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November 16, 2015

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) Final 2015 Operations Plan for the Second Six Months - October 1, 2015, through March 31, 2016

Thank you for the input provided in your October 29, 2015, correspondence and at the November 5, 2015, Technical Group meeting regarding LADWP's proposed operations plan for the second half of the 2015 runoff year.

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, 2015, through March 31, 2016. Elements of the proposed operations plan include the 2015 Eastern Sierra Runoff Forecast, soil/vegetation water balance calculations for October 2015, Planned Owens Valley Groundwater Pumping for the Second Six Months of the 2015-16 Runoff Year (acre-feet), Historic (1981-82) and Projected (2015-16) Water Supplied by the City of Los Angeles within the Owens Valley, and Planned Los Angeles Aqueduct Operations for the 2015-16 Runoff Year. A summary of the enclosed plan is as follows:

Forecast Owens River Basin snowpack runoff during the 2015 runoff year is not revised from the April 1, 2015, forecast at 148,600 acre-feet or about 36 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, 2015, has changed to "OFF" status. No vegetation monitoring site that was in "OFF" status on April 1, 2015, has changed to "ON" status.

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Total planned Owens Valley pumping between October 1, 2015 and March 31, 2016, is between 19,942 and 34,552 acre-feet. Projected groundwater production by wellfield for the second six months of the 2015 runoff year is included in Table 2.6.

Projected water diversions for Owens Valley uses during the 2015 runoff year are expected to be 133,389 acre-feet. Owens Valley water uses include irrigation, stockwater, enhancement/mitigation project, the Lower Owens River Project, Owens Lake, Recreation and Wildlife, and 1,600 acre foot projects. A summary of Owens Valley water uses is provided in Table 2.7.

Projected aqueduct delivery to Los Angeles during the 2015 runoff year is 21,754 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

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ET:fj Enclosures

c: Mr. Eric Tillemans

2015 EASTERN SIERRA RUNOFF FORECAST April 1, 2015

APRIL THROUGH SEPTEMBER RUNOFF

		ROBABLE LUE	REASONABLE MAXIMUM	REASONABLE MINIMUM	LONG-TERM MEAN (1961 - 2010)
	(Acre-feet)	(% of Avg.)	(% of Avg.)	(% of Avg.)	(Acre-feet)
MONO BASIN:	20,200	20%	32%	7%	103,522
OWENS RIVER BASIN:	76,000	25%	38%	12%	303,903

APRIL THROUGH MARCH RUNOFF

	100001000	ROBABLE LUE	REASONABLE MAXIMUM	REASONABLE MINIMUM	LONG-TERM MEAN (1961 - 2010)	
	(Acre-feet)	(% of Avg.)	(% of Avg.)	(% of Avg.)	(Acre-feet)	
MONO BASIN:	30,400	25%	38%	12%	122,333	
OWENS RIVER BASIN:	148,600	36%	49%	24%	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, 2015 according to Green Book Section III

Site	July 1, 2015 Status	October, 2015 Veg. Water Req./Soil AWC for turn-on	October 2015 soil AWC	+30% annual ppt.	October 1, 2015 Status	Soil AWC req. for well turn on
		(cm)	(cm)	(cm)		(cm)
L1	OFF	3.8/15.6	1.6	NA	OFF	15.6, OFF 7-10
L2	ON	7.0/NA	7.3	7.3 + 4.7 = 12.0	ON	NA
L3	OFF	12.4/25.2	7.5	NA	OFF	25.2, OFF 10-11
BP1	OFF	2.1/22.9	0.9	NA	OFF	22.9†, OFF 10-97
BP2	OFF	4.9/28.4	1.3	NA	OFF	28.4, OFF 7-98
BP3	OFF	4.2/10.6	2.6	NA	OFF	10.6. OFF 7-12
BP4	ON	7.5/NA	35.3	35.3 + 4.9 = 40.2	ON	NA
TA3	OFF	14.2/26.0	6.3	NA	OFF	26.0, OFF 10-11
TA4	OFF	8.8/23.3	13.4	NA	OFF	23.3, OFF 10-11
TA5	ON	3.9/NA	21.4	21.4 + 4.9 = 26.3	ON	NA
TA6	OFF	10.7/17.6	8.8	NA	OFF	17.6, OFF 10-11
TS1	OFF	3.1/20.4	1.3	NA	OFF	20.4†, OFF 10-96
TS2	ON	9.1/NA	6	6.0 + 4.4 = 10.4	ON	NA
TS3	OFF	12.8/32.9	16.5	NA	OFF	32.9, OFF 10-12
TS4	OFF	27.7/55.9	33.2	NA	OFF	55.9, OFF 10-11
101	OFF	35.0/42.2	11.1	NA	OFF	42.2, OFF 10-98
102	OFF	3.4/18.9	4.5	NA	OFF	18.9, OFF 7-11
SS1	ON	4.8/NA	11.7	11.7 + 3.9 = 15.6	ON	NA
SS2	OFF	1.5/25.6	2.9	NA	OFF	25.6, OFF 7-11
SS3	OFF	5.9/33.8	18.9	NA	OFF	33.8, OFF 10-11
SS4	OFF	4.8/15.9	4.8	NA	OFF	15.9, OFF 7-05
BG2	ON	1.7/NA	23	23.0 + 4.0 = 27.0	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 Month of 2015-16 Runoff Year in acre-feet

