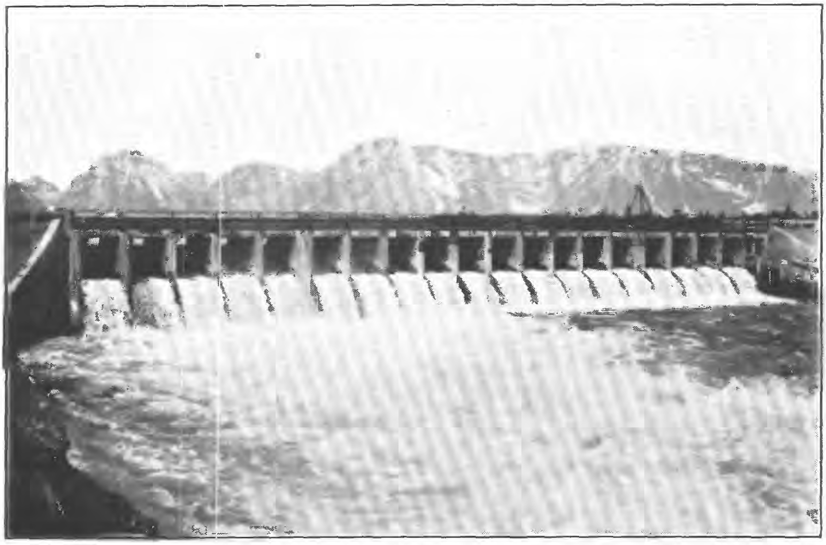
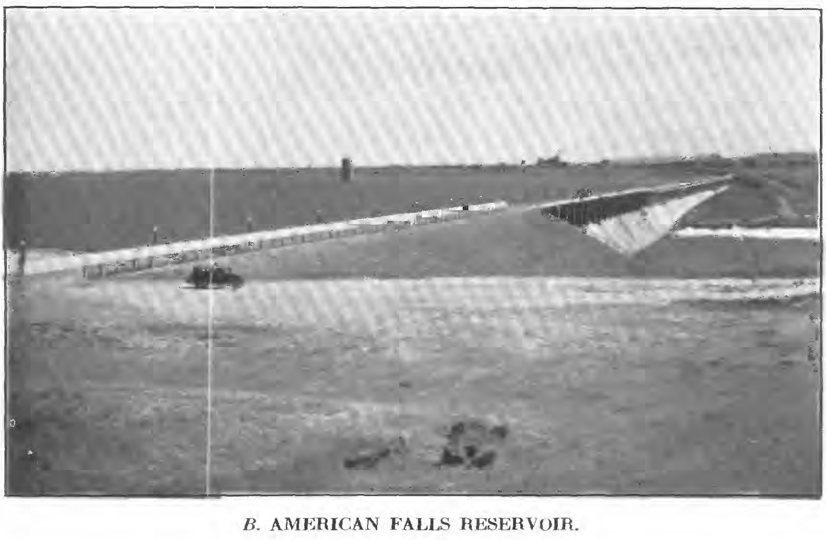
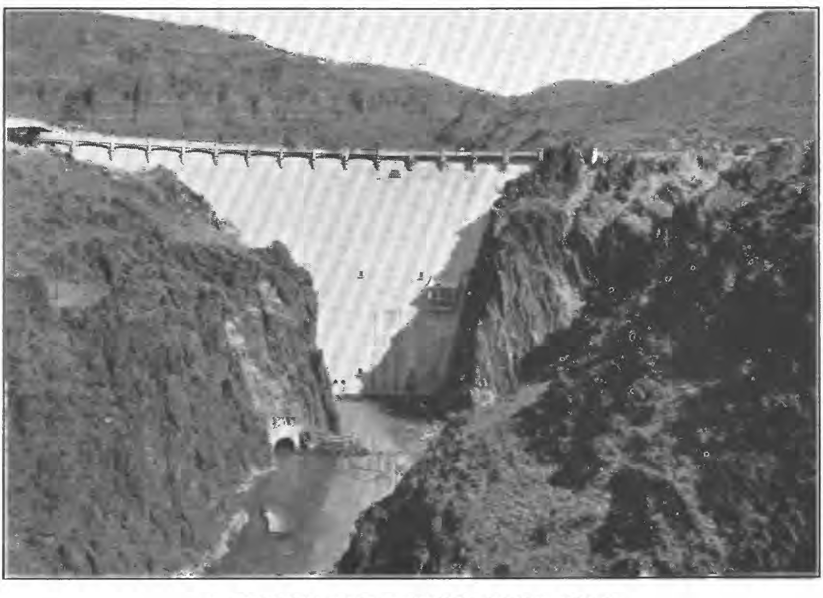


A. JACKSON LAKE DAM, SNAKE RIVER, WYO.



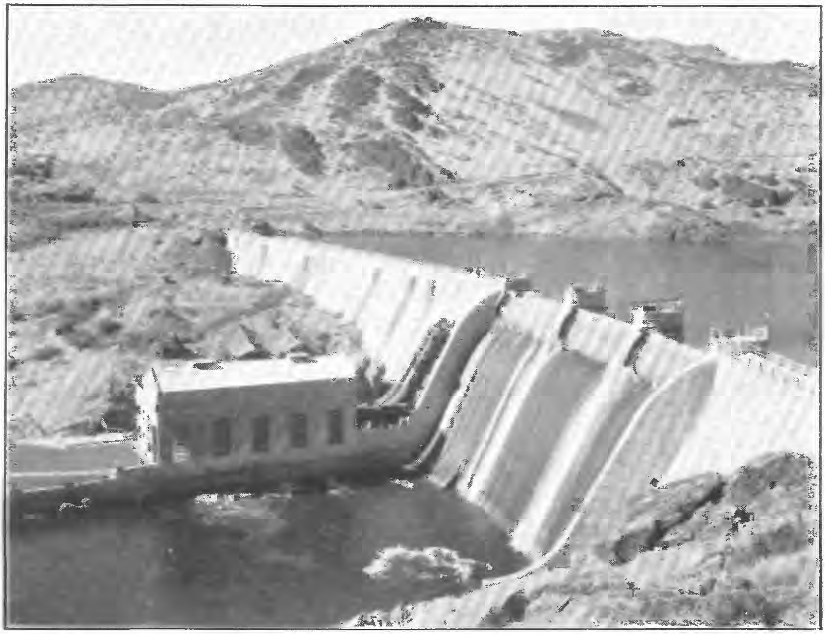
B. AMERICAN FALLS RESERVOIR.

