

10, 1921, as measured by the U.S. Geological Survey, Water Resources Division, Boise, Idaho. Inflow records were discontinued in 1959. Outlet works capacity measured 2880 cfs in 1921, at reservoir water surface elevation 6055.5. The computed spillway capacity is 3250 cfs with 4 feet of freeboard on the dam.

c. Elevation, Reservoir, and Storage Capacity

| | Elevation (feet) | Storage (acre-feet) | Reservoir Surface (acres) |
|---|---------------------|------------------------|------------------------------|
| Top of dam | 6076 | 55,091 | 1652 |
| Spillway crest | 6067 | 44,500 | 1341 |
| Upper outlet gates (approximate) | 6020 | 3750 | 368 |
| Lower outlet gates (approximate) | 6000 | - | - |
| Downstream outlet Invert (approximate) | 5095 | - | - |

d. Dam

Type - Sand, gravel and cobblestone, with very little clay materials make up the embankment of the dam.

Length - 1430 feet.

Height - 70 feet.

Top width is 160 feet for the old portion and 15 feet for the raised portion.

Embankment slopes are 3:1 upstream and 2:1 downstream.

Core and cutoff - Steel sheet piling and concrete corewall.

e. Spillway

| | |
|--------------------|---|
| Type | Uncontrolled concrete structure |
| Length of weir | 75 feet |
| Crest elevation | 6067 feet |
| Upstream channel | Open to reservoir |
| Downstream channel | Concrete, 640 feet long (minimum width-24 feet) |

concrete was placed in the corewall.

Embankment material was dumped from railroad cars as shown in Photographs 3 and 4. The corewall can be seen in each of these photographs.

Many reports were made by various engineers during the period from 1905 to 1918 concerning the safety of the dam. As a result of these reports, construction was stopped after the dam reached 70 feet in height. During the period from 1924 to 1938, drought caused hardship on the farmers receiving water from the reservoir. After this drought the irrigators wanted to increase the storage capacity of the reservoir by raising the dam 10 feet in height. Engineer Henry L. Senger was retained by the Big Lost River Irrigation District in 1952 to study this possibility. After a considerable amount of research and investigation, plans and specifications were submitted to the State Reclamation Engineer for approval to raise the dam 5 feet and place tainter gates at the entrance of the spillway. These plans and specifications were approved on March 28, 1952. Prior to construction, an amendment to these plans and specifications was submitted on March 9, 1956, which deleted all references to tainter gates for the spillway and substituted plans and specifications to construct a 5 foot concrete weir at the entrance of the spillway. This weir greatly reduced the capacity of the spillway and this amendment was not approved by the State Reclamation Engineer. The irrigation district appealed and the case was heard in Blackfoot, Idaho, in the Sixth Judicial District Court. This court reversed the decision by the State Reclamation Engineer and ruled in favor of the Big Lost River Irrigation District. The State Reclamation Engineer then appealed to the Idaho Supreme Court and that ruling also went against the State. The irrigation district then constructed the new spillway with the 5 foot high weir in the entrance channel and raised the dam 5 feet. The weir is shown in Photographs 23 and 24.

h. Normal Operating Procedure

Normal operation of the reservoir is to store spring runoff and subsurface inflow and to release water for irrigation during the summer months.

1.3 Pertinent Data

a. Drainage Area

The drainage area is 788 square miles.

b. Discharge at Damsite

The maximum known inflow above the dam was 2760 cfs on June 12, 1921, and the maximum known outflow was 2990 cfs on June

f. Outlet

The outlet control consists of 5 motor-operated 4 foot by 8 foot slide gates mounted in a multi-level arrangement in the upstream control tower. The outlet tunnel, in section, is 10 feet by 10 feet with arched roof, extending 500 feet from the outlet tower in the reservoir, through the right abutment and under the spillway. The first 50 feet of the outlet conduit is a 10 foot diameter riveted steel pipe. At the outlet, the tunnel branches into 5 smaller pipes which exit into a concrete stilling basin near the toe of the dam.