U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

PREPARED IN COOPERATION WITH
INYO COUNTY AND THE
LOS ANGELES DEPARTMENT OF WATER AND POWER

WATER-SUPPLY PAPER 2370–H
Simulated ground-water budget for the aquifer system, water years 1963-88–TABLE 11, PART 1 OF 3

Danskin, W.R., 1998, Evaluation of the hydrologic system and selected water-management alternatives in the Owens Valley, California

EXPLANATION FOR TABLE 11, PART 1

Values in acre-feet per year except as noted below. Accuracy varies for individual water-budget components, but is generally 2 or 3 significant figures; greater precision is shown for computational purposes only. Parentheses ( ) indicate negative value, except in 'Water-budget component' and 'Calculation or source of data' columns

Water-budget component–Type and area of ground-water recharge or discharge. Components are identified on plate 3, 1:24,000-scale topographic maps, or 1:24,000-scale water-use maps maintained by the Los Angeles Department of Water and Power (R.H. Rawson, written commun., 1988).

Water year–Annual values of ground-water recharge or discharge, in acre-feet, for water years 1963 through 1988. A water year extends from October through September; for example, water year 1963 extends from October 1, 1962, through September 30, 1963.

Average for water years–Average annual values of ground-water recharge or discharge in acre-feet, for a selected period of water years.

Predictive simulation–Annual values of ground-water recharge or discharge, in acre-feet, for selected periods.

SS–Values for 1988 steady-state simulation, used as alternative 1 and as simulation period II in alternative 4 (refer to text and figures 30 and 32).

Dry–Values for simulation period I in alternative 4 (refer to text and figures 30 and 31).

Wet–Values for simulation period III in alternative 4 (refer to text and figures 30 and 33).

dih–Value of ground-water recharge or discharge depends on initital heads in the ground-water flow model.

Relative degree of confidence–Qualitative assessment of the accuracy of ground-water recharge or discharge values: high, average, or low.

Method of calculation–Method of calculating values of ground-water recharge or discharge.

Calculation or source of data–For water years 1963-88. Methods and assumptions for calculating values for predictive simulations are described in text.

AL–Water allocated to an area of miscellaneous recharge, expressed as a decimal fraction of the total quantity of water for a specific category of use (for example, “Laws–Operations"). Estimated by the Los Angeles Department of Water and Power (R.H. Rawson, oral commun., 1988).

CCAF–Conversion from cubic feet per second to acre-feet per year; equals 723.96.

CFAF–Conversion from cubic feet to acre-feet; equals 0.000022957; reciprocal equals 43,560.

CIF–Conversion from inches to feet; equals 0.08333; reciprocal equals 12.

CR–Recharge rate for canal, ditch, or pond; expressed in cubic feet per second.

ET0–Evapotranspiration rate of high-water-use vegetation near stream, in feet per year.

LADWP–Los Angeles Department of Water and Power.

LADWP estimate of uses and losses in areas of Owens Valley–Values, in acre-feet per year, from water-budget summaries compiled for water years 1970-88 by R.H. Rawson (Los Angeles Department of Water and Power, written commun., 1988). Values for water years 1963-69 estimated from 1970-88 data.

LSD–Altitude of land surface datum, in feet above mean sea level.

MR–Recharge percentage for miscellaneous water operations; expressed as a decimal fraction of water applied to the land surface.

PA–Area of precipitation: in this calculation assumed to be area of a cell of the ground-water flow model; equals 4,000,000 square feet.

PLTAVE–Long-term mean annual precipitation, in inches per year. Calculated for each cell of the ground-water flow model (refer to figure 7 and to equations 1-2 in text).

PR–Average percent of recharge (deep percolation) from precipitation in areas where mean annual precipitation is greater than 8 inches per year. Assumed to equal 5 percent (0.05).

RO–Percent runoff for water year; expressed as a decimal fraction of long-term average annual runoff (refer to table 7).

SBM–Long-term mean annual stream discharge measured at base-of-mountains gage; in cubic feet per second. Gages shown in figure 11 and listed in table 6.

SLA–Length of stream reach above base-of-mountains gage, in feet (figure 11).

SLB–Length of stream reach below river-aqueduct gage, in feet (figure 11).

SLG–Stream channel length between base-of-mountains gage and river-aqueduct gage, in feet.

SLRG–Stream average loss rate between the base-of-mountains and river-aqueduct gages, expressed as a decimal fraction of stream discharge at the base-of-mountains gage (SBM). Values greater than 1.0 indicate significant recharge upstream of base-of-mountains gage. Refer to figure 13 and to equation 7a in text.

SVG–Percent of vegetative cover within the width (SWG) of high-water-use vegetation near the stream between the base-of-mountains and river-aqueduct gages; expressed as a decimal fraction of total area.

SWG–Width of high-water-use vegetation near the stream channel between the base-of-mountains and river-aqueduct gages, in feet.

UND–Underflow rate, in cubic feet per second.

UR–Recharge rate for ungaged area between tributary streams, in cubic feet per second.