A. ARROWROCK RESERVOIR, BOISE RIVER, IDAHO.



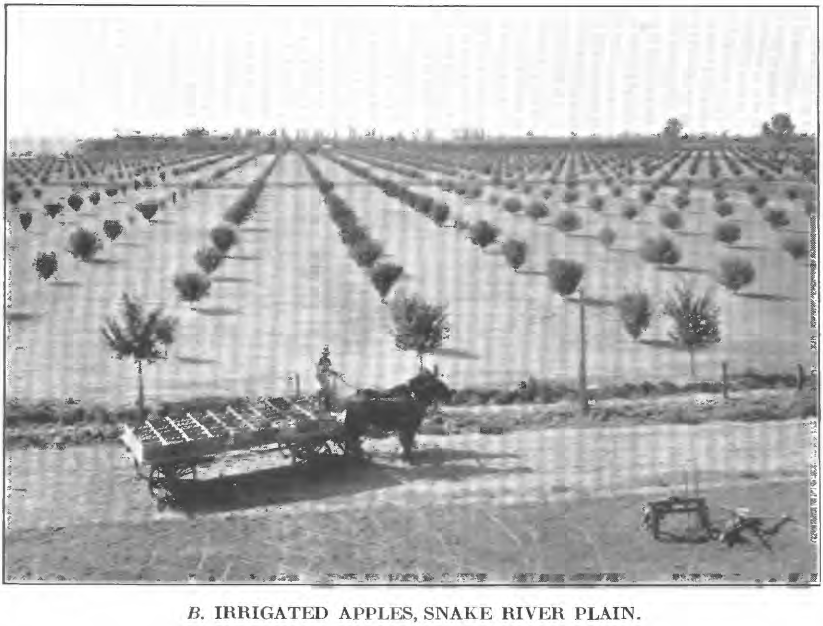
B. OWYHEE DAM, OWYHEE RIVER, OREG

A. DEADWOOD RESERVOIR, DEADWOOD RIVER, IDAHO.



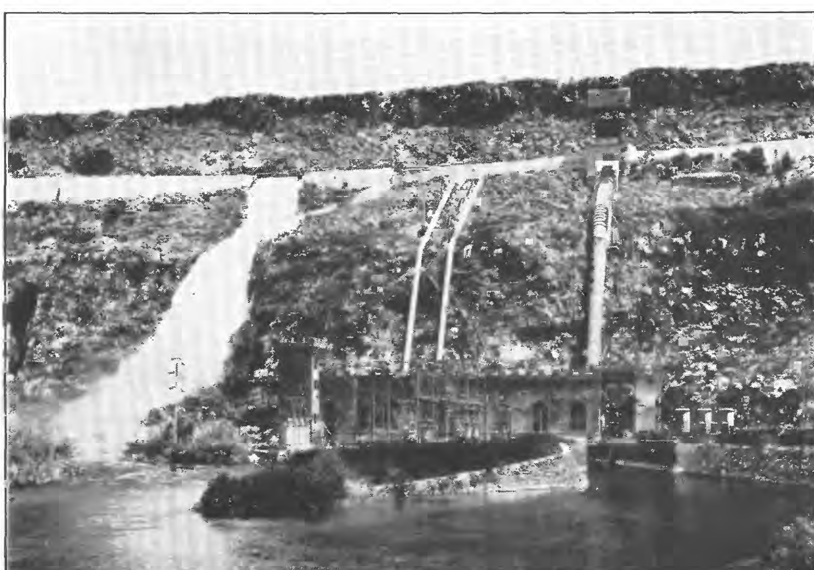
B. BLACK CANYON DAM AND POWERHOUSE, PAYETTE RIVER, IDAHO.

