



Water Supply and Treatment

SOURCE WATER

MAY 2026 UPDATE



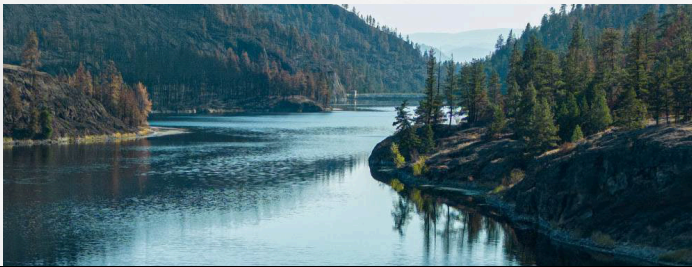
Photo: Rose Valley Reservoir

Overview

Source water monitoring and hydrology play a central role in understanding, protecting, and managing watersheds. Monitoring and hydrological analysis provide the data and insights needed to make informed decisions that sustain both ecosystems and human water needs. The following report outlines the changes in the last month of monitoring by the Watershed Operations Team.

Hydrology in the Watershed

Hydrology examines how water moves through the watershed—how it falls as precipitation, infiltrates soils, flows across land as runoff, and is stored in rivers, lakes, and aquifers. This understanding is essential because changes in one part of the system often ripple throughout the entire watershed.



Powers Creek update

- **The Nicola Creek Diversion (NCD)** is now spilling 2.5” over the sill.
- **Powers Creek Diversion (PCD)** is flowing with 3.75” down the creek into Lambly Lake.
- **Dobbin Lake** is now open to 5.45 MLD, feeding PCD.

Rose Valley update

- **Dunwaters Diversion** is fully open and actively conveying water to Bighorn Reservoir; flows are slowing down as snowmelt now is minimal.
- **Bear Creek Intake (BCI)** is currently spilling across all three tiers. This supports early storage recovery and will continue to support Rose Valley levels as long as practically possible. The Rotork valve currently remains open to 30%.

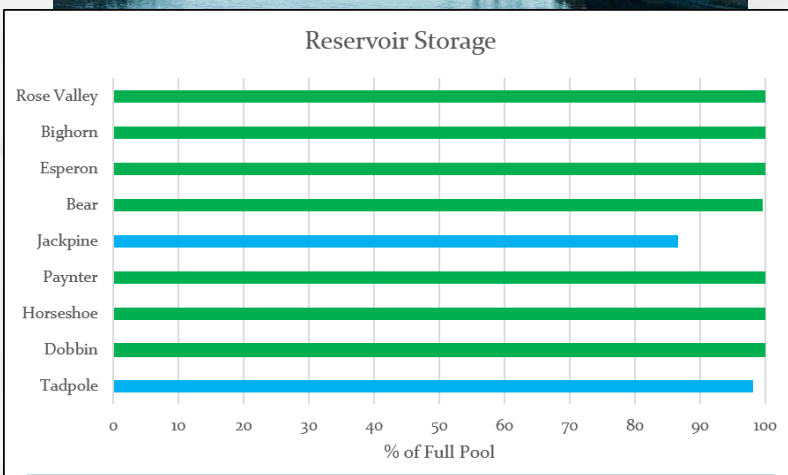


Figure 1: Visual representation of Raw Water Reservoir Storage

Snow Course Update

Snow course measurements are completed for 2026. A snow course located near Esperon Lake, previously maintained by the Ministry, is soon to be adopted and maintained by CWK, providing more relevant snow course measurements for the Rose Valley Watershed moving forward. Maintenance work for this snow course will be completed in 2026.

Water Quality

Source water monitoring focuses specifically on the quality and quantity of water at its origins—such as streams and lakes used for drinking water. By regularly measuring parameters like temperature, turbidity, nutrient levels, contaminants, and flow rates, monitoring programs can detect changes early. This early detection is critical for preventing pollution events, identifying emerging threats, and ensuring safe drinking water supplies.

Rose Valley Reservoir Algae Monitoring

Early May revealed the first algae bloom of the year (pictured). This algae bloom was abundant with *Anabena* sp. on the surface, a genus of cyanobacteria that is known for its nitrogen-fixing ability. Certain species of *Anabena* sp. can produce neurotoxins, which can be harmful to wildlife, livestock and humans. Low numbers of *Anabena* sp. were observed in the Rose Valley Reservoir tap samples, resulting in no concerns. Algae monitoring in Rose Valley Reservoir continued weekly throughout May. Cooler temperatures following the first week of May and the gentle mixing action provided by the aeration system at Rose Valley Dam significantly slowed the further growth of blue-green algae for the remainder of the month. Increasing numbers of diatoms and green algae were observed throughout the month. Warmer temperatures in June could bring about further algae blooms. See Appendix A for visual observations of algae in Rose Valley Reservoir.

