• Water System Operations July 2005 Activity Report

Summary

Following is a summary of Water System Operations Group activities for the period following the July 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 equipment for the security network at Union Station and Diamond Valley Lake (DVL). Installation work at all other project sites has been completed. JCI resubmitted the acceptance plan applicable to Eagle Rock, Union Station, and DVL central station sites. The following sites completed their individual acceptance and 30-day operational testing in July: Eagle Rock, Weymouth Plant, Hollywood North Portal Pressure Control Structure (PCS), Carson and Alameda PCS, Deodora PCS, Temescal Power Plant, Venice PCS, Carbon Creek PCS, Irvine Regulating Structure, Coyote Creek PCS, West Portal San Jacinto Tunnel, Oak Street PCS, OC-88 Pump Station, Soto Street, and Greg Avenue PCS. The following additional sites underwent commissioning and 30-day operational testing in July: Ramona PCS, San Dimas PCS, Coastal Junction PCS, Valley View PCS, Diemer Plant, Garvey Reservoir, Mills Plant, Sepulveda Canyon PCS, Red Mountain PCS, PC-1 PCS, Chemical Unloading Facility, Skinner Plant, San Gabriel PCS, Rio Hondo PCS, and Lake Mathews. The Eagle Rock site will be tested as a command center at the end of the project when all sites are connected and command center testing is feasible. Also, multiple training sessions were provided to system operators and security operators at Eagle Rock, Jensen Plant, Weymouth Plant, Diemer Plant, Skinner Plant, and Mills Plant.

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 July 25, 2005 were:

	THM Levels		
	4-week Average	**4-week High**	**Percent SPW Blends**
Mills	13 ppb	17 ppb	100%
Jensen	34 ppb	41 ppb	100%
Diemer	38 ppb	41 ppb	50%
Skinner	54 ppb	58 ppb	30%
Weymouth	40 ppb	46 ppb	65%

The total organic carbon (TOC) four-week average at the Mills influent has decreased to 3.5 parts per million (ppm) in July, down from 4.0 ppm reported in June. Jensen influent TOC four-week average has decreased slightly to 3.5 ppm in July.

Diemer and Weymouth plants remain on delayed chlorination and THM levels have remained low. Distribution system THM levels in parts of Orange County and the central pool were as high as 64 ppb, and the 4-week average ranged from 39 to 52 ppb. On July 1, 2005, the Jensen plant started the use of ozone as

