



# WATER-RIGHT DOCKET

## Aztec Ruins National Monument

Docket No: 2

WATER SYSTEM.

Preliminary Docket Information

02-03-1961: water right/source docket information - supplemental information for docket 2, part 1, domestic water supply, aztec rui

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Aztec Ruins National Monument  
Aztec, New Mexico

February 3, 1961

### ORIGINAL WATER WELL SUPPLY SYSTEM

### AZTEC RUINS NATIONAL MONUMENT

### SUPPLEMENTAL INFORMATION

Filed in Docket 2, Part 1, Domestic Water Supply, Aztec Ruins National Monument, dated September 29, 1960, is information pertaining to the original and only well drilled on the Monument. The following information is to be filed as supplemental to the data mentioned above.

Water for use in the Visitor Center and residences is now obtained from the City of Aztec. The amount of water consumed during the first year of service, August 1958 through July, 1959, was approximately 803,500 gallons. This figure represents the amount of water which would have been supplied by the well during that period.

The well is now used for supplying water for care of grounds on the north side of the Visitor Center only. The well water is not used in lieu of, or supplemental to, the irrigation water from the ditch. The ditch water is used for irrigation from the east end of the Visitor Center to the boundary fence on the east and to the boundary fence on the south.

(Signed)

John F. Turney  
Superintendent

WATER DOCKET INFORMATION

A R E A AZTEC RUINS N. M.

DOCKET NO. 2

APPLICATION NO. \_\_\_\_\_

PERMIT NO. \_\_\_\_\_

CERTIFICATE NO. \_\_\_\_\_

TITLE OF DOCKET DOMESTIC WATER SUPPLY. PART I - WELL SUPPLY  
PART II- CITY SUPPLY

PRIORITY PART I - June 1931  
PART II - June 30, 1958

REMARKS: AZR U now uses Aztec city water.

Area: Aztec Ruins NM Docket #2

Title of Docket: Domestic Water Supply-Part I Well Supply

*U.S. Post-Box 6, 11th Ave. Part II City Supply  
Berkeley, Cal. 94702. Part I & II. OK 1/9 effective 12/1/58.*

1. Three-page Completion Report of Construction Project, submitted by Albert G. Henson, Superintendent, dated October 11, 1958
2. Apeco-copy of drawing NM-AZT-4953 of original well supply system, dated September 15, 1960  
*copy 2/2/58, 1958, 1959*
3. Original Water Well Supply System, Aztec Ruins NM, dated September 29, 1960, John P. Turney, Superintendent. Enclosure Log of Water Well, L. E. Teague  
*copy of original well supply system, dated 2/2/61, John P. Turney, Supt.*
4. Analytical Statement, Lab No. 54196, dated April 13, 1964 ✓
5. Analytical Statement, Lab No. 056701, dated April 5, 1965 ✓
6. Analytical Statement, Lab No. 058827, dated February 3, 1966 ✓
7. Analytical Statement, Lab No. 061448, dated April 14, 1967 ✓
8. Analytical Statement, Lab No. 063301, dated January 30, 1968 ✓

Area: Aztec Ruins NM Docket #2

Title of Docket: Domestic Water Supply - Part I - Well Supply  
Part II- City Supply

1. Letter to Johnwill Faris, Custodian, from H. B. Hommon, Sanitary Engineer In Charge, dated 6/23/1933.
2. Letter to Berkeley Pump Corporation from Irving D. Townsend, Custodian, dated 11/17/1947.
3. Letter to U.S.D.I., National Park Service, from Berkeley Pump Company dated 12/9/1947.
4. Letter to Berkeley Pump Corporation from Irving D. Townsend, Superintendent, dated 10/18/1952.
5. Letter to Berkeley Pump Corporation from Irving D. Townsend, Superintendent, dated 10/26/1952.
6. Memo to Regional Director, Region Three, from Chief, Water Resources Section, dated 1/23/1959.
7. Memo to Regional Director from Superintendent, Aztec Ruins, dated 3/30/1959.
8. Memo to Regional Director, Region Three, from Chief, Water Resources, dated 9/15/1960.
9. Memo to Superintendent, Aztec Ruins, from Regional Director dated 9/22/1960.
10. Memo to Regional Director from Superintendent, Aztec Ruins, dated 9/29/1960.
11. Memo to Superintendent, Aztec Ruins, from Acting Regional Director dated 10/10/1960.
12. Memo to Director from Assistant Regional Director dated 12/7/1960.
13. Memo to Regional Director, Region Three, from Chief, Water Resources Section, dated 12/14/1960.
14. Memo to Regional Director from Superintendent, Aztec Ruins, dated 2/3/1961.
15. Memo to Director from Assistant Regional Director dated 2/10/1961.
16. Memo to Superintendent, Aztec Ruins, from Acting Assistant Regional Director, Operations, dated 4/10/1964.
17. Memo to Superintendent, Aztec Ruins, from Assistant Regional Director, Operations, dated 7/22/1965.
18. Memo to Superintendent, Aztec Ruins, from Hydraulic Engineer, SSC, Santa Fe, dated 11/7/1966.

Area: Aztec Ruins NM Docket #2

Title of Docket: Domestic Water Supply-Part I Well Supply  
Part II City Supply

1. Standard Government Short Form Contract dated 6/27/31 for an invitation to bid on a 500 gallon pressure tank and 50 feet galvanized pipe.
2. Berkeley Jet Pump Part List and information concerning pump.
3. Invoice from Berkeley Pump Corporation dated 10/2/41 ordering pressure pump
4. Agreement between U.S. Government and the Church of the Seventh Day Adventist of Farmington, New Mexico dated 6/30/1949.
5. Apeco-copy of drawing NM-AZT-4953 of original well supply system dated September 15, 1960.
6. Three-page Completion Report of Construction Project, submitted by Albert G. Henson, Superintendent, dated October 11, 1958.
7. Record of water consumed from August, 1958 through July, 1959.
8. Original Water Well Supply System,

Administrative Agreements

This Agreement made and entered into this 26<sup>th</sup> day of September, 1956, by and between the United States of America, acting in this behalf by John M. Davis, General Superintendent, Southwest National Monuments, party of the first part, hereafter referred to as the "Government" and the Town of Atee, New Mexico, hereinafter referred to as the "Town":

Witnesseth : That the Government, in consideration of the covenants and agreements hereinafter stated to be performed by the Town, hereby covenants and agrees, to contribute \$5,595.00 to cover a part of the cost of constructing 4550 feet of 6" water main and 3040 feet of 8" sewer main, in accordance with standard city specifications, as more specifically shown on the map attached hereto and made a part hereof. The water main shall remain the property of the Town, but the Town agrees henceforth to furnish water and sewer service to the Government at rates not in excess of rates charged the general public. The payment by the Government shall be made upon completion of the main, and upon being presented with a certified bill and a signed statement that all work to enable the Government to tie into the utilities has been performed. The above-mentioned sum of \$5,595.00 is available under the Interior Department appropriation act for the fiscal year 1957.

The Town Agrees:

a. To reimburse the Government on a prorata share (based on the ratio of the Government contribution bears to other contributions for initial construction of this project) for each new and additional water and sewer connection not shown on the attached plan until the Government's investment is fully repaid without interest. This reimbursement shall be made on January 1 and July 1 of each year, or a report rendered by the Town that there were no connections authorized during that six month period.

