
***Lake Thunderbird TMDL Monitoring Plan Implementation:
Sample Year (SY) 2017- September Report***



SY2017 Monthly Report

Lake Thunderbird TMDL Monitoring Plan Implementation:

September 2017 Monitoring Report

Oklahoma Water Resources Board
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SUMMARY OF SEPTEMBER WATER QUALITY SAMPLING

Sampling for September 2017 occurred on the eighteenth and was considered a base flow collection. Water samples were collected at all ten locations with the exception of LT-1, due to dry stream conditions. Discharge was not measured this month as a result of low water levels, where the stage measurements were at or near base flow conditions. Mesonet data for Norman shows 0.09 inches of precipitation occurring in the 72 hours prior to sampling, 0.35 inches of precipitation occurring on the eighteenth, and no precipitation in the 72 hours after the sampling event. The total rainfall amount in Norman for the month of September was 2.94 inches. All water level gages were operational for the month.

RESULTS

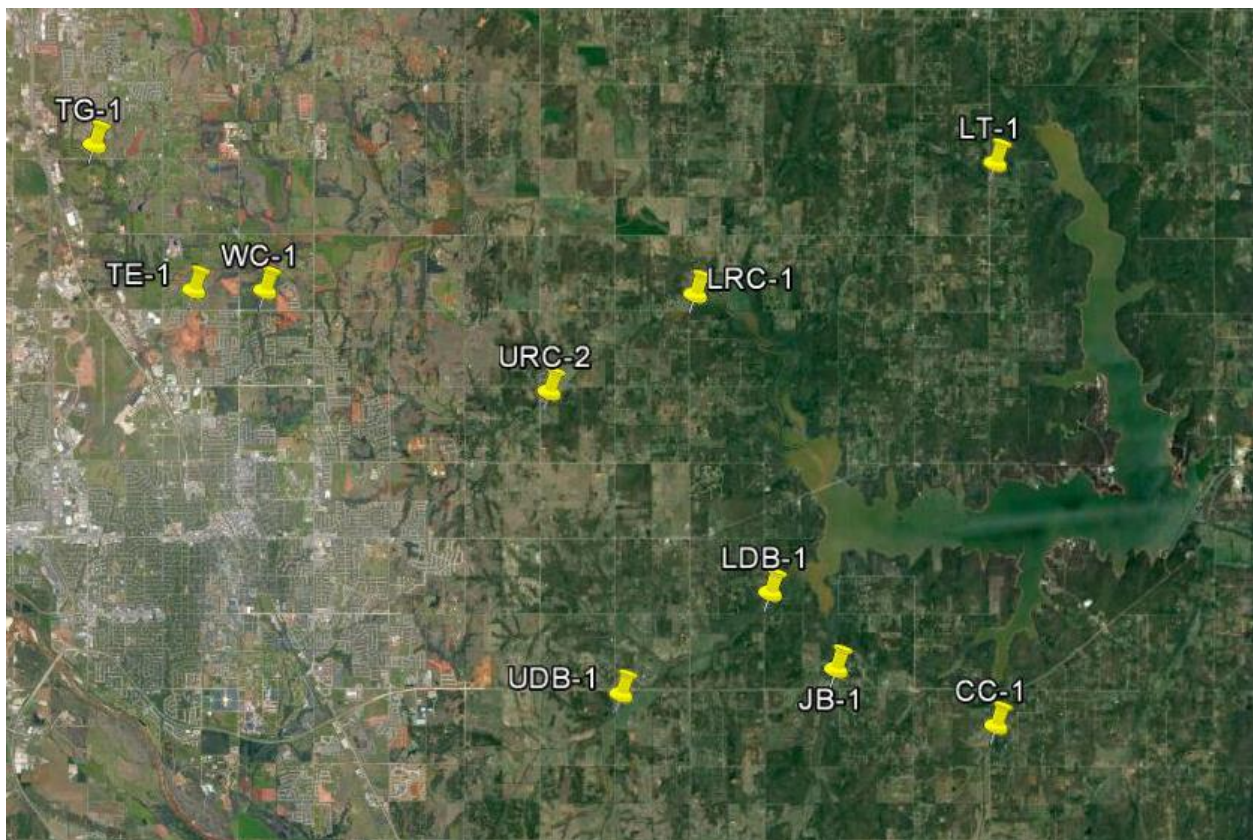


Figure 1 Monitoring Station Map

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	9/18/2017	9:55	SD	21.0	6.9	632.0	7.8	12.0	
lt-1	9/18/2017	12:45	SD	N/A	N/A	N/A	N/A	N/A	completely dry on us and ds
jb-1	9/18/2017	11:10	SD	21.4	6.6	774.0	7.4	24.0	not connected to us. Barely connected to pool just ds of bridge. RP1 not over water, used RP2
udb-1	9/18/2017	9:05	SD	21.8	4.1	863.0	7.7	13.0	same stage as last month
ldb-1	9/18/2017	11:55	SD	24.1	5.0	596.0	8.0	18.0	
tg-1	9/18/2017	17:05	SD	25.3	8.1	633.0	7.9	15.0	
te-1	9/18/2017	16:10	SD	27.8	8.6	776.0	8.0	33.0	very blue water
wc-1	9/18/2017	15:25	SD	23.5	4.3	918.0	7.7	14.0	
lrc-1	9/18/2017	13:30	SD	22.6	3.7	662.0	7.6	10.0	
urc-2	9/18/2017	14:10	SD	24.2	4.0	547.0	7.3	7.0	RP2 barely over water. RP1, RP3 not over water
tg-1	9/18/2017	16:55	SD	N/A	N/A	N/A	N/A	1.0	field blank

