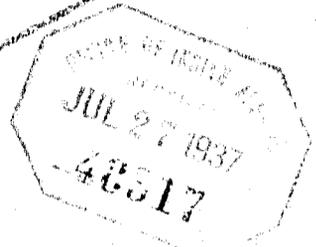


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NARRATIVE & COST REPORT  
FOR  
FISCAL YEAR 1937



NAVAJO SERVICE IRRIGATION DIVISION  
WINDOW ROCK ARIZONA



E. R. FRYER  
GENERAL SUPERINTENDENT



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June 1937

HOPI CONSTRUCTION  
LOWER DENEBITO PROJECT

J. Len Westerman, Assistant Engineer, employee in charge.

This project is located on the Denebito Wash approximately 14 miles north of Oraibi, Arizona, and in Land Management District No. 4.

Work was started in the latter part of November and has been continued through the remainder of the fiscal year. It was necessary to curtail construction for six weeks in the winter, due to weather conditions. A reinforced concrete buttress type diversion dam 160 feet in length and 11 feet high, with a stilling pool wall 12 feet from the downstream toe was completely constructed. In connection an outlet box from the dam and a silt trap with a radial type gate were built. All concrete work set on solid rock footings.

One mile of the main canal containing 16,500 cubic yards was excavated with a dragline at a cost of 87 cents per cubic yard. A 160 foot steel flume was designed with a 36-foot-center-truss section.

This project is still in the course of construction and the work will be carried on during the fiscal year 1938.

ORAIBI WASH PROJECT

This project is located on Oraibi Wash approximately 15 miles northeast of Oraibi, Arizona.

To make it possible to remove the silt which collects in front of the headgate at the diversion dam, a radial sluice gate was installed in

(Oraibi Wash Project - Continued)

the dam adjacent to the wing well on which the headgate is located. This was accomplished by removing a section of the rock masonry and constructing a concrete sluice structure with a 4 by 4-foot radial gate. In addition to this work some minor repairs were made to the canal.

Lower Denebito Project

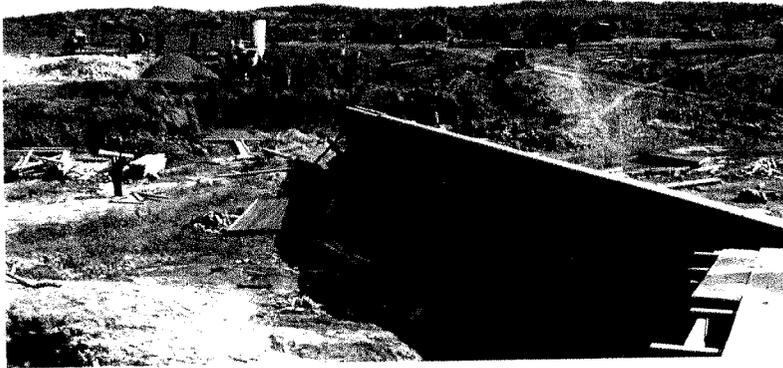


Dragline excavating main canal.

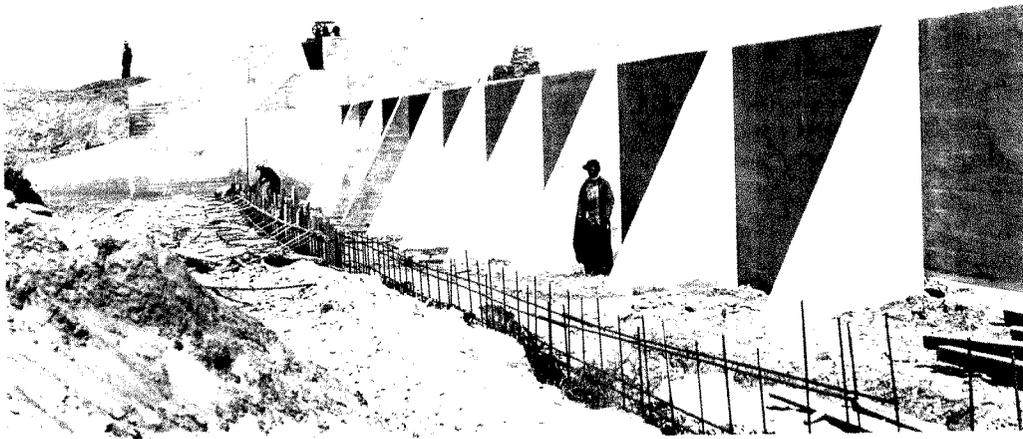


Lower Denebito Diversion Dam during construction

LOWER DENEBITO PROJECT



Lower Denebito Diversion Dam during construction



Lower Denebito Diversion Dam

June, 1937

WATER SUPPLY, NAVAJO and HOPI

John J. Schwarz, Foreman, employee in charge.

