

• Water System Operations August 2005 Activity Report

Summary

Following is a summary of Water System Operations Group activities for the period following the August 2005 Board Meeting

Detailed Report

Security Update

Security improvements are proceeding according to schedule and budget. Johnson Controls, Inc. (JCI) continued installation of conduits, cables, and hardware for the security network at Union Station and Diamond Valley Lake (DVL). Installation work at all other project sites has been completed. Metropolitan provided comments on the acceptance plan for Eagle Rock, Union Station, and DVL central station sites. The following sites completed their individual acceptance and 30-day operational testing in August: Ramona Pressure Control Structure (PCS), San Dimas Power Plant and PCS, Palos Verdes Reservoir, Palos Verdes Secondary Inlet, Coastal Junction PCS, Valley View PCS, Diemer Plant, Garvey Reservoir, Mills Plant, Sepulveda Canyon PCS, Red Mountain PCS, PC-1 PCS, and Chemical Unloading Facility. The following additional sites underwent commissioning and 30-day operational testing in August: Gene Pumping Plant, Copper Basin, Black Metal Communications Site, Intake Pumping Plant, Hinds Pumping Plant, Iron Mountain Pumping Plant, Eagle Mountain Pumping Plant, and Cactus City Communication Site. Eagle Rock, Union Station and DVL sites will undergo command center testing at the end of the project when all sites are connected and command center testing is feasible. Also, additional training sessions were provided for security staff at Eagle Rock and operations staff at DVL and Gene. We identified some technical anomalies with the programming of the video system servers and brought this to JCI's attention for priority resolution.

Water Quality and Treatment Update

Metropolitan has complied with all drinking water quality standards during this reporting period.

Disinfection By-Products and DBP Precursors

Trihalomethane (THM) samples were collected from the five treatment plants and in the distribution system on a weekly basis. The four-week THM levels (parts per billion - ppb) and State project water (SPW) blends for the most recent four-week period ending the week of August 29, 2005 were:

	<u>THM Levels</u>		
	4-week Average	4-week High	Percent SPW Blends
Mills	16 ppb	24 ppb	100%
Jensen	33 ppb	35 ppb	100%
Diemer	41 ppb	44 ppb	60%
Skinner	56 ppb	65 ppb	31%
Weymouth	40 ppb	45 ppb	65%

With the start-up of ozone facilities at the Jensen plant, there has been a significant improvement in THM levels in portions of the central pool area of Metropolitan's distribution system. THM levels were reduced by approximately 50 percent since the July 2005 online date for the Jensen ozone facilities.

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The total organic carbon (TOC) four-week average at the Mills influent has decreased to 3.3 parts per million (ppm) in August, down from 3.5 ppm reported in July. Jensen influent TOC four-week average has remained at 3.5 ppm in August.

Diemer and Weymouth plants remain on delayed chlorination. Distribution system THM levels in parts of Orange County and the central pool were as high as 49 ppb, and the 4-week average ranged from 34 to 47 ppb. On July 1, 2005, the Jensen plant started the use of ozone as the primary disinfectant. Similar to the Mills treatment plant, the Jensen plant will also use biofiltration to remove nutrients that could stimulate microbial growth in the distribution system. Due to operational constraints, it is anticipated that biofiltration will not be on-line until September 6, 2005. Therefore, the Jensen plant is still applying chlorine at the filter influent with THM levels ranging from 29 to 35 ppb. A further reduction in THMs is expected after September 6, when chlorine will be moved to the filter effluent. The Skinner distribution system sites have ranged from 51 to 61 ppb. The Skinner SPW blend was 36 percent, as of August 29, due to the draw down of Lake Perris. The SPW blend in Skinner is expected to continue to increase to approximately 50 percent. However, the increased coagulant dose has helped maintain reduced THM levels.

