THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Board Report

Operations Groups

- **Operations Monthly Activity Report**

Summary

This monthly report for the Operations Groups provides a summary of activities for November 2024 in the following key areas:

- Enhance Workplace Safety
- Develop Workforce and Prepare Employees for New Opportunities
- Manage Business Operations, Budget, and Staffing
- Provide Reliable Water Deliveries and Manage Storage
- Develop New Supplies and Optimize System Flexibility
- Protect Source Waters and Ensure Water Quality Compliance
- Optimize Water Treatment and Distribution
- Protect Infrastructure and Optimize Maintenance
- Ensure Power and Environmental Regulatory Compliance
- Enhance Emergency Preparedness and Response
- Prepare for Future Legislation and Regulations
- Advance Education and Outreach Initiatives

Purpose

Informational by the Operations Groups on a summary of key activities for the month of November 2024.

Attachments

Attachment 1: Detailed Report—Operations Groups' Monthly Activities for November 2024

Date of Report: [December 10, 2024]

Operations

Operations Groups

Core Business Objectives

Enhance Workforce Safety

Staff rebuilt an eyewash-safety shower station at the Eagle Mountain pumping plant to ensure safe use and operation. Routine monthly inspections identified the eyewash-safety shower for refurbishment because of degradation that was exacerbated by the desert environment. In addition to maintaining eyewash-safety shower stations in good working order, staff flushes the eyewash before working in the area to ensure a fresh, cool supply of water should the safety shower or eyewash station be needed.

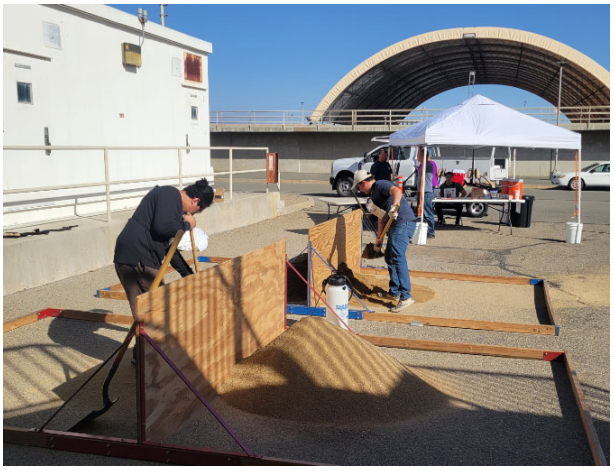
Rebuilt eyewash-safety shower station at Eagle Mountain

Pump Maintenance Team staff rebuilt an aerial work platform that was damaged. Repairs included replacing bent safety rails and applying a new coating. The platform will be inspected and certified before being placed back in operation. Staff uses the aerial work platform in combination with forklifts to safely complete work tasks at height.

Rebuilt forklift aerial work platform

Develop Workforce and Prepare Employees for New Opportunities

The Mills plant hosted the current Apprenticeship Recruitment Physical Ability Testing, a step in the apprentice recruitment process. Approximately 60 candidates worked through five different stations where they were tested on mechanical aptitude, physical strength and endurance, and color blindness. The apprenticeship class from this recruitment will be placed throughout the three operations groups for their hands-on learning.



Candidates performing 1/3 cubic yard sand removal over a 3-foot barrier (left) and candidate descending ladder from confined space testing (right)

Manage Business Operations, Budget, and Staffing

Business Management Team (BMT) welcomed its new Business Team Manager and Administrative Analyst in November. Orientation and training are well underway for both positions. The focus of November's monthly Accounts Payable Collaboration meeting among Accounts Payable, BMT, and Operations Groups Business Support Teams was policies and procedures relating to expense reports.

Provide Reliable Water Deliveries and Manage Storage

Metropolitan member agency water deliveries were 117,500 acre-feet (AF) for November with an average of 3,900 AF per day, which was about 300 AF per day lower than in October. Metropolitan continued delivering water to the Cyclic and Conjunctive Use Programs. Treated water deliveries were 4,300 AF lower than in October, for a total of 58,400 AF, or 50 percent of total deliveries for the month. The Colorado River Aqueduct (CRA) pumped a total of 97,000 AF in November. State Water Project (SWP) imports averaged 2,600 AF per day, totaling about 78,300 AF for the month. The target SWP blend is 25 percent for Skinner. The blends changed from 25 percent to 50 percent during the month at Weymouth and Diemer during Lake Mathews tower chlorination.

