
**Lake Thunderbird TMDL Monitoring
Plan Implementation: Sample Year
(SY) 2023- July Report**



OKLAHOMA
Water Resources Board

Lake Thunderbird TMDL Monitoring Plan Implementation: July 2023 Monitoring Report

Oklahoma Water Resources Board
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SUMMARY OF JULY SAMPLING

Sampling for July 2023 consisted of two sampling events. The first collection occurred above base flow conditions on the tenth. Water samples were collected at nine locations, two of which were via autosampler, and discharge was measured at seven locations. Mesonet shows no precipitation on the tenth, 4.69 inches of precipitation in the 72 hours prior to sampling, and 2.88 inches of precipitation in the 72 hours after the sampling event. The second collection occurred during high flow conditions on the eleventh. Water samples were collected at seven outfalls, as well as two permanent stations via autosampler. Discharge was measured at four locations. Mesonet shows 2.83 inches of precipitation on the eleventh, 3.60 inches of precipitation in the 72 hours prior to sampling, and 0.05 inches of precipitation in the 72 hours after sampling occurred. The total rainfall amount in Norman for the month of July was 7.62 inches. Samples were not collected at LT-1 since this station will be relocated later this year. All water level gauges were operational for the month, except for JB-1, which is having communication issues.

RESULTS

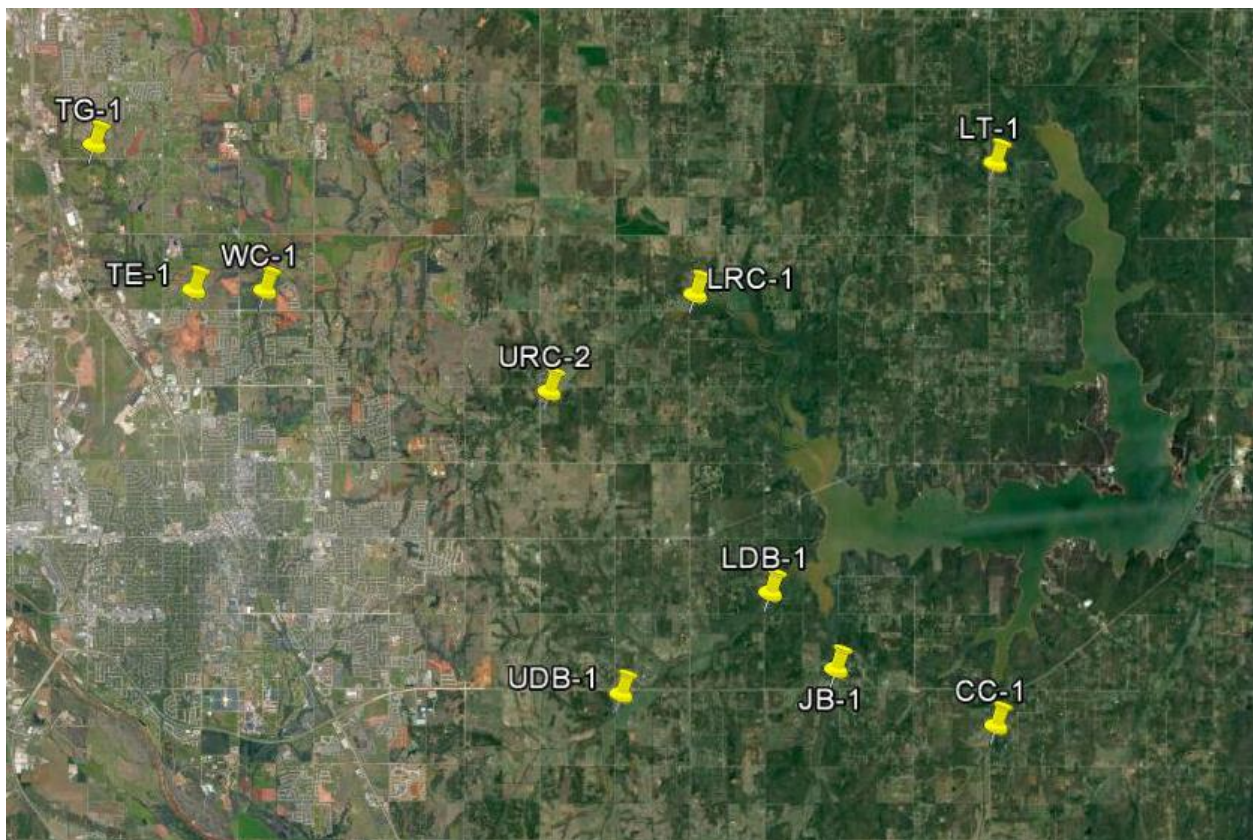


Figure 1 Monitoring Station Map

Monitoring Location ID	Monitoring Location Name	Date	Time	Field Crew	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	pH	Specific Conductance (µS/cm)	Turbidity (NTU)	Notes
CC-1	Clear Creek	7/10/2023	11:08	NH	21.6	6.73	7.55	617	37	Autosampler triggered but no water collected; evidence of high flows 3-4 ft below bridge; changed DCP; used RP4
JB-1	Jim Blue Creek	7/10/2023	12:05	NH	22.7	7.17	7.49	531	37	Extremely muddy; mixed turbidity; trash seems to be piling up in middle of stream; took flow further downstream where it constricts
LDB-1	Lower Dave Blue Creek	7/9/2023	10:38	NH	*	*	7.90	177	1000	Autosampler T4; peaked at stage 22.79 @ 5:45; very turbid, a little bit of visual flow
LRC-1	Lower Rock Creek	7/9/2023	6:50	NH	*	*	8.02	85	1000	Autosampler T4; peaked at stage 13.81 @ 8:30
TE-1	Little River Tributary	7/10/2023	17:29	NH	32.6	6.50	7.58	389	66	Appears to be getting back to base flow, no periphyton line
TG-1	Little River	7/10/2023	18:04	NH	27.2	7.10	7.64	599	25	Signs of high flow from storm event on 7/9 debris scattered, plants laid down; autosampler did not collect
UDB-1	Upper Dave Blue Creek	7/10/2023	9:21	NH	22.6	7.62	7.65	508	59	Major flood event on 7/9; locals said water was 3-4 ft over bridge; autosampler box gone; changed DCP
URC-2	Upper Rock Creek	7/10/2023	15:43	NH	25.6	7.62	7.96	312	118	Autosampler triggered but no water collected; water line looks to have come up to about 3 ft below bridge
WC-1	Woodcrest Creek	7/10/2023	16:55	NH	26.9	7.41	7.76	431	24	Autosampler did not trigger after 7/9 storm event

Table 1 Field Data Form Where the Asterisk Denotes a Sample from an Autosampler

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	0.13	0.56	0.065	21.0
JB-1	Jim Blue Creek	0.07	0.63	0.066	24.0
LDB-1	Lower Dave Blue Creek	0.18	2.53	0.870	2670
LRC-1	Lower Rock Creek	0.24	6.87	2.13	5490
TE-1	Little River Tributary	0.26	0.75	0.155	80.0
TG-1	Little River	0.64	0.78	0.149	16.0
UDB-1	Upper Dave Blue Creek	0.15	0.71	0.098	52.0
URC-2	Upper Rock Creek	0.15	0.97	0.131	72.0
WC-1	Woodcrest Creek	0.08	0.90	0.095	6.0

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	0.13	0.54	0.064	18.0
Duplicate RPD	0%	3.64%	1.55%	15.38%*

Table 3 QA/QC Data Where the Asterisk Denotes RPD2

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	2.03	20.43
JB-1	Jim Blue Creek	3.79	N/A
LDB-1	Lower Dave Blue Creek	26.75	18.49
LRC-1	Lower Rock Creek	16.54	5.20
TE-1	Little River Tributary	0.02	10.97
TG-1	Little River	0.72	9.07
UDB-1	Upper Dave Blue Creek	14.39	18.00
URC-2	Upper Rock Creek	13.47	12.28
WC-1	Woodcrest Creek	3.29	7.83

Table 4 Station Discharge Summary

All rated stream discharges are provisional and subject to change.

