KANSAS-OKLAHOMA ARKANSAS RIVER COMPACT COMMISSION
ENGINEERING COMMITTEE REPORT
July 28, 2021
Oklahoma Water Resources Board
Oklahoma City, OK

This report covers water year (WY) 2020: October 1, 2019 through September 30, 2020. The report contains the standard updates to streamflow data, water quality data and reservoir conservation storage capacities constructed in the Compact area.

WY2020 mean flows at four of the five Oklahoma gaging stations were lower than WY2019 mean flows. At the Cimarron River gage near Waynoka, OK, the WY2020 mean flow was 115 cfs, an 81% decrease from the WY2019 mean flow of 607 cfs. Three of the other Oklahoma gaging stations reported decreases in mean flow ranging from 42% to 70% between WY2019 and WY2020. Due to a bridge reconstruction project, the fifth Oklahoma gaging station – the Chikaskia River gage near Blackwell, OK – was not in operation from April 2, 2020 through the end of the water year.

The Verdigris River gage at Independence, KS reported a 51% decrease in mean flow, from 6,302 cfs in WY2019 to 3,080 cfs in WY2020. The Arkansas River gage at Arkansas City, KS reported a 76% decrease in mean flow, from 6,962 cfs in WY2019 to 1,655 cfs in WY2020.

WY2020 mean flows at the gaging stations in Kansas and Oklahoma varied in relation to the historical mean flows at those gaging stations, ranging from a 57% decrease at the Cimarron River gage near Waynoka, OK to a 36% increase at the Verdigris River gage near Independence, KS.

The Engineering Committee reports that there were no new water storage structures completed in the Kansas or Oklahoma Compact areas between October 1, 2019 and September 30, 2020 that exceeded the 100-acre-foot conservation storage minimum requirement as set forth in the Compact.

Respectfully submitted by the Engineering Committee:

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Elizabeth Hickman, Member

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Yohanes Sugeng, Member

Water Flow Data

Water Year 2020
Oklahoma and Kansas

Station	Description	Years of Record	Mean Flow, Period of Record (cfs)	Mean Flow, WY2019 (cfs)	Mean Flow, WY2020 (cfs)
07175500	Caney River near Ramona, OK	37	1578	3289	1894
07152000	Chikaskia River near Blackwell, OK	83	622	2076	----
07158000	Cimarron River near Waynoka, OK	83	266	607	115
07185000	Neosho River near Commerce, OK	81	3887	11070	4533
07151000	Salt Fork Arkansas River at Tonkawa, OK	79	929	3138	947
07170500	Verdigris River at Independence, KS	53	2267	6302	3080
07146500	Arkansas River at Arkansas City, KS	101	1989	6962	1655

Source: United States Geological Survey, National Water Information System – waterdata.usgs.gov.

Water Quality Data

Fall 2019 through Fall 2020
Stations in Kansas

Station Number	Station Description	Total Dissolved Solids (mg/L)		Hardness (mg/L)		Specific Conductance (µOhms/cm)		Water Temperature (°C)	
		Min	Max	Min	Max	Min	Max	Min	Max
000215	Verdigris River near Coffeyville	170	300	140	250	300	540	6	31
000218	Arkansas River near Arkansas City	460	1020	160	350	770	1700	4	32
000529	Chikaskia River near Corbin	640	400	230	280	610	670	4	29
000566	Neosho River near Oswego	140	320	97	260	240	570	6	30
000214	Neosho River near Chetopa	140	330	95	270	230	570	6	28

Source: Kansas Department of Health and Environment, Stream Chemistry Monitoring Program, July 21, 2021.