WYOMING WATER DEVELOPMENT COMMISSION

AND

RYAN PARK TRACT "B" WATER COMPANY

RYAN PARK WATER SUPPLY PROJECT

FINAL REPORT

WATER SUPPLY ALTERNATIVES

LEVEL I

PREPARED BY:

Coffey Engineering & Surveying, Inc.

IN COOPERATION WITH

James M. Montgomery Consulting Engineers Inc.
WYOMING WATER DEVELOPMENT COMMISSION

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NOVEMBER, 1991

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Project No. 91041.00
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CHAPTER 1
CHAPTER 1

INTRODUCTION

STATEMENT OF PROBLEM

Residents of the unincorporated community of Ryan Park, Wyoming, have relied upon springs and individual wells for their domestic water needs since the area was originally patented and since further platting and subdivision of some of the Ryan Park area in the early 1970's. Most of the wells produce water of good potable quality but produce fine sands. Springs have been developed as water supplies but there has been no treatment of this water and there has never been a community-wide distribution system. Increased concern about water quality provided by the springs, and concern that individual wells in the area produce fine sand together with the lack of a secure, community system have led to the present project.

BACKGROUND

In September, 1990, the members of the Ryan Park Tract "B" Water Company requested funding from the Wyoming Water Development Commission for a Level 1 feasibility study. The Ryan Park Tract "B" Water Company is a non-profit corporation in the State of Wyoming. Shareholders in this company own lots in the Tract "B" Subdivision lying within Ryan Park. The Ryan Park Tract "B" Water Company was an adequate entity to initiate a study of the water needs of the Ryan Park area but does not meet the needs of the WWDC or other funding agencies for further funding. Ultimately the residents and owners of the Ryan Park area must determine a boundary and form a District which is a public entity. This entity or district must meet the requirements of public funding agencies, such as WWDC, if funding in the form of grants or loans are pursued for construction purposes. The request for the initiation of a Level 1 Feasibility Study was granted and Coffey Engineering & Surveying, Inc. (CESI) of Laramie was selected to perform the Level 1 Study.

DESCRIPTION OF STUDY AREA

The Ryan Park community is located on the westerly side of the Medicine Bow Mountains in Eastern Carbon County and is located immediately South of Wyoming State Highway 130. The community of Saratoga is located approximately 17 miles West of Ryan Park and Laramie is located approximately 70 miles East of Ryan Park. Ryan Park straddles Barrett Creek and consists of approximately 320 acres of privately owned land which is completely surrounded by the Medicine Bow National Forest.
The Ryan Park area lies in an alpine valley within the Medicine Bow Mountains at an elevation of approximately 8300 feet. The geology of the valley consists of ancient Precambrian-aged granites, gneisses and metasedimentary rocks overlain by gravels, silts, sands and clays from the Tertiary period and by later glacially deposited gravels and cobbles.

OBJECTIVES OF REPORT

The objectives of this report are to 1) inventory the existing systems, 2) estimate water demands for the service area, 3) analyze water supply alternatives, 4) to recommend alternatives, 5) develop preliminary designs, 6) develop preliminary cost estimates, and 7) prepare draft and final project reports for the Ryan Park Water Supply Project.

SCOPE OF REPORT

This investigation begins with preliminary assessment of potential water demands and water supply alternatives for the Ryan Park area. Groundwater, springs, and surface water resources are identified and evaluated as water supply sources, and four groundwater alternatives having the greatest potential are selected for further exploration. Recommendations for further development of the groundwater resource are presented. Preliminary designs for a water system are developed, allowing preliminary cost estimates to be developed. Highlights of the report and CESI's recommendations are presented in Chapter 6.
CHAPTER 2
CHAPTER 2
PRESENT AND FUTURE WATER NEEDS

SERVICE AREA

The Ryan Park area consists of approximately 320 acres of privately owned lands lying within the Medicine Bow National Forest. Thus, the maximum potential service area is relatively fixed. Additionally, several cabins/homes occupy Forest Service leases immediately South of the privately held land referred to as Ryan Park. These should be included in the service area. Through the use of information provided by the Ryan Park Land Company, Plats of Record in the Office of the Carbon County Clerk, maps from the Office of the Carbon County Assessor and the results of interviews with local residents, Figure 2-1 (also see Appendix A-6) was developed showing individual tracts within the Ryan Park area. Additionally, in September 1991, a preliminary plat was filed with the Carbon County Planning Office by the Ryan Park Land Company proposing an additional 18 lot subdivision in the NW1/4 SW1/4, Section 28, Township 16 North, Range 81 West. Assuming that this Plat is approved, there will be approximately 155 individual building sites in the Ryan Park area, which has approximately 83 existing homes/cabins. It is further anticipated that several of the larger land tracts will be subdivided, resulting in more than 155 individual building sites.

FUTURE EXPANSION OF THE SERVICE AREA

Mr. Don Carroll, Ranger of the Saratoga District of the Medicine Bow National Forest, has noted the U. S. Forest Service is considering a land trade which will add approximately 35 acres of private land to the privately held lands lying within the Forest. It is anticipated that this 35-acre parcel will be subdivided. The land is located in the NW1/4, Section 28, Township 16 North, Range 81 West. The cultural resources inventory for this transaction has been completed by the U. S. Forest Service. Although this report of a land trade is preliminary, planning to extend a transmission main to the Northwest side of the Ryan Park Area is advisable.

