

Memorandum

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**To:** Joe Trueblood, Superintendent

**From:** Bill Swearingen, Operations Supervisor

**Date:** June 11, 2025

**Subject:** Filter Performance and Capacity Update

Head Loss and Pressure Observations

The attached chart represents recent pressure monitoring data and confirms the following performance observations:

- Filters 7, 8, and 9 continue to exhibit stable pressure profiles with no signs of increasing pressure. While the differential pressure remains elevated—approximately– 6 to 7 psi, this level is consistent with long-term historical data and does not suggest any immediate danger in underdrain performance.
- Filters 1 through 6, which underwent IMS cap replacements between 2022 and 2025, thus demonstrating a measurable decrease in head loss. This trend aligns with performance expectations and validates the success of the recapping initiative in enhancing filter efficiency and sustaining underdrain integrity.

Overview of Filter Operational Capacity

The capacities defined by Leopold provide strong assurance for operating Filters 1–6 with a safeguarded flow of 3 MGD each, totaling 18 MGD. Furthermore, Filter 10, which was replaced in 2018, can reliably operate at 4.0 MGD. This brings the total system capacity to 22 MGD, comfortably within the credited overload limits defined for the system.

Filter Capacities

Filter Group	Normal Rate	Possible Overload	Credited Overload
Filters 1–9	≤ 2 MGD	4.0 MGD	36 MGD
Filters 10–11	≤ 3 MGD	4.5 MGD	9 MGD

Operational Scenario

Filters in Use	Operating Rate per Filter	Total Flow
Filters 1–6	3 MGD	18 MGD
Filter 10	4.0 MGD	4.0 MGD
Total		22 MGD

## Conclusion

The filtration system remains stable and fully compliant, with significant performance gains resulting from the recent IMS cap upgrades. Enhancements to Filters 1 through 6 have notably strengthened the system's resilience, providing sustained reliability and long-term stability to underdrain performance during high operational demands.

In the event of an unforeseen failure of Filters 7, 8, 9, and 11—especially during peak summer loading—the system remains well-prepared at 22 MGD. The robust condition of Filters 1–6 ensures we have sufficient capacity and operational flexibility to meet demand without compromising system integrity or compliance.

## Filter Pressure Monitoring

