

DAM FAILURE BREACH DATA *

Purpose of Dam: Name of Dam: Swift Dam
 Flood Control _____ Water Conservation _____ County: Pondera
 Power _____ Recreation _____ Waterway: Birch Creek
 Irrigation X Other _____ Hazard Class (SCS): _____

Type of Failure:
 Piping _____ Overtopping X Other _____

Data:

- 1. Drainage area D.A. = 75.3 sq. mi.
- 2. Depth of ponded water at time of failure, measured from water surface to _____ downstream toe or _____
 $H_w =$ > 160 feet
- 3. Ponded water surface associated with H_w
 $A_s =$ 506 acres
- 4. Ponded water storage associated with H_w
 $V_s =$ > 30,000 acre feet
- 5. Length of dam $L =$ 450 feet
- 6. Top width of dam $b =$ 15 feet
- 7. Height of dam measured from top to _____ downstream toe or _____

- 8. Side slopes of embankment: u/s = 1.2-1.5:1 $H =$ 160 feet
 d/s = 1.33:1
- 9. Longitudinal slope of reservoir bed $s_o =$ 0.0148

- 10. Total maximum discharge downstream, measured or estimated (not by a breach formula)
 $Q^*_{max} =$ 881,000 cfs @ Dupuyer, 17 miles downstream
 da = 105 sq mi
- 11. Maximum discharge downstream, attributed to sudden water release from storage
 $Q_{max} =$ _____ cfs

- 12. Estimated total outflow, at time of breach, through spillway system and over top of dam
 $Q_o =$ _____ cfs
- 13. Spillway system rating curves. (Enclose if item 12 is unknown.) See enclosed plan of spillway.
- 14. Storage or surface area-stage curve. (Enclose if item 12 is unknown.) See enclosed topo.

- 15. Embankment section: Homogeneous X Zoned _____ (if so, complete item 16.)
- 16. Core size: Top width _____ Bottom width _____ Height (to d.s. toe) _____
- 17. Material properties: Textural size, cohesiveness, plasticity, etc.
 A. Homogeneous fill: Rock
 B. Core:
 Shell: U.S. Concrete slab

18. Remarks (Include the title, publisher and date of the source report of this data.)

No witnesses of failure - considered to be sudden. No high water marks measured, may be possible to still measure them.

Source: 1) Fay Stokes, Manager, Pondera Cty Canal & Reservoir Co., Box 245, Valier, MT
 2) Floods of June 1964 in NW Montana, USGS Water Supply paper 1840-B

* If particular information is not available, please leave space blank.

killed 19 ≈ \$1 million in damages

Dam tender observed about a 20 foot high wall of water down stream from the dam. Unknown where