A. IRRIGATED POTATOES, SNAKE RIVER PLAIN.



B. IRRIGATED APPLES, SNAKE RIVER PLAIN.

A. SHOSHONE FALLS AND SHOSHONE FALLS POWERHOUSE OF IDAHO POWER CO.



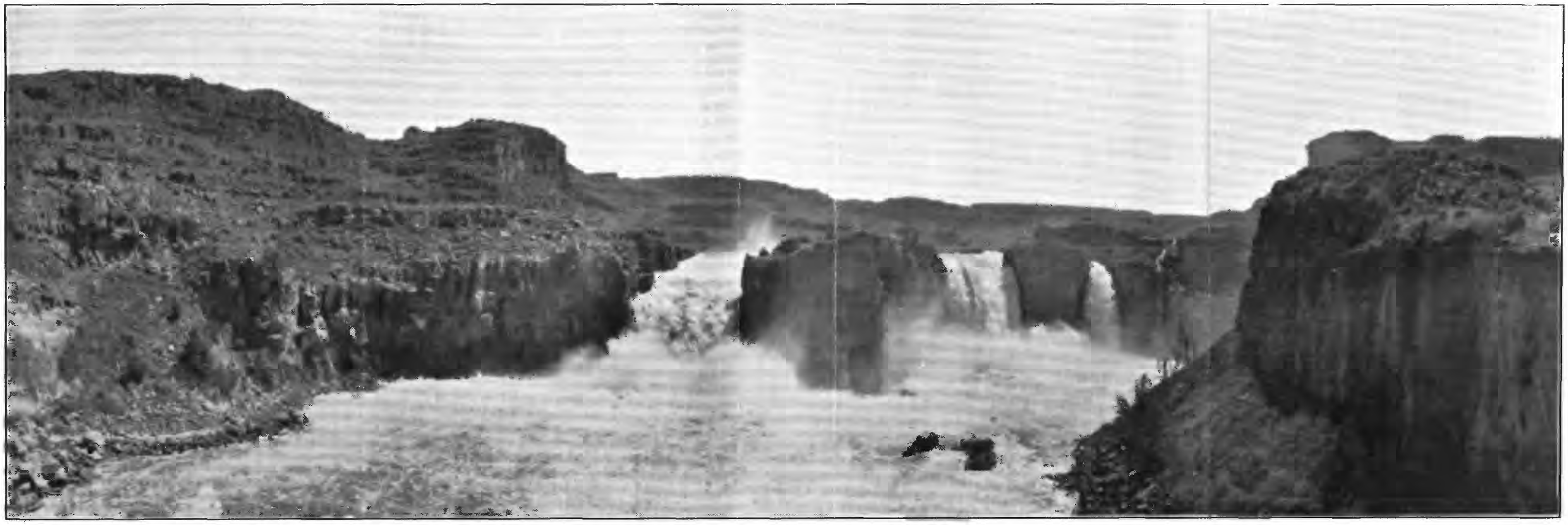
B. THOUSAND SPRINGS DEVELOPMENT, IDAHO POWER CO.

A. LOWER SALMON FALLS DEVELOPMENT, IDAHO POWER CO.

B. SNAKE RIVER BETWEEN OXBOW AND HOMESTEAD, IDAHO-OREGON.
Figures in circles indicate mileage from Lewiston, Idaho.

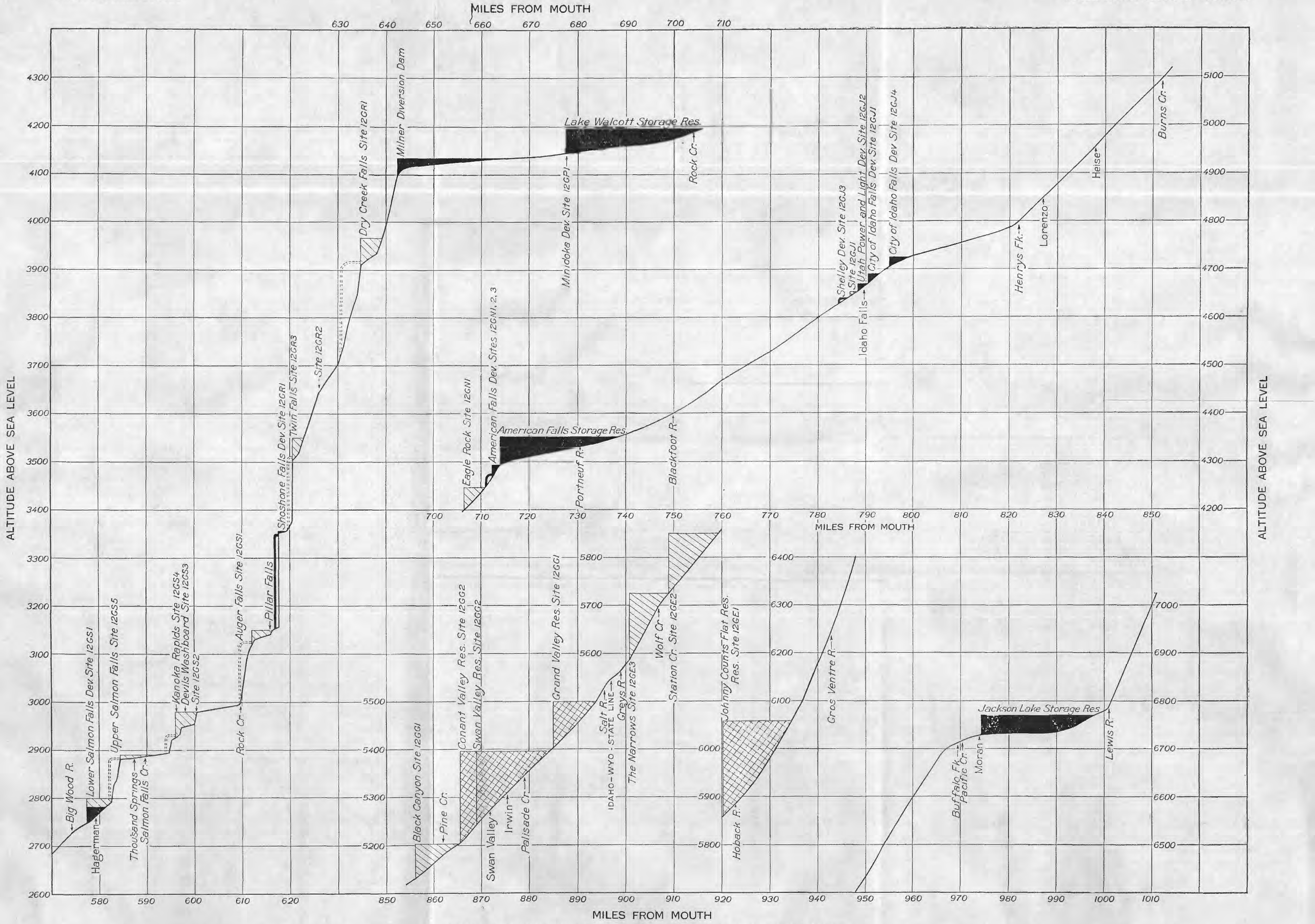
A. PILLAR FALLS, SNAKE RIVER, IDAHO.