Regular inspections of windmills, wells, tanks and troughs were made throughout the fiscal year 1937 by four regular maintenance crews operating over the entire Navajo and Hopi reservations. An average of 106 wells equipped with windmills were inspected each month, and repairs made wherever necessary. In cooperation with the Education Division eight day school wells were repaired during the year by irrigation forces.

A program of revamping dug wells and springs which was initiated during the last fiscal year was carried on throughout this fiscal year in the northern, southern and western Navajo Divisions. Under this program there were 137 springs and 55 dug wells completely revamped. This work consisted mainly of cleaning out the well or spring, replacing the gravel filter and cleaning, repairing or replacing the pipe lines leading from the well or spring to the troughs. Due to the lowering of the water table in several small valleys, it was necessary to revamp three springs into dug wells.

During the fiscal year the 15 wells tabulated below were drilled in Arizona and New Mexico.

Number	Location	Depth	Capacity 24-hour run
88	At Rock Point store, Arizona	124 feet	40,000 gallons
90	Near Red Rock, north of Round Rock, Arizona	165 feet	17,280 gallons
339	At Fraziers Store, Arizona	190 feet	43,200 gallons
403	Three miles north of Chinle, Arizona	130 feet	38,880 gallons

(Water Supply, Navajo and Hopi - Continued)

Number	Location	Depth	Capacity 24-hour run
404	Sixteen miles south of Chinle, Arizona at Short Canyon	92 feet	14,400 gallons
406	Four miles east of Round Rock, Arizona	280 feet	72,000 gallons
407	Four miles southeast of Round Rock, Arizona	202 feet	10,080 gallons, artesian flow
408	At Round Rock store, Arizona	750 feet	5,760 gallons, artesian flow
428	Many Farms, Arizona, near Chinle	110 feet	20,160 gallons
440	Four miles northwest of Round Rock, Arizona	800 feet	7,280 gallons, artesian flow
630	At Wide Ruins, Arizona	130 feet	37,460 gallons
641	Eight miles southwest of Standing Rock, New Mexico	384 feet	7,200 gallons
642	Five miles east of Twin Lakes, New Mexico	873 feet	144,000 gallons, artesian flow
643	Six miles south of Stony Butte, New Mexico	942 feet	40,320 gallons
644	Six and one-half miles northeast of Tohatchi, New Mexico	155 feet	25,800 gallons

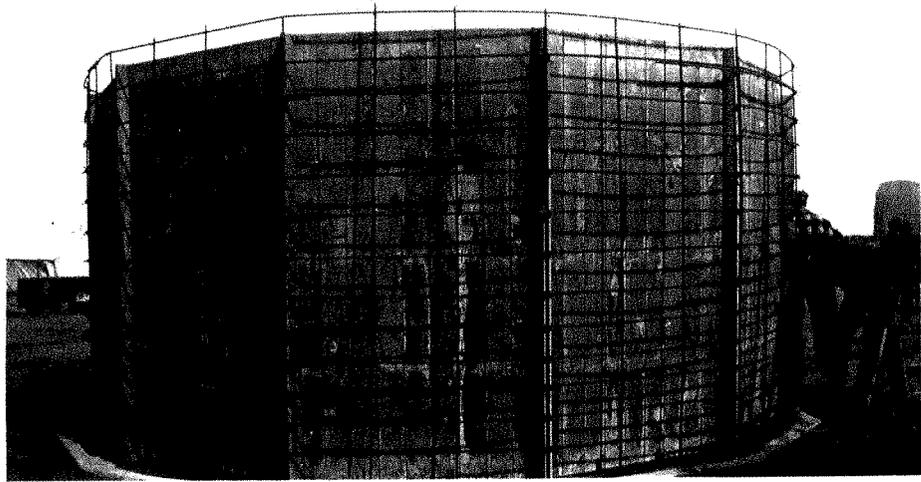
During the latter part of the year concrete tanks with a capacity of 10,000 gallons were constructed at the following wells: Nos. 88, 90, 106, 335, 339, 354, 367, 406, 428 and 748. These tanks which are entirely of reinforced concrete construction have a radially reinforced concrete top. In many sections of the Navajo country it has become necessary to construct covered tanks due to the rapid evaporation during the hot, dry summer months, the blowing of sand in the spring months and the freezing during the extremely cold winter months.

During the year a new type of concrete trough with a concrete apron was developed so that both sheep and larger stock could be watered advan-

(Water Supply, Navajo and Hopi - Continued)

tageously. These troughs are 24-feet long and arranged in such a manner that 36 sheep can drink at each trough simultaneously without crowding. Thirty-one of these troughs have been constructed at various windmills and springs and have so far proved to be much more satisfactory than the old type of troughs.

NAVAJO AND HOPI WATER SUPPLY



Construction of Concrete Water Tanks

NAVAJO AND HOPI WATER SUPPLY



Concrete Tank and low Type Trough