October 20, 2016

Dr. Robert Harrington, Director
Inyo County Water Department
P.O. Box 337
Independence, CA 93526-0337

Dear Dr. Harrington:

Subject: Los Angeles Department of Water and Power's (LADWP) Proposed 2016-17 Operations Plan for the Second Six Months - October 1, 2016, through March 31, 2017

Please see below LADWP's proposed operations plan for the second half of the 2016-17 runoff year for your review and providing us with any comments you may have. This operations plan is being provided to you as Inyo County's senior Technical Group member and in conformance with Section V.D of the *Agreement between the County of Inyo and the City of Los Angeles and its Department of Water and Power on a Long Term Groundwater Management Plan for Owens Valley and Inyo County.* The plan outlines LADWP proposed operations in the Owens Valley during the six month period from October 1, 2016, through March 31, 2017. Elements of the proposed operations plan include the 2016 Eastern Sierra Runoff Forecast, soil/vegetation water balance calculations for October 2016, Planned Owens Valley Groundwater Pumping for the Second Six Months of the 2016-17 Runoff Year (acre-feet), Historic (1981-82) and Projected (2016-17) Water Supplied by the City of Los Angeles within the Owens Valley, and Planned Los Angeles Aqueduct Operations for the 2016-17 Runoff Year. A summary of the enclosed plan is as follows:

Forecast Owens River Basin snowpack runoff during the 2016 runoff year is the same as the April 1, 2016, forecast at 293,800 acre-feet or about 71 percent of average runoff (Table 2.1).

The following wellfield monitoring sites are in "ON" status pursuant to Water Agreement Section V and Green Book Section I.B: L2, BP4, TA5, TS2, SS1, and BG2. Water balance calculations for the wellfield monitoring sites are summarized in Table 2.2. No vegetation monitoring site that was in "ON" status on April 1, 2016 has changed to

"OFF" status. No vegetation monitoring site that was in "OFF" status on April 1, 2016 has changed to "ON" status.

Total planned Owens Valley pumping between October 1, 2016 and March 31, 2017 is approximately 24,838 acre-feet. Planned groundwater production by wellfield for the second six months of the 2016-17 runoff year is included in Table 2.6. Additional pumping tests of wells subject to the Water Agreement is not included in this year's planned pumping total and if performed, it will be in addition to the planned pumping for 2016-17. The planned pumping may also increase to provide freeze protection for the Los Angeles Aqueduct (LAA).

Planned Owens Valley uses during the 2016 runoff year are expected to be 96,325 acre-feet. Owens Valley water uses include irrigation, stockwater, enhancement/mitigation project, the Lower Owens River Project, Recreation and Wildlife, and 1,600 acre foot projects. A summary of Owens Valley water uses is provided in Table 2.7.

Planned aqueduct delivery to Los Angeles during the 2016-17 runoff year is 113,850 acre-feet. The projected beginning-of-month reservoir storage amounts and monthly Los Angeles Aqueduct deliveries to Los Angeles are included in Table 2.9.

Sincerely,

James G. Yannotta
Manager of Aqueduct

ET:vrm
Enclosures
c: Mr. Eric Tillemans

Table 2.1 Owens Valley Runoff Forecast for 2016-17 Runoff Year

2016 EASTERN SIERRA RUNOFF FORECAST
April 1, 2016

APRIL THROUGH SEPTEMBER RUNOFF

	MOST PROBABLE VALUE (Acre-feet)	MOST PROBABLE VALUE (% of Avg.)	REASONABLE MAXIMUM (% of Avg.)	REASONABLE MINIMUM (% of Avg.)	LONG-TERM MEAN (1961 - 2010) (Acre-feet)
MONO BASIN:	**73,000**	**71%**	83%	58%	103,522
OWENS RIVER BASIN:	**203,100**	**67%**	80%	54%	303,903