The Town agrees to authorize only those water and sewer connections as will assure the Government an adequate supply of water and adequate sewage disposal for sanitary and domestic purposes at all times and to maintain sufficient pressure on the water lines to provide an adequate supply for fire protection. Provided that the Town will have the right to increase the capacity of the mains at any time demand therefor is indicated without advance approval of the Government.

b. The Town agrees to provide a standard Town fire plug at the point at which the water main connects with the Government main. The Town also agrees to provide a master meter at the point at which the water main connects with the Government main.

c. All of the water and sewer mains, including the man-holes at the main terminals are to be maintained by the Town. Water and sewer lines inside the Monument will be maintained by the Government. In the event of a shortage of water due to a breakdown of Town facilities, the Government shall be entitled to receive a prorata share of the water made available for general consumption, but shall be subject to the same general restrictions as may be placed on other users.

d. The Town further agrees that it will provide the Government with a pure and wholesome supply of water and that it will maintain the main supply lines in such condition as at all times will insure the Government of its prorata share of available and pure supply of water. The Town agrees that it will at all times maintain its sewer lines open so that all sewerage can be disposed of as recommended by State Sanitary Code for the State of New Mexico.

e. "Nothing in this agreement shall bind the Government to expend in any fiscal year a sum greater than the funds appropriated by the Congress and available for the purposes expressed herein for that fiscal year.

f. In connection with the performance of work under this contract, the contractor agrees not to discriminate against

any employee or applicant for employment because of race, religion, color, or national origin. The aforesaid provision shall include, but not be limited to, the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

The Contractor further agrees to insert the foregoing provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

No member of or Delegate to Congress or Resident Commissioner shall be admitted to any share or part of this agreement or to any benefit that may arise therefrom, but this restriction shall not be construed to extend to this agreement if made with a corporation or company for its general benefit.

In Witnesseth Whereof the said parties have hereunto  
subscribed their names and affixed their seals the day, month, and  
year aforesaid.

United States of America:

By John M. Davis  
General Superintendent  
Southwestern National Monuments

This agreement is executed on  
behalf of the Town of Astec  
pursuant to a resolution of its  
governing body dated Sept 26,  
1956

By R. F. Simmons  
Clerk, Town of Astec.

Town of Astec:

By Ernest C. Arnold  
Mayor, Town of Astec

Attachment: Executed Map



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
AZTEC RUINS NATIONAL MONUMENT  
AZTEC, NEW MEXICO

SAV  
Building # -  
FOLDER

AGREEMENT, between the United States Government and the Church  
of the Seventh Day Adventist of Farmington, New Mexico.

It is agreed that the membership of the Seventh Day Adventist Church of Farmington, New Mexico will remove within 30 days all appts of the old building located at Aztec Ruins National Monument, Aztec, New Mexico, including foundations, footings and steps, and level the site and leave the site clean; in exchange for which they may retain for their own use any part of the above adobe house including the lavatory, water closet, bath tub, sink, gas water heater, kitchen and bathroom cabinets, kitchen range, two small gas heaters, light fixtures, wiring and plumbing within the exterior walls of the building.

It is agreed that this work will be completed as above indicated, by the close of business June 30, 1949.

In agreement hereto, we the undersigned place our names.

  
\_\_\_\_\_  
Pastor or Agent for Seventh Days  
Adventist Church

  
\_\_\_\_\_  
Irving D. Townsend, Superintendent  
Aztec Ruins National Monument,  
Agent for the United States Government.

Aztec Ruins National Monument  
Aztec, New Mexico

L54

February 3, 1961

ORIGINAL WATER WELL SUPPLY SYSTEM

AZTEC RUINS NATIONAL MONUMENT

SUPPLEMENTAL INFORMATION

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The well is now used for supplying water for care of grounds on the north side of the Visitor Center only. The well water is not used in lieu of, or supplemental to, the irrigation water from the ditch. The ditch water is used for irrigation from the east end of the Visitor Center to the boundary fence on the east and to the boundary fence on the south.

(Signed)

John F. Turney  
Superintendent

Record of water consumed from August, 1958 through July, 1959.  
First year of service on City of Aztec water lines:

| Mo.    | Visitor Center | Res. #1 | Res. #8 | Grounds | Trailer | Res. #9 |
|--------|----------------|---------|---------|---------|---------|---------|
| Meter# | 1040           | 1041    | 1042    | 1043    | 1044    | 1045    |
| Aug.   | 34,200         | 24,100  | 61,900  | 36,300  | 5,900   |         |
| Sept.  | 17,200         | 12,400  | 34,900  | 12,000  | 1,900   |         |
| Oct.   | 4,700          | 10,600  | 11,800  | 6,600   | 2,600   |         |
| Nov.   | 2,700          | 12,000  | 11,900  | 700     | 1,900   |         |
| Dec.   | 3,200          | 11,000  | 10,600  | --      | 10,900  |         |
| Jan.   | 3,700          | 13,700  | 10,800  | 2,500   | --      |         |
| Feb.   | 2,000          | 10,200  | 12,700  | 500     | --      | 500     |
| Mar.   | 6,900          | 7,600   | 11,700  | --      | --      | 5,600   |
| Apr.   | 8,500          | 8,400   | 10,500  | --      | --      | 3,700   |
| May    | 33,900         | 11,100  | 21,900  | --      | --      | 800     |
| Jun.   | 85,500         | 10,300  | 20,200  | 4,000   | --      | 9,500   |
| Jul.   | 93,500         | 10,300  | 16,200  | 11,600  | 700     | 12,500  |
| Total  | 296,000        | 141,700 | 235,100 | 71,200  | 23,900  | 32,600  |

|         |      |                  |
|---------|------|------------------|
| Meter # | 1040 | 296,000          |
| Meter # | 1041 | 141,700          |
| Meter # | 1042 | 235,100          |
| Meter # | 1043 | 71,200           |
| Meter # | 1044 | 23,900           |
| Meter # | 1045 | <u>32,600</u>    |
| Total   |      | 803,500 gallons. |

(Signed)

John F. Turney  
Superintendent

Record of water consumed from August, 1958 through July, 1959.  
First year of service on City of Aztec water lines:

| Mo.    | Visitor Center | Res. #4 | Res. #8 | Grounds | Trailer | Res. #9 |
|--------|----------------|---------|---------|---------|---------|---------|
| Meter# | 1040           | 1041    | 1042    | 1043    | 1044    | 1045    |
| Aug.   | 34,200         | 24,100  | 61,900  | 36,300  | 5,900   |         |
| Sept.  | 17,200         | 12,400  | 34,900  | 12,000  | 1,900   |         |
| Oct.   | 4,700          | 10,600  | 11,800  | 6,600   | 2,600   |         |
| Nov.   | 2,700          | 12,000  | 11,900  | 700     | 1,900   |         |
| Dec.   | 3,200          | 11,000  | 10,600  | --      | 10,900  |         |
| Jan.   | 3,700          | 13,700  | 10,800  | 2,500   | --      |         |
| Feb.   | 2,000          | 10,200  | 12,700  | 500     | --      | 500     |
| Mar.   | 6,900          | 7,600   | 11,700  | --      | --      | 5,600   |
| Apr.   | 8,500          | 8,400   | 10,500  | --      | --      | 3,700   |
| May    | 33,900         | 11,100  | 21,900  | --      | --      | 800     |
| Jun.   | 35,500         | 10,300  | 20,200  | 4,000   | --      | 9,500   |
| Jul.   | 23,500         | 10,300  | 16,200  | 11,600  | 700     | 12,500  |
| Total  | 296,000        | 141,700 | 235,100 | 74,200  | 23,900  | 32,600  |

Meter # 1040 296,000

Meter # 1041 141,700

Meter # 1042 235,100

Meter # 1043 74,200

Meter # 1044 23,900

Meter # 1045 32,600

Total 803,500 gallons.

