

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

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RECEIVED **JAN 8 1979**
DATE ENTERED **JAN 29 1979**

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC

Walnut Canyon Dam

AND/OR COMMON

Santa Fe Dam

LOCATION

STREET & NUMBER

Approximately 12 miles SE of Flagstaff

NOT FOR PUBLICATION

CITY, TOWN

Winona *Flagstaff*

VICINITY OF

CONGRESSIONAL DISTRICT

3

STATE

CODE

Arizona

04

COUNTY

Coconino

CODE

005

CLASSIFICATION

CATEGORY

OWNERSHIP

STATUS

PRESENT USE

DISTRICT

PUBLIC

OCCUPIED

AGRICULTURE

MUSEUM

BUILDING(S)

PRIVATE

UNOCCUPIED

COMMERCIAL

PARK

STRUCTURE

BOTH

WORK IN PROGRESS

EDUCATIONAL

PRIVATE RESIDENCE

SITE

PUBLIC ACQUISITION

ACCESSIBLE

ENTERTAINMENT

RELIGIOUS

OBJECT

IN PROCESS

YES: RESTRICTED

GOVERNMENT

SCIENTIFIC

BEING CONSIDERED

YES: UNRESTRICTED

INDUSTRIAL

TRANSPORTATION

NO

MILITARY

OTHER

OWNER OF PROPERTY

NAME

Atchison, Topeka and Santa Fe Railroad Company

STREET & NUMBER

80 East Jackson Boulevard

CITY, TOWN

Chicago

VICINITY OF

STATE

Illinois 60640

LOCATION OF LEGAL DESCRIPTION

COURTHOUSE,
REGISTRY OF DEEDS, ETC.

Coconino County Courthouse

STREET & NUMBER

CITY, TOWN

Flagstaff

STATE

Arizona

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

DATE

FEDERAL STATE COUNTY LOCAL

DEPOSITORY FOR
SURVEY RECORDS

CITY, TOWN

STATE

7- DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input checked="" type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input checked="" type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input type="checkbox"/> ALTERED	<input type="checkbox"/> MOVED DATE _____
<input type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The Walnut Canyon Dam in Walnut Canyon is dwarfed by the steep-sided 400 foot walls of the winding canyon that cuts through the high forest lands of north central Arizona. Oak, ponderosa, and Douglas fir cover the rim lands and spill down over the steep walls. The twists and turns of the canyon cause some slopes to receive far more sun than others. In these areas the vegetation changes to sage, yucca, and cactus. The canyon walls are composed of Kaibab marine limestone layers resting on a smaller cross-bedded Toroweap formation of fossil sandstone. Walnut, Creek, which carved this spectacular formation, is a normally permanent stream.

Rising sharply from the solid rock bottom of Walnut Canyon at an elevation of 6,100 feet is the Walnut Canyon Dam, a coursed ashlar limestone structure just outside the northeast corner of Walnut Canyon National Monument. The bottom of the canyon was so filled with debris of earth and stone that it was necessary to excavate 28 feet below the surface to reach bedrock, on which the dam was erected. The width at this point was but 30 feet, at the surface of the streambed 120 feet, and at the top of the dam 268 feet. The dam is 77.6 feet in height, with a thickness at its base of over 60 feet. The top of the dam is rounded in a parabolil and is 13 feet thick at a point 10 feet below the crest. The dam is arched upstream, constructed of tan, white, and grey colored limestone blocks mortared with portland cement. The crest is capped by coping consisting of a single tier of oblong, cut stones placed end-to-end. Limestone blocks used in construction of the dam were quarried from the adjacent canyon walls. This design forms an exceedingly massive structure with an unusually large factor of safety.

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input checked="" type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
<input checked="" type="checkbox"/> 1800-1899	<input type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input checked="" type="checkbox"/> TRANSPORTATION
<input type="checkbox"/> 1900-	<input type="checkbox"/> COMMUNICATIONS	<input type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)
		<input type="checkbox"/> INVENTION		

SPECIFIC DATES

1897-1898

BUILDER/ARCHITECT

R.B. Burns

STATEMENT OF SIGNIFICANCE

The Walnut Canyon Dam serves to illustrate man's ability to secure a permanent water supply in an arid environment.