APRIL THROUGH MARCH RUNOFF

	MOST PROBABLE VALUE (Acre-feet)	MOST PROBABLE VALUE (% of Avg.)	REASONABLE MAXIMUM (% of Avg.)	REASONABLE MINIMUM (% of Avg.)	LONG-TERM MEAN (1961 - 2010) (Acre-feet)
MONO BASIN:	**90,100**	**74%**	87%	60%	122,333
OWENS RIVER BASIN:	**293,800**	**71%**	84%	59%	412,284

NOTE - Owens River Basin includes Long, Round and Owens Valleys (not incl Laws Area)

MOST PROBABLE - That runoff which is expected if median precipitation occurs after the forecast date.

REASONABLE MAXIMUM - That runoff which is expected to occur if precipitation subsequent to the forecast is equal to the amount which is exceeded on the average once in 10 years.

REASONABLE MINIMUM - That runoff which is expected to occur if precipitation subsequent to the forecast is equal to the amount which is exceeded on the average 9 out of 10 years.

Table 2.2 Monitoring sites status and soil/vegetation water balance calculations for October 1, 2016 according to Green Book Section III

Site	July 1, 2015 Status	October, 2016 Veg. Water Req./Soil AWC for turn-on	October 2016 soil AWC	+30% annual ppt.	October 1, 2016 Status	Soil AWC req. for well turn-on
		(cm)	(cm)	(cm)		(cm)
L1	OFF	5.0/15.6	1.3	NA	OFF	15.6, OFF 7-10
L2	ON	3.3/NA	4.5	4.5 + 4.7 = 9.2	**ON**	NA
L3	OFF	5.5/25.2	7	NA	OFF	25.2, OFF 10-11
BP1	OFF	1.7/22.9	1	NA	OFF	22.9†, OFF 10-97
BP2	OFF	7.5/28.4	1.1	NA	OFF	28.4, OFF 7-98
BP3	OFF	7.0/10.6	2.7	NA	OFF	10.6. OFF 7-12
BP4	ON	5.4/NA	33.2	33.2 + 4.9 = 38.1	**ON**	NA
TA3	OFF	13.8/26.0	6.4	NA	OFF	26.0, OFF 10-11
TA4	OFF	7.7/23.3	12.1	NA	OFF	23.3, OFF 10-11
TA5	ON	2.1/NA	20.4	20.4 + 4.9 = 25.3	**ON**	NA
TA6	OFF	8.3/17.6	8.7	NA	OFF	17.6, OFF 10-11
TS1	OFF	9.4/20.4	1.5	NA	OFF	20.4†, OFF 10-96
TS2	ON	4.6/NA	6.2	6.2 + 4.4 = 10.6	**ON**	NA
TS3	OFF	8.0/32.9	15.5	NA	OFF	32.9, OFF 10-12
TS4	OFF	23.0/55.9	38.9	NA	OFF	55.9, OFF 10-11
IO1	OFF	26.1/42.2	9.2	NA	OFF	42.2, OFF 10-98
IO2	OFF	1.7/18.9	3.8	NA	OFF	18.9, OFF 7-11
SS1	ON	8.4/NA	8.9	8.9 + 3.9 = 12.8	**ON**	NA
SS2	OFF	1.3/25.6	3.3	NA	OFF	25.6, OFF 7-11
SS3	OFF	11.1/33.8	14.3	NA	OFF	33.8, OFF 10-11
SS4	OFF	6.3/15.9	3.4	NA	OFF	15.9, OFF 7-05
BG2	ON	5.1/NA	18.9	18.9 + 4.0 = 22.9	**ON**	NA

These values of soil water required for well turn-on were derived using calculations based on percent cover that were routinely performed in the past. The values have not been updated t conform with the Green Book equations in Section III.D.2, p. 57-59

Table 2.6 - Planned Owens Valley Pumping for the Second Six Months of 2016-17 Runoff Year (acre-feet)