Table 1 Field Data Form

Site Name	TKN (mg/L)	Nitrate/Nitrite (mg/L)	TP (mg/L)	TSS (mg/L)
TG-1	0.79	0.14	0.094	12.0
CC-1	0.46	<0.05	0.108	7.0
JB-1	0.74	<0.05	0.086	33.8
UDB-1	0.32	<0.05	0.046	9.0
LDB-1	0.62	<0.05	0.051	11.3
LRC-1	0.60	<0.05	0.104	5.0
URC-2	0.65	<0.05	0.087	<5.0
WC-1	0.55	<0.05	0.113	10.0
TE-1	0.76	<0.05	0.072	19.0
LT-1	N/A	N/A	N/A	N/A

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
Duplicate	0.45 mg/L	<0.05 mg/L	0.107 mg/L	8.0 mg/L
Duplicate RPD	2.20%	0%	0.93%	13.33%* ₁

Table 3 QA/QC Data Where Subscript 1 Denotes a Level 2 RPD

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)	9.79	0.64	15.51	17.51	16.4	18.39	11.42	8.58	11.82	N/A
DISCHARGE (ft ³ /s)	15	0.25	0	0.7	0	>1	>1	>1	>1	N/A

Table 4 Station Discharge Summary

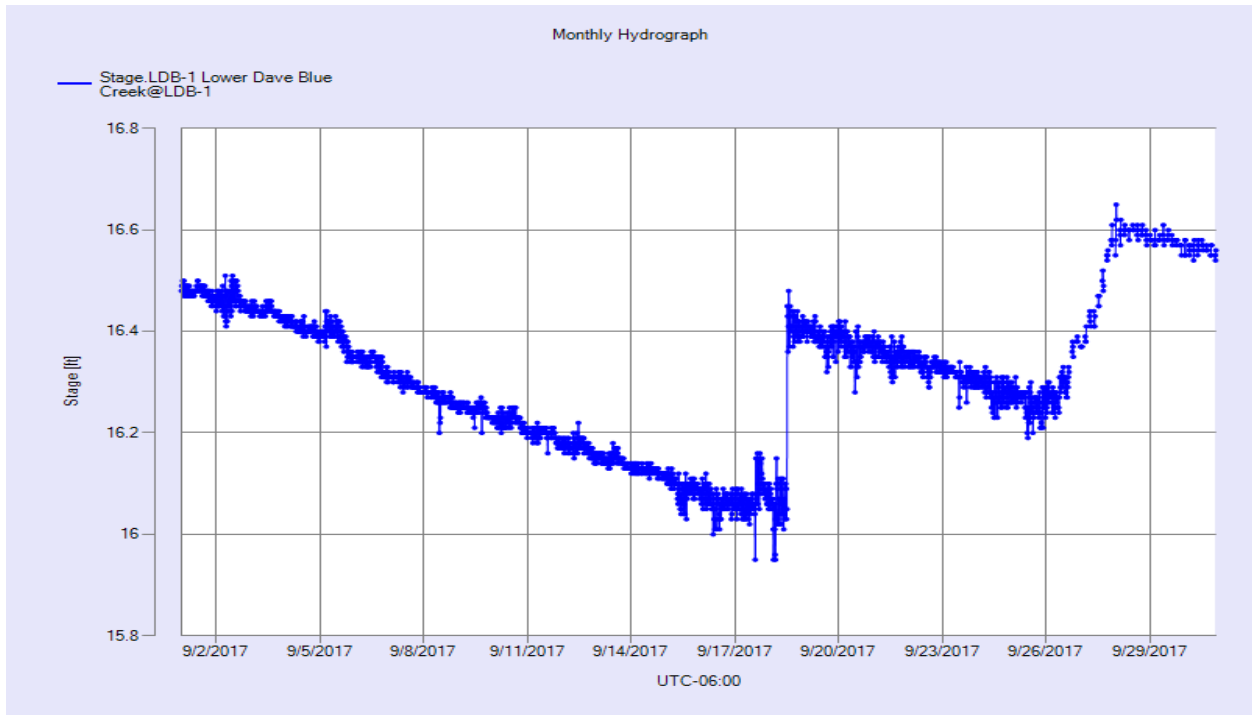


Figure 2 Monthly Hydrograph LDB-1

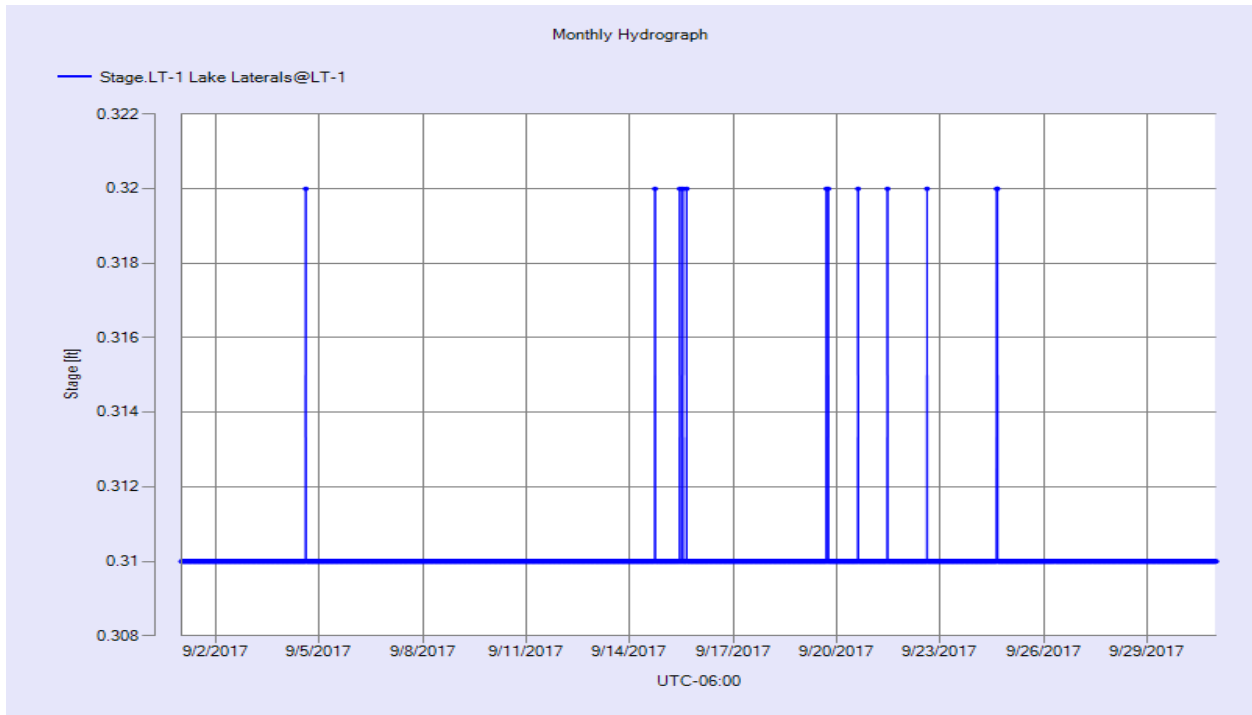


Figure 3 Monthly Hydrograph LT-1

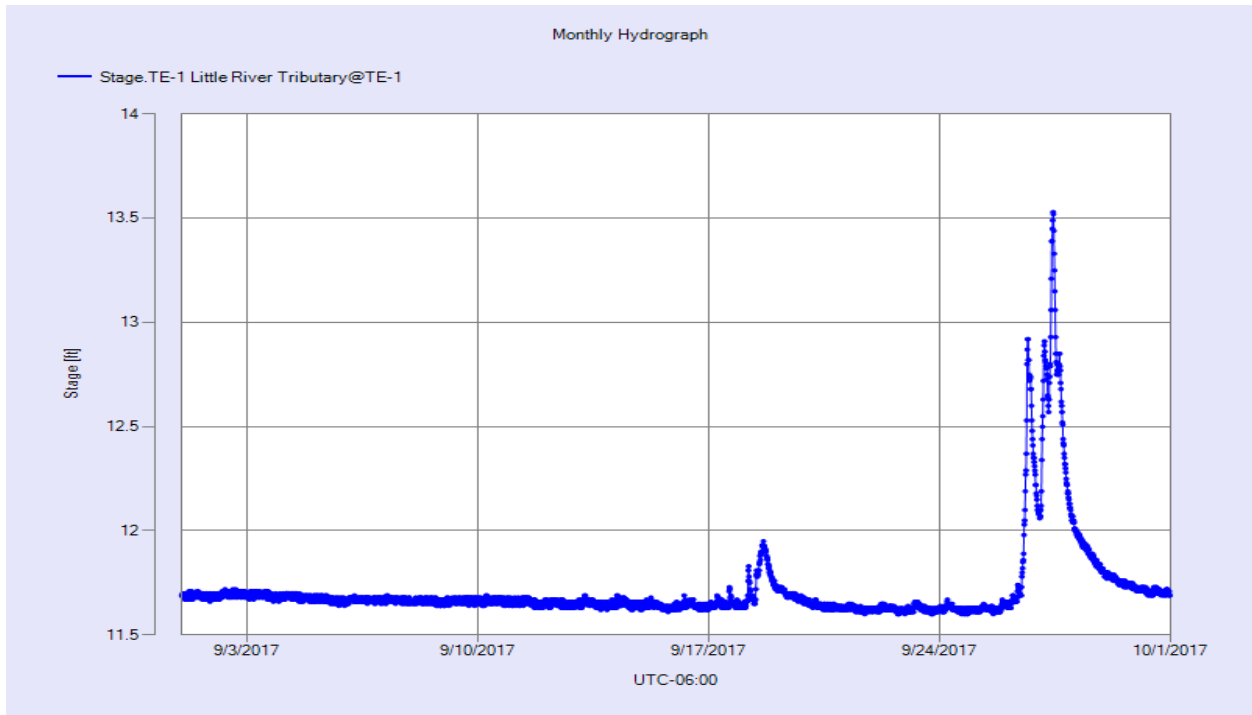


Figure 4 Monthly Hydrograph TE-1

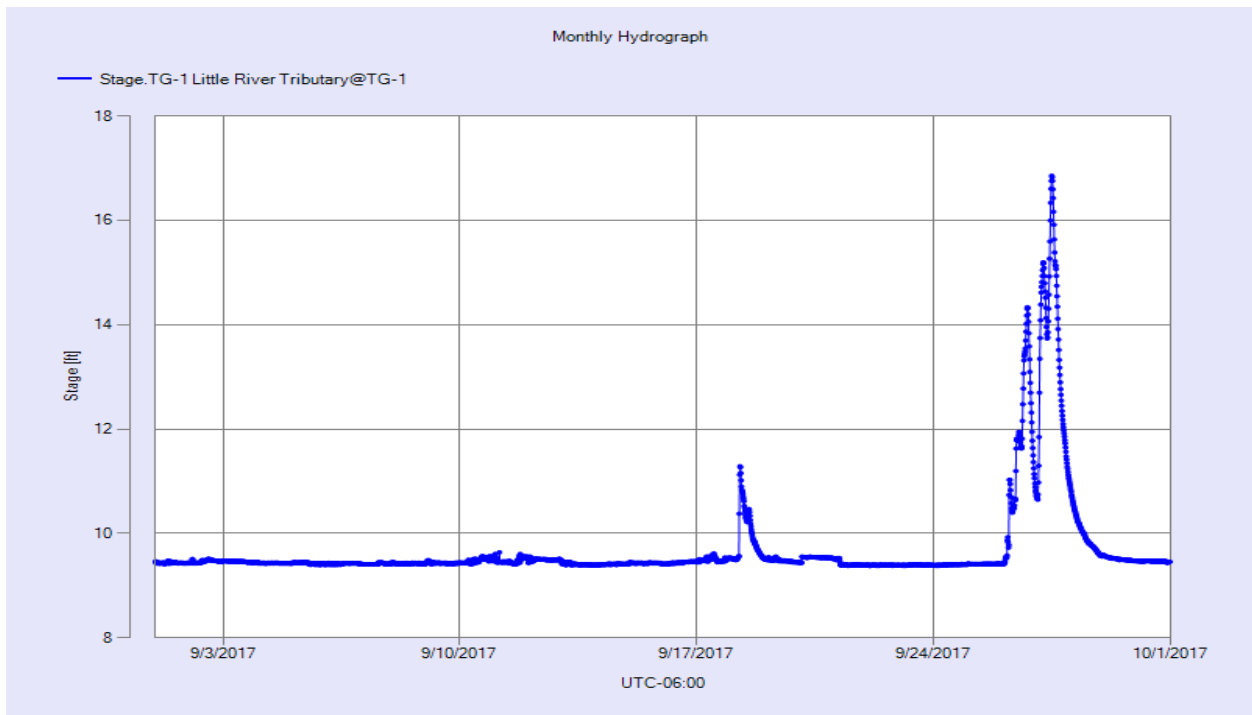


Figure 5 Monthly Hydrograph TG-1

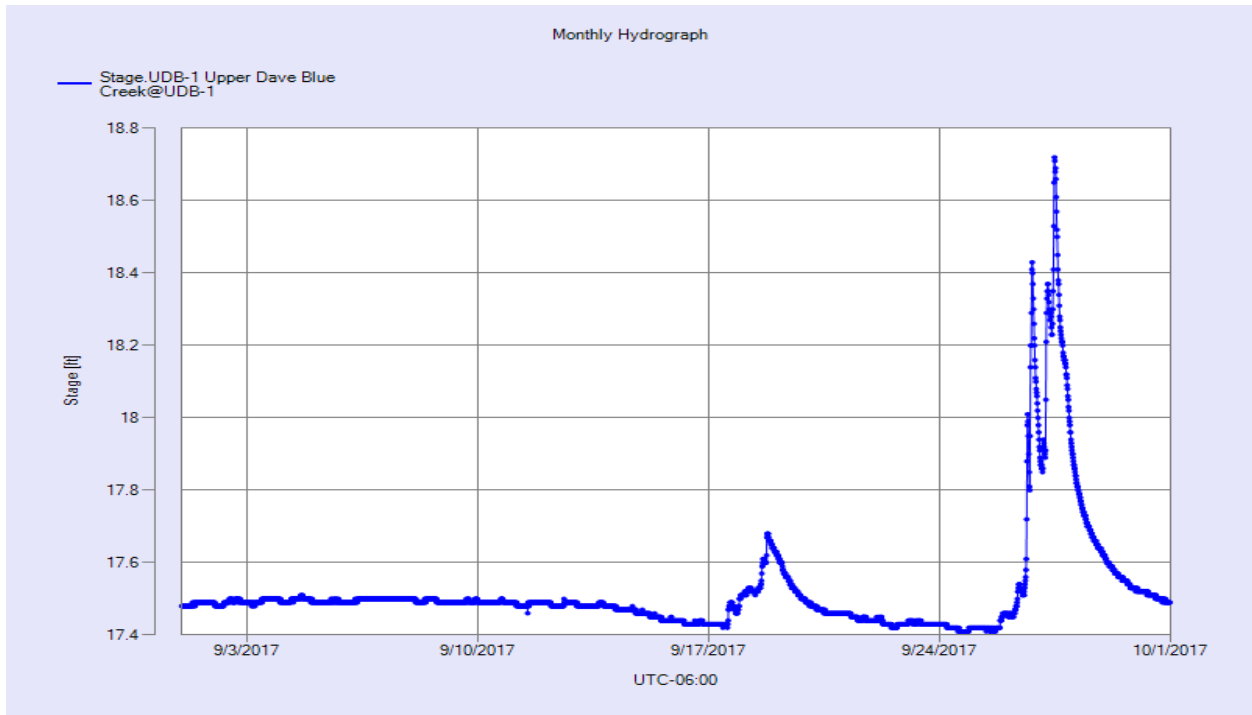


Figure 6 Monthly Hydrograph UDB-1

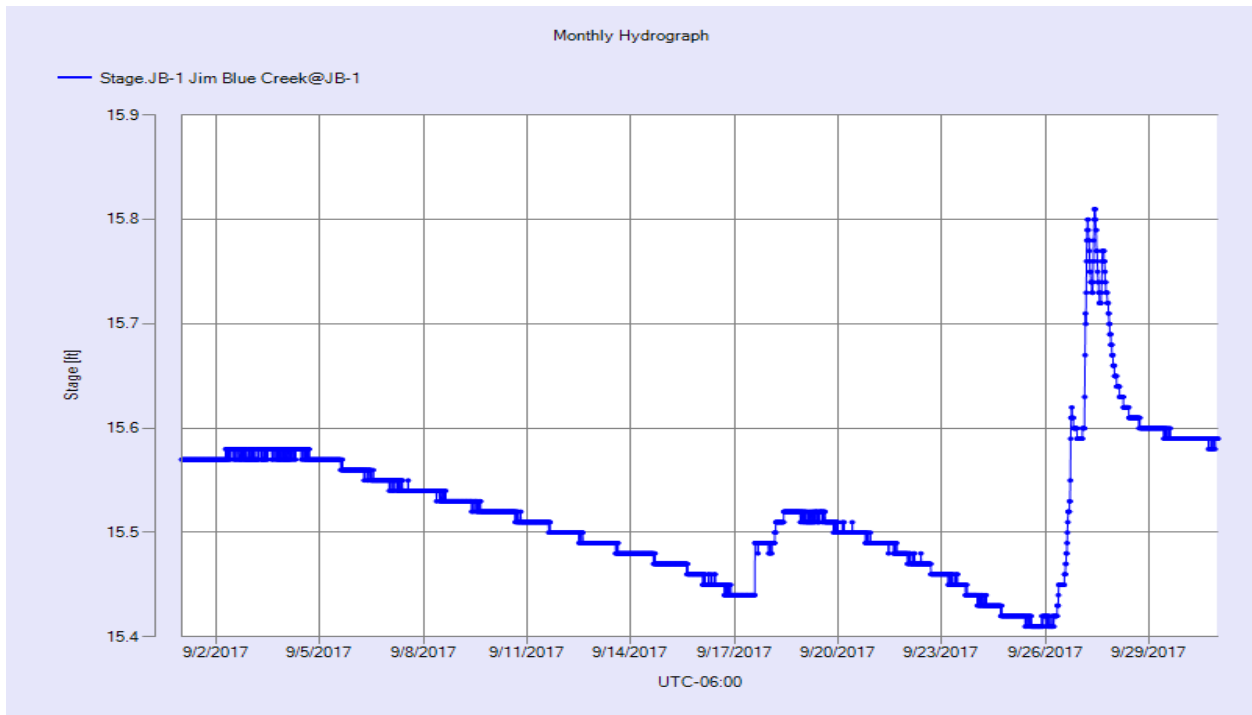


Figure 7 Monthly Hydrograph JB-1

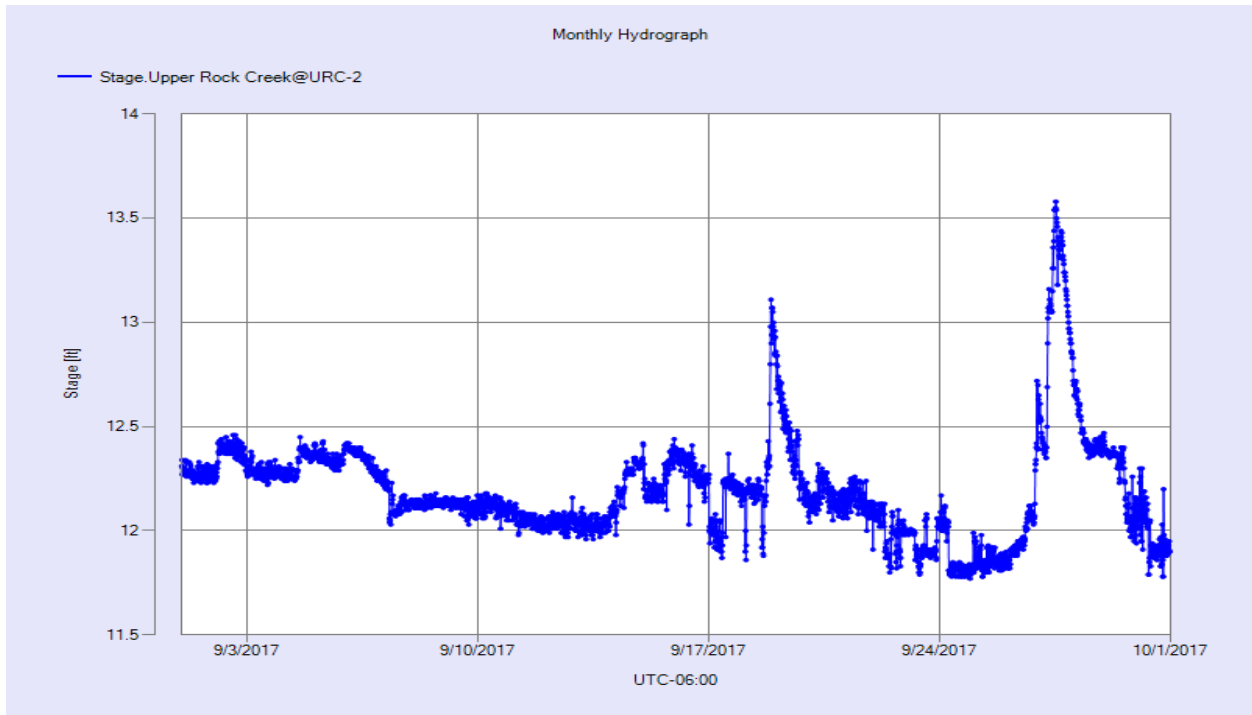


Figure 8 Monthly Hydrograph URC-2

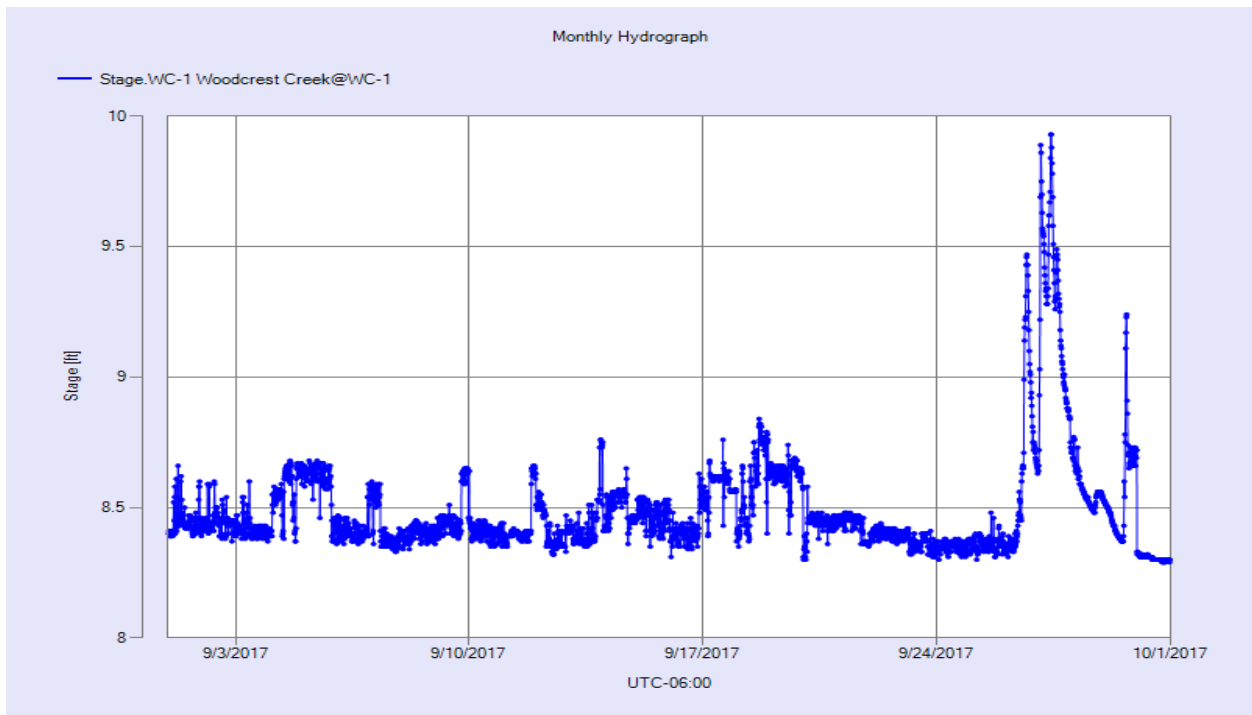


Figure 9 Monthly Hydrograph WC-1

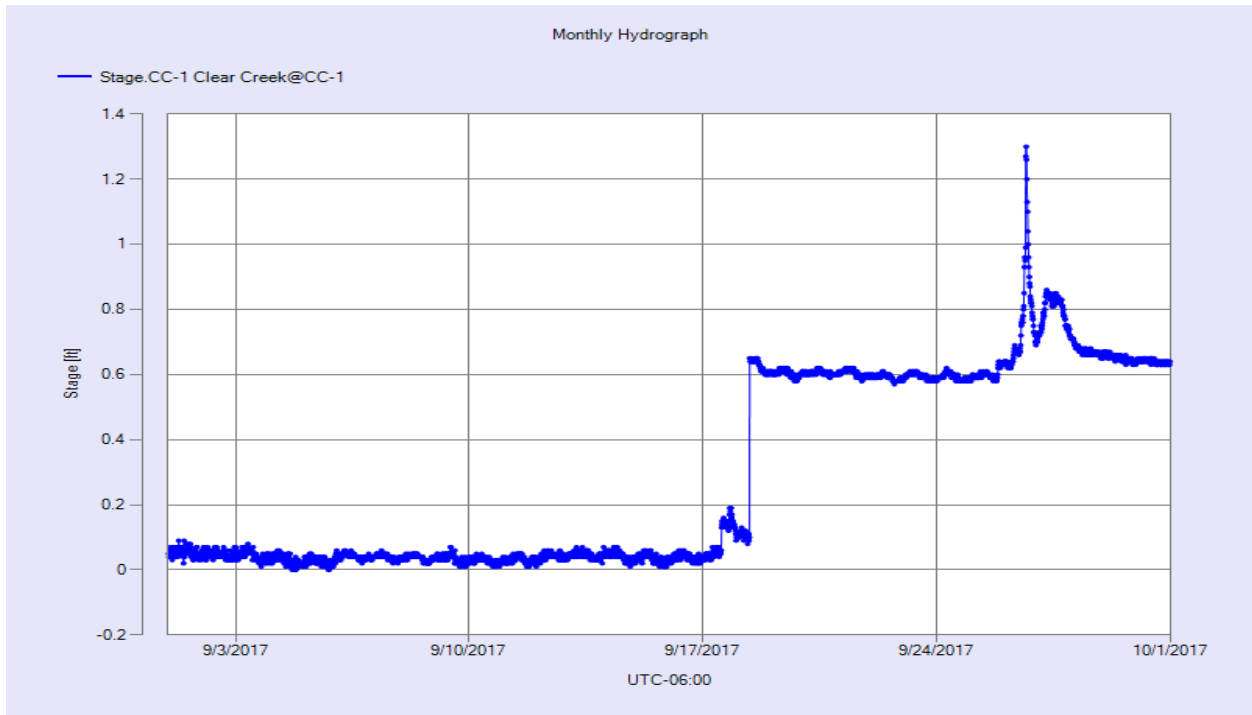


Figure 10 Monthly Hydrograph CC-1

