

RESERVOIR SEDIMENT
DATA SUMMARY

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

SUCCESS LAKE

NAME OF RESERVOIR

71-41

DATA SHEET NO.

DAM	1. OWNER U.S. Army Engineers		2. STREAM Tule River		3. STATE California				
	4. SEC. 35 TWP. 21S RANGE 28E		5. NEAREST P.O. Porterville		6. COUNTY Tulare				
	7. LAT 36°03'40" LONG. 118°55'18"		8. TOP OF DAM ELEVATION 691.5		9. SPILLWAY CREST ELEV. 652.5				
RESERVOIR	10. STORAGE ALLOCATION	11. ELEVATION TOP OF POOL	12. ORIGINAL SURFACE AREA, ACRES	13. ORIGINAL CAPACITY, ACRE-Feet	14. GROSS STORAGE, ACRE-Feet	15. DATE STORAGE BEGAN			
	a. FLOOD CONTROL					4 Apr 60			
	b. MULTIPLE USE	652.5	2,406	78,635	86,160				
	c. POWER								
	d. WATER SUPPLY								
	e. IRRIGATION					15 May 61			
	f. CONSERVATION 1/	587.0	470	6,805	7,525				
g. INACTIVE	559.0	95	720	720					
WATERSHED	17. LENGTH OF RESERVOIR 3.56 MILES		AV. WIDTH OF RESERVOIR 1.05 MILES						
	18. TOTAL DRAINAGE AREA 393 SQ. MI.		22. MEAN ANNUAL PRECIPITATION 10-45 INCHES						
	19. NET SEDIMENT CONTRIBUTING AREA 393 SQ. MI.		23. MEAN ANNUAL RUNOFF 6.04 INCHES						
	20. LENGTH 24.0 MILES		AV. WIDTH 16.4 MILES		24. MEAN ANNUAL RUNOFF 126,600 AC.-FT.				
	21. MAX. ELEV. 10,000		MIN. ELEV. 538*		25. ANNUAL TEMP MEAN *55 RANGE -20 to 115				
SURVEY DATA	26. DATE OF SURVEY	27. PERIOD YEARS	28. ACCL. YEARS	29. TYPE OF SURVEY	30. NO. OF RANGES OR CONTOUR INT.	31. SURFACE AREA, ACRES	32. CAPACITY, ACRE-Feet	33. C/I. RATIO, AC.-FT. PER AC.-FT.	
	16 Sep 60 2/	0	0	(D)	25 Ranges	2,406	86,160*	0.681	
	1 Nov 65 2/	5.2	5.2	(D)	10 ft cont	2,406	86,160	0.681	
	13 Nov 67	2.0	7.2	(R)	75 meas.*	2,406	83,610	0.660	
	11 Dec 68	1.1	8.3	(D)	25 Ranges	2,406	83,680	0.661	
	26. DATE OF SURVEY	34. PERIOD ANNUAL PRECIPITATION	35. PERIOD WATER INFLOW, ACRE-Feet		36. WATER INFL. TO DATE, AC.-FT.				
			a. MEAN ANNUAL	b. MAX. ANNUAL	c. PERIOD TOTAL	a. MEAN ANNUAL	b. TOTAL TO DATE		
	16 Sep 60	---	---	---	0	---	0		
	1 Nov 65	7 - 50	82519	137,600	429,097	82519	429,097		
	13 Nov 67	7 - 80	211,556	373,900	423,113	118,362	852,210		
	11 Dec 68	9 - 34	64,700	67,200	71,170	111,251	923,380		
	26. DATE OF SURVEY	37. PERIOD CAPACITY LOSS, ACRE-Feet			38. TOTAL SED. DEPOSITS TO DATE, ACRE-Feet				
		a. PERIOD TOTAL	b. AV. ANNUAL	c. PER SQ. MI.-YEAR	a. TOTAL TO DATE	b. AV. ANNUAL	c. PER SQ. MI.-YEAR		
16 Sep 60	0	---	---	0	---	0			
1 Nov 65	0*	0*	0*	0*	0*	0*			
13 Nov 67	2550	1275	3.244	2550	354	0.901			
11 Dec 68	-70	-64	-0.163	2480	299	0.761			
26. DATE OF SURVEY	39. AV. DRY WGT., LBS. PER CU. FT.	40. SED. DEP., TONS PER SQ. MI.-YR.		41. STORAGE LOSS, PCT.		42. SED. INFLOW, PPM			
		a. PERIOD	b. TOTAL TO DATE	a. AV. ANN.	b. TOT. TOT. DATE	a. PERIOD	b. TOT. TOT. DATE		
16 Sep 60	---	---	0	---	0	0	0		
1 Nov 65	---	0*	0*	0*	0*	0*	0*		
13 Nov 67	62*	4383	1,217	0.41	2.96	5988	2973		
11 Dec 68	62*	-218.7	1,027	0.35	2.88	-977	2669		