B BUCK CREEK RAPIDS SNAKE RIVER, OREGON-IDAHO.

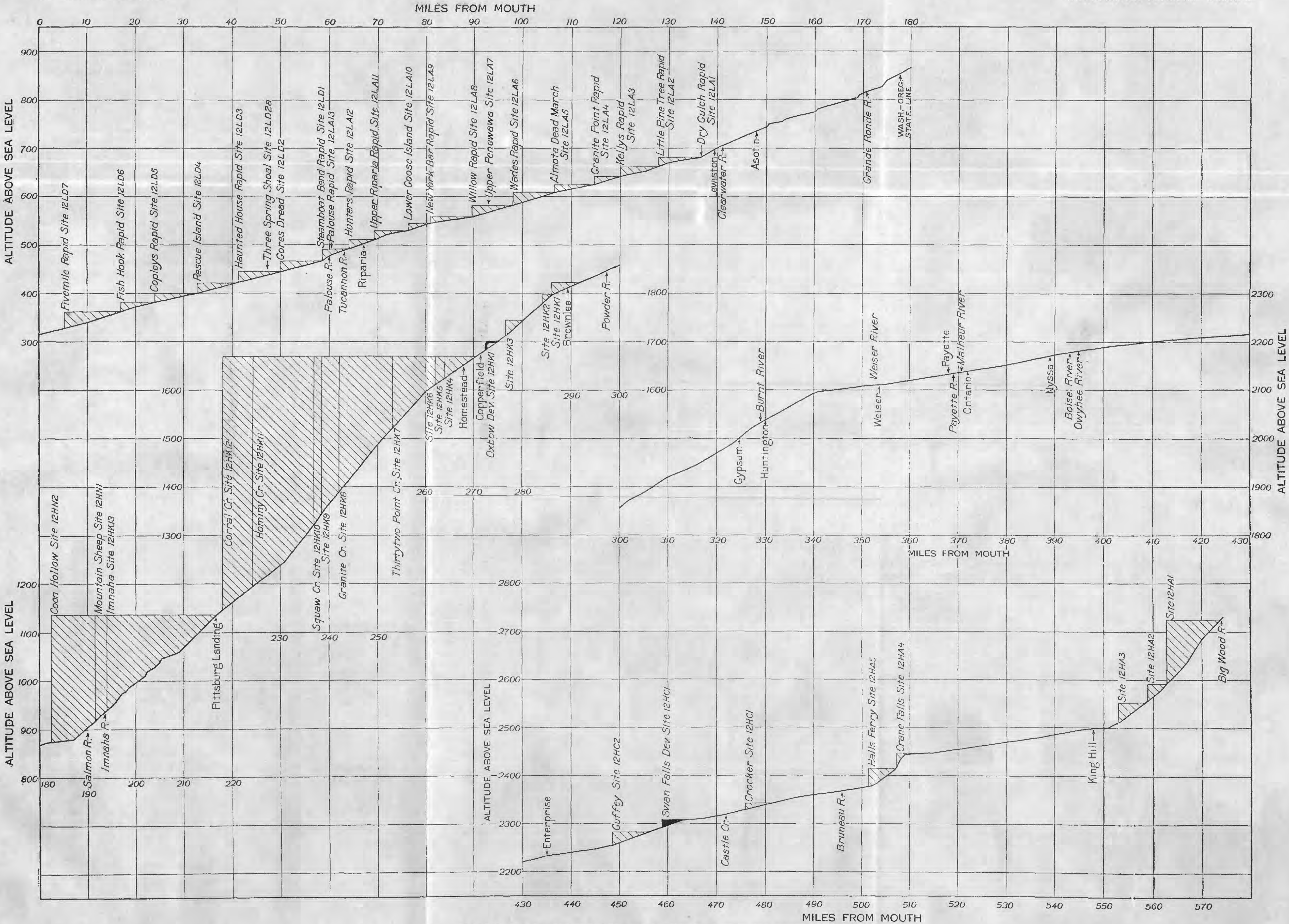


A. TWIN FALLS, SNAKE RIVER, IDAHO.

B. SHOSHONE FALLS, SNAKE RIVER, IDAHO.



PROFILE OF SNAKE RIVER ABOVE MOUTH OF BIG WOOD RIVER.



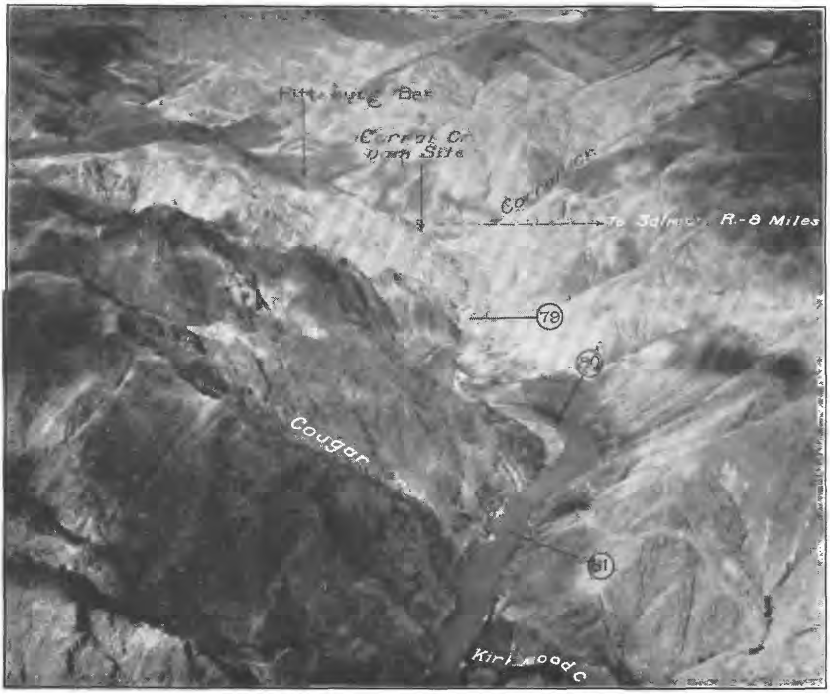
PROFILE OF SNAKE RIVER, BIG WOOD RIVER TO MOUTH.