Water-budget component	Water year																										Average value			Predictive simulation			Relative degree of confidence	Method of calculation	Calculation or source of data
	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1963-69	1970-84	1985-88	SS	Dry	Wet			(acronyms and units of measure described above)
Precipitation	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	1,452	average	linear regression	(PR)*(PLTAVE)*(CIF)*(PA)*(CFAF); summed for all model cells with PLTAVE > 8 inches/year
Evapotranspiration																																			
Ground-water-model evapotranspiration	(102,598)	(96,629)	(96,738)	(95,927)	(107,414)	(99,266)	(116,126)	(106,267)	(89,421)	(72,177)	(65,536)	(67,750)	(66,789)	(49,787)	(47,594)	(52,575)	(55,738)	(61,681)	(59,904)	(63,695)	(77,481)	(77,901)	(71,374)	(78,965)	(63,289)	(50,564)	(102,100)	(67,620)	(66,048)	(34,629)	dih	dih	high	simulated	head-dependent relation in the ground-water flow model
Alabama Hills seepage	(286)	(257)	(254)	(238)	(264)	(248)	(303)	(294)	(252)	(192)	(156)	(146)	(130)	(198)	(133)	(154)	(173)	(212)	(215)	(252)	(331)	(365)	(360)	(389)	(312)	(221)	(264)	(214)	(321)	0	dih	dih	high	simulated	head-dependent relation in the ground-water flow model
Independence springfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Total (evapotranspiration)	(102,884)	(96,886)	(96,992)	(96,165)	(107,678)	(99,514)	(116,429)	(106,561)	(89,673)	(72,369)	(65,692)	(67,896)	(66,919)	(49,985)	(47,727)	(52,729)	(55,911)	(61,893)	(60,119)	(63,947)	(77,812)	(78,266)	(71,734)	(79,354)	(63,601)	(50,785)	(102,364)	(67,833)	(66,369)	(34,629)	dih	dih	high	sum	head-dependent relation in the ground-water flow model
Tributary streams																																			
Channel recharge																																			[(SBM)*(CCAF)*(RO)*(SLRG)*(1+(SLA/SLG)+(SLB/SLG)]-[(ETO)*(SLG)*(SWG)*(SVG)*(CFAF)]
Fish Slough	187	116	166	124	250	137	352	172	135	116	185	187	152	107	90	237	170	252	153	254	339	233	170	281	133	115	190	185	175	174	118	230	low	linear regression	[(8.54)*(723.96)*(RO)*(0.03)*(1+0+0)]-[(3.92)*(8,600)*(50)*(0.30)*(0.000022957)]
Horton Creek	773	492	691	522	1,023	573	1,429	714	566	492	765	773	632	455	389	972	706	1,031	640	1,038	1,378	957	706	1,149	559	485	786	767	725	721	500	942	average	linear regression	[(10.19)*(723.96)*(RO)*(0.10)*(1+0+0)]-[(3.92)*(12,400)*(50)*(0.30)*(0.000022957)]
McGee Creek	1,186	758	1,062	803	1,569	882	2,189	1,096	871	758	1,175	1,186	972	702	601	1,491	1,085	1,581	984	1,592	2,110	1,468	1,085	1,761	860	747	1,207	1,178	1,113	1,108	770	1,446	average	linear regression	[(2.47)*(723.96)*(RO)*(0.63)*(1+0+0)]-[(3.92)*(14,100)*(50)*(0.30)*(0.000022957)]
Birch Creek (near Bishop)	1,257	806	1,127	854	1,661	937	2,314	1,162	925	806	1,245	1,257	1,032	747	640	1,578	1,150	1,673	1,043	1,685	2,231	1,554	1,150	1,863	913	794	1,279	1,249	1,180	1,174	818	1,530	average	linear regression	[(1.64)*(723.96)*(RO)*(1.00)*(1+0+0)]-[(3.92)*(9,800)*(50)*(0.30)*(0.000022957)]
Bishop Creek	14,466	9,317	12,975	9,859	19,072	10,808	26,524	13,382	10,672	9,317	14,330	14,466	11,892	8,640	7,421	18,124	13,246	19,208	12,027	19,343	25,575	17,853	13,246	21,375	10,537	9,182	14,717	14,366	13,585	13,517	9,453	17,582	average	linear regression	[(93.57)*(723.96)*(RO)*(0.20)*(1+0+0)]-[(3.92)*(22,900)*(50)*(0.30)*(0.000022957)]
Rawson Creek	685	438	614	464	907	510	1,266	633	503	438	679	685	562	405	347	861	627	914	568	920	1,220	848	627	1,018	496	431	698	681	643	640	444	835	average	linear regression	[(1.86)*(723.96)*(RO)*(0.44)*(1+0.10+0)]-[(3.92)*(8,800)*(50)*(0.30)*(0.000022957)]
Freeman Creek	820	522	734	554	1,086	608	1,516	757	601	522	812	820	671	483	413	1,031	749	1,094	679	1,101	1,461	1,015	749	1,219	593	515	834	814	769	765	530	1,000	average	linear regression	[(1.15)*(723.96)*(RO)*(0.94)*(1+0+0)]-[(3.92)*(13,100)*(50)*(0.30)*(0.000022957)]
Shannon Creek	812	518	727	549	1,076	603	1,502	750	595	518	804	812	665	479	409	1,022	742	1,084	673	1,091	1,448	1,006	742	1,208	587	510	827	807	762	758	525	991	low	linear regression	[(1.53)*(723.96)*(RO)*(0.70)*(1+0+0)]-[(3.92)*(12,900)*(50)*(0.30)*(0.000022957)]
Baker Creek	1,378	882	1,234	934	1,821	1,026	2,539	1,274	1,013	882	1,365	1,378	1,130	817	700	1,730	1,261	1,835	1,143	1,848	2,448	1,704	1,261	2,043	1,000	869	1,402	1,369	1,293	1,287	895	1,678	average	linear regression	[(8.54)*(723.96)*(RO)*(0.21)*(1+0+0)]-[(3.92)*(13,200)*(50)*(0.30)*(0.000022957)]
Big Pine Creek	3,527	2,263	3,161	2,396	4,658	2,629	6,487	3,261	2,595	2,263	3,494	3,527	2,895	2,097	1,797	4,425	3,228	4,691	2,928	4,724	6,255	4,358	3,228	5,223	2,562	2,230	3,589	3,503	3,311	3,294	2,296	4,292	average	linear regression	[(41.77)*(723.96)*(RO)*(0.10)*(1+0+0.10)]-[(3.92)*(24,000)*(50)*(0.30)*(0.000022957)]
Birch Creek (near Big Pine)	2,105	1,340	1,884	1,420	2,791	1,561	3,899	1,944	1,541	1,340	2,085	2,105	1,723	1,239	1,057	2,650	1,924	2,811	1,743	2,831	3,758	2,609	1,924	3,133	1,521	1,319	2,143	2,091	1,974	1,964	1,360	2,569	average	linear regression	[(7.68)*(723.96)*(RO)*(0.25)*(1+0.30+0.15)]-[(3.92)*(37,900)*(50)*(0.30)*(0.000022957)]
Fuller, Tinemaha, and Red Mountain Creeks	7,614	4,873	6,821	5,162	10,067	5,667	14,035	7,037	5,594	4,873	7,542	7,614	6,244	4,512	3,863	9,562	6,965	10,139	6,316	10,211	13,530	9,418	6,965	11,293	5,522	4,801	7,748	7,561	7,145	7,109	4,945	9,273	average	linear regression	[(13.54)*(723.96)*(RO)*(0.55)*(1+0.30+0.05)]-[(3.92)*(77,500)*(50)*(0.30)*(0.000022957)]
Taboose Creek	5,406	3,467	4,845	3,671	7,141	4,028	9,949	4,998	3,977	3,467	5,355	5,406	4,436	3,211	2,752	6,784	4,947	7,192	4,487	7,244	9,591	6,682	4,947	8,009	3,926	3,416	5,501	5,369	5,075	5,049	3,518	6,580	high	linear regression	[(9.23)*(723.96)*(RO)*(0.57)*(1+0.34+0)]-[(3.92)*(40,800)*(50)*(0.30)*(0.000022957)]
Goodale Creek	4,138	2,647	3,706	2,804	5,472	3,078	7,630	3,824	3,039	2,647	4,099	4,138	3,392	2,450	2,097	5,197	3,785	5,511	3,432	5,551	7,356	5,119	3,785	6,139	3,000	2,607	4,211	4,109	3,883	3,863	2,686	5,040	high	linear regression	[(7.17)*(723.96)*(RO)*(0.70)*(1+0.08+0)]-[(3.92)*(45,300)*(50)*(0.30)*(0.000022957)]
Division Creek	8,250	5,313	7,399	5,622	10,877	6,163	15,128	7,631	6,086	5,313	8,172	8,250	6,781	4,926	4,231	10,336	7,554	10,954	6,858	11,032	14,587	10,182	7,554	12,191	6,008	5,235	8,393	8,193	7,747	7,709	5,390	10,027	low	linear regression	[(8.54)*(723.96)*(RO)*(1.25)*(1+0+0)]-[(3.92)*(14,700)*(50)*(0.30)*(0.000022957)]
Sawmill Creek	2,204	1,417	1,976	1,500	2,909	1,645	4,048	2,039	1,624	1,417	2,184	2,204	1,811	1,313	1,127	2,764	2,018	2,930	1,831	2,950	3,903	2,722	2,018	3,261	1,603	1,396	2,243	2,189	2,070	2,059	1,438	2,681	high	linear regression	[(5.30)*(723.96)*(RO)*(0.54)*(1+0+0)]-[(3.92)*(9,400)*(50)*(0.30)*(0.000022957)]
Thibaut Creek	1,408	901	1,261	955	1,861	1,048	2,594	1,301	1,035	901	1,395	1,408	1,155	835	715	1,768	1,288	1,874	1,168	1,888	2,501	1,741	1,288	2,088	1,021	888	1,433	1,398	1,321	1,315	915	1,714	average	linear regression	[(2.36)*(723.96)*(RO)*(0.78)*(1+0+0)]-[(3.92)*(13,400)*(50)*(0.30)*(0.000022957)]
Oak Creek (including North Fork)	11,624	7,469	10,421	7,906	15,341	8,671	21,355	10,749	8,562	7,469	11,514	11,624	9,546	6,922	5,938	14,576	10,640	15,450	9,655	15,560	20,589	14,357	10,640	17,200	8,453	7,359	11,827	11,543	10,913	10,858	7,578	14,138	average	linear regression	[(16.56)*(723.96)*(RO)*(0.76)*(1+0.20+0)]-[(3.92)*(56,100)*(50)*(0.30)*(0.000022957)]
Independence Creek	7,368	4,736	6,606	5,013	9,722	5,498	13,530	6,814	5,429	4,736	7,298	7,368	6,052	4,390	3,767	9,237	6,744	9,791	6,121	9,860	13,046	9,099	6,744	10,899	5,359	4,667	7,496	7,317	6,917	6,883	4,805	8,960	average	linear regression	[(14.00)*(723.96)*(RO)*(0.61)*(1+0.10+0.02)]-[(3.92)*(31,000)*(50)*(0.30)*(0.000022957)]
Symmes Creek	3,265	2,084	2,923	2,208	4,321	2,426	6,029	3,016	2,395	2,084	3,233	3,265	2,674	1,929	1,649	4,103	2,985	4,352	2,705	4,383	5,812	4,041	2,985	4,849	2,364	2,053	3,322	3,242	3,063	3,047	2,115	3,979	high	linear regression	[(3.87)*(723.96)*(RO)*(0.99)*(1+0.10+0.02)]-[(3.92)*(44,100)*(50)*(0.30)*(0.000022957)]
Shepherd Creek	4,728	3,029	4,236	3,208	6,248	3,521	8,707	4,370	3,476	3,029	4,683	4,728	3,878	2,805	2,403	5,935	4,325	6,293	3,923	6,337	8,394	5,846	4,325	7,008	3,431	2,984	4,811	4,695	4,437	4,415	3,073	5,756	high	linear regression	[(10.86)*(723.96)*(RO)*(0.47)*(1+0.06+0.15)]-[(3.92)*(41,900)*(50)*(0.30)*(0.000022957)]
Bairs Creek (including North Fork)	3,406	2,171	3,049	2,301	4,511	2,528	6,299	3,146	2,496	2,171	3,374	3,406	2,788	2,008	1,716	4,284	3,114	4,544	2,821	4,576	6,072	4,219	3,114	5,064	2,463	2,138	3,466	3,382	3,195	3,179	2,203	4,154	high	linear regression	[(5.19)*(723.96)*(RO)*(0.84)*(1+0.03+0)]-[(3.92)*(53,600)*(50)*(0.30)*(0.000022957)]
George Creek	4,099	2,626	3,673	2,781	5,418	3,052	7,550	3,789	3,014	2,626	4,060	4,099	3,363	2,432	2,083	5,146	3,750	5,456	3,401	5,495	7,279	5,069	3,750	6,077	2,975	2,587	4,171	4,071	3,847	3,828	2,665	4,991	high	linear regression	[(8.90)*(723.96)*(RO)*(0.59)*(1+0.02+0)]-[(3.92)*(36,900)*(50)*(0.30)*(0.000022957)]
Hogback Creek	2,254	1,432	2,016	1,519	2,990	1,670	4,180	2,081	1,649	1,432	2,233	2,254	1,843	1,324	1,129	2,839	2,060	3,012	1,865	3,033	4,029	2,795	2,060	3,358	1,627	1,411	2,294	2,239	2,114	2,103	1,454	2,752	average	linear regression	[(4.11)*(723.96)*(RO)*(0.72)*(1+0.01+0)]-[(3.92)*(45,100)*(50)*(0.30)*(0.000022957)]
Lone Pine Creek	3,542	2,264	3,172	2,399	4,685	2,634	6,534	3,273	2,600	2,264	3,508	3,542	2,903	2,096	1,793	4,450	3,239	4,719	2,937	4,752	6,299	4,382	3,239	5,257	2,567	2,230	3,604	3,517	3,323	3,306	2,298	4,315	low	linear regression	[(13.01)*(723.96)*(RO)*(0.35)*(1+0.02+0)]-[(3.92)*(41,600)*(50)*(0.30)*(0.000022957)]
Tuttle Creek	1,878	1,196	1,681	1,268	2,489	1,393	3,476	1,735	1,375	1,196	1,860	1,878	1,537	1,106	944	2,363	1,717	2,507	1,555	2,525	3,351	2,327	1,717	2,794	1,358	1,178	1,912	1,865	1,762	1,753	1,214	2,291	average	linear regression	[(9.36)*(723.96)*(RO)*(0.25)*(1+0+0.06)]-[(3.92)*(32,000)*(50)*(0.30)*(0.000022957)]
Diaz Creek	1,702	1,083	1,523	1,149	2,256	1,263	3,152	1,572	1,246	1,083	1,686	1,702	1,393	1,002	855	2,142	1,556	2,272	1,409	2,289	3,038	2,110	1,556	2,533	1,230	1,067	1,733	1,690	1,597	1,588	1,100	2,077	average	linear regression	[(2.50)*(723.96)*(RO)*(0.90)*(1+0+0)]-[(3.92)*(30,100)*(50)*(0.30)*(0.000022957)]
Lubkin Creek	1,873	1,194	1,677	1,265	2,481	1,390	3,465	1,730	1,373	1,194	1,855	1,873	1,533	1,104	943	2,356	1,712	2,499	1,551	2,517	3,340	2,320	1,712	2,785	1,355	1,176	1,906	1,860	1,757	1,748	1,212	2,285	average	linear regression	[(3.05)*(723.96)*(RO)*(0.81)*(1+0+0)]-[(3.92)*(30,000)*(50)*(0.30)*(0.000022957)]
Silver Canyon	832	526	744	558	1,106	615	1,550	768	607	526	824	832	679	486	413	1,050	760	1,114	687	1,122	1,493	1,034	760	1,243	599	518	847	826	780	776	534	1,018	average	linear regression	[(1.59)*(723.96)*(RO)*(0.70)*(1+0+0)]-[(3.92)*(22,100)*(50)*(0.30)*(0.000022957)]
Coldwater Canyon	337	213	301	226	447	249	626	311	246	213	333	337	275	197	168	424	307	450	278	454	603	418	307	502	24	2	343	334	209	314	216	411	average	linear regression	[(1.02)*(723.96)*(RO)*(0.44)*(1+0+0)]-[(3.92)*(8,200)*(50)*(0.30)*(0.000022957)]
Poleta Canyon	8	5	7	5	10	6	14	7	6	5	8	8	6	5	4	10	7	10	6	10	14	10	7	11	6	5	8	8	7	7	5	9	low	estimated	[(0.01)*(723.96)*(RO)*(1.00)*(1+0+0)]-[(3.92)*(0)*(50)*(0.30)*(0.000022957)]
Black Canyon	8	5	7	5	10	6	14	7	6	5	8	8	6	5	4	10	7	10	6	10	14	10	7	11	6	5	8	8	7	7	5	9	low	estimated	[(0.01)*(723.96)*(RO)*(1.00)*(1+0+0)]-[(3.92)*(0)*(50)*(0.30)*(0.000022957)]
Westgard Pass	8	5	7	5	10	6	14	7	6	5	8	8	6	5	4	10	7	10	6	10	14	10	7	11	6	5	8	8	7	7	5	9	low	estimated	[(0.01)*(723.96)*(RO)*(1.00)*(1+0+0)]-[(3.92)*(0)*(50)*(0.30)*(0.000022957)]
Waucoba Canyon	8	5	7	5	10	6	14	7	6	5	8	8	6	5	4	10	7	10	6	10	14	10	7	11	6	5	8	8	7	7	5	9	low	estimated	[(0.01)*(723.96)*(RO)*(1.00)*(1+0+0)]-[(3.92)*(0)*(50)*(0.30)*(0.000022957)]
Mazourka Canyon	232	150	209	159	306	174	426	215	172	150	230	232	191	139	119	291	213	308	193	311	410	287	213	343	169	148	237	231	218	217	152	282	low	estimated	[(0.30)*(723.96)*(RO)*(1.00)*(1+0+0)]-[(3.92)*(0)*(50)*(0.30)*(0.000022957)]
subtotal (channel recharge)	103,388	66,263	92,642	70,173	136,602	77,011	190,336	95,572	76,036	66,263	102,409	103,388	84,824	61,378	52,585	129,768	94,595	137,581	85,798	138,557	183,502	127,813	94,595	153,210	74,839	65,078	105,202	102,671	96,931	96,549	67,240	125,855	average	sum	
Channel gains																																			
Lone Pine Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Tuttle Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Diaz Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Lubkin Creek	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
subtotal (channel gains)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	dih	dih	average	sum	
Tributary stream underflow																																			(UND)*(CCAF)
Bishop Creek area	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	average	estimated	(0.300)*(723.96)
Big Pine Creek area	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	217	average	estimated	(0.300)*(723.96)
Waucoba Canyon	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	65	average	estimated	(0.090)*(723.96)
subtotal (tributary stream underflow)	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	499	average	sum	
Total (tributary streams)	103,887	66,762	93,141	70,672	137,101	77,510	190,835	96,071	76,535	66,762	102,908	103,887	85,323	61,877	53,084	130,267	95,094	138,080	86,297	139,056	184,001	128,312	95,094	153,709	75,338	65,577	105,701	103,170	97,430	97,048	dih	dih	average	sum	
Recharge from mountain-front runoff																																			(UR)*(RO)*(CCAF)
Chalfant Valley – Fish Slough	25	16	22	17	33	19	45	23	18	16	25	25	20	15	13	31	23	33	21	33	44	31	23	37	18	16	25	25	24	23	16	30	low	estimated	(0.032)*(RO)*(723.96)
Fish Slough – Owens River	22	14	19	15	29	16	40	20	16	14	21	22	18	13	11	27	20	29	18	29	38	27	20	32	16	14	22	22	21	20	14	26	low	estimated	(0.028)*(RO)*(723.96)
Owens River – Horton Creek	6	4	6	4	8	5	11	6	5	4	6	6	5	4	3	8	6	8	5	8	11	8	6	9	5	4	6	6	6	6	4	8	low	estimated	(0.008)*(RO)*(723.96)
Horton Creek – McGee Creek	108	70	97	74	143	81	199	100	80	70	107	108	89	65	56	136	99	144	90	145	192	134	99	160	79	69	110	108	102	101	71	132	low	estimated	(0.140)*(RO)*(723.96)
McGee Creek – Birch Creek (near Bishop)	15	10	14	11	20	12	28	14	11	10	15	15	13	9	8	19	14	21	13	21	27	19	14	23	11	10	16	15	15	14	10	19	low	estimated	(0.020)*(RO)*(723.96)
Birch Creek (near Bishop) – Bishop Creek	93	60	83	63	122	70	170	86	69	60	92	93	76	56	48	116	85	123	77	124	164	115	85	137	68	59	94	92	87	87	61	113	low	estimated	(0.120)*(RO)*(723.96)
Bishop Creek – Rawson Creek	2,208	1,424	1,981	1,506	2,909	1,651	4,044	2,043	1,630	1,424	2,187	2,208	1,816	1,321	1,135	2,765	2,022	2,930	1,836	2,951	3,900	2,724	2,022	3,260	1,609	1,403	2,246	2,193	2,074	2,063	1,444	2,682	average	estimated	(2.850)*(RO)*(723.96)
Rawson Creek – Freeman Creek	1,046	674	938	713	1,378	782	1,916	968	772	674	1,036	1,046	860	626	538	1,310	958	1,388	870	1,398	1,847	1,290	958	1,544	762	665	1,064	1,039	982	977	684	1,271	average	estimated	(1.350)*(RO)*(723.96)
Freeman Creek – Shannon Canyon	581	375	521	396	766	434	1,064	538	429	375	576	581	478	348	299	728	532	771	483	776	1,026	717	532	858	424	369	591	577	546	543	380	706	average	estimated	(0.750)*(RO)*(723.96)
Shannon Creek – Baker Creek	2,440	1,574	2,189	1,665	3,215	1,824	4,470	2,258	1,802	1,574	2,417	2,440	2,007	1,460	1,254	3,056	2,235	3,238	2,030	3,261	4,310	3,010	2,235	3,603	1,779	1,551	2,482	2,423	2,292	2,280	1,596	2,965	average	estimated	(3.150)*(RO)*(723.96)
Baker Creek – Big Pine Creek	465	300	417	317	612	348	851	430	343	300	460	465	382	278	239	582	426	617	387	621	821	573	426	686	339	295	473	462	437	434	304	565	average	estimated	(0.600)*(RO)*(723.96)
Big Pine Creek – Crater Mountain	871	562	782	595	1,148	652	1,596	806	643	562	863	871	717	521	448	1,091	798	1,157	725	1,165	1,539	1,075	798	1,287	635	554	887	865	819	814	570	1,059	average	estimated	(1.125)*(RO)*(723.96)
Crater Mountain – Birch Creek (near Big Pine)	697	450	626	476	919	521	1,277	645	515	450	691	697	573	417	358	873	639	925	580	932	1,231	860	639	1,029	508	443	709	692	655	652	456	847	average	estimated	(0.900)*(RO)*(723.96)
Birch Creek (near Big Pine) – Fuller Creek	1,046	674	938	713	1,378	782	1,916	968	772	674	1,036	1,046	860	626	538	1,310	958	1,388	870	1,398	1,847	1,290	958	1,544	762	665	1,064	1,039	982	977	684	1,271	average	estimated	(1.350)*(RO)*(723.96)
Fuller Creek – Tinemaha Creek	349	225	313	238	459	261	639	323	257	225	345	349	287	209	179	437	319	463	290	466	616	430	319	515	254	222	355	346	328	326	228	424	average	estimated	(0.450)*(RO)*(723.96)
Tinemaha Creek – Red Mountain Creek	999	644	897	682	1,317	747	1,830	925	738	644	990	999	822	598	514	1,251	915	1,326	831	1,336	1,765	1,233	915	1,476	728	635	1,017	992	939	934	654	1,214	average	estimated	(1.290)*(RO)*(723.96)
Red Mountain Creek – Taboose Creek	1,159	747	1,040	791	1,527	867	2,123	1,072	856	747	1,148	1,159	953	693	596	1,452	1,062	1,538	964	1,549	2,047	1,430	1,062	1,712	845	737	1,179	1,151	1,089	1,083	758	1,408	average	estimated	(1.496)*(RO)*(723.96)
Taboose Creek – Goodale Creek	1,886	1,216	1,692	1,287	2,485	1,410	3,454	1,745	1,392	1,216	1,868	1,886	1,551	1,128	969	2,362	1,727	2,503	1,569	2,520	3,331	2,326	1,727	2,785	1,375	1,198	1,919	1,873	1,771	1,762	1,234	2,291	average	estimated	(2.434)*(RO)*(723.96)
Goodale Creek – Division Creek	958	618	860	654	1,262	716	1,755	886	707	618	949	958	788	573	492	1,200	877	1,271	797	1,280	1,692	1,182	877	1,415	698	609	975	951	900	895	627	1,164	average	estimated	(1.237)*(RO)*(723.96)
Division Creek – Sawmill Creek	383	247	344	261	505	286	701	354	283	247	379	383	315	229	197	479	351	508	318	512	676	472	351	565	279	243	390	380	360	358	250	465	average	estimated	(0.494)*(RO)*(723.96)
Sawmill Creek – Thibaut Creek	585	377	525	399	771	437	1,072	541	432	377	580	585	481	350	301	733	536	776	487	782	1,033	722	536	864	426	372	595	581	550	547	383	711	average	estimated	(0.755)*(RO)*(723.96)
Thibaut Creek – North Oak Creek	239	154	214	163	315	179	437	221	176	154	237	239	196	143	123	299	219	317	199	319	422	295	219	353	174	152	243	237	225	223	156	290	average	estimated	(0.308)*(RO)*(723.96)
