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EXCERPT FROM REPORT OF HERBERT V. CLOTTIS
ASSISTANT DIRECTOR OF IRRIGATION, JUNE 30, 1943

HOGBACK IRRIGATION UNIT _ NAVAJO RESERVATION

The Hogback project is one of the oldest, largest and most successful on the reservation. In 1903 or 1904 a small ditch was built to take water from the San Juan River about 9 miles above the Shiprock Agency. The heading was in solid rock and consisted of about 75 feet of tunnel with a timber headgate built by the Indian Service and about 4 miles of ditch built by the Indians at their own expense. The cost to the Government was \$350. Project surveys were begun in 1907 under Superintendent of Irrigation Harper. Superintendent Shelton and Assistant Engr. Hitter reported 767 acres being irrigated in 1908. In the fall of 1908 and spring of 1909 Consulting Engineer J. H. Quinton reported favorably upon the proposed project. The canal was to be 12- $\frac{1}{2}$ miles long to cover 3,900 acres of land. Actual work was commenced in May 1909 and continued during 1910-11, when a new concrete heading and a new main canal were started. In July 1911 there occurred the heaviest flood known from the time of earliest settlement, doing considerable damage to the canal. Another flood in September further damaged the canal and in the first week of October general rains caused a larger flood than in July, the water reaching a point about 5 feet higher. Water went over the entire headgate, destroyed about 600 feet of canal, making it necessary to change the entire plan of headworks. The total expenditures on this project in 1909 to 1913 fiscal years amounted to \$180,880.44.

In 1933-36 the diversion was strengthened and the main canal extended, 1100 feet of canal lined, 500 acres subjugated and bank protection work improved.

The water supply is obtained by direct diversion from the San Juan River. A filing on 100 sec. ft. of water was made with the State Engineer March 15, 1913, approved August 11, 1913.

The project works consist of a loose rock weir built in 1932-33 under PWA, reinforced concrete headgates, 18 miles of main canal with 45 structures, 42 miles of laterals with 500 structures, concrete automatic wasteway, 3 sand sluices, 6 metal flumes and 2 metal inverted siphons. Also 2 miles of drainage canals and 2 miles of dikes. Some rough leveling has been done on the lower part of the project.

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