

RESERVOIR SEDIMENTATION
DATA SUMMARY

Wilbur Meyer

35-18

NAME OF RESERVOIR

DATA SHEET NO.

DAM	1. OWNER Wilbur Meyer			2. RIVER Trib. of Boyer R.		3. STATE Iowa					
	4. SEC. 6 TWP. 82 N RANGE 38 W			5. NEAREST TOWN Denison		6. COUNTY Crawford					
	7. STREAM BED ELEV.			8. TOP OF DAM ELEV.		9. SPILLWAY CREST ELEV.					
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				6.38	32.76	43.80	Nov. 1944			
	b. POWER										
	c. WATER SUPPLY				2.27	11.04	11.04	16. DATE NORMAL OPER. BEGAN			
	d. IRRIGATION										
	e. CONSERVATION										
	f. INACTIVE							Nov. 1944			
WATERSHED	17. LENGTH OF RESERVOIR				MILES		AV. WIDTH OF RESERVOIR		MILES		
	18. TOTAL DRAINAGE AREA				0.297		SQ. MI.		22. MEAN ANNUAL PRECIPITATION	28 (40)	
	19. NET SEDIMENT CONTRIBUTING AREA				0.293		SQ. MI.		23. MEAN ANNUAL RUNOFF		4.8 *
	20. LENGTH		MILES		AV. WIDTH		MILES		24. MEAN ANNUAL RUNOFF		AC.-FT.
	21. MAX. ELEV.			MIN. ELEV.			25. CLIMATIC CLASSIFICATION				Sub-humid
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.			
	Nov. 1944	-	-	-	-	2.27	11.04	37.2			
	April 1949	4.4	4.4	Range Detailed	6	2.04	6.40	21.5			
	26. DATE OF SURVEY	34. PERIOD ANNUAL PRECIPITATION		35. PERIOD WATER INFLOW			ACRE- FEET		36. WATER INFL. TO DATE		
				a. MEAN ANNUAL	b. MAX. ANNUAL	c. PERIOD TOTAL		d. MEAN ANNUAL	e. TOTAL TO DATE		
	April 1949			(inches)	8.4 *			(inches)	8.4 *		
	26. DATE OF SURVEY	37. PERIOD SEDIMENT DEPOSITS			ACRE- FEET		38. TOTAL SED. DEPOSITS TO DATE				
		a. PERIOD TOTAL	b. AV. ANNUAL	c. PER SQ. MI.-YEAR	d. TOTAL TO DATE	e. AV. ANNUAL	f. PER SQ. MI.-YEAR				
	April 1949	4.64 (6.47) 1/	1.055 (1.470)	3.60 (5.02)	4.64 (6.47)	1.055 (1.470)	3.60 (5.02)				
	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	c. AV. ANNUAL	d. TOT. TO DATE	e. PERIOD	f. TOT. TO DATE				
April 1949	56.3 (3)	4,410 (6,160)	4,410 (6,160)	3.36 (9.56) 2/	14.8 (42.0) 2/	7,150 (9,970)	7,150 (9,970)				

*Estimated

1/ Above-crest deposits within original flow-line at emergency spillway elevation, and wholly within flood storage pool.

2/ Based on water supply pool

26. DATE OF SURVEY	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION												
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION													

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															

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

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY

47. REMARKS AND REFERENCES
 Gottschalk, L. C. and G. M. Brune. Sediment design criteria for the Missouri Basin Loess Hills. U. S. Soil Conserv. Serv., SCS-TP-97, 21 pp., illus., processed Milwaukee, Wisconsin, 1950.

$$\frac{3}{42} = \frac{37b \times 39 \times 1,000,000}{35a \times 18 \times 640 \times 62.4 \times 12}$$

Region 3, Soil Conservation Service
 U. S. Department of Agriculture

48. AGENCY SUPPLYING DATA Milwaukee, Wisconsin 49. DATE January 9, 1950

RESERVOIR SEDIMENTATION
DATA SUMMARY

Wilbur Meyer

NAME OF RESERVOIR

35-18a

DATA SHEET NO.