(Signed)

John F. Turney  
Superintendent

|                                                                    |                                          |                                                                     |                                                          |                                       |     |
|--------------------------------------------------------------------|------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------|---------------------------------------|-----|
| G.W. <u>                    </u>                                   |                                          | Type Analysis <u>A-1, no Fe sol'n.</u> USGS CHEMICAL ANALYSIS       |                                                          | Account <u>20MP</u>                   | (8) |
| State <u>New Mexico</u>                                            | County <u>San Juan</u>                   | Location <u>Aztec Ruins Nat'l. Mon.</u>                             |                                                          | Project <u>34</u>                     |     |
| Latitude-Longitude <u>                    </u>                     |                                          | Well No. <u>                    </u>                                | Date Collected <u>1-30-68</u>                            |                                       |     |
| Owner <u>City of Aztec, Aztec, NM.</u>                             | Date Drilled <u>                    </u> | Public water Source supply <u>                    </u>              | Depth (ft) <u>                    </u>                   | Diam (in) <u>                    </u> |     |
| pH..... <u>7.7</u> Temp. (°C) <u>                    </u>          |                                          | Specific Conductance, micromhos at 25°C <u>                    </u> |                                                          | <u>725</u>                            |     |
| Hardness as CaCO <sub>3</sub> :<br>Total, mg/L..... <u>304</u>     |                                          | Concentrations in milligrams per liter (mg/L)                       |                                                          |                                       |     |
| Noncarbonate, mg/L. <u>142</u>                                     |                                          | Silica (SiO <sub>2</sub> )..... <u>8.2</u>                          | Bicarbonate (HCO <sub>3</sub> )..... <u>198</u>          |                                       |     |
| Dr. <u>0</u> Sodium-adsorption ratio..... <u>0.9</u>               |                                          | Calcium (Ca)..... <u>95</u>                                         | Carbonate (CO <sub>3</sub> )..... <u>0</u>               |                                       |     |
| %Na..... <u>21</u> Tons per acre ft... <u>                    </u> |                                          | Magnesium (Mg)..... <u>16</u>                                       | Sulfate (SO <sub>4</sub> )..... <u>174</u>               |                                       |     |
| Density, g/ml at 20°C <u>                    </u>                  |                                          | Sodium (Na)..... <u>37</u>                                          | Chloride (Cl)..... <u>32</u>                             |                                       |     |
| W.B.F. <u>                    </u>                                 |                                          | Potassium (K)..... <u>4.2</u>                                       | Fluoride (F)..... <u>0.4</u>                             |                                       |     |
| Producing Intervals <u>                    </u>                    |                                          | Na+K (Calculated)..... <u>                    </u>                  | Nitrate (NO <sub>3</sub> )..... <u>0.8</u>               |                                       |     |
| W.L. <u>                    </u>                                   |                                          | Dissolved Iron (Fe).... <u>                    </u>                 | Boron (B)..... <u>0.12</u>                               |                                       |     |
| Sampled after Pumping (Time) <u>                    </u>           |                                          | Total Iron (Fe)..... <u>0.02</u>                                    | Dissolved Solids:<br>Sum of Constituents..... <u>465</u> |                                       |     |
| Yield <u>                    </u>                                  |                                          |                                                                     | Residue on Evaporation<br>at 180°C..... <u>496</u>       |                                       |     |
| Pt of Collection <u>Deep sink, visitor center</u>                  |                                          |                                                                     |                                                          |                                       |     |
| Appearance <u>                    </u>                             |                                          |                                                                     |                                                          |                                       |     |
| Use <u>Public Supply</u>                                           |                                          |                                                                     |                                                          |                                       |     |
| Collected by <u>G.L.W., Nat'l. Park Service</u>                    |                                          |                                                                     |                                                          |                                       |     |
| Remarks:                                                           |                                          |                                                                     |                                                          |                                       |     |
| Chemist <u>RL, EP</u> Checked By <u>EFW</u>                        |                                          |                                                                     |                                                          |                                       |     |
| <u>GS, BR, SWA</u>                                                 |                                          |                                                                     |                                                          |                                       |     |
| Date Completed <u>3-14-68</u>                                      |                                          |                                                                     |                                                          |                                       |     |
| Date Transmitted <u>1-30-68</u>                                    |                                          |                                                                     |                                                          |                                       |     |
| Laboratory No. <u>                    </u>                         |                                          |                                                                     |                                                          |                                       |     |

Provisional records, subject to revision.

Exp. form: 6-66 (7/66)  
 Geological Survey  
 UNITED STATES DEPARTMENT OF THE INTERIOR  
 Surface Water Analysis  
 Water Resources Division 6

Lat. 31° 15' N Long. 106° 15' W  
 River basin SAN JUAN Sta. Ident. No. 1 Date of collection APRIL 14, 1967 Frequency ANNUAL D<sup>b</sup> Y 04 14 67

Stream and location SAN JUAN RIVER, AZTEC, NM - AZTEC RUINS NAT'L MON. County SAN JUAN Discharge (cfs) 15  
 Collected by J.W. FISHER - N.P.S. Lab. No. 61448 Project No. 20 NPS-C Appearance Wc CLEAR Wa 15 Gage height (ft) 21 Time 11:18

| ppm              |                               | epm            |                | ppm                            |                                | epm            |                |
|------------------|-------------------------------|----------------|----------------|--------------------------------|--------------------------------|----------------|----------------|
| SiO <sub>2</sub> | <u>56.2</u> 10 ml             | <u>6.0</u> 22  | <u>6.0</u> 24  | HCO <sub>3</sub>               | <u>6.95</u> 50 ml              | <u>13.9</u> 58 | <u>2.28</u> 61 |
| Al               | <u>1.18</u>                   |                |                | CO <sub>2</sub>                | <u>50</u> ml                   | <u>0</u> 62    | <u>0.00</u> 63 |
| (Al + Fe)        |                               |                |                | SO <sub>4</sub>                | <u>50-100</u> 40 ml            | <u>12.7</u> 64 | <u>2.64</u> 68 |
| Fe               | <u>1.94</u> 0.15 ml           | <u>0.15</u> 28 | <u>0.15</u> 31 | Cl                             | <u>25</u> ml                   | <u>18</u> 69   | <u>0.51</u> 74 |
| Total            | <u>25</u> ml Abs. <u>0.76</u> |                |                | Mg - AgNO <sub>3</sub>         | <u>0.5</u> 8.00                |                |                |
| Dissolved        |                               |                |                |                                | <u>7.00</u>                    |                |                |
| Abs              |                               |                |                |                                | <u>-0.10 = 0.90</u>            |                |                |
| Mn               | <u>10</u> ml                  | <u>76</u> 35   | <u>3.79</u> 38 | F                              | <u>10</u> ml Abs. <u>1.393</u> | <u>0.4</u> 75  | <u>0.02</u> 77 |
| Total            |                               |                |                | Sample No. <sup>c</sup>        |                                |                |                |
| Dissolved        |                               |                |                | Card No. 1                     |                                |                |                |
| Abs              |                               |                |                | NO <sub>3</sub>                | <u>11.8</u> 10 ml              | <u>0.0</u> 15  | <u>0.00</u> 17 |
| Ca               | <u>10</u> ml                  | <u>76</u> 35   | <u>3.79</u> 38 | PO <sub>4</sub>                |                                |                |                |
| M                | <u>1.53</u> 0.03 ml           | <u>9.4</u> 39  | <u>0.77</u> 42 | Abs                            |                                |                |                |
| Sr               |                               |                |                | HPO <sub>4</sub>               |                                |                |                |
| Na               | <u>0-50</u> ml                | <u>19</u> 43   | <u>0.83</u> 46 | H <sub>2</sub> PO <sub>4</sub> |                                |                |                |
| 20               | Reading <u>45.3</u>           |                |                | Total anions                   |                                | <u>5.45</u>    |                |
| K                | <u>0-10</u> ml                | <u>2.9</u> 52  | <u>0.07</u> 54 |                                |                                |                |                |
| Reading          | <u>29.0</u>                   |                |                |                                |                                |                |                |
| Li               |                               |                |                |                                |                                |                |                |
| Reading          |                               |                |                |                                |                                |                |                |
| Total cations    |                               | <u>5.46</u>    |                |                                |                                |                |                |