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET BELOW, AND ABOVE, CREST ELEVATION									
	124-105	105-90	90-75	75-60	60-45	45-30	30-15	15-CR	CR-10	
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION									
16 Sep 60	0	0	0	0	0	0	0	0	0	
1 Nov 65	--	--	---	--	--	--	--	--	--	
13 Nov 67	2	4	8	25	25	16	15	5	0	
11 Dec 68	1	3	5	18	23	20	16	14	0	

26. DATE OF SURVEY	44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR														
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	-105	-110	-115	-120	-125
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														
16 Sep 60	0	0	0	0	0	0	0	0	0	0	0				
1 Nov 65	--	--	--	--	--	--	--	--	--	--	--				
13 Nov 67	2	2	5	15	20	15	15	15	10	1	0				
11 Dec 68	1	3	6	21	23	19	16	7	3	1	0				

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.
1961	560.26	545*	19,400				
1962	617.52	556.34	86,230				
1963	642.68	588.83	120,400				
1964	620.85	586.95	60,310				
1965	642.70	587.06	137,600				
1966	613.84	584.98	47,140				
1967	658.63	583.65	373,900				
1968	629.95	590.85	67,200				
1969	656.42	589.73	503,800				

46. ELEVATION-AREA-CAPACITY DATA 3/								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
538	0	0	595	662	11,504	640	1,757	59,546
559	95	0	600	709	14,935	645	2,003	68,940
560	101	98	605	766	18,614	650	2,265	79,603
565	139	692	610	840	22,621	655	2,551	91,636
570	186	1503	615	935	27,056	660	2,856	105,146
575	248	2581	620	1,046	32,006	665	3,155	120,166
580	328	4010	625	1,198	37,611	670	3,469	136,720
585	431	5903	630	1,360	44,002	680	4,036	174,210
590	578	8378	635	1,552	51,277	690	4,560	217,161

47. REMARKS AND REFERENCES *Assumed

1/ Reserve for Sedimentation

2/ Original lake capacity was revised by detailed contour survey of 1 Nov 65. Sediment accumulation 1 Sep 60 to 1 Nov 65 was not defined. The 1 Nov 65 capacity survey is currently in use for operation.

3/ Data does not include the inactive storage of 720 ac-ft.

REMARKS Major flood, 5-6 Dec 66. Spillway was sandbagged to elev. 657.5 ft during spring and summer of 67. Majority of sediment appeared to be sand (13 Nov 67 survey). The negative sedimentation indicated by the 11 Dec 68 survey resulted from use of more accurate survey method in 1968. No evaluation of sedimentation has been made since 1968. REFERENCES Sedimentation Reconnaissance at Success Reservoir, 23 Jan 68.

48. AGENCY MAKING SURVEY U.S. Army Engineers, Sacramento Dist.

49. AGENCY SUPPLYING DATA U.S. Army Engineers, Sacramento Dist. 50. DATE 15 Feb 1971

RESERVOIR SEDIMENT
DATA SUMMARY

Success Reservoir

NAME OF RESERVOIR

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DATA SHEET NO.