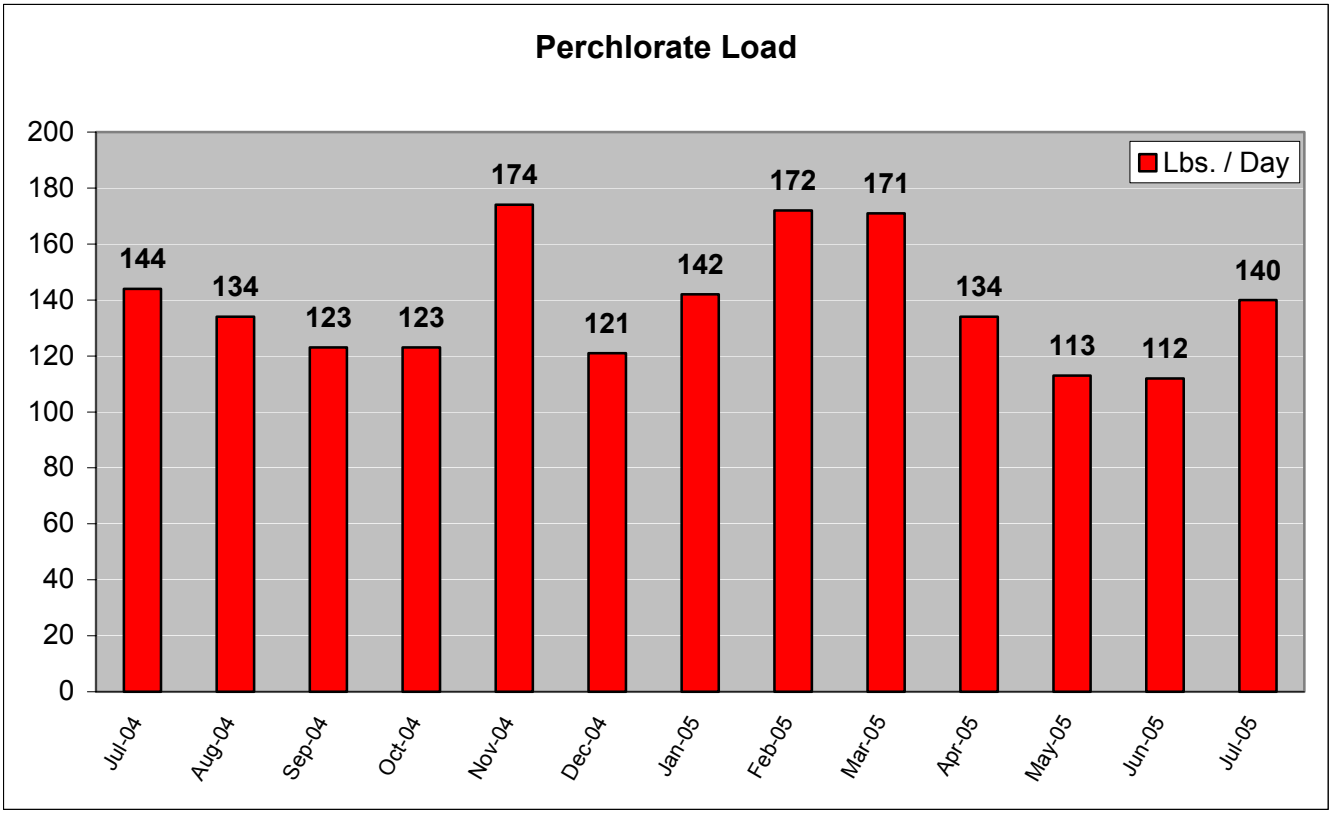
the primary disinfectant. Similar to the Mills treatment plan, the Jensen plant will also use biofiltration to remove nutrients that could stimulate microbial growth in the distribution system. Due to operational constraints, it is anticipated that biofiltration will not be on-line until September 6, 2005. Therefore, the Jensen plant is still applying chlorine at the filter influent with THM levels ranging from 29 to 41 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 50 to 61 ppb. The Skinner SPW blend is being held to 30 percent or less and the coagulant dose has been increased to help further reduce THM levels.

Colorado River Issues
Perchlorate
Perchlorate was not detected at or above the California Department of Health Services' (CDHS) detection limit for purposes of reporting (DLR) of 4 ppb at any of the monitoring locations in July 2005. Metropolitan is capable of measuring perchlorate at a minimum reporting level (MRL) of 2 ppb. 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 July, 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 MRL of 2 ppb.

Currently, there is no regulatory standard for perchlorate. 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 July 2005 was calculated to be 140 lbs/day.

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 extraction well MW 34-100 (located approximately 50 - 65 feet from the river) have ranged from 452 to 597 ppb from April 4 through July 17, 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. 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 July.

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 three miles northwest of the city of Moab, Utah on the west bank of the Colorado River. The ore processing facility started operations in 1956 and closed in 1984. Approximately 12 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 Crescent Valley, located approximately 30 northwest of Moab. Twelve federal, tribal, state, and local agencies participated with DOE in the development of the FEIS. Metropolitan submitted comments on the draft EIS on February 17, 2005, and recommended removing the pile and implementing groundwater remediation measures. Staff is currently reviewing the FEIS. DOE will issue its final decision on which alternatives to implement in a Record of Decision, to be issued no sooner than 30 days after the USEPA issues a Notice of Availability of the FEIS in the Federal Register.

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)
The East Branch of the California Aqueduct was treated four times during the last month to control methylisoborneol (MIB) and geosmin production by attached blue-green algae. The Department of Water Resources (DWR) has significantly modified the timing and amount of copper used for each treatment to reduce the risk of fish kills. DWR treated one side of the lower half of the East Branch on August 22, 2005, with 800 pounds of copper sulfate. A second treatment should follow on the opposite side within a week.

Lake Skinner was treated with five-tons of copper sulfate on August 9, 2005, to control two species of benthic blue-green algae; one producing geosmin and the other MIB. Partial bypass of the lake has been used to assure acceptable water to the Skinner plant. T&O within the lake is expected to improve as higher inflow rates dilute and wash out MIB and geosmin.

