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31-1

RESERVOIR SEDIMENTATION
DATA SUMMARY

Lake of the Ozarks (Bagnell Dam)

NAME OF RESERVOIR

DATA SHEET NO.

1. OWNER Union Electric Co. of Mo.		2. RIVER Osage		3. STATE Missouri				
4. SEC. 19 TWP. 40 N RANGE 15 W		5. NEAREST TOWN Eldon		6. COUNTY Miller				
7. STREAM BED ELEV. 540 1/		8. TOP OF DAM ELEV. 670		9. SPILLWAY CREST ELEV. 660 2/				
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	660 3/	59,675	1,293,720	2,087,223	19 Feb 1931		
	b. POWER	660 3/	59,675	1,293,720	2,087,223			
	c. WATER SUPPLY	-	-	-	-			
	d. IRRIGATION	-	-	-	-	16. DATE NORMAL OPER. BEGAN		
	e. CONSERVATION	-	-	-	-			
	f. INACTIVE	630	30,111	793,503	793,503	16 Oct 1931		
17. LENGTH OF RESERVOIR 129 (river)			MILES	AV. WIDTH OF RESERVOIR 0.47 4/		MILES		
WATERSHED	18. TOTAL DRAINAGE AREA 14,000		SQ. MI.	22. MEAN ANNUAL PRECIPITATION 39.87		INCHES		
	19. NET SEDIMENT CONTRIBUTING AREA 13,900		SQ. MI.	23. MEAN ANNUAL RUNOFF 9.34 (63 yr)		INCHES		
	20. LENGTH 200	MILES	AV. WIDTH 70	MILES	24. MEAN ANNUAL RUNOFF 6,971,800 (63 yr)		AC.-FT.	
	21. MAX. ELEV. 1450		MIN. ELEV. 540	25. CLIMATIC CLASSIFICATION Humid				
	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.
Feb 1931					59,675	2,087,223	149	
1941 5/						2,008,804	143	
Oct 1948	10.8	17.8	Range(D)	75	57,404	1,972,531	141	
SURVEY DATA	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. 1948	38.1 6/	7,249,000	7/14,207,000	125,550,000	7,249,000	125,550,000	
SURVEY DATA	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.-YR.	a. TOTAL TO DATE	b. AV. ANNUAL	c. PER SQ. MI.-YR.	
	Oct. 1948	115,000	6,440	0.464	115,000	6,440	0.464	
SURVEY DATA	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. TO DATE	a. PERIOD	b. TO DATE
	Oct. 1948	59.2 (6 samples)	598	598	0.308	5.50	864	864

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION											
	20-30	30-20	20-10	10-Crest								
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION												
Oct. 1948	58	19	7	16								

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
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														
Oct. 1948	4	7	25	7	14	17	18	7	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.
Part 1931	659.4		2,315,000	1940	660.7	649.2	2,404,000
1932	660.0	644.2	4,057,000	1941	661.9	656.4	5,291,000
1933	660.1	642.1	4,690,000	1942	662.5	657.6	13,216,000
1934	654.4	640.4	1,749,000	1943	665.5	652.9	12,512,000
1935	660.0	649.5	10,999,000	1944	661.5	652.1	8,839,000
1936	660.0	640.6	2,915,000	1945	661.8	653.3	14,207,000
1937	660.9	653.7	8,776,000	1946	663.9	652.7	6,558,000
1938	660.8	647.4	6,005,000	1947	661.8	651.1	9,852,000
1939	658.5	646.7	3,392,000	1948	663.0	640.0	7,748,000

46. ELEVATION-AREA-CAPACITY DATA									
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	
630	27,242	726,967	47. REMARKS AND REFERENCES						
640	37,333	1,044,384		1/	All elevations are mean sea level adjustment of 1912.				
650	45,754	1,059,595		2/	Spillway sill at 638, topped by Tainter gates with top elev. of 661; however, operation contemplates "full pool" at 660.				
660	57,404	1,972,531		3/	F.P.C. operational plan requires power pool not exceed about 657 during March, April and May in interest of flood control; at other times, power pool may reach 660.				

47. REMARKS AND REFERENCES Cont'd.

4/ Based on main stem length of 129 mi. and tributary arm lengths of: Gravois 11 mi.; Grand Glaize-17 mi.; Niangua-19 mi.; South Grand-19 mi.; Pomme de Terre-6mi.

5/ An estimate in 1941 by Union Elec. Co. indicated a gross capacity to elev. 660 of 2,008,804 ac.ft.; other data not available.

6/ Calendar years 1931-1938, incl.

7/ 1932-1948.

Reference: "Sedimentation in the Lake of the Ozarks, Osage River, Missouri 1948" by Kansas City District, May 1950.

48. AGENCY SUPPLYING DATA
 Dept of Army, C. E., Kansas City District & Union Electric Co of Missouri
 DATE October 1949