North Oak Creek – South Oak Creek	1,190	767	1,068	812	1,568	890	2,180	1,101	878	767	1,179	1,190	979	712	612	1,490	1,090	1,579	990	1,590	2,102	1,468	1,090	1,757	867	756	1,211	1,182	1,118	1,112	778	1,446	average	estimated	(1.536)*(RO)*(723.96)
South Oak Creek – Independence Creek	389	251	349	265	512	291	712	360	287	251	385	389	320	232	200	487	356	516	323	519	687	479	356	574	283	247	396	386	365	363	254	472	average	estimated	(0.502)*(RO)*(723.96)
Independence Creek – Symmes Creek	2,072	1,336	1,859	1,414	2,731	1,549	3,796	1,917	1,530	1,336	2,053	2,072	1,704	1,240	1,065	2,595	1,898	2,750	1,724	2,770	3,661	2,557	1,898	3,060	1,511	1,317	2,108	2,058	1,947	1,937	1,356	2,518	average	estimated	(2.675)*(RO)*(723.96)
Symmes Creek – Shepherd Creek	173	111	155	118	227	129	316	160	127	111	171	173	142	103	89	216	158	229	144	231	305	213	158	255	126	110	176	171	162	161	113	210	average	estimated	(0.233)*(RO)*(723.96)
Shepherd Creek – North Bairs Creek	370	239	332	252	488	277	678	342	273	239	367	370	304	221	190	463	339	491	308	495	654	457	339	546	270	235	377	368	348	346	242	450	average	estimated	(0.478)*(RO)*(723.96)
North Bairs Creek – South Bairs Creek	171	110	153	117	225	128	313	158	126	110	169	171	140	102	88	214	156	227	142	228	302	211	156	252	125	109	174	170	161	160	112	208	average	estimated	(0.220)*(RO)*(723.96)
South Bairs Creek – George Creek	496	320	445	339	654	371	909	459	366	320	492	496	408	297	255	621	454	658	413	663	876	612	454	733	362	315	505	493	466	464	325	603	average	estimated	(0.640)*(RO)*(723.96)
George Creek – Hogback Creek	857	553	769	585	1,129	641	1,570	793	633	553	849	857	705	513	440	1,073	785	1,137	713	1,145	1,514	1,057	785	1,265	625	545	872	851	805	801	561	1,041	average	estimated	(1.106)*(RO)*(723.96)
Hogback Creek – Lone Pine Creek	885	571	794	604	1,167	662	1,622	819	654	571	877	885	728	530	455	1,109	811	1,175	736	1,183	1,564	1,092	811	1,307	645	563	901	879	832	827	579	1,076	average	estimated	(1.143)*(RO)*(723.96)
Lone Pine Creek – Tuttle Creek	930	599	834	634	1,225	695	1,703	860	686	599	921	930	765	556	478	1,164	851	1,234	773	1,242	1,642	1,147	851	1,373	678	591	946	923	873	869	608	1,129	average	estimated	(1.200)*(RO)*(723.96)
Tuttle Creek – Diaz Creek	697	450	626	476	919	521	1,277	645	515	450	691	697	573	417	358	873	639	925	580	932	1,231	860	639	1,029	508	443	709	692	655	652	456	847	average	estimated	(0.900)*(RO)*(723.96)
Diaz Creek – North Lubkin Creek	232	150	209	159	306	174	426	215	172	150	230	232	191	139	119	291	213	308	193	311	410	287	213	343	169	148	237	231	218	217	152	282	average	estimated	(0.300)*(RO)*(723.96)
North Lubkin Cr – ground-water model boundary	581	375	521	396	766	434	1,064	538	429	375	576	581	478	348	299	728	532	771	483	776	1,026	717	532	858	424	369	591	577	546	543	380	706	average	estimated	(0.750)*(RO)*(723.96)
Chalfant Valley – Coldwater Canyon	77	50	70	53	102	58	142	72	57	50	77	77	64	46	40	97	71	103	64	104	137	96	71	114	56	49	79	77	73	72	51	94	low	estimated	(0.100)*(RO)*(723.96)
Coldwater Canyon – Silver Canyon	217	140	195	148	286	162	397	201	160	140	215	217	178	130	111	272	199	288	180	290	383	268	199	320	158	138	221	215	204	203	142	264	low	estimated	(0.280)*(RO)*(723.96)
Silver Canyon – Poleta Canyon	186	120	167	127	245	139	341	172	137	120	184	186	153	111	96	233	170	247	155	248	328	229	170	275	136	118	189	185	175	174	122	226	low	estimated	(0.240)*(RO)*(723.96)
Poleta Canyon – Black Canyon	20	13	18	14	27	15	37	19	15	13	20	20	17	12	10	25	18	27	17	27	36	25	18	30	15	13	21	20	19	19	13	24	low	estimated	(0.026)*(RO)*(723.96)
Black Canyon – Westgard Pass Road	28	18	25	19	37	21	51	26	21	18	28	28	23	17	14	35	26	37	23	37	49	34	26	41	20	18	28	28	26	26	18	34	low	estimated	(0.036)*(RO)*(723.96)
Westgard Pass Road – Waucoba Road	17	11	15	12	22	13	31	16	13	11	17	17	14	10	9	21	16	23	14	23	30	21	16	25	12	11	17	17	16	16	11	21	low	estimated	(0.022)*(RO)*(723.96)
Waucoba Road – Harkless Flat	45	29	40	31	59	34	82	42	33	29	45	45	37	27	23	56	41	60	37	60	79	55	41	66	33	29	46	45	42	42	29	55	low	estimated	(0.058)*(RO)*(723.96)
Harkless Flat – Papoose Flat	23	15	21	16	31	17	43	22	17	15	23	23	19	14	12	29	21	31	19	31	41	29	21	34	17	15	24	23	22	22	15	28	low	estimated	(0.030)*(RO)*(723.96)
Papoose Flat – Black Jack Mine	25	16	22	17	33	19	45	23	18	16	25	25	20	15	13	31	23	33	21	33	44	31	23	37	18	16	25	25	24	23	16	30	low	estimated	(0.032)*(RO)*(723.96)
Black Jack Mine – Mazourka Canyon	50	32	44	34	65	37	91	46	37	32	49	50	41	30	25	62	45	66	41	66	88	61	45	73	36	32	50	49	47	46	32	60	low	estimated	(0.064)*(RO)*(723.96)
Mazourka Canyon – Reward	28	18	25	19	37	21	51	26	21	18	28	28	23	17	14	35	26	37	23	37	49	34	26	41	20	18	28	28	26	26	18	34	low	estimated	(0.036)*(RO)*(723.96)
Reward – Owenyo	20	13	18	14	27	15	37	19	15	13	20	20	17	12	10	25	18	27	17	27	36	25	18	30	15	13	21	20	19	19	13	24	low	estimated	(0.026)*(RO)*(723.96)
Owenyo – Long John Canyon	25	16	22	17	33	19	45	23	18	16	25	25	20	15	13	31	23	33	21	33	44	31	23	37	18	16	25	25	24	23	16	30	low	estimated	(0.032)*(RO)*(723.96)
Long John Canyon – ground-water model boundary	22	14	19	15	29	16	40	20	16	14	21	22	18	13	11	27	20	29	18	29	38	27	20	32	16	14	22	22	21	20	14	26	low	estimated	(0.028)*(RO)*(723.96)
Total (mountain-front recharge)	26,007	16,772	23,333	17,747	34,271	19,448	47,637	24,066	19,200	16,772	25,765	26,007	21,388	15,561	13,368	32,568	23,820	34,515	21,632	34,756	45,935	32,086	23,820	38,401	18,957	16,533	26,459	25,829	24,428	24,302	17,010	31,599	average	sum	
Runoff from bedrock within the valley fill																																			
Alabama Hills																																			(UR)*(RO)*(CCAF)
Alabama Hills (northwest side)	45	29	40	31	59	34	82	42	33	29	45	45	37	27	23	56	41	60	37	60	79	55	41	66	33	29	46	45	42	42	29	55	average	estimated	(0.058)*(RO)*(723.96)
Alabama Hills (southwest side)	25	16	22	17	33	19	45	23	18	16	25	25	20	15	13	31	23	33	21	33	44	31	23	37	18	16	25	25	24	23	16	30	average	estimated	(0.032)*(RO)*(723.96)
Alabama Hills (northeast side)	22	14	19	15	29	16	40	20	16	14	21	22	18	13	11	27	20	29	18	29	38	27	20	32	16	14	22	22	21	20	14	26	average	estimated	(0.028)*(RO)*(723.96)
Alabama Hills (southeast side)	20	13	18	14	27	15	37	19	15	13	20	20	17	12	10	25	18	27	17	27	36	25	18	30	15	13	21	20	19	19	13	24	average	estimated	(0.026)*(RO)*(723.96)
subtotal (Alabama Hills)	112	72	99	77	148	84	204	104	82	72	111	112	92	67	57	139	102	149	93	149	197	138	102	165	82	72	114	111	105	104	72	135	average	sum	
Poverty Hills	31	20	28	21	41	23	57	29	23	20	31	31	25	19	16	39	28	41	26	41	55	38	28	46	23	20	32	31	29	29	20	38	average	estimated	(0.040)*(RO)*(723.96)
Total (runoff from bedrock within valley fill)	143	92	127	98	189	107	261	133	105	92	142	143	117	86	73	178	130	190	119	190	252	176	130	211	105	92	145	142	135	133	92	173	average	sum	
Canals, ditches, and ponds																																			
Channel seepage																																			(CR)*(CCAF)
A-Drain	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	1,444	average	estimated	(1.995)*(723.96)
A-1 Drain	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	829	average	estimated	(1.145)*(723.96)
Big Pine Canal above Baker Creek	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890	average	estimated	(1.230)*(723.96)
Big Pine Canal below Baker Creek	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	1,745	average	estimated	(2.410)*(723.96)
Bishop Creek Canal	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	818	average	estimated	(1.130)*(723.96)
Bishop Creek (North Fork)	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	1,473	average	estimated	(2.035)*(723.96)
Bishop Creek (South Fork)	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	804	average	estimated	(1.110)*(723.96)
Bishop Creek Ditch	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	746	average	estimated	(1.030)*(723.96)
C-Drain	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	731	average	estimated	(2.010)*(723.96)
Collins Canal	0	0	0	0	1,832	0	1,832	0	0	0	0	0	0	0	0	0	0	0	0	0	1,832	0	0	0	0	0	523	122	0	0	174	41	average	estimated	(2.530)*(723.96); operated only during 1967, 1969, and 1983 water years
Farmers Ditch to Duck Ponds	0	0	0	0	999	0	999	0	0	0	0	0	0	0	0	999	0	999	999	999	999	999	999	999	999	999	285	400	999	999	761	799	average	estimated	(1.380)*(723.96); operated only during 1967, 1969, 1978, and 1980-88 water years
Ford Rawson Ditch	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	253	average	estimated	(0.350)*(723.96)
Geiger Canal	0	0	0	0	1,536	0	1,536	0	0	0	0	0	0	0	0	1,536	0	1,536	0	1,536	1,536	1,536	0	1,536	0	0	439	512	384	512	658	171	average	estimated	(2.121)*(723.96); operated only when RO > 1.25
Hall Ditch	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	847	average	estimated	(1.170)*(723.96)
Indian Ditch	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	average	estimated	(0.469)*(723.96)
Indian Ditch (south) – Newlan Ditch	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	588	average	estimated	(0.812)*(723.96)
North McNally Canal and Laws Ditch	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	2,914	average	estimated	(4.025)*(723.96)
South McNally Canal to Geiger Canal	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	2,411	average	estimated	(3.330)*(723.96)
Owens River Canal (north)	0	0	0	0	1,151	0	1,151	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	329	0	0	0	110	0	average	estimated	(1.590)*(723.96); operated only during 1967 and 1969 water years
Owens River Canal (south)	0	0	0	0	1,814	0	1,814	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	518	0	0	0	173	0	average	estimated	(2.506)*(723.96); operated only during 1967 and 1969 water years
Rawson Canal above Duck Ponds	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	992	average	estimated	(1.370)*(723.96)
Rawson Canal below Duck Ponds	0	0	0	0	1,343	0	1,343	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	384	0	0	0	128	0	average	estimated	(1.855)*(723.96); operated only during 1967 and 1969 water years
subtotal (channel seepage)	17,825	17,825	17,825	17,825	26,500	17,825	26,500	17,825	17,825	17,825	17,825	17,825	17,825	17,825	17,825	20,360	17,825	20,360	18,824	20,360	22,192	20,360	18,824	20,360	18,824	18,824	20,304	18,859	19,208	19,336	19,829	18,836	average	sum	
Miscellaneous recharge																																			(MR)*(AL)*(LADWP estimate of uses and losses in particular area)
South of North McNally Canal	0	0	0	0	80	0	80	0	0	0	0	0	0	0	0	19	0	1	12	0	155	89	88	431	616	452	23	18	397	324	452	431	average	estimated	(0.20)*(0.40)*(LADWP "Laws–Operations")
South of South McNally Canal	0	0	0	0	80	0	80	0	0	0	0	0	0	0	0	19	0	1	12	0	155	89	88	431	616	452	23	18	397	324	452	431	average	estimated	(0.20)*(0.40)*(LADWP "Laws–Operations")
Laws Ditch	0	0	0	0	40	0	40	0	0	0	0	0	0	0	0	10	0	0	6	0	78	44	44	215	308	226	11	9	198	162	226	215	average	estimated	(0.20)*(0.20)*(LADWP "Laws–Operations")
Farmer's Ponds near Bishop	26	26	26	26	26	26	26	26	24	53	3	3	14	9	6	50	13	86	11	5	712	33	41	496	46	25	26	70	152	187	25	496	average	estimated	(0.20)*(0.30)*(LADWP "Bishop–Operations")
Kingsley Ponds near Bishop	9	9	9	9	9	9	9	9	8	18	1	1	5	3	2	17	4	29	4	2	237	11	14	165	15	8	9	23	51	62	8	165	average	estimated	(0.20)*(0.10)*(LADWP "Bishop–Operations")
Arkansas Flats near Bishop	0	0	0	0	0	0	17	17	16	35	2	2	10	6	4	34	9	57	8	3	474	22	27	330	30	17	2	47	101	125	17	330	average	estimated	(0.20)*(0.20)*(LADWP "Bishop–Operations")
Partridge Slough near Bishop	17	17	17	17	17	17	17	17	16	35	2	2	10	6	4	34	9	57	8	3	474	22	27	330	30	17	17	47	101	125	17	330	average	estimated	(0.20)*(0.20)*(LADWP "Bishop–Operations")
Runkle Slough near Bishop	17	17	17	17	17	17	17	17	16	35	2	2	10	6	4	34	9	57	8	3	474	22	27	330	30	17	17	47	101	125	17	330	average	estimated	(0.20)*(0.20)*(LADWP "Bishop–Operations")
East of Crater Mountain	20	20	20	20	20	20	20	20	41	64	6	0	59	23	0	10	0	0	0	200	181	314	12	679	1	7	20	61	175	233	7	679	average	estimated	(0.20)*(1.00)*(LADWP "Big Pine–Operations")
Blackrock-Thibaut area 1	0	0	0	0	1,359	0	1,810	0	0	0	0	0	0	0	0	608	0	1,052	0	428	1,810	1,676	0	1,810	0	0	453	372	453	603	0	1,810	average	estimated	(0.10)*(0.50)*(LADWP "Overheads & spillgates–Operations and recreation")
Blackrock-Thibaut area 2	0	0	0	0	1,087	0	1,448	0	0	0	0	0	0	0	0	487	0	842	0	342	1,448	1,341	0	1,448	0	0	362	297	362	483	0	1,448	average	estimated	(0.10)*(0.40)*(LADWP "Overheads & spillgates–Operations and recreation")
Blackrock-Thibaut area 3	0	0	0	0	272	0	362	0	0	0	0	0	0	0	0	122	0	210	0	86	362	335	0	362	0	0	91	74	91	121	0	362	average	estimated	(0.10)*(0.10)*(LADWP "Overheads & spillgates–Operations and recreation")
South of North McNally Canal	0	0	0	0	2,669	0	5,130	0	0	0	0	1,449	594	0	0	2,351	404	2,690	389	2,429	4,613	36	0	3,675	0	0	1,114	997	919	1,225	0	3,675	average	estimated	(0.75)*(0.20)*(LADWP "Laws–Ground-water recharge")
South of South McNally Canal	0	0	0	0	8,008	0	15,390	0	0	0	0	4,346	1,782	0	0	7,053	1,212	8,070	1,166	7,288	13,839	108	0	11,025	0	0	3,343	2,991	2,756	3,675	0	11,025	average	estimated	(0.75)*(0.60)*(LADWP "Laws–Ground-water recharge")
Laws Ditch	0	0	0	0	2,669	0	5,130	0	0	0	0	1,449	594	0	0	2,351	404	2,690	389	2,429	4,613	36	0	3,675	0	0	1,114	997	919	1,225	0	3,675	average	estimated	(0.75)*(0.20)*(LADWP "Laws–Ground-water recharge")
Crater Mountain, north edge	842	0	472	0	1,982	0	3,829	572	0	0	136	311	96	0	0	2,612	1,675	2,432	724	1,437	3,532	393	230	3,246	0	0	1,018	928	869	1,159	0	3,246	average	estimated	(0.95)*(0.20)*(LADWP "Big Pine–Ground-water recharge")
Crater Mountain, south edge	421	0	236	0	991	0	1,915	286	0	0	68	155	48	0	0	1,306	838	1,216	362	719	1,766	197	115	1,623	0	0	509	464	435	579	0	1,623	average	estimated	(0.95)*(0.10)*(LADWP "Big Pine–Ground-water recharge")
Fish Springs	1,094	0	613	0	2,577	0	4,978	744	0	0	177	404	125	0	0	3,396	2,178	3,162	941	1,869	4,592	511	299	4,220	0	0	1,323	1,207	1,130	1,506	0	4,220	average	estimated	(0.95)*(0.26)*(LADWP "Big Pine–Ground-water recharge")
Laws wood lot	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	23	87	41	26	32	62	0	8	40	43	62	26	average	estimated	(0.20)*(1.00)*(LADWP "Laws–Recreation")
Buckley Ponds near Bishop	0	3,010	3,010	3,010	3,010	3,010	3,010	3,010	2,164	2,058	2,204	3,132	2,944	2,894	3,487	3,770	4,237	3,527	2,878	2,838	2,336	3,294	2,519	2,377	1,865	2,032	2,580	2,985	2,198	2,309	2,032	2,377	average	estimated	(0.70)*(0.67)*(LADWP "Bishop–Recreation"); 100% during 1963-82 water years
Farmer's Ponds near Bishop	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,150	1,622	1,242	1,171	917	978	0	185	1,077	1,130	978	1,171	average	estimated	(0.70)*(0.33)*(LADWP "Bishop–Recreation"); 0% during 1963-82 water years
Poleta pasture land near Laws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	223	0	0	80	223	223	223	average	estimated	(0.20)*(0.18)*(LADWP "Laws–Enhancement and mitigation")
McNally ponds near Laws	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	348	791	0	0	285	791	791	791	average	estimated	(0.20)*(0.64)*(LADWP "Laws–Enhancement and mitigation")
Extension of South McNally Canal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	98	223	0	0	80	223	223	223	average	estimated	(0.20)*(0.18)*(LADWP "Laws–Enhancement and mitigation")
Klondike Lake	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	930	715	0	0	411	715	715	715	average	estimated	(0.30)*(1.00)*(LADWP "Big Pine–Enhancement and mitigation")
Independence Springfield	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	106	531	827	0	0	368	827	827	827	average	estimated	(0.30)*(0.44)*(LADWP "Tinemaha to Haiwee–Enhancement and mitigation")
Richards land near Lone Pine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	43	217	338	0	0	150	338	338	338	average	estimated	(0.30)*(0.18)*(LADWP "Tinemaha to Haiwee–Enhancement and mitigation")
Van Norman land near Lone Pine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	43	217	338	0	0	150	338	338	338	average	estimated	(0.30)*(0.18)*(LADWP "Tinemaha to Haiwee–Enhancement and mitigation")
subtotal (miscellaneous recharge)	2,446	3,099	4,420	3,099	24,913	3,099	43,308	4,718	2,285	2,298	2,601	11,256	6,291	2,947	3,507	24,283	10,992	26,179	6,918	20,085	43,024	10,282	4,828	38,257	6,945	7,748	12,055	11,844	14,445	19,179	7,748	41,520	average	sum	
Sewage ponds																																			
Bishop	23	25	27	27	23	25	20	24	30	36	36	36	36	36	36	36	36	36	36	36	33	31	36	30	36	36	24	34	35	36	dih	dih	low	simulated	head-dependent relation in the ground-water flow model
Big Pine	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	dih	dih	low	simulated	head-dependent relation in the ground-water flow model
Independence	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	dih	dih	low	simulated	head-dependent relation in the ground-water flow model
Lone Pine	(83)	(82)	(82)	(81)	(81)	(80)	(79)	(73)	(69)	(63)	(59)	(55)	(51)	(63)	(61)	(59)	(57)	(57)	(56)	(57)	(59)	(60)	(61)	(62)	(66)	(74)	(81)	(60)	(66)	(89)	dih	dih	low	simulated	head-dependent relation in the ground-water flow model
subtotal (sewage ponds)	12	15	17	18	14	17	13	23	33	45	49	53	57	45	47	49	51	51	52	51	46	43	47	40	42	34	15	46	41	19	dih	dih	low	sum	
Total (canal, ditches, and ponds)	20,283	20,939	22,262	20,942	51,427	20,941	69,821	22,566	20,143	20,168	20,475	29,134	24,173	20,817	21,379	44,692	28,868	46,590	25,794	40,496	65,262	30,685	23,699	58,657	25,811	26,606	32,374	30,749	33,693	38,534	dih	dih	average	sum	
Total—Table 11, part 1																																			
Recharge	151,772	106,017	140,315	110,911	224,440	119,458	310,006	144,288	117,435	105,246	150,742	160,623	132,453	99,793	89,356	209,157	149,364	220,827	135,294	215,950	296,902	192,711	144,195	252,430	121,663	110,260	166,131	161,343	157,137	161,469	dih	dih	average	sum	
Discharge	(102,884)	(96,886)	(96,992)	(96,165)	(107,678)	(99,514)	(116,429)	(106,561)	(89,673)	(72,369)	(65,692)	(67,896)	(66,919)	(49,985)	(47,727)	(52,729)	(55,911)	(61,893)	(60,119)	(63,947)	(77,812)	(78,266)	(71,734)	(79,354)	(63,601)	(50,785)	(102,364)	(67,833)	(66,369)	(34,629)	dih	dih	average	sum	