A.

B.

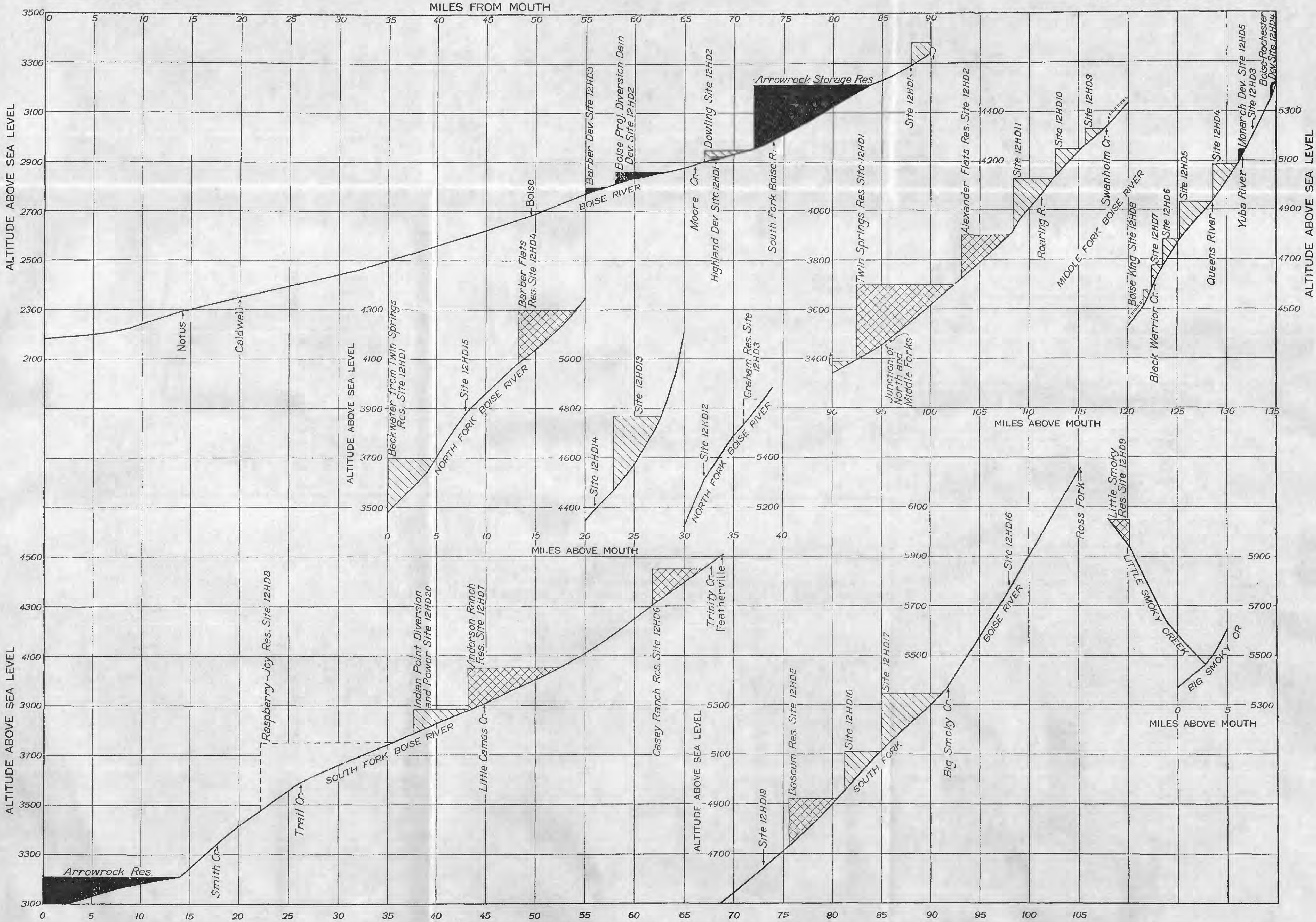
SNAKE RIVER IN HELLS CANYON, OREGON-IDAHO.

Figures in circles indicate mileage from Lewiston, Idaho.