Total Dissolved Solids (TDS) Levels
The August 2004 through July 2005 twelve-month flow-weighted average TDS levels for the Diemer, Skinner, and Weymouth plants were 458, 489, 453 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, preparing required permit amendment application forms, and drafting 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 our conceptual design and will confirm approval in writing. The permit amendment application form was submitted.

Conveyance & Distribution Update
Final electrical installation of the last three pumps at the OC-88 service connection has been completed, and these units are available for manual operation. Some control system components remain to be installed and tested. Once this phase of the project is completed this fall, all pump units will be fully operational at this key facility.

To aid in the drafting of Perris Reservoir, staff assisted DWR with the installation of a temporary aeration system. The diffuser structure for this system is located near the outlet tower. This system will help improve the quality of the water leaving the lake. The system is now fully operational. DWR will be responsible for routine maintenance of the aeration system once all installation activities are completed.

Water System Update
As of August 28, 2005, total State Water Project (SWP) in-basin deliveries for the calendar year (CY) were 920,500 acre-feet (AF). These deliveries include 808,700 AF on the East and West Branches; 107,900 AF through the San Bernardino Valley Municipal Water District/Inland Feeder Interconnection and 3,900 AF from the San Gabriel Valley Municipal Water District. All SWP deliveries to date are from CY 2004 carryover accounts, Article 21 and Table A.

Through August 28, 2005, CY Colorado River Aqueduct (CRA) deliveries were 528,000 AF, or 71 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 August 28, 2005:

Metropolitan Reservoirs	**Storage To-Date**	**Percent of Capacity**
Diamond Valley Lake	781,600 AF	98%
Lake Mathews	133,700 AF	73%
Lake Skinner	37,500 AF	85%
State Water Project Reservoirs		
Lake Oroville	3.06 MAF	87%
San Luis Reservoir Total	1.20 MAF	59%
San Luis State Share	0.81 MAF	76%
Colorado River Reservoirs		
Lake Powell	12.1 MAF	50%
Lake Mead	15.3 MAF	56%
SDCWA Reservoirs		
24-Reservoir Total	396,500 AF	67%

As of August 28, 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.

Sales and Deliveries

The official final water sales for July 2005 were 226 thousand acre-feet (TAF). This amount is 36 TAF, or 19 percent more than the budgeted amount of 190 TAF for the month of July 2005. The current sales projection for August 2005 is 234 TAF, which is 42 TAF more than the budget amount for August of this year.

Precipitation

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 August 28, 2005, water year (October 1, 2004 through September 30, 2005) precipitation to date was 105 percent of normal, and the projected unregulated inflow into Lake Powell is 108 percent of normal.

For the current water year through August 28, 2005, total precipitation for four southern California cities and the Eight Station Index (a measure of precipitation in the SWP's watershed) is:

Weather Station	**Precipitation**	**Percent of Normal**
Los Angeles Civic Center	37.25 inches	255%
Santa Ana (John Wayne Airport)	25.18 inches	204%
San Diego Airport	22.50 inches	216%
Riverside Airport	21.20 inches	216%
Eight Station Index	57.10 inches	117%

As of August 28, 2005, the Los Angeles Civic Center has received 37.25 inches of rain, which is now the second highest water year on record, and only 0.93 inches lower than the highest annual water-year record of 38.18 inches that was set in 1883-84.

Power Update

During July, Metropolitan purchased 13,375 Megawatt-hours (MWh) of firm energy from energy traders and utilities throughout the western United States at an average rate of $37.19 per MWh for a total purchase cost of about $497,471. Metropolitan provided 6,780 MWh of exchange energy to DWR during on-peak hours and received 20,160 MWh of exchange energy from DWR during off-peak hours. This provided a more balanced energy profile for DWR resulting in reduced DWR pumping cost. DWR exchange energy account will be cleared by December 31, 2005. Metropolitan did not exchange energy with Southern California Edison (SCE) in July. SCE exchange energy account will be cleared by September 30, 2005.

In July, Metropolitan generated 49,329 MWh at its small hydroelectric power plants for total revenue of about $2.7 million. There was no generation from DVL power plant in July.

In the month of July, DWR was requested to reduce pumping by 200 MW on seven days for a total of 24 hours. On July 22, 2005, Metropolitan was asked to curtail the Gene and Intake pumps (7 pumps each) for 3 hours and 49 minutes due to an Independent System Operator Stage II electrical emergency. These curtailments were managed without impacting water supply or deliveries.