Month	Laws	Bishop	Big Pine	Taboose- Aberdeen	Thibaut- Sawmill	IndepOak	Symmes- Shepherd		Lone Pine	TOTAL
October	40	300	1,700-2,150	240-1250	667	100-550	150-615	110-170	25	3,332-5,767
November	40	300	1,700-2,150	240-1250	667	100-550	150-615	110-170	25	3,332-5,767
December	30	300	1,700-2,150	240-1250	667	100-550	150-615	110-170	25	3,322-5,757
January	30	300	1,700-2,150	240-1250	667	100-550	150-615	110-170	25	3,322-5,757
February	30	300	1,700-2,150	240-1250	667	100-550	150-615	110-170	20	3,317-5,752
March	30	300	1,700-2,150	240-1250	667	100-550	150-615	110-170	20	3,317-5,752
TOTAL	200	1,800	10,200-12,900	1,440-7,500	4,002	600-3,300	900-3,690	660-1,020	140	19,942-34,552

Table 7. Historic (1981-82) and Projected (2015-16) Water Supply by LADWP in the Owens Valley (acre-feet)

													то	TAL		
	Ar	oril	Ma	ay	Ju	ne	Ju	ıly	Aug	ust	Septe	mber	Apr	-Sep		
Use	1981	2015	1981	2015	1981	2015	1981	2015	1981	2015	1981	2015	1981	2015		
Irrigation	3,980	4,894	7,958	6,878	10,373	8,369	9,476	8,050	8,295	6,778	6,321	3,960	46,403	38.929		
Stockwater	1,141	918	1,319	1,029	1,244	974	1,245	1,022	1,219	953	1,319	882	7,487	5,778		
E/M	0	1,424	0	1,351	0	1,546	0	1,460	0	1,103	0	1,089	0	7,973		
LORP	0	832	0	1,296	0	2,516	0	3,240	0	3,435	0	2,954	0	14,273		
Owens Lake	0	7,078	0	5,197	0	3,622	0	1,277	0	1,293	0	4,301	0	22,768		
Rec. & Wildlife	379	626	804	887	1,160	878	1,455	995	1,381	606	1,406	776	6,585	4,768		
1600 ACFT Proj.	0	92	0	93	0	85	0	119	0	71	0	71	0	531		
Total	5,500	15,864	10,081	16.731	12.777	17.990	12.176	16.163	10 895	14 230	9.046	14 022	60 475	05.020		
	5,500	15,864	10,081	16,731	12,777	17,990	12,176	16,163	10,895	14,239	9,046	14,033	60,475	95,020		
			10,081	16,731	12,777	17,990	12,176	16,163	10,895	14,239	9,046	14,033	60,475 TO	•	то	TAL
Total	5,500 Octo		10,081 Nove		12,777 Decer		12,176 Janu		10,895 Febru		9,046 Mar	,		ΓAL		TAL -Mar
												,	TO	ΓAL		
Total	Octo	ber	Nove	mber	Decer	mber	Janu	ıary	Febr	uary	Mar	ch 2016	TO ⁻ Oct- 81-82	ΓAL -Mar 15-16	Apr 81-82	-Mar 15-16
Total	Octo	ber 2015	Novei	mber 2015	Decer	mber 2015	Janu 1982	ıary 2016	Febru 1982	uary 2016	M ar 1982	ch	TO ⁻ Oct- 81-82	ΓAL •Mar 15-16 700	Apr 81-82 46,680	-Mar 15-16 39,629