DAM	1. OWNER U. S. Army Engineers			2. STREAM Tule River			3. STATE California					
	4. SEC. 35 TWP. 21S RANGE 28E			5. NEAREST P.O. Porterville			6. COUNTY Tulare					
	7. LAT 36° 03' 40" LONG 118° 55' 18"			8. TOP OF DAM ELEVATION 691.5			9. SPILLWAY CREST ELEV. 652.5					
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	a. FLOOD CONTROL											
	b. MULTIPLE USE		652.5		2,406		78,635		86,160		4 April 6	
	c. POWER											
	d. WATER SUPPLY										16. DATE NOR- MAL OPER. BEGA	
	e. IRRIGATION											
	f. CONSERVATION		587.0		470		6,805		7,525		15 May 196	
	g. INACTIVE		559.0		95		720		720 2/			
WATERSHED	17. LENGTH OF RESERVOIR 3.56 MILES				AV. WIDTH OF RESERVOIR 1.05 MILE							
	18. TOTAL DRAINAGE AREA 393 SQ. MI.				22. MEAN ANNUAL PRECIPITATION 10 - 45 INCHES							
	19. NET SEDIMENT CONTRIBUTING AREA 393 SQ. MI.				23. MEAN ANNUAL RUNOFF 6.04 INCHES							
	20. LENGTH 24 MILES		AV. WIDTH 16.4 MILES		24. MEAN ANNUAL RUNOFF 126,600 AC. FT.							
	21. MAX. ELEV. 10,000		MIN. ELEV. 538*		25. ANNUAL TEMP MEAN 55* RANGE -20 to 115*							
SURVEY DATA	26. DATE OF SURVEY		27. PERIOD YEARS	28. ACCL. YEARS	29. TYPE OF SURVEY	30. NO. OF RANGES OR CONTOUR INT.	31. SURFACE AREA, ACRES	32. CAPACITY, ACRE-FEET	33. C/I. RATIO, AC.-FT. PER AC.-FT.			
	16 Sep. 60		0	0	(D)	25	2,406	86,160 2/	0.681			
	13 Nov. 67		7.2	7.2	(R)	75M*	2,406	83,610 2/	0.660			
	Oct. 77		10	17	(D)	25	2,406	80,930 2/	0.639			
	26. DATE OF SURVEY		34. PERIOD ANNUAL PRECIPITATION		35. PERIOD WATER INFLOW, ACRE-FEET			36. WATER INFL. TO DATE, AC.-FT.				
			a. MEAN ANNUAL		b. MAX. ANNUAL		c. PERIOD TOTAL	a. MEAN ANNUAL		b. TOTAL TO DATE		
	16 Sep. 60		-		-		0	-		0		
	13 Nov. 67		6-72		117,910		393,900	117,910		848,942		
	Oct. 77		6-72		137,420		503,773	130,551		2,219,367		
	26. DATE OF SURVEY		37. PERIOD CAPACITY LOSS, ACRE-FEET			38. TOTAL SED. DEPOSITS TO DATE, ACRE-FEET						
		a. PERIOD TOTAL	b. AV. ANNUAL	c. PER SQ. MI.-YEAR	a. TOTAL TO DATE	b. AV. ANNUAL	c. PER SQ. MI.-YEAR					
16 Sep. 60		0	-	-	0	-	-					
13 Nov. 67		2,550	354	0.901	2,550	354	0.901					
Oct. 77		2,680	268	0.682	5,230	307	0.781					
26. DATE OF SURVEY		39. AV. DRY WGT., LBS. PER CU. FT.	40. SED. DEP., TONS PER SQ. MI.-YR.		41. STORAGE LOSS, PCT.		42. SED. INFLOW, PPM					
			a. PERIOD	b. TOTAL TO DATE	a. AV. ANN.	b. TOT. TO DATE	a. PERIOD	b. TOT. TO DATE				
16 Sep. 60		-	-	0	-	-	-	-				
13 Nov. 67		62*	1,217	1,217	0.41	2.96	2,984	2,984				
Oct. 77		62*	921	1,055	0.35	6.07	1,938	2,341				

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET BELOW, AND ABOVE, CREST ELEVATION										
	14-105	105-90	90-75	75-60	60-45	45-30	30-15	15-CR	CR-10		
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION										
16 Sep 1960	0	0	0	0	0	0	0	0	0		
13 Nov 1967	2*	4*	8*	25*	25*	16*	15*	5*	0*		
Oct 1977	2* ^{3/}	4* ^{3/}	8* ^{3/}	25* ^{3/}	25* ^{3/}	16* ^{3/}	15* ^{3/}	5* ^{3/}	0* ^{3/}		

26. DATE OF SURVEY	44. REACH DESIGNATION PERCENT OF TOTAL ORIGINAL LENGTH OF RESERVOIR														
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	-105	-110	-115	-120	-125
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														
16 Sep 1960	0	0	0	0	0	0	0	0	0	0	0				
13 Nov 1967	2*	2*	5*	15*	20*	15*	15*	15*	10*	1*	0*				
Oct 1977	5	4	15	27	15	9	8	12	5	0					

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.
1961	560.26	545*	19,400	1973	651.42	579.52	225,121
1962	617.52	556.34	86,230	1974	652.47	590.68	156,661
1963	642.68	558.83	120,400	1975	652.25	594.63	122,354
1964	620.85	586.95	60,310	1976	622.31	587.98	18,560
1965	642.70	587.06	137,612	1977	600.20	582.83	5,663
1966	613.84	584.98	47,140				
1967	658.63	583.64	373,900				
1968	629.95	590.85	67,750				
1969	656.42	589.73	503,773				
1970	631.00	589.13	122,343				
1971	634.82	581.31	84,002				
1972	613.45	580.72	34,754				

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
550	24	98	595	514	10,096	640	1,746	56,084
555	53	287	600	609	12,902	645	2,016	65,473
560	91	644	605	709	16,196	650	2,318	76,298
565	132	1,200	610	811	19,994	655	2,638	88,685
570	177	1,972	615	917	24,312	660	2,960	102,684
575	226	2,975	620	1,033	29,183	665	3,269	118,264
580	282	4,241	625	1,165	34,669	670	3,557	135,338
585	349	5,813	630	1,322	40,874	675	3,830	153,812
590	427	7,747	635	1,514	47,950	680	4,098	173,633
						685	4,358	194,784

47. REMARKS AND REFERENCES

* Assumed.

1/ Reserve for sedimentation.

2/ Capacity of reservoir below elevation 559 is assumed.

3/ Previous area-capacity data does not give accurate indication of sediment distribution.

48. AGENCY MAKING SURVEY U.S. Army Corps of Engineers, Sacramento

49. AGENCY SUPPLYING DATA US Army Corps of Engineers, Sacramento 50. DATE 12 December 1973