POPULATION PROJECTION

The population history of the Ryan Park area has not been documented because census data are not compiled for unincorporated areas. (No direct population counts are available.) Census data for Carbon County (in Table 2-1 below) shows that the County grew in the 1970's to a population of 21,896 people but experienced a 23.9% decrease in population in the 1980's. In 1990 the average
inventories shows an average of 2.3 people for each tract owner replying to the questionnaire. Actual platting of lots using a subdivision process began in this area in 1971. Since that time approximately 50 home/cabins have been constructed. A large majority of the present landowners have Carbon County addresses with eight families living in Ryan Park on a permanent or year-round basis.

### TABLE 2-1

**CARBON COUNTY CENSUS DATA**

<table>
<thead>
<tr>
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<tr>
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<td>13,354</td>
<td>21,896</td>
<td>16,659</td>
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<tr>
<td>% of Change</td>
<td>10.6</td>
<td>64</td>
<td>-23.9</td>
</tr>
<tr>
<td>Carbon Co. No. Households</td>
<td>4,308</td>
<td>8,659</td>
<td>6,001</td>
</tr>
<tr>
<td>% of Change</td>
<td>-6.9</td>
<td>100</td>
<td>-30.7</td>
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<tr>
<td>Average No. People Per Household</td>
<td>3.02</td>
<td>2.5</td>
<td>2.63</td>
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<tr>
<td>Numbers of Vacant Households</td>
<td>1,184</td>
<td>2,189</td>
<td></td>
</tr>
<tr>
<td>Seasonal Vacancies, County</td>
<td></td>
<td>693</td>
<td></td>
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</table>

All information was taken from the General Housing Characteristics for Wyoming found in 1970 Census of Housing, 1980 Census of Housing, and the Selected Population and Housing Characteristics for Wyoming: 1990.

With the construction of approximately 50 cabins since 1971, a growth rate of 2.5 cabins per year or 25 cabins per 10 years may be projected. Over a 30 year period 75 additional cabins may be expected to be constructed giving the area a total of approximately 158 home/cabins. Assuming 2.6 water users per household with 83 existing households yields a present population of water users in Ryan Park of 216 (see Figure 2-1) and assuming 158 home/cabins in the year 2021 the projected population is 411 people.

### SERVICE AREA WATER DEMAND

Water demand for the Ryan Park area is based upon the population projections developed above and the Wyoming Department of Environmental Quality (DEQ, 1985) public water supply design criteria. In the absence of historic water use data or actual water consumption rates, a design peak day use of 340 gallons per day per capita is required. It is assumed that peak demands of less than one day duration can be most cost effectively met with water storage. WDEQ guidelines indicate one day of storage will be required. At the present estimated population of 216 people, a one-well water supply
RYAN PARK POPULATION PROJECTIONS

FIGURE 2-2
of 51 gpm and 44,000 gallons of water storage, or a two-well supply and 30,000 gallons of storage, are needed to meet current DEQ-mandated design criteria. At the projected population of 411 people in the year 2021, a one-well water supply of 97 gpm and 280,000 gallons of water storage or a two-well supply and 52,000 gallons of storage will be necessary.

Since the Ryan Park area presently serves as a full time place of residence for approximately 10% of the owners with cabins or homes, the water use per capita will be much lower than the maximum daily water demand of 340 gallons per day per capita required for design purposes by DEQ.

CESI recommends a near term peak-day water demand for the present population of the Ryan Park area of 51 gpm. We believe that this rate of supply will serve the needs of Ryan Park for an extended period of time if appropriate conservation measures are adopted by the district. Several district residents have suggested that water use fee structures be adopted in such a manner that excessive water use is charged accordingly. Others have suggested that no lawn watering be allowed. It must also be pointed out that many of the owners in the Ryan Park area continue and will continue to own "Cottages" which are rated in Wyoming Department of Environmental Quality's Water Quality Rules and Regulations Chapter 11, page 92 to use only 50 gpd/bedroom minimum peak design flow. This is significantly less than 150 gpd/bedroom minimum peak design flow. Although these peak use rates are for the design of wastewater systems, the point is that in the Ryan Park area situation, the design peak daily use of 340 gpd/capita required by Wyoming Department of Environmental Quality will be high.

Fire protection is not explored herein for the Ryan Park Area. Due to the remote nature of Ryan Park, an improvement in fire insurance rates would be difficult to achieve.
CHAPTER 3
CHAPTER 3
EXISTING SYSTEMS INVENTORY AND
EVALUATION OF WATER SUPPLY ALTERNATIVES

SYSTEMS INVENTORY

The State Engineer's office records and questionnaires (Appendix A) sent to individual landowners were used to inventory the existing water systems at Ryan Park. Based on these data, 17 residents reportedly use springs as their primary water source; it is certain that many more residents, particularly in Tract A, use springs as their primary water source (See Figure 3-1). Water quality is reported to be good with regards to dissolved solids; many residents connected to spring systems are aware of the seasonal problems with microbial content.

