

RESERVOIR SEDIMENT
DATA SUMMARY

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

ORWELL DAM
NAME OF RESERVOIR

30-19

DATA SHEET NO.

DAM	1. OWNER Corps of Engineers			2. STREAM Ottertail			3. STATE Minnesota									
	4. SEC. 26 TWP. 132N RANGE 44W			5. NEAREST P.O. Fergus Falls			6. COUNTY Ottertail									
	7. LAT 46° 13' 00" LONG 96° 10' 40"			8. TOP OF DAM ELEVATION 1080.0			9. SPILLWAY CREST ELEV. 1044.0									
RESERVOIR	10. STORAGE ALLOCATION		11. ELEVATION TOP OF POOL		12. ORIGINAL SURFACE AREA, ACRES		13. ORIGINAL (E) CAPACITY, ACRE-FEET		14. GROSS STORAGE, ACRE-FEET (E)		15. DATE STORAGE BEGAN					
	a. FLOOD CONTROL		1070.0		1,110		13,100		14,100		March 53					
	b. MULTIPLE USE															
	c. POWER															
	d. WATER SUPPLY		1070.0		1,110		13,100		14,100		March 53					
	e. IRRIGATION															
	f. CONSERVATION		1048.0		210		1,000		1,000							
g. INACTIVE		1048.0		210		1,000		1,000								
WATERSHED	17. LENGTH OF RESERVOIR				4.0 MILES				AV. WIDTH OF RESERVOIR				1.0 MILES			
	18. TOTAL DRAINAGE AREA				1820.00 SQ. MI.				22. MEAN ANNUAL PRECIPITATION				24.16 (39) INCHES			
	19. NET SEDIMENT CONTRIBUTING AREA				245.0 SQ. MI.				23. MEAN ANNUAL RUNOFF				2.13 (39) INCHES			
	20. LENGTH		MILES		AV. WIDTH		MILES		24. MEAN ANNUAL RUNOFF				207,200 (39) AC.-FT.			
	21. MAX. ELEV.		1600		MIN. ELEV.		1033.0		25. ANNUAL TEMP. MEAN				41.9° RANGE 37.5°-44.6°			
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.	
	14 May 54		9.8		0		Range		21 R		1,110		14,100		.068	
	16 Mar 64		6.8		9.8		Detailed		21		1,110		14,028		.068	
	1 Dec 70				16.6						1,110		13,975		.067	
	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			
	14 May 54		24.41"		61,880		346,020		2,210,870		61,880		2,210,870			
	16 Mar 64		25.48"		86,800		481,450		2,107,460		68,490		2,339,614			
	1 Dec 70															
	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				
14 May 54		72 (C) (86.7)(D)		7 (8.8)		0.03 (0.036)		72 (86.7)		7 (8.8)		0.03 (0.036)				
16 Mar 64		52.8 (97.76)		7.76 (14.38)		0.0317 (0.0586)		124.8 (194.5)		7.5 (11.1)		0.0306 (0.0453)				
1 Dec 70																
26. DATE OF SURVEY		39. AV. DRY WGT., LBS. PER CU. FT.		40. SED. DEPOS. TO DATE PER SQ. MI.-YR.		41. STORAGE LOSS, PCT.		42. SED. INFLOW, PPM								
				a. PERIOD		b. TOTAL TO DATE		a. PERIOD		b. TOTAL TO DATE						
14 Mar 54		90 (*)		59 (70.57)		59 (70.57)		0.05 (0.06)		0.50 (0.61)		47 (56.6)				
16 Mar 64		90 (*)		62.14 (114.87)		59.98 (88.80)		0.0532 (0.0737)		0.865 (1.309)		36.1 (66.9)				
1 Dec 70																

25. DATE OF SURVEY	43. DEPTH DESIGNATION PERCENT BELOW, AND ABOVE, DREST ELEVATION													
	PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION													

25. 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	-10%	-11%	-11%	-12%
PERCENT OF TOTAL SEDIMENT LOCATED WITHIN REACH DESIGNATION														
16 Mar 64	47.0	39.0	3.5A	27.0	20.0	16.0	13.5	8.5	7.0	2.0	1.5	3.0	18.0	4.0
1 Dec 70	44.0	17.0	27.0	100	18.0	34.0	17.0	14.0	1.0	1.0	25.0	22.0	7.5	0.5

45. RANGE IN RESERVOIR OPERATION							
WATER YEAR B	MAX. FLEV.	MIN. ELEV.	INFLOW, AC.-FT.	WATER YEAR	MAX. ELEV.	MIN. ELEV.	INFLOW, AC.-FT.
1954	1070.12	1047.17	180,422	1963	1070.00	1048.22	205,360
1955	69.48	48.11	242,722	1964	71.37	48.00	212,600
1956	68.92	46.97	217,441	1965	71.33	47.33	389,592
1957	70.03	54.84	286,278	1966	72.38	51.40	473,600
1958	70.29	46.58	180,439	1967	70.22	49.05	333,350
1959	70.15	57.25	195,405	1968	69.94	47.90	229,820
1960	68.44	53.95	228,643	1969	70.71	47.15	299,545
1961	67.52	57.40	126,822	to 12/1/70	69.28	47.14	195,197

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

47. REMARKS AND REFERENCES

A. Negative denotes scour in this reach.

B. Records are for entire calendar year. Elevations are Baldhill Pool at the dam.

C. Net amount below reservoir elevation in Item #9.

D. Net amount above and below reservoir elevation in Item #9.

E. Flood control and water supply elevation are same. Spring drawdown produces change in storage.

48. AGENCY MAKING SURVEY

49. AGENCY SUPPLYING DATA *Corps of Engineers*

50. DATE *10 March 1972*