

TABLES

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Table 3-1
Allocation Of Pumping By Model Layer For Current and Former Production Wells Completed In The Saugus Formation
Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Well Name	Status	Model Layer	Kh (ft/day)	Open Interval (ft)		Ground Elev. (ft)	Layer Top Elev. (ft)	Layer Bottom Elev. (ft)	Depth to Layer Bottom (ft)	Thickness of Overlying Layers (ft)	Layer Thickness (ft)	Thickness of Open Interval In This Model Layer (ft)	Transmissivity (ft ² /day) of Open Interval In This Model Layer	Approximate Proportion of Pumping From Each Model Layer	
				Depth to Top	Depth to Bottom										
NWD-4	Destroyed	2	0.5	134		1386	1318	873	513	68	445	379	190	87.5%	
		3	0.5		567			873	623	763	513	250	54	27	12.5%
NWD-7	Inactive	3	0.5	520		1250	1133	719	531	117	414	11	6	4.2%	
		4	0.5				719	469	781	531	250	250	125	95.8%	
		5			974		469	-281	1531	781	750	193	0	0.0%	
NWD-9	Inactive	2	0.5	311		1352	1273	828	524	79	445	213	107	58.7%	
		3	0.5		674		828	578	774	524	250	150	75	41.3%	
NWD-10	Inactive	4	6.5	780		1207	464	214	993	743	250	213	1,385	73.5%	
		5	1		1544		214	-286	1493	993	500	500	500	26.5%	
NWD-11	Inactive	2	30	200		1187	1072	692	495	115	380	295	8,850	73.1%	
		3	6.5				692	442	745	495	250	250	1,625	13.4%	
		4	6.5		1075		442	192	995	745	250	250	1,625	13.4%	
NWD-12	Active	3	6.5	485		1203	706	456	747	497	250	250	1,625	46.0%	
		4	6.5				456	206	997	747	250	250	1,625	46.0%	
		5	1		1280		206	-294	1497	997	500	283	283	8.0%	
NWD-13	Active	3	6.5	420		1197	702	452	745	495	250	250	1,625	46.0%	
		4	6.5				452	202	995	745	250	250	1,625	46.0%	
		5	1		1280		202	-298	1495	995	500	285	285	8.1%	
NLF-156	Inactive	2	30	320		1048	854	454	594	194	400	274	8,220	59.2%	
		3	6.5				454	204	844	594	250	250	1,625	11.7%	
		4	6.5				204	-46	1094	844	250	250	1,625	11.7%	
		5	4				-46	-546	1594	1094	500	500	2,000	14.4%	
		6	2		1800		-546	-1046	2094	1594	500	206	412	3.0%	
SCWD-Saugus1	Active	3	6.5	490		1163	644	394	769	519	250	250	1,625	29.8%	
		4	6.5				394	144	1019	769	250	250	1,625	29.8%	
		5	4				144	-355	1518	1019	499	499	1,996	36.6%	
		6	2		1620		-355	-855	2018	1518	500	102	204	3.7%	
SCWD-Saugus2	Active	3	6.5	490		1159	639	389	770	520	250	250	1,625	30.1%	
		4	6.5				389	139	1020	770	250	250	1,625	30.1%	
		5	4				139	-361	1520	1020	500	500	2,000	37.1%	
		6	2		1591		-361	-861	2020	1520	500	71	142	2.6%	
VWD-157	Destroyed	3	6.5	586		1152	632	382	770	520	250	184	1,196	20.6%	
		4	6.5				382	132	1020	770	250	250	1,625	28.0%	
		5	4				132	-368	1520	1020	500	500	2,000	34.5%	
		6	2		2008		-368	-868	2020	1520	500	488	976	16.8%	
VWD-159	Active	3	0.5	662		1292	749	499	793	543	250	131	66	5.7%	
		4	0.5				499	249	1043	793	250	250	125	10.8%	
		5	0.5				249	-251	1543	1043	500	500	250	21.7%	
		6	2		1900		-251	-751	2043	1543	500	357	714	61.8%	
VWD-160	Active	4	6.5	950		1101	300	50	1051	801	250	101	657	18.5%	
		5	4				50	-450	1551	1051	500	500	2,000	56.3%	
		6	2		2000		-450	-950	2051	1551	500	449	898	25.3%	
VWD-201	Active	3	6.5	540		1152	633	383	769	519	250	229	1,489	27.5%	
		4	6.5				383	133	1019	769	250	250	1,625	30.0%	
		5	4				133	-367	1519	1019	500	500	2,000	36.9%	
		6	2		1670		-367	-867	2019	1519	500	151	302	5.6%	
VWD-205	Active ¹	4	6.5	820		1147	340	90	1057	807	250	237	1,541	33.9%	
		5	4				90	-410	1557	1057	500	500	2,000	44.0%	
		6	2		1930		-410	-910	2057	1557	500	500	1,000	22.0%	
VWD-206	Active	3	6.5	490		1072	489	239	833	583	250	250	1,625	26.4%	
		4	6.5				239	-11	1083	833	250	250	1,625	26.4%	
		5	4				-11	-511	1583	1083	500	500	2,000	32.4%	
		6	2		2040		-511	-1011	2083	1583	500	457	914	14.8%	
VWD-207	Active	3	6.5	507		1122	495	245	877	627	250	250	1,625	45.9%	
		4	6.5				245	-5	1127	877	250	250	1,625	45.9%	
		5	4		1199		-5	-505	1627	1127	500	72	288	8.1%	
LACWWD36-19	Active	2	1	400		1411	1199	749	662	212	450	262	262	18.2%	
		3	1				749	499	912	662	250	250	250	17.4%	
		4	1				499	249	1162	912	250	250	250	17.4%	
		5	1				249	-251	1662	1162	500	500	500	34.8%	
		6	0.4		2100		-251	-751	2162	1662	500	438	175	12.2%	

Notes

In the model, some wells are constrained to not extend into certain layers if their open intervals would penetrate only a minor percentage of that layer's thickness.

The proportion of pumping from each model layer is an estimate and is provided for general informational purposes; the MODFLOW-USG model calculates the actual proportions for each well at every time step during the model simulation.

¹The status of well VWD-205 is indicated as Active because it was not in use as of the end of 2019 due to perchlorate presence; treatment options for this well are under evaluation by SCV Water.

Elev. = elevation

ft = feet

ft/day = feet per day

Kh = horizontal hydraulic conductivity, in units of feet per day. Elevations, depths, and thicknesses are in units of feet.

Table 3-2
 Specifications for General-Head Boundary Cells
 Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Grid Node Number	Reach Number	Head (ft)	Cell Width (ft)	Saturated Thickness (ft)	GHB Distance (ft)	Hydraulic Conductivity (ft/day)	Description
32521	1	1960	250	25	10	1	Santa Clara River at Lang Gage
32523	1	1960	250	25	10	1	Santa Clara River at Lang Gage
33294	1	1960	250	25	10	1	Santa Clara River at Lang Gage
33296	1	1960	250	25	10	1	Santa Clara River at Lang Gage
36361	2	1905	250	50	10	0.05	Pole Canyon
37132	2	1905	250	50	10	0.05	Pole Canyon
37135	2	1905	250	50	10	0.05	Pole Canyon
26258	3	2050	250	25	10	0.5	Bee Canyon
26894	3	2050	250	25	10	0.5	Bee Canyon
25587	4	1859	250	25	10	0.5	Tick Canyon
25584	4	1859	250	25	10	0.5	Tick Canyon
31099	0	1770	250	25	10	0.5	Unnamed Tributary
33221	0	1780	250	25	10	0.5	Unnamed Tributary
30465	0	1800	250	25	10	0.5	Unnamed Tributary
40351	0	1735	250	25	10	0.5	Unnamed Tributary
41212	0	1735	250	25	10	0.5	Unnamed Tributary
42025	0	1690	250	25	10	0.5	Unnamed Tributary
44756	0	1810	250	25	10	0.5	Unnamed Tributary
54344	0	1990	250	25	10	0.5	Unnamed Tributary
54345	0	1990	250	25	10	0.5	Unnamed Tributary
54348	0	1990	250	25	10	0.5	Unnamed Tributary
49706	5	1980	250	25	10	0.5	Oak Spring Canyon
49708	5	1980	250	25	10	0.5	Oak Spring Canyon
52469	0	1770	250	25	10	0.5	Unnamed Tributary
52470	0	1770	250	25	10	0.5	Unnamed Tributary
56834	0	1890	250	25	10	0.5	Unnamed Tributary
60451	6	2010	250	25	10	0.5	Iron Canyon
64072	0	1955	250	25	10	0.5	Unnamed Tributary
64657	0	1955	250	25	10	0.5	Unnamed Tributary
64660	0	1955	250	25	10	0.5	Unnamed Tributary
64661	0	1955	250	25	10	0.5	Unnamed Tributary
64697	7	2060	250	25	10	0.5	Sand Canyon
64698	7	2060	250	25	10	0.5	Sand Canyon
66978	0	2080	250	25	10	0.5	Unnamed Tributary
67807	0	2105	250	25	10	0.5	Unnamed Tributary
67389	0	2075	250	25	10	0.5	Unnamed Tributary
31072	0	1700	250	25	10	0.5	Unnamed Tributary
31065	0	1695	250	25	10	0.5	Unnamed Tributary
31696	0	1680	250	25	10	0.5	Unnamed Tributary
33918	0	1675	250	25	10	0.5	Unnamed Tributary
32394	0	1680	250	25	10	0.5	Unnamed Tributary
26191	0	1787	250	25	10	0.5	Unnamed Tributary
22614	0	1965	250	25	10	0.5	Unnamed Tributary
16997	0	1943	250	25	10	0.5	Unnamed Tributary
17000	0	1943	250	25	10	0.5	Unnamed Tributary
17519	0	1905	250	25	10	0.5	Unnamed Tributary
17522	0	1905	250	25	10	0.5	Unnamed Tributary
12051	8	2090	250	25	10	0.5	Mint Canyon
12054	8	2090	250	25	10	0.5	Mint Canyon
12057	8	2090	250	25	10	0.5	Mint Canyon
12504	8	2090	250	25	10	0.5	Mint Canyon
12506	8	2090	250	25	10	0.5	Mint Canyon
16907	0	1560	250	25	10	0.5	Unnamed Tributary
16915	0	1585	250	25	10	0.5	Unnamed Tributary
21473	0	1700	250	25	10	0.5	Unnamed Tributary
21476	0	1700	250	25	10	0.5	Unnamed Tributary
17499	0	1735	250	25	10	0.5	Unnamed Tributary
17501	0	1735	250	25	10	0.5	Unnamed Tributary
12006	0	1810	250	25	10	0.5	Unnamed Tributary
12009	0	1810	250	25	10	0.5	Unnamed Tributary
12932	9	1805	250	25	10	0.5	Vasquer Canyon
9094	10	1812	250	25	10	0.5	Texas Canyon
6295	11	1761	250	25	10	0.5	Bouquet Canyon
6298	11	1761	250	25	10	0.5	Bouquet Canyon
10333	12	1646	250	25	10	0.5	Haskell Canyon
10313	0	1645	250	25	10	0.5	Unnamed Tributary
13815	0	1550	250	25	10	0.5	Unnamed Tributary
13821	0	1550	250	25	10	0.5	Unnamed Tributary
12841	13	1540	250	25	10	0.5	Dry Canyon
12842	13	1540	250	25	10	0.5	Dry Canyon
1860	14	1520	250	25	10	0.5	San Francisquito Canyon
1861	14	1520	250	25	10	0.5	San Francisquito Canyon
2487	0	1280	250	25	10	0.5	Unnamed Tributary
797	15	1400	250	25	10	0.5	Marple Canyon
4648	0	1330	250	25	10	0.5	Unnamed Tributary
48631	0	1599	250	25	10	0.5	Unnamed Tributary
49620	0	1595	250	25	10	0.5	Unnamed Tributary
49623	0	1595	250	25	10	0.5	Unnamed Tributary

Table 3-2
 Specifications for General-Head Boundary Cells
 Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Grid Node Number	Reach Number	Head (ft)	Cell Width (ft)	Saturated Thickness (ft)	GHB Distance (ft)	Hydraulic Conductivity (ft/day)	Description
50590	0	1595	250	25	10	0.5	Unnamed Tributary
51521	0	1535	250	25	10	0.5	Unnamed Tributary
51522	0	1535	250	25	10	0.5	Unnamed Tributary
51510	0	1525	250	25	10	0.5	Unnamed Tributary
51511	0	1525	250	25	10	0.5	Unnamed Tributary
51512	0	1525	250	25	10	0.5	Unnamed Tributary
54268	0	1525	250	25	10	0.5	Unnamed Tributary
65151	16	1625	250	25	10	0.5	Placerita Creek
65153	16	1625	250	25	10	0.5	Placerita Creek
68568	17	1542	500	25	10	0.5	Whitney Canyon
73267	18	1757	250	25	10	0.5	Newhall Creek
73256	18	1757	250	25	10	0.5	Newhall Creek
72914	18	1757	250	25	10	0.5	Newhall Creek
72912	18	1757	250	25	10	0.5	Newhall Creek
73262	18	1757	250	25	10	0.5	Newhall Creek
73263	18	1757	250	25	10	0.5	Newhall Creek
73266	18	1757	250	25	10	0.5	Newhall Creek
73569	19	1559	250	25	10	0.5	Gavin Canyon
72894	0	1610	250	25	10	0.5	Unnamed Tributary
71468	0	1490	250	25	10	0.5	Unnamed Tributary
71095	20	1535	250	25	10	0.5	Towsley Canyon
68850	21	1465	250	25	10	0.5	South Fork Santa Clara River
63207	22	1640	250	25	10	0.5	Pico Canyon
63807	22	1640	250	25	10	0.5	Pico Canyon
65428	0	1570	250	25	10	0.5	Unnamed Tributary
60802	23	1482	250	25	10	0.5	Potrero Canyon
59447	0	1450	250	25	10	0.5	Unnamed Tributary
60124	0	1430	250	25	10	0.5	Unnamed Tributary
56605	0	1360	250	25	10	0.5	Unnamed Tributary
54929	0	1370	250	25	10	0.5	Unnamed Tributary
54018	0	1330	250	25	10	0.5	Unnamed Tributary
53064	0	1280	250	25	10	0.5	Unnamed Tributary
52104	0	1280	250	25	10	0.5	Unnamed Tributary
60786	0	1360	250	25	10	0.5	Unnamed Tributary
59415	0	1320	250	25	10	0.5	Unnamed Tributary
60096	0	1330	250	25	10	0.5	Unnamed Tributary
58678	0	1260	250	25	10	0.5	Unnamed Tributary
58671	0	1260	250	25	10	0.5	Unnamed Tributary
58667	0	1260	250	25	10	0.5	Unnamed Tributary
51172	0	1260	250	25	10	0.5	Unnamed Tributary
51165	0	1250	250	25	10	0.5	Unnamed Tributary
51164	0	1250	250	25	10	0.5	Unnamed Tributary
51161	0	1250	250	25	10	0.5	Unnamed Tributary
51159	0	1250	250	25	10	0.5	Unnamed Tributary
52074	0	1250	250	25	10	0.5	Unnamed Tributary
53028	0	1200	250	25	10	0.5	Unnamed Tributary
53031	0	1200	250	25	10	0.5	Unnamed Tributary
53032	0	1200	250	25	10	0.5	Unnamed Tributary
59393	0	1220	250	25	10	0.5	Unnamed Tributary
59388	0	1200	250	25	10	0.5	Unnamed Tributary
54861	0	1180	250	25	10	0.5	Unnamed Tributary
54864	0	1180	250	25	10	0.5	Unnamed Tributary
57242	0	1120	250	25	10	0.5	Unnamed Tributary
57243	0	1120	250	25	10	0.5	Unnamed Tributary
53006	0	1045	250	25	10	0.5	Unnamed Tributary
53936	0	1045	250	25	10	0.5	Unnamed Tributary
45119	0	955	250	25	10	0.5	Unnamed Tributary
45115	0	955	250	25	10	0.5	Unnamed Tributary
32638	24	1445	250	25	10	0.5	San Martinez Grande Canyon
33409	24	1445	250	25	10	0.5	San Martinez Grande Canyon
33410	24	1445	250	25	10	0.5	San Martinez Grande Canyon
30637	0	1230	250	25	10	0.5	Unnamed Tributary
30640	0	1230	250	25	10	0.5	Unnamed Tributary
30641	0	1230	250	25	10	0.5	Unnamed Tributary
31959	0	1240	250	25	10	0.5	Unnamed Tributary
31960	0	1240	250	25	10	0.5	Unnamed Tributary
31966	0	1240	250	25	10	0.5	Unnamed Tributary
32704	0	1240	250	25	10	0.5	Unnamed Tributary
68853	21	1465	250	25	10	0.5	South Fork Santa Clara River
66097	0	1925	500	500	10	0.5	Unnamed Tributary
66525	0	1925	500	500	10	0.5	Unnamed Tributary