Total Use Irrigation	Octo	ober 2015 600	Nove 1981	mber 2015 0	Decer 1981	mber 2015 0	Janu 1982	1ary 2016 0	Febru 1982	Jary 2016	M ar 1982	rch 2016	TO ⁻ Oct- 81-82	ΓAL -Mar 15-16 700 4,200	Apr 81-82 46,680 13,762	-Mar 15-16 39,629 9,978
Use Irrigation Stockwater	Octo 1981 263 1,065	ober 2015 600 700	Novei 1981 0 1,045	mber 2015 0 700	Decer 1981 0 1,050	mber 2015 0 700	Janu 1982 0 1,007	1ary 2016 0 700	Febru 1982 0 1,010	Jary 2016 0 700	Mar 1982 14 1,098	2016 100 700	TO ⁻ Oct- 81-82 277 6,275	ΓAL -Mar 15-16 700 4,200 750	Apr 81-82 46,680	-Mar 15-16 39,629 9,978 8,723
Use Irrigation Stockwater E / M	Octo 1981 263 1,065	600 700 250	Novei 1981 0 1,045	mber 2015 0 700 100	Decer 1981 0 1,050 0	nber 2015 0 700 100	Janu 1982 0 1,007	0 700 100	Febru 1982 0 1,010 0	2016 0 700 100	Mar 1982 14 1,098	2016 100 700 100	TOTOCH-81-82 277 6,275	ΓAL -Mar 15-16 700 4,200 750 2,400	Apr 81-82 46,680 13,762	4-Mar 15-16 39,629 9,978 8,723 16,673
Use Irrigation Stockwater E / M LORP	Octo 1981 263 1,065 0	600 700 250 900	Novel 1981 0 1,045 0	mber 2015 0 700 100 250	Decer 1981 0 1,050 0	nber 2015 0 700 100 150	Janu 1982 0 1,007 0	2016 0 700 100 250	Febru 1982 0 1,010 0	2016 0 700 100 250	1982 14 1,098 0	7 ch 2016 100 700 100 600	TOTOCH-81-82 277 6,275 0 0	TAL -Mar 15-16 700 4,200 750 2,400 26,150	Apr 81-82 46,680 13,762 0 0	39,629 9,978 8,723 16,673 48,918
Use Irrigation Stockwater E / M LORP Owens Lake	Octo 1981 263 1,065 0	600 700 250 900 8,000	Nover 1981 0 1,045 0 0	mber 2015 0 700 100 250 3,700	Decer 1981 0 1,050 0 0	0 700 100 150 3,925	Janu 1982 0 1,007 0 0	0 700 100 250 3,825	Febru 1982 0 1,010 0 0	2016 0 700 100 250 2,200	Mar 1982 14 1,098 0 0	2016 100 700 100 600 4,500	TO Oct- 81-82 277 6,275 0	ΓAL -Mar 15-16 700 4,200 750 2,400	Apr 81-82 46,680 13,762 0	4-Mar 15-16 39,629 9,978 8,723 16,673

NOTE: Rec & Wildlife includes LORP off-river lakes and ponds water use An additional 3,200 acre-feet per year is provided to Indian lands

Table 9 - Planned Los Angeles Aqueduct Operations for 2015-16 Runoff Year

Month	Owens Valley-Bouquet Reservoir Storage 1 st of month Storage (acre-feet)	Aqueduct Delivery to Los Angeles (acre-feet)
April	160,819	462
May	160,933	307
June	162,953	298
July	162,649	2,900
August	161,088	3,948
September	152,789	5,875
October	141,786	0
November	144,751	0
December	150,869	0
January	159,384	3,074
February	165,485	2,222
March	172,359	2,668
TOTAL		21,754