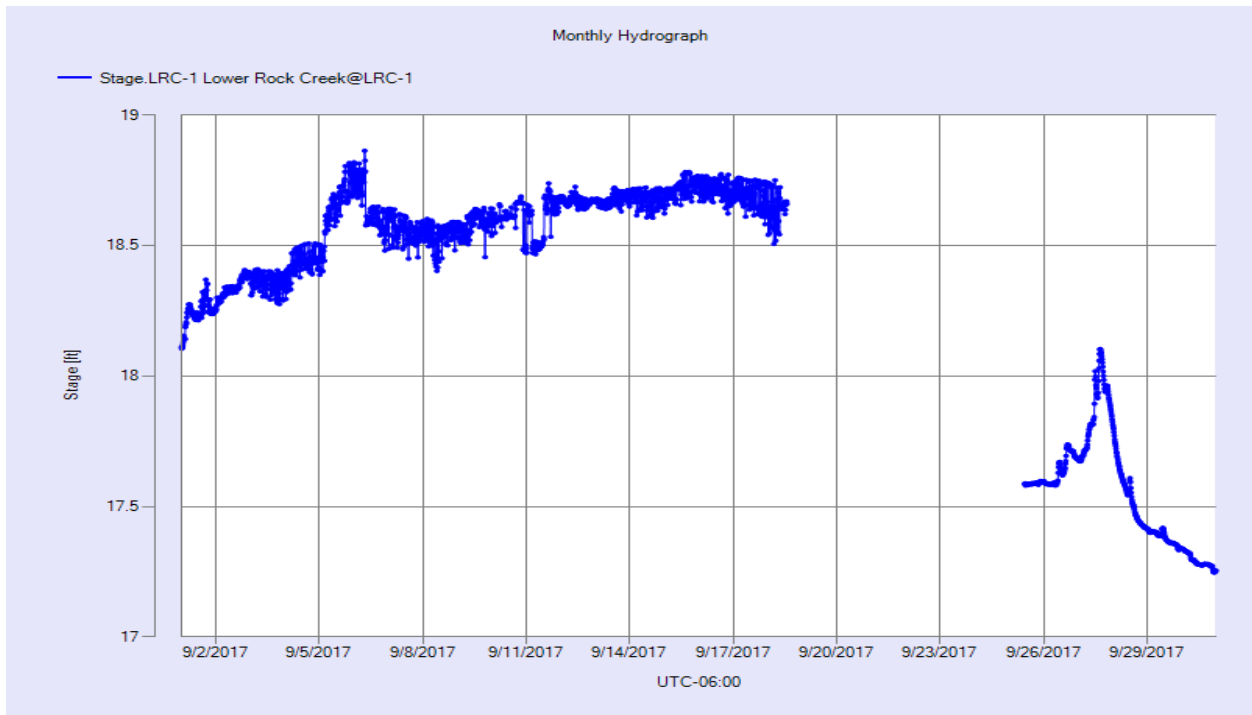


Figure 11 Monthly Hydrograph LRC-1

MESONET CLIMATOLOGICAL DATA SUMMARY				September 2017				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 (in)		PRESSURE (in)		WIND SPEED (mph)		SOLAR (MJ/m ²)	4" SOIL TEMPERATURES			
	MAX	MIN	AVG	DEWPT	HDD	CDD	MAX	MIN	AVG		STN	MSL	DIR	AVG	MAX		SOD	BARE	MAX	MIN
1	83	59	72.4	61.4	0	6	99	47	71	0.00	28.81	30.06	E	3.6	11.7	22.76	76.8	79.0	88	71
2	86	68	76.4	66.4	0	12	96	49	73	0.04	28.81	30.06	SE	5.3	15.4	16.98	77.9	80.2	86	75
3	90	65	78.6	68.2	0	12	100	48	73	0.00	28.82	30.07	SSE	3.6	13.0	20.96	78.4	81.7	89	74
4	92	69	80.8	66.9	0	16	90	42	65	0.00	28.73	29.98	S	7.5	21.0	22.37	79.2	82.9	90	76