Thirty permitted wells serve individual residences in the Ryan Park area (see Figure 3-1). The majority of these wells are less than 100 feet deep and yield less than 20 gpm. Most residents report good quality water from a potability standpoint; problems with water quality typically focus on pumpage of fine sand or short-term elevated concentrations of iron if the well casing is composed of steel. Many well owners routinely test their water for bacteriological content; of the interviewed well owners, none have reported elevated concentrations of total coliform.

Springs developed by the Ryan Park residents were examined during the course of this study to ascertain occurrence, discharge rates, water quality and system developments. Select wells were tested, sampled for water quality analysis, analyzed for productivity, and well completion methods. The results of these investigations have been summarized in the evaluation of water alternatives presented in the following section.

EVALUATION OF WATER SUPPLY ALTERNATIVES

Water supply alternatives available to the Ryan Park Community include (1) rehabilitation of the existing springs in order to minimize contamination from outside sources; (2) development of additional springs discharging along the east face of Barrett Ridge; (3) construction of wells producing groundwater from the Quaternary and Tertiary-aged sediments or Precambrian-aged igneous and metamorphic rocks. The following sections discuss the supply potential of each alternative.
Springs

Existing Developments. Springs discharging from the face of Barrett Ridge have been used as a source of culinary supply before the 1940's; water rights to many springs were issued in 1941. Figure 3-2 illustrates the locations of the few springs identified or developed in the immediate vicinity of Ryan Park. The Tract A Ryan Park residents presently use the Crow Spring; Tract B residents have developed a series of spring boxes and catchment basins to collect water from the Tract B springs.

Crow Spring. The Crow Spring development presently is comprised of a 1300 gallon capacity redwood catchment tub which holds water from two springs. No spring box is in place; however, vestiges of an old spring box can be found about 100 feet north of where the two springs converge. The flow of both springs is estimated to be collectively 20 gpm on July 21 and 16 gpm on August 11. Both springs appear to discharge an equal quantity of water.

Examination of the point of emergence for both springs reveals that flow is diffuse from hillslope colluvium. Both emergences are from very steep and wooded hillsides.

The Crow Spring was granted a surface water right to 0.18 cfs (81 gpm) in 1941 under Permit No. 19616. Flow measurements collected after one of the wettest years on record indicate that both springs only yield approximately 20 gpm. According to the State Engineer's office records, the permit has expired or was canceled.

Although cumulative flow rates are moderate and the apparent water quality is excellent with a pH of 7.9 and a specific conductance of 77 umhos/cm, secure development of the springs from intrusion by surface water and debris would be difficult. Consequently, rehabilitation of these springs has not been further evaluated as a potential municipal water supply due to the extensive treatment that would be required prior to distribution.

Tract B Springs. The Ryan Park Tract "B" Water Company has developed three springs discharging from one of the numerous drainages entrenched in Barrett Ridge. The original spring was developed by Donald and Vera Brinkman under special use Permit No. 43330; organization of the Ryan Park Tract "B" Water Company brought the control of the spring under this entity in 1987. A spring box of approximately 200 gallon capacity was installed to develop one of the several springs. This box has been covered by a wooden building for protection from snow and rodent intrusion.

Two-inch galvanized pipe transmits the collected water down the draw to two redwood tanks lined with hypalon. A 1987-priority surface water right to 0.092 cfs (41 gpm) was granted under Permit No. 27685. Other spring boxes use 30-gallon plastic garbage cans set into the colluvium as catchment basins.
EXPLANATION
- DEVELOPED SPRING OR EXAMINED IN FIELD
- SPRING IDENTIFIED USING COLOR INFRARED PHOTOGRAPHY

SELECT SPRING LOCATIONS IN THE RYAN PARK AREA

FIGURE 3-2
One spring has been tied into the existing two-inch line and an enlargement to the original permit has been applied for under Permit No. 6989 enlargement which covers not only Permit No. 27685, but also Permit No. 30609 (Permit No. 30609 added three points of use which were not developed at the time proof was taken for Permit No. 27685). The State Engineer's Office approved the enlargement, but the water right remains at 0.092 cfs.

Flow measurements collected over the course of the investigation from the catchment basins overflow has been gaged as high as 14 gpm on June 29, 1991; later measurements on July 18 approached 12 gpm and 8 gpm on August 11. Obviously the collective flow from both springs rarely approaches the appropriated quantity. Flow declines through the summer typify the springs discharge according to those familiar with the water use demands on the spring, and usually stabilizes at six gpm. On drier years, flow into a third collection gallery comprised of a second plastic garbage can has been diverted to the catchment basin to supplement the waning discharge from the two larger springs. Flow measurements from this spring yielded three gpm on July 18 and two gpm on August 11.

Examination of the water catchment systems revealed that all systems are covered and secure from rodent intrusion. However, spring emergences in the drainage are irregular, with water serving both the upper and lower spring boxes daylighting and disappearing above and below the spring boxes. Obviously, entrained coliform and other particulate matter are being introduced into the spring boxes and storage system above the collection points. Such an irregular flow pattern, coupled with the steep and wooded terrain, makes redevelopment difficult. Consequently, rehabilitation of the spring system is considered unfeasible to enhance municipal water supply due to the improbability of tracing the spring flow to its origin for construction of secure spring boxes.

