

November 17, 2022

Dr. Aaron Steinwand, Director
Inyo County Water Department
P.O. Box 337
137 South Jackson St.
Independence, CA 93526-0337

Dear Mr. Steinwand:

Subject: Los Angeles Department of Water and Power's Final Operations
Plan for the Second Six Months of 2022-23 Runoff Year –
October 1, 2022, through March 31, 2023

The following is the Los Angeles Department of Water and Power's (LADWP's) final operations plan for the second half of the 2022-23 runoff year. This operations plan is being provided to the Inyo County Water Department 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's operations in Owens Valley during the six months from October 1, 2022, through March 31, 2023. The operation plan includes the 2022 Eastern Sierra Runoff Forecast, soil/vegetation water balance calculations for October 2022, Planned Owens Valley Groundwater Pumping for the Second Six Months of the 2022-23 Runoff Year (acre-feet), Historic (1981-82) and Projected (2022-23) Water Supplied by the City of Los Angeles within the Owens Valley, Pumped Water during the first 6-month period of the 2022-23 Runoff Year, and Planned Los Angeles Aqueduct Operations for the 2022-23 Runoff Year.

Forecast Owens River Basin snowpack runoff during the 2022-23 runoff year remains unchanged from the April 1, 2022 forecast at 194,300 acre-feet or about 47 percent of average runoff (Table 1). However, due to unusually wet summer monsoonal rain, the actual runoff for the first six months of the year was higher than the forecasted runoff. Actual runoff at this time is estimated to be 55 percent of normal for the entire year.

The status of the wellfield vegetation monitoring sites' October 1, 2022, is provided in Table 2. There were no status changes in any of the monitoring sites. Of the 22 wellfield vegetation monitoring sites, 14 are in ON status (LW1, LW2, LW3, BP1, BP3, BP4, TA4, TA5, TA6, TS2, TS3, TS4, SS3, BG2) and 8 sites are in OFF status (BP2, TA3, TS1, 101, 102, SS1, SS2, SS4). The total available pumping capacity of the well associated

with vegetation monitoring sites in ON status or exempt from ON/OFF provisions of the Water Agreement is 192,000 acre-feet for the runoff year.

The planned range and actual pumping from each Owens Valley wellfield are presented in Table 3. The planned Owens Valley pumping between October 1, 2022, and March 31, 2022, is between 24,570 and 35,950 acre-feet. The planned groundwater production by wellfield for the second six months of the 2022-23 runoff year is included in Table 4. Additional pumping tests of wells subject to the Water Agreement are not included in this year's planned pumping total, and if performed, it will be in addition to the planned pumping for 2022-23. The planned pumping may also increase to provide freeze protection for the Los Angeles Aqueduct (LAA).


Planned Owens Valley uses during the 2022 runoff year are expected to be 85,080 acre-feet. Owens Valley water uses include irrigation, stockwater, Enhancement and Mitigation projects, 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 5.

The updated planned export from Eastern Sierra through LAA and delivery to Los Angeles during the 2022-23 runoff year is 58,655 acre-feet. This is approximately one-quarter of the water that would be delivered in an average hydrological year. The projected beginning-of-month reservoir storage amounts and monthly Los Angeles Aqueduct deliveries to Los Angeles are presented in Table 6.

Despite a very dry year, shallow groundwater levels in Owens Valley remained relatively stable due to LADWP's very conservative pumping plan. Figure 1 shows the groundwater levels in representative monitoring wells in each wellfield throughout Owens Valley on April 1 and October 1, 2022. The average groundwater decline in Owens Valley during the first six months of the 2022-23 runoff year was less than 0.8 feet.

Please contact Mr. Eric Tillemans, Managing Water Utility Engineer, if you have any questions regarding this plan. Mr. Tillemans may be reached at (760) 873-0256.