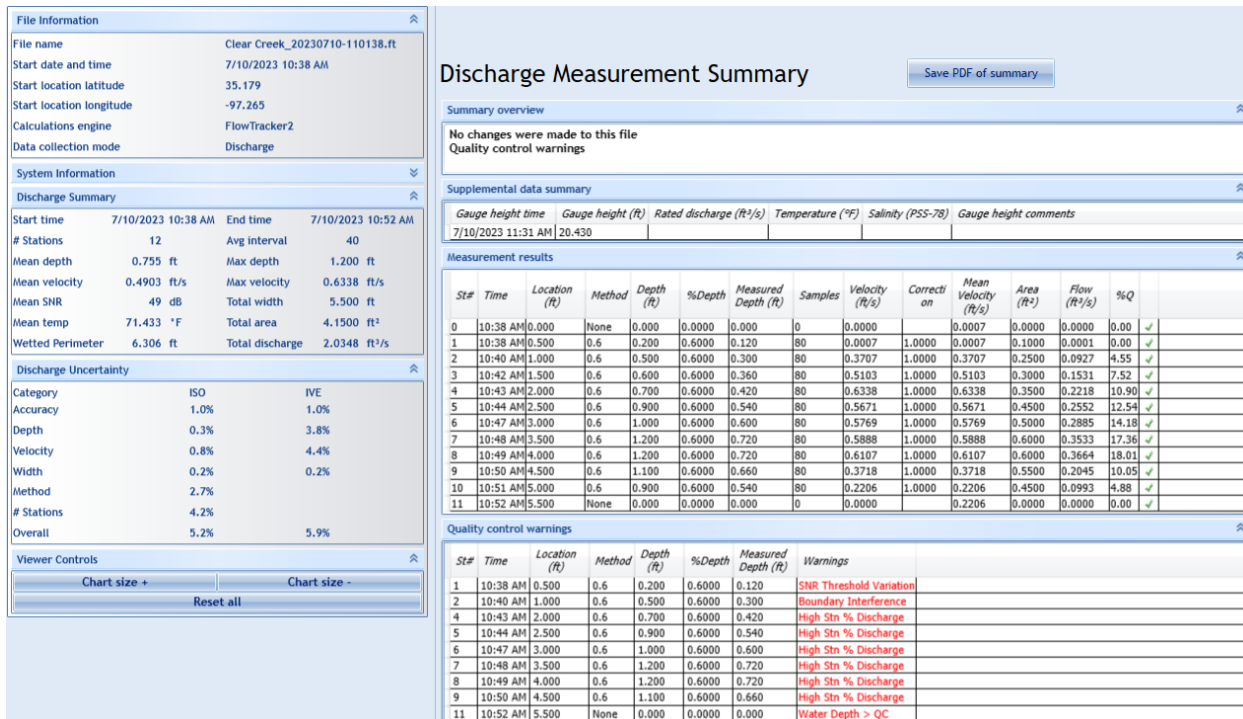


Figure 2 Discharge Measurement Summary CC-1

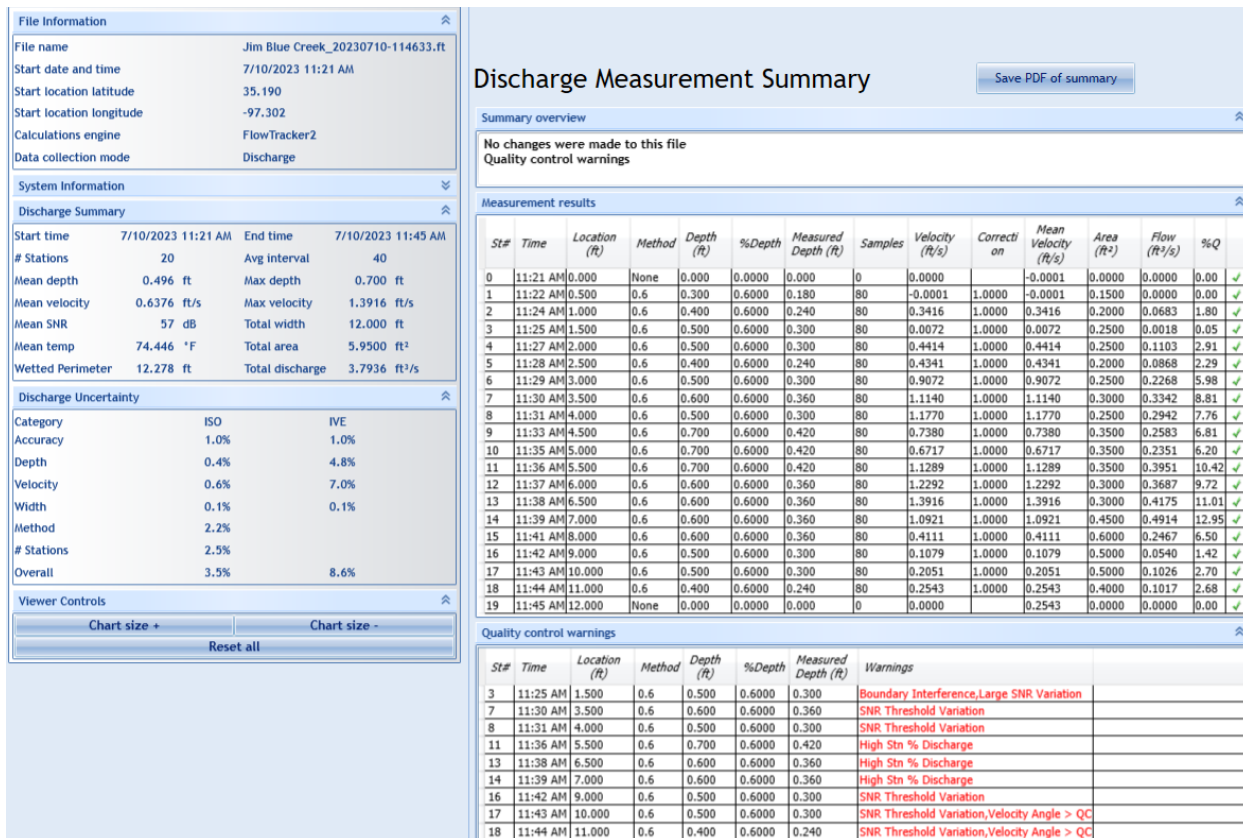


Figure 3 Discharge Measurement Summary JB-1

Discharge Measurement Summary

Date Measured: 2023-07-10

Site Information				Measurement Information			
Site Name	LDB			Operator	ndh		
Station Number				Vessel	Streamboat Willie		
Location				Measurement Number			
Gauge Height	18.485						

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (ft)	0.15	Distance	ft
Instrument Sub-Type	RS5	Screening Distance (ft)	0	Velocity	ft/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	ft ²
	40008	Magnetic Declination (deg)	3.1	Discharge	ft ³ /s
Firmware Version	1.25			Temperature	°F

Discharge Calculation Settings				Discharge Results			
Track Reference	Bottom-Track	Left Method	Slope	Width (ft)	49.257		
Depth Reference	Vertical Beam	Right Method	Slope	Area (ft ²)	203.857		
Coordinate System	ENU	Top Fit Type	Power Fit		7		
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Mean Speed (ft/s)	0.1312		
				Total Q (ft ³ /s)	26.7514		
				Max Depth (ft)	9.468		
				Max Speed (ft/s)	1.3953		

Measurement Results																	
Tr #		Start Time (UTC-5)	Duration	Track Distance (ft)	DMG (ft)	Width (ft)	Area (ft ²)	Boat Speed (ft/s)	Mean Speed (ft/s)	Left Q (ft ³ /s)	Right Q (ft ³ /s)	Top Q (ft ³ /s)	Bottom Q (ft ³ /s)	Middle Q (ft ³ /s)	Total Q (ft ³ /s)	Total Q Corrected (ft ³ /s)	% Measured
01	R	13:26:09	00:01:34	43.489	37.588	49.588	209.073	0.4626	0.1329	0.0653	0.3599	1.9225	5.8932	19.5457	27.7866		70.34
02	L	13:28:01	00:01:39	41.023	39.771	50.771	201.4141	0.4144	0.1276	-0.0318	0.0538	1.9362	5.5284	18.2042	25.6908		70.86
03	R	13:31:06	00:01:26	41.18	38.805	49.805	210.4768	0.4788	0.1396	0.002	0.1766	2.0946	6.5849	20.5324	29.3905		69.86
04	L	13:32:39	00:01:28	40.733	38.184	49.184	200.3853	0.4629	0.124	-0.0388	0.1603	1.7133	5.1108	17.8923	24.8379		72.04
06	R	13:36:52	00:01:10	39.689	35.494	46.494	195.8262	0.567	0.1394	0.0333	0.1057	1.9388	5.8441	19.3857	27.3076		70.99
07	L	13:38:12	00:01:09	42.392	38.703	49.703	205.9706	0.6144	0.1238	-0.0295	0.2895	1.7412	5.5932	17.9004	25.4948		70.21
Mean				41.417	38.091	49.257	203.8577	0.5	0.1312	0.0001	0.191	1.8911	5.7591	18.9101	26.7514	0	70.72
Std Dev				1.219	1.336	1.325	5.1318	0.0685	0.0066	0.0382	0.1045	0.1296	0.4487	0.9845	1.5658	0	0.7
COV				0.097	0.115	0.088	0.271	0.4492	0.1656	20490.1929	19.3176	2.4201	2.7517	1.8386	2.0671	0	0.99

Figure 4 Discharge Measurement Summary LDB-1

Discharge Measurement Summary

Date Measured: 2023-07-10

Site Information				Measurement Information			
Site Name	LRC			Operator	ndh		
Station Number				Vessel	Streamboat Willie		
Location				Measurement Number			
Gauge Height	5.2						

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (ft)	0.15	Distance	ft
Instrument Sub-Type	RS5	Screening Distance (ft)	0	Velocity	ft/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	ft ²
	40008	Magnetic Declination (deg)	3.1	Discharge	ft ³ /s
Firmware Version	1.25			Temperature	°F

Discharge Calculation Settings				Discharge Results			
Track Reference	Bottom-Track	Left Method	Slope	Width (ft)	22.299		
Depth Reference	Vertical Beam	Right Method	Slope	Area (ft ²)	65.3512		
Coordinate System	ENU	Top Fit Type	Power Fit	Mean Speed (ft/s)	0.2542		
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Total Q (ft ³ /s)	16.5354		
				Max Depth (ft)	4.889		
				Max Speed (ft/s)	1.2454		

