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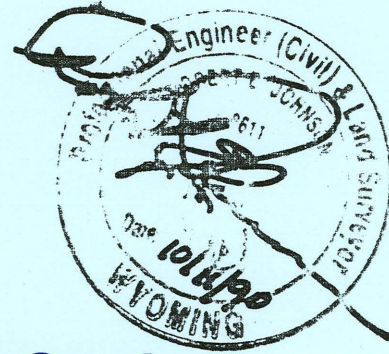
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JOHNSON-FERMELIA Co. Inc.

CONSULTING ENGINEERS, ARCHITECTS AND SURVEYORS

EXECUTIVE SUMMARY

FARSON

WATER SUPPLY STUDY

LEVEL 1

FOR

WYOMING WATER DEVELOPMENT COMMISSION

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OCTOBER 1990

EXECUTIVE SUMMARY
FARSON WATER SUPPLY STUDY

The Level I Feasibility Study and Report on the Farson Water Supply Project were completed pursuant to the Consultants Contract for Services dated June 6, 1990 and Exhibits thereto.

The Farson Area is located in Sweetwater County about 35 miles north of Rock Springs. The study also involved a preliminary assessment of the water supplies in the Eden Area, which is located four miles south of Farson.

The Farson Study Area includes:

1. Twenty homes.
2. A 56 space trailer court.
3. Twelve mobile homes outside the trailer park.
4. The Farson School.
5. The Farson Store.
6. Two service stations.
7. A small motel.
8. Two cafes.
9. Two churches.
10. A community hall.
11. One bar.
12. A picnic area and park.
13. Highway Department Shop.

14. Fire Station.
15. Weed and Pest Control Office and Shop.
16. Soil Conservation Service and University of Wyoming Agricultural Extension Service Office.
17. Telephone Company Control Building.
18. Post Office.
19. Irrigation District Office.

The Eden Area includes:

1. Eight homes.
2. Fourteen mobile homes.
3. One mobile home park.
4. One bar.
5. Two businesses.
6. Two churches.

All water in both the Farson and Eden Areas is obtained from either shallow or deep wells. The geology and groundwater regimen are described in detail in the report, which identifies two distinct water producing zones: an unconfined shallow aquifer and a deep artesian or confined aquifer.

A well testing program was conducted on six wells during July and August 1990, five were in the Farson Area. The Farson Area tests were performed on three shallow and two deep wells.

One well test was performed in the Eden Area which was a deep test. Well owners in the Eden Area were reluctant to grant permission to test wells in the immediate area and it was therefore necessary to test a deep well located 1-5/8 miles south of Eden.

The data obtained from the groundwater testing program were used to develop computer models capable of analyzing long term impacts of various pumping schemes on the groundwater system.

Projections of the growth in population were also developed based on information and data from the Wyoming Population and Employment Forecast Report (1988) and Wyoming Data Handbook (1989). These projections were then used to calculate future water demands that were integrated into the groundwater models to assess long term impacts on groundwater conditions.

The testing and groundwater modelling indicate that an adequate long term supply of water can be obtained from groundwater sources.

Detailed water quality analysis was performed on three wells:

1. One shallow well in the Farson Area -
Sandy Crossing Shallow Well. Permit
#U.W. 49004.

2. One deep well in the Farson Area - Sandy Crossing Deep Well. Permit #U.W. 28956.
3. One deep well in the Eden Area - Tomich Deep Well. Permit #U.W. 12401.

Water quality analysis indicates no serious violations of U.S. Environmental Protection Agency (E.P.A.) criteria in the Farson Area; however, there are some secondary maximum contaminant levels that are exceeded which may pose some threat to people with health problems. Reference can be made to the detailed water quality information in the Report if concerns about this aspect exist.

Water from the Sandy Crossing Deep Well has a fluoride concentration of 3.5 mg/l, which exceeds the 2.0 mg/l E.P.A. secondary criteria. This water should be blended with water from the shallow aquifer to produce a fluoride concentration of less than 2.0 mg/l for a public water system to avoid the requirement for public notification that the 2.0 mg/l requirement is being exceeded.

The deep well in the Eden Area exceeds the primary standard for fluoride (4.0 mg/l - Tomich Well 4.3). This means that water from this well would have to be mixed with water having a lower fluoride concentration to reduce the fluoride to less than 4.0 mg/l in order to qualify as a public water supply.

Another objective of the Study was to examine the possibility of creating a public water system to meet the needs of the residents in the Study Area. To do this it was necessary to project water demands over a 30 year period and to develop preliminary designs and costs for a water system consisting of water supply wells, storage facilities, booster stations, and distribution systems. Operation and maintenance costs were also estimated and included in the final monthly cost numbers.

Various elements of such a project qualify for funding by the Wyoming Water Development Commission (WWDC); others would be funded by the Wyoming Farm Loan Board (WFLB).

Features that qualify for funding under WWDC criteria are:

1. Wells
2. Booster Pumps
3. Storage Tanks
4. Booster Station Buildings
5. Property Acquisition for Above.

These facilities would be financed by a 67% grant, 33% loan repayable over thirty years at 4% interest.

Facilities that qualify for funding under Wyoming Farm Loan Board criteria are:

1. Distribution systems
2. Road Borings
3. Valves and Fittings
4. Right-of-Way Costs

These would be funded by a 50% grant, 50% loan repayable over thirty years at 8.5% interest.

The total capital costs associated with a project to serve the Farson Area are:

| | |
|--------------------------------|---------------------|
| Funded by WWDC..... | \$198,022.00 |
| Funded by WFLB..... | <u>\$142,322.00</u> |
| TOTAL CAPITAL COST..... | \$340,344.00 |

Total monthly water cost for water service under the system contemplated in the report for the Farson Area is estimated to be:

| <u>Number of Connections</u> | <u>Total Monthly Cost</u> |
|------------------------------|---------------------------|
| 50 | \$79.14 |
| 75 | \$52.76 |
| 100 | \$39.57 |
| 125 | \$31.66 |

The above figures are based on a monthly usage of 100 gallons per capita per day, without fire protection.

The capital costs of a similar project to serve the Eden Area are estimated at:

| | |
|--------------------------------|---------------------|
| Funded by WWDC..... | \$145,538.00 |
| Funded by WFLB..... | <u>\$137,838.00</u> |
| TOTAL CAPITAL COST..... | \$283,376.00 |

Total monthly water cost for service from the system contemplated in the report for Eden Area are estimated to be:

| <u>Number of Connections</u> | <u>Total Monthly Cost</u> |
|------------------------------|---------------------------|
| 20 | \$144.00 |
| 25 | \$115.00 |
| 30 | \$ 96.00 |

Monthly water costs in the Eden Area are estimated to be considerably higher because the Eden residents would not enjoy the economy of scale that exists in the Farson Area. In other words, a public water system would serve fewer users in Eden and therefore the costs allocated to the user would be higher.

A public water agency, district or entity will have to be created before funding a water project in the Farson Area can be authorized.

Another objective of the study was to determine which of the existing water systems in the Farson and Eden Areas qualify as "public water systems" under EPA Regulations. The results of the determination are as follows:

Public Water Systems as Defined By EPA

Farson Area:

1. Sandy Crossing Enterprises, Inc.
2. Farson School
3. Mitch's Cafe, Etc.
4. Big Sandy Park

Eden Area:

1. Eden Bar and Trailer Park