5	78	57	70.9	52.6	0	2	86	32	54	0.00	28.86	30.11	NNE	10.6	26.5	15.21	77.1	79.4	82	75
6	79	50	65.8	45.3	0	0	82	27	51	0.00	28.92	30.18	NNE	5.1	18.2	24.15	73.9	75.8	84	68
7	82*	54*	69.1*	49.9*	0*	3*	77*	33*	52*	0.00*	28.88*	30.13*	S *	6.1*	16.6*	20.48*	73.6*	75.7*	83*	69*
8	83	60	71.0	53.6	0	6	76	37	56	0.00	28.89	30.15	S	7.1	19.2	21.97	74.2	76.4	83	70
9	83	57	71.3	56.5	0	5	93	37	62	0.00	28.95	30.20	SSE	5.9	18.9	21.92	74.4	77.1	84	70
10	81	60	70.3	55.2	0	5	89	36	61	0.00	28.96	30.21	E	5.4	16.9	22.03	74.3	77.3	84	71
11	83	54	68.8	54.4	0	4	97	35	64	0.00	28.86	30.12	NNE	3.0	15.1	23.02	73.7	77.3	85	70
12	79	55	67.1	52.7	0	2	94	35	64	0.00	28.69	29.94	NNE	4.6	15.4	15.59	72.2	75.0	80	70
13	87	53	70.7	51.8	0	5	95	25	56	0.00	28.59	29.83	SSE	3.4	11.8	22.18	72.3	75.7	84	68