**Armstrong Spring.** Investigation of this spring was limited to its identification on the State Engineer's Office tabulation of adjudicated water rights. As shown on Figure 3-2, the spring was developed on property approximately one-half mile north of Ryan Park. The Armstrong Spring has a 1941 - priority surface water rights of 0.01 cfs (4 gpm) under Permit No. 19597. Based on this apparent low flow, and the required pumping lift to Ryan Park, the Armstrong Spring does not have sufficient flow to augment or meet Ryan Park residents needs.

**Unnamed Spring.** A small spring located approximately 1.5 miles West of Ryan Park in Section 30 was investigated as a possible indication of structurally controlled spring occurrence. The spring flow was estimated at two to three gpm on July 18; inspection on August 11 indicated no apparent change in flow. Field measurement of pH yielded a value of 7.5; specific conductance measurements were consistently 80 umhos/cm indicating an excellent quality water with regards to dissolved solids.
Analysis of high altitude color infrared aerial photography identified a linear feature trending roughly east-west with the spring located close to the alignment of the lineament. Based on review of the water rights records filed with the State Engineer, no water right has been issued.

Other Springs. Other springs in the Ryan Park area have been investigated in terms of their indication of groundwater occurrence. The Medicine Bow Lodge in Section 19 reportedly developed a spring under a 1941 priority surface water right to 0.03 cfs (13.5 gpm). Based on the previous discussion regarding other springs along Barrett Ridge, it is unlikely that the spring discharges even one-half this reported flow (See Permit No. 19662).

Examination of color infrared (IR) aerial photography of the Ryan Park area reveals several areas which reflect near-infrared radiation indicative of healthy vegetation. These areas are typically a bright orange or red on the aerial photography, and contrast well with the darker colors associated with the pine forests. Field examination of several IR "bright spots" reveal that these areas are thickly vegetated with aspens and myriad ferns usually associated with wet areas. Most of the springs discussed earlier coincide with IR bright spots; several others which may be developable springs are shown on Figure 3-2. Discharge from these springs are variable, but usually between a few gpm to 20 gpm. At least one set of springs just south of Ryan Park has reportedly ceased to flow. None of these springs have direct water supply potential for the Ryan Park area primarily due to transmission distance and the difficulty in confidently ascertaining the primary discharge area for development.

Groundwater

The geologic setting for the Ryan Park area shown on Figure 3-3, indicates that the community is nestled in an alpine valley within the Medicine Bow Mountains. Bedrock is composed of ancient Precambrian-aged granites, gneisses and metasedimentary rocks. The Paleozoic and Mesozoic rocks typically found veneering the Precambrian rocks in Wyoming have been stripped from the bedrock by erosion following uplifting of the range during the Laramide Orogeny (Late Mesozoic through early Tertiary time). Continued erosion of the highlands during the Tertiary period eventually filled the valley with gravels, sands, silts and clays. Later glaciation deposited the lag gravels and cobbles found on the surface today. Down cutting by Barrett Creek provides a thin veneer of alluvium mantling the older Quaternary and Tertiary-aged rocks filling the valley.
Welcome to the Geological Map of Ryan Park Area. The map illustrates the distribution of various rock formations and geological features.

Key Features:
- **Older Precambrian Rocks (OPC)**
- **Medial Precambrian Rocks (MPC)**
- **Quaternary/Tertiary Rocks, Undivided (Qtu)**
- **Amphibolite**
- **Lac Gravels**
- **Alluvium**
- **North Park Formation (TNP)**

The map also includes a linear feature and a scale for reference.

This map provides a detailed view of the geological formations within the Ryan Park Area, highlighting the diversity of rock types and their spatial distribution.
BJORK WELL
T.D. 155
REPORTED YIELD = 10 GPM
SPEC. CAP. = 0.3 - 0.5 GPM/FT

WILSON WELL
T.D. 100
REPORTED YIELD = 7 GPM
SPEC. CAP. = 0.3 GPM/FT

BRINKMAN WELL
T.D. 315
REPORTED YIELD = 10 GPM
SPEC. CAP. = 0.03 GPM/FT

SPRINKEL WELL
T.D. 165
REPORTED YIELD = 1 GPM
SPEC. CAP. = 7 GPM/FT

STOKER WELL
T.D. 175
REPORTED YIELD = 15 GPM
SPEC. CAP. = 0.3 GPM/FT

RYAN PARK CAMPGROUND
T.D. 60
REPORTED YIELD = 10 GPM
SPEC. CAP. = 0.5 GPM/FT

BEACH WELL
T.D. 95
REPORTED YIELD = 5 GPM
SPEC. CAP. = 0.07 GPM/FT

BUSH WELL
T.D. 60
REPORTED YIELD = 10 GPM
SPEC. CAP. = 2.5 GPM/FT

JOHNSON WELL
T.D. 31
REPORTED YIELD = 8 GPM
SPEC. CAP. = 4.5 GPM/FT

COON WELI
T.D. 35
REPORTED YIELD = 17.5 GPM
SPEC. CAP. = 0.5 GPM/FT

NAYLOR WELL
T.D. 110
REPORTED YIELD = 10 GPM
SPEC. CAP. = 0.06 GPM/FT

SELECT WELL PERFORMANCE DATA IN THE RYAN PARK AREA
FIGURE 3-5
JOHNSON WELL NO. 1
7-21-1991
Drawdown Test
5.8 gpm

FIGURE 3-6
JOHNSON WELL NO. 1
7-21-1991
Recovery Test
5.8 gpm

FIGURE 3-7
The formations capable of yielding groundwater to wells and springs in the Ryan park area are limited to the Precambrian-age rocks of Barrett Ridge or underlying the unknown thickness of Quaternary and Tertiary-age valley fill, and the overlying Quaternary and Tertiary-age valley fill. The alluvial "groundwater" resource is basically an alternate intake method for developing surface water and is thus subsidiary to the discussion of surface water presented in a later section.