Table 11. Simulated ground-water budget for the aquifer system of the Owens Valley, California, water years 1963-88 (part 1 of 3)

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INYO COUNTY AND THE
LOS ANGELES DEPARTMENT OF WATER AND POWER

WATER-SUPPLY PAPER 2370–H
Simulated ground-water budget for the aquifer system, water years 1963-88–TABLE 11, PART 2 OF 3

Danskin, W.R., 1998, Evaluation of the hydrologic system and selected water-management alternatives in the Owens Valley, California

EXPLANATION FOR TABLE 11, PART 2

Values in acre-feet per year except as noted below. Accuracy varies for individual water-budget components, but is generally 2 or 3 significant figures; greater precision is shown for computational purposes only. Parentheses ( ) indicate negative value, except in 'Water-budget component' and 'Calculation or source of data' columns

Water-budget component–Type and area of ground-water recharge or discharge. Components are identified on plate 3, 1:24,000-scale topographic maps, or 1:24,000-scale water-use maps maintained by the Los Angeles Department of Water and Power (R.H. Rawson, written commun., 1988).

Pumped and flowing wells–Well numbers from the Los Angeles Department of Water and Power; USGS, U.S. Geological Survey well and site listed in tables 1 and 9; EM, enhancement and mitigation well.

Water year–Annual values of ground-water recharge or discharge, in acre-feet, for water years 1963 through 1988. A water year extends from October through September; for example, water year 1963 extends from October 1, 1962, through September 30, 1963.

Average for water years–Average annual values of ground-water recharge or discharge, in acre-feet, for a selected period of water years.

Predictive simulation–Annual values of ground-water recharge or discharge, in acre-feet, for selected periods.

SS–Values for 1988 steady-state simulation, used as alternative 1 and as simulation period II in alternative 4 (refer to text and figures 30 and 32).

Dry–Values for simulation period I in alternative 4 (refer to text and figures 30 and 31).

Wet–Values for simulation period III in alternative 4 (refer to text and figures 30 and 33).

dih–Value of ground-water recharge or discharge depends on initital heads in the ground-water flow model.

Relative degree of confidence–Qualitative assessment of the accuracy of ground-water recharge or discharge values: high, average, or low.

Method of calculation–Method of calculating values of ground-water recharge or discharge.

Calculation or source of data–For water years 1963-88. Methods and assumptions for calculating values for predictive simulations are described in text.

Los Angeles Department of Water and Power–Measured values of discharge from pumped and flowing wells for water years 1963-88 obtained from M.L. Blevins (Los Angeles Department of Water and Power, written commun., 1988).

