

RESERVOIR SEDIMENT
DATA SUMMARY

SCS-34 Rev. 6-62

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Alfred Lage
NAME OF RESERVOIR

35-15b
DATA SHEET NO.

| | | | | | | | | | | |
|-------------------------|------------------------------------------|----------------------------------------|------------------------------------|---------------------------------|--------------------------------------------|-----------------------------------|-------------------------------|-----------------------------------|-------|---------|
| DAM | 1. OWNER Alfred Lage | | | 2. STREAM Trib. of Elk Creek | | | 3. STATE Iowa | | | |
| | 4. SEC. 36 TWP. 83N RANGE 37W | | | 5. NEAREST TOWN Aspinwall | | | 6. COUNTY Crawford | | | |
| | 7. STREAM BED ELEVATION | | | 8. TOP OF DAM ELEVATION | | | 9. SPILLWAY CREST ELEV. 100.0 | | | |
| 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. MULTIPLE USE | | | | | June 1941 | | | | |
| | b. FLOOD CONTROL | 103.0 | 2.35 | 5.53 | 11.23 | | | | | |
| | c. POWER | | | | | 16. DATE NORMAL OPER. BEGAN | | | | |
| | d. WATER SUPPLY | 100.0 | 1.39 | 5.70 | 5.70 | | | | | |
| | e. IRRIGATION | | | | | June 1941 | | | | |
| | f. CONSERVATION | | | | | | | | | |
| | g. SEDIMENT | | | | | | | | | |
| h. INACTIVE | | | | | | | | | | |
| 17. LENGTH OF RESERVOIR | | | | MILES | AV. WIDTH OF RESERVOIR | | | | MILES | |
| WATERSHED | 18. TOTAL DRAINAGE AREA 0.184 | | | SQ. MI. | 22. MEAN ANNUAL PRECIPITATION 28 (40) | | | INCHES | | |
| | 19. NET SEDIMENT CONTRIBUTING AREA 0.182 | | | SQ. MI. | 23. MEAN ANNUAL RUNOFF 5.0 est. | | | INCHES | | |
| | 20. LENGTH | | MILES | AV. WIDTH | | MILES | 24. MEAN ANNUAL RUNOFF | | | AC.-FT. |
| | 21. MAX. ELEV. | | MIN. ELEV. | | 25. CLIMATIC CLASSIFICATION sub-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. | | |
| June 1941 | -- | -- | -- | -- | 2.35 | 11.23 | 61.0 | | | |
| April 1949 | 7.8 | 7.8 | Detailed Range | 7 ranges | 2.20 | 8.56 | 46.5 | | | |
| June 1952 | 3.2 | 11.0 | " | " | 2.12 | 7.14 | 38.8 | | | |
| SURVEY DATA | 26. DATE OF SURVEY | 34. PERIOD ANNUAL PRECIPITATION | 35. PERIOD WATER INFLOW ACRE-Feet | | | 36. WATER INFL. TO DATE ACRE-Feet | | | | |
| | | | a. MEAN ANNUAL | b. MAX. ANNUAL | c. PERIOD TOTAL | a. MEAN ANNUAL | b. TOTAL TO DATE | | | |
| | April 1949 | -- | 7.8 est. (inches) | -- | -- | 7.8 est. (inches) | | | | |
| 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.-YEAR | a. TOTAL TO DATE | b. AV. ANNUAL | c. PER SQ. MI.-YEAR | | | |
| | April 1949 | 2.67 (2.97) ^{3/} | .34 (0.38) | 1.88 (2.088) | 2.67 (2.97) ^{3/} | 0.34 (0.380) | 1.88 (2.088) | | | |
| June 1952 | 1.42 | .44 | 2.42 | 4.09 (4.39) ^{3/} | 0.37 (0.40) | 2.04 (2.19) | | | | |
| 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. AN. | b. TOT. TO DATE | a. PERIOD | b. TOT. TO DATE | | |
| | April 1949 | 53.2(3) | 2180 (2420) | 2180 (2420) | 3.0 | 23.8 | 3410 (4234) | 3410 (4234) | | |
| June 1952 | 51.9(3) | 2735 | 2305 (2480) | 3.9 | 36.4 | | | | | |

1/ At crest. 2/ C/I ratio estimated to be 0.228 in 1941, 0.174 in 1949, and 0.145 in 1952. Trap efficiency estimated to be 94% in 1941, 92% in 1949, and 90% in 1952. 3/ Includes 0.30 A.F. sediment above emergency spillway.

| | | | | | | | | | | | |
|------------------------------|-----------------------------------------------------------------------|----|--|-----------------------------|--|--|----|--|-----------------|--|----|
| 26. DATE OF SURVEY <u>1/</u> | 43. DEPTH DESIGNATION RANGE IN FEET ABOVE, AND BELOW, CREST ELEVATION | | | | | | | | | | |
| | Below crest | | | Between crest and emergency | | | | | Above emergency | | |
| | PERCENT OF TOTAL SEDIMENT LOCATED WITHIN DEPTH DESIGNATION | | | | | | | | | | |
| April 1949 | | 81 | | | | | 9 | | | | 10 |
| June 1952 | | 79 | | | | | 14 | | | | 7 |

| | | | | | | | | | | | | | | | |
|--------------------|---------------------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|--------|------|------|------|------|------|
| 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 |
| 1941: | | | | | | | | |
| 103.0 | 2.35 | 11.23 | | | | | | |
| 100.0 | 1.39 | 5.70 | | | | | | |
| 1949: | | | | | | | | |
| 103.0 | 2.31 | 8.56 | | | | | | |
| 100.0 | 1.24 | 3.31 | | | | | | |
| 1952: | | | | | | | | |
| 103.0 | 2.31 | 7.14 | | | | | | |
| 100.0 | 1.16 | 2.23 | | | | | | |

47. REMARKS AND REFERENCES (1) Gottschalk, L.C., and G. M. Brune. Sediment design Criteria for the Missouri Basin Loess Hills. Soil Conservation Service, Milwaukee, Wisconsin, 1950. (2) U.S.D.A. Yearbook of Agriculture, Washington, D.C., 1941. For 300 feet downstream from dam, gradient was found to have decreased from 2.13 to 1.53% by 1949. From 300 to 600 feet downstream, gradient increased from 0.33 to 0.60%.

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

48. AGENCY MAKING SURVEY SCS
 49. AGENCY SUPPLYING DATA SCS, Milwaukee, Wisconsin 50. DATE July 20, 1952