EXPLANATION

b BOULDER GRAVEL--Varies from boulders mixed with cobbles and pebbles to boulders in open-work deposits; boulders angular to subrounded; derived from nearby talus or bedrock. In canyon, boulders are of rhyolitic ash-flow tuff and basalt and form bars as thick as 12 m (40 ft) downstream from bedrock projections. Small deposits of gravel with angular basalt boulders occur at canyon mouth where floodwaters spilled over basalt scarp onto alluvial fill

g GRAVEL--Varies from mixed pebbly gravel and sand to cobble gravel; clasts rounded to subrounded; derived from Teton Dam, from gravel along Teton River, and from gravel in road fills, irrigation canals, and terrace scarps. Forms pendant bars as thick as 10(?) m (33 ft) in canyon downstream from bedrock projections. Also forms gravel sheets as thick as 5(?) m (16 ft) at canyon mouth and as thick as 1 m (3.5 ft) downstream from scoured road fills, irrigation canals, and terrace scarps. Surface locally displays large- and small-scale asymmetric ripples. Locally covered by less than 10 cm (4 in.) of fine sand and silt in some areas inundated by slack water during recession of flood

s SAND--Sand and pebbly sand. Forms parts of pendant bars in canyon and sheet-like deposits at canyon mouth and farther downstream. Downstream deposits derived from sandy road fills, irrigation canals, and terrace scarps. Deposits in canyon as thick as 3 m (10 ft); deposits downstream usually less than 1 m (3.5 ft) thick. Deposits change several kilometers west of Sugar City and Rexburg from dominantly gravel to dominantly sand in accord with a decrease in grain size of alluvium of Pleistocene age along Henrys Fork and Teton River

f FINE SAND AND SILT--Fine sand, silt, and clay in deposits usually less than 20 cm (8 in.) thick on flood plains and in depressions and fields surrounded by dikes, roads, or irrigation canals. Found where slack water was present during flood and (or) where standing water remained as long as a month. Mapped only where thicker than about 5 cm (2 in.). Source was the compacted core of Teton Dam, loess and eolian sand, fine-grained artificial fills, and the fine fraction of gravelly embankments

FEW OR NO DEPOSITS--Areas without symbols sustained widespread and variable property damage, but are marked by little or no geologic evidence of flooding

PLACES OF EROSION

Zones of erosion--Caused by turbulent flow across roads, irrigation canals, and scarps. Depth of erosion ranges from 0.5 m to more than 3 m (1.5-10 ft)

Wider areas of erosion--Located on slopes, terrace scarps, and fields where depth of sheet erosion and gullying is at least 20 cm (8 in.). Depth of erosion along terrace scarps and slopes at the canyon mouth is locally as great as 10 m (33 ft) where water flowing over basalt slopes onto alluvium formed plunge pools

X AREAS OF SAND AND GRAVEL DEPOSITS THAT DISPLAY ASYMMETRIC RIPPLES--Generally heights of 0.3-3 m (1-10 ft) and lengths of 2-50 m (6.5-165 ft). Larger ripples occur on bars in canyon and at canyon mouth; smaller ripples occur in downstream areas

16(53) APPROXIMATE DEPTH OF FLOW IN METERS (FEET)--Most depths in canyon measured photogrammetrically using a Kern PG-2 plotter by measuring height of stranded floating debris. Some depths determined in field by measurement with Abney level. Measurements represent minimum depths because depth of flood scour could not be determined. Depth of flood flow on alluvial plain below the canyon mouth determined by several methods: height of sediment coating on walls of buildings; height of wetting on porous stone and brick buildings; and height of stranded floating debris on fences, roofs, and trees. These measurements represent approximate depth of flow in these areas. Accurate measurements of altitude of high-water surface are given in U.S. Geological Survey Hydrologic Investigations Atlases (see references)

BOUNDARY OF FLOODED AREA--Modified from U.S. Geological Survey Hydrologic Investigations Atlases. Many small areas near margin of flooded area but not covered by flood are not shown. Boundary not shown in upper part of canyon where flood was contained by steep canyon walls

Base from U.S. Geological Survey, Menan Buttes, 1951, Moody, 1951, Newdale, 1949, Parker, 1948, Plano, 1951, Rexburg, 1949, St. Anthony, 1948, 1:24,000

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This map is preliminary and has not been edited or reviewed for conformity with Geological Survey standards or nomenclature.

Plate 1.--Map showing geologic effects of flooding from Teton Dam failure, southeastern Idaho.