Desert Pumping Plant Domestic Water Systems Update

On Sunday evening, August 21, 2005, the Eagle Mountain chlorine pump failed. In addition, the alarm system also failed so the problem was not discovered until the following morning. The chlorine residual leaving the treated water storage tank dropped to 0.14 ppm. Chlorine levels below 0.2 ppm constitute a violation of the Surface Water Treatment Rule (SWTR). Bacteriological samples collected in the distribution were negative indicating that no microbial degradation occurred during this incident. Eagle Mountain desert residents were notified on Wednesday, September 21, in accordance with regulatory requirements. Weekly alarm and notification tests have been implemented at all desert facilities to prevent a recurrence of this incident. In addition, a backup chlorine analyzer and alarm will be installed at the storage tank effluent at all desert sites.

All five desert domestic water systems have been upgraded to include granular activated carbon (GAC) treatment. The new GAC treatment coupled with the existing Memcor microfiltration treatment will produce high quality water for the domestic water systems. The GAC treatment is necessary to meet new regulatory standards for disinfection by-products. The GAC units have substantially reduced the level of THMs in the domestic water systems, meeting Metropolitan's water quality objectives.

Perchlorate

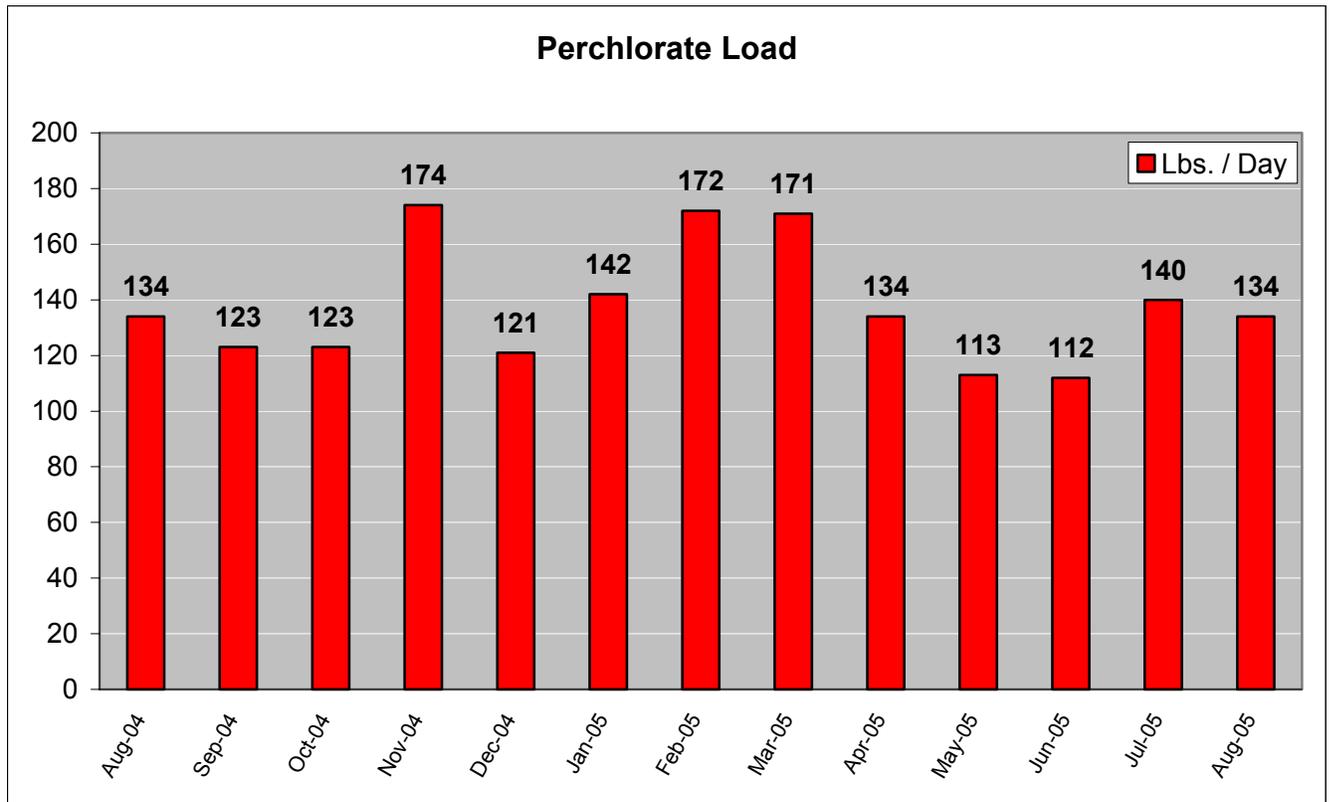
Since January 2005, perchlorate levels in the Colorado River source water locations (Lake Havasu at Intake, San Jacinto Tunnel West Portal, and Lake Mathews) have ranged from non-detect (<2 ppb) to 3.4 ppb. For the month of August, perchlorate was detected at 2.6 ppb at the Lake Havasu intake and the San Jacinto Tunnel West Portal. No other source waters, treatment plant effluents, or distribution system locations have perchlorate detections above the minimum reporting level (MRL) of 2 ppb.

