River Watch Items for the February 2023 UWP Board Meeting

- River Watch items of interest:
  - Samples from our six main River Watch sites were collected between the 3rd and 7th of February 2023.
  - My report that summarizes River Watch sampling and data collected by UWP volunteers from May 2019 through December 2021 should be completed this month.
- Precipitation, streamflow and reservoir storage:
  - Snowpacks in Colorado continued to increase through January. On February 4th the Gunnison Basin had 144% of its median Snow Water Equivalent (SWE), an increase from 138% on December 4th. SWE at the Idarado SNOTEL site dipped slightly from 121% of its median to 113% over the same period. Figure 1 shows current and historic SWE curves for the Idarado SNOTEL. The current data indicates SWE only increased slightly after about 19 January.

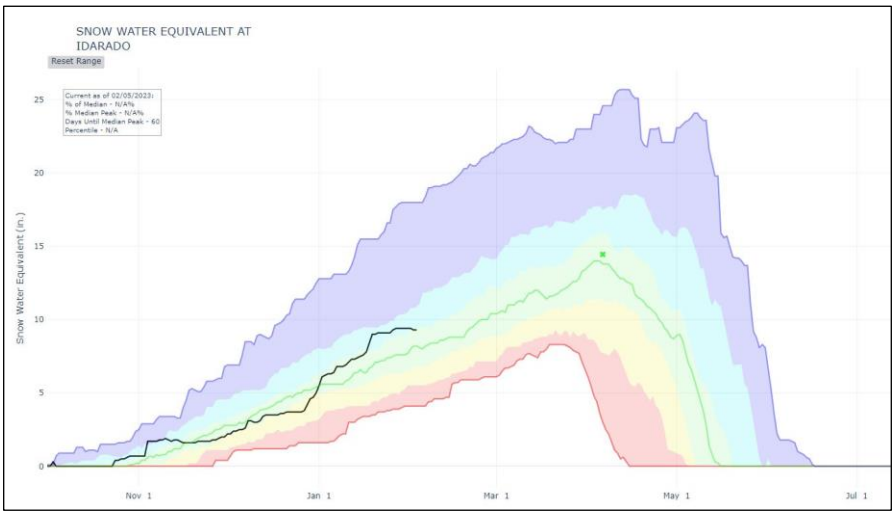

Figure 1. Graph of current and historic SWE curves for the Idarado SNOTEL. Black line shows the curve for the current 2023 Water Year through February 4th. Green line is the median curve using data from 2001-2020.

  - Streamflow measurements at the USGS gauges near Ouray and Ridgway indicated flows on the Uncompahgre during January tracked with closely with long-term median flows. The Ridgway gauge recorded ~40 cfs on February 4th. The USGS gauge below Ridgway Reservoir indicated outflow from the reservoir was 39 cfs throughout January.
  - For the period 5 January through 5 February 2023, Ridgway Reservoir storage went from 68,030 acre-ft to 69,370 acre-ft (82.2% of capacity), with the median for the date being 64,400 acre-ft.

- Work on my River Watch report focused on a review of river segments in the 2022 303(d) list where River Watch data was the primary input to impairment assessment. Table 1 is an example showing the data used for evaluation of Uncompahgre segment COGUUN03c_A which is the mainstem of the Uncompahgre River from a point immediately above the confluence with Dexter Creek to a point immediately below the confluence with Dallas Creek. The 303(d) evaluation by WQCD included data from the period 1 January 2015 through 31 December 2019. Three River Watch sites (Potters Ranch, Ridgway Town, and CR24) contributed 49 median values of metals concentrations (95% of all data) to the 303(d) assessment. [Note that median values are used when samples from more than one site are collected on similar dates.]

The previous 303(d) list indicated this segment was impaired for exceeding the aquatic life standards for dissolved cadmium and copper, and total iron. It also showed impairment for exceeding the water supply standard for dissolved manganese. Table 1 shows these four metals attained their respective standards based on 2015-2019 data and were removed from the 2022 303(d) list. One sample had a total arsenic value that exceeded the water supply standard, but this was not sufficient to add it to the 303(d) list. Columns 7-9 indicate evaluations based on the more recent River Watch data are in agreement with the earlier assessment for all parameters except total arsenic where the 50th percentile concentration of 4.0 µg/liter was greater than the current water supply standard of 0.02 µg/liter.

Table 1. Data from the 2022 303(d) assessment for segment COGUUN03c_A. Columns 1-6 show the parameters evaluated, their chronic Table Value Standards (TVS), the values from the 2015-19 data, and their 303(d) listing. Columns 7-10 show similar evaluation data computed from more recent 2019-21 River Watch data. Column 10 indicates if the two evaluations agree. Red shading indicates non-agreement.

Uncompahgre River Basin Segment **COGUUN03c_A**: Uncompahgre R from point above conf with Dexter Cr to point below conf with Dallas Cr.					Uses: Aquatic Life, Water Supply, Recreation E, Agriculture				
2022 303(D) List and Assessment Data (2015-2019) WQCD Unc R Abv Cutler Cr (WQX-10608C), USGS (09146200), and RW Potters Ranch (392), Ridgway Town (402), CR24 (395)						2019-2021 RW Data: Potters Ranch (392), Ridgway Town (402), CR24 (395)			
Analyte	**Classification**	**Samples****	**Chronic TVS**	**85th %tile**	**303(D) List**	**Samples***	**Chronic TVS**	**85th %tile**	**303(D) Agreement**
Cadmium (D)	Aquatic Life	49	1.4	0.52	Delisted	87	1.51	0.53	Yes
Copper (D)	Aquatic Life	49	19.19	7.98	Delisted	87	20.67	6.58	Yes
Zinc (D)	Aquatic Life	49	272.68	46.38	No	87	295.12	67.02	Yes
			Std (1995-99)	74th %tile			Std (1995-99)	74th %tile	
Manganese (D)	Water Supply	49	180	159.53	Delisted	87	180	152.12	Yes
			WS standard	1 sample			WS standard	50th %tile	
Arsenic (T)	Water Supply	1	0.02	5.2	No*	87	0.02	4.00	No**
			min std	15th %tile			min std	15th %tile	
pH min	Aquatic Life	67	6.50	7.7	No	95	6.5	7.6	Yes
			Chronic Std	50th %tile			Chronic Std	50th %tile	
Iron (T)	Aquatic Life	49	1793	1176	Delisted	87	1793	1176	Yes
* 1 sample insufficent to change listing. **Medians used with same day multiple samples.						* All samples used rather than medians. **Samples analyzed if > MDL			