

ELECTRONIC SENSOR CALIBRATION

February 14, 2024 Gauge Readings and Comparisons at the Dam and Narrows

By John Popa, Duane Flaska, and Richard Thompson

Dam Location at 11:38 a.m.

Staff Gauge 588.08'
Water Tube 588.12' Delta 0.04' (0.5")
Note: Staff Gauge was difficult to read

Experiment:

11:38 a.m. Raised Dam Gate for zero flow
12:08 p.m. Water Tube 588.40'
12:20 p.m. Water Tube 588.30' (Level was stable)

Observations:

By 12:20 p.m., 40 minutes after gate closure, the surge wave ended.

The water tube in the control room read 588.30'.

The electronic sensor read 588.30'.

At 12:20 p.m. the staff gauge at the narrows read 588.30'.

The electronic sensor at the narrows read 588.30'.

Conclusions:

With zero flow at the dam, the electronic sensor readings were accurate.

The electronic reading matched the staff gauge and the water tube.

The lake level at the dam and the narrows became level after 40 minutes of zero flow at the dam.

Historic Gauge Readings at the Dam: The Electronic Sensor read higher than the staff gauge with water flowing over the dam.

Date	Reading Difference
11-02-23	+ 0.04'
11-22-23	+ 0.03'
12-01-23	+ 0.04'
02-14-24	<u>+ 0.06'</u>
	$0.17' / 4 = 0.0425' = 0.51''$

The staff gauge is closer to the dam than the electronic sensor which may explain the half inch difference. The staff gauge may be influenced by the curl of the water flowing over the dam.

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HISTORIC ELECTRONIC SENSOR READINGS

ONE MONTH STARTING JANUARY 24, 2024

- 1) The narrows readings continue to correlate with its respective staff gauge.
- 2) The south lake readings continue to correlate with its respective staff gauge.
- 3) The electronic sensor at the dam started to behave erratically starting February 6th through the 8th and again later in the month.
- 4) The chart below shows the readings.
- 5) John Popa to describe the investigation
- 6) Suggested action to repair the dam sensor — — — Purchase a new sensor and install as soon as it's available.

Graph: 3 Sensor 1 Month