B 1.32 f 1.0 ml Abs. 0.82 0.11 21 23  
 Dissolved solids 340 24 29  
 Residue at 180°C 200  
 Dish No. 61,4637  
 Calculated 61,3356  
 Hardness: 228 42 45  
 Ca, Mg 25 ml 18.70 46 49  
 Noncarbonate 13.00  
 Acidity H<sup>+</sup> 114 50 51  
 SAR 0.5 52 54  
 Kx10<sup>6</sup> 23.6 T 348 R 661 526 55 58  
 pH 7.9 60 61 Color 3 62 64  
 Oxygen cons. filtered or DO 1 65 67  
 Oxygen cons. unfiltered or BOD 1 68 70  
 Organics: Phenol 1 71 73  
 Organics: MBAS 1 74 76  
 Temperature °F 77-78 77-78  
 Sample No. <sup>c</sup> 79 Card No. 2 80 2  
 Chemist Richard L. Lepp Checked by R. F. WILLIAMS  
 Date began May 3 Complete May 3 1967  
 Punched by 10 Verified by 104  
 Remarks and explanation (other side) Additional records, subject to review

r61448

| Card 3 Duplicate 1-14 (card 1) |      |       |                     | Sta. Ident. No. | Date b                          | Discharge |
|--------------------------------|------|-------|---------------------|-----------------|---------------------------------|-----------|
| Date                           | Time | Temp. | K x 10 <sup>6</sup> | Cr              | NH <sub>4</sub>                 |           |
|                                |      |       |                     | 15 18           | 51 52                           |           |
|                                |      |       |                     | Ni 19 21        | NO <sub>2</sub> 53 55           |           |
|                                |      |       |                     | Cu 22 25        | CN 56 58                        |           |
|                                |      |       |                     | Pb 26 29        | Dissolved oxygen: ppm 59 61     |           |
|                                |      |       |                     | Zn 30 33        | % Saturation 62 64              |           |
|                                |      |       |                     | Co 34 36        | OH 65 67                        |           |
|                                |      |       |                     | Ba 37 40        | Alk. as CaCO <sub>3</sub> 68 71 |           |
|                                |      |       |                     | Br 41 44        | Turbidity 72 74                 |           |
|                                |      |       |                     | I 45 48         | Density at 20°C (gm/ml) 75 78   |           |
|                                |      |       |                     | % Na 49 50      | Sample No. 79 Card No. 3 80     |           |

Remarks:

OWNER = City of AZTEC  
PUBLIC SUPPLY

Provisional records, subject to review

a Frequency: Daily, monthly, intermittent, miscellaneous, additional, etc.

b Daily sampling: Number of days in composite sample. Monthly, weekly, miscellaneous or additional sample; Actual date.

c Composite samples numbered in sequence within each month; Oct., 1, 2, 3, etc.; Nov., 1, 2, 3, etc. Enter "M" for monthly, weekly, or miscellaneous samples; "X" for additional samples.



| State                                                                                                                                                                                                                                                                               | County | Lat. | Long. | Seq. No.                                                          | Date | Samp. depth                     | c  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------|-------|-------------------------------------------------------------------|------|---------------------------------|----|
| Remarks:                                                                                                                                                                                                                                                                            |        |      |       |                                                                   |      |                                 |    |
| Br _____ ml                                                                                                                                                                                                                                                                         |        |      |       | 26                                                                | 28   | Radiochemical                   |    |
|                                                                                                                                                                                                                                                                                     |        |      |       |                                                                   |      | Alpha (pc/l)                    |    |
|                                                                                                                                                                                                                                                                                     |        |      |       |                                                                   |      | 55                              | 57 |
| I _____ ml                                                                                                                                                                                                                                                                          |        |      |       | 29                                                                | 31   | Beta (pc/l)                     |    |
|                                                                                                                                                                                                                                                                                     |        |      |       |                                                                   |      | 58                              | 60 |
| Alk. as CaCO <sub>3</sub>                                                                                                                                                                                                                                                           |        |      |       | 32                                                                | 35   | Ra (pc/l)                       |    |
|                                                                                                                                                                                                                                                                                     |        |      |       |                                                                   |      | 61                              | 63 |
| Free CO <sub>2</sub>                                                                                                                                                                                                                                                                |        |      |       | 36                                                                | 38   | U (ug/l)                        |    |
|                                                                                                                                                                                                                                                                                     |        |      |       |                                                                   |      | 64                              | 66 |
| SAR                                                                                                                                                                                                                                                                                 |        |      |       | 39                                                                | 41   | Other data (67-79) <sup>a</sup> |    |
|                                                                                                                                                                                                                                                                                     |        |      |       |                                                                   |      |                                 |    |
| RSC                                                                                                                                                                                                                                                                                 |        |      |       | 42                                                                | 44   |                                 |    |
|                                                                                                                                                                                                                                                                                     |        |      |       |                                                                   |      |                                 |    |
| Organics                                                                                                                                                                                                                                                                            |        |      |       |                                                                   |      |                                 |    |
| MBAS (ABS) _____ ml                                                                                                                                                                                                                                                                 |        |      |       | 45                                                                | 47   |                                 |    |
|                                                                                                                                                                                                                                                                                     |        |      |       |                                                                   |      |                                 |    |
|                                                                                                                                                                                                                                                                                     |        |      |       | 48                                                                | 50   |                                 |    |
|                                                                                                                                                                                                                                                                                     |        |      |       |                                                                   |      |                                 |    |
|                                                                                                                                                                                                                                                                                     |        |      |       | 51                                                                | 54   |                                 |    |
|                                                                                                                                                                                                                                                                                     |        |      |       |                                                                   |      |                                 |    |
| a Master card A (21-34)<br>b Master card A (52-66)<br>c Type:<br>1. Pumped      4. Spigot<br>2. Bucket      5. Bailer<br>3. Forest      6. Special<br>d Source of data:<br>1. USGS      5. Industrial<br>2. UPHS      6. Private<br>3. State Health      7. Educational<br>4. State |        |      |       | e Indicate constituent and card columns.<br>Card 5      80      5 |      |                                 |    |

Provisional records, subject to revision.

APR 13 1966

JOE O'NEILL

Chemist \_\_\_\_\_ Checked by 5/4/66/KO

Date began \_\_\_\_\_ Date transmitted \_\_\_\_\_

Punched by 58 Verified \_\_\_\_\_

58827

S.W. Analysis Fe sol. U.S. GEOLOGICAL SURVEY ANALYTICAL NOTES Project N.P.S.

River Basin San Juan Date Collected April 5, 1965

Station Anima River, Aztec Ruins Nat'l. Mon. New Mexico County San Juan Time \_\_\_\_\_

Appearance Turbid Gauge Height (ft) \_\_\_\_\_ Discharge (cfs) \_\_\_\_\_ Collector N.P.S. (GLW)

Spec. Cond. (micromhos at 25°C): T 27.2 R KCl 32.4 R Sample 521 (622) 622

| PPM                     |                            | EPM                     | PPM                             |                            | EPM                     |
|-------------------------|----------------------------|-------------------------|---------------------------------|----------------------------|-------------------------|
| Silica                  | <u>1.476</u> vol <u>10</u> | <u>(5.2)</u> <u>5.2</u> | Bicarbonate                     | <u>7.95</u>                | <u>(153)</u> <u>153</u> |
| a.d. <u>0.105</u>       |                            |                         | vol <u>50</u>                   | <u>7.95</u>                | <u>2.51</u>             |
| Calcium                 | <u>1.72</u>                | <u>(86)</u> <u>86</u>   | Carbonate                       | <u>0.15</u>                | <u>(3)</u> <u>3</u>     |
| vol <u>10</u>           | <u>0.00</u>                | <u>4.29</u>             | Sulfate                         | <u>4.02</u>                |                         |
|                         | <u>1.72</u>                |                         | vol <u>10</u>                   | <u>0.00</u>                | <u>(158)</u> <u>158</u> |
| Magnesium               | <u>6.60</u>                | <u>(12)</u> <u>12</u>   | Chloride                        | <u>1.44</u>                |                         |
| vol <u>25</u>           | <u>0.00</u>                | <u>0.99</u>             | vol <u>25</u>                   | <u>6.48</u>                |                         |
|                         | <u>6.60</u>                |                         | AgNO <sub>3</sub> <u>0.5</u>    | <u>1.24</u>                | <u>(27)</u> <u>27</u>   |
| Sodium                  | vol <u>0</u>               |                         | Fluoride                        | vol <u>10</u>              |                         |
| 0-50 range <u>66.5</u>  | <u>66.5</u>                | <u>(30)</u> <u>30</u>   | a.d. <u>1.375</u>               | <u>(0.04)</u> <u>0.04</u>  | <u>0.02</u>             |
| Potassium               | vol <u>0</u>               |                         | Nitrate                         | <u>11.31</u> vol <u>10</u> |                         |
| 0-10 range <u>37.3</u>  | <u>37.3</u>                | <u>(3.7)</u> <u>3.7</u> | a.d. <u>0.000</u>               | <u>(0.0)</u> <u>0.0</u>    | <u>0.00</u>             |
| Na+K (Calculated)       |                            |                         | Boron                           | <u>1.30</u> vol <u>10</u>  |                         |
| Iron                    | <u>1.84</u> vol <u>25</u>  |                         | a.d. <u>0.091</u>               | <u>(0.12)</u> <u>0.12</u>  |                         |
| In sol. a.d. _____      |                            |                         | Sum of Constituents             | <u>(400)</u> <u>400</u>    |                         |
| Total a.d. <u>0.020</u> | <u>(0.04)</u> <u>0.04</u>  |                         | Residue on Evaporation at 180°C |                            |                         |
|                         |                            |                         | vol <u>200</u>                  | <u>44.785</u>              | <u>(408)</u> <u>408</u> |
|                         |                            |                         | dish <u>147</u>                 | <u>0.0817</u>              |                         |
| TOTAL CATIONS           | <u>6.67</u>                |                         | TOTAL ANIONS                    | <u>6.68</u>                |                         |

