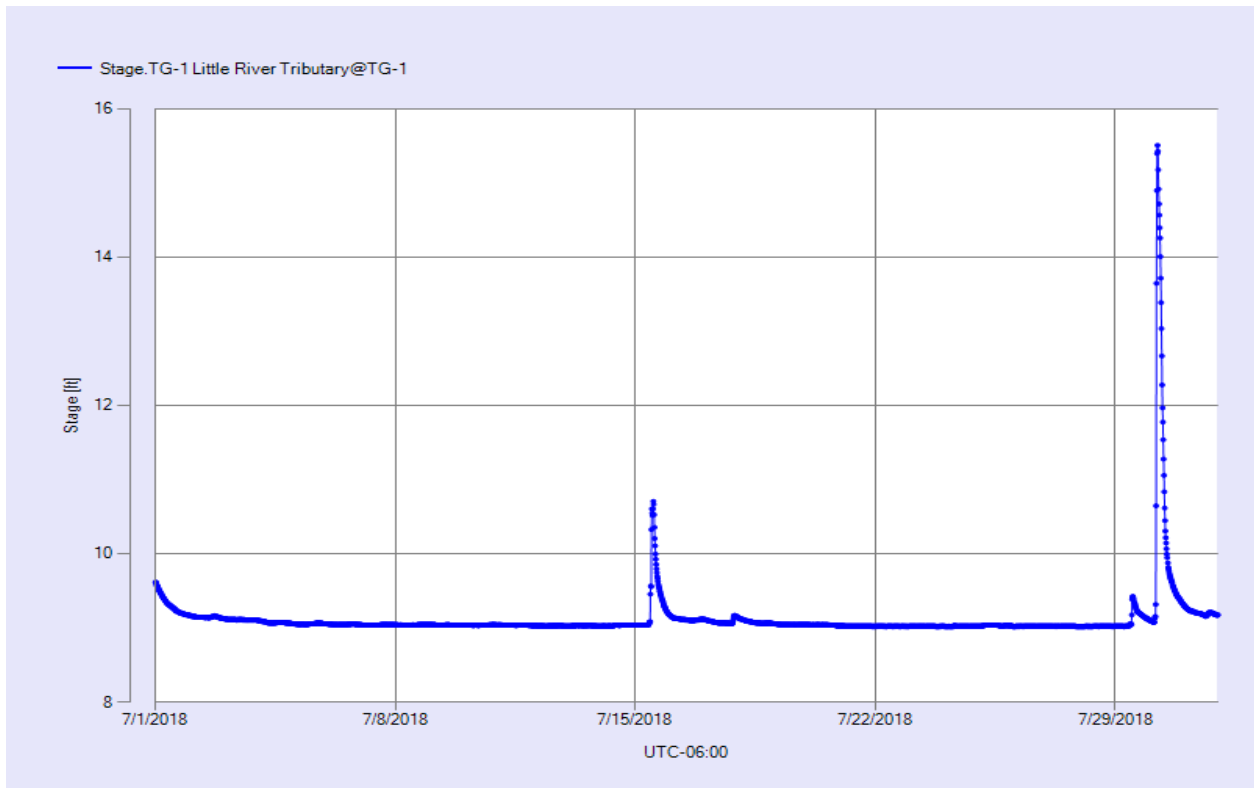


Figure 3 Monthly Hydrograph TG-1

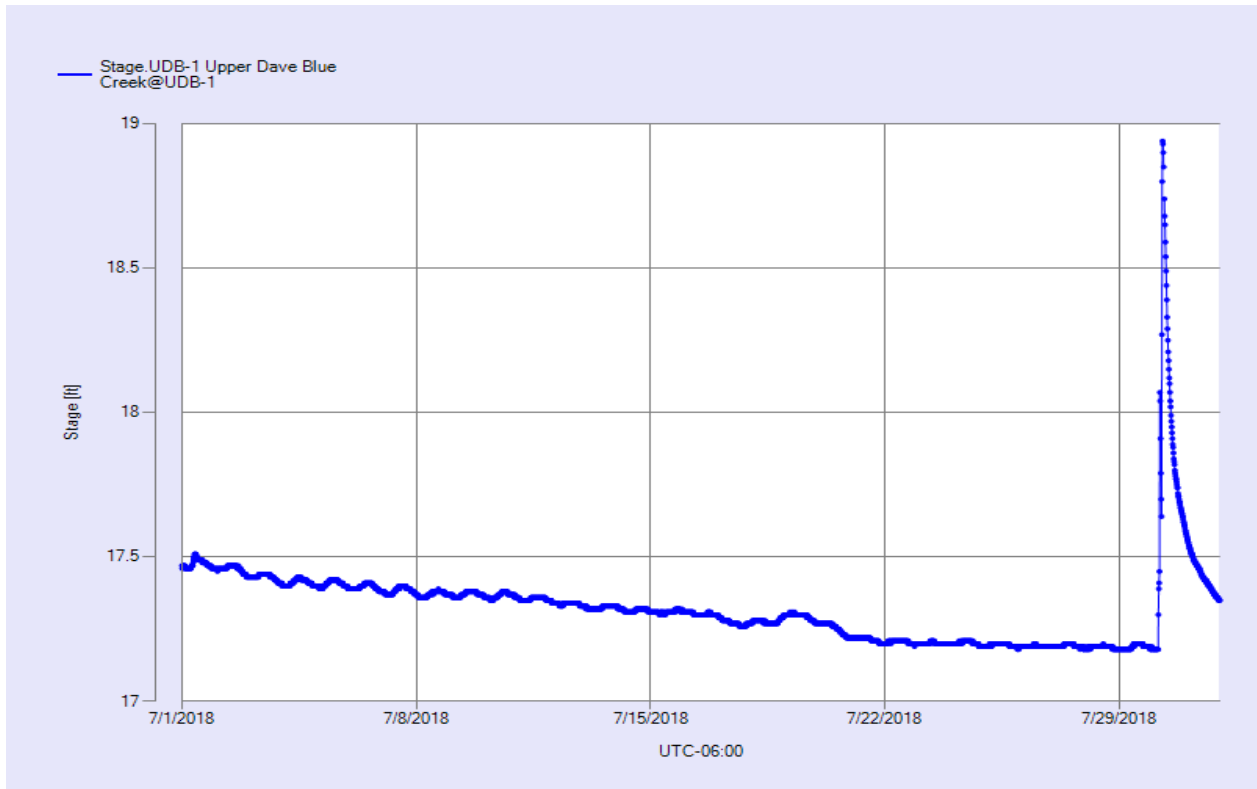


Figure 4 Monthly Hydrograph UDB-1

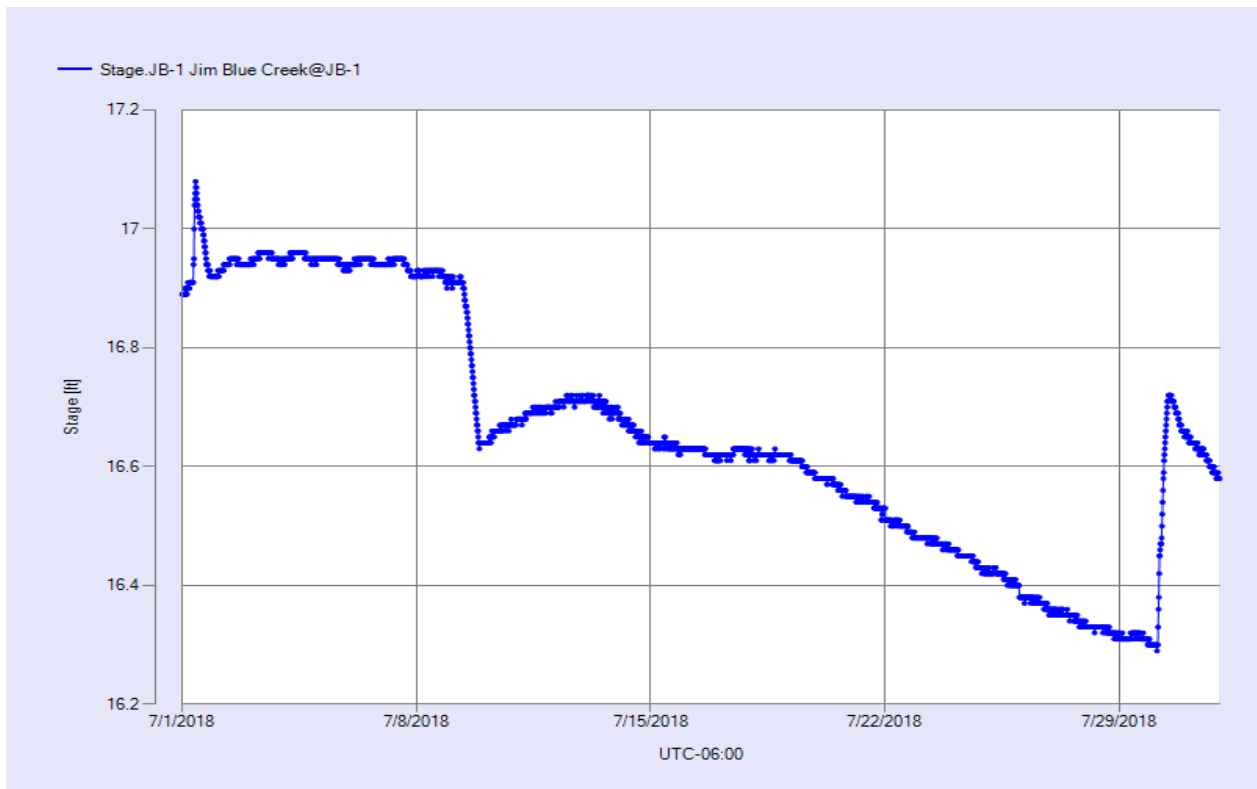


Figure 5 Monthly Hydrograph JB-1

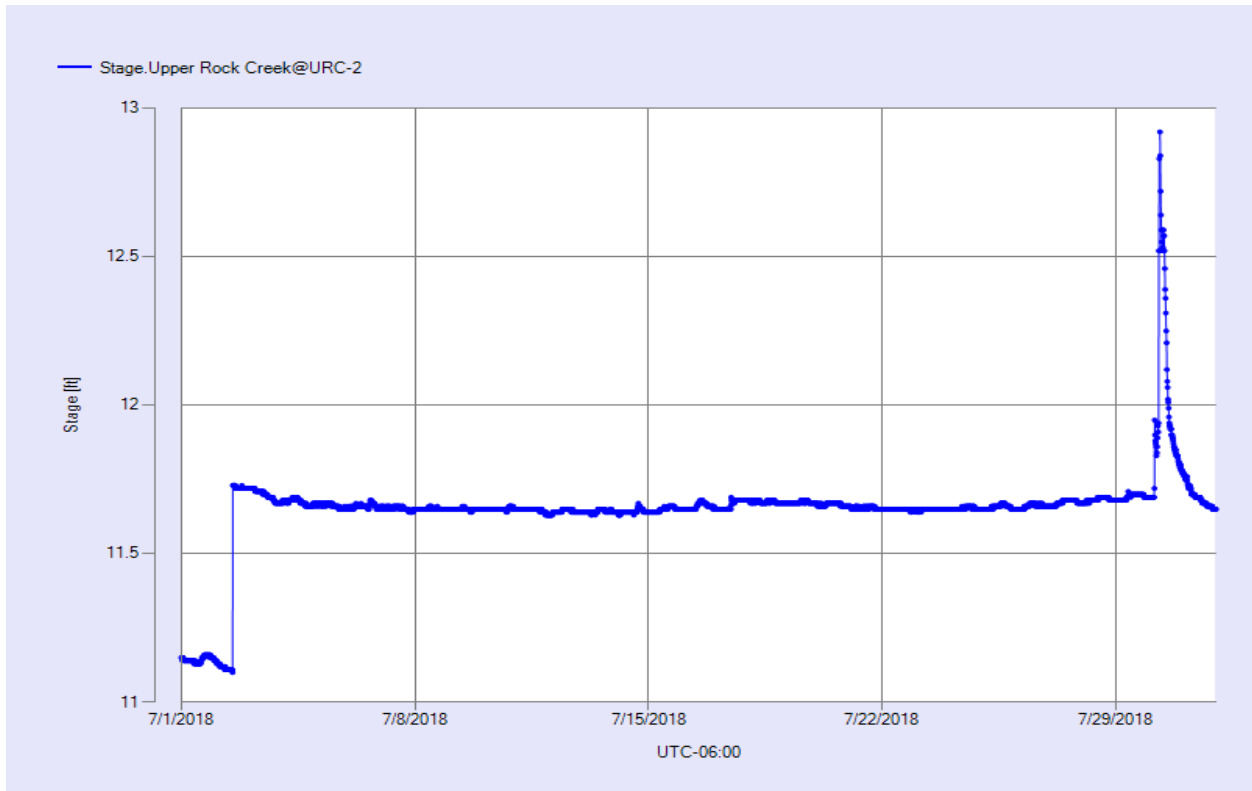


Figure 6 Monthly Hydrograph URC-2

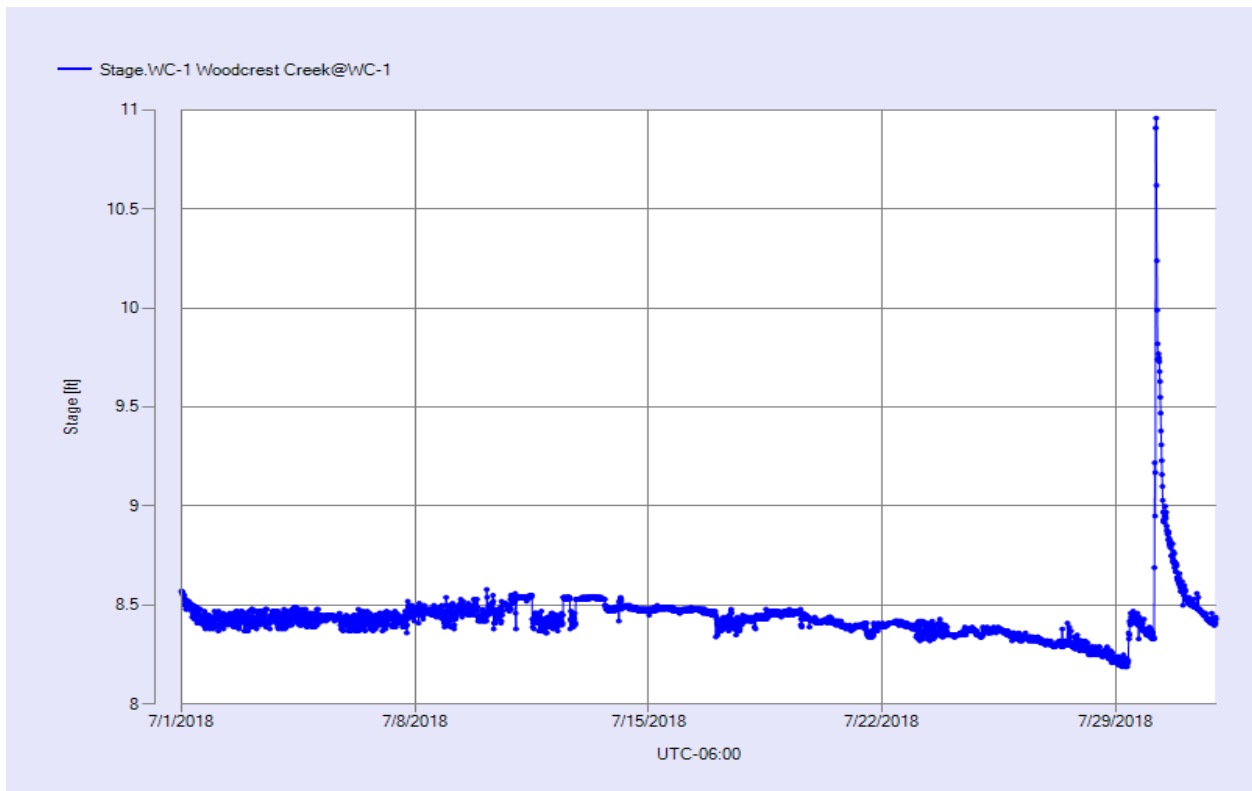


Figure 7 Monthly Hydrograph WC-1

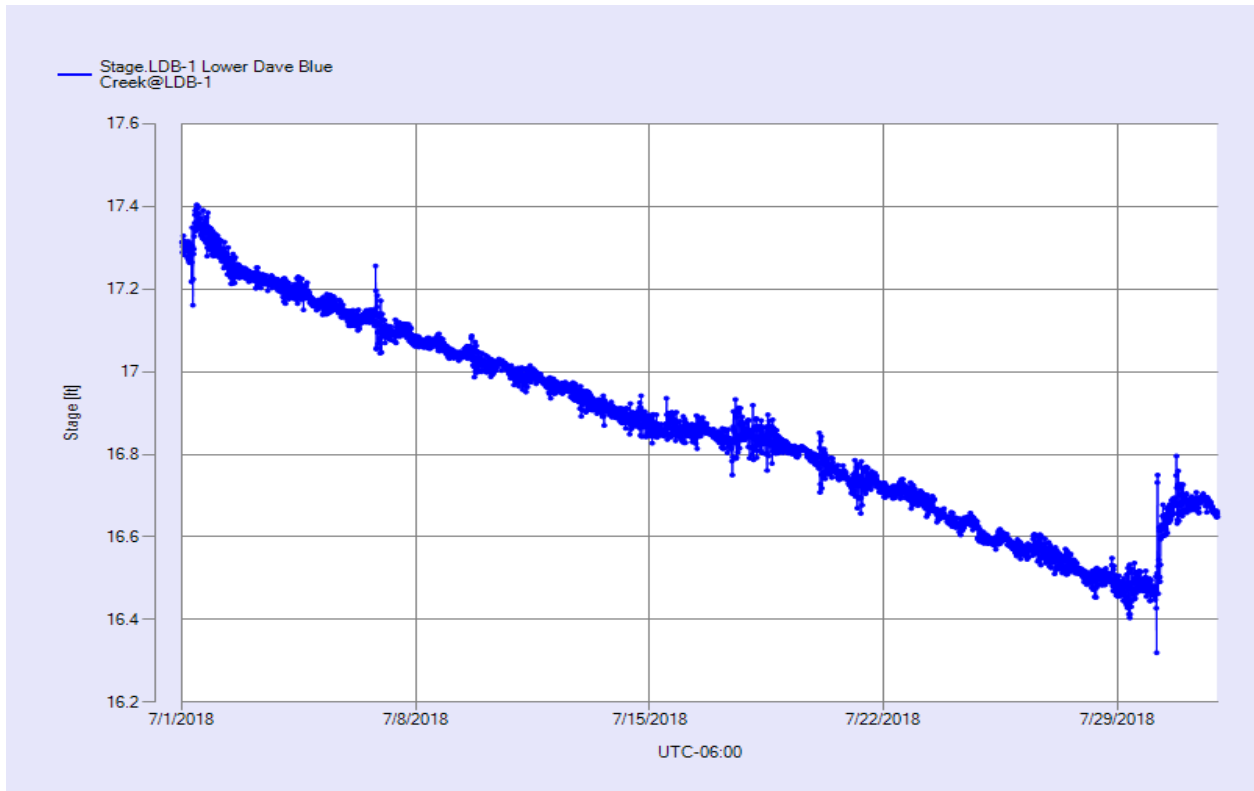


Figure 8 Monthly Hydrograph LDB-1

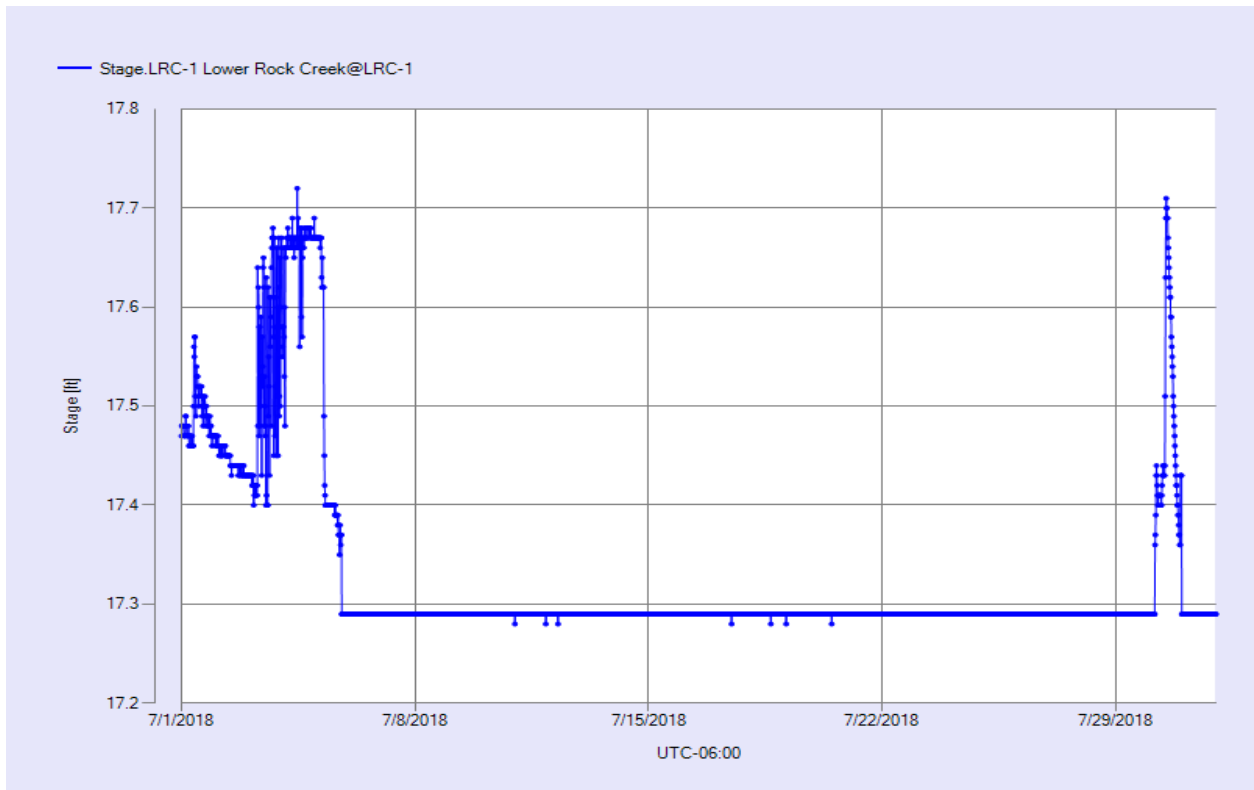


Figure 9 Monthly Hydrograph LRC-1