Notes
 ft = feet
 ft/day = feet per day
 GHB = general-head boundary

Table 3-3
 Specifications for Connected Linear Networks (CLNs)
 Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Well Name	Easting (ft)	Northing (ft)	Top Layer	Bottom Layer	Number of CLN Nodes	CLN Node Number					Aquifer Node Number to Which CLN Node is Connected					Years When Well is Present During the Calibration Period (1980–2019)			Well Name
						CLN Node1	CLN Node2	CLN Node3	CLN Node4	CLN Node5	GW Node1	GW Node2	GW Node3	GW Node4	GW Node5				
NLF-156	6377435	1979116	2	6	5	1	1	1	1	1	46230	68599	89624	107774	123225	1980	through	2019	NLF-156
LACWWD36-19	6368049	1992202.38	2	6	5	2	2	2	2	2	37688	61688	82729	102412	118713	2009	through	2019	LACWWD36-19
NWD-4	6401352	1956017	2	3	2	5	5	---	---	---	58382	79589	---	---	---	1980	through	1984	NWD-4
NWD-7	6401264	1962732	3	4	2	6	6	---	---	---	77762	98774	---	---	---	1980	through	2019	NWD-7
NWD-9	6404122	1956997	2	3	2	7	7	---	---	---	58142	79358	---	---	---	1980	through	2019	NWD-9
NWD-10	6399388	1965803	4	6	3	8	8	8	---	---	97686	114714	129705	---	---	1980	through	2019	NWD-10
NWD-11	6399004	1968019	2	4	3	9	9	9	---	---	54327	75865	96881	---	---	1980	through	2019	NWD-11
NWD-12	6399282	1965920	3	5	3	3	3	3	---	---	76517	97532	114574	---	---	1986	through	2019	NWD-12
NWD-13	6399098	1967327	3	5	3	4	4	4	---	---	76198	97214	114290	---	---	1988	through	2019	NWD-13
SCWD-Saugus1	6397847	1973452	3	6	4	10	10	10	10	---	72886	93904	111413	126576	---	1986	through	2019	SCWD-Saugus1
SCWD-Saugus2	6398514	1972540	3	6	4	11	11	11	11	---	73539	94557	112002	127157	---	1986	through	2019	SCWD-Saugus2
VWD-157	6395696	1974099	3	6	4	12	12	12	12	---	72537	93555	111094	126263	---	1980	through	2004	VWD-157
VWD-159	6390972	1962392	3	6	4	13	13	13	13	---	77690	98702	115659	130590	---	1980	through	2019	VWD-159
VWD-160	6388950	1976191	4	6	3	14	14	14	---	---	91996	109704	124992	---	---	1980	through	2019	VWD-160
VWD-201	6394125	1973032	3	6	4	15	15	15	15	---	73185	94203	111679	126838	---	1987	through	2019	VWD-201
VWD-205	6391703	1973191	4	6	3	16	16	16	---	---	94181	111657	126816	---	---	1997	through	2019	VWD-205
VWD-206	6379894.5	1979308.5	3	6	4	17	17	17	17	---	68617	89642	107792	123243	---	2003	through	2019	VWD-206
VWD-207	6379935.5	1978292	3	5	3	18	18	18	---	---	69332	90355	108376	---	---	2009	through	2019	VWD-207

Notes
 CLN = Connected Linear Network
 ft = feet

Table 3-4
 Derivation of Monthly ET Demands for a Representative Vegetation Mixture in Riparian Mixed Hardwood Forests
 Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Vegetation Type	Evapotranspiration Demand												Total (mm)	Total (ft)
	Jan (mm)	Feb (mm)	Mar (mm)	Apr (mm)	May (mm)	Jun (mm)	Jul (mm)	Aug (mm)	Sep (mm)	Oct (mm)	Nov (mm)	Dec (mm)		
Reference surface (grass)	77.5	86.1	129.5	159.6	181.2	204.1	220.0	213.1	163.6	128.0	89.9	67.7	1,720.1	5.6
Large stand permanent wetland	54.2	60.2	103.6	159.6	190.3	244.9	264.0	255.8	171.8	140.7	89.9	50.8	1,785.7	5.9
Estimated <i>Arundo</i> (median of TNC values)	77.3	85.8	147.6	227.4	271.2	349.1	376.2	364.5	244.9	200.6	128.1	72.3	2,545.0	8.3
Estimated <i>Arundo</i> (mean of TNC values)	113.9	126.5	217.6	335.2	399.7	514.6	554.6	537.3	360.9	295.7	188.9	106.6	3,751.5	12.3
Large stand willow	62.7	57.7	71.2	94.1	134.1	175.5	204.6	202.5	175.1	134.3	77.3	60.2	1,449.4	4.8
Large stand cottonwood	62.7	62.0	79.0	105.3	148.6	191.9	224.4	217.4	175.1	138.2	79.1	60.2	1,543.8	5.1
Rain fed oak-grassland mix	41.8	33.6	63.4	94.1	99.7	61.2	39.6	23.4	11.5	5.1	32.4	71.7	577.6	1.9

Santa Clara River Riparian Corridor	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Total
Mixture of 30% <i>Arundo</i> , 40% cottonwood, and 30% willow	mm	67.1	67.8	97.2	138.6	181.0	234.1	264.0	257.0	196.0	155.8	93.3	63.9	1,815.9	6.0
	ft	0.22	0.22	0.32	0.45	0.59	0.77	0.87	0.84	0.64	0.51	0.31	0.21	5.96	
	ft/day	0.0071	0.0079	0.0103	0.0152	0.0192	0.0256	0.0279	0.0272	0.0214	0.0165	0.0102	0.0068		

Notes

ET = evapotranspiration

mm = millimeters

ft = feet

TNC = The Nature Conservancy

ft/day = feet per day

Table 3-5
 Index of Streams and Stream Segments Used in the SFR7 Package
 Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Santa Clara River			Tributaries to the Santa Clara River		
Segment No.	No. of Reaches	Description	Segment No.	No. of Reaches	Description
1	34	From Lang Station to Bee Canyon	2	21	Bee Canyon
3	9	From Bee Canyon to Pole Canyon	4	11	Pole Canyon
5	8	From Pole Canyon to Unnamed Tributary	6	3	Unnamed Tributary to Santa Clara River
7	5	From Unnamed Tributary to Tapie Canyon	8	3	Tapie Canyon
9	9	From Tapie Canyon to Tick Canyon	10	21	Tick Canyon
13	4	From Tick Canyon to Unnamed Tributary	11	1	Tributary to Tick Canyon
14	26	From Unnamed Tributary to Oak Spring Canyon	12	3	Tick Canyon
16	10	From Oak Spring Canyon to Sand Canyon	15	42	Oak Spring Canyon
24	3	From Sand Canyon to Unnamed Tributary	17	39	Sand Canyon
26	33	From Unnamed Tributary to Mint Canyon	18	21	Iron Canyon
38	10	From Mint Canyon to Unnamed Tributary	19	13	Sand Canyon
39	83	From Unnamed Tributary to Outfall for SATP	20	15	Unnamed Tributary to Sand Canyon
40	20	From SATP Outfall to Former SPTF Outfall	21	11	Sand Canyon
41	2	From Former SPTF Outfall to Saugus WRP Outfall	22	17	Unnamed Tributary to Sand Canyon
42	2	From Saugus WRP Outfall to Bouquet Canyon	23	14	Sand Canyon
60-62	15	From Bouquet Canyon to S. Fork Santa Clara River	25	9	Unnamed Tributary to Santa Clara River
78-80	15	From S. Fork Santa Clara River to San Francisquito Canyon	27	54	Mint Canyon
85-93	28	From San Francisquito Canyon to Valencia WRP Outfall	28	22	Unnamed Tributary to Mint Canyon
94-107	58	From Valencia WRP Outfall to Castaic Creek	29	5	Mint Canyon
119-130	47	From Castaic Creek to San Martinez Canyon	30	27	Unnamed Tributary to Mint Canyon
132-133	10	From San Martinez Canyon to Potrero Canyon	31	3	Mint Canyon
135-139	18	From Potrero Canyon to LA/Ventura County Line	32	1	Unnamed Tributary to Mint Canyon
			33	1	Mint Canyon
			34	1	Unnamed Tributary to Mint Canyon
			35	5	Mint Canyon
			36	1	Unnamed Tributary to Mint Canyon
			37	51	Mint Canyon
			43	17	Texas Canyon
			44	16	Bouquet Canyon
			45	27	Bouquet Canyon
			46	31	Vasquer Canyon
			47	5	Bouquet Canyon
			48	18	Unnamed Tributary to Bouquet Canyon
			49	17	Bouquet Canyon
			50	11	Unnamed Tributary to Bouquet Canyon
			51	14	Bouquet Canyon
			52	16	Unnamed Tributary to Bouquet Canyon
			53	16	Bouquet Canyon
			54	44	Plum Canyon
			55	13	Bouquet Canyon
			56	65	Haskell Canyon
			57	35	Bouquet Canyon
			58	71	Dry Canyon
			59	13	Bouquet Canyon
			63	25	Newhall Creek
			64	14	Whitney Canyon
			65	19	Newhall Creek
			66	26	Railroad Aqueduct Canyon
			67	27	Newhall Creek
			68	84	Placerita Creek
			69	4	Placerita Creek
			70	21	Gavin Canyon
			71	17	Towsley Canyon
			72	16	Gavin Canyon
			73	14	S. Fork Santa Clara River
			74	27	S. Fork Santa Clara River
			75	70	Pico Canyon
			76	9	S. Fork Santa Clara River
			77	49	S. Fork Santa Clara River
			81-84	138	San Francisquito Canyon
			108	38	Castaic Creek
			109	55	Marple Canyon
			110	12	Castaic Creek
			111	32	Charlie Canyon
			112	69	Castaic Creek
			113	24	Hasley Canyon
			114	28	Romera Canyon
			115	5	Hasley Canyon
			116	23	Sloan Canyon
			117	53	Hasley Canyon
			118	27	Castaic Creek
			131	67	San Martinez Canyon
			134	81	Potrero Canyon

Notes

- LA = Los Angeles
- No. = number
- S = south
- SATP = Saugus Aquifer Treatment Plant (for groundwater extraction and treatment system on the Whittaker-Bermite property)
- SPTF = Saugus Perchlorate Treatment Facility
- WRP = water reclamation plant

