Tab 1

Metropolitan Water District of Salt Lake & Sandy
Board Meeting Information
Last Update: October 9, 2023

Agenda Item: District response to R. Warther

Background: Mr. Robert Warther attended the September 18, 2023 Board Meeting and presented a letter to the trustees. He requested an update on the Managed Aquifer Recharge Project. Mr. Warther's property borders the Little Cottonwood Treatment Plant on the north side. He has concerns about future performance of the surface infiltration basins (SIB) and communications to date on the project.

Staff prepared a response to his letter. The District's response is included in the board packet.

Committee Activity: None.

Recommendation: Reporting item.

Metropolitan Water District of Salt Lake & Sandy
3430 East Danish Road, Cottonwood Heights, UT 84093
Phone: 801-942-1391 Fax: 801-942-3674
www.mwdsls.org

October 9, 2023

Robert F. Warther
3182 E. Alta Hills Dr.
Cottonwood Heights, UT 84093

Dear Mr. Warther:

As you are aware, the Metropolitan Water District of Salt Lake & Sandy (District) is engaged in the Managed Aquifer Recharge Pilot Study and Phase 1 Project. This project includes the construction of five monitoring wells, an aquifer storage and recovery (ASR) well, and two large surface infiltration basins (SIBs), all situated at the Little Cottonwood Water Treatment Plant (LCWTP) site. These facilities join 11 monitoring wells and a vadose well drilled in 2006 with a previous water bank pilot project.

You provided a letter and public comment to the District's Board of Trustees on September 18, 2023. In your communications, you requested information on performance risks of the Managed Aquifer Recharge project and provided feedback on project communications.

Performance Risks
The facilities currently being constructed represent Phase 1 of a larger managed aquifer recharge project. Before obtaining final permits for Phase 1, the District will work through a pilot period with the new infrastructure. During the pilot phase, the SIBs and ASR well will be operated separately and in tandem in a variety of closely-monitored scenarios to better understand how the ground formation and aquifer will respond.

The initial portion of the pilot study is anticipated to occur in 2024. During this process, controls will be exercised and additional data will be collected to determine conservative operational parameters. It is anticipated the pilot study will continue for an additional four or more years to fully understand the long-term impacts to the aquifer.

Your letter shares two performance concerns with the SIBs – (1) surface water flow and (2) water flow in the unsaturated zone. As these concerns are discussed below, please be aware some limits will be determined during the initial portion of the pilot study.

Surface water flow. The project includes two SIBs, each fed from a 16-inch pipe that receives untreated water from the LCWTP. The south basin is 2.50 acres and includes five 48-inch diameter, approximately 70-feet deep drain holes. The north basin is 1.85 acres and includes four drain holes. Two-foot high overflow weirs will be placed around each drain hole. Both basins are engineered to operate at two feet of water, such that the settled water cascades into the drain holes.

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The lowest perimeter elevation of the south basin is 4960 feet, compared to an operating water surface elevation of 4955 feet. The south basin includes three 16-inch diameter overflow pipes at elevation 4955.5 that overflow water to the north basin. The lowest perimeter elevation of the north basin is 4955 feet, compared to an operating water surface elevation of 4948.5 feet.

Each basin will be equipped with redundant level sensors. The level sensors will feed into a SCADA system to automatically modulate inflow valves and ensure the basins do not exceed two feet of water. In the event both sensors fail, an alarm will provide notice to an on-site operator that is at the plant 24/7/365. The more-than-three-times storage volume compared to the operating water surface elevation will provide staff time to manually shut the inflow valves without concern of overflow.

Groundwater flow. Initial studies from 2006 on the project site indicate a general lack of perched or confining layers from land surface to the water table, indicating that water recharged from the SIBs will move freely into the aquifer. The aquifer moves generally from the east to the northwest, with water leaving the LCWTP predominantly to the southwest. Topographic maps extending one mile beyond the LCWTP property boundary were consulted. We followed a conservative approach to modeling in designing the SIBs.

Data from the SIBs, ASR well, and monitoring wells will be automatically collected regularly and managed in a SCADA system. Controls will be set to manage groundwater similar to those that will be set to govern overflow. In particular, if the new monitoring wells report a water level in excess of a to-be-determined level, the inflow valves will automatically be closed and the on-site operator notified. The surrounding site slopes will also be monitored regularly for signs of seepage.

Piloting will begin with the south SIB. The north SIB will follow after appropriate limits are determined. The pilot phase and initial operation of the SIBs will provide additional data to better refine the potential impact area through use of industry-standard groundwater modeling methods and site-specific data.

We look forward to the data this pilot project will provide, particularly as it relates to the health of the local aquifer, drought tolerance, and the Great Salt Lake. In preparing for this project, the District and its consultant considered results from prior studies, existing wells, and other sources. The well and basins were carefully sized and placed with the help of piezometric maps and state and local requirements.

As with all groundwater projects, there is a risk the project will not function as intended or designed. This highlights the importance of a pilot study. The upcoming pilot study will provide the District data to more effectively understand the hydrogeological performance of the ASR well and SIBs. This understanding will be incorporated into an operation plan that expands on

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checks and balances to manage the risk of overflowing and groundwater flooding to nearby properties.

We also note the District carries a liability policy. In the event a claim arises as a result of the project, the claim can be submitted to the insurance carrier and will be processed at that time.

Project Communications
Thank you for your comments regarding the project website, www.mwdsls.gov/aquifer.html. We have since changed the website's emphasis to the ongoing SIB work. A project schedule has been added. We also appreciate the reminder that using project nomenclature may be at odds with how certain words and phrases may be perceived by those outside the project. We will endeavor to use more general language in future project updates.

You requested a specific completion date. Construction of the ASR well is complete, and development is anticipated over the next three months. Construction on the SIBs is ongoing, with an anticipated February 12, 2024 substantial completion date. Mass excavation for the basins concluded on October 2, 2023. The basins will now be shaped and drain holes drilled in November 2023. Site infrastructure (e.g., piping, conduits, electrical) will follow. The ASR well pump has a lengthy delivery time that suggests the well will not be equipped until next spring. Any adjustments to the project schedule will be timely advertised on the project website.

Our staff is always willing to speak with those interested in the project. Please feel free to contact Ammon Allen at 801-942-9687 or allen@mwdsls.org for more specific project updates.

Again, we thank you for your comments and questions. We hope this response provides further insight into the project.

Sincerely,

Annalee Munsey
General Manager

cc: MWDSLS Board of Trustees