

RESERVOIR SEDIMENTATION
DATA SUMMARY

Lake Cheesman
NAME OF RESERVOIR

34-4a
DATA SHEET NO.

DAM	1. OWNER City & County of Denver			2. RIVER So. Platte River and Goose or Lost Park Creek		3. STATE Colorado		
	4. SEC. 6 TWP. 10S RANGE 70W			5. NEAREST TOWN Deckers		6. COUNTY Douglas		
	7. STREAM BED ELEV. 6630 (6629.91)			8. TOP OF DAM ELEV. 6846.91		9. SPILLWAY CREST ELEV. 6841.91		
RESERVOIR	10. STORAGE ALLOCATION	11. ELEVATION TOP OF POOL	12. SURFACE AREA ACRES	13. STORAGE ACRE- FEET	14. ACCUMULATED ACRE- FEET	15. DATE STORAGE BEGAN		
	a. FLOOD CONTROL	6841.91	874.08		79,064	15. Approx. Oct. 7, 1900^{f/}		
	b. POWER					16. DATE NORMAL OPER. BEGAN		
	c. WATER SUPPLY					16. 1901		
	d. IRRIGATION							
	e. CONSERVATION							
	f. INACTIVE							
WATERSHED	17. LENGTH OF RESERVOIR ± 4.5 & ± 1.88 MILES			18. AV. WIDTH OF RESERVOIR ± 0.4 MILES				
	18. TOTAL DRAINAGE AREA 1766 (1680) ^{b/} SQ. MI.			22. MEAN ANNUAL PRECIPITATION 12.78 ^{e/} INCHES				
	19. NET SEDIMENT CONTRIBUTING AREA 1460 ^{b/} SQ. MI.			23. MEAN ANNUAL RUNOFF 4.1 ^{e/} INCHES				
	20. LENGTH 52 MILES			24. MEAN ANNUAL RUNOFF 132,979 ^{e/} AC.-FT.				
	21. MAX. ELEV. 14284			25. CLIMATIC CLASSIFICATION semi-arid				
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/W RATIO AC.-FT. PER SQ. MI.
	Oct. 1900	0	0	contour	10-ft. contour	874	79,064	44.8
	Sept. 1931	31 ^{f/}	31	contour	10-ft. contour	874	77,958	44.1
	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	
	Oct. 1900							
	Sept. 1931	16.14 ^{e/}	140,799	303,813	4,470,372	140,799	4,470,372	
			water year 1900-1931			water year 1913-1914		
	26. DATE OF SURVEY	37. PERIOD SEDIMENT DEPOSITS 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	
Oct. 1900								
Sept. 1931	1106	35.68	0.0244 (1460 mi.)	1106	35.68	0.0244		
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. ANNUAL	b. TOT. TO DATE	a. PERIOD	b. TOT. TO DATE	
Oct. 1900								
Sept. 1931	70 lbs. (estimate)	37.20	37.20	0.045	1.40	277.6	277.6	

^{a/} Goose Creek (or Lost Park Creek)
^{b/} Does not include Goose Creek, since it was not included in the sediment survey
^{c/} Lake Cheesman Station (1903-1948)
^{d/} Hartzel Station (1909-1946) ^{e/} Runoff at station Cheesman Lake 46.25 yrs.

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION											
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION											
	212-210	210-200	200-190	190-180	180-170	170-160	160-150	150-140	140-130	130-120	120-110	110-100
Sept. 1931	0	0.27	0.81	2.44	5.33	7.96	10.12	12.15	13.46	12.65	9.58	6.60
	100-90	90-80	80-70	70-60	60-50	50-40	40-30	30-15				
	3.71	2.08	1.90	4.16	4.97	1.81	0	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														
	Information not available.														

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW AC.-FT.
See attached sheet							

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
15	27	0	90	277	11,131	160	581	40,382
30	74	783	100	311	14,084	170	633	46,443
40	107	1687	110	349	17,416	180	689	53,031
50	134	2889	120	389	21,144	190	747	60,176
60	169	4455	130	429	25,276	200	803	67,905
70	207	6326	140	479	29,835	210	862	76,224
80	241	8543	150	529	34,863	212	874	77,958

47. REMARKS AND REFERENCES

f/ Based on gage reading and discharge evidence
g/ Based on Lake Cheesman Station (1903-1931)

All records obtained from City and County of Denver, Colorado (Municipal Water Department)