Table 3-6
Discharges from the Saugus Water Reclamation Plant (1980-2019)
Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Cal Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1980	361.54	364.92	418.62	414.33	418.62	386.71	361.54	361.54	349.88	361.54	359.08	371.05	4,529.37
1981	381.52	336.86	390.08	397.75	444.31	411.57	416.72	429.09	430.90	433.85	412.49	459.54	4,944.68
1982	445.26	398.74	455.73	443.79	446.22	433.66	433.85	421.48	415.25	433.85	430.90	437.65	5,196.38
1983	459.54	421.08	513.77	541.39	562.29	545.07	520.43	476.66	457.60	481.42	476.94	533.75	5,989.92
1984	558.48	504.65	499.50	485.22	475.71	442.87	457.63	455.73	451.16	467.15	474.18	518.52	5,790.80
1985	503.30	461.47	505.20	457.60	448.12	443.79	451.92	458.58	452.08	470.00	460.36	497.59	5,610.03
1986	497.68	474.94	527.78	500.78	499.12	483.13	481.23	475.28	499.77	510.81	518.24	551.53	6,020.30
1987	523.98	474.88	542.14	487.28	425.35	382.51	391.41	402.98	394.66	396.81	411.39	429.95	5,263.35
1988	442.75	411.17	438.58	434.37	439.93	430.08	444.84	456.56	434.71	464.38	435.85	460.39	5,293.61
1989	461.50	410.31	440.88	449.59	463.86	436.18	475.74	478.72	462.17	471.41	451.40	465.95	5,467.72
1990	462.94	403.35	432.29	426.06	483.10	491.60	513.27	503.72	488.90	492.65	507.87	511.58	5,717.33
1991	494.80	422.60	479.10	427.47	490.42	516.40	556.64	525.34	486.39	473.59	469.72	492.52	5,834.99
1992	487.57	506.58	530.38	472.03	489.28	475.99	492.61	520.49	491.91	498.32	451.59	513.73	5,930.47
1993	594.79	534.22	616.19	580.48	615.34	587.29	622.09	603.54	578.36	608.77	566.49	567.01	7,074.58
1994	601.16	605.80	694.01	676.60	686.69	643.64	641.59	644.83	619.43	663.38	654.59	684.98	7,816.70
1995	657.39	577.44	675.46	704.31	699.25	631.58	641.21	634.55	616.85	612.67	568.05	581.28	7,600.05
1996	532.76	503.73	525.15	501.76	516.59	506.37	511.83	524.20	532.15	578.42	557.92	583.18	6,374.06
1997	564.15	515.57	514.68	461.25	469.02	417.06	442.38	473.78	474.14	503.27	521.10	552.74	5,909.15
1998	528.95	541.35	543.22	510.97	616.48	586.47	426.21	398.62	456.65	501.36	521.10	533.71	6,165.10
1999	541.32	484.64	550.84	529.38	543.22	511.89	547.03	531.81	521.10	527.05	487.03	514.68	6,290.00
2000	492.80	486.82	501.36	487.95	503.27	466.78	457.60	508.98	584.62	555.59	513.73	595.55	6,155.06
2001	591.74	531.04	571.77	510.05	499.46	489.80	485.19	519.44	510.05	527.05	553.32	560.35	6,349.26
2002	519.44	458.86	518.49	492.56	490.90	525.70	564.15	550.84	517.42	551.79	556.08	567.01	6,313.23
2003	550.84	500.11	528.00	342.49	352.00	331.44	327.27	334.88	324.07	325.36	325.00	352.00	4,593.46
2004	359.61	359.55	384.35	371.95	376.74	361.82	377.69	372.93	396.81	405.28	370.11	395.76	4,532.60
2005	409.08	359.18	378.64	359.06	387.20	370.11	383.40	409.08	396.81	406.23	394.05	437.62	4,690.46
2006	449.99	392.70	433.82	426.27	462.36	451.13	457.60	449.99	449.29	499.46	485.19	482.34	5,440.13
2007	471.87	429.64	475.68	453.89	473.78	467.70	474.73	483.29	463.10	433.82	437.32	468.07	5,532.87
2008	481.39	447.66	467.12	452.97	467.12	433.63	489.00	490.90	475.06	494.71	491.64	506.12	5,697.30
2009	497.56	446.83	499.46	479.67	500.41	490.72	491.85	410.03	370.11	373.88	406.01	469.97	5,436.51
2010	508.02	435.66	481.39	461.25	475.68	453.89	468.07	471.87	454.81	469.97	458.49	487.09	5,626.20
2011	478.53	435.66	498.51	459.41	475.68	454.81	469.97	465.21	439.16	477.58	459.41	456.65	5,570.59
2012	469.02	444.99	477.58	468.62	480.43	467.70	484.24	499.46	475.99	468.07	460.33	476.63	5,673.06
2013	483.29	427.07	478.53	468.62	481.39	473.22	496.61	495.66	491.64	493.75	486.11	491.85	5,767.74
2014	496.61	449.41	493.75	489.80	535.61	522.02	533.71	528.00	512.81	528.00	499.00	520.39	6,109.12
2015	500.41	438.24	498.51	472.30	488.05	468.62	492.80	487.09	468.62	489.95	451.13	461.41	5,717.13
2016	484.24	444.99	479.48	459.41	467.12	438.24	478.53	486.14	459.41	486.14	465.86	488.05	5,637.61
2017	485.19	446.83	483.29	462.18	473.78	467.70	483.29	485.19	475.99	492.80	475.06	484.24	5,715.53
2018	484.24	409.88	475.68	451.13	447.14	436.40	469.97	446.19	412.46	444.28	431.79	410.99	5,320.14
2019	405.28	385.82	457.60	447.44	430.96	432.71	453.80	448.09	446.52	451.89	443.76	402.42	5,206.31

Notes

All values are in units of acre-feet.

Cal = calendar

Table 3-7
Discharges from the Valencia Water Reclamation Plant (1980-2019)
Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Cal Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1980	266.40	258.11	256.88	239.39	247.37	211.77	218.83	218.83	211.77	228.34	239.39	247.37	2,844.44
1981	248.32	219.99	249.27	234.79	243.56	236.63	253.08	254.98	247.68	262.59	284.51	270.20	3,005.60
1982	274.96	247.49	284.47	270.69	276.86	268.85	274.96	268.30	254.12	266.40	270.69	283.52	3,241.33
1983	286.38	261.24	300.65	288.19	295.89	277.14	287.33	295.89	281.74	286.38	276.22	294.94	3,431.99
1984	302.55	281.25	304.45	293.71	320.63	314.89	319.68	316.82	313.97	321.58	314.89	318.73	3,723.15
1985	309.21	282.73	315.87	315.81	333.00	330.54	353.93	358.69	348.04	360.59	357.24	340.61	4,006.24
1986	350.12	341.16	373.91	359.08	376.76	380.26	414.82	453.83	445.63	439.56	420.77	445.26	4,801.17
1987	454.96	415.07	472.39	489.09	549.54	567.06	602.66	594.34	578.45	632.95	600.08	624.42	6,581.01
1988	621.53	557.33	588.42	587.29	602.75	536.81	575.04	605.79	586.76	607.88	599.71	601.92	7,071.23
1989	621.87	592.50	694.93	665.90	670.81	708.01	714.33	731.15	668.05	677.41	672.78	675.79	8,093.54
1990	697.79	644.09	724.64	694.93	666.24	693.09	725.10	713.90	691.77	699.78	657.93	680.11	8,289.38
1991	714.47	662.51	702.10	626.97	667.85	645.39	646.92	690.68	708.91	743.01	717.20	747.77	8,273.79
1992	776.31	776.95	819.12	812.95	823.87	799.14	852.42	869.54	817.55	827.68	811.11	785.82	9,772.45
1993	778.21	732.97	862.88	858.06	868.59	924.35	910.45	845.76	815.71	833.39	818.47	858.12	10,106.96
1994	799.14	728.68	808.65	776.12	801.99	760.47	771.55	763.94	739.30	762.99	734.69	759.18	9,206.70
1995	889.52	776.80	935.18	886.60	883.81	847.93	853.37	814.36	825.84	833.39	823.08	855.27	10,225.15
1996	893.32	838.36	935.18	889.36	901.89	875.55	902.84	891.42	886.60	817.22	809.27	816.26	10,457.28
1997	815.31	712.35	866.69	828.60	852.42	879.24	860.03	850.51	824.00	825.78	777.96	775.36	9,868.23
1998	777.26	787.11	955.16	954.73	983.70	964.86	1,135.92	1,138.77	1,019.18	993.22	910.54	905.69	11,526.14
1999	930.43	867.88	961.82	952.89	984.65	967.62	1,003.68	1,017.95	961.18	1,019.85	1,040.35	986.56	11,694.87
2000	1,010.34	956.73	1,026.51	1,012.73	1,066.47	1,072.58	1,147.34	1,146.38	1,006.29	1,078.84	1,031.15	1,010.34	12,565.70
2001	963.72	915.14	1,043.64	1,012.73	1,080.74	1,048.64	1,119.75	1,104.52	1,058.77	1,106.43	1,053.24	1,062.66	12,569.99
2002	1,106.43	1,001.07	1,118.80	1,100.20	1,185.39	1,163.72	1,210.13	1,245.33	1,212.52	1,199.66	1,140.71	1,153.04	13,836.99
2003	1,158.75	1,082.70	1,204.42	1,311.03	1,366.15	1,338.65	1,415.62	1,423.23	1,372.72	1,345.22	1,315.63	1,320.48	15,654.60
2004	1,314.77	1,262.88	1,345.22	1,295.38	1,342.36	1,330.36	1,370.90	1,413.72	1,284.33	1,414.67	1,369.95	1,396.59	16,141.14
2005	1,518.36	1,467.67	1,597.33	1,532.91	1,628.72	1,541.20	1,577.35	1,586.86	1,505.29	1,599.23	1,521.86	1,476.50	18,553.29
2006	1,490.78	1,330.18	1,545.00	1,521.86	1,525.02	1,455.58	1,485.07	1,487.92	1,400.34	1,427.03	1,382.84	1,431.79	17,483.41
2007	1,428.94	1,325.02	1,440.35	1,425.19	1,454.62	1,417.83	1,461.28	1,497.43	1,460.18	1,530.73	1,470.31	1,486.02	17,397.91
2008	1,527.88	1,382.14	1,469.85	1,412.30	1,477.46	1,462.94	1,485.07	1,487.92	1,440.84	1,440.35	1,409.54	1,438.45	17,434.74
2009	1,403.25	1,325.02	1,412.76	1,346.94	1,443.21	1,373.64	1,375.66	1,501.24	1,504.37	1,511.71	1,451.89	1,443.21	17,092.90
2010	1,449.87	1,306.98	1,411.81	1,355.22	1,395.64	1,361.67	1,409.91	1,407.06	1,344.17	1,408.96	1,348.78	1,440.35	16,640.42
2011	1,378.52	1,239.95	1,423.23	1,309.19	1,368.05	1,316.55	1,381.37	1,419.42	1,366.27	1,358.54	1,339.57	1,367.10	16,267.76
2012	1,335.70	1,261.10	1,362.34	1,336.81	1,377.56	1,338.65	1,384.22	1,414.67	1,351.54	1,407.06	1,336.81	1,374.71	16,281.17
2013	1,331.90	1,205.58	1,339.51	1,293.54	1,349.97	1,322.08	1,392.79	1,396.59	1,330.36	1,334.75	1,290.78	1,304.31	15,892.16
2014	1,272.91	1,174.65	1,323.34	1,239.22	1,268.16	1,236.46	1,277.67	1,280.53	1,229.09	1,213.93	1,201.47	1,269.11	14,986.53
2015	1,234.86	1,138.56	1,282.43	1,183.98	1,237.71	1,189.50	1,215.83	1,231.06	1,187.66	1,189.20	1,164.64	1,185.39	14,440.82
2016	1,178.73	1,111.58	1,219.64	1,148.07	1,222.49	1,195.95	1,195.85	1,236.76	1,176.61	1,202.51	1,168.33	1,198.71	14,255.25
2017	1,267.21	1,137.70	1,202.51	1,155.44	1,219.64	1,250.27	1,269.11	1,298.60	1,194.11	1,198.71	1,182.14	1,192.05	14,567.47
2018	1,217.74	1,096.45	1,250.08	1,185.82	1,271.96	1,215.28	1,229.15	1,265.30	1,272.36	1,259.60	1,209.76	1,283.38	14,756.89
2019	1,311.92	1,212.46	1,286.23	1,156.36	1,254.84	1,210.68	1,237.71	1,291.94	1,216.20	1,188.24	1,181.22	1,325.24	14,873.04

Notes

All values are in units of acre-feet.

Cal = calendar

Table 3-8
Combined Discharges from the Saugus and Valencia Water Reclamation Plants (1980-2019)
Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Cal Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1980	627.94	623.03	675.51	653.72	665.99	598.47	580.37	580.37	561.64	589.88	598.47	618.42	7,373.81
1981	629.84	556.86	639.35	632.54	687.88	648.19	669.80	684.07	678.58	696.44	696.99	729.74	7,950.28
1982	720.22	646.23	740.20	714.49	723.08	702.52	708.81	689.78	669.37	700.25	701.60	721.18	8,437.71
1983	745.91	682.32	814.42	829.58	858.18	822.21	807.76	772.55	739.35	767.80	753.16	828.69	9,421.91
1984	861.03	785.90	803.95	778.94	796.34	757.76	777.31	772.55	765.13	788.73	789.06	837.25	9,513.95
1985	812.51	744.19	821.08	773.41	781.12	774.33	805.85	817.27	800.11	830.59	817.61	838.20	9,616.28
1986	847.80	816.10	901.69	859.86	875.88	863.39	896.05	929.11	945.40	950.37	939.01	996.80	10,821.47
1987	978.94	889.95	1,014.54	976.36	974.89	949.57	994.07	997.32	973.11	1,029.76	1,011.47	1,054.37	11,844.36
1988	1,064.28	968.51	1,027.00	1,021.66	1,042.68	966.88	1,019.88	1,062.35	1,021.47	1,072.26	1,035.56	1,062.32	12,364.84
1989	1,083.37	1,002.82	1,135.81	1,115.50	1,134.68	1,144.19	1,190.07	1,209.86	1,130.23	1,148.82	1,124.18	1,141.74	13,561.26
1990	1,160.73	1,047.43	1,156.93	1,120.99	1,149.35	1,184.70	1,238.37	1,217.62	1,180.68	1,192.43	1,165.79	1,191.69	14,006.71
1991	1,209.27	1,085.11	1,181.20	1,054.44	1,158.28	1,161.79	1,203.56	1,216.02	1,195.30	1,216.59	1,186.92	1,240.28	14,108.78
1992	1,263.88	1,283.53	1,349.50	1,284.98	1,313.16	1,275.12	1,345.03	1,390.03	1,309.47	1,326.00	1,262.70	1,299.55	15,702.93
1993	1,373.00	1,267.19	1,479.07	1,438.54	1,483.93	1,511.64	1,532.54	1,449.30	1,394.07	1,442.16	1,384.96	1,425.13	17,181.54
1994	1,400.30	1,334.48	1,502.67	1,452.72	1,488.68	1,404.11	1,413.14	1,408.77	1,358.72	1,426.37	1,389.29	1,444.16	17,023.41
1995	1,546.91	1,354.24	1,610.65	1,590.91	1,583.06	1,479.51	1,494.58	1,448.92	1,442.69	1,446.06	1,391.13	1,436.55	17,825.19
1996	1,426.08	1,342.09	1,460.33	1,391.13	1,418.47	1,381.92	1,414.67	1,415.62	1,418.75	1,395.64	1,367.19	1,399.45	16,831.33
1997	1,379.47	1,227.92	1,381.37	1,289.86	1,321.43	1,296.30	1,302.41	1,324.29	1,298.14	1,329.04	1,299.06	1,328.09	15,777.38
1998	1,306.21	1,328.46	1,498.39	1,465.70	1,600.18	1,551.32	1,562.13	1,537.39	1,475.83	1,494.58	1,431.64	1,439.40	17,691.24
1999	1,471.75	1,352.52	1,512.66	1,482.27	1,527.88	1,479.51	1,550.71	1,549.76	1,482.27	1,546.91	1,527.39	1,501.24	17,984.87
2000	1,503.14	1,443.55	1,527.88	1,500.69	1,569.74	1,539.36	1,604.94	1,655.36	1,590.91	1,634.43	1,544.88	1,605.89	18,720.76
2001	1,555.47	1,446.18	1,615.40	1,522.78	1,580.20	1,538.44	1,604.94	1,623.97	1,568.82	1,633.48	1,606.56	1,623.01	18,919.25
2002	1,625.87	1,459.93	1,637.28	1,592.75	1,676.29	1,689.42	1,774.28	1,796.16	1,729.93	1,751.45	1,696.79	1,720.05	20,150.22
2003	1,709.59	1,582.81	1,732.42	1,653.52	1,718.15	1,670.09	1,742.88	1,758.11	1,696.79	1,670.58	1,640.63	1,672.48	20,248.05
2004	1,674.39	1,622.43	1,729.57	1,667.33	1,719.10	1,692.19	1,748.59	1,786.65	1,681.14	1,819.94	1,740.06	1,792.36	20,673.74
2005	1,927.45	1,826.85	1,975.97	1,891.97	2,015.92	1,911.31	1,960.75	1,995.95	1,902.10	2,005.46	1,915.91	1,914.13	23,243.75
2006	1,940.77	1,722.88	1,978.82	1,948.13	1,987.38	1,906.70	1,942.67	1,937.91	1,849.62	1,926.50	1,868.03	1,914.13	22,923.54
2007	1,900.81	1,754.67	1,916.03	1,879.08	1,928.40	1,885.53	1,936.01	1,980.72	1,923.27	1,964.55	1,907.62	1,954.09	22,930.79
2008	2,009.26	1,829.80	1,936.96	1,865.27	1,944.57	1,896.57	1,974.06	1,978.82	1,915.91	1,935.06	1,901.18	1,944.57	23,132.04
2009	1,900.81	1,771.86	1,912.23	1,826.60	1,943.62	1,864.35	1,867.51	1,911.27	1,874.48	1,885.59	1,857.91	1,913.18	22,529.41
2010	1,957.89	1,742.64	1,893.20	1,816.48	1,871.32	1,815.56	1,877.98	1,878.93	1,798.98	1,878.93	1,807.27	1,927.45	22,266.62
2011	1,857.05	1,675.61	1,921.74	1,768.60	1,843.73	1,771.36	1,851.34	1,884.64	1,805.43	1,836.12	1,798.98	1,823.75	21,838.35
2012	1,804.72	1,706.09	1,839.92	1,805.43	1,858.00	1,806.35	1,868.46	1,914.13	1,827.52	1,875.12	1,797.14	1,851.34	21,954.23
2013	1,815.19	1,632.65	1,818.04	1,762.16	1,831.36	1,795.30	1,889.39	1,892.25	1,822.00	1,828.51	1,776.89	1,796.16	21,659.90
2014	1,769.52	1,624.06	1,817.09	1,729.01	1,803.77	1,758.47	1,811.38	1,808.53	1,741.90	1,741.93	1,700.47	1,789.50	21,095.65
2015	1,735.27	1,576.80	1,780.94	1,656.28	1,725.76	1,658.12	1,708.64	1,718.15	1,656.28	1,679.14	1,615.77	1,646.80	20,157.95
2016	1,662.97	1,556.57	1,699.12	1,607.49	1,689.61	1,634.18	1,674.39	1,722.91	1,636.03	1,688.66	1,634.18	1,686.75	19,892.86
2017	1,752.40	1,584.53	1,685.80	1,617.61	1,693.41	1,717.97	1,752.40	1,783.79	1,670.09	1,691.51	1,657.20	1,676.29	20,283.01
2018	1,701.98	1,506.33	1,725.76	1,636.95	1,719.10	1,651.68	1,699.12	1,711.49	1,684.82	1,703.88	1,641.55	1,694.37	20,077.02
2019	1,717.20	1,598.28	1,743.84	1,603.80	1,685.80	1,643.39	1,691.51	1,740.03	1,662.73	1,640.14	1,624.98	1,727.66	20,079.36