Water-budget component	Water year																										Average for water years			Predictive simulation			Relative degree of confidence	Method of calculation	Calculation or source of data (acronyms and units of measure described above)
	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1963-69	1970-84	1985-88	SS	Dry	Wet			
Pumped and flowing wells																																			
1	16	56	64	60	72	72	73	82	40	0	0	0	0	0	0	0	2	6	53	36	57	71	56	49	28	0	59	23	33	35	56	35	high	measured	Los Angeles Department of Water and Power
2	391	212	244	270	270	270	269	294	136	1	0	0	0	0	0	0	9	14	122	140	225	254	198	183	96	0	275	80	119	127	198	127	high	measured	Los Angeles Department of Water and Power
3	89	114	91	75	51	48	45	49	24	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	5	0	0	0	0	high	measured	Los Angeles Department of Water and Power
5	3	19	26	21	38	33	28	26	18	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	3	0	0	0	0	high	measured	Los Angeles Department of Water and Power
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	25	16	30	37	21	16	18	0	0	7	14	12	21	12	high	measured	Los Angeles Department of Water and Power
9	241	248	302	350	346	363	366	383	221	50	16	78	106	49	74	8	201	163	249	225	170	131	93	72	46	2	317	142	53	56	93	56	high	measured	Los Angeles Department of Water and Power
15	55	462	216	405	412	510	469	658	838	0	841	499	541	568	532	687	50	27	386	446	579	555	848	439	1,059	1,268	361	480	904	852	1,268	852	high	measured	Los Angeles Department of Water and Power
16	281	295	389	447	459	503	510	562	276	275	387	435	311	349	353	425	282	234	575	560	437	438	542	501	442	960	412	393	611	668	960	668	high	measured	Los Angeles Department of Water and Power
17	47	91	85	91	83	83	85	101	49	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	81	10	0	0	0	0	high	measured	Los Angeles Department of Water and Power
18	50	119	116	114	103	103	114	163	59	0	0	0	0	0	0	0	35	36	100	65	99	96	81	67	3	0	103	44	38	49	81	49	high	measured	Los Angeles Department of Water and Power
20	103	176	194	219	224	236	74	23	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	175	2	0	0	0	0	high	measured	Los Angeles Department of Water and Power
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26	33	58	72	47	36	35	2	0	13	30	28	47	28	high	measured	Los Angeles Department of Water and Power
23	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	25	26	84	52	52	54	41	67	28	3	0	20	35	37	67	37	high	measured	Los Angeles Department of Water and Power
24	13	38	48	43	32	42	38	48	23	0	0	0	0	0	0	0	22	31	131	55	128	71	68	60	45	0	36	34	43	43	68	43	high	measured	Los Angeles Department of Water and Power
25	50	91	90	97	102	108	106	133	50	0	0	0	0	0	0	0	53	35	83	38	58	71	68	39	46	2	92	35	39	36	68	36	high	measured	Los Angeles Department of Water and Power
26	20	77	109	108	88	90	93	98	36	0	0	0	0	0	0	0	9	12	99	99	70	97	68	72	45	1	84	35	47	47	72	47	high	measured	Los Angeles Department of Water and Power
27	174	194	198	215	225	243	241	269	115	0	0	0	27	0	0	0	108	113	205	156	233	231	185	125	74	6	213	97	98	105	185	105	high	measured	Los Angeles Department of Water and Power
28	47	210	337	434	319	344	329	375	158	0	0	0	0	0	0	0	9	6	57	113	131	144	125	110	85	1	289	66	80	79	125	79	high	measured	Los Angeles Department of Water and Power
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	16	95	46	51	61	49	52	35	8	0	19	36	36	52	36	high	measured	Los Angeles Department of Water and Power
30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	8	32	71	48	63	26	0	0	8	34	37	63	37	high	measured	Los Angeles Department of Water and Power
31	229	319	342	385	401	411	436	465	239	1	0	0	35	0	0	0	123	119	290	247	377	433	402	331	201	17	360	155	238	250	402	250	high	measured	Los Angeles Department of Water and Power
32	139	168	177	172	220	256	251	354	156	5	0	10	48	0	1	1	116	96	186	159	211	229	215	169	93	15	198	105	123	133	215	133	high	measured	Los Angeles Department of Water and Power
33	0	0	8	149	183	278	263	360	78	0	0	0	0	0	0	0	0	0	0	1	83	144	86	72	36	0	126	44	49	53	86	53	high	measured	Los Angeles Department of Water and Power
34	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	9	10	24	50	69	64	54	24	1	0	11	36	40	64	40	high	measured	Los Angeles Department of Water and Power
35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	9	0	0	0	7	6	17	6	high	measured	Los Angeles Department of Water and Power
36	53	57	64	72	72	70	70	73	43	24	5	14	20	7	8	2	43	34	63	41	50	38	44	61	37	4	65	31	37	36	61	36	high	measured	Los Angeles Department of Water and Power
38	225	282	293	291	286	347	376	424	259	13	0	12	76	0	2	3	104	103	69	142	204	283	269	220	99	15	300	113	151	168	269	168	high	measured	Los Angeles Department of Water and Power
39	310	305	316	341	344	366	363	375	305	197	83	161	165	141	138	57	232	237	295	293	341	381	371	365	330	142	335	227	302	293	371	293	high	measured	Los Angeles Department of Water and Power
40	24	22	24	24	22	20	20	24	13	12	5	12	10	6	11	8	20	20	15	13	17	17	12	18	12	8	22	14	13	13	18	13	high	measured	Los Angeles Department of Water and Power
41	93	123	128	131	147	151	146	103	43	32	0	4	7	0	0	0	10	22	30	44	67	80	87	82	62	10	131	29	60	60	87	60	high	measured	Los Angeles Department of Water and Power
42	53	51	21	12	23	24	24	29	6	3	0	0	7	0	0	1	14	14	59	29	44	51	65	40	25	4	30	17	34	36	65	36	high	measured	Los Angeles Department of Water and Power
43	0	0	0	0	0	0	0	40	43	0	0	0	7	0	2	1	27	38	52	72	105	117	130	125	95	13	0	34	91	89	130	89	high	measured	Los Angeles Department of Water and Power
44	82	92	92	95	98	103	101	106	87	68	50	53	53	53	49	27	65	80	92	95	99	105	109	112	99	65	95	72	96	95	112	95	high	measured	Los Angeles Department of Water and Power
45	67	71	83	80	68	74	79	81	40	31	2	6	7	0	0	0	0	0	0	0	3	2	5	0	0	0	75	11	1	2	5	2	high	measured	Los Angeles Department of Water and Power
46	61	64	64	72	76	83	83	83	75	56	17	50	38	36	35	16	58	58	66	70	85	96	91	92	81	48	72	56	78	77	92	77	high	measured	Los Angeles Department of Water and Power
48	35	43	32	36	36	36	36	41	53	39	47	25	53	49	22	7	26	36	49	44	54	61	64	75	64	41	36	40	61	60	75	60	high	measured	Los Angeles Department of Water and Power
49	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	high	measured	Los Angeles Department of Water and Power
52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	6	2	0	0	0	2	2	6	2	high	measured	Los Angeles Department of Water and Power
53	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	68	27	0	0	26	12	68	12	high	measured	Los Angeles Department of Water and Power
54	54	73	70	49	49	41	38	48	40	43	18	0	0	0	0	0	0	1	2	12	13	27	66	57	39	17	53	14	45	47	66	47	high	measured	Los Angeles Department of Water and Power
55	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	high	measured	Los Angeles Department of Water and Power
57	68	697	0	0	0	0	18	0	437	3,037	2,528	2,617	2,594	2,281	1,429	1,444	157	2,549	50	553	0	0	646	153	1,624	2,717	112	1,312	1,285	1,172	2,717	1,172	high	measured	Los Angeles Department of Water and Power
58	47	49	47	44	49	53	47	75	73	86	73	85	59	36	12	6	24	33	65	66	74	83	100	85	67	39	48	57	73	75	100	75	high	measured	Los Angeles Department of Water and Power
59	33	170	149	2	160	45	42	222	1,093	1,553	1,331	1,019	897	394	1,130	965	65	291	0	59	0	0	417	0	1,186	1,891	86	601	874	769	1,891	769	high	measured	Los Angeles Department of Water and Power
60	61	515	2	5	4	49	66	376	1,566	2,517	1,236	667	387	1,361	1,307	1,203	40	1,291	0	82	0	2	616	526	1,443	1,820	100	802	1,101	987	1,820	987	high	measured	Los Angeles Department of Water and Power
61	34	315	1	0	0	548	6	116	1,156	1,540	1,005	0	466	0	330	874	64	0	196	36	0	2	556	1	1,217	1,821	129	386	899	793	1,821	793	high	measured	Los Angeles Department of Water and Power
63	35	338	0	0	0	0	0	36	1,151	1,610	1,331	1,439	946	49	405	878	56	786	0	32	0	0	216	89	1,055	1,671	53	581	758	659	1,671	659	high	measured	Los Angeles Department of Water and Power
65	87	767	3	7	5	119	99	362	2,585	3,816	2,128	1,429	2,120	2,639	1,675	1,279	92	20	16	85	0	0	675	0	1,638	2,784	155	1,216	1,274	1,153	2,784	1,153	high	measured	Los Angeles Department of Water and Power
66	64	5	2	6	4	78	70	296	1,805	2,589	1,808	2,009	986	2,501	1,463	1,052	69	0	0	0	0	0	197	0	1,599	1,646	33	972	861	614	1,646	614	high	measured	Los Angeles Department of Water and Power
67	48	5	3	6	4	76	0	0	584	2,112	1,125	471	263	846	553	1,069	79	357	1,065	1,268	0	0	247	1,053	1,154	1,216	20	653	918	839	1,216	839	high	measured	Los Angeles Department of Water and Power
68	134	3	1	3	2	58	0	131	1,100	1,515	1,013	632	0	179	1,075	563	44	0	0	0	6	1	103	1	1,149	1,175	29	417	607	426	1,175	426	high	measured	Los Angeles Department of Water and Power
69	81	5	4	7	5	0	0	0	584	2,976	1,587	938	1,156	2,591	903	1,215	130	364	164	1,538	0	0	413	802	2,264	2,167	15	943	1,412	1,127	2,264	1,127	high	measured	Los Angeles Department of Water and Power
73	0	0	0	0	0	0	0	0	0	668	1,561	1,064	634	1,789	863	1,017	71	0	0	23	0	0	134	825	1,616	1,834	0	513	1,102	931	1,834	931	high	measured	Los Angeles Department of Water and Power
74	58	5	4	6	4	76	69	274	1,756	1,254	798	248	0	0	474	531	50	373	0	50	0	0	120	0	1,323	1,031	32	387	619	384	1,323	384	high	measured	Los Angeles Department of Water and Power
75	39	472	4	7	2	0	0	0	707	771	1,398	505	698	1,612	783	855	21	778	97	681	0	2	176	534	1,368	1,687	75	594	941	799	1,687	799	high	measured	Los Angeles Department of Water and Power
76	29	438	4	5	2	377	60	6	1,333	1,992	1,440	852	815	2,564	2,358	798	120	906	697	682	0	2	0	473	1,372	1,726	131	971	893	733	1,726	733	high	measured	Los Angeles Department of Water and Power
77	49	473	3	5	4	83	91	504	1,588	1,970	1,406	459	0	162	308	943	99	984	0	36	21	321	904	425	1,447	2,002	101	587	1,195	1,110	2,002	1,110	high	measured	Los Angeles Department of Water and Power
82	10	31	2	9	23	33	29	82	3	0	0	0	0	0	0	0	0	16	30	2	26	103	29	0	0	0	20	17	7	10	29	10	high	measured	Los Angeles Department of Water and Power
83	0	17	1	9	25	34	39	73	2	0	0	0	0	0	0	0	0	0	9	2	37	34	13	17	10	0	18	10	10	10	17	10	high	measured	Los Angeles Department of Water and Power
84	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	3	31	33	11	14	9	0	0	5	9	8	14	8	high	measured	Los Angeles Department of Water and Power
85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	23	85	74	73	38	0	0	7	46	49	74	49	high	measured	Los Angeles Department of Water and Power
86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	high	measured	Los Angeles Department of Water and Power
87	10	151	2	1	2	87	21	85	99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39	12	0	0	0	0	high	measured	Los Angeles Department of Water and Power
89	12	185	2	3	2	106	23	105	613	254	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	48	65	0	0	0	0	high	measured	Los Angeles Department of Water and Power
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	high	measured	Los Angeles Department of Water and Power
92	39	5	3	0	0	0	0	0	820	2,359	1,377	930	433	1,386	1,688	839	64	762	0	612	0	0	151	776	1,697	1,775	7	751	1,100	901	1,775	901	high	measured	Los Angeles Department of Water and Power
95	17	239	2	4	2	208	33	30	841	1,063	519	459	108	0	263	396	55	389	0	27	0	1	7	182	604	762	72	277	389	317	762	317	high	measured	Los Angeles Department of Water and Power
96	50	4	5	7	5	104	65	365	2,417	3,079	1,380	1,241	1,231	2,924	1,047	1,113	126	1,272	904	832	0	0	274	701	2,184	2,075	34	1,195	1,309	1,017	2,184	1,017	high	measured	Los Angeles Department of Water and Power
99	33	7	2	5	1	0	0	0	881	1,582	946	44	340	937	702	570	43	167	0	43	0	0	443	71	87	0	7	417	150	0	0	0	high	measured	Los Angeles Department of Water and Power
103	30	68	95	130	145	186	260	278	199	223	800	506	69	413	710	535	40	77	159	218	221	216	291	356	947	1,027	131	311	655	558	1,027	558	high	measured	Los Angeles Department of Water and Power
104	20	0	0	0	0	0	0	119	281	988	632	402	69	269	643	401	36	85	172	232	219	244	279	289	677	724	3	319	492	431	724	431	high	measured	Los Angeles Department of Water and Power
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	7	19	3	0	0	0	7	9	19	9	high	measured	Los Angeles Department of Water and Power
106	73	5	3	7	2	1,544	2	450	2,236	2,943	1,290	0	777	1,537	524	642	184	0	1,958	1,716	2,352	1,252	32	296	2,221	1,879	234	1,191	1,107	736	2,221	736	high	measured	Los Angeles Department of Water and Power
108	64	5	3	4	0	10	0	0	869	3,365	2,808	1,749	1,264	1,865	763	1,307	293	377	108	47	0	0	0	0	0	0	12	988	0	0	0	0	high	measured	Los Angeles Department of Water and Power
109	98	3	4	6	3	9	2	10	1,363	4,063	3,693	3,307	2,395	1,712	1,069	964	271	977	0	60	72	876	27	217	1,353	31	18	1,389	407	92	1,353	92	high	measured	Los Angeles Department of Water and Power
110	69	5	5	4	0	1,343	0	325	1,954	3,413	2,521	2,251	1,785	3,997	1,209	1,429	1,274	3,151	2,493	259	15	882	1,303	1,570	3,118	3,346	204	1,797	2,334	2,073	3,346	2,073	high	measured	Los Angeles Department of Water and Power
111	0	0	0	0	0	1,773	3,453	495	1,667	2,657	0	0	0	0	18	1,000	42	1,827	24	54	0	167	25	568	1,827	2,115	747	530	1,134	903	2,115	903	high	measured	Los Angeles Department of Water and Power
112	40	3	1	2	2	829	1	230	1,201	971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	125	160	0	0	0	0	high	measured	Los Angeles Department of Water and Power
113	37	3	2	4	2	793	1	222	1,162	1,102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	120	166	0	0	0	0	high	measured	Los Angeles Department of Water and Power
114	68	6	3	0	0	1,262	0	202	2,053	3,058	1,269	660	1,756	1,172	1,157	1,289	1,313	1,854	356	1,784	1,317	0	747	845	1,858	2,016	191	1,283	1,367	1,203	2,016	1,203	high	measured	Los Angeles Department of Water and Power
116	49	4	2	2	3	773	1	280	1,435	2,214	1,073	735	607	0	214	8	0	0	0	0	0	0	0	0	0	0	119	438	0	0	0	0	high	measured	Los Angeles Department of Water and Power
118	45	0	0	0	0	43	0	0	188	1,705	804	70	1,015	2,496	1,179	1,178	142	1,081	888	1,011	0	0	1,285	786	1,929	1,763	13	784	1,441	1,278	1,929	1,278	high	measured	Los Angeles Department of Water and Power
122	237	246	217	206	210	232	219	234	214	168	140	122	139	125	126	131	128	152	133	123	125	140	138	140	180	153	224	147	153	144	180	144	high	measured	Los Angeles Department of Water and Power
125	1,160	1,295	1,262	1,302	1,288	1,056	914	1,950	1,674	1,544	1,389	1,286	1,262	1,058	926	1,009	1,093	1,031	1,107	1,066	1,062	940	1,054	976	809	676	1,182	1,226	879	902	1,054	902	high	measured	Los Angeles Department of Water and Power
126	696	780	700	717	770	838	880	838	748	566	487	482	498	457	418	397	389	411	374	334	391	408	355	334	363	267	769	480	330	319	363	319	high	measured	Los Angeles Department of Water and Power
127	600	656	615	636	665	708	716	751	626	585	547	553	585	543	457	498	576	513	533	503	526	504	500	481	455	426	657	553	466	469	500	469	high	measured	Los Angeles Department of Water and Power
128	0	0	0	0	0	0	0	0	0	92	358	363	341	291	290	289	288	291	273	251	268	252	295	333	354	325	0	243	327	318	354	318	high	measured	Los Angeles Department of Water and Power
129	12	12	12	12	12	12	12	12	12	1	0	0	0	0	5	75	9	12	106	253	262	225	191	182	76	100	12	65	137	158	191	158	high	measured	Los Angeles Department of Water and Power
130	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	143	218	215	227	247	292	280	289	310	331	248	0	108	295	282	331	282	high	measured	Los Angeles Department of Water and Power
131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79	706	683	0	0	367	254	706	254	high	measured	Los Angeles Department of Water and Power
132	902	996	835	883	921	913	943	981	779	608	532	583	574	542	438	437	500	451	511	439	545	659	544	509	438	237	913	572	432	430	544	430	high	measured	Los Angeles Department of Water and Power
133	1,070	1,111	978	1,048	1,117	1,139	1,188	1,230	1,048	842	694	768	871	796	640	680	836	791	871	728	904	897	751	598	548	367	1,093	840	566	572	751	572	high	measured	Los Angeles Department of Water and Power
134	604	675	605	694	760	743	744	845	591	398	272	326	365	332	290	384	634	533	648	508	764	721	662	710	553	183	689	507	527	518	710	518	high	measured	Los Angeles Department of Water and Power
136	0	0	0	0	0	0	0	0	0	0	0	38	0	35	2	25	84	51	92	34	190	215	139	162	237	0	0	51	135	100	237	100	high	measured	Los Angeles Department of Water and Power
137	76	79	61	63	63	49	60	49	31	278	369	23	63	542	975	92	355	6	454	342	1	390	666	1	669	650	64	265	497	439	669	439	high	measured	Los Angeles Department of Water and Power
138	0	0	0	0	0	0	0	0	0	444	854	141	469	1,424	2,272	219	1,080	13	1,298	745	0	934	1,587	0	1,353	1,371	0	660	1,078	986	1,587	986	high	measured	Los Angeles Department of Water and Power
139	133	139	175	203	160	201	184	196	181	205	175	218	196	143	194	270	252	258	280	242	210	263	0	0	0	0	171	219	0	0	0	0	high	measured	Los Angeles Department of Water and Power