Currently, there is no regulatory standard for perchlorate. California Department of Health Services (CDHS) plans to establish a maximum contaminant level (MCL) this year, based on the Office of Environmental Health Hazard Assessment (OEHHA) public health goal (PHG) of 6 ppb.

Perchlorate clean-up efforts in Henderson, Nevada continue. Based on our weekly monitoring data and the real-time flow data provided by the Nevada Department of Environmental Protection (NDEP), the average loading at North Shore Road for August 2005 was calculated to be 134 lbs/day.

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Perchlorate loads measured at North Shore Road are presented in the figure below:



Chromium 6

Metropolitan continues to participate in the Department of Toxic Substance Control's (DTSC) Consultative Workgroup in order to ensure that Metropolitan's interests are represented.

Chromium 6 concentrations in monitoring well MW 34-100 (located approximately 50 - 65 feet from the river) have ranged from 452 to 649 ppb from April 4 through August 31, 2005. As a result of these findings, the DTSC has directed Pacific Gas and Electric (PG&E) to install an additional extraction well [PE-1] that is located 150 - 165 feet from the river. This new extraction well was completed but is not yet operating, pending approval of permits by mid-to-late 2006. PG&E has commenced (as of July 31, 2005) the operation of an on-site treatment plant to treat water at a flow rate of 90 gallons per minute (gpm) from the existing extraction well [TW-2]. Following treatment, the water will be injected underground on-site. Monthly sampling of the Colorado River near the PG&E site continues. Chromium 6 was not detected (<0.03 ppb) in any of the samples collected in August.

Currently, there is no drinking water standard for chromium 6. The CDHS MCL for total chromium is set at 50 ppb. The OEHHA is working on a PHG that will be used by CDHS to set an MCL for chromium 6 in the upcoming year.

Moab Uranium Mill Tailings

In July 2005, the U.S. Department of Energy (DOE) issued a final Environmental Impact Statement (FEIS) for the remediation of the Moab uranium mill tailings. These tailings are the result of a uranium ore processing facility located 3 miles northwest of the city of Moab, Utah on the west bank of the Colorado

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River. The ore processing facility started operations in 1956 and closed in 1984. Approximately 11.9 million tons of contaminated waste materials were produced at the site, most of which were deposited in a 130 acre unlined pile. The top of the pile averages 94 feet above the Colorado River floodplain and is located approximately 750 feet from the Colorado River. The pile contains high levels of uranium and radium 226, ammonia, solvents and various trace metals and minerals.

The FEIS lists the preferred option for site and groundwater remediation. The preferred option for site remediation is to remove the pile and contaminated materials by rail to the proposed Crescent Valley location (30 miles northwest of Moab). Twelve federal, tribal, state, and local agencies participated with DOE in the development of the FEIS. On September 14, 2005, U.S. Secretary of Energy Samuel W. Bodman signed the Record of Decision (ROD) that clears the way for the removal of the 11.9 million tons of radioactive material.