Notes

All values are in units of acre-feet.

Cal = calendar

Table 3-9
Releases from Castaic Lagoon to Castaic Creek (1980-2019)
Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Cal Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1980	1,998	1,692	2,686	3,767	1,243	2,919	406	55	20	0	0	0	14,786
1981	0	935	2,702	512	190	154	48	0	0	0	0	0	4,541
1982	0	0	923	3,846	1,702	0	0	0	0	0	0	242	6,713
1983	178	53,378	6,804	2,456	0	0	0	0	0	0	235	2,080	65,131
1984	1,781	987	1,743	1,957	209	0	0	0	0	0	0	0	6,677
1985	169	124	162	173	75	161	306	222	243	228	141	615	2,619
1986	1,387	450	219	1,268	990	163	112	9	42	72	101	132	4,945
1987	147	141	101	282	26	3	0	0	0	38	212	121	1,071
1988	548	718	992	519	1,078	108	204	6	0	7	20	83	4,283
1989	121	126	150	256	163	6	0	0	0	0	0	0	822
1990	60	117	165	165	21	4	0	0	0	0	0	0	532
1991	30	102	0	235	210	227	330	282	239	212	319	89	2,275
1992	187	12,174	766	3,232	853	307	210	137	195	129	135	0	18,325
1993	180	140	13,139	3,211	2,149	875	589	616	1,083	168	96	431	22,677
1994	396	53	7	3,069	1,572	58	152	136	117	228	164	128	6,080
1995	155	57	62	92	105	1,758	2,197	2,116	0	74	113	144	6,873
1996	0	78	4,961	795	118	109	256	148	161	98	62	0	6,786
1997	62	30	8,800	963	70	118	149	150	145	194	137	465	11,283
1998	1,248	19,573	10,778	4,596	7,592	47	1,525	591	619	426	772	1,050	48,817
1999	736	775	50	3,277	1,284	269	119	116	120	193	106	178	7,223
2000	0	660	855	0	2,087	3,484	0	0	0	0	0	0	7,086
2001	0	389	1,218	867	221	0	0	0	0	0	0	0	2,695
2002	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	2,286	418	315	0	0	0	0	0	0	3,019
2004	0	59	1,004	0	0	0	0	0	0	0	0	60	1,123
2005	32,391	37,514	12,993	3,613	2,891	90	1,657	32	0	0	0	0	91,181
2006	1,403	2,185	2,648	5,906	3,395	2,307	0	0	0	0	0	0	17,844
2007	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	1,543	1,377	80	220	3,087	1,441	2,831	0	0	0	0	10,579
2009	0	571	1,027	954	0	0	0	0	0	0	0	0	2,552
2010	0	0	4,155	5,192	838	0	0	0	0	0	0	0	10,185
2011	572	1,180	5,562	12,049	1,165	1,719	0	0	0	0	0	0	22,247
2012	0	0	150	553	6	0	0	0	0	0	0	0	709
2013	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	3,261	355	1,639	2,357	7,606	4,363	0	0	0	0	0	19,581
2018	0	0	0	0	0	0	0	0	0	0	0	0	0
2019	0	666	4,453	8,662	5,184	266	0	0	0	0	0	0	19,231

Notes

All values are in units of acre-feet.

Cal = calendar

Table 3-10
Releases from Bouquet Reservoir to Bouquet Creek (1980-2019)
Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Cal Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
1980	60.77	37.90	23.94	295.81	309.36	297.59	297.08	369.51	356.40	62.61	59.99	61.99	2,232.95
1981	61.99	55.99	60.77	402.14	514.98	299.38	308.74	307.51	297.59	54.63	68.90	62.61	2,495.24
1982	63.84	59.88	65.68	291.65	310.58	297.59	308.74	308.74	298.78	57.70	60.59	65.06	2,188.83
1983	63.84	57.66	63.84	204.34	336.36	326.70	332.07	331.45	299.38	69.97	67.72	65.06	2,218.37
1984	60.77	58.57	62.61	297.59	310.58	299.38	307.51	307.51	300.56	62.61	59.99	60.77	2,188.45
1985	60.77	55.99	61.99	297.59	309.36	298.78	309.36	308.74	307.69	65.06	62.96	66.90	2,205.21
1986	63.84	57.10	62.61	298.78	307.51	300.56	309.36	309.36	303.53	70.59	63.56	62.61	2,209.40
1987	66.90	61.54	70.59	300.56	310.58	297.59	311.20	308.74	301.75	65.06	62.96	63.84	2,221.32
1988	65.06	57.99	62.61	303.53	317.33	304.72	310.58	310.58	302.35	61.99	61.78	62.61	2,221.14
1989	65.06	58.77	61.99	298.78	313.65	301.75	309.36	311.20	299.38	97.59	63.56	62.61	2,243.70
1990	68.75	57.66	65.06	304.72	312.42	298.78	310.58	313.65	298.78	66.90	65.93	65.06	2,228.31
1991	65.68	58.77	68.75	303.53	314.27	304.72	310.58	312.42	304.72	70.59	63.56	66.90	2,244.49
1992	65.06	60.87	65.06	295.81	306.29	297.59	304.44	301.38	289.87	58.92	59.99	60.77	2,166.06
1993	60.15	57.10	60.15	289.87	305.67	291.65	311.20	307.51	301.75	62.61	59.99	62.61	2,170.28
1994	57.08	57.10	58.92	271.46	307.51	293.44	305.67	298.92	296.41	93.91	60.59	63.84	2,164.85
1995	60.15	53.78	60.15	294.62	305.67	297.59	305.67	308.74	296.41	68.75	58.81	61.99	2,172.34
1996	63.84	56.85	62.61	297.59	306.29	299.38	305.67	306.29	297.59	60.77	58.81	1.23	2,116.90
1997	60.77	54.89	65.06	296.41	306.29	296.41	306.29	304.44	296.41	81.02	60.59	62.61	2,191.17
1998	62.61	57.10	62.61	127.71	307.51	296.41	304.44	305.67	298.78	243.68	57.62	60.15	2,184.30
1999	61.99	55.99	60.77	293.44	307.51	296.41	305.67	305.67	294.62	67.52	60.59	61.99	2,172.18
2000	61.99	57.99	70.59	282.15	306.29	298.78	307.51	305.67	294.62	66.90	57.02	60.15	2,169.68
2001	60.77	57.10	65.06	292.84	318.56	287.50	306.29	305.67	295.81	63.84	60.59	62.61	2,176.63
2002	61.99	55.99	62.61	294.62	307.51	296.41	306.29	306.29	253.64	58.92	57.62	60.77	2,122.66
2003	58.92	54.89	65.06	296.41	306.29	296.41	306.29	306.29	292.84	60.77	58.81	60.77	2,163.72
2004	60.77	56.85	60.77	284.53	306.29	296.41	306.29	306.29	296.41	67.08	179.45	243.20	2,464.31
2005	21.62	26.87	1.03	55.68	65.91	61.89	114.46	62.96	60.96	60.89	58.89	62.96	654.13
2006	62.96	52.81	60.89	99.02	124.60	123.83	120.48	126.66	118.54	77.14	60.96	62.96	1,090.86
2007	62.96	56.96	62.96	111.34	126.66	122.66	124.60	126.66	122.66	126.66	122.66	103.04	1,269.83
2008	62.96	58.96	62.96	117.53	126.66	122.66	126.66	126.66	122.66	126.66	163.49	70.49	1,288.37
2009	63.38	59.88	86.65	289.32	316.38	306.73	316.62	306.90	297.00	306.50	297.99	64.35	2,711.70
2010	86.33	55.44	102.56	206.12	266.11	288.09	306.90	306.90	297.00	306.90	297.00	119.45	2,638.81
2011	60.83	98.88	60.98	202.36	302.98	298.62	306.90	306.90	278.78	302.33	160.78	65.06	2,445.40
2012	61.38	57.42	61.38	142.54	93.08	162.08	122.76	124.98	115.41	61.38	52.15	61.38	1,115.95
2013	61.38	122.32	184.14	64.39	46.33	44.06	69.93	61.38	55.72	36.04	36.29	29.22	811.21
2014	13.35	26.47	30.69	30.29	93.87	89.10	101.55	78.94	71.85	72.97	59.40	50.31	718.80
2015	42.97	38.81	55.78	61.93	61.38	59.40	69.91	73.66	58.59	49.10	48.13	29.54	649.20
2016	30.69	48.91	61.38	65.76	79.79	77.22	79.79	82.82	65.12	92.07	89.42	61.38	834.35
2017	61.38	55.44	61.38	59.40	61.38	66.69	113.30	122.76	118.80	122.76	84.39	92.07	1,019.74
2018	92.07	92.07	89.10	92.07	89.10	115.26	122.76	122.56	118.40	122.36	96.36	92.07	1,244.19
2019	92.07	92.07	58.51	65.68	90.64	106.84	122.76	122.56	122.76	122.76	122.76	122.76	1,242.17

Notes

All values are in units of acre-feet.