14	93*	58*	77.8*	60.2*	0*	11*	86*	35*	57*	0.00*	28.58*	29.83*	SSE*	7.8*	23.6*	21.18*	73.7*	77.9*	85*	71*
15	90	70	79.8	64.9	0	15	85	45	62	0.02	28.61	29.86	SSE	11.3	28.2	20.31	75.6	80.0	86	75
16	90	71	80.8	67.4	0	15	88	44	65	0.00	28.68	29.92	SSE	9.8	22.7	15.94	76.4	80.7	85	76
17	84	71	76.2	68.8	0	13	90	62	78	0.07	28.77	30.02	SSE	8.7	28.1	12.54	76.9	79.8	83	77
18	86	66	74.3	66.1	0	11	97	54	77	0.35	28.73	29.98	SSW	8.2	29.3	16.13	76.4	76.3	81	72
19	93	72	81.9	70.0	0	18	93	44	69	0.00	28.57	29.82	S	11.4	29.9	20.91	77.4	78.9	87	73
20	91	73	82.1	70.3	0	17	87	56	68	0.00	28.58	29.82	S	11.0	29.2	20.31	78.2	81.6	88	75
21	92	77	83.2	71.6	0	19	84	53	69	0.00	28.63	29.88	SSE	11.6	25.7	19.12	79.1	83.4	90	78