140	0	0	0	0	0	0	0	0	0	566	427	0	178	0	1,342	155	908	541	1,201	687	0	847	1,476	14	1,540	1,449	0	457	1,120	980	1,540	980	high	measured	Los Angeles Department of Water and Power
141	0	0	0	0	0	0	0	0	0	394	860	33	413	119	1,224	187	511	0	1,065	705	1	769	1,362	9	1,349	1,302	0	419	1,006	891	1,362	891	high	measured	Los Angeles Department of Water and Power
148	0	0	0	0	0	0	0	0	0	0	268	391	328	354	325	303	368	378	436	369	316	369	0	0	0	0	0	280	0	0	0	0	high	measured	Los Angeles Department of Water and Power
155	29	305	2	3	2	0	1	165	1,077	1,441	758	387	110	198	385	164	0	0	350	66	0	0	0	17	492	430	49	340	235	149	492	149	high	measured	Los Angeles Department of Water and Power
159	30	309	2	3	2	0	41	174	1,023	1,384	777	523	435	114	270	464	13	0	0	55	0	1	7	0	694	771	55	349	368	259	771	259	high	measured	Los Angeles Department of Water and Power
161	0	0	0	0	0	0	0	0	0	3	17	54	59	14	8	0	14	19	64	109	181	212	201	190	163	39	0	50	148	143	201	143	high	measured	Los Angeles Department of Water and Power
169	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	high	measured	Los Angeles Department of Water and Power
203	0	7	1	1	1	0	0	45	476	817	353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	113	0	0	0	0	high	measured	Los Angeles Department of Water and Power
207	0	0	0	0	0	0	0	0	0	876	2,044	252	0	0	1,211	1,167	842	670	1,012	1,483	8	833	1,547	0	1,314	1,359	0	693	1,055	969	1,547	969	high	measured	Los Angeles Department of Water and Power
208	0	0	0	0	0	0	0	0	0	70	568	350	481	92	468	85	158	0	0	0	0	0	0	0	0	0	0	151	0	0	0	0	high	measured	Los Angeles Department of Water and Power
210	2	1	2	3	2	0	0	84	1,031	1,749	757	0	0	108	366	679	0	0	0	26	0	0	0	0	607	798	1	320	351	266	798	266	high	measured	Los Angeles Department of Water and Power
218	3	4	1	3	1	1	0	127	1,255	2,443	1,179	0	164	352	374	617	0	0	0	0	0	0	0	0	1,504	1,016	2	434	630	339	1,504	339	high	measured	Los Angeles Department of Water and Power
219	3	20	1	6	0	0	0	226	1,670	4,555	3,015	1,272	2,023	584	603	1,071	0	0	0	1	0	3	0	1	2,267	1,327	4	1,002	899	443	2,267	443	high	measured	Los Angeles Department of Water and Power
220	7	2	50	4	3	0	76	41	1,389	2,306	1,070	0	63	172	332	483	0	6	0	53	506	0	211	150	1,447	1,043	20	428	713	468	1,447	468	high	measured	Los Angeles Department of Water and Power
222	6	4	1	5	2	0	0	143	1,563	2,376	987	0	905	0	225	268	0	0	0	34	0	0	28	0	1,374	551	3	433	488	193	1,374	193	high	measured	Los Angeles Department of Water and Power
223	6	5	1	5	2	0	0	194	2,116	3,257	1,499	870	1,212	0	462	776	0	0	0	54	0	0	218	0	2,038	1,183	3	696	860	467	2,038	467	high	measured	Los Angeles Department of Water and Power
228	7	4	0	2	3	0	0	119	1,236	414	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	118	0	0	0	0	high	measured	Los Angeles Department of Water and Power
229	7	4	1	4	2	0	0	166	1,497	2,388	1,085	0	63	257	229	364	0	0	0	27	0	424	0	0	1,233	678	3	433	478	226	1,233	226	high	measured	Los Angeles Department of Water and Power
230	0	0	0	0	0	0	0	36	646	1,482	558	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	181	0	0	0	0	high	measured	Los Angeles Department of Water and Power
231	9	5	0	8	4	0	0	188	2,059	3,346	1,473	0	84	605	359	605	0	0	0	41	0	0	172	203	1,772	815	4	584	741	397	1,772	397	high	measured	Los Angeles Department of Water and Power
232	6	4	1	5	2	0	0	134	1,479	2,161	908	0	797	0	146	573	0	0	0	3	0	1	0	1	1,460	887	3	413	587	296	1,460	296	high	measured	Los Angeles Department of Water and Power
233	1	1	0	2	2	0	0	64	709	1,062	399	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	149	0	0	0	0	high	measured	Los Angeles Department of Water and Power
235	0	0	205	397	36	0	0	0	0	194	895	24	326	1,034	1,065	81	615	11	735	460	0	0	885	0	984	1,676	91	363	886	854	1,676	854	high	measured	Los Angeles Department of Water and Power
236	7	1,511	1,211	0	0	1,562	0	290	2,555	2,968	2,272	867	1,061	2,230	2,751	960	815	981	1,081	934	0	969	1,355	892	2,053	2,398	613	1,382	1,675	1,548	2,398	1,548	high	measured	Los Angeles Department of Water and Power
237	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	high	measured	Los Angeles Department of Water and Power
238	0	0	0	0	35	0	0	0	0	582	1,401	693	485	1,656	2,724	772	951	1,123	1,091	1,849	1	0	2,183	1,079	1,390	2,219	5	889	1,718	1,827	2,219	1,827	high	measured	Los Angeles Department of Water and Power
239	7	1,333	1,347	5	2	1,329	0	222	2,067	2,049	1,892	807	1,032	1,633	2,310	911	735	904	975	913	1	836	1,210	942	1,804	2,141	575	1,152	1,524	1,431	2,141	1,431	high	measured	Los Angeles Department of Water and Power
240	7	1,153	959	10	2	1,233	0	213	1,948	2,383	1,563	189	265	2,191	1,874	821	668	820	863	971	0	713	1,038	791	1,563	1,851	481	1,032	1,311	1,227	1,851	1,227	high	measured	Los Angeles Department of Water and Power
241	4	981	782	159	0	935	0	168	1,506	1,799	1,007	290	846	1,715	1,342	629	534	652	705	764	1	569	824	219	1,223	1,088	409	835	839	710	1,223	710	high	measured	Los Angeles Department of Water and Power
242	7	1,389	1,100	4	2	1,409	0	253	2,276	1,806	541	229	906	1,187	574	420	472	459	503	543	0	404	589	435	845	613	559	705	621	546	845	546	high	measured	Los Angeles Department of Water and Power
243	6	1,032	489	2	84	1,158	0	220	1,817	1,366	1,412	534	1,085	1,593	1,803	871	748	901	970	1,104	0	662	1,166	885	1,696	1,896	396	1,006	1,411	1,316	1,896	1,316	high	measured	Los Angeles Department of Water and Power
244	6	1,220	496	6	2	1,178	0	219	1,963	2,312	1,770	662	793	1,089	2,021	880	698	784	895	1,037	0	766	1,350	805	869	0	415	1,059	756	718	1,350	718	high	measured	Los Angeles Department of Water and Power
245	7	1,355	554	6	2	1,311	0	236	2,154	2,519	1,939	763	1,276	2,484	2,170	753	640	734	775	1,032	0	667	1,134	813	1,133	1,031	462	1,209	1,028	993	1,134	993	high	measured	Los Angeles Department of Water and Power
246	7	608	0	5	1	1	0	0	785	2,480	1,526	520	1	0	5	0	19	663	675	813	0	0	5	359	1,390	1,547	89	499	825	637	1,547	637	high	measured	Los Angeles Department of Water and Power
247	8	1,874	430	7	3	2	0	0	307	2,206	2,589	759	125	0	0	1	44	1,575	1,416	1,801	2	0	0	1,391	2,755	2,778	332	722	1,731	1,390	2,778	1,390	high	measured	Los Angeles Department of Water and Power
248	8	1,471	377	0	0	0	0	0	1,167	3,727	2,309	716	164	0	0	1	33	1,187	1,195	1,530	0	0	9	701	2,438	3,182	265	802	1,583	1,297	3,182	1,297	high	measured	Los Angeles Department of Water and Power
249	8	1,097	260	5	2	1	0	0	822	2,698	2,510	794	83	0	2	1	50	1,066	1,056	1,367	0	101	214	665	2,135	2,769	196	703	1,446	1,216	2,769	1,216	high	measured	Los Angeles Department of Water and Power
250	36	56	50	39	37	72	60	58	68	88	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	15	0	0	0	0	high	measured	Los Angeles Department of Water and Power
251	11	1,070	1,049	3	2	1,004	0	796	1,781	1,870	1,096	1,279	1,352	797	80	0	0	0	0	0	0	0	0	0	0	0	448	603	0	0	0	0	high	measured	Los Angeles Department of Water and Power
278	0	0	0	0	0	0	0	0	24	24	24	23	23	48	13	10	62	1	0	0	0	0	0	0	0	0	0	17	0	0	0	0	high	measured	Los Angeles Department of Water and Power
324	12	9	10	5	12	2	0	2	2	4	5	5	4	5	0	0	0	0	0	0	0	0	0	0	0	0	7	2	0	0	0	0	high	measured	Los Angeles Department of Water and Power
327	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0	2	0	0	0	0	high	measured	Los Angeles Department of Water and Power
330	0	0	0	0	2	0	0	246	3,691	6,432	2,823	9,911	14,020	12,610	11,879	11,754	12,179	12,385	10,807	8,363	13,605	14,764	13,086	10,911	13,688	11,160	0	9,698	12,211	11,719	13,688	11,719	high	measured	Los Angeles Department of Water and Power
331	0	0	0	0	0	0	0	0	0	0	0	0	1	5	666	3,008	3,268	25	3,260	1,459	0	0	0	0	0	92	0	779	23	31	92	31	high	measured	Los Angeles Department of Water and Power
332	0	0	0	0	2	0	0	285	5,103	6,643	4,165	73	11,893	12,785	12,579	12,032	8,763	13,321	12,324	13,146	10,654	11,151	12,811	13,348	9,223	12,459	0	8,994	11,960	12,873	13,348	12,873	high	measured	Los Angeles Department of Water and Power
341	0	0	0	373	696	0	458	71	797	1,078	1,073	781	458	559	794	556	772	833	483	394	711	372	359	289	304	378	218	649	333	342	378	342	high	measured	Los Angeles Department of Water and Power
342	0	0	0	0	0	0	0	0	3,922	9,368	4,939	4,222	3,600	8,669	6,755	3,775	1,432	3,638	2,505	482	0	0	2,209	3,613	6,754	7,883	0	3,554	5,115	4,568	7,883	4,568	high	measured	Los Angeles Department of Water and Power
343	0	0	0	0	0	0	0	0	0	0	0	0	0	467	512	438	322	48	308	78	0	0	165	0	1,144	1,205	0	145	629	457	1,205	457	high	measured	Los Angeles Department of Water and Power
344	0	0	0	0	0	555	1,260	1,533	330	530	549	577	760	545	827	701	650	915	946	1,223	1,248	991	623	0	1,588	1,332	259	822	886	652	1,588	652	high	measured	Los Angeles Department of Water and Power
345	0	0	0	0	0	0	0	0	0	2,053	2,292	799	194	1,329	788	1,802	76	1,661	630	232	0	2	1,641	1,282	2,786	3,553	0	791	2,316	2,159	3,553	2,159	high	measured	Los Angeles Department of Water and Power
346	0	0	0	0	0	0	0	621	1,684	1,830	1,815	1,773	1,198	1,622	1,276	1,984	1,388	847	729	83	0	781	1,574	2,439	72	57	0	1,175	1,036	1,357	2,439	1,357	high	measured	Los Angeles Department of Water and Power
347	0	0	0	0	0	0	0	0	1,344	7,705	6,561	548	6,433	8,145	9,272	3,447	542	3,105	1,290	4,827	0	5	4,807	3,783	7,254	8,364	0	3,548	6,052	5,651	8,364	5,651	high	measured	Los Angeles Department of Water and Power
348	0	0	0	0	0	0	0	0	0	802	2,175	104	1,056	2,594	841	1,035	186	989	0	652	0	0	64	0	1,621	1,210	0	696	724	425	1,621	425	high	measured	Los Angeles Department of Water and Power
349	0	0	0	0	0	0	0	0	0	3,354	4,915	698	8,189	10,624	7,850	3,997	443	0	1,002	5,170	73	1	4,030	2,166	7,447	8,746	0	3,088	5,597	4,981	8,746	4,981	high	measured	Los Angeles Department of Water and Power
351	0	0	0	0	0	0	0	0	0	0	7,777	12,334	11,874	11,828	11,879	10,598	2,212	3,424	3,053	2,909	3,678	3,146	9,808	11,083	12,558	12,718	0	5,647	11,542	11,203	12,718	11,203	high	measured	Los Angeles Department of Water and Power
352	0	0	0	0	0	0	0	0	0	0	150	62	631	529	590	1,569	812	44	407	701	67	439	52	151	349	258	0	400	203	154	349	154	high	measured	Los Angeles Department of Water and Power
353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	high	measured	Los Angeles Department of Water and Power
354	0	0	0	0	0	0	0	0	0	0	70	119	58	42	25	28	37	33	20	36	29	26	27	28	26	20	0	35	25	25	28	25	high	measured	Los Angeles Department of Water and Power
355	0	0	0	0	0	0	0	0	0	0	0	0	0	0	54	475	0	0	0	0	0	0	0	0	0	0	0	35	0	0	0	0	high	measured	Los Angeles Department of Water and Power
356	0	0	0	0	0	0	0	0	0	0	0	0	0	0	532	1,710	6,570	8,610	7,327	7,910	6,913	7,360	2,582	1,516	3,252	2,121	0	3,129	2,368	2,073	3,252	2,073	high	measured	Los Angeles Department of Water and Power
357	0	0	0	0	0	0	0	0	0	0	0	0	0	139	1,395	1,706	1,676	310	575	345	312	354	334	355	361	411	0	454	365	367	411	367	high	measured	Los Angeles Department of Water and Power
365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	702	1,497	1,040	1,752	1,209	1,680	1,005	1,141	1,095	1,027	1,290	1,172	0	668	1,146	1,098	1,290	1,098	high	measured	Los Angeles Department of Water and Power
366	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	3	0	0	0	0	0	1	1	3	1	high	measured	Los Angeles Department of Water and Power
367	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	12	0	25	22	14	0	2	15	13	25	13	high	measured	Los Angeles Department of Water and Power
368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	77	35	0	0	43	31	77	31	high	measured	Los Angeles Department of Water and Power
370	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	598	799	1,101	1,307	0	0	951	901	1,307	901	high	measured	Los Angeles Department of Water and Power
371	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	71	706	959	874	0	0	653	550	959	550	high	measured	Los Angeles Department of Water and Power
374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,680	1,022	0	0	676	341	1,680	341	high	measured	Los Angeles Department of Water and Power
2N	372	409	391	466	391	360	428	436	486	336	52	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	402	90	0	0	0	0	high	measured	Los Angeles Department of Water and Power
20N	177	200	233	224	211	231	213	220	224	227	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	213	45	0	0	0	0	high	measured	Los Angeles Department of Water and Power
22N	0	0	0	0	0	0	0	0	0	0	34	90	90	73	53	70	104	133	171	124	112	112	0	0	0	0	0	78	0	0	0	0	high	measured	Los Angeles Department of Water and Power
44A	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	8	18	38	34	16	6	3	0	0	0	0	9	1	1	3	1	high	measured	Los Angeles Department of Water and Power
45A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	8	0	2	0	0	0	1	1	1	2	1	high	measured	Los Angeles Department of Water and Power
BTW2 (Bishop town well no. 2)	0	0	0	0	0	0	0	0	0	135	156	185	164	131	55	93	143	125	163	107	130	127	0	0	0	0	0	114	0	0	0	0	high	measured	Los Angeles Department of Water and Power
BTW4 (Bishop town well no. 4)	0	0	0	0	0	0	0	0	0	1,309	1,369	1,672	1,621	1,633	1,555	1,484	1,624	1,588	1,632	1,374	1,511	1,639	0	0	0	0	0	1,334	0	0	0	0	high	measured	Los Angeles Department of Water and Power
8GP (well P at USGS Independence fast site)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	0	high	measured	Los Angeles Department of Water and Power
15GA (well A at USGS Independence springfield)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	4	0	0	0	high	measured	Los Angeles Department of Water and Power
99EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	781	1,253	0	0	509	1,253	1,253	1,253	high	measured	Los Angeles Department of Water and Power
375EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,552	157	0	0	427	1,552	1,552	1,552	high	measured	Los Angeles Department of Water and Power
376EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,204	1,667	0	0	718	1,667	1,667	1,667	high	measured	Los Angeles Department of Water and Power
377EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,456	1,702	0	0	790	1,702	1,702	1,702	high	measured	Los Angeles Department of Water and Power
378EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,768	2,094	0	0	966	2,094	2,094	2,094	high	measured	Los Angeles Department of Water and Power
379EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,713	1,833	0	0	887	1,833	1,833	1,833	high	measured	Los Angeles Department of Water and Power
380EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	228	2,402	0	0	658	2,402	2,402	2,402	high	measured	Los Angeles Department of Water and Power
381EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	229	2,440	0	0	667	2,440	2,440	2,440	high	measured	Los Angeles Department of Water and Power
382EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	135	1,508	0	0	411	1,508	1,508	1,508	high	measured	Los Angeles Department of Water and Power
383EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	695	825	0	0	380	825	825	825	high	measured	Los Angeles Department of Water and Power
384EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	236	808	0	0	261	808	808	808	high	measured	Los Angeles Department of Water and Power
385EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2,261	0	0	565	2,261	2,261	2,261	high	measured	Los Angeles Department of Water and Power
386EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3,385	0	0	846	3,385	3,385	3,385	high	measured	Los Angeles Department of Water and Power
387EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,046	3,202	0	0	1,062	3,202	3,202	3,202	high	measured	Los Angeles Department of Water and Power
388EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	853	3,022	0	0	969	3,022	3,022	3,022	high	measured	Los Angeles Department of Water and Power
389EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,012	3,079	0	0	1,023	3,079	3,079	3,079	high	measured	Los Angeles Department of Water and Power
390EM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	296	266	0	0	141	296	296	296	high	measured	Los Angeles Department of Water and Power
Total (pumped and flowing wells)	(10,932)	(32,503)	(20,055)	(12,692)	(12,830)	(34,242)	(18,021)	(26,700)	(105,288)	(177,615)	(132,849)	(80,332)	(110,130)	(140,218)	(132,545)	(111,086)	(67,310)	(94,361)	(85,885)	(91,476)	(55,275)	(67,322)	(95,434)	(84,562)	(178,956)	(200,238)	(20,182)	(98,559)	(139,798)	(149,268)	(226,245)	(149,268)	high	sum	
Total—Table 11, part 2																																			
Recharge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	high	sum	
Discharge	(10,932)	(32,503)	(20,055)	(12,692)	(12,830)	(34,242)	(18,021)	(26,700)	(105,288)	(177,615)	(132,849)	(80,332)	(110,130)	(140,218)	(132,545)	(111,086)	(67,310)	(94,361)	(85,885)	(91,476)	(55,275)	(67,322)	(95,434)	(84,562)	(178,956)	(200,238)	(20,182)	(98,559)	(139,798)	(149,268)	(226,245)	(149,268)	high	sum	