Metropolitan has sufficient SWP and Colorado River supplies to meet demands in 2024. Water continues to be managed according to Water Surplus and Drought Management (WSDM) principles and operational objectives with an emphasis on positioning SWP supplies to meet future demands in the SWP-dependent area. Metropolitan continued deliveries to Desert Water Agency and Coachella Valley Water District. Metropolitan is continuing to minimize the use of Table A supplies this year to improve SWP carryover for next year, targeting around 400,000 AF in carryover and a full Diamond Valley Lake at the end of the year.

Staff completed the installation of phase one of the Greg Avenue Pump Station check valve replacement project. The purpose of the upgrade is to enhance the system's ability to reduce the negative effects of backflow through the pumps after a power loss or pump trip event.

Staff hoisting check valve into place (left) and constructing new pipe support (right)

The Technical Control Team hosted a two-day Value Engineering Workshop on Bromate Control Upgrades at the Jensen plant on November 6–7. The workshop focused on relocating the Caustic tank farm to a new area adjacent to the Fluoride section of the plant. The workshop's primary goal is to evaluate the project's impact on plant operations, with particular attention to minimizing plant shutdowns by optimizing construction sequencing and phasing. Following the workshop sessions, participants took part in an in-depth walking tour of the current Caustic area, the Ozone facility, the plant influent, and the proposed location for the new caustic tank farm. Attendees included members of the Technical Control team, consultants, engineers, plant staff, and plant management.

Participants at Value Engineering Workshop on Bromate Control Upgrades (left) at Jensen plant and walking tour to proposed new tank farm location (right)

Develop New Supplies and Optimize System Flexibility

Operations continued at the Pure Water Southern California Napolitano Innovation Center demonstration plant with staff supporting Los Angeles County Sanitation Districts' (LACSD) resumption of reverse osmosis concentrate testing. This testing is evaluating anomalous toxicity tests from earlier in the year to ensure that a full-scale treatment plant would comply with LACSD's discharge permits and environmental standards. Metropolitan staff also supported additional emissions testing and installed four new Conex containers for onsite storage to support the demonstration plant's long-term maintenance needs.

Installation of a new chemical line for the carbon dosing system at the PWSC Napolitano Center

Protect Source Waters and Ensure Water Quality Compliance

Metropolitan complied with all water quality regulations and primary drinking water standards during October 2024.

Processes and procedures at the Water Quality Laboratory in La Verne and the five satellite laboratories at the water treatment plants were audited from October 28 through November 1 by a state-approved assessor under the requirements for biennial recertification of the laboratory's state accreditation. The audit report and any corresponding corrective actions will be included as part of Metropolitan's certification application to the state's Environmental Laboratory Accreditation Program in 2025. Certification is required for all laboratories that monitor and report results in compliance with drinking water regulations.

Laboratory assessor reviewing sample receiving procedures at the Water Quality Laboratory

Optimize Water Treatment and Distribution

The State Water Project (SWP) target blend entering the Weymouth and Diemer plants increased from 25 to 50 percent before decreasing to zero percent in November. The SWP blend entering Lake Skinner decreased from 25 percent to zero percent. Flow-weighted running annual averages for total dissolved solids from September 2023 through August 2024 for Metropolitan's treatment plants capable of receiving a blend of supplies from the SWP and the Colorado River Aqueduct were 497, 571, and 508 mg/L for the Weymouth, Diemer, and Skinner plants, respectively.

Operations (continued)

Staff at the Skinner plant refurbished their sample line chlorination trailer. Water quality samples are taken from sample taps at different points throughout the treatment process at every treatment plant. To keep the sample lines clean and representative of water quality in the process, the sample lines are cleaned and disinfected with a sodium hypochlorite solution as a regular preventative maintenance task. Staff refurbished the Skinner chlorination trailer to make it easier, faster, and safer to perform the sample line cleaning and disinfection.