One of the earliest utiliziers of water in Walnut Creek were the Sinagua people, who built their cliff houses along the canyon walls in the 12th and 13th centuries, and irrigated their crops growing in the canyon bottom lands.

The dam was constructed to supply water to the Transcontinental Atlantic and Pacific Railroad (later to become the Atchison, Topeka and Santa Fe Railroad). Rainfall is light in most of the area of northern Arizona where the railroad was being constructed, and there were no dependable permanent supplies of fresh water for the trains and stations along the route. Exploration into the canyons of Arizona's ponderosa forests revealed springs from which water could be piped to the railroad and hauled in tank cars. Even this did not supply the needed quantity; a dam was needed. Walnut Creek was a permanent stream and its narrow steep sided canyon was ideal for a dam site.

The dam was built from quarried limestone from the canyon, and a rail line was extended inside the canyon from Winona to the dam site for the construction, later to be used for water tank cars carrying water to the main line. The track was abandoned and removed in 1897 when a pipe line was put in. The water traveled by gravity flow to storage tanks at Angel near the main line at Winona. The exact date of construction is unknown, but the reservoir filled up for the first time on March 8, 1898. Construction dates vary, but it is generally accepted that the dam was built in 1885 or 1886.

In 1903, D.M. Riordan built a dam upstream to create Lake Mary, to augment the water supply for the City of Flagstaff, and thus reduced considerably the flow of water in Walnut Creek. In 1939, local stockmen from the Kellum Ranch decided to release some of the water held by the railroad dam, for use by their stock downstream. They set off some dynamite near the north end of the dam, loosening the masonry to allow water to leak out, even when the water level was quite low.

In spite of these two diversions, the railroad pipeline continued in use until 1944. At that time, deep wells near the stations were drilled, and the dam and its water storage were no longer needed by the railroad.

The dynamite did little structural damage, and despite the impoundment of water at Lake Mary, the Walnut Canyon still holds water and occasionally overflows. The remoteness of the site has allowed the Walnut Canyon Dam and its setting to remain virtually unchanged.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

Arizona Republic, October 10, 1968.

Correspondence with owner, 1978.

Interview, Superintendent of Walnut Canyon National Monument, 1977.

Schuyler, James Dix. Reservoirs for Irrigation Water-Power and Domestic Water-Supply, 1909 (supplied by Donald Jackson, HAER, to assist SHPD)

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY 2½

UTM REFERENCES

A | 1, 2 | 4 | 5, 6 | 7, 4, 0 | 3, 8 | 9, 1 | 4, 0, 5 |
 ZONE EASTING NORTHING

B | 1, 2 | 4 | 5, 6 | 7, 4, 5 | 3, 8 | 9, 1 | 3, 5, 5 |
 ZONE EASTING NORTHING

VERBAL BOUNDARY DESCRIPTION

NE4 NE4 NW4 W2 Sec 31 T21N R9E

Lying in Walnut Canyon approximately 40 meters from the east boundary line of Walnut Canyon National Monument.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE Thomas S. Rothweiler
 Marjorie H. Wilson

Registrar
 Contract Historian

ORGANIZATION

Heritage Conservation Section, Arizona State Parks

DATE

January 3, 1979

STREET & NUMBER

1688 West Adams

TELEPHONE

(602) 271-4174

CITY OR TOWN

Phoenix

STATE

Arizona 85007

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL

STATE

LOCAL X

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

TITLE

Dorothy H. Hall

DATE

1-2-79

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

[Signature]

DATE

1/29/79

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

KEEPER OF THE NATIONAL REGISTER

ATTEST:

Bill Labovich

DATE

1/26/79

KEEPER OF THE NATIONAL REGISTER