48. AGENCY SUPPLYING DATA Bureau of Reclamation 49. DATE 11/30/50

BUREAU OF RECLAMATION

34-42

SHEET 1 OF 2

SUBJECT Lake Cheesman Max. and Min. W.S. Elevations PROJECT _____

City Datum + 5172.91 = M.S.L.; Spillway Elev. (city datum) = 1669.00

COMPUTED BY _____ DATE _____ CHECKED BY _____ DATE _____

	Water year	Maximum elevation	Minimum elevation	Inflow acre-feet	Outflow acre-feet		
Oct. 7, 1900	1900			124,873 ^{4/} 9 mos.			
	1901	6696.41	6645.16	101,926			
	1902	6697.71	6687.21	35,363			
	1903	6727.25	6679.21	51,903	43,632 ^{1/}	10.5 mos.	
	1904	6790.41	6714.91	79,962	55,649 ^{2/}	10.5 mos.	
	1905	6842.30	6789.79	113,963	75,116 ^{3/}	6 mos.	
	1906	6842.58	6838.91	93,655	93,260		
	1907	6843.02	6840.03	187,338	188,972		
	1908	6842.20	6813.14	44,711	69,544		
	1909	6843.26	6811.19	181,444	154,843		
	1910	6842.54	6834.66	105,710	129,337		
	1911	6837.61	6815.61	83,685	99,213		
	1912	6843.31	6804.61	145,086	138,530		
	1913	6842.91	6818.61	302,009	119,454		
	1914	6843.81	6833.59	303,813	301,120		
	1915	6842.91	6829.25	140,470	146,117		
	1916	6842.24	6815.94	131,146	137,105		
	1917	6843.02	6823.99	157,815	147,622		
	1918	6843.91	6830.38	142,052	137,680		
	1919	6842.93	6773.24	168,819	216,494		
	1920	6825.51	6773.47	132,688	124,681		
	1921	6843.91	6787.33	275,443	243,752		
	1922	6842.50	6775.57	95,182	133,650		
	1923	6843.00	6772.01	189,252	143,367		
	1924	6843.01	6802.85	164,181	194,229		
	1925	6803.21	6755.86	92,551	107,100		
	1926	6843.07	6777.98	157,924	122,647		
	1927	6842.23	6826.47	107,183	98,857		
	1928	6842.96	6827.41	116,420	120,884		
	1929	6843.05	6819.50	162,915	160,242		
	1930	6842.49	6808.27	162,701	173,447		

BUREAU OF RECLAMATION

SUBJECT _____

PROJECT _____

COMPUTED BY	DATE	CHECKED BY	DATE		
Water year	Maximum elevation	Minimum elevation	Inflow acre-feet	Subtotal	Outflow acre-feet
1931	6842.62	6788.67	118,189	4,470,372	144,172
1932	6801.43	6744.30	91,539	avg. 140,799	112,589
1933	6783.83	6684.93	100,526		82,225
1934	6794.04	6737.29	44,782		65,608
1935	6780.10	6719.18	92,336		80,526
1936	6800.00	6761.71	137,705		125,581
1937	6802.07	6771.40	71,745		79,223
1938	6828.73	6762.13	105,478		68,836
1939	6841.91	6817.24	90,151		118,698
1940	6818.31	6791.73	39,132		55,968
1941	6841.91	6791.73	133,020		104,042
1942	6841.91	6831.15	234,805		236,304
1943	6841.91	6826.81	91,581		95,021
1944	6841.91	6818.49	91,603		92,077
1945	6841.91	6815.54	117,120		107,711
1946	6839.84	6801.78	64,842		91,571
1947	6841.91	6798.41	182,014		156,490
1948	6841.91	6821.00	219,151		231,882
1949	6841.91	6801.33	230,998		225,727
1950	6833.91	6774.10	104,579	Total 6,713,479	140,028

Period: 31 yrs
9 mos.

- 1/ Period Nov. 17, 1902 - Sept. 30, 1903.
- 2/ Period Feb. 20, 1904 - April 7, 1904 missing.
- 3/ Periods Nov. 1, 1904, to Jan. 11, 1905; Jan. 18 to May 9, 1905, are missing.
- 4/ Period Jan. 1900 to Sept. 30, 1900.

Note: Conversion factor city datum to M.S.L. = 5172.91 ft.
 Determination of gage zero at dam:
 City datum, spillway elevation : 1669.00
 Conversion factor: 5172.91
 M.S.L., spillway elevation : 6841.91
 Diff. to gage zero 212.00
 M.S.L. elevation of gage zero: 6629.91