Quaternary and Tertiary-Age Rocks. As shown on Figure 3-4, the bulk of the wells in the Ryan Park area are completed in the Quaternary and Tertiary-age sediments overlying the older Precambrian rocks. The thickness of these younger sediments is unknown; the deepest well penetrates over 300 feet of gravel, fine sand and silt.

Approximately 30 permitted wells have been installed in the Ryan Park area. Seventy-five percent are less than 100 feet; typical yields are less than 10 gpm. There is no apparent correlation between greater yields with increased depths. However, there is an apparent correlation between well location and yield.

As shown on Figure 3-5, the specific capacities (the quantity of water yielded per foot of drawdown) calculated from reported pump tests and our own testing varies over three orders of magnitude across the area. Typical wells in the immediate vicinity of Ryan Park yield five to 10 gpm (the recently completed Patchen well reportedly yields 18 gpm); specific capacities typically range from 0.03 to 0.5 gpm/ft of drawdown. Larger specific capacities can be found in wells further upstream along Barrett Creek and along Brush Creek. However, the productive characteristics between closely spaced wells in these areas varies by a factor of two to three. No correlation between depth of wells and production is readily apparent.

Only two wells reportedly flow at the ground surface. Water in the Naylor well rises just to the ground level and was equipped with a pump to develop sufficient head for domestic use. The Johnson well flows approximately eight gpm and has a shut-in pressure of two psi. We flow tested this well for approximately one hour at a rate of 5.8 gpm on July 12, 1991 and determined that the aquifer transmissivity ranged from 5,000 to 10,000 gallons per day per ft (gpd/ft) using the drawdown and recovery data (See Figures 3-6 and 3-7). Whether this well fully penetrates the Quaternary and Tertiary sediments remains unknown; if partially penetrating the transmissivity of the full formation may be somewhat greater.

Random sampling of water from several wells completed in the Quaternary and Tertiary sediments indicates an excellent quality resource. As listed in Table I, total dissolved solids (TDS) in the select wells are low.
A cursory investigation of potential contamination from the closely spaced septic systems focused on wells down-gradient from the majority of the year-round residences yielded no elevated concentrations of coliform or nitrates in the Domman well or the Wojahn well.

According to most Ryan Park residents, the most predominant problem associated with their wells is very fine sand co-produced with the pumped water. A cursory review of select well completion records filed with the State Engineer's Office indicates that factory-or torch-slotted casings with a pea gravel filter envelope typify most well completions. The Brinkman well was reportedly completed with wire-wrapped well screen with 0.006-inch sized-slots and a gravel pack, yet pumped very fine sand during our sampling and well inspection efforts. However, the history of this well was plagued with many problems regarding completion records; some of the gravel pack was found at the well head and was nothing more than crusher-run gravel and sand. In addition, well development to rehabilitate the well bore following drilling was also apparently not completed.

Based on the reported testing results of several area wells, testing of one well and limited water quality assays it appears that the Quaternary and Tertiary sediments may be capable of providing an adequate water supply for the community. The production characteristics of the aquifer in the immediate vicinity of Ryan Park appear poor. Perhaps an exploration well installed to deeper depths may encounter significantly permeable material such as a basal gravel postulated at depth as shown on Figure 3-4. Other potentially attractive exploration and development sites are discussed in a later section.

**Precambrian - Age Rocks.** The final groundwater resource investigated was the Precambrian rock mass of Barrett Ridge. These rocks typically constitute an unconventional target for groundwater development because of the low intrinsic permeability; however, significant local permeability may be found in the form of fractures and foliations. We have identified linear trends which may be associated with large scale fracture trends through examination of aerial photography. Figure 3-3 illustrates the linear features construed as faults and fracture zones; the majority of the features trend northeasterly and many have weakened the rocks structural integrity to enhance erosion and formation of the northeasterly trending drainages. Based on the relationship between springs, associated vegetated areas, and linear trends as observed from IR photography, groundwater circulation is enhanced along the apparent structural disturbances in the Precambrian rocks.

We have not been able to identify areas of significant water production from the Precambrian rocks in the vicinity of Ryan Park as part of the well and spring inventory for the area.
Flow measurements of select springs during this past summer indicated flows between five to 15 gpm. No wells develop water from the Precambrian rocks near Ryan Park except for a well permitted to the Forest Service for use at the work camp and the U.W. Recreation Camp (Permit No. U.W. 56950) near Centennial. Our testing found that the well yields excellent quality water and a short term yield of 25 gpm with 50 ft of drawdown. Pump testing and analysis indicated that 13 gpm with 6.5 ft of drawdown was developed over a one-hour period yielding a transmissivity of 800 gpd/ft. Analysis of the test data indicated that perhaps the long-term transmissivity approached 10,000 gpd/ft, suggesting that greater quantities of water could be developed (JMM, 1989). Further afield, the Hogadon Ski area well on Casper Mountain was completed in the Precambrian rocks well testing yielded production characteristics closer to the lower value determined at the UW Recreation Camp Well, indicative of the highly variable permeability characteristics in these types of rocks. However, these data provided a potential average value for the aquifer parameters anticipated from a well completed in the Precambrian rocks (See Anderson & Kelly, 1987).