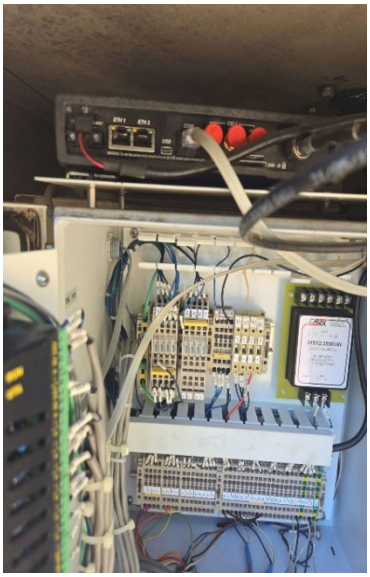
Sample line chlorination trailer refurbished at the Skinner plant

Weymouth Control Systems staff installed new Rosemount flowmeters at the polymer, sulfuric acid, and aluminum sulfate tank farms. These new flowmeters ensure accurate flow rates will be recorded and available to the plant operators via the SCADA system. This allows for improved monitoring and control of the chemicals. Having an accurate flow rate improves operational efficiency and helps staff better manage chemical inventory and usage.

Staff calibrating alum flow meter (left) and staff calibrating polymer flow meter (right)

Operations (continued)

Weymouth Control Systems staff upgraded various Service Connection AMR Radios. These are some of the first GE Orbit Radios to be deployed as part of a district-wide project to upgrade the AMR meters These new radios are designed to communicate longer distances with lower signal latency and lower signal loss. This will allow Operations Control Center staff to respond quickly to service connection flow changes and data corrections with real-time data.


Staff completing radio upgrade (left), installed AMR radio and SCADA Pak (middle), and remote AMR service connection (right)

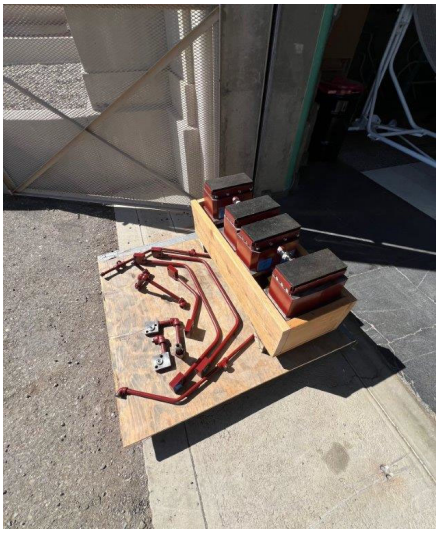
Staff installed two high-security meter cabinets on the Long Beach Lateral at service connection LA-16, which serves the Los Angeles Department of Water and Power in the City of Carson. These robustly designed cabinets will better protect metering and electrical equipment to prevent tampering.


Staff installing two high-security meter cabinets at service connection LA-16

Protect Infrastructure and Optimize Maintenance

Work continues with the Eagle plant unit 9 pump/motor repair. Contractor testing of the rotor and stator is in progress, Desert staff is ready to begin the process of cleaning the rotor and stator. Mechanical work includes ensuring bearing fit, rebuilding the hydraulic jacks, as well as cleaning and cataloging parts for reassembly. Staff is taking advantage of the pump outage to perform upgrades to ancillary components of the pump such as fabricating new oil sample taps and associated piping manifolds. These sample taps are used to collect oil samples for analysis to ensure that the oil is free of contaminants. This oil analysis is part of the condition-based maintenance program used to ensure that CRA motor and pump bearings operate without issue.

Lubrication oil sample tap bracket (left) and lubrication oil sample manifold (right)



Eagle plant unit 9 rotor and containment, ready for cleaning (left), staff scraping guide bearings, a laborious and technical process that ensures proper fit of the bearings (center) and rebuilt motor jacks, which allow for an oil wedge between bearing surfaces (right)

Operations (continued)

The Desert Control Systems Team is working in several underground solar vaults along the CRA to upgrade lead-acid batteries to lithium-polymer. The lithium-polymer batteries hold a longer charge and have a significantly longer lifespan, which will reduce the replacement frequency from 3 years to 9 years, reducing maintenance cost and waste generated. The new lithium-poymer batteries are also 50 percent lighter, making them easier and safer to handle.