Table 11. Simulated ground-water budget for the aquifer system of the Owens Valley, California, water years 1963-88 (part 2 of 3)

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WATER-SUPPLY PAPER 2370–H
Simulated ground-water budget for the aquifer system, water years 1963-88–TABLE 11, PART 3 OF 3
Danskin, W.R., 1998, Evaluation of the hydrologic system and selected
water-management alternatives in the Owens Valley, California

EXPLANATION FOR TABLE 11, PART 3

Values in acre-feet per year except as noted below. Accuracy varies for individual water-budget components, but is generally 2 or 3 significant figures; greater precision is shown for computational purposes only. Parentheses ( ) indicate negative value, except in 'Water-budget component' and 'Calculation or source of data' columns

Water-budget component–Type and area of ground-water recharge or discharge. Components are identified on plate 3, 1:24,000-scale topographic maps, or 1:24,000-scale water-use maps maintained by the Los Angeles Department of Water and Power (R.H. Rawson, written commun., 1988).

Water year–Annual values of ground-water recharge or discharge, in acre-feet, for water years 1963 through 1988. A water year extends from October through September; for example, water year 1963 extends from October 1, 1962, through September 30, 1963.

Average for water years–Average annual values of ground-water recharge or discharge, in acre-feet, for a selected period of water years.

Predictive simulation–Annual values of ground-water recharge or discharge, in acre-feet, for selected periods.

SS–Values for 1988 steady-state simulation, used as alternative 1 and as simulation period II in alternative 4 (refer to text and figures 30 and 32).

Dry–Values for simulation period I in alternative 4 (refer to text and figures 30 and 31).

Wet–Values for simulation period III in alternative 4 (refer to text and figures 30 and 33).

dih–Value of ground-water recharge or discharge depends on initital heads in the ground-water flow model.

Relative degree of confidence–Qualitative assessment of the accuracy of ground-water recharge or discharge values: high, average, or low.

Method of calculation–Method of calculating values of ground-water recharge or discharge.

Calculation or source of data–For water years 1963-88. Methods and assumptions for calculating values for predictive simulations are described in text.

AL–Water allocated to an area of miscellaneous recharge; expressed as a decimal fraction of the total quantity of water for a specific category of uses (for example, "Bishop–Indian land"). Estimated by the Los Angeles Department of Water and Power (R.H. Rawson, oral commun., 1988).

CCAF–Conversion from cubic feet per second to acre-feet per year; equals 723.96.

CFAF–Conversion from cubic feet to acre-feet; equals 0.000022957; reciprocal equals 43,560.

IRA–Area of irrigated land, in square feet.

IRR–Recharge rate for water applied to irrigated land. Value equals 1.0 foot per year for water years 1963-69 and 0.5 foot per year for water years 1970-88.

IRV–Multiplier for increased recharge on irrigated land underlain by highly permeable volcanic rocks. Equals 2.0 for volcanic areas; 1.0 for all other areas.

LADWP–Los Angeles Department of Water and Power.

LADWP estimate of uses and losses in particular area–Values in acre-feet per year from water-budget summaries compiled for water years 1970-88 by R.H. Rawson (Los Angeles Department of Water and Power, written commun., 1988). Values for water years 1963-69 estimated from data for water years 1970-88.

MR–Recharge percentage for miscellaneous water operations; expressed as a decimal fraction of water applied to the land surface.

SGD–Average annual discharge from a spillgate that is used for routine cleaning of sand and debris from the Los Angeles Aqueduct. Values in cubic feet per second. Additional discharge from spillgates that occurs in years of above-average runoff is included in calculations of miscellaneous recharge, table 11, part 1 (under "Water-budget component").

SGR–Recharge rate of water discharged from a spillgate on the Los Angeles Aqueduct; expressed as a decimal fraction of average annual discharge from the spillgate (SGD).

UND–Underflow rate, in cubic feet per second.