Measurement Results																	
Tr #		Start Time (UTC-5)	Duration	Track Distance (ft)	DMG (ft)	Width (ft)	Area (ft ²)	Boat Speed (ft/s)	Mean Speed (ft/s)	Left Q (ft ³ /s)	Right Q (ft ³ /s)	Top Q (ft ³ /s)	Bottom Q (ft ³ /s)	Middle Q (ft ³ /s)	Total Q (ft ³ /s)	Total Q Corrected (ft ³ /s)	% Measured
01	L	14:30:23	00:01:17	20.939	16.817	22.817	67.2525	0.2719	0.2154	2.6607	-0.2087	1.3457	2.4604	8.2293	14.4874		56.8
02	R	14:31:49	00:00:52	22.547	16.485	22.485	67.183	0.4336	0.2697	1.9482	-0.2863	1.7044	3.3337	11.4166	18.1165		63.02
05	R	14:34:22	00:00:51	18.714	16.527	22.527	68.9807	0.3669	0.2085	1.876	-0.2124	1.1903	2.1588	9.3706	14.3833		65.15
06	L	14:35:22	00:00:46	18.658	16.758	22.758	60.3083	0.4056	0.2855	2.0415	-0.1817	1.7147	3.005	10.6389	17.2183		61.79
07	R	14:36:19	00:00:57	17.983	15.19	21.19	62.3228	0.3155	0.286	2.26	-0.1967	1.6114	3.5223	10.6286	17.8255		59.63
09	R	14:38:39	00:00:49	20.236	16.015	22.015	66.0597	0.413	0.2601	2.2707	-0.0698	1.3631	3.3176	10.2996	17.1812		59.95
Mean				19.846	16.299	22.299	65.3512	0.3678	0.2542	2.1762	-0.1926	1.4883	2.9663	10.0972	16.5354	0	61.06
Std Dev				1.571	0.559	0.559	3.0345	0.0573	0.0312	0.2617	0.0641	0.1991	0.4961	1.0307	1.5206	0	2.66
COV				0.26	0.113	0.082	0.4998	0.5115	0.4033	4.2467	-11.7545	4.7253	5.9065	3.6049	3.2476	0	4.36

Figure 5 Discharge Measurement Summary LRC-1

File Information

File name: Upper Dave Blue Creek_20230710-093131.ft
 Start date and time: 7/10/2023 9:03 AM
 Start location latitude:
 Start location longitude:
 Calculations engine: FlowTracker2
 Data collection mode: Discharge

System Information

Discharge Summary

Start time: 7/10/2023 9:03 AM End time: 7/10/2023 9:26 AM
 # Stations: 18 Avg interval: 40
 Mean depth: 1.341 ft Max depth: 1.800 ft
 Mean velocity: 0.6311 ft/s Max velocity: 1.2561 ft/s
 Mean SNR: 49 dB Total width: 17.000 ft
 Mean temp: 72.885 °F Total area: 22.8000 ft²
 Wetted Perimeter: 17.798 ft Total discharge: 14.3899 ft³/s

Discharge Uncertainty

Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.2%	2.0%
Velocity	1.2%	4.5%
Width	0.2%	0.2%
Method	2.6%	
# Stations	2.8%	
Overall	4.1%	5.0%

Viewer Controls

Chart size + Chart size -
 Reset all

Discharge Measurement Summary

Save PDF of summary

Summary overview

No changes were made to this file
 Quality control warnings

Supplemental data summary

Gauge height time	Gauge height (ft)	Rated discharge (ft³/s)	Temperature (°F)	Salinity (PSS-78)	Gauge height comments
7/10/2023 9:30 AM	18.000				

Measurement results

St#	Time	Location (ft)	Method	Depth (ft)	%Depth	Measured Depth (ft)	Samples	Velocity (ft/s)	Correction	Mean Velocity (ft/s)	Area (ft²)	Flow (ft³/s)	%Q	
0	9:03 AM	0.000	None	0.000	0.0000	0.000	0	0.0000		-0.0792	0.0000	0.0000	0.00	✓
1	9:04 AM	1.000	0.6	0.600	0.6000	0.360	80	-0.0792	1.0000	-0.0792	0.6000	-0.0475	-0.33	✓
2	9:05 AM	2.000	0.6	0.800	0.6000	0.480	80	0.0937	1.0000	0.0937	0.8000	0.0749	0.52	✓
3	9:07 AM	3.000	0.6	1.200	0.6000	0.720	80	0.0602	1.0000	0.0602	1.2000	0.0723	0.50	✓
4	9:08 AM	4.000	0.6	1.500	0.6000	0.900	80	0.2046	1.0000	0.2046	1.5000	0.3069	2.13	✓
5	9:11 AM	5.000	0.6	1.600	0.6000	0.960	80	0.4486	1.0000	0.4486	1.6000	0.7177	4.99	✓
6	9:12 AM	6.000	0.6	1.600	0.6000	0.960	80	0.5689	1.0000	0.5689	1.6000	0.9102	6.33	✓
7	9:14 AM	7.000	0.6	1.800	0.6000	1.080	80	1.0334	1.0000	1.0334	1.8000	1.8601	12.93	✓
8	9:15 AM	8.000	0.6	1.700	0.6000	1.020	80	1.2561	1.0000	1.2561	1.7000	2.1353	14.84	✓
9	9:16 AM	9.000	0.6	1.800	0.6000	1.080	80	1.0332	1.0000	1.0332	1.8000	1.8598	12.92	✓
10	9:18 AM	10.000	0.6	1.800	0.6000	1.080	80	1.1973	1.0000	1.1973	1.8000	2.1551	14.98	✓
11	9:19 AM	11.000	0.6	1.800	0.6000	1.080	80	1.2216	1.0000	1.2216	1.8000	2.1989	15.28	✓
12	9:20 AM	12.000	0.6	1.700	0.6000	1.020	80	0.7700	1.0000	0.7700	1.7000	1.3090	9.10	✓
13	9:21 AM	13.000	0.6	1.400	0.6000	0.840	80	0.3850	1.0000	0.3850	1.4000	0.5390	3.75	✓
14	9:22 AM	14.000	0.6	1.500	0.6000	0.900	80	0.1172	1.0000	0.1172	1.5000	0.1758	1.22	✓
15	9:24 AM	15.000	0.6	1.200	0.6000	0.720	80	0.0891	1.0000	0.0891	1.2000	0.1069	0.74	✓
16	9:25 AM	16.000	0.6	0.800	0.6000	0.480	80	0.0193	1.0000	0.0193	0.8000	0.0154	0.11	✓
17	9:26 AM	17.000	None	0.000	0.0000	0.000	0	0.0000		0.0193	0.0000	0.0000	0.00	✓

Quality control warnings

St#	Time	Location (ft)	Method	Depth (ft)	%Depth	Measured Depth (ft)	Warnings
1	9:04 AM	1.000	0.6	0.600	0.6000	0.360	Velocity Angle > QC,Rod Angle > QC
2	9:05 AM	2.000	0.6	0.800	0.6000	0.480	Velocity Angle > QC
4	9:08 AM	4.000	0.6	1.500	0.6000	0.900	Velocity Angle > QC
7	9:14 AM	7.000	0.6	1.800	0.6000	1.080	High Stn % Discharge
8	9:15 AM	8.000	0.6	1.700	0.6000	1.020	Standard Error > QC,High Stn % Discharge
9	9:16 AM	9.000	0.6	1.800	0.6000	1.080	Standard Error > QC,High Stn % Discharge
10	9:18 AM	10.000	0.6	1.800	0.6000	1.080	Standard Error > QC,High Stn % Discharge
11	9:19 AM	11.000	0.6	1.800	0.6000	1.080	High Stn % Discharge
14	9:22 AM	14.000	0.6	1.500	0.6000	0.900	Velocity Angle > QC
15	9:24 AM	15.000	0.6	1.200	0.6000	0.720	Velocity Angle > QC
17	9:26 AM	17.000	None	0.000	0.0000	0.000	Water Depth > QC

Figure 6 Discharge Measurement Summary UDB-1

File Information

File name: Upper Rock Creek_20230710-151903.ft
 Start date and time: 7/10/2023 2:43 PM
 Start location latitude: 35.242
 Start location longitude: -97.371
 Calculations engine: FlowTracker2
 Data collection mode: Discharge

System Information

Discharge Summary

Start time: 7/10/2023 2:43 PM End time: 7/10/2023 3:18 PM
 # Stations: 16 Avg interval: 40
 Mean depth: 1.288 ft Max depth: 1.700 ft
 Mean velocity: 1.0462 ft/s Max velocity: 1.5626 ft/s
 Mean SNR: 50 dB Total width: 10.000 ft
 Mean temp: 78.260 °F Total area: 12.8750 ft²
 Wetted Perimeter: 11.601 ft Total discharge: 13.4703 ft³/s

Discharge Uncertainty

Category	ISO	IVE
Accuracy	1.0%	1.0%
Depth	0.2%	3.7%
Velocity	0.4%	4.1%
Width	0.2%	0.2%
Method	1.6%	
# Stations	3.1%	
Overall	3.7%	5.6%

Viewer Controls

Chart size + Chart size -
 Reset all

Discharge Measurement Summary

Save PDF of summary

Summary overview

No changes were made to this file
 Quality control warnings

Supplemental data summary

Gauge height time	Gauge height (ft)	Rated discharge (ft ³ /s)	Temperature (°F)	Salinity (PSS-78)	Gauge height comments
7/10/2023 2:43 PM	12.285				