Cal = calendar

Table 3-11
 Annual Groundwater Pumping Volumes from the Alluvial Aquifer
 Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Owner	Well Name	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
NWD	Castaic1	244	257	253	189	251	274	295	450	520	478	444	561	515	458	496	401	385	535	166	426	
	Castaic2	124	48	0	0	0	0	380	535	324	678	0	0	0	477	518	380	327	268	257	331	
	Castaic3	0	108	136	172	240	301	0	0	324	0	660	532	488	0	0	0	0	0	0	0	0
	Castaic4	0	0	0	0	0	0	0	0	0	39	0	0	0	0	0	0	0	0	95	57	6
	Castaic 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Castaic 7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pinetree1	346	326	355	242	148	273	8	0	2	152	0	47	16	247	154	79	64	89	227	403	
	Pinetree2	58	84	209	112	154	113	206	309	351	348	31	0	283	326	218	165	70	0	0	0	
	Pinetree3	398	527	225	432	753	655	719	756	758	672	801	724	682	450	607	595	624	812	716	505	
	Pinetree4	0	0	0	0	3	28	234	77	4	0	0	0	10	19	232	55	333	510	338	5	
Pinetree5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
SCWD	Clark	303	228	131	137	194	200	208	342	248	301	407	542	662	635	572	662	1,027	873	697	878	
	Guida	1,058	795	457	477	677	698	221	569	158	530	676	801	978	895	942	744	1,252	1,479	1,274	1,556	
	Honby	594	447	257	268	381	392	193	391	462	216	930	893	731	1,393	476	553	352	814	532	1,162	
	Lost Canyon 2	1,083	814	468	489	693	714	765	923	787	588	601	404	465	692	669	773	678	792	757	946	
	Lost Canyon 2A	0	0	0	0	0	0	0	0	0	0	293	832	1,284	1,080	1,383	1,230	1,370	1,055	973	890	
	Methodist	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Mitchell 5A	1,189	893	515	537	761	785	444	582	485	435	264	3	474	663	564	610	598	633	482	913	
	Mitchell 5b	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	N.Oaks Central	488	367	211	220	313	322	304	361	153	329	525	704	701	1,403	1,313	965	851	870	1,490	1,682	
	N.Oaks East	601	451	260	271	385	396	863	972	776	914	454	194	588	1,233	1,473	1,295	900	1,033	1,407	695	
	N.Oaks West	643	483	278	290	412	424	874	465	842	413	275	78	634	866	972	795	663	952	934	1,894	
	Sand Canyon	721	542	312	325	461	477	514	466	498	1,115	458	49	661	918	781	842	1,211	1,533	1,622	1,629	
	SantaClara	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Sierra	2,787	2,086	1,202	1,255	1,780	1,834	856	220	459	730	772	719	1,050	1,413	1,433	1,092	1,034	597	814	1,158	
	Stadium	0	0	0	0	0	0	167	291	211	214	328	374	60	825	418	656	509	637	444	338	
Valley Center	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
VWD	D	289	269	164	163	240	41	0	305	588	614	510	680	239	173	494	403	454	1,134	1,209	921	
	E15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	I	214	200	122	121	177	181	95	0	91	132	73	108	1	0	1	0	0	0	0	0	
	K2	0	0	0	0	0	0	0	0	0	0	0	982	1,134	1,708	2,089	1,155	1,305	1,076	1,489	1,420	
	L2	9	8	5	5	7	91	0	0	0	0	0	838	526	996	1,236	818	961	308	190	532	
	N	1,475	1,376	840	833	1,223	1,093	1,472	1,420	1,473	1,177	792	976	697	66	0	24	263	808	768	1,036	
	N3	0	0	0	0	0	0	0	0	0	0	0	10	999	1,536	29	943	1,325	1,034	1,093	1,057	
	N4	5	5	3	3	4	65	0	0	0	0	0	847	248	133	911	1,329	1,328	1,185	772	894	
	N7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	N8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	Q2	440	411	251	248	367	461	838	893	512	1,483	1,398	1,783	335	548	1,348	1,126	1,385	1,462	1,655	1,288	
	S6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	S8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	T2	621	580	354	351	515	704	894	913	1,007	1,030	643	662	379	0	3	280	733	837	941	726	
	T4	160	150	91	91	133	54	167	0	0	0	0	163	687	3	1	975	1,258	804	523	892	
	T7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
U3	1,476	1,378	841	834	1,225	1,278	1,033	638	323	823	1,254	1,199	369	1	2	765	987	851	560	702		
U4	1,306	1,220	744	738	1,084	665	668	606	696	567	551	584	42	3	2	7	742	789	529	828		
U6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
W6	0	0	0	0	0	0	0	0	146	145	0	0	217	260	204	224	365	615	493	355	416	
W9	0	0	0	0	0	0	0	0	0	0	0	11	902	699	444	507	508	1,077	915	627	1,111	
W10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
W11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

Table 3-11
 Annual Groundwater Pumping Volumes from the Alluvial Aquifer
 Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Owner	Well Name	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
NLF	161	317	370	271	223	314	220	170	0	0	0	120	82	401	753	791	0	0	0	0	123
	B10	0	0	0	0	0	0	0	0	0	0	0	291	1,225	452	1,406	894	1,045	930	1,244	1,155
	B11	186	217	159	133	184	138	60	0	0	127	445	311	0	136	51	127	151	30	250	212
	B5	1,218	1,423	1,041	858	1,208	772	1,178	1,002	1,481	1,928	1,893	1,880	860	989	1,950	1,921	1,649	1,756	1,273	1,748
	B6	858	1,002	733	604	850	543	946	788	165	96	137	263	615	283	808	1,359	1,421	1,602	1,572	2,133
	B7	0	0	0	0	0	0	60	0	0	127	0	0	400	180	581	373	56	286	176	444
	B14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	B15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	B16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	B20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	C	723	845	618	510	717	575	660	387	418	557	338	226	756	1,024	417	1,324	715	1,126	598	716
	C3	196	229	168	138	195	140	254	63	130	71	134	48	197	259	582	333	397	355	378	619
	C4	260	304	222	183	258	196	137	25	30	7	213	225	166	12	108	150	293	483	609	819
	C5	459	536	392	323	455	359	328	191	198	154	147	250	428	414	394	472	676	894	628	685
	C6	203	237	174	143	201	166	161	103	117	77	59	123	0	0	0	360	229	226	128	154
	C7	575	671	491	405	570	354	195	192	318	337	339	220	427	279	625	778	582	779	779	1,167
	C8	0	0	0	0	0	0	0	0	0	0	0	0	126	254	166	199	458	432	179	236
	C9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	C10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	C11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	C12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	E	2,067	2,416	1,767	1,457	2,051	3,342	1,842	1,180	812	624	965	498	1,325	1,513	1,022	1,366	2,542	1,949	1,522	2,506
	E2	174	203	149	123	173	138	103	0	0	251	1,284	830	560	584	555	115	669	525	426	138
	E3	0	0	0	0	0	0	0	0	0	0	0	0	0	15	138	0	0	0	0	0
	E4	1,011	1,181	864	712	1,003	639	716	83	566	392	553	284	376	16	0	381	140	339	80	281
	E5	0	0	0	0	0	0	0	0	0	0	0	0	65	274	0	142	514	598	42	0
	E7	0	0	0	0	0	0	0	0	0	0	0	0	116	80	105	88	79	2	0	0
	E9	96	113	82	68	96	78	117	288	476	411	339	596	252	187	435	319	12	142	170	42
	G45	324	378	277	228	321	179	153	98	123	99	143	146	165	82	144	137	159	180	144	231
	Q	441	515	377	311	438	159	360	382	312	185	15	0	0	0	0	0	0	0	0	0
	R	0	0	0	0	0	0	0	205	0	0	0	0	0	0	0	0	0	0	0	0
	R2	159	186	136	112	158	71	104	47	0	0	0	87	0	0	0	0	0	0	0	0
	S2	293	342	250	206	290	95	0	958	0	0	503	0	0	0	0	0	0	0	0	276
	S3	655	765	560	461	649	327	124	0	0	0	29	37	52	99	87	109	97	55	10	3
	Topco 1	0	0	0	0	0	0	0	0	0	0	0	0	75	0	0	0	0	0	0	0
	W4	303	354	259	213	300	138	60	1	0	300	157	252	1	0	36	5	128	29	20	3
	W5	553	646	472	389	548	191	315	205	308	192	0	175	0	0	0	0	0	0	0	21
	X3	260	304	222	183	258	508	244	314	497	308	412	215	350	135	205	222	8	108	22	112
Robinson Ranch	—	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PDC	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	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
	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	1,842	1,842	1,842	1,842	1,842	1,842	1,842	1,842	1,842	1,842	1,229	1,376	772	1,104	1,204	1,352	760	614	1,229	1,131
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	15	137	137	137	137	137	137	137	137	137	137	91	102	57	82	89	100	56	46	91	84
	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	17	1,021	1,021	1,021	1,021	1,021	1,021	1,021	1,021	1,021	1,021	680	762	427	612	666	748	421	340	680	627
	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3-11
Annual Groundwater Pumping Volumes from the Alluvial Aquifer
Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Owner	Well Name	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	Total (NWD)	1,170	1,350	1,178	1,147	1,549	1,644	1,842	2,127	2,283	2,367	1,936	1,864	1,994	1,977	2,225	1,675	1,803	2,309	1,761	1,676
	Total (SCWD)	9,467	7,106	4,091	4,269	6,057	6,242	5,409	5,582	5,079	5,785	5,983	5,593	8,288	12,016	10,996	10,217	10,445	11,268	11,426	13,741
	Total (VWD)	5,995	5,597	3,415	3,387	4,975	4,633	5,167	4,921	4,835	5,826	5,232	9,951	6,615	5,815	6,847	8,698	12,433	11,696	10,711	11,823
	Total (All Purveyors)	16,632	14,053	8,684	8,803	12,581	12,519	12,418	12,630	12,197	13,978	13,151	17,408	16,897	19,808	20,068	20,590	24,681	25,273	23,898	27,240
	Total (NLF)	11,331	13,237	9,684	7,983	11,237	9,328	8,287	6,512	5,951	6,243	8,225	7,039	8,938	8,020	10,606	11,174	12,020	12,826	10,250	13,824
	Total (Robinson Ranch)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Total (PDC)	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	3,000	2,000	2,240	1,256	1,798	1,959	2,200	1,237	1,000	2,000	1,842
	Total (Domestic)	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	Total (Private and Domestic)	14,831	16,737	13,184	11,483	14,737	12,828	11,787	10,012	9,451	9,743	10,725	9,779	10,694	10,318	13,065	13,874	13,757	14,326	12,750	16,166
	Total Alluvial Aquifer Pumping	31,463	30,790	21,868	20,286	27,318	25,347	24,205	22,642	21,648	23,721	23,876	27,187	27,591	30,126	33,133	34,464	38,438	39,599	36,648	43,406

Note
 All pumping volumes are listed in acre-feet (AF) and are from records maintained by SCV Water and its retail divisions.

Abbreviations
 NLF = Newhall Land & Farming Company
 NWD = Newhall County Water Division of SCV Water
 PDC = Pitchess Detention Center (formerly known as Wayside Honor Rancho)
 — = not available
 SCV Water = Santa Clarita Valley Water Agency
 SCWD = Santa Clarita Water Division of SCV Water
 VWD = Valencia Water Division of SCV Water

Table 3-11
Annual Groundwater Pumping Volumes from the Alluvial Aquifer

Owner	Well Name	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	
NWD	Castaic1	118	345	385	561	456	360	557	392	596	347	320	464	424	87	340	214	0	32	421	379	
	Castaic2	289	166	0	123	403	288	310	162	66	21	30	138	224	199	172	78	73	225	197	173	
	Castaic3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Castaic4	7	100	47	56	80	66	198	38	0	0	0	0	0	0	0	0	0	0	0	0	0
	Castaic 6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Castaic 7	0	0	0	0	0	0	0	0	498	965	1043	1046	890	680	871	839	553	518	108	492	
	Pinetree1	245	164	0	0	0	131	242	343	197	181	151	186	173	53	0	0	0	0	0	0	0
	Pinetree2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pinetree3	494	566	544	525	643	336	427	473	257	306	299	475	395	119	0	0	0	0	0	0	0
	Pinetree4	355	300	5	0	0	208	415	399	103	40	0	122	0	0	0	0	0	0	0	0	0
Pinetree5	0	0	0	0	0	0	0	0	0	0	0	480	785	525	267	0	0	0	5	2	0	
SCWD	Clark	747	696	782	712	728	694	777	795	770	572	707	521	486	400	242	470	373	56	255	333	
	Guida	853	1,047	1,320	1,230	1,432	1,487	1,479	1,384	1,147	858	1,095	962	971	974	781	613	405	237	347	405	
	Honby	815	721	696	874	707	1,289	886	1,291	1,314	1,173	965	695	596	500	21	72	38	20	19	16	
	Lost Canyon 2	708	741	730	644	785	853	837	802	1,197	1,015	666	848	739	674	570	69	0	12	12	203	
	Lost Canyon 2A	998	1,034	905	593	756	738	799	554	609	567	268	583	611	460	160	314	287	104	387	534	
	Methodist	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mitchell 5A	439	407	293	19	54	1,158	1,996	1,728	545	263	253	462	514	171	91	10	27	17	47	0	
	Mitchell 5b	0	0	0	0	0	0	0	0	752	365	253	506	711	215	17	0	0	3	97	4	
	N.Oaks Central	1,145	822	1,646	1,641	669	1,700	1,024	14	1232	849	746	801	710	724	406	3	69	37	20	70	
	N.Oaks East	1,483	1,234	448	485	595	941	987	1,028	735	958	677	471	487	436	260	0	111	35	31	48	
	N.Oaks West	1,663	898	1,123	31	858	904	1,143	30	1,168	975	661	739	778	534	530	397	113	27	31	0	
	Sand Canyon	1,317	930	705	195	562	1,260	1,557	1,408	1,029	891	896	1,009	995	733	331	548	251	85	332	621	
	SantaClara	0	0	0	0	0	0	0	0	0	1,116	1,392	946	695	302	104	484	337	1	27	56	
	Sierra	640	846	87	0	0	1,384	1,671	1,652	1,381	446	806	616	1,107	80	57	563	562	52	313	215	
	Stadium	721	565	778	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Valley Center	0	0	0	0	0	0	0	0	0	29	1,222	1,036	792	1,059	650	1,054	912	221	547	257		
VWD	D	880	646	772	687	833	1,178	1,048	870	680	559	1,096	925	675	850	1,087	1,122	978	454	752	155	
	E15	0	0	0	0	0	0	838	1,263	771	714	1,095	822	1,239	852	1,676	1,186	924	669	619	180	
	I	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	K2	861	669	954	364	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	L2	494	349	490	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	N	935	591	700	622	587	282	1,053	849	1,281	933	315	683	403	955	1,266	1,175	837	724	948	437	
	N3	778	226	857	255	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	N4	710	458	909	248	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	N7	0	0	0	0	0	0	0	486	1,326	1,488	1,538	876	1,100	1,299	1,875	1,342	1,356	677	1,340	649	
	N8	0	0	0	0	0	0	0	539	958	1,299	1,306	1,234	900	1,086	1,776	1,352	1,273	684	1,165	546	
	Q2	1,387	923	1,167	1,451	1,096	404	1,280	1,116	1,711	1,090	1,409	1,456	1,238	1,223	1,264	1,102	1,177	798	1,100	157	
	S6	515	1,489	1,311	2,135	2,302	1,695	1,579	1,751	1,812	1,127	930	1,078	1,445	1,836	2,558	2,127	2,080	1,370	1,350	324	
	S7	111	564	419	1,095	471	186	766	675	622	100	76	291	241	224	862	499	255	226	503	151	
	S8	79	327	190	409	153	2,095	437	422	577	117	96	229	254	245	868	423	262	225	558	143	
	T2	984	700	696	1,014	822	724	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	T4	625	690	831	799	747	823	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	T7	0	0	0	0	0	0	0	0	566	879	822	741	642	469	365	44	36	63	91	148	
U3	1,126	956	572	823	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
U4	1,073	942	796	934	625	1,049	750	790	1,008	824	474	658	719	462	818	62	43	48	63	71		
U6	0	0	0	0	0	0	636	1,323	540	566	818	638	816	819	918	73	67	81	102	128		
W6	445	182	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
W9	1,176	806	939	764	566	995	951	931	564	1,210	535	867	1,165	558	831	657	39	59	214	642		
W10	0	0	0	36	1,537	1,674	990	1,244	1,113	1,131	1,618	1,517	1,474	1,402	1,745	1,299	970	988	1,384	999		
W11	0	0	0	0	123	1,123	1,556	881	794	422	926	760	459	484	1,171	1,142	835	671	648	513		