Remarks: Point of collection Deep sink, Visitor center restroom  
Owner: City of Aztec, N.Mex.

Composite Date \_\_\_\_\_

Sec. Ft. Days \_\_\_\_\_

Mean Daily Discharge \_\_\_\_\_

Tons per Day \_\_\_\_\_

Total Acre Feet \_\_\_\_\_

Total Tons \_\_\_\_\_

LEWIS ALARY  
Chemist \_\_\_\_\_ Checked By GLW

Date Completed May 4 1965

Date Transmitted \_\_\_\_\_

Laboratory No. 056701

Provisional records, subject to revision.

G.W. Type Analysis A-1 U.S. GEOLOGICAL SURVEY ANALYTICAL NOTES Project NPS Collector R.L. Morris  
 State New Mexico County Sandoval City (at or near) Frijoles Canyon, Bandelier National Monument  
 Latitude-Longitude \_\_\_\_\_ Well No. \_\_\_\_\_ Date Collected May 11, 1965  
 Owner National Park Service, Los Alamos, New Mexico Date Drilled \_\_\_\_\_ Cased to \_\_\_\_\_ Depth (ft.) \_\_\_\_\_ Diam. (in.) \_\_\_\_\_

pH 7.5 7.5 Temp. (°F) 42  
 Hardness as CaCO<sub>3</sub> 28  
 Total 28  
 Noncarbonate 0  
 Color 35 35 S.A.R. 0.7 0.7  
 % Na 36 36 T/af 0.16 0.16  
 Density (g/ml) \_\_\_\_\_  
 W.B.F. \_\_\_\_\_  
 Producing Intervals \_\_\_\_\_  
 W.L. \_\_\_\_\_  
 Sampled after Pumping (Time) \_\_\_\_\_  
 Yield \_\_\_\_\_

Point of Collection 2 miles north visitor center

Appearance Clear

Use irr.

Remarks: Source: Frijoles Creek

Chemist KO Checked By HEK

Date Completed JUN 7 1965

Date Transmitted \_\_\_\_\_

Laboratory No. 56999

| Spec. Cond. (micromhos at 25°C): T <u>235</u> R KCl <u>345</u> R Sample <u>3720</u> |                                                                     |                                     |                                     | 94                                  |             |
|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------|
|                                                                                     |                                                                     | PPM                                 | EPM                                 | PPM                                 | EPM         |
| Silica                                                                              | f. <u>50.4</u> vol <u>17</u>                                        | <u>(51)</u> <u>51</u>               |                                     | <u>(50)</u> <u>50</u>               | <u>0.82</u> |
| o.d. <u>6.20</u> REBUN (OVER)                                                       |                                                                     |                                     |                                     |                                     |             |
| Calcium                                                                             | <u>6.88</u><br><u>0.20</u><br>vol <u>50</u> <u>0.78</u>             | EPM TH <u>0.38</u>                  | <u>(7.8)</u> <u>7.8</u> <u>0.39</u> | <u>(0)</u> <u>0</u> <u>0.00</u>     |             |
|                                                                                     |                                                                     |                                     |                                     |                                     |             |
| Magnesium                                                                           | <u>6.25</u><br><u>4.80</u><br>vol <u>50</u> <u>1.40</u>             | <u>(2.1)</u> <u>2.1</u> <u>0.17</u> |                                     | <u>(6.0)</u> <u>6.0</u> <u>0.12</u> |             |
|                                                                                     |                                                                     |                                     |                                     |                                     |             |
| Sodium                                                                              | vol <u>25-50</u><br><u>0-10</u> range <u>40.5</u>                   | <u>(8.1)</u> <u>8.1</u> <u>0.35</u> |                                     | <u>(1.7)</u> <u>1.7</u> <u>0.05</u> |             |
| <u>10</u> <u>4.25 x 2</u>                                                           |                                                                     |                                     |                                     |                                     |             |
| Potassium                                                                           | vol <u>25-50</u><br><u>0-10</u> range <u>10.0</u><br><u>1.0 x 2</u> | <u>(2.0)</u> <u>2.0</u> <u>0.05</u> |                                     |                                     |             |
| Na+K (Calculated)                                                                   |                                                                     |                                     |                                     |                                     |             |
| Iron                                                                                | f. <u>1.92</u> vol <u>25</u>                                        |                                     |                                     |                                     |             |
| In sol.: o.d.                                                                       |                                                                     |                                     |                                     |                                     |             |
| Total: o.d. <u>0.198</u>                                                            |                                                                     | <u>(0.38)</u> <u>0.38</u>           |                                     |                                     |             |
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Provisional records, subject to revision.

FORM 9-1368 (9-1960)  
U. S. D. P. T. OF INTERIOR  
GEOLOGICAL SURVEY

ANALYTICAL STATEMENT. SW  
NPS

COUNTY San Juan  
LAB NO. 54196

✓ 79787

|                                          |                                             |                |  |
|------------------------------------------|---------------------------------------------|----------------|--|
| Source <u>Aztec Ruins Natl.</u>          | Date of collection <u>Apr. 13, 1964</u>     |                |  |
| Location <u>Monument, Aztec, N.M.</u>    | Ignition Loss <u>0</u>                      | Color <u>0</u> |  |
| <u>Animas River</u>                      | Dissolved Solids:                           |                |  |
| <u>City Water Supply</u>                 | Residue at 100°C <u>455</u>                 |                |  |
| Water Temp (°F) _____ Gage Ht (ft) _____ | Calculated (Sum) <u>424</u>                 |                |  |
| Discharge (cfs) _____                    | Tons per Acre Foot <u>0.62</u>              |                |  |
| Collector <u>Jack R. Williams,</u>       | Hardness as CaCO <sub>3</sub> <u>268</u>    |                |  |
| <u>Supt.</u>                             | Non-carbonate Hardness <u>146</u>           |                |  |
| Sec Ft Days _____                        | T Ha <u>22</u> SAR <u>0.9</u> pH <u>8.1</u> |                |  |
| Mean Daily Discharge _____               | Specific Conductance                        |                |  |
| Total Acre Feet _____                    | (micromhos at 25°C) <u>677</u>              |                |  |
| Total Tons _____                         | PC: Visitor Center                          |                |  |
| Tons per Day _____                       | Appear.: Clear                              |                |  |
|                                          | Use: Dom., Ps                               |                |  |
|                                          | Rmks: Small bottle                          |                |  |
|                                          | from public drink-                          |                |  |
|                                          | ing fountain.                               |                |  |
| Chemist <u>JON</u>                       |                                             |                |  |
| Date completed <u>May 19, 1964</u>       |                                             |                |  |
| Checked by <u>LJA</u>                    |                                             |                |  |
| Date transmitted _____                   |                                             |                |  |

|                  | epm  | ppm    |
|------------------|------|--------|
| SiO <sub>2</sub> |      | 4.5    |
| Fe (total)       |      | 0.01   |
| Ca               | 4.34 | 87     |
| Mg               | 1.02 | 12     |
| Na               | 1.52 | 35     |
| K                | 0.10 | 4.1    |
| Na + K           | 6.98 |        |
| HCO <sub>3</sub> | 2.44 | 149    |
| CO <sub>3</sub>  | 0.00 | 0      |
| SO <sub>4</sub>  | 3.66 | 176    |
| Cl               | 0.90 | 32     |
| F                | 0.03 | 0.5    |
| NO <sub>3</sub>  | 0.00 | 0.0    |
|                  | 7.03 | B 0.09 |

For archival records, subject to revision.