Old lead acid battery (left) and a new lithium battery installed (right)

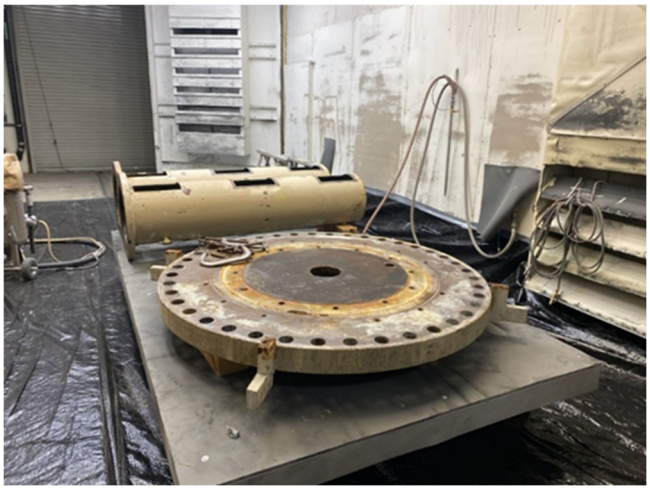
The Desert Line Crew has been installing equipment for the communications upgrades at several locations throughout the system.

Las Vegas Junction communication site

Operations (continued)

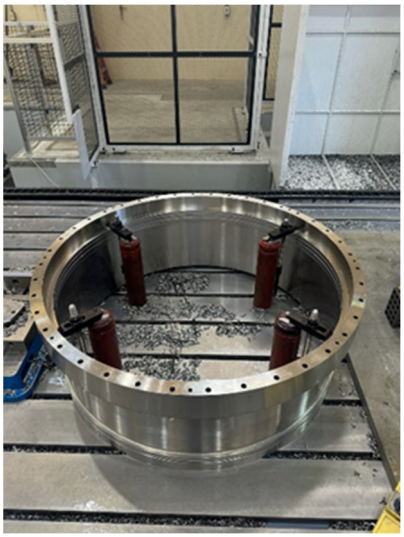
The La Verne shops completed refurbishment of a 42” sleeve valve for the Red Mountain Pressure Control Structure. The sleeve valve required weld repairs and machining of existing components, and manufacturing of new components to return the valve to an operable condition. The sleeve valve was reassembled and functionally tested and delivered to the site for installation. Staff installed the 42-inch sleeve valve to replace valve V-03 at the Red Mountain Pressure Control Structure during the San Diego Pipeline 5 shutdown. The previously installed bulkhead was removed during the shutdown and returned to La Verne for coating repairs.

As-found valve gate (left), welding repairs of valve gate (middle) and machining of inner valve body (right)



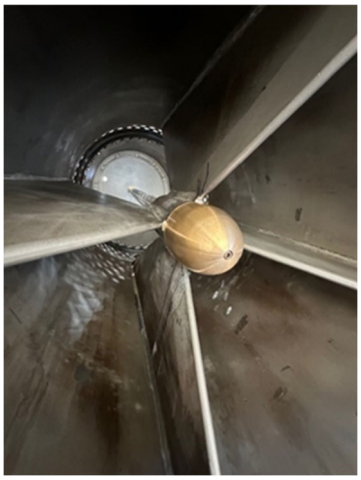
As-found sleeve valve cover (left) and completed valve cover (right)

Operations (continued)



Machining of new lower valve body (left) and assembly of sleeve valve components (middle and right)





Installation of valve shaft (left), installation of valve shaft nut (middle) and installed new stem nut cover (right)


Installation of actuator (left) and completed sleeve valve (right)

Staff installing a 42-in sleeve valve at the Red Mountain Pressure Control Structure

Staff provided top support at the Perris Bypass Pipeline shutdown to allow for inspection of the prestressed concrete cylinder pipeline.

Staff providing top support at the Perris Bypass Pipeline shutdown

Ensure Power and Environmental Regulatory Compliance

Diemer staff recently completed a project to upgrade the breaker panels around the plant for electrical resiliency and safety. Staff is double-checking that all the new labels and breaker schedules are correct and match the previous labeling, ensuring operational readiness and reliability.