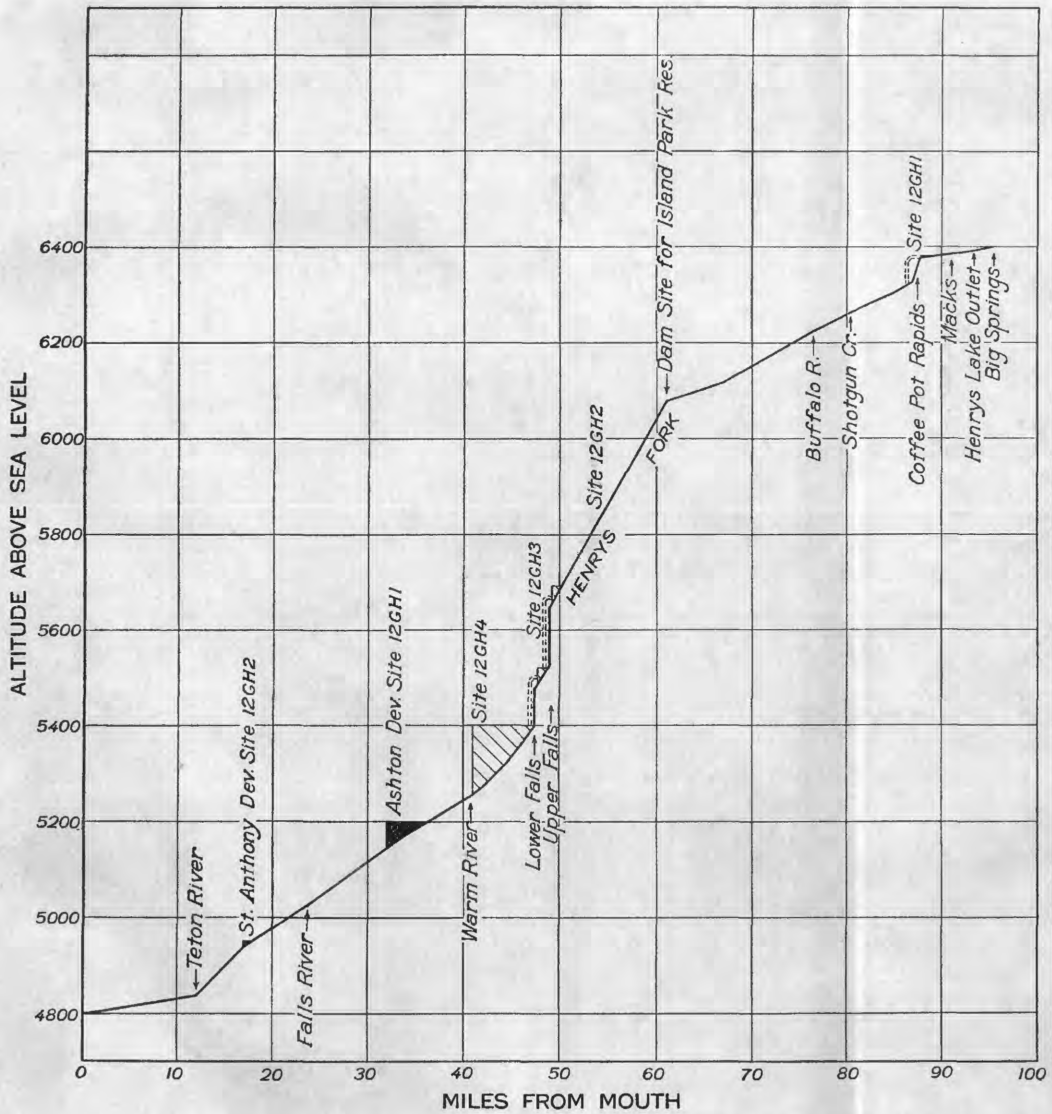


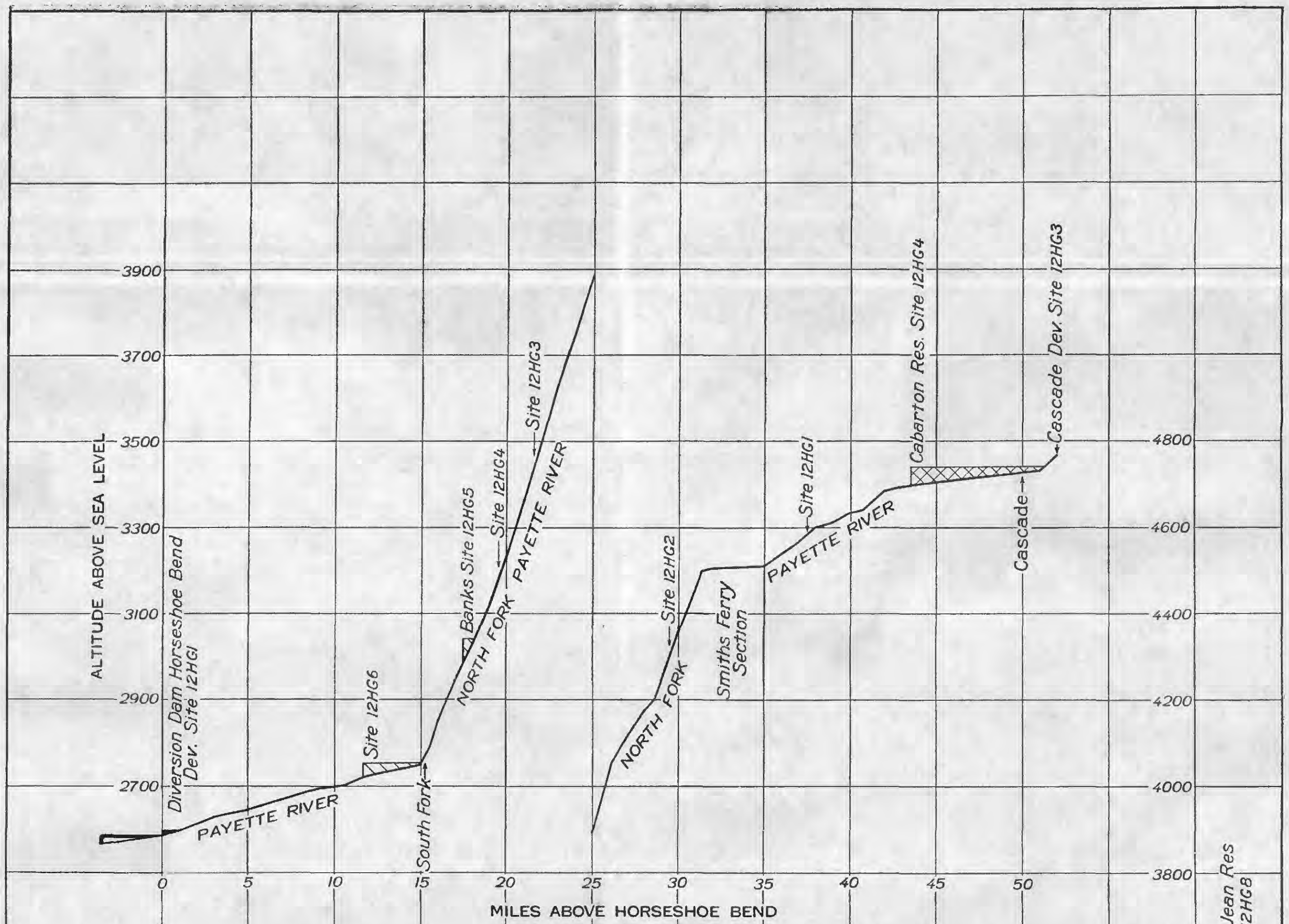
A. SNAKE RIVER IN VICINITY OF PITTSBURG BAR, OREGON-IDAHO.