MESONET CLIMATOLOGICAL DATA SUMMARY															July 2018					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	4" SOIL TEMPERATURES										
	MAX	MIN	AVG	DEWPT	HDD	CDD	MAX	MIN	AVG	(in)	STN	MSL	DIR	AVG	MAX	(MJ/m ²)	SOD	BARE	MAX	MIN							
1	86	74	79.2	72.9	0	15	97	70	81	0.00	28.67	29.92	SSE	6.4	21.3	11.20	79.8	79.1	82	76							
2	90	74	82.4	74.5	0	17	98	58	79	0.00	28.72	29.97	ESE	7.6	16.6	NA	81.0	82.7	91	76							
3	96	76	85.9	69.6	0	21	72	40	59	0.00	28.71	29.96	SSE	9.1	19.0	NA	82.2	86.9	96	78							
4	89	72	81.0	71.3	0	16	91	58	73	0.00	28.84	30.09	SE	8.4	22.6	NA	82.0	87.6	95	80							
5	91	73	82.5	72.2	0	17	93	50	73	0.00	29.00	30.26	ENE	5.4	17.6	NA	81.7	88.6	97	81							
6	92	74	82.4	71.6	0	18	92	51	71	0.00	28.98	30.24	ENE	5.9	31.9	NA	81.9	89.9	98	83							
7	91	70	80.7	69.7	0	16	93	48	71	0.00	28.90	30.15	E	4.7	16.0	NA	81.4	89.2	97	82							
8	89	68	79.9	68.4	0	14	94	48	69	0.00	28.88	30.13	E	5.8	17.7	NA	81.0	87.9	94	82							
9	90	70	80.2	69.7	0	15	93	50	72	0.00	28.91	30.17	ESE	4.8	18.9	NA	80.5	87.2	94	81							
10	92	70	82.1	70.7	0	16	96	51	70	0.00	28.86	30.12	SE	4.4	16.0	26.09	81.1	88.2	95	81							
11	94	73	84.1	70.5	0	18	89	44	66	0.00	28.79	30.04	SE	5.5	18.1	26.44	81.7	89.2	97	82							
12	95	75	84.6	70.4	0	20	85	44	64	0.00	28.79	30.04	SSE	7.5	20.7	29.32	82.6	90.4	98	83							