UNITED STATES  
DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE  
Aztec Ruins National Monument  
Aztec, New Mexico

September 29, 1960

IN REPLY REFER TO:

LS4

ORIGINAL WATER WELL SUPPLY SYSTEM  
AZTEC RUINS NATIONAL MONUMENT

Filed in Docker 2, Part 1, Domestic Water Supply, Aztec Ruins National Monument, is a log of the Original and only well drilled for the National Park Service in the SE $\frac{1}{4}$ SW $\frac{1}{4}$  of Section 4, T-30N, R 11 W, NMPM. This log is signed by L. E. Teague for Teague and Coon Drillers, Aztec, New Mexico and dated June, 1931. The actual day of completion, during June, is not given.

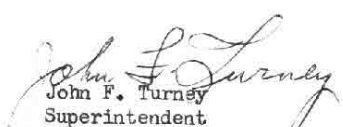
The first pump, which was ordered in June, 1931, had a capacity of 500 gallons per hour. It was attached to a 500 gallon pressure storage tank. The power was from a 1 $\frac{1}{2}$  H.P., 60 cycle, A.C. current, single phase electric motor. The above pump was replaced in October, 1941 with a Berkeley Hydro-Jet, Model 1-70, pressure pump which is designed to supply 650 g.p.h. at a head of 70 feet or 750 g.p.h. at 60 feet as indicated on this well chart. This latter pump is powered with a 1 H.P., single phase, Penn 152 P.S., #120 A.C. electric motor. Water is pumped to the original 500 gallon pressure storage tank and an additional 1,000 gallon pressure storage tank.

To my knowledge, the electric power has been supplied commercially since 1931.

The Monument water, supplied from the well, was replaced by that from the City of Aztec on June 30, 1958.

The well is still in use and is utilized for watering trees, shrubs, lawns, etc. in connection with grounds care in the proximity of the Visitor Center.

I certify the the above information is correct, to the best of my knowledge, as taken from papers on file at Aztec Ruins National Monument on this date, September, 29, 1960.

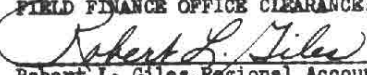
  
John F. Turney  
Superintendent

Form 10-174  
(Rev. 5-54)

**UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
COMPLETION REPORT OF CONSTRUCTION PROJECT**

|                                                                               |                                              |                                                    |                                       |
|-------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------------|---------------------------------------|
| REGION<br><b>Three</b>                                                        | AREA<br><b>Aztec Ruins National Monument</b> | COUNTY<br><b>San Juan</b>                          | STATE<br><b>New Mexico</b>            |
| PROJECT OR JOB TITLE<br><b>Water and Sewer Systems, Project No. RO 33-47</b>  |                                              |                                                    | PCP NO.<br><b>U-3-1</b>               |
| LOCATION IN AREA<br><b>Headquarters and Residential Area</b>                  |                                              | MASTER PLAN NO.                                    | BUILDING NO.                          |
| WORKING DRAWING NO. AND TITLE<br><b>NM-AR-2150-C, Water and Sewer Systems</b> |                                              |                                                    |                                       |
| APPROPRIATION TITLE AND SYMBOL<br><b>14X1035, Const., NPS</b>                 |                                              |                                                    | WORK ORDER NO.<br><b>332.17</b>       |
| CONTRACT NO.<br><b>14-10-333-322 &amp; Unnumbered Contract</b>                |                                              | DATE WORK STARTED<br><b>About 10/15/58</b>         | DATE WORK COMPLETED<br><b>6/30/58</b> |
| NAME OF CONTRACTOR<br><b>Huey Plumbing and Heating - City of Aztec*</b>       |                                              | ADDRESS<br><b>P. O. Box 794, Aztec, New Mexico</b> |                                       |

**COST ANALYSIS**

| CONSTRUCTION ITEMS                                                                                                                                                                 | QTY. | UNIT COST<br>IN PLACE | TOTAL COST<br>IN PLACE |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------------|------------------------|
| Contract Payment                                                                                                                                                                   | Job  | \$11,792.50           | \$11,792.50            |
| Facilitating Services                                                                                                                                                              |      | 120.00                | 120.00                 |
| Supplies and Materials                                                                                                                                                             |      | 1,320.77              | 1,320.77               |
| Other Direct Expenses                                                                                                                                                              |      | 10.90                 | 10.90                  |
| Equipment Operation                                                                                                                                                                |      | .32                   | .32                    |
| Equipment Depreciation                                                                                                                                                             |      | 1.22                  | 1.22                   |
| *City of Aztec portion to be refunded as others tie onto lines.                                                                                                                    |      |                       |                        |
| <b>FIELD FINANCE OFFICE CLEARANCE:</b><br> Oct. 13, 1958<br>Robert L. Giles, Regional Accountant |      |                       |                        |
| <b>TOTAL</b>                                                                                                                                                                       |      |                       | <b>\$13,245.71</b>     |

**SUMMARY OF EXPENDITURES**

|                    |           |                        |
|--------------------|-----------|------------------------|
| PERSONAL SERVICES  | EQUIPMENT | MATERIALS AND SUPPLIES |
|                    |           | <b>\$1,320.77</b>      |
| OTHER              |           |                        |
| <b>\$11,924.94</b> |           |                        |

**CHANGE ORDERS**

|                                               |                 |                 |                          |                                   |
|-----------------------------------------------|-----------------|-----------------|--------------------------|-----------------------------------|
| ORIGINAL CONTRACT AMOUNT                      | FIRST           | Second          | <del>BOOK</del> Underrun | <del>BOOK</del> Final Contr. Amt. |
| <b>Huey Plumbing &amp; Heating \$6,252.98</b> | <b>\$539.09</b> | <b>\$148.38</b> | <b>\$203.86</b>          | <b>\$6,736.59</b>                 |
| <del>BOOK</del> City of Aztec                 | <del>BOOK</del> | <del>BOOK</del> | <del>BOOK</del>          | <del>BOOK</del> Final Contr. Amt. |
| <b>\$5,555.00</b>                             |                 |                 |                          |                                   |

THIS PROJECT OR JOB HAS BEEN COMPLETED IN ACCORDANCE WITH  
APPROVED DRAWINGS, SPECIFICATIONS, AUTHORIZED CHANGES

|                                                                                                                     |                                 |
|---------------------------------------------------------------------------------------------------------------------|---------------------------------|
| SUBMITTED BY (Name and title)<br><b>Albert G. Henson, Superintendent</b>                                            | DATE<br><b>October 11, 1958</b> |
| APPROVED BY (Name and title)<br> | DATE                            |

(ATTACH NARRATIVE STATEMENT, PHOTOGRAPHS, AND "AS BUILT" DRAWINGS TO THIS FORM)

GPO 214175



OFFICE OF  
THE DISTRICT ENGINEER  
INTERSTATE SANITARY DISTRICT Nos. 5, 6  
400 FATT BUILDING  
14TH AVE. & LAKE ST.  
SAN FRANCISCO, CALIF.