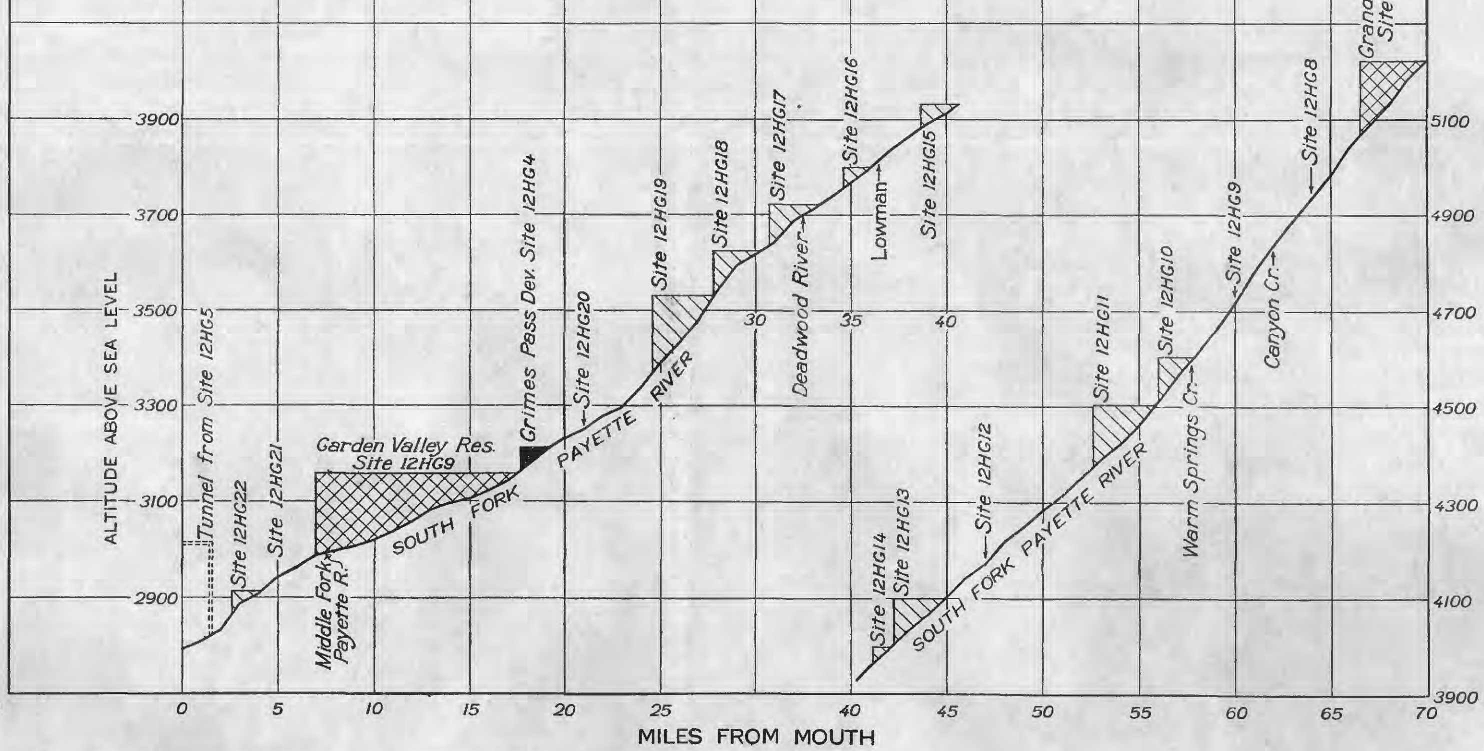
B. SNAKE RIVER AT JUNCTION WITH SALMON RIVER.
Figures in circles (in both views) indicate mileage from Lewiston, Idaho.



PROFILE OF BOISE RIVER AND NORTH, MIDDLE, AND SOUTH FORKS.







PROFILE OF PAYETTE RIVER, NORTH AND SOUTH FORKS OF PAYETTE RIVER, AND HENRYS FORK.

A. SALMON RIVER ABOVE RANIER RAPIDS.

B. SALMON RIVER AT RHEIMS UNDEVELOPED POWER SITE.

A. SALMON RIVER AT RED CANYON UNDEVELOPED POWER SITE.

B. SALMON RIVER AT SNOW HOLE UNDEVELOPED POWER SITE.

The difficulties of constructing and maintaining the long conduit suggested, as well as the probable poor foundation conditions at the dam site, make the suggested power scheme one of doubtful feasibility.