13	93	71	82.5	70.4	0	17	91	48	69	0.00	28.80	30.05	SSE	7.5	19.7	28.42	82.7	89.8	97	83							
14	95	76	84.6	70.1	0	20	80	44	63	0.00	28.77	30.01	S	6.1	21.1	24.48	83.2	90.2	97	84							
15	96	79	84.6	70.6	0	22	79	45	64	0.01	28.73	29.98	SSE	5.8	18.0	18.69	82.6	88.6	95	85							
16	96	74	86.2	72.3	0	20	86	49	65	0.00	28.75	30.00	E	5.6	16.8	27.00	83.1	90.6	98	84							
17	95	74	83.7	73.3	0	19	92	45	72	0.07	28.74	29.99	ESE	7.9	23.0	21.29	83.1	88.8	94	85							
18	88*	77*	81.1*	74.5*	0*	17*	92*	65*	81*	0.00*	28.69*	29.94*	E *	6.6*	20.8*	NA	81.8*	85.7*	88*	84*							
19	105*	72*	88.9*	68.8*	0*	24*	97*	26*	58*	0.00*	28.60*	29.84*	ESE*	6.2*	19.0*	NA	83.2*	88.7*	97*	80*							
20	108	77	94.5	60.6	0	28	62	17	35	0.00	28.60	29.85	SSW	9.3	25.1	28.53	83.9	91.3	99	84							
21	100	80	89.3	65.8	0	25	68	31	47	0.00	28.68	29.92	ENE	6.6	17.2	26.33	84.3	92.1	99	86							
22	95	76	85.1	66.9	0	21	74	41	56	0.00	28.68	29.92	E	8.4	20.0	24.11	84.1	90.8	96	85							
23	91	73	80.7	64.3	0	17	79	37	59	0.00	28.76	30.00	NE	7.3	17.8	14.41	81.7	87.0	90	84							
24	92	68	80.8	63.5	0	15	86	37	58	0.00	28.85	30.11	ENE	5.4	18.9	27.49	81.5	87.3	95	80							
25	97	66	83.2	62.4	0	16	91	27	54	0.00	28.80	30.05	ESE	3.9	13.4	28.18	82.6	88.6	97	81							