Las Vegas Wastewater Discharge

Wastewater discharge into Lake Mead from the Las Vegas area is expected to increase from 170 million gallons per day (mgd) to approximately 400 mgd by 2050. Several agencies (City of Las Vegas, City of Henderson, and Clark County Sanitation District) have formed a collaborative partnership [Clean Water Coalition (CWC)] to evaluate alternatives for wastewater discharge into Lake Mead. Two principle discharge schemes have been proposed: i) the Las Vegas Bay Alternative, and ii) the Boulder Basin Alternative. The CWC currently favors the Boulder Basin Alternative. Both alternatives would increase loading of treated wastewater byproducts into Lake Mead that could adversely impact water quality for downstream users. Moreover, these alternatives do not include additional treatment of the wastewater. Metropolitan has participated as a stakeholder on the CWC and expressed concerns about water quality as a result of this increased discharge. A draft EIS is expected in September 2005. Metropolitan will continue to participate as a stakeholder on the CWC. Metropolitan staff and our consultant are currently reviewing both alternatives and the potential benefits of implementing additional treatment prior to discharge.

Taste-and-Odor (T&O)

Lake Skinner has been experiencing an unusual and severe algal event since early August. During August through mid-September, Lake Skinner has had four different species of methylisoborneol (MIB) and Geosmin producing blue-green algae. One of these species (Planktothrix Perornata) is new to our system and has proven to be resilient to treatment and has the ability to produce high amounts of MIB (>1,800 ng/L in the lake). Lake Skinner has received three copper sulfate treatments in August and September to contain the taste-and-odor events (August 9, September 9 and 17).

Several operational changes were made to the Skinner treatment plant and raw water pipelines as this event progressed. Unlike past algae bloom episodes, the increases in MIB occurred at a faster pace so levels leaving the treatment plant and raw water pipelines were higher than normal on a few occasions. The treatment plant and pipelines numbers 3 and 5 have been on 100 percent lake by-pass since Friday, September 9.

As the Skinner taste-and-odor episode evolved, Metropolitan's press office, in coordination with the public information officers at Eastern Municipal Water District, Western Municipal Water District and the San Diego County Water Authority, issued two press releases (September 1 and 9).

There is a low level of MIB production occurring in Lake Perris. Monitoring is being conducted to determine the source and need for treatment.

The East Branch of the California Aqueduct continues to have growth of blue-green algae that is producing both MIB and geosmin. Metropolitan is continuing to monitor.

There are no other taste-and-odor problems in any of our source waters or finished waters.

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Total Dissolved Solids (TDS) Levels

The September 2004 through August 2005 twelve-month flow-weighted average TDS levels for the Diemer, Skinner, and Weymouth plants were 461, 494, 447 ppm, respectively. These levels meet Metropolitan's water quality objectives for TDS.

Fluoridation

Final design for fluoridation is nearly complete for all five plants. Construction is to be completed at all five plants by December 2006. Water Quality staff is preparing informational material for member agencies and the public, required permit amendment application forms, and the Fluoridation Plan required by CDHS. Meetings with the Member Agency Fluoridation Policy Workgroup and the in-house Fluoride Task Force are ongoing. A meeting with CDHS was held on August 24, 2005, to discuss fluoridation design, permitting and timing requirements. The CDHS has approved the conceptual design and will confirm approval in writing. The permit amendment application form was submitted.

Conveyance & Distribution Update

At the OC-88 service connection, contractor work continues on installation and testing of control system components. This work is scheduled for completion in October. Preparations are underway for upcoming shutdowns, the first of which will occur on the West Valley Feeder No. 1 to replace the section of pipeline that leaked in August 2004, due to the movement of an adjacent man-made slope. This portion of the pipeline is used by the Los Angeles Department of Water and Power under a lease agreement and per the terms of the lease, they will share in the cost of this repair.

Water System Update

As of September 25, 2005, total State Water Project (SWP) in-basin deliveries for the calendar year (CY) were 1,052,000 acre-feet (AF). These deliveries include 931,700 AF on the East and West Branches and 120,300 AF through the San Bernardino Valley Municipal Water District/Inland Feeder Interconnection. All SWP deliveries to date are from CY 2004 carryover accounts, Article 21 and Table A.