Figure 2: General Speciation for May 2026

Sample Location	Comment
Surface Samples	High numbers of <i>Anabena</i> sp. were present in the first week of May, and an uptick of diatoms and green algae were also observed.
Plant Intake level (10m)	No cyanobacteria were observed in May. Low numbers of diatoms and green algae were present.
Raw Tap	Low numbers of cyanobacteria present until mid month, not a large concern at this time.
Tow samples	Typical Copepod and Rotifer species noted. <i>Anabena</i> sp. present in all tow samples in small numbers in May.



Anabena sp. viewed during the first algae bloom of the year.

50µm
40x

Figure 3: Values listed are cell count ranges for the month.

Algae Type	RV Raw Tap	Surface (0m)	RV - 10m
Total Cells	840 - 4600	180 - 10000	100 - 210
Diatoms	260 - 1720	0 - 320	10 - 20
Yellow. Brown	0 - 200	0	0
Green	570 - 1250	160 - 280	90 - 190
Cyanobacteria	0-1650	0-10000	0
Dinoflagellates	0	0	0

Nutrient loading, manganese, dissolved oxygen and temperature

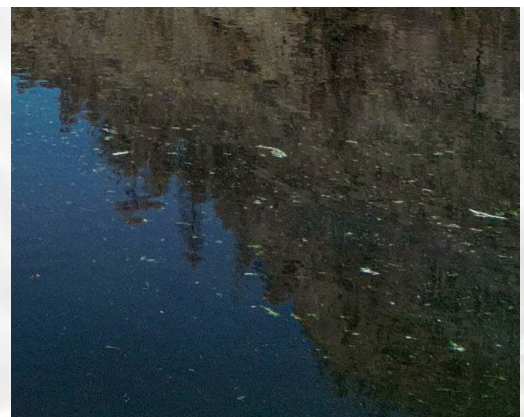
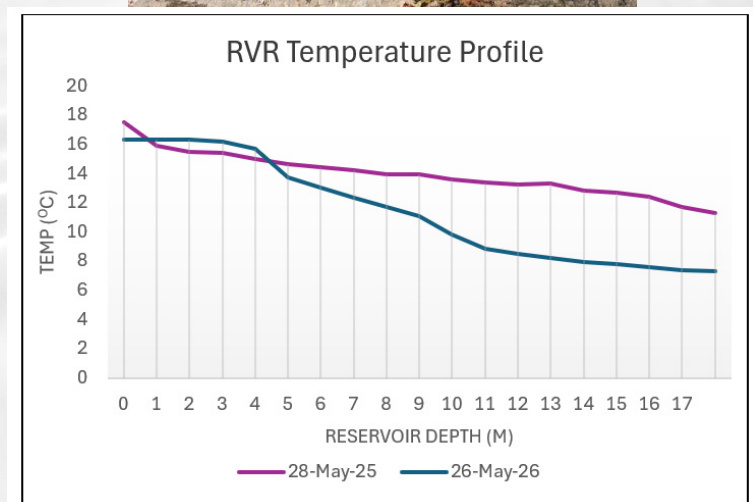
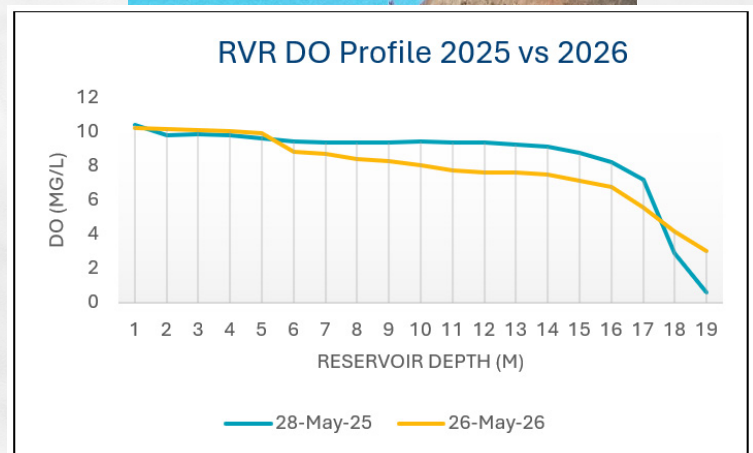
Nutrient loading continues to be monitored at different levels of Rose Valley Reservoir. Early May saw an increase in both total nitrogen and total phosphorus levels in the 17m samples, as well as a small increase in the raw tap samples. Monitoring continues throughout the summer season.