Sincerely,



Adam Perez
Manager of Aqueduct

SJ:fj
attachment

c: Eric Tillemans

Table 1 – Eastern Sierra Runoff Forecast for 2022-23 Runoff Year

**2022 EASTERN SIERRA
RUNOFF FORECAST
April 1, 2022**

APRIL THROUGH SEPTEMBER RUNOFF

	MOST PROBABLE VALUE		REASONABLE MAXIMUM	REASONABLE MINIMUM	LONG-TERM MEAN (1971 - 2020)
	(Acre-feet)	(% of Avg.)	(% of Avg.)	(% of Avg.)	(Acre-feet)
MONO BASIN:	56,200	56%	69%	43%	100,307
OWENS RIVER BASIN:	117,200	39%	52%	26%	300,298

APRIL THROUGH MARCH RUNOFF

	MOST PROBABLE VALUE		REASONABLE MAXIMUM	REASONABLE MINIMUM	LONG-TERM MEAN (1971 - 2020)
	(Acre-feet)	(% of Avg.)	(% of Avg.)	(% of Avg.)	(Acre-feet)
MONO BASIN:	70,900	60%	74%	46%	118,170
OWENS RIVER BASIN:	194,300	47%	60%	35%	409,364

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 - Monitoring Sites Status and Soil/Vegetation Water Balance Calculations for October 1, 2022 According to the Green Book Section III

Site	April 2022 Actual Soil AWC	April 2022 On/Off Status	October 2022 Vegetation Water Requirement	October 2022 Soil AWC	October 2022 Required Soil AWC For Turn-On	October 2022 On/Off Status
LW 1	55.7	ON	4.7	30.3	NA	ON
LW 2	37.1	ON	2.8	31.9	NA	ON
LW 3	19.6	ON	7.2	7.9	NA	ON
BP 1	24.8	ON	14.1	15.2	NA	ON
BP 2	5.3	OFF (7/98)	6.7	1.2	28.4	OFF (7/98)
BP 3	60.6	ON	8.3	40.3	NA	ON
BP 4	69.2	ON	5.1	63.2	NA	ON
TA 3	13.7	OFF (10/17)	7.5	10.6	28.4	OFF (10/17)
TA 4	21.4	ON	6.6	15.4	NA	ON
TA 5	22.6	ON	3.2	20.7	NA	ON
TA 6	23.6	ON	9.1	14.4	NA	ON
TS 1	10.3	OFF (7/17)	14.5	7.6	28.9	OFF (7/17)
TS 2	17.8	ON	4.5	12.4	NA	ON
TS 3	23.4	ON	5.0	17.2	NA	ON
TS 4	48.5	ON	17.4	35.5	NA	ON
IO 1	24.9	OFF (10/98)	14.5	17.7	42.2	OFF (10/98)
IO 2	2.7	OFF (7/20)	1.9	3.4	3.9	OFF (7/20)
SS 1	27.6	OFF (7/17)	7.2	25.3	34.0	OFF (7/17)
SS 2	3.5	OFF (7/11)	1.0	3.3	25.6	OFF (7/11)
SS 3	30.1	ON	7.5	25.5	NA	ON
SS 4	7.7	OFF (7/05)	1.8	7.1	15.9	OFF (7/05)
BG 2	25.2	ON	2.0	24.8	NA	ON

Table 3 – Planned range and the actual pumping by wellfields during the first six-month of the 2022-23 runoff year

Wellfield	Planned Pumping (af)	Actual Pumping (af)
Laws	7,000-8,200	6,548
Bishop	9,720	8,852
Big Pine	10,200-11,700	9,681
Taboose-Aberdeen	3,000-7,050	5,280
Thibaut-Sawmill	5,040-5,280	5,134
Independence-Oak	5,860-6,600	4,311
Symmes-Shepherd	1,200	802
Bairs-George	450-890	271
Lone Pine	760	848
Total Owens Valley	43,230-51,400	43,891

Table 4 – Planned Owens Valley Pumping for the Second Six Months of 2012-23 Runoff Year (acre-feet)