26	86	76	81.2	65.7	0	16	75	49	60	0.00	28.79	30.04	ENE	8.1	17.5	12.36	81.6	86.7	89	84							
27	90	71	79.7	67.5	0	15	90	48	68	0.00	28.83	30.08	NE	6.9	19.2	23.17	81.6	86.5	93	81							
28	95	72	82.8	69.0	0	19	83	43	64	0.00	28.79	30.04	ESE	5.6	21.4	21.59	82.9	88.1	95	82							
29	94	71	81.3	70.9	0	18	95	42	73	0.14	28.74	29.99	SSE	7.7	25.3	22.85	83.8	87.6	94	82							
30	87	66	74.9	66.7	0	11	99	53	77	2.06	28.78	30.03	NNE	8.0	46.1	21.40	79.9	82.3	87	77							
31	85	64	73.2	61.5	0	9	97	40	70	0.00	28.84	30.09	N	6.4	19.5	26.07	79.2	77.0	81	72							
											93* 73* 82.7* 68.9*		<- Monthly Averages ->				28.78* 30.03*		ESE* 6.6* 46.1*			23.31*		82.0* 87.6* 94* 82*			
Temperature - Highest: 108*							Degree Days - Total HDD: 0*							Number of Days With:													
Lowest: 64*							Total CDD: 552*							Tmax ≥ 90: 24*							Rainfall ≥ 0.01 inch: 4*						
Rainfall: Monthly Total: 2.28* in.							Humidity - Highest: 99*							Tmax ≤ 32: 0*							Rainfall ≥ 0.10 inch: 2*						
Greatest 24 Hr: 2.06* in.							Lowest: 17*							Tmin ≤ 32: 0*							Avg Wind Speed ≥ 10 mph: 0*						
														Tmin ≤ 0: 0*							Max Wind Speed ≥ 30 mph: 2*						

Figure 10 July Mesonet Data