While the Precambrian rocks are not a commonly developed aquifer in Wyoming, communities built on these rocks in the eastern United States have been using groundwater pumped from major fracture zones for decades. A case study by Coswell (1991) has shown that wells located near linear features can yield over 350 gpm for long term municipal supplies. Examination of the few outcrops in the area in Section 13, Township 16 North, Range 82 West, reveals that the Precambrian rocks along Barrett Ridge are fractured and strongly foliated. Recharge for this groundwater source is a function of snowmelt and other precipitation on adjacent areas of Barrett Ridge. However, the seasonal flow from the various springs on the east and west side of the ridge indicates that the bulk of the recharge is probably locally derived. Laboratory analyses and field measurements of the spring water (Table I) demonstrates the excellent quality expected from a groundwater source in this geologic setting. The recharge area is within the Medicine Bow National Forest, which may provide a protective barrier to groundwater degradation by industrial pollution.

**Surface Water**

**Flow Availability.** Barrett Creek is the obvious choice of surface water for the Ryan Park community. Diversion of the creek for community use could be completed with a pipeline as short as a few hundred feet. The presence of adequate flow in this stream is not an issue -- our flow measurements of the creek at Ryan Park on August 11 found 1.40 cubic feet per second (cfs; 630 gpm). Water quality also appears favorable except for disinfection and filtration requirements to meet the Surface Water Treatment Rule of the Safe Drinking Water Act.
The principal advantage of this source is the large quantity (even during the summer months), relative to the present and future needs of the Ryan Park community.

**Water Rights.** Table II presents a summary of adjudicated water rights on Barrett Creek (according to the Wyoming State Engineer's Office, there are no significant unadjudicated rights in this area):

<table>
<thead>
<tr>
<th>Appropriator</th>
<th>Priority</th>
<th>Use (a)</th>
<th>Flow (cfs) (b)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ellen Fitzgerald</td>
<td>6-19-1918</td>
<td>I</td>
<td>S.S. (2.62)</td>
</tr>
<tr>
<td>Cedar Creek Ranches</td>
<td>6-19-1918</td>
<td>I</td>
<td>S.S. (.95)</td>
</tr>
<tr>
<td>Heirs Patrick Fitzgerald</td>
<td>6-19-1918</td>
<td>I</td>
<td>S.S. (2.97)</td>
</tr>
<tr>
<td>Fred C. Haines</td>
<td>6-19-1918</td>
<td>I, S, D</td>
<td>S.S. (2.43)</td>
</tr>
<tr>
<td>U.S.D.A. Forest Service</td>
<td>7-03-1941</td>
<td>I, S</td>
<td>0.06</td>
</tr>
<tr>
<td>U.S.D.A. Forest Service</td>
<td>7-03-1941</td>
<td>I, S, D</td>
<td>0.07</td>
</tr>
</tbody>
</table>

a. I = Irrigation; D = Domestic; S = Stock  
b. cfs = cubic feet per second  
   S. S. = Supplemental Supply, value in parenthesis is the original appropriation from North Ranch Creek which is conveyed to the Barrett Creek drainage via the "Highline Canal No. 1".

The "supplemental supply" appropriations from Barrett Creek entitle these diverters to draw as much water from Barrett Creek as is necessary to maintain the full, original appropriation from North French Creek. Comparison of the total appropriation under these rights of 8.97 cfs with the measured flow of 1.4 cfs suggests that the entire flow of Barrett Creek and substantially more would be required to satisfy this demand were these rights fully exercised. This suggests the futility of establishing a new, current-day water right on Barrett Creek.

Further investigation of the surface water option for Ryan Park should include an evaluation of (1) the historic use of the ditch through which water is transferred from the North French Creek to the Barrett Creek basin; (2) the historic consumptive use of the lands under the Barrett Creek and North French Creek water rights; and (3) the availability and cost of purchasable existing water rights of sufficient volume and priority to provide a secure water supply.
The increasing frequency of winter (October - April) regulation of all post-1904 water rights in the North Platte Basin above Pathfinder Reservoir would also require evaluation in exploring the viability of purchasing existing surface water rights. While water to meet North Platte obligations may be available from the City of Cheyenne (under temporary excess State II contracts), only to the extent that this water could be used in exchange for Barrett Creek water, which would otherwise flow to appropriators on the North Platte below the mouth of the Encampment River, would it represent a potential water supply for Ryan Park. It appears highly unlikely that this would occur during the high-demand months.

Sites Recommended for Exploration or Development

Four sites were identified for further studies of groundwater exploration or development in the Ryan Park area. As shown on Figure 3-8, the sites recommended for further consideration were (1) the Barrett Ridge Site; (2) a deep well in Ryan Park; (3) the Barrett Creek Site; and (4) the Brush Creek Site. Table III provides a qualitative comparison of each site; subsequent discussions provide information outlining the various attributes of each site.