Staff verifying labels on the electrical breaker panels

Weymouth Electrical Team reconfigured three 4,160-volt circuits that were damaged during the recent Asphalt Repaving Project at La Verne. Staff developed the concept for the repairs and met with Engineering to confirm that the plan would meet Metropolitan standards. This work required an electrical outage to the Water Quality Laboratory and the South Solar Power area. Staff performed high-voltage switching and obtained a clearance to work on the high-voltage equipment. Staff will install six new conductors and install them on a new 4,160-volt circuit breaker. The Hydroelectric Team and Power Support Unit provided support.

Electrician grounding conductors before work (left) and electricians preparing high voltage termination (right)

Enhance Emergency Preparedness and Response

Staff began site grading for the Diemer Helicopter Hydrant Facility. The helicopter hydrant consists of an open-top tank and supporting infrastructure, allowing helicopters to collect water to fight nearby fires quickly. Metropolitan collaborated with Yorba Linda Water District (YLWD) to develop a project that would benefit both agencies. YLWD will provide up to $500,000 in grant funding, technical support during design and construction, and coordination with the California Department of Forestry and Fire Protection and Orange County Fire Authority to ensure that both agencies' design and operational conditions are acceptable. Metropolitan will own and operate the facility after construction is completed.

Motor grader performing site grading for construction of Helicopter Hydrant Facility.

Prepare for Future Legislation and Regulations

On October 30, the Environmental Protection Agency published the final Lead and Copper Rule Improvements (LCRI). The LCRI builds on the 2021 Lead and Copper Rule Revisions (LCRR) and the original Lead and Copper Rule. The final LCRI mandates the replacement of all lead service lines within 10 years, lowering the lead action level from 15 to 10 parts per billion (ppb), removing the lead trigger level, improving tap sampling procedures, and improving public education and outreach materials to include renters and individuals with limited English proficiency. For Metropolitan, the LCRI will result in additional sampling at Metropolitan's desert housing but is not applicable to the main water treatment system. The final rule goes into effect on December 30. Staff is working on compliance procedures for the new LCRI.

On November 7, staff submitted comments on the California Air Resources Board's (CARB's) discussion draft on amendments to the Advanced Clean Fleets Regulation. The draft introduces a definition for "traditional utility-specialized vehicles" and alters exemption requirements, potentially allowing utilities to add internal combustion vehicles over 8,500 lbs. to their fleets when zero-emission trucks are not available in similar configurations or suitable for utility-specific operations. Staff recommended that CARB expand the definition of "traditional utility-specialized vehicle" to include vehicles with towing capacities exceeding 30,000 lbs., develop criteria for low-use vehicles, and refine the exemptions for both replacement and addition of new qualified internal-combustion engine-powered vehicles. Lastly, staff asked CARB to delay the compliance date for Class 8 ZEVs used to transport extremely hazardous materials such as chlorine until 2030 or exempt this application altogether. CARB expects to hold a board hearing in early 2025. Staff will continue to monitor and engage in future Advanced Clean Fleet amendments.

Advance Education and Outreach Initiatives

On November 1, staff provided a presentation on Metropolitan's approach to direct potable reuse (DPR) under the PWSC program to the Water Advisory Committee of Orange County. Topics included regulatory requirements, the benefits and challenges of different forms of DPR, and Metropolitan's research approach.

A tour of the Water Quality Laboratory was provided for Member Agency Legislative Coordinators on November 7, including summarizing the history of the Safe Drinking Water Act (passed in 1974) and contributions of the Water Quality Section to safeguarding Metropolitan's drinking water supplies.

Staff highlighted Metropolitan's reservoir management program with presentations at the International Symposium on Harmful Algal Blooms (October 27-November 1) and the North American Lake Management Society (NALMS) Annual Conference (November 5–8). These presentations covered the use of SCUBA diving and remotely operated vehicles to enhance reservoir monitoring (Metropolitan's Water Quality Division pioneered SCUBA as a water quality tool over 40 years ago), the dynamics of cyanotoxin-producing blooms, weather whiplash and the resulting turbidity in source water lakes, and sediment characterization to improve understanding of nutrient cycling in Metropolitan's lakes. Metropolitan was a sponsor of the NALMS conference and received recognition at the conference venue and in social media postings. The theme of the conference was "Managing Lakes Under Changing Climates."

Recognition of Metropolitan's sponsorship of the North American Lake Management Annual Symposium