Table 3-11
Annual Groundwater Pumping Volumes from the Alluvial Aquifer



Owner	Well Name	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
NLF	161	328	496	485	2,021	1,834	986	1,069	645	27	572	194	84	349	528	451	337	795	631	655	640
	B10	1,446	1,240	534	344	589	592	466	140	0	0	0	0	0	0	0	0	0	0	0	0
	B11	87	205	232	271	338	81	30	34	87	109	79	125	113	91	144	143	133	159	181	130
	B5	2,008	1,680	2,280	1,582	2,166	2,129	2,673	1,730	1394	1647	1782	1595	1048	1242	575	653	1130	755	873	723
	B6	870	1,312	2,175	1,766	1,356	1,090	1,216	834	1065	985	704	1053	785	746	573	762	729	459	476	725
	B7	461	474	584	402	71	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	B14	0	0	0	0	0	0	239	1,125	614	879	831	868	1063	1247	585	394	1415	1279	711	901
	B15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	841	658
	B16	0	0	0	0	0	0	0	0	0	708	1198	1113	1474	1329	961	791	790	760	713	777
	B20	0	0	0	0	0	0	347	483	552	392	281	312	343	280	432	427	388	371	373	78
	C	1,034	1,319	1,720	1,373	1,202	1,091	1,197	817	717	1588	1585	1195	1203	1339	857	951	903	168	678	450
	C3	441	93	192	186	59	0	124	362	127	85	67	60	88	141	98	184	143	55	0	169
	C4	1,078	1,028	809	764	274	0	358	663	609	341	160	211	295	523	383	286	489	529	441	636
	C5	605	680	850	622	649	864	896	1,027	1034	36	378	465	576	550	428	829	571	4031	3336	1973
	C6	164	231	241	108	119	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	C7	503	741	866	443	369	366	336	905	0	0	0	0	0	0	0	0	0	0	0	0
	C8	241	286	593	408	390	316	463	192	42	671	196	169	227	133	75	0	0	0	0	0
	C9	0	0	0	0	0	0	0	0	1	1	6	3	4	6	0	0	0	0	0	0
	C10	0	0	0	0	0	0	0	0	1622	1350	1738	2118	1982	2186	2387	1889	2073	60	3	832
	C11	0	0	0	0	0	0	271	355	540	1010	997	945	1513	1342	978	751	1211	1091	414	789
	C12	0	0	0	0	0	0	0	0	0	0	0	0	76	131	115	293	308	0	536	309
	E	1,854	1,700	17	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	E2	125	141	55	14	676	107	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	E3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	E4	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	E5	47	172	679	537	284	157	92	17	0	0	0	0	0	0	0	0	0	0	0	0
	E7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	E9	38	238	814	47	609	842	992	42	0	0	0	0	0	0	0	0	0	0	0	0
	G45	197	291	283	60	0	26	690	597	760	687	576	7	157	277	220	178	198	0	0	0
	Q	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	R	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	R2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S2	237	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	S3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Topco 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	W4	0	46	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	W5	17	276	104	23	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0
	X3	10	12	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Robinson Ranch	—	720	724	563	431	571	633	869	588	600	597	457	513	590	561	369	223	213	76	95	117
PDC	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3	0	0	0	0	0	0	0	0	0	0	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
	5	0	0	0	0	0	0	0	0	472	0	627	677	388	0	0	0	0	0	0	0
	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	1,010	1,000	1,000	1,000	2,000	2,000	2,000	2,000	763	2000	851	614	713	725	870	450	541	530	655	578
	11	0	0	0	0	0	0	0	0	425	0	606	740	282	0	0	0	0	0	0	0
	15	75	74	72	173	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	17	559	530	530	1,100	1,105	842	1,026	85	1423	1432	979	734	917	1027	897	923	659	616	505	521
	18	0	0	0	0	0	0	0	0	423	0	383	461	422	557	315	395	417	484	451	461
	1A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 3-11
Annual Groundwater Pumping Volumes from the Alluvial Aquifer

Owner	Well Name	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
	Total (NWD)	1,508	1,641	981	1,265	1,582	1,389	2,149	1,807	1,717	1,860	2,323	3,216	2,631	1,405	1,383	1,131	626	780	728	1,044
	Total (SCWD)	11,529	9,941	9,513	6,424	7,146	12,408	13,156	10,686	11,879	10,077	10,607	10,195	10,192	7,262	4,220	4,597	3,485	907	2,465	2,762
	Total (VWD)	12,179	10,518	11,603	11,707	9,862	12,228	11,884	13,140	14,323	12,459	13,054	12,775	12,770	12,764	19,080	13,605	11,132	7,737	10,837	5,243
	Total (All Purveyors)	25,216	22,100	22,097	19,396	18,590	26,025	27,189	25,633	27,919	24,396	25,984	26,186	25,593	21,431	24,683	19,333	15,243	9,424	14,030	9,049
	Total (NLF)	11,857	12,661	13,514	10,999	10,991	8,648	11,477	9,968	9,191	11,061	10,772	10,323	11,296	12,091	9,262	8,868	11,276	10,348	10,231	9,790
	Total (Robinson Ranch)	720	724	563	431	571	633	869	588	600	597	457	513	590	561	369	223	213	76	95	117
	Total (PDC)	1,644	1,604	1,602	2,273	3,105	2,842	3,026	2,085	3,506	3,432	3,446	3,226	2,722	2,309	2,082	1,768	1,617	1,630	1,611	1,560
	Total (Domestic)	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
	Total (Private and Domestic)	14,721	15,489	16,179	14,203	15,167	12,623	15,872	13,141	13,797	15,590	15,175	14,562	15,108	15,461	12,213	11,359	13,606	12,554	12,437	11,967
	Total Alluvial Aquifer Pumping	39,937	37,589	38,276	33,599	33,757	38,648	43,061	38,774	41,716	39,986	41,159	40,748	40,701	36,892	36,896	30,692	28,849	21,978	26,467	21,016

Note

Abbreviations

NLF= Newhall Land & Farming Company

NWD = Newhall County Water Division of SCV Water

PDC = Pitchess Detention Center (formerly known as Wayside Honor Rancho)

— = not available

SCV Water = Santa Clarita Valley Water Agency

SCWD = Santa Clarita Water Division of SCV Water

VWD = Valencia Water Division of SCV Water

Table 3-12
Annual Groundwater Pumping from the Saugus Formation
Development of a Numerical Groundwater Flow Model for the
Santa Clara River Valley East Groundwater Subbasin

Owner	Well Name	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
LACWWD36	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NWD	4	440	449	319	385	315	369	222	0	0	0	0	0	0	0	0	0	0	0	0	0
	7	404	396	350	348	355	384	271	260	332	242	242	274	180	268	321	364	332	288	280	172
	9	0	0	0	0	119	227	115	138	1	0	5	1	1	0	4	1	1	0	1	0
	10	790	906	1,287	1,300	1,007	997	731	888	613	453	644	343	351	61	0	1	0	0	2	0
	11	729	870	716	754	1,159	1,278	2,209	2,371	1,265	1,280	1,252	1,034	428	730	614	522	353	81	14	0
	12	0	0	0	0	0	0	0	0	1,830	2,713	2,603	3,342	2,807	1,956	1,918	2,264	2,140	1,798	1,909	1,155
	13	0	0	0	0	0	0	0	0	0	0	0	0	1,393	2,053	2,246	1,623	2,045	3,001	2,351	1,295
NLF	156	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	266	445	426	479
SCWD	Saugus1	0	0	0	0	0	0	0	0	31	0	0	1,690	437	1,226	1,333	0	410	451	0	0
	Saugus2	0	0	0	0	0	0	0	0	32	0	40	3,091	2,476	1,675	2,530	1,726	1,766	617	0	0
VWD	157	635	604	529	239	387	314	581	483	1,223	1,146	635	1,005	570	436	616	403	46	80	0	0
	159	0	0	0	0	0	0	0	0	0	0	3	63	65	74	147	68	3	0	0	0
	160	1,571	1,725	869	806	1,087	1,126	1,336	1,401	1,581	1,848	1,378	1,805	1,026	1,359	1,431	1,038	753	949	556	604
	201	0	0	0	0	0	0	0	0	0	57	2,039	2,249	1,170	752	845	530	71	35	16	11
	205	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	206	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	207	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (LACWWD36)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (NWD)		2,363	2,621	2,672	2,787	2,955	3,255	3,548	3,657	4,041	4,688	4,746	4,994	5,160	5,068	5,103	4,775	4,871	5,168	4,557	2,622
Total (SCWD)		0	0	0	0	0	0	0	0	63	0	40	4,781	2,913	2,901	3,863	1,726	2,176	1,068	0	0
SCWD Pumping to Municipal Supply System		0	0	0	0	0	0	0	0	63	0	40	4,781	2,913	2,901	3,863	1,726	2,176	1,068	0	0
SCWD Pumping to NPDES Discharge		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (VWD)		2,206	2,329	1,398	1,045	1,474	1,440	1,917	1,884	2,804	3,051	4,055	5,122	2,831	2,621	3,039	2,039	873	1,064	572	615
VWD Pumping to Municipal Supply System		1,644	1,808	897	611	854	885	1,427	1,305	2,300	2,529	3,516	4,642	2,385	2,182	2,565	1,586	326	516	149	106
VWD Pumping to Golf Course Uses		562	521	501	434	620	555	490	579	504	522	539	480	446	439	474	453	547	548	423	509
VWD Pumping to NPDES Discharge		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VWD Other Non-System Pumping		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (All Purveyors)		4,569	4,950	4,070	3,832	4,429	4,695	5,465	5,541	6,908	7,739	8,841	14,897	10,904	10,590	12,005	8,540	7,920	7,300	5,129	3,237
Pumping to Municipal Supply System		4,007	4,429	3,569	3,398	3,809	4,140	4,975	4,962	6,404	7,217	8,302	14,417	10,458	10,151	11,531	8,087	7,373	6,752	4,706	2,728
Pumping to Golf Course Uses		562	521	501	434	620	555	490	579	504	522	539	480	446	439	474	453	547	548	423	509
Pumping to NPDES Discharge		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (NLF)		20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	266	445	426	479
Total Saugus Formation Pumping		4,589	4,970	4,090	3,852	4,449	4,715	5,485	5,561	6,928	7,759	8,861	14,917	10,924	10,610	12,025	8,560	8,186	7,745	5,555	3,716

Note
All pumping volumes are listed in acre-feet (AF) and are from records maintained by SCV Water and its retail divisions.

Abbreviations

LACWD36 = Los Angeles County Waterworks District 36
NPDES = National Pollutant Discharge Elimination System
NLF = Newhall Land & Farming Company
SCV Water = Santa Clarita Valley Water Agency

NWD = Newhall County Water Division of SCV Water
SCWD = Santa Clarita Water Division of SCV Water
VWD = Valencia Water Division of SCV Water

Table 3-12
Annual Groundwater Pumping from the Saugus Formation
Development of a Numerical Groundwater Flow Model for the
Santa Clara River Valley East Groundwater Subbasin

Owner	Well Name	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
LACWWD36	19	0	0	0	0	0	0	0	0	0	0	0	0	794	811	1,238	973	1,046	1,093	1,204	972
NWD	4	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	0	0	0	0	0	0	0	0	0	0
	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	12	1,767	1,242	1,758	1,013	1,833	1,878	2,305	1,397	2,188	1,906	2,223	2,326	2,130	2,475	2,532	1,710	2,028	802	117	1,112
	13	419	1,190	1,637	1,500	1,906	1,557	1,118	2,294	2,006	1,962	1,950	2,063	1,951	1,360	1,317	1,987	1,815	721	1,762	1,552
NLF	156	374	300	211	122	268	6	934	971	330	379	366	344	0	0	0	0	0	0	0	0
SCWD	Saugus1	0	0	0	0	0	0	0	0	0	0	909	1,617	1,807	1,478	813	1,726	1,715	1,345	1,609	1,658
	Saugus2	0	0	0	0	0	0	0	0	0	0	733	1,317	1,149	1,630	1,690	1,235	1,692	1,648	1,310	1,528
VWD	157	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	159	0	91	0	30	9	25	1	40	22	26	32	15	7	15	8	183	225	232	27	9
	160	1,124	1,189	936	863	1,527	844	583	681	741	955	945	532	592	693	680	552	546	664	621	554
	201	295	128	495	168	148	299	396	133	106	135	49	0	0	0	0	0	0	1,931	1,156	
	205	101	0	123	511	813	1,478	613	772	562	716	728	70	5	0	0	0	0	0	0	3
	206	0	0	0	0	0	366	1,362	1,397	963	1,599	1,799	181	191	274	1,193	889	1,326	656	1,331	716
	207	0	0	0	0	0	0	0	0	0	0	0	0	93	302	1,130	2,025	1,446	702	1,493	940
Total (LACWWD36)		0	0	0	0	0	0	0	0	0	0	0	0	794	811	1,238	973	1,046	1,093	1,204	972
Total (NWD)		2,186	2,432	3,395	2,513	3,739	3,435	3,423	3,691	4,194	3,868	4,173	4,389	4,081	3,835	3,849	3,697	3,843	1,523	1,879	2,664
Total (SCWD)		0	0	0	0	0	0	0	0	0	0	1,642	2,934	2,956	3,108	2,503	2,961	3,407	2,993	2,919	3,186
SCWD Pumping to Municipal Supply System		0	0	0	0	0	0	0	0	0	0	1,642	2,784	2,956	3,108	2,503	2,961	3,407	2,993	2,919	3,186
SCWD Pumping to NPDES Discharge		0	0	0	0	0	0	0	0	0	0	0	150	0	0	0	0	0	0	0	0
Total (VWD)		1,520	1,408	1,554	1,572	2,497	3,012	2,955	3,023	2,394	3,431	3,553	798	888	1,284	3,011	3,649	3,543	2,254	5,403	3,378
VWD Pumping to Municipal Supply System		1,007	835	965	1,068	1,962	2,513	2,449	2,367	1,771	2,836	2,995	265	302	594	2,339	2,929	2,789	1,370	2,838	1,667
VWD Pumping to Golf Course Uses		513	573	589	504	535	499	506	656	623	595	558	533	586	690	672	720	754	884	634	543
VWD Pumping to NPDES Discharge		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,931	1,156
VWD Other Non-System Pumping		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total (All Purveyors)		3,706	3,840	4,949	4,085	6,236	6,447	6,378	6,714	6,588	7,299	9,368	8,121	8,719	9,038	10,601	11,280	11,839	7,863	11,405	10,200
Pumping to Municipal Supply System		3,193	3,267	4,360	3,581	5,701	5,948	5,872	6,058	5,965	6,704	8,810	7,438	8,133	8,348	9,929	10,560	11,085	6,979	8,840	8,501
Pumping to Golf Course Uses		513	573	589	504	535	499	506	656	623	595	558	533	586	690	672	720	754	884	634	543
Pumping to NPDES Discharge		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1,931	1,156
Total (NLF)		374	300	211	122	268	6	934	971	330	379	366	344	0	0	0	0	0	0	0	0
Total Saugus Formation Pumping		4,080	4,140	5,160	4,207	6,504	6,453	7,312	7,685	6,918	7,678	9,734	8,465	8,719	9,038	10,601	11,280	11,839	7,863	11,405	10,200

Note
 All pumping volumes are listed in acre-feet (AF) and are from records maintained by SCV Water and its retail divisions.