22	89	71	79.1	68.9	0	15	95	55	72	0.00	28.68	29.93	SSE	9.7	24.4	18.81	78.7	82.6	89	77
23	89	70	79.2	65.9	0	15	86	43	65	0.00	28.69	29.94	SSE	8.4	21.5	19.77	78.0	82.0	88	76
24	88	71	79.1	65.4	0	14	86	45	64	0.00	28.66	29.91	SSE	8.4	22.6	17.35	77.7	81.6	87	77
25	86*	70*	76.0*	66.4*	0*	13*	98*	51*	74*	0.05*	28.65*	29.90*	SSE*	7.3*	21.6*	NA	77.0*	80.2*	84*	77*
26	71	62	67.4	66.7	0	1	99	95	98	1.08	28.75	30.00	N	8.4	24.7	2.28	75.0	74.7	78	71
27	64	61	62.3	61.7	3	0	99	94	98	1.30	28.86	30.12	NNE	9.6	19.3	1.70	71.1	68.6	71	67
28	68	58	62.5	57.1	2	0	96	74	83	0.03	28.91	30.17	NNE	8.0	17.7	6.18	70.1	66.7	69	65
29	78	58	67.5	55.4	0	3	94	39	68	0.00	28.94	30.19	NNE	4.7	12.9	19.14	70.6	68.2	75	62
30	80	56	68.3	54.8	0	3	100	33	66	0.00	28.91	30.16	SE	4.8	17.0	16.60	70.8	68.8	74	64
	84*	63*	73.7*	61.2*	<- Monthly Averages ->						28.77*	30.02*	SSE*	7.3*	29.9*	17.86*	75.3*	77.5*	83*	72*
Temperature - Highest: 93*				Degree Days - Total HDD: 5*				Number of Days With:												
Lowest: 50*				Total CDD: 263*				Tmax ≥ 90: 8*				Rainfall ≥ 0.01 inch: 8*								
								Tmax ≤ 32: 0*				Rainfall ≥ 0.10 inch: 3*								
Rainfall: Monthly Total: 2.94* in.				Humidity - Highest: 100*				Tmin ≤ 32: 0*				Avg Wind Speed ≥ 10 mph: 5*								
Greatest 24 Hr: 1.30* in.				Lowest: 25*				Tmin ≤ 0: 0*				Max Wind Speed ≥ 30 mph: 0*								

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* Denotes incomplete record

Figure 12 September Mesonet Data