*Water Soft*  
TREASURY DEPARTMENT

UNITED STATES  
PUBLIC HEALTH SERVICE

SAN FRANCISCO, CALIF.

June 23, 1933

Johnwill Faris, Custodian  
Aztec Ruins National Monument,  
Aztec, N.M.

Dear Mr. Faris:

This afternoon we wired you, night letter, as follows: "Water can be softened by Zeolite". The analysis is given herewith:

|                                     |                       |
|-------------------------------------|-----------------------|
| State B. of H. Laboratory No. 12672 |                       |
| Hardness                            | 686 parts per million |
| Alkalinity                          | 360 " " "             |
| Chlorides                           | 32 " " "              |
| Sulphates                           | 528 " " "             |
| Iron                                | None                  |
| Fluorides                           | 0.4 " " "             |
| Hydrogen Sulphide                   | None                  |

This water would be classed as being very hard and practically near the limits of water that can be satisfactorily softened with Zeolite. If, however, the softener you have in mind purchasing is a large one it will operate satisfactorily, since the amount of water you will want to treat will be very small in comparison to the size of the softener. The water contains approximately 40 grains of total hardness. Each cubic foot of Zeolite will soften so many gallons of water, depending on the rating of the mineral, but with a large unit there will be sufficient Zeolite to give you fairly long runs without regenerating the mineral.

As far as the analysis shows, the water can be used for irrigation.

Very truly yours,

*H. B. Hommon*  
H. B. Hommon  
Sanitary Engineer  
In Charge

BBH:R  
c.c. to Mr. Pinkley

*Well*

LOG OF WATER WELL DRILLED AT AZTEC NATIONAL  
MONUMENT, SAN JUAN COUNTY, NEW MEXICO, IN JUNE,  
1931.

10 feet silt.

67 feet sand and gravel.

2 feet shale.

*77*

Drillers Teague & Coon.  
Aztec, New Mexico,

*L. E. Teague.*  
L. E. Teague.

Other Supporting Information

Region Three  
Santa Fe, New Mexico

L-54

FEB 10 1961

|                     |  |
|---------------------|--|
| W O D C             |  |
| FEB 13 '61          |  |
| CHF                 |  |
| ADM                 |  |
| PERS                |  |
| P & P               |  |
| ARCH                |  |
| ENGR                |  |
| L. A.               |  |
| SPEC                |  |
| CONT                |  |
| SFTY                |  |
| ACTION TAKEN - DATE |  |

*last*

*Ma...*

*Nov...*

*W...*

Memorandum

To: Director

From: Assistant Regional Director

Subject: Domestic Water Supply, Docket 2, Aztec Ruins

Attached is a statement from the Superintendent, Aztec Ruins entitled "Original Water Well Supply System, Aztec Ruins National Monument, Supplemental Information," and a record of the water consumed from August, 1958 through July, 1959. These are being forwarded in response to a request by Mr. A. van V. Dunn dated December 14, 1960.

We have placed copies of these in our Aztec Ruins Water Docket #2, and by copies of this memorandum are sending copies to WODC for insertion in their Docket.

(SIGNED)

George W. Miller  
Assistant Regional Director

In duplicate

Attachments

Copy to: Chief, WODC (2) ☒ With attachments.  
Supt., Aztec Ruins

154-OBL

December 14, 1960

Memorandum

To: Regional Director, Region Three

From: Chief, Water Resources Section

Subject: Domestic Water Supply, Docket 2, Aztec Ruins

With his memorandum of December 7, Mr. George Miller has supplied more complete data on the well, pumps, and domestic supply than I had hoped to obtain at this belated date, and Mr. Turney has presented it in an excellent form for the historical record.

It might be well to add the monthly records of water purchased from the City during the first year of such service, if available from the bills, to suggest approximately how much water may have been used from the well just before. If the well is now used for irrigation, some consideration should be given to whether it is in lieu of, or supplemental to the irrigation by the ditch (Docket 1). We should be careful not to suggest abandonment of part of the ditch right in trying to build up a continuing claim to the groundwater.

SIGNED

A. van V. Dunn  
Chief, Water Resources Section

Copy to: Superintendent, Aztec Ruins  
Chief, WODC (2)

|                     |        |
|---------------------|--------|
| W O D C             |        |
| DEC 16 '60          |        |
| CHF                 |        |
| ADM                 |        |
| PERG                |        |
| P & P               |        |
| ARCH                |        |
| ENG                 | 2/2/19 |
| L.A.                |        |
| SPEC                |        |
| CONT                |        |
| SFTY                |        |
| ACTION TAKEN - DATE |        |
| None yet            |        |

*Nowak*

Region Three  
Santa Fe, New Mexico

DEC 7 1960

W O D C  
DEC-9-60

|              |  |
|--------------|--|
| Mr. Tolson   |  |
| Mr. DeLoach  |  |
| Mr. Mohr     |  |
| Mr. Bishop   |  |
| Mr. Casper   |  |
| Mr. Callahan |  |
| Mr. Conrad   |  |
| Mr. Felt     |  |
| Mr. Gale     |  |
| Mr. Rosen    |  |
| Mr. Sullivan |  |
| Mr. Tavel    |  |
| Mr. Trotter  |  |
| Tele. Room   |  |
| Miss Holmes  |  |
| Miss Gandy   |  |

ACTION TAKEN - DATE

L-54

Memorandum

To: Director

From: Assistant Regional Director

Subject: Domestic Water Supply, Docket 2, Astec Ruins

Mr. Dunn's memorandum of September 15 concerning the above subject repeated a request made earlier by a memorandum in which he stated Part I of the subject docket should contain a record of the well and a statement giving the year the first well was drilled. He stated that if possible this statement should contain pump capacity, power installation, date when supply was replaced by that from the city, and disposition of the well after that date.

Attached are copies of the log of the well dated June 1931 signed by L. E. Teague of Teague & Coon Drillers, Astec, New Mexico. Also attached is a certified statement signed by Superintendent Turney dated September 29, 1966, which contains the location of the well, capacity of the pump and storage tank, when the original pump was replaced by another, the capacity and power installation of this pump, the date when the well was replaced by water from the city, and that the well is still utilized for watering in the vicinity of the Visitor Center. *See Part I*

We have inserted a copy of these documents in our Docket No. 2 and by copies of this memorandum are furnishing copies to WODC and the Superintendent for insertion in their dockets.

(SIGNED)

George W. Miller  
Assistant Regional Director

In duplicate

Attachments

Copy to: Supt., Astec Ruins with attachments  
Chief, WODC (2) with attachments

L-54

Region Three  
Santa Fe, New Mexico

SEP 22 1960

|                     |      |
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| ACTION TAKEN - DATE |      |
| None                |      |

## Memorandum

To: Superintendent, Aztec Ruins

From: Regional Director

Subject: Domestic Water Supply, Docket 2, Aztec Ruins  
National Monument

By memorandum of September 15 Chief, Water Resources Section sent us a copy of Drawing MN-AET-4953 which shows the original well supply system. This drawing has been inserted in Part I of our docket.

In this same memorandum there is a request for a record of the well, a statement giving the year the first well was drilled, pump capacity, power installation, date when supply was replaced by that from the City, and disposition of the well after that date. This statement should be dated and signed by the person preparing it. Would you please send us a record of the well and, if possible, make a certified statement with the above information. When done a copy of this should be inserted in your Water Right Docket No. 2. The original and two copies should be sent to this office and we will forward a copy to WODC and the Washington Office.