Abbreviations

LACWD36 = Los Angeles County Waterworks District 36
 NPDES = National Pollutant Discharge Elimination System
 NLF = Newhall Land & Farming Company
 SCV Water = Santa Clarita Valley Water Agency

NWD = Newhall County Water Division of SCV Water
 SCWD = Santa Clarita Water Division of SCV Water
 VWD = Valencia Water Division of SCV Water

Table 3-13
Distribution Of Pumping By Month For Agricultural and Urban Production Wells
Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Month	% of Annual Water Use (Agricultural)	% of Annual Water Use (Urban)	% of May-Oct Water Use (Urban)
January	3.8%	5.2%	
February	5.1%	3.7%	
March	6.6%	5.2%	
April	9.1%	6.6%	
May	10.6%	8.7%	13.2%
June	11.4%	10.4%	15.8%
July	14.1%	13.0%	19.7%
August	12.9%	13.6%	20.6%
September	10.2%	10.9%	16.5%
October	7.5%	9.3%	14.1%
November	5.0%	7.1%	
December	3.8%	6.3%	
Total	100.0%	100.0%	100.0%

Table 3-14
 Hydraulic Conductivity Zones Used in the Numerical Model
Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Zone Number	Horizontal Hydraulic Conductivity (ft/day)	Vertical Hydraulic Conductivity (ft/day)	Vertical Hydraulic Conductivity (cm/sec)
1	1	0.01	3.5E-06
6	0.2	0.002	7.1E-07
7	0.3	0.01	3.5E-06
8	0.3	0.015	5.3E-06
9	0.4	0.04	1.4E-05
13	30	0.01	3.5E-06
14	1	0.01	3.5E-06
15	0.1	0.01	3.5E-06
16	6.5	0.325	1.1E-04
17	1	0.1	3.5E-05
18	2	1	3.5E-04
20	100	1	3.5E-04
23	75	7.5	2.6E-03
24	600	60	2.1E-02
25	375	37.5	1.3E-02
26	700	45	1.6E-02
27	300	15	5.3E-03
28	400	15	5.3E-03
29	50	1	3.5E-04
30	1,200	120	4.2E-02
31	1,200	120	4.2E-02
32	800	15	5.3E-03
33	1,400	15	5.3E-03
34	1,500	150	5.3E-02
35	250	10	3.5E-03
36	20	0.01	3.5E-06
37	1,200	12	4.2E-03
38	1,200	120	4.2E-02
39	1,200	120	4.2E-02
40	75	7.5	2.6E-03
41	0.01	0.00001	3.5E-09
42	0.01	0.00001	3.5E-09
43	5	0.5	1.8E-04
44	10	0.02	7.1E-06
45	30	0.3	1.1E-04
46	6.5	0.3	1.1E-04
47	4	0.002	7.1E-07
48	2	0.2	7.1E-05
51	1	0.02	7.1E-06
52	2	0.2	7.1E-05
53	5	1	3.5E-04
54	100	1	3.5E-04
55	175	1	3.5E-04
56	700	70	2.5E-02
57	250	25	8.8E-03
58	300	1	3.5E-04
59	100	5	1.8E-03
60	1,400	35	1.2E-02
61	1,000	35	1.2E-02
62	250	25	8.8E-03
63	250	25	8.8E-03
64	1	0.002	7.1E-07
65	2	0.02	7.1E-06
66	0.00001	0.001	3.5E-07

Note
 ft/day = feet or foot per day

Table 3-15
 Test Results and Hydraulic Conductivity Estimates for Wells with High Specific Capacity in the Alluvial Aquifer
 Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Owner	Well Name	Alluvial Subarea	Test Date	Pumping Rate (gpm)	Measured Drawdown (ft)	Specific Capacity (gpm/ft)	Formation Drawdown (ft) (E=100%)	Formation Drawdown (ft) (E=70%)	Formation Drawdown (ft) (E=50%)	T (ft ² /day) (E=80%)	T (ft ² /day) (E=60%)	Known or Estimated Depth to Top of Screen (ft)	Estimated Depth to Bottom of Alluvium (ft)	Estimated Depth to Static Water (ft)	Estimated Saturated Thickness (ft)	Reported Typical Saturated Thickness of Alluvium (ft)	Selected Saturated Thickness (ft)	Kh (ft/day) (E=80%)	Kh (ft/day) (E=60%)
Along the Santa Clara River																			
NLF	B5	Below Valencia WRP	3/28/2000	2357	6	392.8	6	4.2	3	98,463	131,283	30	100	10.8	89	110	90	1,090	1,460
VWD	N4	Below Saugus WRP	11/21/1991	1510	5.5	274.5	5.5	3.85	2.75	68,808	91,745	76	175	44	131	170	130	530	710
SCWD	Stadium	Above Saugus WRP	3/19/1974	1046	2.8	373.6	2.8	1.96	1.4	93,650	124,866	33	130	25	105	115	105	890	1,190
VWD	U3	Above Saugus WRP	8/15/1973	1997	4.7	424.9	4.7	3.29	2.35	106,509	142,012	39	133	27.6	105	115	105	1,010	1,350
VWD	U4	Above Saugus WRP	8/13/1973	2679	8	334.9	8	5.6	4	83,949	111,932	30	130	---	---	115	105	800	1,070
SCWD	N. Oaks Central	At and Above Mint Canyon	9/17/1998	1450	4.8	302.1	4.8	3.36	2.4	75,727	100,969	50	117	28.6	88	90	90	840	1,120
SCWD	Sand Canyon	At and Above Mint Canyon	9/1/1979	825	2.6	317.3	2.6	1.82	1.3	79,537	106,049	60	130	14	116	90	115	690	920
SCWD	Sierra	At and Above Mint Canyon	3/15/1983	1950	5.5	354.5	5.5	3.85	2.75	88,862	118,483	60	120	21	99	90	100	890	1,180
In Tributary Valleys																			
NLF	R2	Bouquet Canyon	10/29/1947	1680	6.4	262.5	6.4	4.48	3.2	65,800	87,734	40	140	---	---	90	90	730	970
SCWD	Clark	Bouquet Canyon	6/6/1972	814	4	203.5	4	2.8	2	51,011	68,015	56	96	---	---	90	90	570	760
SCWD	Guida	Bouquet Canyon	9/1/1979	990	3.6	275	3.6	2.52	1.8	68,934	91,912	20	95	37	58	90	80	860	1,150
NLF	E	Castaic Valley	4/10/1984	1726	7.8	221.3	7.8	5.46	3.9	55,473	73,964	12	93	17.3	76	105	100	550	740
NLF	E2	Castaic Valley	6/5/1996	1473	5.8	254	5.8	4.06	2.9	63,670	84,893	30	105	17.3	88	105	100	640	850

Notes

The reported typical saturated thicknesses are based on examining values reported by RCS (2002; see Table 4.4) for wet vs. normal vs. dry years (1945, 1965, 1985, and 2000).

- E = well efficiency
- ft = feet or foot
- ft/day = feet per day
- ft²/day = square feet per day
- gpm/ft = gallons per minute per foot
- gpm/ft = gallons per minute per foot
- Kh = horizontal hydraulic conductivity
- NLF = Newhall Land & Farming Company
- SCWD = Santa Clarita Water Division
- T = transmissivity, which is calculated as 1,500 times the specific capacity per the method recommended by Driscoll (1986) for unconfined aquifers.
- VWD = Valencia Water Division
- WRP = water reclamation plant

Table 3-16
Summary of Selected Tests and Estimated Parameter Values for the Saugus Formation
Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Well Owner-Name	Date	Type of Test	Pumping or Injection Rates (gpm)	Length of Test (minutes)	Well Monitored	Specific Capacity (gpm/ft) ^a	T (gpd/ft)	T (ft ² /day)	Storativity
NWD-7	3/4/1987	Drawdown	341	1,440	NWD-7	3.1	26,400	3,530	
NWD-7	3/5/1987	Recovery		1,500	NWD-7		23,300	3,110	
NWD-10	3/11/1987	Drawdown	364	1,440	NWD-10	8.3	28,500	3,810	
NWD-10	3/11/1987	Drawdown	364	1,440	NWD-12 (160 feet away)		57,700	7,710	9.10E-04
NWD-10	3/11/1987	Recovery		1,480	NWD-10		38,400	5,130	
NWD-10	3/11/1987	Recovery		1,490	NWD-12 (160 feet away)		61,500	8,220	7.60E-04
NWD-9	3/17/1987	Drawdown	256	1,460	NWD-9	1.9	3,700	490	
NWD-9	3/17/1987	Recovery		1,500	NWD-9		3,000	400	
VWD-160	3/24/1987	Drawdown	2,562	720	VWD-160	49.8	163,000	21,790	
VWD-160	3/24/1987	Recovery		850	VWD-160		182,000	24,330	
VWD-205	7/1/2000	Injection + Recovery	500-800-1,100	30,240 / 12,960	VWD-205M (40 feet)	12.2	41,370	5,530	8.88E-04
VWD-205	7/2/2000	Injection + Recovery	500-800-1,100	30,240 / 12,960	VWD-201 (2,400 feet)		50,450	6,740	7.56E-04
VWD-205	7/3/2000	Injection + Recovery	500-800-1,100	30,240 / 12,960	VWD-157 (4,100 feet)		54,880	7,340	6.45E-04
VWD-205	8/1/2000	Pumping	2,273	12,960 / 14,440	VWD-205	18.7			
VWD-205	8/1/2000	Pumping + Recovery	2,273	12,960 / 14,440	VWD-205M (40 feet)	18.7	78,910	10,550	9.48E-04
VWD-205	8/2/2000	Pumping + Recovery	2,273	12,960 / 14,440	VWD-201 (2,400 feet)		76,410	10,220	1.37E-03
VWD-205	8/3/2000	Pumping + Recovery	2,273	12,960 / 14,440	VWD-157 (4,100 feet)		65,880	8,810	1.36E-03
VWD-201	10/1/2000	Pumping	2,439	14,440 / 2,880	VWD-201	30	65,100	8,700	5.75E-04
VWD -201	10/1/2000	Pumping + Recovery	2,439	14,440 / 2,880	VWD-157 (1,900 feet)		44,230	5,910	1.17E-03
VWD-201	10/1/2000	Pumping + Recovery	2,439	14,440 / 2,880	VWD-205M (2,360 feet)		57,210	7,650	8.49E-04
VWD-201	10/1/2000	Pumping + Recovery	2,439	14,440 / 2,880	VWD-205 (2,400 feet)		47,890	6,400	6.75E-04
SCWD-Saugus1	7/1/1988	Pumping	2,941	1,440	SCWD-Saugus1	30.2	69,300	9,260	
SCWD-Saugus1	7/1/1988	Recovery	2,941	480	SCWD-Saugus1		59,700	7,980	
SCWD-Saugus2	9/1/1988	Pumping	2,531	2,880	SCWD-Saugus2	24.1	53,500	7,150	
SCWD-Saugus2	9/1/1988	Recovery	2,531	1,320	SCWD-Saugus2		55,700	7,450	
SCWD-Saugus2	9/1/1988	Pumping	2,531	2,880	SCWD-Saugus1		71,500	9,560	3.60E-04
SCWD-Saugus3	9/1/1988	Recovery	2,531	1,320	SCWD-Saugus1		60,200	8,050	

Notes
 Data source: RCS, 2002

^aGallons per minute per foot of drawdown
 ft²/day = square feet per day
 gpd/ft = gallons per day per foot

gpm = gallons per minute
 gpm/ft² = gallons per minute per square foot
 NWD = Newhall Water Division

SCWD = Santa Clarita Water Division
 T = transmissivity
 VWD = Valencia Water Division