During the period October 29, 1927, to June 14, 1929, the Eastern Oregon Light & Power Co. held a preliminary permit from the Federal Power Commission for this site.

POWER AT TROY RESERVOIR SITE, OREGON (12HP 3)

This site is described on page 109. The lower 95 ft. of the site has a capacity of only 15,000 acre-ft. and therefore could be used more advantageously for the head it develops.

The feasibility of this scheme depends largely upon the geologic conditions at the dam site. In view of the probability of excessive leakage around the ends of a dam at this site, the power value is very small.

BOUNDARY SITE, WASHINGTON (12HP 5)

This scheme suggests the diversion of the Grande Ronde River just below the Troy site and a conduit to a powerhouse site in sec. 32, T. 7 N., R. 44 E. (See sheet A, Plan and profile, Grande Ronde River, for river plan, and pl. 25 for profile.) Either bank offers about the same advantages and obstacles. Altitude of water surface at powerhouse site, 1,316 ft.; gross head, 181 ft.

POWER AT RAYS FERRY RESERVOIR SITE, WASHINGTON (12HP 4)

A description of this site is given on page 109. A draw-down to the 1,235-ft. contour will give the highest yield of theoretical power for the river as a whole.

POWER AT THE NARROWS RESERVOIR SITE, WASHINGTON (12HP 5)

A description of this site is given on page 110. The principal value of the site will not be for the storage but for the head it develops. Roughly estimated, a draw-down of 40 ft., releasing 50,000 acre-ft., will give the highest power yield. A tunnel taking out at an altitude of 1,076 ft., near the heel of the horseshoe, would have a length of about 500 ft. The powerhouse site, approximately in the NW¼NE¼ sec. 26, T. 7 N., R. 46 E., would have an altitude of 878 ft., giving a gross head of 198 ft. at the bottom of the draw-down and a mean head during draw-down of 218 ft. On account of the probability of excessive leakage the site apparently has little value.

ROGERSBURG SITE, WASHINGTON (12HP 6)

Development is suggested by a conduit diverting at an altitude of 878 ft. just below the Narrows site. The right bank is considered the best adapted for conduit location. The powerhouse would be at the mouth of the river, where a gross head of 60 ft. could be obtained. Present Q90, 630 sec.-ft.; Q50, 1,480 sec.-ft.; the corresponding power capacity, 3,020 and 7,080 hp. With regulation, Q90, 1,560 sec.-ft.; Q50, 1,740 sec.-ft.; corresponding power capacity, 7,480 and 8,350 hp.

WENAHA RIVER

The Wenaha River, draining an area of 294 square miles, is the only large tributary of the Grande Ronde River between Rondowa and Joseph Creek. It heads in the Blue Mountains at an altitude of more than 5,000 feet. The numerous small tributaries of the headwater region descend rapidly to the main stream, which flows in a deep, narrow valley for about 19 miles to the Grande Ronde, at an average gradient of about 84 feet to the mile. The stream apparently has small power possibilities, which could be developed by conduits.

THE FORK SITE, OREGON (12HP 7)

The North Fork of the Wenaha River could be diverted in sec. 17, T. 6 N., R. 40 E. Willamette meridian, Washington, and the water carried by a conduit to a powerhouse at the junction of the forks, in sec. 36, T. 6 N., R. 40 E. Willamette meridian, Oregon, giving a gross head of 500 ft. The South Fork could be diverted just below the mouth of Mill Creek, in sec. 8 T. 5 N., R. 40 E., and the water carried by a conduit to the same powerhouse under a gross head of 1,000 ft. The drainage area of the North Fork above the proposed point of diversion is 18 square miles, and that of the South Fork 38 square miles.

BEAVER CREEK SITE, OREGON (12HP 8)

The scheme for this site would divert the Wenaha River just below the junction of the North and South Forks, in sec. 36, T. 6 N., R. 40 E.; pick up water from Beaver Creek, Butte Creek, Crooked Fork, and other minor tributaries; and carry the water by conduit to a powerhouse in the SW¼SE¼ sec. 36, T. 6 N., R. 42 E., at an altitude of 1,740 ft. The site would have a gross head of 1,460 ft. and would require 25 miles of conduit.

JOSEPH CREEK

Joseph Creek, the principal tributary to the Grande Ronde River below the Wenaha, drains an area of about 560 square miles. The creek has its source in a high, rolling plateau having a general altitude of about 4,000 feet.

The creek has many small intermittent tributaries which have their sources in the partly forested uplands. The main stream has cut its way into the plateau until its lower course lies about 2,000 feet below the general level. This lower canyon is a tortuous, V-shaped gorge, except in the last few miles, where it widens somewhat. Without the use of storage the stream is considered as having no feasible possibilities for power.

In 1930 a survey was made of a possible reservoir site in about sec. 10, T. 3 N., R. 45 E., near Chico. The altitude of the water surface is about 3,050 feet. A dam raising the water 140 feet would impound about 70,000 acre-feet. During the year ending June 1932 the run-off was 64,000 acre-feet, of which about 58,000 acre-feet occurred during March, April, and May. Deducting for possible evaporation losses but not for leakage indicates that it would have been possible to provide a uniform flow of about 75 second-feet. In the 35 miles below the Chico site Joseph Creek drops about 2,170 feet. With a regulated flow as assumed the potential power amounts to about 370 horsepower to the mile. It seems improbable, however, that the entire stretch could be feasibly developed. The valley sides in the lower 20 miles or more of the canyon are broken by basalt cliffs and talus slopes. Conduit construction and maintenance would be very expensive.