(SIGNED  
Thomas J. Allen  
Regional Director

Copy to: Director (2)  
Chief, WODC (2)

Copy to: Superintendent, Aztec Ruins, w/c attachment  
 Chief, WDC (2), w/c attachment

Form 10-174  
(Rev. 8-54)

**UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE  
COMPLETION REPORT OF CONSTRUCTION PROJECT**

|                                                                               |                                              |                                                    |                                       |
|-------------------------------------------------------------------------------|----------------------------------------------|----------------------------------------------------|---------------------------------------|
| REGION<br><b>Three</b>                                                        | AREA<br><b>Aztec Ruins National Monument</b> | COUNTY<br><b>San Juan</b>                          | STATE<br><b>New Mexico</b>            |
| PROJECT OR JOB TITLE<br><b>Water and Sewer Systems, Project No. RO 33-47</b>  |                                              | PCF NO.<br><b>U-3-1</b>                            |                                       |
| LOCATION IN AREA<br><b>Headquarters and Residential Area</b>                  |                                              | MASTER PLAN NO.                                    | BUILDING NO.                          |
| WORKING DRAWING NO. AND TITLE<br><b>NM-AR-2150-C, Water and Sewer Systems</b> |                                              | WORK ORDER NO.<br><b>332.17</b>                    |                                       |
| APPROPRIATION TITLE AND SYMBOL<br><b>141035, Const., NPS</b>                  |                                              | DATE WORK STARTED<br><b>About 10/15/58</b>         | DATE WORK COMPLETED<br><b>6/30/58</b> |
| CONTRACT NO.<br><b>14-10-333-322 &amp; Unnumbered Contract</b>                |                                              | ADDRESS<br><b>P. O. Box 794, Aztec, New Mexico</b> |                                       |
| NAME OF CONTRACTOR<br><b>Huey Plumbing and Heating - City of Aztec*</b>       |                                              |                                                    |                                       |

**COST ANALYSIS**

| CONSTRUCTION ITEMS                                                                                              | QTY. | UNIT COST<br>IN PLACE | TOTAL COST<br>IN PLACE |
|-----------------------------------------------------------------------------------------------------------------|------|-----------------------|------------------------|
| Contract Payment                                                                                                | Job  | \$11,792.50           | \$11,792.50            |
| Facilitating Services                                                                                           |      | 120.00                | 120.00                 |
| Supplies and Materials                                                                                          |      | 1,320.77              | 1,320.77               |
| Other Direct Expenses                                                                                           |      | 10.90                 | 10.90                  |
| Equipment Operation                                                                                             |      | .32                   | .32                    |
| Equipment Depreciation                                                                                          |      | 1.22                  | 1.22                   |
| *City of Aztec portion to be refunded as others tie onto lines.                                                 |      |                       |                        |
| FIELD FINANCE OFFICE CLEARANCE:<br><i>Robert L. Giles</i> Oct. 13, 1958<br>Robert L. Giles, Regional Accountant |      |                       |                        |
| TOTAL                                                                                                           |      |                       | \$13,245.71            |

**SUMMARY OF EXPENDITURES**

|                   |           |                        |
|-------------------|-----------|------------------------|
| PERSONAL SERVICES | EQUIPMENT | MATERIALS AND SUPPLIES |
|                   |           | \$1,320.77             |
| OTHER             |           |                        |
| \$11,924.94       |           |                        |

| CHANGE ORDERS            |          |                   |                   |
|--------------------------|----------|-------------------|-------------------|
| ORIGINAL CONTRACT AMOUNT | FIRST    | Second            | Final Contr. Amt. |
| \$6,252.98               | \$539.09 | \$148.38          | \$6,736.59        |
| Huey Plumbing & Heating  |          | Underrun \$203.86 |                   |
| CITY OF AZTEC            |          |                   |                   |
| \$5,595.00               |          |                   |                   |

THIS PROJECT OR JOB HAS BEEN COMPLETED IN ACCORDANCE WITH  
APPROVED DRAWINGS, SPECIFICATIONS, AUTHORIZED CHANGES

|                                                                          |                                 |
|--------------------------------------------------------------------------|---------------------------------|
| SUBMITTED BY (Name and title)<br><b>Albert G. Henson, Superintendent</b> | DATE<br><b>October 11, 1958</b> |
| APPROVED BY (Name and title)<br><i>Albert G. Henson</i>                  | DATE                            |

(ATTACH NARRATIVE STATEMENT, PHOTOGRAPHS, AND "AS BUILT" DRAWINGS TO THIS FORM)

GPO 214876

## Aztec Ruins National Monument

COMPLETION REPORT  
WATER AND SEWER SYSTEMS

Because of difficulties in maintaining the water and sewer systems at Aztec Ruins, the possibility of utilizing the City of Aztec systems was investigated. The early discussions disclosed that it was not feasible because of the great distances involved. Later, as the City of Aztec grew, the water and sewer lines were extended and negotiations were renewed. An agreement with the City was reached whereby the National Park Service would contribute \$5,595 toward the extension of the water and sewer lines. This amount would be returned to the National Park Service as new connections were added to the line. The agreement stated that the City would lay the lines to the corner of the Monument and that the National Park Service would lay any lines needed within the Monument. Other individuals contributed funds, also and the agreement stipulated that reimbursements would be made in proportion to the amount of each contribution. Thus far \$4,077.15 has been refunded to the National Park Service and the final amount of \$1,517.85 is now due.

The City of Aztec completed work on the extension of the water and sewer lines in January, 1956. The 8 inch sewer line ended with a manhole approximately 16 feet SW of the SW corner of the Monument boundary and the 6 inch water line ended with a plugged tee and fire hydrant approximately 30 feet SW of the SW corner of the Monument.

Plans for the Monument connections were at first based on a 4 inch water line and an 8 inch sewer line extending to Monument headquarters. The residences would continue to be served by the existing 6 inch sewer line and the existing 2 inch galvanized water line.

Plans were then made to replace the 2 inch galvanized line from the vicinity of the visitor center to the residential area and still later it was decided to extend the proposed 4 inch line to the residential area. It was also decided to construct a 6 inch sewer line to the Visitor Center instead of an 8 inch line.

Invitations to Bid No. 33-52 were issued covering the purchase of materials for a 4 inch asbestos cement water line and the materials were secured.

At this stage it was planned to accomplish the work by day labor. Because of doubt as to the location of the proposed additions to the visitor center, work on this project was delayed. Further study indicated the desirability of installing a six inch water line instead of four inch and plans were made accordingly. Working Drawing NM-AR-2150-C was approved and it was decided to contract the work.

Invitations to Bid were issued and Huey Plumbing and Heating Company was awarded the contract for \$6,252.98.

Work on this project was started on April 18, 1958. Due to a delay in receiving the asbestos cement pipe and the necessary fittings, the initial work was concentrated upon the various small pipe lines at the residences and to the north of the visitor center.

Change Order No. 1 was issued in order to cover the installation of 560 lineal feet of 4 inch asbestos cement pipe to be used for irrigation purposes. This item of \$539.09 was charged to Account No. 333.1, Fencing and Other Miscellaneous Items.

During the installation of the meter at the SE corner of Residence No. 1 and later during the construction of the irrigation line across the lawn south of Residence No. 1, we found that the existing water line serving Residence No. 4 was leaking badly in several spots. At first we attempted to repair the line, but as more leaks were located it became evident that a new line would be necessary. Change Order No. 2 was issued in order to cover the installation of 114 feet of 1½ inch galvanized line and the re-installation of the water meters. This change added \$148.38 to the contract amount.

The rest of the project proceeded without incident and after chemical treatment of the line and after testing, flushing and sampling, the final connections were made. Backfilling and clean-up activities were completed on June 30 and the project was accepted on that date.

The water line is in use at the present time and the sewer is ready for connection to the new restrooms as soon as they are completed.

The water line portion of the project consisted of the installation of 1,175 feet of 6 inch asbestos cement pipe, 93 feet of 2 inch galvanized iron pipe, 308 feet of 1½ inch galvanized iron pipe 12 feet of 4 inch asbestos cement pipe, 120 feet of 3/4 inch galvanized iron pipe, two 4 inch fire hydrants and the necessary fittings, meters and boxes.

The sewer system consisted of the installation of 140 feet of 6 inch vitrified clay tile pipe and two manholes.

|                               |           |    |           |
|-------------------------------|-----------|----|-----------|
| Number of Documents in Docket | 35        |    |           |
| Documents Dated from          | 6/15/1931 | to | 1/30/1968 |
| Docket Compiled:              | 1/31/2011 |    |           |