Measurement results

St#	Time	Location (ft)	Method	Depth (ft)	%Depth	Measured Depth (ft)	Samples	Velocity (ft/s)	Correcti on	Mean Velocity (ft/s)	Area (ft ²)	Flow (ft ³ /s)	%Q	
0	2:43 PM	0.000	None	0.000	0.0000	0.000	0	0.0000		0.4066	0.0000	0.0000	0.00	✓
1	2:43 PM	0.500	0.6	0.700	0.6000	0.420	80	0.4066	1.0000	0.4066	0.3500	0.1423	1.06	✓
2	2:45 PM	1.000	0.6	0.700	0.6000	0.420	80	0.4418	1.0000	0.4418	0.3500	0.1546	1.15	✓
3	2:47 PM	1.500	0.6	1.600	0.6000	0.960	80	1.1073	1.0000	1.1073	0.8000	0.8858	6.58	✓
4	2:49 PM	2.000	0.6	1.500	0.6000	0.900	80	1.2437	1.0000	1.2437	0.7500	0.9328	6.92	✓
5	2:50 PM	2.500	0.6	1.600	0.6000	0.960	80	1.1443	1.0000	1.1443	0.8000	0.9154	6.80	✓
6	2:51 PM	3.000	0.2/0.8	1.600	0.2000	0.320	80	1.3720	1.0000	1.0372	0.8000	0.8297	6.16	✓
6	2:51 PM	3.000	0.2/0.8	1.600	0.8000	1.280	80	0.7024	1.0000	1.0372	0.8000	0.8297	6.16	✓
7	2:54 PM	3.500	0.6	1.400	0.6000	0.840	80	1.4238	1.0000	1.4238	0.7000	0.9966	7.40	✓
8	2:56 PM	4.000	0.6	1.300	0.6000	0.780	80	1.5406	1.0000	1.5406	0.6500	1.0014	7.43	✓
9	2:58 PM	4.500	0.6	1.300	0.6000	0.780	80	1.5626	1.0000	1.5626	0.6500	1.0157	7.54	✓
10	3:05 PM	5.000	0.2/0.8	1.400	0.2000	0.280	80	1.5600	1.0000	1.4746	0.7000	1.0322	7.66	✓
10	3:05 PM	5.000	0.2/0.8	1.400	0.8000	1.120	80	1.3892	1.0000	1.4746	0.7000	1.0322	7.66	✓
11	3:08 PM	5.500	0.2/0.8	1.500	0.2000	0.300	80	1.5272	1.0000	1.4427	1.5000	2.1640	16.07	✓
11	3:08 PM	5.500	0.2/0.8	1.500	0.8000	1.200	80	1.3582	1.0000	1.4427	1.5000	2.1640	16.07	✓
12	3:12 PM	7.000	0.2/0.8	1.700	0.2000	0.340	80	1.3824	1.0000	0.8781	2.1250	1.8660	13.85	✓
12	3:12 PM	7.000	0.2/0.8	1.700	0.8000	1.360	80	0.3739	1.0000	0.8781	2.1250	1.8660	13.85	✓
13	3:14 PM	8.000	0.2/0.8	1.600	0.2000	0.320	80	0.9837	1.0000	0.7652	1.6000	1.2243	9.09	✓
13	3:14 PM	8.000	0.2/0.8	1.600	0.8000	1.280	80	0.5466	1.0000	0.7652	1.6000	1.2243	9.09	✓
14	3:17 PM	9.000	0.6	1.100	0.6000	0.660	80	0.2812	1.0000	0.2812	1.1000	0.3093	2.30	✓
15	3:18 PM	10.000	None	0.000	0.0000	0.000	0	0.0000		0.2812	0.0000	0.0000	0.00	✓

Quality control warnings

St#	Time	Location (ft)	Method	Depth (ft)	%Depth	Measured Depth (ft)	Warnings
2	2:45 PM	1.000	0.6	0.700	0.6000	0.420	Boundary Interference
6	2:51 PM	3.000	0.2/0.8	1.600	0.2000	0.320	Low SNR,Beam SNRs Not Similar,SNR Threshold Variation,Velocity Angle > QC
6	2:51 PM	3.000	0.2/0.8	1.600	0.8000	1.280	Low SNR,Beam SNRs Not Similar,SNR Threshold Variation,Velocity Angle > QC
11	3:08 PM	5.500	0.2/0.8	1.500	0.2000	0.300	High Stn % Discharge
11	3:08 PM	5.500	0.2/0.8	1.500	0.8000	1.200	High Stn % Discharge
12	3:12 PM	7.000	0.2/0.8	1.700	0.2000	0.340	Velocity Angle > QC,High Stn % Discharge
12	3:12 PM	7.000	0.2/0.8	1.700	0.8000	1.360	Velocity Angle > QC,High Stn % Discharge
15	3:18 PM	10.000	None	0.000	0.0000	0.000	Water Depth > QC

Figure 7 Discharge Measurement Summary URC-2

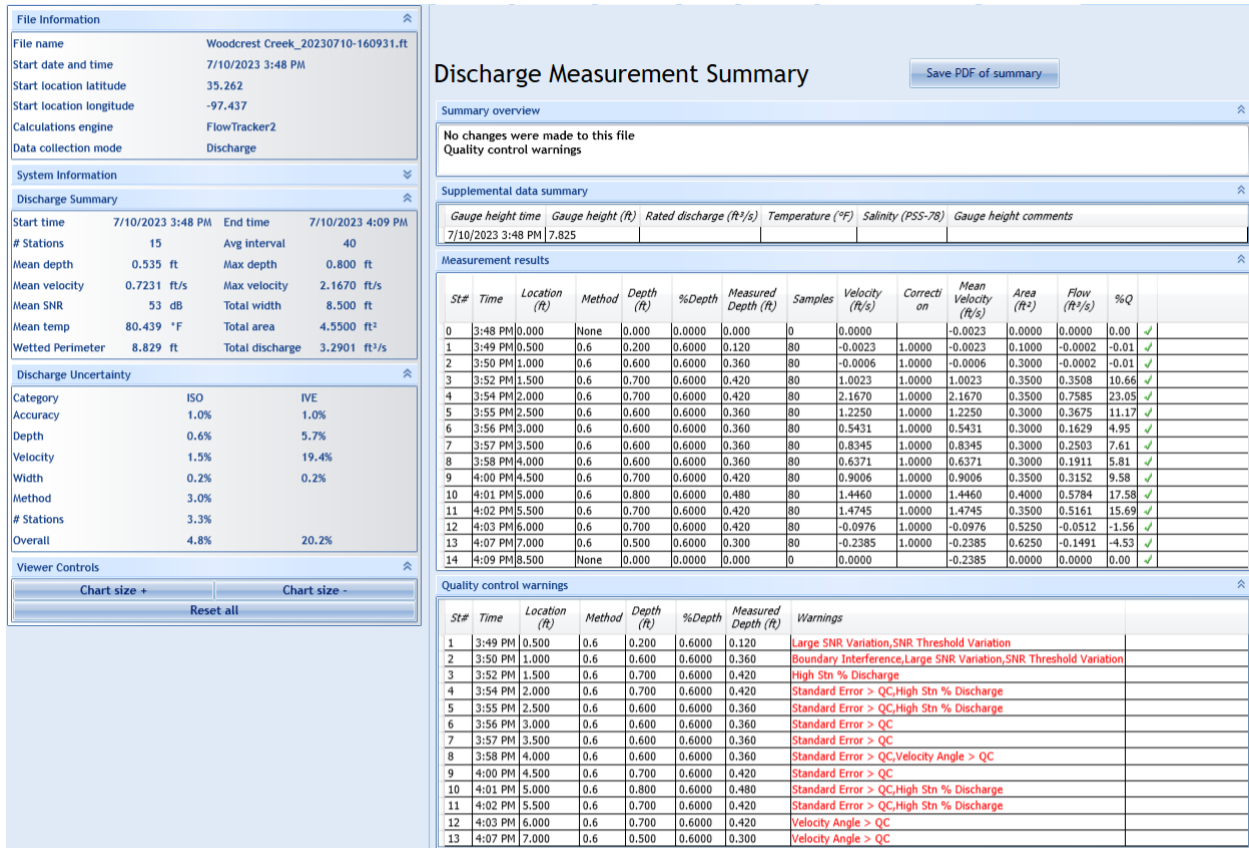


Figure 8 Discharge Measurement Summary WC-1

Monitoring Location ID	Monitoring Location Name	Date	Time	Field Crew	Water Temperature (°C)	Dissolved Oxygen (DO) (mg/L)	pH	Specific Conductance (µS/cm)	Turbidity (NTU)	Notes
SW-08	Stormwater Outfall 08	7/11/2023	9:49	NH	24.4	7.32	7.48	175	75	Bankful and turbid
SW-09	Stormwater Outfall 09	7/11/2023	10:10	NH	23.4	6.85	7.32	131	76	Pooled up by drainage pipe, but flows further downstream where sampling occurred
SW-10	Stormwater Outfall 10	7/11/2023	10:29	NH	23.5	7.53	7.34	134	64	High flow, large broken gate partially in channel
SW-11	Stormwater Outfall 11	7/11/2023	11:04	NH	23.7	7.46	7.32	151	63	Turbid and slightly foamy
SW-12	Stormwater Outfall 12	7/11/2023	9:32	NH	23.5	7.50	7.72	272	95	Three channels converging into one drainage pipe - one stream larger and more turbid than the others
SW-13	Stormwater Outfall 13	7/11/2023	11:26	NH	23.7	7.43	7.42	283	189	Very turbid
SW-14	Stormwater Outfall 14	7/11/2023	12:00	NH	24.1	7.53	7.60	250	207	Sampled at spot on upstream side of drainage pipe
TG-1	Little River	7/11/2023	5:04	NH	*	*	8.15	72	861	Autosampler T3; peaked at stage 20.59 @ 4:00
WC-1	Woodcrest Creek	7/11/2023	3:54	NH	*	*	8.24	118	845	Autosampler triggered 3, but only one bottle collected; peaked at stage 17.73 @ 4:00