Dissolved manganese analyzers are in place at the intake at Rose Valley Dam as well as where raw water enters the treatment process. Both analyzers have read below detection levels throughout May. As dissolved oxygen in the reservoir drops, detection of manganese in the raw water will trigger the pretreatment with sodium permanganate. Third party samples continue to be sent out as confirmation of manganese levels in the reservoir.

A dissolved oxygen profile is measured on a weekly basis in Rose Valley Reservoir. Dissolved oxygen levels at the intake level (10m depth) remain above 7.7 mg/L. However, oxygen levels near the sediment-water interface (17m) continue to show signs of decline, and a distinct anoxic zone is forming (see Figure 4). It is expected dissolved oxygen levels will continue to decline at lower levels, despite the Rose Valley Reservoir aeration being operational.

May saw warmer temperatures than April, but the lack of intense sunshine hours meant the reservoir temperature remained cooler than the same month last year (see Figure 4). Bear Creek Intake remained open throughout May, supplying Rose Valley Reservoir with enough water to meet demand, keeping reservoir levels stable. As cooler water is brought in from Bear Creek, it aids in slowing the stratification of the reservoir. We have seen this in the profile data for the last two weeks, and it is comparable to that of last year. See Figure 4.

Figure 4: Rose Valley Reservoir dissolved oxygen (DO) and temperature profiles comparing the same weeks in 2025 to 2026.



Provincial Drought Rating and Water Restrictions

According to British Columbia's Drought Information Portal, the Okanagan is experiencing significant drought conditions driven by several years of below-average precipitation, reduced snowpack, and earlier-than-normal snowmelt. Provincial drought monitoring indicates that the region entered the 2026 drought season at Drought Level 5, the highest drought classification, reflecting exceptionally dry conditions and an elevated risk of impacts to water supplies, aquatic ecosystems, agriculture, and communities. Low stream flows, depleted groundwater reserves, and reduced runoff from mountain snowpack have increased concerns about water availability throughout the summer, prompting water conservation measures and calls for residents and businesses to reduce water use wherever possible.

Key risks, considerations and recommendations

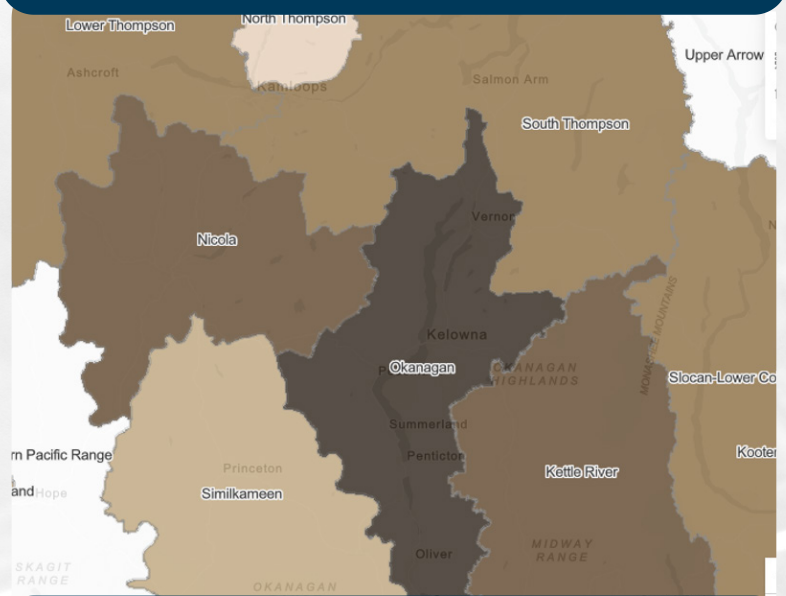
While many reservoirs are at or near full capacity and spilling, the lack of spring precipitation remains a major concern as we head into Summer. The Watershed Operations Team is already seeing firsthand spring freshet conditions slow down at higher elevations, increasing the potential for water reserves to be required earlier in the season than normal.

Operationally, the focus remains on:

- Maintaining infrastructure readiness
- Preparing for drought conditions and supply constraints
- Continuation of watershed water quality monitoring to ensure healthy water supply
- Keeping the flow of information consistent to provide community resilience.

The month of June is forecasted to bring warmer weather with low amounts of precipitation across the region. **Current conditions continue to indicate drought risk and water scarcity conditions. It is suggested that Stage 3 Water Restrictions be considered and possibly implemented if these conditions persist.** This forecast supports proactive demand management to preserve available resources and to avoid more severe restrictions later in the season. This recommendation coincides with recommendations from the province in the latest Water Scarcity Bulletin.

Source: BC Drought Information Portal, 2026



The dark brown colour indicates Drought Level 5, the most severe level indicated by the Province.

Regards,
Water Supply and Treatment Team



Report by the City of West Kelowna Water Supply & Treatment team.