DAM	1. OWNER Wilbur Meyer			2. RIVER Trib. of Boyer			3. STATE Iowa				
	4. SEC. 6 TWP. 82N RANGE 38W			5. NEAREST TOWN Denison			6. COUNTY Crawford				
	7. STREAM BED ELEV.			8. TOP OF DAM ELEV.			9. SPILLWAY CREST ELEV. 100.0				
RESERVOIR	10. STORAGE ALLOCATION	11. ELEVATION TOP OF POOL	12. SURFACE AREA ACRES	13. STORAGE ACRE- FEET	14. ACCUMULATED ACRE- FEET	15. assumed DATE STORAGE BEGAN					
	a. FLOOD CONTROL	108.0	6.38	32.76	43.80	Nov. 1944					
	b. POWER										
	c. WATER SUPPLY	100.0	2.27	11.04	11.04	16. DATE NORMAL OPER. BEGAN					
	d. IRRIGATION										
	e. CONSERVATION										
	f. INACTIVE					Nov. 1944					
17. LENGTH OF RESERVOIR				MILES		AV. WIDTH OF RESERVOIR MILES					
WATERSHED	18. TOTAL DRAINAGE AREA 0.297			SQ. MI.		22. MEAN ANNUAL PRECIPITATION 28 (40)			INCHES		
	19. NET SEDIMENT CONTRIBUTING AREA 0.293			SQ. MI.		23. MEAN ANNUAL RUNOFF 4.8 est.			INCHES		
	20. LENGTH		MILES		AV. WIDTH		MILES		24. MEAN ANNUAL RUNOFF		
									AG.-FT.		
	21. MAX. ELEV.		MIN. ELEV.		25. CLIMATIC CLASSIFICATION Sub-humid						
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 2/ AC.-FT. PER SQ. MI.			
	11/44	-	-	-	-	6.38	43.80	147			
	4/49	4.4	4.4	Detailed Range	6 ranges	6.15	37.33	125			
	6/52	3.2	7.6	"	"	5.97	34.63	117			
	26. DATE OF SURVEY	34. PERIOD ANNUAL PRECIPITATION		35. PERIOD WATER INFLOW ACRE- FEET			36. WATER INFL. TO DATE AC.-FT.				
				a. MEAN ANNUAL (inches)	b. MAX. ANNUAL	c. PERIOD TOTAL	a. MEAN ANNUAL (inches)		b. TOTAL TO DATE		
	4/19	-		8.4 est.	-	-	8.4 est.		-		
	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				
	4/49	4.64 (6.47)	1.055 (1.471)	3.601 (5,021)	4.64 (6.47)	1.055 (1,471)	3.601 (5,021)				
6/52	2.62 (2.70)	0.818 (0.843)	2.79 (2.88)	7.26 (9.17)	0.955 (1.21)	3.26 (4.13)					
26. DATE OF SURVEY	39. AV. DRY WGT. LBS. PER CU. FT.	40. SED. DEP. TONS PER SQ. MI.-YR.		41. STORAGE LOSS PGT.		42. SED. INFLOW PPM					
		a. PERIOD	b. TOTAL TO DATE	a. AV. ANNUAL	b. TOT. TO DATE	a. PERIOD	b. TOT. TO DATE				
4/49	56.3 (3)	4,420 (6,160)	4,420 (6,160)	2.41	10.59	7,150 (9,970)	7,150 (9,970)				
6/52	56.1 (3)	3,420 (3,520)	3,980 (5,060)	218	16.58						

1/ At crest. 2/ C/I ratio estimated to be 0.572 in 1944, 0.487 in 1949, and 0.456 in 1952. Trap efficiency estimated to be 97% up to 1952.

26. DATE OF SURVEY 1/	43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION												
	Below crest				Between crest and emergency								
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION												
April 1949	72						28						
June 1952	79						21						

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														

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

46. ELEVATION-AREA-CAPACITY DATA								
ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY	ELEVATION	AREA	CAPACITY
1944:								
108.0	6.38	43.80						
100.0	2.27	11.04						
1949:								
108.0	6.38	37.33						
100.0	2.04	6.40						
1952:								
108.0	6.38	34.63						
100.0	1.86	3.78						

47. REMARKS AND REFERENCES Water reached maximum elevation of 105.0 in June 1951.
 1. Gottschalk, L. C. and G. M. Brune. Sediment Design Criteria for the Missouri Basin Loess Hills. Soil Conservation Service, Milwaukee, Wisconsin, 1950.
 2. USDA Yearbook of Agriculture, Washington, D. C., 1941

48. AGENCY SUPPLYING DATA SCS, Milwaukee, Wis. 49. DATE July 20, 1952

1/ These figures are for total sediment to date of survey.

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