Table 5 Stormwater Field Data Form Where the Asterisk Denotes a Sample from an Autosampler

Monitoring Location ID	Monitoring Location Name	Nitrate and Nitrite (mg/L)	Kjeldahl Nitrogen (mg/L)	Phosphorus (mg/L)	Total Suspended Solids (mg/L)
SW-08	Stormwater Outfall 08	0.13	1.18	0.160	72.0
SW-09	Stormwater Outfall 09	0.07	1.29	0.376	12.0
SW-10	Stormwater Outfall 10	0.20	0.95	0.230	36.0
SW-11	Stormwater Outfall 11	0.22	1.01	0.228	34.0
SW-12	Stormwater Outfall 12	0.10	1.07	0.122	32.0
SW-13	Stormwater Outfall 13	0.17	0.98	0.167	96.0
SW-14	Stormwater Outfall 14	0.10	1.57	0.245	244
TG-1	Little River	0.33	1.89	0.733	970
WC-1	Woodcrest Creek	0.28	2.31	0.727	1430

Table 6 Stormwater 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

Table 7 Stormwater QA/QC Data

Monitoring Location ID	Monitoring Location Name	Discharge (cfs)	Stream Stage (ft)
TG-1	Little River	152.78	10.76
WC-1	Woodcrest Creek	32.31	8.82
UDB-1	Upper Dave Blue Creek	104.18	19.08
URC-2	Upper Rock Creek	110.83	14.54

Table 8 Stormwater Station Discharge Summary

Discharge Measurement Summary

Date Measured: 2023-07-11

Site Information				Measurement Information			
Site Name	TG			Operator	Ndh		
Station Number				Vessel	Steamboat Willie		
Location				Measurement Number			
Gauge Height	10.76						

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (ft)	0.15	Distance	ft
Instrument Sub-Type	RS5	Screening Distance (ft)	0	Velocity	ft/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	ft ²
	40008	Magnetic Declination (deg)	3.2	Discharge	ft ³ /s
Firmware Version	1.25			Temperature	°F

Discharge Calculation Settings				Discharge Results			
Track Reference	Bottom-Track	Left Method	Slope	Width (ft)	25.231		
Depth Reference	Vertical Beam	Right Method	Slope	Area (ft ²)	51.2787		
Coordinate System	ENU	Top Fit Type	Power Fit	Mean Speed (ft/s)	2.9906		
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Total Q (ft ³ /s)	152.7809		
				Max Depth (ft)	3.088		
				Max Speed (ft/s)	5.0955		

Measurement Results																	
Tr #		Start Time (UTC-5)	Duration	Track Distance (ft)	DMG (ft)	Width (ft)	Area (ft ²)	Boat Speed (ft/s)	Mean Speed (ft/s)	Left Q (ft ³ /s)	Right Q (ft ³ /s)	Top Q (ft ³ /s)	Bottom Q (ft ³ /s)	Middle Q (ft ³ /s)	Total Q (ft ³ /s)	Total Q Corrected (ft ³ /s)	% Measured
01	L	12:56:20	00:00:50	24.918	15.964	25.964	49.8399	0.4984	3.1968	13.0946	10.3962	20.7617	19.0354	96.0425	159.3305		60.28
03	L	12:58:42	00:00:49	24.224	14.313	24.313	48.4329	0.4944	3.2895	15.4401	10.9141	19.6548	17.4409	95.8687	159.3185		60.17
05	L	13:00:36	00:00:49	22.43	15.609	25.609	49.2312	0.4578	2.9544	17.429	10.6819	18.8106	15.7422	82.7839	145.4476		56.92
06	R	13:01:35	00:00:50	20.084	16.149	26.149	55.1605	0.4017	2.9236	15.3036	9.3037	21.1405	19.0357	96.4829	161.2663		59.83
07	L	13:02:35	00:00:38	18.448	13.331	23.331	46.8345	0.4855	2.9321	15.5231	10.1563	16.7394	14.7215	80.1811	137.3215		58.39
08	R	13:03:20	00:00:55	19.991	16.019	26.019	58.1732	0.3635	2.6473	14.8947	9.843	19.4427	16.5289	93.2917	154.0009		60.58
Mean				21.682	15.231	25.231	51.2787	0.4502	2.9906	15.2809	10.2158	19.425	17.0841	90.7751	152.7809	0	59.36
Std Dev				2.358	1.049	1.049	4.0148	0.0507	0.2077	1.2668	0.5341	1.436	1.6039	6.692	8.6785	0	1.3
COV				0.357	0.226	0.136	0.8428	0.3698	0.2279	2.9275	1.8465	2.6107	3.3154	2.6034	2.006	0	2.19

Figure 9 Discharge Measurement Summary TG-1 High Flow

Discharge Measurement Summary

Date Measured: 2023-07-11

Site Information				Measurement Information			
Site Name	UDB			Operator	ndh		
Station Number				Vessel	Streamboat Willie		
Location				Measurement Number			
Gauge Height							

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (ft)	0.15	Distance	ft
Instrument Sub-Type	RS5	Screening Distance (ft)	0	Velocity	ft/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	ft ²
	40008	Magnetic Declination (deg)	3.1	Discharge	ft ³ /s
Firmware Version	1.25			Temperature	°F

Discharge Calculation Settings				Discharge Results			
Track Reference	Bottom-Track	Left Method	Slope	Width (ft)	23.197		
Depth Reference	Vertical Beam	Right Method	Slope	Area (ft ²)	30.8633		
Coordinate System	ENU	Top Fit Type	Power Fit	Mean Speed (ft/s)	3.3775		
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Total Q (ft ³ /s)	104.180		
					5		
				Max Depth (ft)	2.33		
				Max Speed (ft/s)	6.4059		

Measurement Results																	
Tr #		Start Time (UTC-S)	Duration	Track Distance (ft)	DMG (ft)	Width (ft)	Area (ft ²)	Boat Speed (ft/s)	Mean Speed (ft/s)	Left Q (ft ³ /s)	Right Q (ft ³ /s)	Top Q (ft ³ /s)	Bottom Q (ft ³ /s)	Middle Q (ft ³ /s)	Total Q (ft ³ /s)	Total Q Corrected (ft ³ /s)	% Measured
01	L	15:54:04	00:01:07	30.023	12.729	18.729	28.4359	0.4481	3.6817	7.6421	0.7147	29.0819	20.8607	46.3937	104.6931		44.31
02	R	15:55:37	00:00:52	24.586	19.96	25.96	32.298	0.4728	3.3473	6.0543	1.5943	29.839	22.0955	48.5267	108.1098		44.89
03	L	15:56:49	00:01:01	23.305	14.976	21.976	30.6849	0.382	3.1443	5.578	6.0106	24.6948	17.7413	42.4574	96.4821		44.01
04	R	15:57:59	00:00:43	20.325	15.097	22.097	30.1951	0.4727	3.326	2.8713	5.9409	26.3539	19.6108	45.6525	100.4295		45.46
05	L	15:58:54	00:00:55	22.457	16.448	23.448	30.4707	0.4083	3.1898	2.1029	4.9756	25.3439	22.9663	41.8077	97.1964		43.01
06	R	16:00:02	00:00:55	22.158	16.852	23.852	33.1294	0.4029	3.4347	6.7579	5.6083	29.5136	20.7486	51.1621	113.7904		44.96
07	L	16:01:05	00:00:50	22.632	18.276	25.276	31.074	0.4526	3.5097	4.9332	3.6887	30.3309	27.8052	42.3038	109.0618		38.79
08	R	16:02:04	00:00:48	22.124	17.24	24.24	30.6184	0.4609	3.3862	6.5636	3.3506	27.1235	21.6306	45.0125	103.6808		43.41
Mean				23.451	16.447	23.197	30.8633	0.4375	3.3775	5.3129	3.9855	27.7852	21.6824	45.4145	104.1805	0	43.61
Std Dev				2.724	2.07	2.127	1.3145	0.0326	0.1607	1.8065	1.8857	2.0422	2.7541	3.0685	5.6374	0	1.97
COV				0.381	0.413	0.301	0.4584	0.2444	0.1561	12.0075	16.7086	2.5956	4.4857	2.3861	1.9109	0	4.53

Figure 10 Discharge Measurement Summary UDB-1 High Flow

Discharge Measurement Summary

Date Measured: 2023-07-11

Site Information		Measurement Information	
Site Name	URC	Operator	Ndh
Station Number		Vessel	Steamboat Willie
Location		Measurement Number	
Gauge Height			

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (ft)	0.15	Distance	ft
Instrument Sub-Type	RS5	Screening Distance (ft)	0	Velocity	ft/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	ft ²
	40008	Magnetic Declination (deg)	3.1	Discharge	ft ³ /s
Firmware Version	1.25			Temperature	°F