Month	Laws	Bishop	Big Pine	Taboose- Aberdeen	Thibaut- Sawmill	Indep.-Oak	Symmies- Shepherd	Bairs- Georges	Lone Pine	TOTAL
Ocotber	770	380	1,700-1,950	500-1,300	840-940	190-370	0-285	85-230	30-40	4,495-6,265
November	770	380	1,670-1,950	500-1,300	840-940	190-370	0-285	85-230	30-40	4,465-6,265
December	230-520	380	1,670-1,950	500-1,300	840-940	190-370	0-285	85-230	20-30	3,915-6,005
January	230-520	380	1,670-1,950	500-1,300	840-940	190-370	0-285	85-230	20-30	3,915-6,005
February	205-230	380	1,670-1,950	500-1,300	840-940	190-360	0-285	85-230	20-30	3,890-5,705
March	205-230	380	1,670-1,950	500-1,300	840-940	190-360	0-285	85-230	20-30	3,890-5,705
TOTAL	2,410-3,040	2,280	10,050-11,700	3,000-7,800	5,040-5,640	1,140-2,200	0-1,710	510-1,380	140-200	24,570 - 35,950

Table 5 - Historic (81-82) and Projected (2022-23) Water Supplied to City-Owned Lands Within the Owens Valley (acre-feet)

Use	April		May		June		July		August		September		TOTAL Apr-Sep	
	1981	2022	1981	2022	1981	2022	1981	2022	1981	2022	1981	2022	1981	2022
Irrigation	3,980	5,033	7,958	7,306	10,373	8,353	9,476	6,754	8,295	6,635	6,321	3,500	46,403	37,581
Stockwater	1,141	932	1,319	959	1,244	996	1,245	909	1,219	882	1,319	600	7,487	5,278
E / M	0	1,023	0	1,225	0	1,537	0	1,407	0	1,012	0	1,800	0	8,004
LORP	0	1,190	0	1,644	0	2,886	0	3,379	0	3,010	0	2,300	0	14,409
Rec. & Wildlife	379	374	804	568	1,160	647	1,455	801	1,381	682	1,406	600	6,585	3,672
1600 ACFT Proj.	0	80	0	181	0	75	0	77	0	174	0	20	0	607
Total	5,500	8,632	10,081	11,883	12,777	14,494	12,176	13,327	10,895	12,395	9,046	8,820	60,475	69,551

Sept. data is Provisional

Use	October		November		December		January		February		March		TOTAL Oct-Mar		TOTAL Apr-Mar	
	1981	2022	1981	2022	1981	2022	1982	2023	1982	2023	1982	2023	81-82	22-23	81-82	22-23
Irrigation	263	30	0	0	0	0	0	0	0	0	14	140	277	170	46,680	37,750
Stockwater	1,065	860	1,045	910	1,050	790	1,007	720	1,010	630	1,098	820	6,275	4,730	13,762	10,010
E / M	0	480	0	270	0	250	0	290	0	270	0	320	0	1,880	0	9,880
LORP	0	2,000	0	1,300	0	500	0	300	0	400	0	600	0	5,100	0	19,510
Rec. & Wildlife	781	820	713	480	565	470	478	240	342	240	447	230	3,326	2,480	9,911	6,150
1600 ACFT Proj.	0	230	0	120	0	200	0	200	0	200	0	220	0	1,170	0	1,780
Total	2,109	4,420	1,758	3,080	1,615	2,210	1,485	1,750	1,352	1,740	1,559	2,330	9,878	15,530	70,353	85,080

Table 6 - Planned Los Angeles Aqueduct Operations for Runoff Year 2022-23

Month	Owens Valley-Bouquet Reservoir Storage 1st of month Storage (acre-feet)	Exports from Eastern Sierra (acre-feet)
April, 2022	186,600	65
May	192,400	930
June	181,600	3,960
July	173,300	3,970
August	164,700	6,830
September	154,900	8,900
October	139,500	0
November	138,800	4,500
December	147,600	9,900
January, 2023	153,900	9,400
February	162,100	6,900
March	168,500	3,300
TOTAL	-18,100	58,655



Figure 1 – Groundwater Levels in Owens Valley Monitoring Wells on April 1 and October 1, 2022