Barrett Ridge Site. This site has been identified as a potential site to capitalize on (1) the probable fracture enhanced permeability in the Precambrian rocks and (2) the excellent water quality determined from the nearby springs. The site provides very good access, is Federally owned, and moderate exploration costs. Potential impact to other users is limited to the few springs discharging along Barrett Ridge near Ryan Park. Although the well would require pumping to produce and adequate supply, the nearly 400 ft elevation drop to Ryan Park would provide an abundance of system pressure. Exploration costs would be moderate to high due to drilling in the hard rock terrain and due to well stimulation procedures which we recommend for wells in hard rock terrains.

Ryan Park Deep Well Site. This site is perhaps the most favorable in terms of project "ease". Site access can most probably be acquired from one of the Ryan Park residents (one well owner has indicated interest in allowing access to his well for the deep well exploration effort). Water rights interference is unknown, but would probably be minimal due to the well depth. Exploration costs would be slightly higher than the other proposed sites because a geophysical survey is recommended to determine the depth to the underlying Precambrian rocks; however, other development costs would be decreased due the proximity to the service area. Because of the density of residences, the storage facilities would probably require an easement from the Forest Service.

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**Barrett Creek Site.** This site is selected due to the testing results presented earlier, coupled with the assumption that perhaps the higher permeability aquifer materials in the Quaternary and Tertiary sediments are located upstream at which point the paleo stream gradients may have decreased and deposited coarser material. Potential impacts focus on the nearby domestic wells. Development costs would be larger due to the transmission distance from the site to the service area, and the developed water would require pumping to a higher location for storage and maintenance of system pressure.

**Brush Creek Site.** Wells in the vicinity of this site appear to have the requisite production characteristics. Exploration costs would be moderate due to the shallow depths to the aquifer (150 ft). Access would require easements from the Forest Service, but no new roads would be required. Potential impacts are minimal due to the seasonal use of two wells servicing the Brush Creek Campground. On the other hand, development costs would be substantially larger than the other sites due to the transmission distance.

**Order of Magnitude Cost.** Order of Magnitude Costs are included in the Table 3-4. Excepting the Ryan Park Deep Well, the USFS must be contacted and dealt with to secure permission to explore for a suitable water source. The Brush Creek Site will require a long transmission line where a great deal of rock will be encountered. The most cost effective route from Brush Creek to Ryan Park would be a straight line which will undoubtedly not be available. Both rock and any addition of length to the transmission line will be extremely expensive. The Barrett Creek Site, if developed, will require a line to pass through the least densely populated portion of the Ryan Park area, and would give the opportunity to maximize the number of water system users. Acquisition of a transmission line easement using this site will require dealings not only with the USFS but with private landowners.

**Recommended Alternatives.** After discussions with Mr. Wade of the Wyoming Water Development Commission and with Mr. Brinkman of the Ryan Park Tract "B", CESI recommends that the Barrett Creek Well Site be chosen as the primary water source. Besides being a good choice as a water source, the anticipated location of this well will allow development of a storage facility and transmission line, which will serve the greatest number of residences in the Ryan Park area.

A possible second location for the Barrett Creek Well Site is in the N1/2 NE1/4 NW1/4 of Section 33, Township 16 North, Range 81 West, where it is reported that an artesian well has been completed. This well was drilled after the inventory of existing water sources in the area was completed. Further investigation of this site may be in order, particularly as either a primary or secondary well site.
Another possible second well location is the Ryan Park Deep Well Site. Having a second well for a water system which derives its supply from a different aquifer than the first well may be advantageous.

### TABLE 3-2
RYAN PARK, WYOMING
ORDER OF MAGNITUDE COSTS
(thousands of dollars)

<table>
<thead>
<tr>
<th>Item</th>
<th>Barrett Ridge Site</th>
<th>Barrett Creek Site</th>
<th>Brush Creek Site</th>
<th>Ryan Park Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well</td>
<td>60-75</td>
<td>35-50</td>
<td>35-50</td>
<td>45-60</td>
</tr>
<tr>
<td>Design</td>
<td>25</td>
<td>25</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Geophysical Stimulation</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Storage</td>
<td>75-140</td>
<td>75-140</td>
<td>75-140</td>
<td>75-140</td>
</tr>
<tr>
<td>Pump, Chlorination</td>
<td>35-45</td>
<td>35-45</td>
<td>35-45</td>
<td>35-45</td>
</tr>
<tr>
<td>Wellhouse Control</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trans. Line</td>
<td>105-130</td>
<td>110-135</td>
<td>120-145</td>
<td>64-76</td>
</tr>
<tr>
<td>Rock Exc.</td>
<td>60</td>
<td>100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elect to Site</td>
<td>40-50</td>
<td>40-50</td>
<td>40-50</td>
<td>40-50</td>
</tr>
<tr>
<td>Sub total</td>
<td>405-530</td>
<td>320-445</td>
<td>430-555</td>
<td>295-410</td>
</tr>
<tr>
<td>Design</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management (10%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contingency (15%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Construction</td>
<td>562-730</td>
<td>432-603</td>
<td>567-737</td>
<td>400-553</td>
</tr>
</tbody>
</table>