Month	Laws	Bishop	Big Pine	Taboose-Aberdeen	Thibaut-Sawmill	Indep.-Oak	Symmes-Shepherd	Bairs-Georges	Lone Pine	TOTAL
October	40	350	1,965	1,050	700	500	600	60	25	5,290
November	20	300	1,700	1,250	667	300	0	60	25	4,322
December	20	300	1,700	1,250	667	300	0	60	25	4,322
January	20	300	1,700	1,250	667	300	0	60	25	4,322
February	20	300	1,700	220	666	300	0	60	25	3,291
March	20	300	1,700	220	666	300	0	60	25	3,291
TOTAL	140	1,850	10,465	5,240	4,033	2,000	600	360	150	24,838

Table 2.7 - Historic (81-82) and Projected (16-17) Water Supplied to City Owned Lands Within the Owens Valley (acre-feet)

Use	April		May		June		July		August		September		TOTAL Apr-Sep	
	1981	2016	1981	2016	1981	2016	1981	2016	1981	2016	1981	2016	1981	2016
Irrigation	3,980	6,670	7,958	8,900	10,373	10,475	9,476	9,600	8,295	8,600	6,321	4,200	46,403	48,445
Stockwater	1,141	975	1,319	1,080	1,244	1,040	1,245	1,085	1,219	980	1,319	900	7,487	6,060
E / M	0	1,400	0	1,230	0	1,670	0	1,630	0	1,330	0	810	0	8,070
LORP	0	800	0	1,500	0	2,700	0	3,200	0	3,400	0	2,700	0	14,300
Rec. & Wildlife	379	600	804	900	1,160	950	1,455	1,050	1,381	900	1,406	800	6,585	5,200
1600 ACFT Proj.	0	85	0	91	0	116	0	157	0	74	0	115	0	638
Total	*5,500*	*10,530*	*10,081*	*13,701*	*12,777*	*16,951*	*12,176*	*16,722*	*10,895*	*15,284*	*9,046*	*9,525*	*60,475*	*82,713*

Use	October		November		December		January		February		March		TOTAL Oct-Mar		TOTAL Apr-Mar	
	1981	2016	1981	2016	1981	2016	1982	2017	1982	2017	1982	2017	81-82	15-16	81-82	16-17
Irrigation	263	400	0	0	0	0	0	0	0	0	14	100	277	500	46,680	48,945
Stockwater	1,065	900	1,045	900	1,050	850	1,007	850	1,010	850	1,098	850	6,275	5,200	13,762	11,260
E / M	0	250	0	100	0	100	0	100	0	100	0	100	0	750	0	8,820
LORP	0	1,200	0	800	0	300	0	250	0	250	0	600	0	3,400	0	17,700
Rec. & Wildlife	781	700	713	500	565	500	478	500	342	300	447	300	3,326	2,800	9,911	8,000
1600 ACFT Proj.	0	215	0	215	0	105	0	97	0	185	0	145	0	962	0	1,600
Total	*2,109*	*3,665*	*1,758*	*2,515*	*1,615*	*1,855*	*1,485*	*1,797*	*1,352*	*1,685*	*1,559*	*2,095*	*9,878*	*13,612*	*70,353*	*96,325*

NOTE: Rec & Wildlife includes LORP off-river lakes and ponds water use

Table 2.9 - Planned Los Angeles Aqueduct Operations for Runoff Year 2016-17

Month	Owens Valley-Bouquet Reservoir Storage 1st of month Storage (acre-feet)	Aqueduct Delivery to Los Angeles (acre-feet)
April, 2016	179,827	10,900
May	174,296	7,500
June	167,761	12,800
July	170,311	18,500
August	166,137	16,340
September	148,155	14,760
October	124,284	0
November	129,205	0
December	143,792	8,600
January, 2017	153,850	8,600
February	163,525	7,500
March	170,462	8,350
TOTAL	***-9,365***	***113,850***