Discharge Calculation Settings				Discharge Results			
Track Reference	Bottom-Track	Left Method	Slope	Width (ft)	24.615		
Depth Reference	Vertical Beam	Right Method	Slope	Area (ft ²)	62.6288		
Coordinate System	ENU	Top Fit Type	Power Fit	Mean Speed (ft/s)	1.7823		
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Total Q (ft ³ /s)	110.831		
					5		
				Max Depth (ft)	4.949		
				Max Speed (ft/s)	4.9774		

Measurement Results																	
Tr #		Start Time (UTC-S)	Durati on	Track Dista nce (ft)	DMG (ft)	Width (ft)	Area (ft ²)	Boat Spee d (ft/ s)	Mean Spee d (ft/ s)	Left Q (ft ³ / s)	Right Q (ft ³ / s)	Top Q (ft ³ / s)	Botto m Q (ft ³ / s)	Middl e Q (ft ³ / s)	Total Q (ft ³ / s)	Total Q Corre cted (ft ³ / s)	% Mea sure d
01	L	14:52:13	00:01:06	28.707	26.446	31.446	81.4912	0.435	1.7084	1.5884	2.1739	19.3331	41.1715	74.9526	139.2194		53.84
02	R	14:53:36	00:00:49	19.698	17.071	23.071	58.0601	0.402	1.7526	5.5314	2.3279	10.6473	28.66	54.5917	101.7581		53.65
03	L	14:54:33	00:00:52	18.508	15.332	21.332	52.9074	0.3559	1.9123	0.5177	0.9053	11.1934	27.6636	60.8934	101.1734		60.19
04	R	14:55:41	00:00:49	23.841	20.826	25.826	67.5643	0.4865	1.8442	2.3442	0.3192	13.3404	35.6062	72.9936	124.6035		58.58
05	L	14:56:42	00:00:53	19.431	16.744	21.744	64.6102	0.3666	1.6002	2.537	1.536	11.2435	25.7185	62.356	103.391		60.31
06	R	14:57:49	00:00:46	17.946	15.381	20.381	59.5997	0.3901	1.9748	3.484	2.7234	13.1375	28.6951	69.6585	117.6985		59.18
07	L	14:58:45	00:01:02	28.916	25.965	30.965	73.0011	0.4664	1.5848	4.1174	0.1242	12.9503	29.6661	68.8312	115.6892		59.5
08	R	14:59:54	00:00:44	30.511	26.165	31.165	62.8082	0.6934	1.6617	1.8755	1.5639	11.7667	26.467	62.6947	104.3678		60.07
09	L	15:00:48	00:00:52	23.026	13.008	18.008	48.2399	0.4428	1.9523	1.0926	0.6989	8.969	27.3131	56.1053	94.179		59.57
10	R	15:01:58	00:00:46	19.418	17.218	22.218	58.0063	0.4221	1.8314	2.7793	1.3431	11.2748	27.3418	63.4963	106.2353		59.77
Mean				23	19.415	24.615	62.6288	0.4461	1.7823	2.5867	1.3716	12.3856	29.8303	64.6573	110.8315	0	58.47
Std Dev				4.548	4.81	4.691	9.1905	0.0914	0.135	1.4119	0.8236	2.6287	4.5838	6.4578	12.7964	0	2.41
COV				0.649	0.813	0.625	1.5796	0.6719	0.2485	19.2749	21.2069	7.4952	5.4265	3.5271	4.0774	0	4.12

Figure 11 Discharge Measurement Summary URC-2 High Flow

Discharge Measurement Summary

Date Measured: 2023-07-11

Site Information				Measurement Information			
Site Name	WC			Operator	ndh		
Station Number				Vessel	Streamboat Willie		
Location				Measurement Number			
Gauge Height							

System Information		System Setup		Units	
Instrument Type	RS2	Transducer Depth (ft)	0.15	Distance	ft
Instrument Sub-Type	RS5	Screening Distance (ft)	0	Velocity	ft/s
Serial Number	RS522	Salinity (PSS-78)	0	Area	ft ²
	40008	Magnetic Declination (deg)	3.1	Discharge	ft ³ /s
Firmware Version	1.25			Temperature	°F

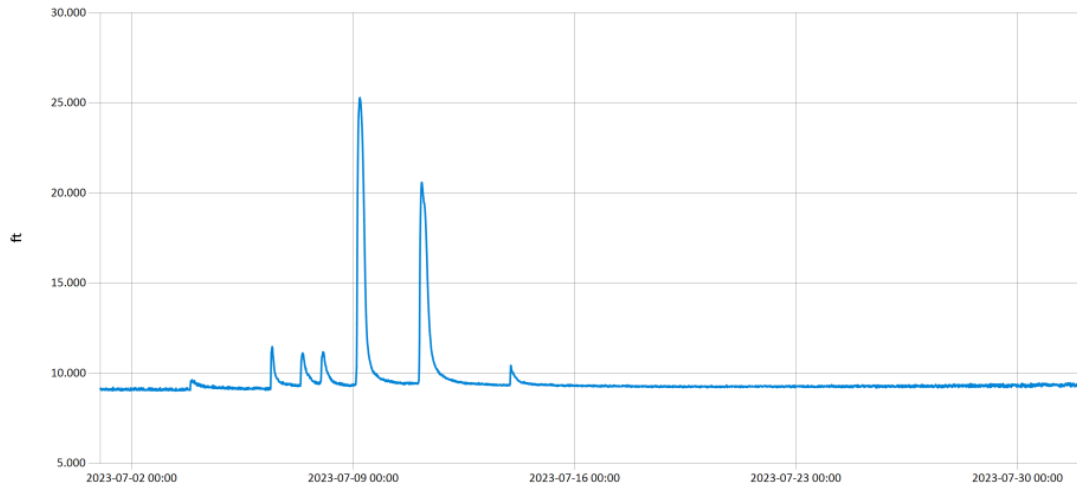
Discharge Calculation Settings				Discharge Results			
Track Reference	Bottom-Track	Left Method	Slope	Width (ft)	12.236		
Depth Reference	Vertical Beam	Right Method	Slope	Area (ft ²)	17.0777		
Coordinate System	ENU	Top Fit Type	Power Fit	Mean Speed (ft/s)	1.8953		
Moving Bed Correction	None	Bottom Fit Type	Power Fit	Total Q (ft ³ /s)	32.3066		
				Max Depth (ft)	2.185		
				Max Speed (ft/s)	6.5657		

Measurement Results																	
Tr #		Start Time (UTC-5)	Duration	Track Distance (ft)	DMG (ft)	Width (ft)	Area (ft ²)	Boat Speed (ft/s)	Mean Speed (ft/s)	Left Q (ft ³ /s)	Right Q (ft ³ /s)	Top Q (ft ³ /s)	Bottom Q (ft ³ /s)	Middle Q (ft ³ /s)	Total Q (ft ³ /s)	Total Q Corrected (ft ³ /s)	% Measured
01	R	13:56:14	00:01:08	24.235	7.923	11.923	16.3587	0.3564	2.0704	0.4873	-0.3427	9.857	8.5569	15.3112	33.8697		45.21
02	L	13:57:37	00:00:41	16.431	8.057	12.057	17.4158	0.4008	1.7227	0.509	0.6034	8.1118	6.6543	14.1229	30.0014		47.07
03	R	13:58:38	00:00:58	23.81	8.558	12.558	18.3357	0.4105	1.8327	0.3994	0.6354	9.9818	7.5842	15.0032	33.6041		44.65
05	R	14:00:55	00:00:44	17.594	8.02	12.02	16.2013	0.3999	1.8395	0.3668	-0.1113	8.5225	7.0595	13.9643	29.8018		46.86
06	L	14:01:48	00:00:45	16.031	7.649	11.649	15.8327	0.3562	2.0128	0.3077	-0.2595	9.1795	5.6507	16.9894	31.8679		53.31
08	L	14:03:37	00:00:44	19.516	9.213	13.213	18.3223	0.4435	1.8936	0.4823	-0.3693	10.0647	7.1677	17.3495	34.6949		50.01
Mean				19.603	8.236	12.236	17.0777	0.3946	1.8953	0.4254	0.026	9.2862	7.1122	15.4568	32.3066	0	47.85
Std Dev				3.317	0.513	0.513	1.0067	0.0307	0.1164	0.073	0.4276	0.7516	0.8814	1.3016	1.8978	0	2.98
COV				0.555	0.204	0.138	0.6345	0.2551	0.2015	6.0634	581.1892	2.8583	4.3766	2.9738	2.0746	0	6.23