TABLE 4-1

Production Wells Used for Calibration of the Regional Model

Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin



Well Owner- Well Name	Year Drilled	Status in 2019	Data Use for Model Calibration Process	Easting (feet) ¹	Northing (feet) ¹	Measuring Point Elevation (feet NAVD88)	Well Depth (feet bgs)	Depth to Top of Open Interval (feet bgs)	Depth to Base of Open Interval (feet bgs)	Type of Open Interval
Alluvial Aquifer Below Valencia WRP										
NLF-B7	1946	Active	Hydrographs & Statistics	6364397	1974200	901.6	102	18	88	Knife Cut
NLF-B10	1956	Active	Hydrographs & Statistics	6364235	1974541	901.4	142	30	130	Knife Cut
NLF-B11	---	Active	Hydrographs & Statistics	6362161	1971971	890	160	---	---	---
NLF-B14	2006	Active	Hydrographs & Statistics	6364610	1974815	904	250	60	235	Screen
NLF-B16	2005	Active	Hydrographs & Statistics	6364235	1974541	901	160	50	135	Screen
NLF-C4	1939	Active	Hydrographs & Statistics	6371437	1976775	953	148	25	120	Knife Cut
NLF-C10	2007	Active	Hydrographs & Statistics	6371677	1977813	958	200	70	170	Screen
NLF-G3	---	Inactive	Hydrographs & Statistics	6377122	1981837	1002	190	90	160	Screen
NLF-G45	---	Inactive	Statistics	6381356	1982222	1029	140	40	140	Knife Cut
NLF-X3	1954	Inactive	Hydrographs & Statistics	6378422	1983172	1014	161	75	145	Knife Cut
VWD-E17	2005	Inactive	Hydrographs & Statistics	6372981	1979707	983	150	80	120	Screen
Alluvial Aquifer Below Saugus WRP										
VWD-I	1945	Inactive	Hydrographs & Statistics	6388567	1981657	1089	165	30	165	---
VWD-N	1936	Active	Hydrographs & Statistics	6395527	1976081	1131.56	237	76	237	Knife Cut
VWD-N7	2004	Active	Hydrographs & Statistics	6395551	1976309	1131.61	175	120	175	Screen
VWD-N8	2004	Active	Statistics	6396002	1976313	1133.31	175	120	175	Screen
VWC-O2	1954	Active	Hydrographs & Statistics	6399032	1977459	1158	170	76	126	Knife Cut
VWD-S6	1999	Active	Statistics	6393030	1978313	1127.16	195	130	195	Screen (Louvers)
VWD-S7	1999	Active	Statistics	6394379	1977732	1128.64	190	130	190	Screen (Louvers)
VWD-S8	1999	Active	Hydrographs & Statistics	6395968	1977596	1143.36	195	130	195	Screen (Louvers)
Alluvial Aquifer Above Saugus WRP										
SCWD-Stadium	1946	Destroyed	Statistics	6402385	1974713	1197	130	33	130	Knife Cut
VWD-T2	1952	Destroyed	Statistics	6403623	1975127	1201	150	50	138	Knife Cut
VWD-T4	1953	Destroyed	Hydrographs & Statistics	6403350	1975164	1194	150	50	135	Knife Cut
VWD-T7	2008	Active	Hydrographs & Statistics	6403920	1975210	1211.08	140	80	115	Screen (Louvers)
VWD-U3	1950	Destroyed	Statistics	6409838	1976455	1263	142	39	133	---
VWD-U4	1944	Active	Hydrographs & Statistics	6407736	1975507	1242.8	135	30	130	Knife Cut
VWD-U6	2004	Active	Hydrographs & Statistics	6405885	1974975	1230.6	175	100	145	Screen (Louvers)
SCWD-Honby	1959	Active	Hydrographs & Statistics	6411408	1977202	1290	202	50	202	Screen
SCWD-Santa Clara	2009	Active	Hydrographs & Statistics	6412073	1977514	1289	160	90	135	Screen (Louvers)
SCWD-Valley Center	2009	Active	Hydrographs & Statistics	6409117	1976637	1262	133	90	125	Screen (Louvers)
Alluvial Aquifer At and Above Mint Canyon										
SCWD-North Oaks West	1940	Active	Hydrographs & Statistics	6421187	1972857	1400	117	78	117	Knife Cut
SCWD-NorthOaks Central	1965	Active	Hydrographs & Statistics	6421383	1972922	1400	140	50	140	Screen
SCWD-NorthOaks East	1940	Active	Hydrographs & Statistics	6421651	1972936	1400	140	76	138	Knife Cut
SCWD-Sierra	1973	Active	Hydrographs & Statistics	6423745	1973272	1430	175	60	150	Screen
SCWD-Mitchell-5A	1976	Active	Hydrographs & Statistics	6430168	1974420	1500	135	76	246	Screen
SCWD-Mitchell-5B	2001	Active	Hydrographs & Statistics	6430168	1974420	1500	145	80	115	Screen
SCWD-Sand Canyon	1973	Active	Hydrographs & Statistics	6432953	1975589	1520	140	60	140	Screen
SCWD-Lost Canyon 2	1965	Active	Hydrographs & Statistics	6433582	1975573	1520	125	125	125	Open Bottom
SCWD-Lost Canyon 2A	1989	Active	Hydrographs & Statistics	6433492	1975620	1520	126	95	125	Screen
NWD-Pinetree1	1966	Active	Hydrographs & Statistics	6439862	1978092	1602.5	210	50	210	Knife Cut
NWD-Pinetree2	1952	Destroyed	Hydrographs & Statistics	6438464	1978022	1592	132	70	130	---
NWD-Pinetree3	1969	Active	Hydrographs & Statistics	6436407	1977772	1570.5	135	50	135	Screen (Louvers)
NWD-Pinetree4	1975	Active	Hydrographs & Statistics	6435493	1977619	1562	185	110	185	Screen (Louvers)
NWD-Pinetree5	2009	Active	Hydrographs & Statistics	6438464	1978022	1592	160	70	130	Screen (Louvers)
Alluvial Aquifer in Castaic Valley										
NLF-C6	1939	Active	Hydrographs & Statistics	6371835	1978154	967	103	26	93	Knife Cut
NLF-E	1937	Inactive	Hydrographs & Statistics	6376155	1987015	1027	---	12	93	Knife Cut
NLF-E4	1940	Active	Statistics	6374844	1982371	994	142	50	136	Knife Cut
VWD-D	1950	Active	Hydrographs & Statistics	6375668	1987267	1035.62	142	60	136	Knife Cut
VWD-E14	2005	Inactive	Hydrographs & Statistics	6376184	1982733	1000	---	75	115	---
VWD-E15	2005	Active	Hydrographs & Statistics	6377260	1983738	1022.96	---	90	135	---
VWD-E16	2005	Inactive	Hydrographs & Statistics	6375816	1982320	996	---	80	145	---
NWD-Castaic1	1966	Active	Hydrographs & Statistics	6376482	2000975	1129	142	74	140	Louvre and Perf
NWD-Castaic2	1951	Active	Hydrographs & Statistics	6376420	2002313	1135	140	55	140	---
NWD-Castaic3	1961	Inactive	Hydrographs & Statistics	6376475	2002309	1135	135	55	135	---
NWD-Castaic4	1987	Inactive	Hydrographs & Statistics	6377087	2001454	1129	165	59.5	165	Knife Cut
NWD-Castaic6	2008	Inactive	Hydrographs & Statistics	6376020	2002730	1146	142	---	120	Screen
NWD-Castaic7	2008	Active	Hydrographs & Statistics	6376007	2002291	1149	150	80	125	Screen
Alluvial Aquifer in San Francisquito Canyon										
NLF-W5	---	Inactive	Hydrographs & Statistics	6393674	1985976	1156.5	---	20	116	---
VWD-W6	1952	Destroyed	Hydrographs & Statistics	6393801	1985449	1155	158	90	153	Knife Cut
VWD-W9	1990	Active	Statistics	6393191	1986829	1174.99	130	70	130	Screen
VWD-W10	1999	Active	Hydrographs & Statistics	6392133	1981322	1130.28	160	120	160	Screen (Louvers)
VWD-W11	2004	Active	Hydrographs & Statistics	6395175	1990192	1208.25	155	110	155	Screen (Louvers)
Alluvial Aquifer in Bouquet Canyon										
SCWD-Clark	1946	Active	Hydrographs & Statistics	6405894	1983061	1260	115	20	115	Knife Cut
SCWD-Guida	1960	Active	Hydrographs & Statistics	6411663	1988666	1350	123	56	123	Screen
Saugus Formation										
LACWWD36-19	2012	Active	Hydrographs & Statistics	6368049	1992202	1410	---	400	2100	---
NWD-7	1954	Inactive	Hydrographs & Statistics	6401264	1962732	1250	994	520	974	Knife Cut
NWD-9	1958	Inactive	Hydrographs & Statistics	6404122	1956997	1358	675	311	674	Screen (Louvers)
NWD-10	1961	Inactive	Hydrographs & Statistics	6399388	1965803	1204	1555	780	1544	Screen (Louvers)
NWD-11	1973	Active	Hydrographs & Statistics	6399004	1968019	1188	1136	200	1075	Screen (Louvers)
NWD-12	1985	Active	Hydrographs & Statistics	6399282	1965920	1204	1340	485	1280	Screen (Louvers)
NWD-13	1990	Active	Hydrographs & Statistics	6399098	1967327	1194	1300	420	830	Screen
SCWD-Saugus1	1988	Inactive	Hydrographs & Statistics	6397847	1973452	1165.5	1640	490	1620	Screen
SCWD-Saugus2	1988	Inactive	Hydrographs & Statistics	6398514	1972540	1170	1612	510	1590	Screen
VWD-157	1962	Destroyed	Hydrographs & Statistics	6395696	1974099	1148	2008	586	2008	Vertical Slots
VWD-159	---	Active	Hydrographs & Statistics	6390972	1962392	1291.2	---	662	1900	---
VWD-160	1964	Active	Hydrographs & Statistics	6388950	1976191	1102.1	2000	950	2000	Screen (Louvers)
VWD-201	1989	Active	Hydrographs & Statistics	6394125	1973032	1151.7	1690	540	1670	Screen (Louvers)
VWD-205	2000	Active	Hydrographs & Statistics	6391703	1973191	1148.5	---	820	1930	---
VWD-206	2005	Active	Hydrographs & Statistics	6379895	1979309	1058.6	---	490	2040	---
VWD-207	2011	Active	Hydrographs & Statistics	6379936	1978292	1035.7	---	507	1199	---

Notes¹Coordinates are listed in California State Plane, NAD83 Datum, Zone V.

-- = No data available.

bgs = below ground surface

MSL = mean sea level

NAVD88 = North American Vertical Datum of 1988

NWD = Newhall Water Division

SCWD = Santa Clarita Water Division

VWD = Valencia Water Division

WRP = water reclamation plant

Table 4-2

Observation Wells Used for Calibration of the Regional Model

Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Well Owner- Well Name	Year Drilled	Status in 2019	Data Use for Model Calibration Process	Easting (feet) ^a	Northing (feet) ^a	Measuring Point Elevation (feet MSL)	Well Depth (feet bgs)	Depth to Top of Open Interval (feet bgs)	Depth to Base of Open Interval (feet bgs)	Type of Open Interval
Alluvial Aquifer										
AL-12A	2004	Active	Hydrographs & Statistics	6397974	1973448	1165.63	80	60	80	Screen
LACFCD-7177B	1949?	Active	Hydrographs & Statistics	6434745	1976476	1542	---	---	---	---
LACFCD-7197D	---	Active	Hydrographs & Statistics	6438052	1977798	1582	---	---	---	---
Saugus Formation										
DW-1A	2012	Active	Hydrographs	6393492	1975565	1127.61	805	780	800	Screen
DW-1B	2012	Active	Hydrographs & Statistics	6393492	1975565	1127.54	1010	985	1005	Screen
DW-1C	2012	Active	Hydrographs	6393492	1975565	1127.43	1205	1180	1200	Screen
DW-2	2012	Active	Hydrographs & Statistics	6390584	1976140	1114.99	945	920	940	Screen
Library-A	2015	Active	Hydrographs & Statistics	6395727	1974050	1151.70	647	622	642	Screen
Library-B	2015	Active	Hydrographs	6395727	1974050	1151.66	747	722	742	Screen
Library-C	2015	Active	Hydrographs	6395727	1974050	1151.66	857	832	852	Screen
Mall-A	2015	Active	Hydrographs & Statistics	6392905	1973370	1147.98	810	785	805	Screen
Mall-B	2015	Active	Hydrographs	6392905	1973370	1147.92	910	885	905	Screen
Mall-C	2015	Active	Hydrographs	6392905	1973370	1147.92	1095	1070	1090	Screen
MP1-02	2002	Active	Hydrographs	6398350	1973445	1180.13	1570	391	401	Screen
MP1-03	2002	Active	Hydrographs	6399862	1970763	1180.13	1570	532	542	Screen
MP1-06	2002	Active	Hydrographs	6399862	1970763	1180.13	1570	983	993	Screen
MP1-08	2002	Active	Hydrographs & Statistics	6399862	1970763	1180.13	1570	1224	1234	Screen
MP1-10	2002	Active	Hydrographs	6399862	1970763	1180.13	1570	1540	1550	Screen
MP2-1	2002	Active	Hydrographs	6405080	1969044	1429.81	1255	323	333	Screen
MP2-2	2002	Active	Hydrographs	6405080	1969044	1429.81	1255	529	539	Screen
MP2-3	2002	Active	Hydrographs	6405080	1969044	1429.81	1255	599	609	Screen
MP2-4	2002	Active	Hydrographs	6405080	1969044	1429.81	1255	769	779	Screen
MP2-5	2002	Active	Hydrographs	6405080	1969044	1429.81	1255	1090	1100	Screen
MP2-6	2002	Active	Hydrographs	6405080	1969044	1429.81	1255	1225	1235	Screen
MP5-1	2003	Active	Hydrographs	6395394	1976084	1132.03	990	409	419	Screen
MP5-2	2003	Active	Hydrographs	6395394	1976084	1132.03	990	565	575	Screen
MP5-3	2003	Active	Hydrographs & Statistics	6395394	1976084	1132.03	990	790	800	Screen
MP5-4	2003	Active	Hydrographs	6395394	1976084	1132.03	990	960	970	Screen
SG1-HSU1	2004	Active	Hydrographs	6398001	1973438	1165.60	285	265	285	Screen
SG1-HSU3a	2009	Active	Hydrographs & Statistics	6398364	1973452	1165.64	520	495	515	Screen
SG1-HSU3c	2006	Active	Hydrographs & Statistics	6398370	1973434	1165.39	745	720	740	Screen

Table 4-3
Calibration Statistics Using All Target Wells
Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Residual Statistics	Alluvial Aquifer	Saugus Formation	Both Aquifers Combined
Groundwater Elevations			
Mean	5.3	18.6	8.7
Standard Deviation	19.2	41.3	27.7
Range	719.3	524.8	719.3
Scaled Absolute Mean	0.7%	3.5%	1.2%
Scaled Standard Deviation	2.7%	7.9%	3.8%
Minimum Observed Value	-61.7	-73.2	-73.2
Maximum Observed Value	69.6	143.4	143.4
Data Count	15,086	5,244	20,330
Well Count	65	24	89
Groundwater Elevation Changes			
Mean	-10.9	6.2	-6.5
Standard Deviation	22.5	38.2	28.8
Range	184.0	1249.5	1249.5
Scaled Absolute Mean	5.9%	0.5%	0.5%
Scaled Standard Deviation	12.2%	3.1%	2.3%
Minimum Residual	-95.6	-115.6	-115.6
Maximum Residual	64.7	124.4	124.4
Data Count	15,086	5,244	20,330
Well Count	65	24	89

Table 4-4

Calibration Statistics With and Without Saugus Wells on the Model's Periphery

Development of a Numerical Groundwater Flow Model for the Santa Clara River Valley East Groundwater Subbasin

Residual Statistics	Saugus Formation		Both Aquifers	
	With All Saugus Wells	Without Five Peripheral Saugus Wells	With All Saugus Wells	Without Five Peripheral Saugus Wells
Groundwater Elevations				
Mean	18.6	-0.3	8.7	4.3
Standard Deviation	41.3	14.8	27.7	19.3
Range	524.8	524.8	719.3	719.3
Scaled Absolute Mean	3.5%	0.1%	1.2%	0.6%
Scaled Standard Deviation	7.9%	2.8%	3.8%	2.7%
Minimum Observed Value	-73.2	-73.2	-73.2	-73.2
Maximum Observed Value	143.4	129.2	143.4	129.2
Data Count	5,244	3,331	20,330	18,417
Well Count	24	19	89	84
Groundwater Elevation Changes				
Mean	6.2	-9.6	-6.5	-10.6
Standard Deviation	38.2	23.1	28.8	23.8
Range	1249.5	1249.5	1249.5	1249.5
Scaled Absolute Mean	0.5%	0.8%	0.5%	0.9%
Scaled Standard Deviation	3.1%	1.9%	2.3%	1.9%
Minimum Residual	-115.6	-115.6	-115.6	-115.6
Maximum Residual	124.4	103.7	124.4	103.7
Data Count	5,244	3,331	20,330	18,417
Well Count	24	19	89	84