Water-budget component	Water year																										Average for water years			Predictive simulation			Relative degree of confidence	Method of calculation	Calculation or source of data (acronyms and units of measure described above)
	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1963-69	1970-84	1985-88	SS	Dry	Wet			
River-aqueduct channel																																			
Pleasant Valley Reservoir to Big Pine	(12,451)	(10,920)	(10,721)	(11,181)	(14,789)	(12,463)	(17,736)	(14,841)	(11,329)	(7,783)	(6,106)	(8,217)	(8,663)	(8,932)	(7,890)	(10,933)	(10,889)	(12,578)	(11,325)	(12,141)	(17,748)	(16,319)	(14,070)	(16,728)	(12,496)	(7,542)	(12,894)	(11,046)	(12,709)	(2,388)	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Big Pine to Tinemaha Reservoir	(909)	(732)	(726)	(607)	(854)	(741)	(1,194)	(891)	174	2,237	2,846	2,504	3,258	3,769	4,699	5,002	4,933	4,435	4,525	4,141	3,047	2,898	3,269	2,650	4,535	5,970	(823)	3,172	4,106	8,221	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Tinemaha Reservoir to Aqueduct intake	(5,387)	(5,304)	(5,309)	(5,251)	(5,377)	(5,062)	(5,307)	(5,234)	(4,495)	(2,566)	(1,940)	(2,675)	(1,730)	(45)	767	(81)	(1,690)	(2,336)	(2,692)	(2,722)	(3,729)	(4,279)	(3,797)	(3,796)	(2,183)	(246)	(5,285)	(2,363)	(2,506)	2,853	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Aqueduct intake to Independence	(2,545)	(1,795)	(1,983)	(1,649)	(2,636)	(1,831)	(3,537)	(2,373)	(1,001)	645	1,509	1,596	1,747	1,857	2,296	1,637	836	(208)	(111)	(1,083)	(2,852)	(2,930)	(1,453)	(2,271)	88	1,915	(2,282)	104	(430)	3,744	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Independence to Alabama Gates	3,607	3,904	3,844	3,924	3,776	3,954	3,654	3,976	4,659	4,972	4,989	4,969	4,946	5,032	5,053	4,965	4,845	4,729	4,697	4,581	3,998	3,779	4,047	3,985	4,889	5,030	3,809	4,679	4,488	5,068	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Total (river-aqueduct channel)	(17,685)	(14,847)	(14,895)	(14,764)	(19,880)	(16,143)	(24,120)	(19,363)	(11,992)	(2,495)	1,298	(1,823)	(442)	1,681	4,925	590	(1,965)	(5,958)	(4,906)	(7,224)	(17,284)	(16,851)	(12,004)	(16,160)	(5,167)	5,127	(17,476)	(5,454)	(7,051)	17,498	dih	dih	average	sum	
Spillgates																																			(SGD)*(SGR)*(CCAF)
Owens River at intake to the aqueduct	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	516	average	estimated	(7.122)*(0.10)*(723.96)
Blackrock	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	1,882	average	estimated	(10.400)*(0.25)*(723.96)
Thibaut	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	530	average	estimated	(2.928)*(0.25)*(723.96)
Independence	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	313	average	estimated	(1.732)*(0.25)*(723.96)
Dean	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	339	average	estimated	(1.559)*(0.30)*(723.96)
Russell	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	342	average	estimated	(1.573)*(0.30)*(723.96)
Locust	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	578	average	estimated	(2.660)*(0.30)*(723.96)
George	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62	average	estimated	(0.344)*(0.25)*(723.96)
Diaz	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	774	average	estimated	(1.337)*(0.80)*(723.96)
Lone Pine	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	806	average	estimated	(1.391)*(0.80)*(723.96)
Total (spillgates)	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	6,142	average	sum	
Lower Owens River	(16,809)	(16,577)	(16,560)	(16,459)	(16,686)	(16,379)	(16,724)	(16,244)	(15,366)	(14,001)	(13,343)	(13,267)	(12,982)	(13,818)	(13,659)	(13,895)	(14,508)	(14,793)	(15,071)	(15,359)	(16,279)	(16,803)	(16,711)	(16,968)	(15,734)	(14,324)	(16,599)	(14,626)	(15,934)	(11,448)	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Reservoir and small lakes																																			
Warren Lake	26	30	30	32	26	29	18	22	29	36	36	35	36	36	36	36	36	31	33	29	18	18	23	18	31	36	27	31	27	36	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Klondike Lake	(43)	(40)	(39)	(36)	(40)	(39)	(48)	(47)	(38)	(22)	(15)	(16)	(12)	(21)	(17)	(16)	(18)	(27)	(27)	(32)	(51)	(52)	(50)	(58)	(54)	(21)	(41)	(27)	(46)	98	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Tinemaha Reservoir	2,054	2,072	2,074	2,089	2,060	2,092	2,044	2,061	2,242	2,798	2,974	2,851	3,130	3,354	3,501	3,472	3,203	3,080	3,018	2,999	2,686	2,539	2,712	2,653	3,071	3,449	2,069	2,927	2,971	4,551	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Diaz Lake	(264)	(218)	(214)	(188)	(246)	(221)	(326)	(284)	(219)	(160)	(156)	(155)	(135)	(122)	(94)	(147)	(153)	(206)	(187)	(233)	(331)	(338)	(294)	(329)	(266)	(204)	(240)	(195)	(273)	(165)	dih	dih	low	simulated	head-dependent relation in the ground-water flow model
Total (reservoir and small lakes)	1,773	1,844	1,851	1,897	1,800	1,861	1,688	1,752	2,014	2,652	2,839	2,715	3,019	3,247	3,426	3,345	3,068	2,878	2,837	2,763	2,322	2,167	2,391	2,284	2,782	3,260	1,816	2,736	2,679	4,520	dih	dih	average	sum	
Irrigation and watering of livestock																																			
Irrigated land in database of mapped vegetation	16,325	16,325	16,325	16,325	16,325	16,325	16,325	8,159	8,159	8,159	8,159	8,159	8,159	8,159	8,159	8,159	8,159	8,159	8,159	8,159	8,159	8,159	8,159	8,159	8,159	8,159	16,325	8,159	8,159	8,159	8,159	8,159	average	estimated	(IRR)*(IRA)*(IRV)*(CFAF)
Indian land																																			(MR)*(AL)*(LADWP estimate of uses and losses in particular area)
Bishop	953	953	953	953	953	953	953	953	869	971	1,108	1,056	877	819	1,182	693	1,162	1,112	1,351	1,016	886	893	791	717	719	1,084	953	997	828	864	1,084	717	average	estimated	(0.30)*(1.00)*(LADWP "Bishop–Indian land")
Big Pine	391	391	391	391	391	391	391	391	862	554	521	478	507	557	438	275	391	319	351	348	159	214	250	221	224	286	391	424	245	252	286	221	average	estimated	(0.50)*(1.00)*(LADWP "Big Pine–Indian land")
Fort Independence	341	215	274	191	321	206	456	348	239	215	74	408	250	198	193	339	337	384	363	469	391	363	358	378	211	258	286	305	301	331	258	378	average	estimated	(0.30)*(1.00)*(LADWP "Tinemaha to Haiwee–Indian land")
Lone Pine	285	285	285	285	285	285	285	285	258	278	274	230	224	287	285	265	304	308	302	285	311	298	304	350	300	313	285	280	317	322	313	350	average	estimated	(0.30)*(1.00)*(LADWP "Overheads & spillgates–Indian land")
subtotal (Indian land)	1,970	1,844	1,903	1,820	1,950	1,835	2,085	1,977	2,228	2,018	1,977	2,172	1,858	1,861	2,098	1,572	2,194	2,123	2,367	2,118	1,747	1,768	1,703	1,666	1,454	1,941	1,915	2,005	1,691	1,770	1,941	1,666	average	sum	
Total (irrigation and watering of livestock)	18,295	18,169	18,228	18,145	18,275	18,160	18,410	10,136	10,387	10,177	10,136	10,331	10,017	10,020	10,257	9,731	10,353	10,282	10,526	10,277	9,906	9,927	9,862	9,825	9,613	10,100	18,240	10,164	9,850	9,929	10,100	9,825	average	sum	
Springs and seeps																																			
Fish Springs	(14,585)	(12,104)	(13,051)	(11,630)	(16,643)	(12,351)	(21,776)	(13,440)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(14,591)	(896)	0	0	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Big Seeley Springs	(3,577)	(3,500)	(3,482)	(3,411)	(3,514)	(3,125)	(3,411)	(3,401)	(2,411)	0	0	(152)	0	0	0	0	0	0	(205)	(85)	(1,435)	(2,121)	(1,379)	(1,329)	0	0	(3,431)	(654)	(677)	0	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Little Seeley Springs and Charles' Butte No. 1	(859)	(824)	(819)	(788)	(840)	(625)	(790)	(766)	(251)	0	0	0	0	0	0	0	0	0	0	0	0	(130)	0	0	0	0	(792)	(76)	0	0	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Hines Spring	(894)	(760)	(778)	(680)	(916)	0	(528)	(527)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(651)	(35)	0	0	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Big Blackrock Springs	(4,345)	(3,804)	(4,033)	(3,754)	(4,603)	(3,807)	(5,228)	(4,369)	(3,022)	(873)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	(4,225)	(551)	0	0	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Little Blackrock Springs	(1,532)	(1,317)	(1,418)	(1,300)	(1,652)	(1,320)	(1,910)	(1,545)	(955)	0	0	0	0	0	0	0	0	0	0	(298)	(932)	(794)	0	(82)	0	0	(1,493)	(302)	(21)	0	dih	dih	average	simulated	head-dependent relation in the ground-water flow model
Reinhackle Springs	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	dih	dih	low	simulated	head-dependent relation in the ground-water flow model
Total (springs and seeps)	(25,792)	(22,309)	(23,581)	(21,563)	(28,168)	(21,228)	(33,643)	(24,048)	(6,639)	(873)	0	(152)	0	0	0	0	0	0	(205)	(383)	(2,367)	(3,045)	(1,379)	(1,411)	0	0	(25,183)	(2,514)	(698)	0	dih	dih	average	sum	
Underflow																																			
Inflow																																			(UND)*(CCAF)
Round Valley	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	3,620	average	estimated	(5.000)*(723.96)
Volcanic Tableland	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	210	average	estimated	(0.290)*(723.96)
Chalfant Valley	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	1,665	average	estimated	(2.300)*(723.96)
subtotal (inflow)	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	5,495	average	sum	
Outflow																																			(UND)*(CCAF)
Alabama Hills (east side)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	(1,774)	average	estimated	(2.450)*(723.96)
Alabama Hills (west side)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	(7,819)	average	estimated	(10.800)*(723.96)
subtotal (outflow)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	(9,593)	average	sum	
Total (underflow)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	(4,098)	average	sum	
Storage (+ in, - out)	(10)	(54,735)	(9,278)	(28,406)	61,616	(45,548)	123,358	(34,386)	(96,655)	(147,096)	(44,767)	12,234	(42,743)	(87,097)	(83,856)	47,174	25,244	59,102	(15,253)	52,698	142,149	24,788	(38,468)	68,203	(126,724)	(134,224)	6,714	(12,564)	(57,803)	0	dih	dih	average	simulated	mass balance in the ground-water flow model
Summary																																			
Total—Table 11, part 1																																			
Recharge	151,772	106,017	140,315	110,911	224,440	119,458	310,006	144,288	117,435	105,246	150,742	160,623	132,453	99,793	89,356	209,157	149,364	220,827	135,294	215,950	296,902	192,711	144,195	252,430	121,663	110,260	166,131	161,343	157,137	161,469	dih	dih	average	sum	
Discharge	(102,884)	(96,886)	(96,992)	(96,165)	(107,678)	(99,514)	(116,429)	(106,561)	(89,673)	(72,369)	(65,692)	(67,896)	(66,919)	(49,985)	(47,727)	(52,729)	(55,911)	(61,893)	(60,119)	(63,947)	(77,812)	(78,266)	(71,734)	(79,354)	(63,601)	(50,785)	(102,364)	(67,833)	(66,369)	(34,629)	dih	dih	average	sum	
Total—Table 11, part 2																																			
Recharge	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	high	sum	
Discharge	(10,932)	(32,503)	(20,055)	(12,692)	(12,830)	(34,242)	(18,021)	(26,700)	(105,288)	(177,615)	(132,849)	(80,332)	(110,130)	(140,218)	(132,545)	(111,086)	(67,310)	(94,361)	(85,885)	(91,476)	(55,275)	(67,322)	(95,434)	(84,562)	(178,956)	(200,238)	(20,182)	(98,559)	(139,798)	(149,268)	(226,245)	(149,268)	high	sum	
Total—Table 11, part 3																																			
Recharge	31,705	31,650	31,716	31,679	31,712	31,658	31,735	23,525	24,038	24,466	25,910	24,683	24,673	26,585	30,245	25,303	25,058	24,797	25,000	24,677	23,865	23,731	23,890	23,746	24,032	30,124	31,694	24,537	24,166	43,584	dih	dih	average	sum	
Discharge	(69,879)	(63,326)	(64,629)	(62,379)	(74,327)	(63,343)	(84,080)	(69,248)	(43,590)	(26,962)	(22,936)	(24,835)	(23,017)	(23,411)	(23,252)	(23,488)	(26,066)	(30,344)	(29,775)	(32,559)	(45,523)	(46,292)	(39,687)	(44,132)	(30,494)	(23,917)	(68,852)	(32,187)	(33,276)	(21,041)	dih	dih	average	sum	
Grand total—Table 11, parts 1-3																																			
Recharge	183,477	137,667	172,031	142,590	256,152	151,116	341,741	167,813	141,473	129,712	176,652	185,306	157,126	126,378	119,601	234,460	174,422	245,624	160,294	240,627	320,767	216,442	168,085	276,176	145,695	140,384	197,825	185,880	181,303	205,053	dih	dih	average	sum	
Discharge	(183,695)	(192,715)	(181,676)	(171,236)	(194,835)	(197,099)	(218,530)	(202,509)	(238,551)	(276,946)	(221,477)	(173,063)	(200,066)	(213,614)	(203,524)	(187,303)	(149,287)	(186,598)	(175,779)	(187,982)	(178,610)	(191,880)	(206,855)	(208,048)	(273,051)	(274,940)	(191,398)	(198,580)	(239,442)	(204,938)	dih	dih	average	sum	
Change in storage	(10)	(54,735)	(9,278)	(28,406)	61,616	(45,548)	123,358	(34,386)	(96,655)	(147,096)	(44,767)	12,234	(42,743)	(87,097)	(83,856)	47,174	25,244	59,102	(15,253)	52,698	142,149	24,788	(38,468)	68,203	(126,724)	(134,224)	6,714	(12,564)	(57,803)	0	dih	dih	average	simulated	mass balance in the ground-water flow model
Numerical error	(208)	(313)	(367)	(240)	(299)	(435)	(147)	(310)	(423)	(138)	(58)	9	(197)	(139)	(67)	(17)	(109)	(76)	(232)	(53)	8	(226)	(302)	(75)	(632)	(332)	(287)	(135)	(335)	116	dih	dih	high	residual	

Table 11. Simulated ground-water budget for the aquifer system of the Owens Valley, California, water years 1963-88 (part 3 of 3)

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