Figure 12 Discharge Measurement Summary WC-1 High Flow

Period Selected: 2023-07-01 00:00 - 2023-07-31 23:59

UTC Offset: -06:00

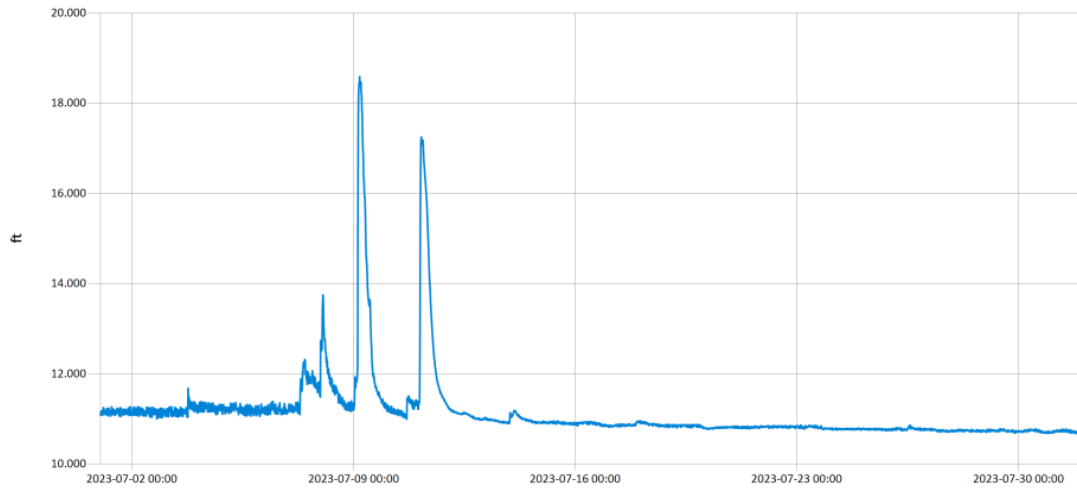


— Stage@TG

Figure 13 Monthly Hydrograph TG-1

Period Selected: 2023-07-01 00:00 - 2023-07-31 23:59

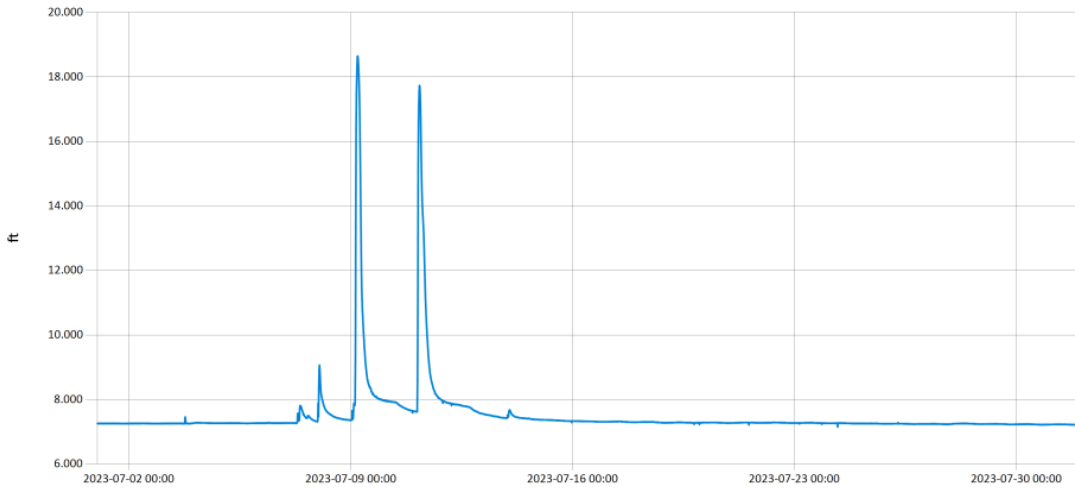
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— Stage@TE

Figure 14 Monthly Hydrograph TE-1

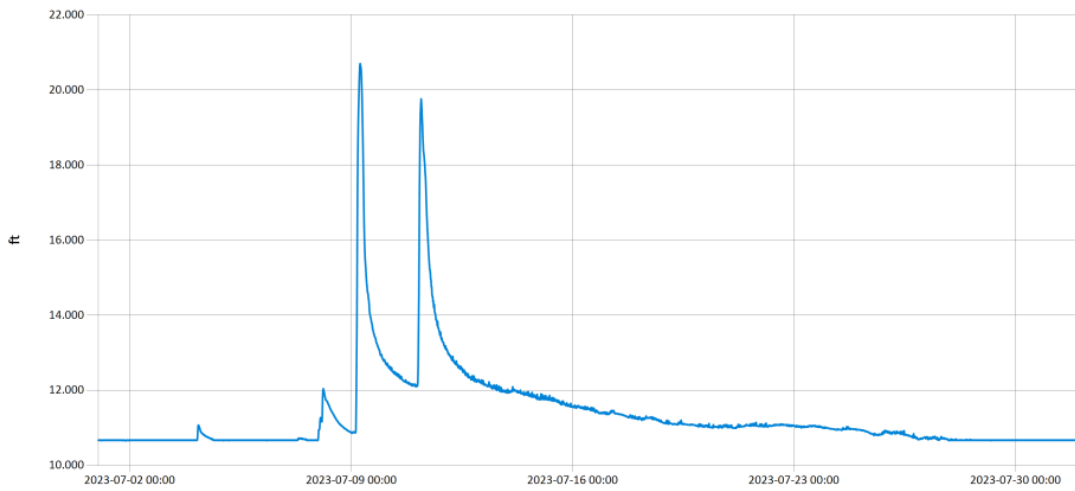
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— Stage@WC