Through September 25, 2005, CY Colorado River Aqueduct (CRA) deliveries were 618,000 AF, or 83 percent of the current approved diversion target of 743,000 AF.

Reservoir levels are indicators of water supply conditions of the SWP, CRA and Metropolitan's service area. The following storage levels for key reservoirs reflect monthly data as of September 25, 2005:

Metropolitan Reservoirs	Storage To-Date	Percent of Capacity
Diamond Valley Lake	774,900 AF	97%
Lake Mathews	138,000 AF	76%
Lake Skinner	41,700 AF	95%
State Water Project Reservoirs		
Lake Oroville	2.92 MAF	83%
San Luis Reservoir Total	1.30 MAF	64%
San Luis State Share	0.91 MAF	86%
Colorado River Reservoirs		
Lake Powell	11.9 MAF	49%
Lake Mead	15.3 MAF	56%
SDCWA Reservoirs		
24-Reservoir Total	378,800 AF	64%

As of September 25, 2005, the San Gabriel Valley Groundwater Basin key well elevation was 242 feet above sea level, which is eight feet below the level that imported water spreading is allowed.

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Sales and Deliveries

The official final water sales for August 2005 were 228 thousand acre-feet (TAF). This amount is 36 TAF, or 18 percent more than the budgeted amount of 192 TAF for the month of August 2005. The current sales projection for September 2005 is 218 TAF, which is 31 TAF more than the budgeted amount for September of this year.

Precipitation

For the current water year (October 1, 2004 through September 30, 2005) through September 25 2005, total precipitation for four southern California cities and the Eight Station Index (a measure of precipitation in the SWP's watershed) is:

<u>Weather Station</u>	<u>Precipitation</u>	<u>Percent of Normal</u>
Los Angeles Civic Center	37.54 inches	248%
Santa Ana (John Wayne Airport)	25.39 inches	199%
San Diego Airport	22.60 inches	210%
Riverside Airport	21.26 inches	208%
Eight Station Index	57.10 inches	114%

The 37.54 inches of rain for the Los Angeles Civic Center is the second highest water year on record, and only 0.64 inches lower than the highest annual water-year record of 38.18 inches that was set in 1883-84.

A La Niña event is currently present along the equator in the eastern Pacific Ocean. According to reports from the Jet Propulsion Laboratory, this event is expected to result in below-normal temperatures and precipitation in Southern California during the 2005-06 winter months.

The Colorado River system had five consecutive years of below-normal rainfall from 2000 through 2004, but received above normal rainfall in 2005. Consequently, drought conditions have eased and this year's storage is expected to recover to 2003 levels. As of September 25, 2005, precipitation was 102 percent of normal, and the projected unregulated inflow into Lake Powell is 106 percent of normal.

Power Update

During August, Metropolitan purchased about 12,000 Megawatt-hours (MWh) of firm energy from Southern California Edison (SCE) at an average rate of \$60.00 per MWh for a total purchase cost of about \$720,000. Metropolitan provided 6,930 MWh of exchange energy to DWR during on-peak hours and received 15,775 MWh of exchange energy from DWR during off-peak hours. This coordinated effort provided a more balanced energy profile and resulted in reduced pumping costs for DWR and Metropolitan. The DWR exchange energy account will be cleared by December 31, 2005. Metropolitan also received 15,720 MWh of exchange energy from SCE. The SCE exchange energy account will be cleared by September 30, 2005.

In August, Metropolitan generated 49,160 MWh at its small hydroelectric power plants for total revenue of about \$2.6 million. There was no generation from the DVL power plant in August.

In August, DWR was requested to reduce pumping by 200 MW on eight days for a total of 24 hours. On August 25, 2005, Metropolitan was asked to curtail the Gene and Intake pumps (7 pumps each for a total of 94 MW) for 4 hours by the Independent System Operator due to the loss of a major transmission line. These curtailments were managed without impacting water supply or deliveries.