Figure 15 Monthly Hydrograph WC-1

Period Selected: 2023-07-01 00:00 - 2023-07-31 23:59 UTC Offset: -06:00

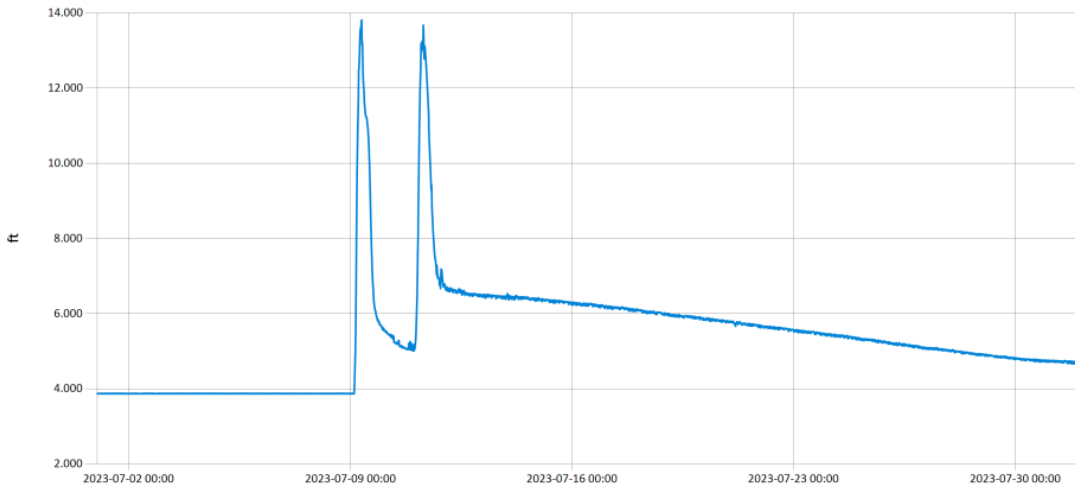


— Stage@URC

Figure 16 Monthly Hydrograph URC-2

Period Selected: 2023-07-01 00:00 - 2023-07-31 23:59

UTC Offset: -06:00

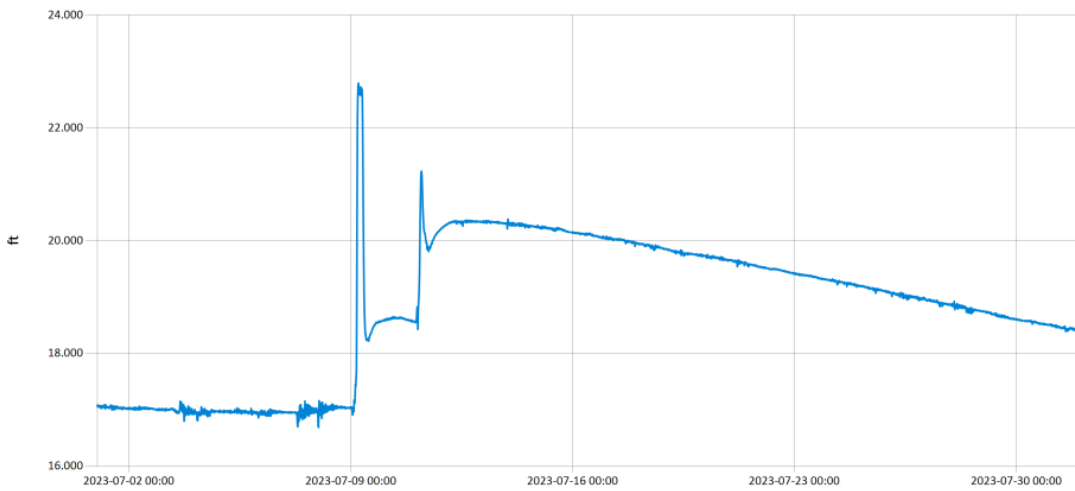


— Stage@LRC

Figure 17 Monthly Hydrograph LRC-1

Period Selected: 2023-07-01 00:00 - 2023-07-31 23:59

UTC Offset: -06:00

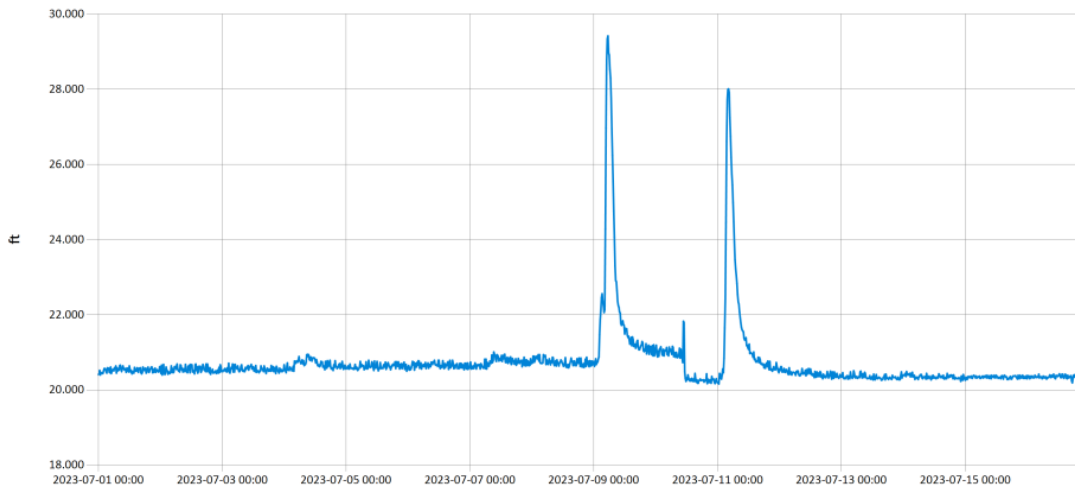


— Stage@LDB

Figure 18 Monthly Hydrograph LDB-1

Period Selected: 2023-07-01 00:00 - 2023-07-31 23:59

UTC Offset: -06:00

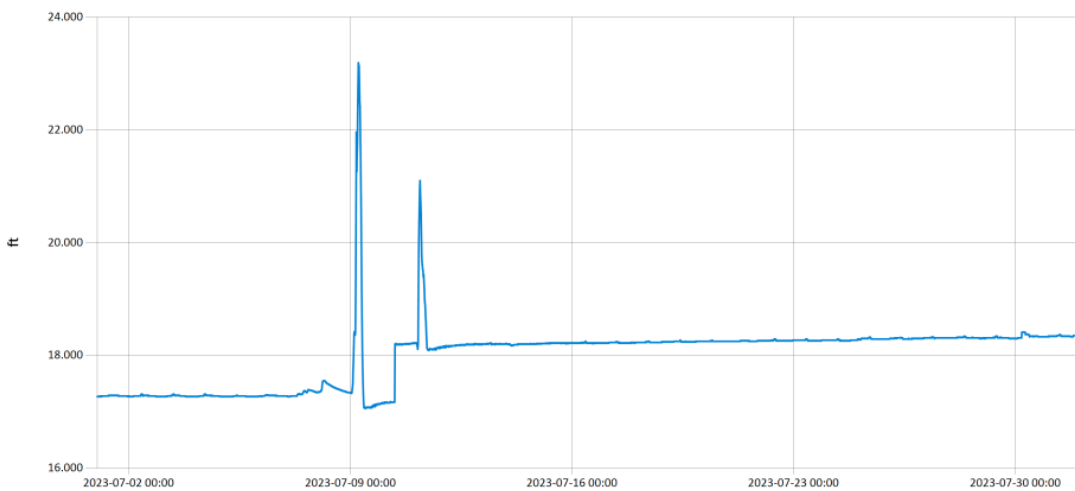


— Stage@CC

Figure 19 Monthly Hydrograph CC-1

Period Selected: 2023-07-01 00:00 - 2023-07-31 23:59

UTC Offset: -06:00



— Stage@UDB

Figure 20 Monthly Hydrograph UDB-1

MESONET CLIMATOLOGICAL DATA SUMMARY				July 2023				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	(in)	STN	MSL	DIR	AVG	MAX		SOD	BARE	MAX	MIN			
1	91	72	81.0	66.9	0	17	86	37	64	0.00	28.70	29.94	SW	8.6	21.6	21.84	78.9	86.4	92	82			
2	92	69	80.9	64.5	0	16	91	31	60	0.00	28.69	29.94	ESE	4.5	11.8	28.61	79.0	87.6	96	80			
3	95	72	80.1	66.4	0	19	84	37	64	0.00	28.69	29.94	SE	8.9	33.8	25.09	79.1	87.8	95	82			
4	94	72	82.6	70.3	0	18	85	49	67	0.00	28.71	29.96	SSE	8.2	20.4	26.54	78.9	87.5	95	81			
5	89	72	80.1	68.5	0	15	88	49	69	0.00	28.78	30.03	ENE	8.7	33.6	23.74	79.8	87.8	93	83			
6	85	70	76.1	68.5	0	13	95	56	79	0.05	28.78	30.03	ENE	8.1	23.2	19.78	79.1	84.6	90	80			
7	82	67	73.5	68.6	0	9	97	67	85	1.09	28.70	29.94	ESE	8.7	43.9	11.09	77.4	79.7	84	77			
8	88	68	77.9	68.5	0	13	96	51	75	0.04	28.67	29.92	E	4.7	13.7	23.44	77.6	79.3	86	74			
9	82	66	73.7	66.8	0	9	98	61	80	3.56	28.70	29.95	ENE	8.1	49.0	20.89	76.8	79.1	85	75			
10	88	65	78.0	69.0	0	12	98	57	76	0.00	28.72	29.97	SE	4.8	20.1	26.56	77.2	80.7	88	74			
11	90	69	79.0	72.3	0	14	98	58	81	2.83	28.68	29.92	SE	8.0	59.8	23.52	78.1	81.8	88	76			
12	95	75	84.9	75.7	0	20	95	58	75	0.00	28.58	29.83	SE	9.0	20.0	21.95	79.4	83.4	88	78			
13	97	79	86.9	76.3	0	23	92	51	72	0.05	28.57	29.81	S	8.3	22.7	23.30	80.5	83.9	89	79			
14	92	77	83.9	75.4	0	20	91	52	77	0.00	28.61	29.86	S	8.1	22.7	18.89	81.5	82.9	86	80			
15	88	71	78.2	70.6	0	15	93	50	79	0.00	28.75	30.00	NNE	7.5	25.1	17.92	80.9	80.3	84	78			
16	92	69	79.9	71.0	0	15	98	47	76	0.00	28.77	30.02	SSE	4.8	18.8	24.71	80.0	80.2	87	75			
17	94	72	83.5	74.1	0	18	92	57	75	0.00	28.72	29.97	S	7.2	20.3	26.62	80.9	83.3	91	76			
18	100	78	88.6	67.3	0	24	79	32	51	0.00	28.65	29.89	SSW	10.2	27.0	27.66	80.9	86.3	93	79			
19	97	79	87.1	68.3	0	23	71	42	54	0.00	28.71	29.95	SSW	10.8	28.0	23.17	80.4	87.0	93	81			
20	94	74	84.9	70.2	0	19	82	42	63	0.00	28.76	30.01	ENE	6.2	16.5	21.31	81.0	88.1	94	82			
21	85	71	77.8	68.4	0	13	89	59	73	0.00	28.79	30.04	NNE	7.7	31.6	17.21	80.6	86.0	90	83			
22	87	65	76.5	63.2	0	11	92	44	66	0.00	28.81	30.06	NE	3.8	16.2	26.13	79.2	85.7	93	79			
23	92	67	80.2	65.0	0	14	87	40	62	0.00	28.80	30.05	SSE	5.9	16.6	27.16	78.7	86.6	94	80			
24	96	70	83.6	67.5	0	18	85	41	60	0.00	28.81	30.06	S	8.8	21.8	26.40	79.6	87.5	94	81			
25	102	74	87.4	65.2	0	23	71	24	50	0.00	28.78	30.02	S	9.7	25.7	26.22	80.0	88.4	95	82			
26	101	76	87.5	64.4	0	24	62	30	48	0.00	28.75	30.00	S	9.9	25.6	25.78	80.2	88.8	95	83			
27	99	75	87.0	65.2	0	22	71	32	50	0.00	28.76	30.00	S	9.4	24.9	25.68	80.6	89.1	95	83			
28	99*	79*	88.4*	64.6*	0*	24*	60*	31*	46*	0.00*	28.78*	30.03*	S	9.3*	24.4*	NA	81.3*	90.1*	96*	85*			
29	99	76	87.5	65.4	0	22	74	29	50	0.00	28.83	30.08	S	6.9	17.8	26.11	81.6	90.5	97	85			
30	99	74	87.7	65.5	0	22	78	29	51	0.00	28.82	30.07	S	5.6	16.2	26.53	82.0	91.2	98	85			
31	100	73	87.4	68.2	0	22	79	31	55	0.00	28.79	30.04	SE	8.1	19.1	24.82	82.4	91.0	97	85			
93* 72* 82.3* 68.4*				<- Monthly Averages ->				28.73*		29.98*		S *		7.7* 59.8*		23.62*		79.8*		85.6*		92* 80*	
Temperature - Highest: 102*							Degree Days - Total HDD: 0*					Number of Days With:											
Lowest: 65*							Total CDD: 546*					Tmax ≥ 90: 22*		Rainfall ≥ 0.01 inch: 6*									
Rainfall: Monthly Total: 7.62* in.							Humidity - Highest: 98*					Tmax ≤ 32: 0*		Rainfall ≥ 0.10 inch: 3*									
Greatest 24 Hr: 3.56* in.							Lowest: 24*					Tmin ≤ 32: 0*		Avg Wind Speed ≥ 10 mph: 2*									
												Tmin ≤ 0: 0*		Max Wind Speed ≥ 30 mph: 6*									

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* Denotes incomplete record

Figure 21 July Mesonet Data