3-11
### TABLE 3-3

**QUALITATIVE ASSESSMENT OF RECOMMENDED EXPLORATION SITES**  
**RYAN PARK, WYOMING**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Barrett Ridge Site</th>
<th>Barrett Creek Site</th>
<th>Brush Creek Site</th>
<th>Ryan Park Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Potential Yield</td>
<td>Fair</td>
<td>Good</td>
<td>Very Good</td>
<td>Fair (?)</td>
</tr>
<tr>
<td>2. Potential Impact</td>
<td>Low</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>3. Exploration Costs</td>
<td>Moderate</td>
<td>Low</td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td>5. Development Costs</td>
<td>Moderate</td>
<td>Moderate to High</td>
<td>High</td>
<td>Low to Moderate</td>
</tr>
</tbody>
</table>

3-12
CHAPTER 4
CHAPTER 4
CONCEPTUAL DESIGN OF WATER SYSTEM
AND
PROPOSED OPERATING PLAN

INTRODUCTION

This chapter provides a conceptual design for a proposed water system which will serve the Ryan Park Area in a cost-effective manner. Because the Ryan Park Area is not served by an existing system, incorporation of existing system components is not required in the development of the system-wide operating plan.

PROPOSED WATER SYSTEM

The proposed system will consist of two wells, a 44,000 gallon reinforced concrete storage reservoir, a control building, and a 6-inch diameter transmission line. In addition to housing controls for the wells, the control building will contain chlorination equipment.

The first proposed system is shown in Figure 4-1 as Alternative No. 1. This water system serves the entire Ryan Park Area. The transmission line through the easterly portion of the Ryan Park Area will also distribute water to the larger tracts of land in the area. This system assumes both wells will be located in the same general area.

The second proposed system encompasses only the "subdivided" or "platted" area of Ryan Park. This system is shown in Figure 4-2 as Alternative No. 2. The Alternative No. 2 water system is shown with a limited service area serving only the most densely populated portion of the Ryan Park Area. This system is designed preliminarily to provide for further expansion to the Northwest and to the balance of the Ryan Park Area to the East of the platted area.

WELL

The Barrett Creek Site was identified as the desired choice as a site for a well. Figure 4-3 shows a preliminary well design for this site. A second well could be developed at this site, at the alternate Barrett Creek Site, or at the Ryan Park Deep Well Site (see Figure 4-4). Development of wells which are a significant distance apart may result in the need for separate control buildings and chlorination equipment. In this event, one of the two wells could pump directly to the distribution system with the design of adequate chlorine contact time.
NOTE:
DEPTHS FOR WELL
APPURtenANCES ARE
DIAGRAMMATIC
ONLY.
FINAL DESIGN TO BE
DETERMINED
BY ENGINEER FOLLOWING
EXAMINATION OF GEOLOGIC AND
GEOPHYSICAL SURVEYS.

NOT TO SCALE

PRELIMINARY WELL DESIGN
BARRETT CREEK SITE
FIGURE 4-3
NOTE:
DEPTHS FOR WELL
APPURtenANCES ARE
DIAGRAMMATIC
ONLY.
FINAL DESIGN TO BE
DETERMINED
BY ENGINEER FOLLOWING
EXAMINATION OF GEOLOGIC AND
GEOPHYSICAL SURVEYS.
WELLHEADS

Each well should be constructed with pitless adapters, allowing the pumped water to be conveyed through pipes buried underground, thus preventing freezing problems. As the well may be drilled within the Medicine Bow National Forest, use of the pitless adapter may be helpful in minimizing visual impacts, as well as avoiding the necessity of a well house directly over the pump. This will allow placement of controls and chlorination equipment in a lower impact area, as well as allow the more convenient servicing of the pump and well.

COLLECTION LINES

Water from the two wells will be collected in 4-inch diameter collection lines and delivered to a water storage facility. Since the storage facility is at a higher elevation than the wells, check valves should be installed at each well to insure that water in the reservoir and collection line is not allowed to re-enter the well. For operations purposes and because the State Engineer's Office is routinely requesting records of water production from wells as a condition of issuing the necessary permits for appropriating groundwater, water meters should be installed in each collection line to monitor water production from individual wells.

CONTROL BUILDING

Well pumping controls, meters and chlorination equipment should be housed in an above-ground structure of approximately 100 square feet, located between the storage facility and the wells. The building architecture should be designed to reflect area aesthetics and to meet the high snow loads expected in Ryan Park.

CHLORINATION FACILITY

Chlorination of the well water will be via a hypochlorite injection system. Hypochlorination is initially less costly than a chlorine gas system, due to the equipment required for safety of operation. In addition, the small volume of water requiring treatment does not require the high concentrations of chlorine provided by a gas system. A sodium hypochlorite system is recommended because it can be delivered as a pre-mixed liquid in barrels to the site, thus eliminating the problems associated with mixing powdered hypochlorite. For winter operations, an extra barrel can be stored in the control building.
STORAGE ALTERNATIVES

Due to the Wyoming Department of Environmental Quality (WDEQ) rules and regulations, two basic storage alternatives are possible. One alternative, for a system with only one well, requires "twice the maximum daily demand" must be stored. The reasoning for this requirement being that this requirement provides adequate storage if the well equipment failed or needed to be removed for routine maintenance. This also assures that the well can be brought back on-line within one day after a failure or servicing. Due to the remote location of Ryan Park, one-day service does not appear to be realistic, especially during winter months. The storage reservoir required to store "twice the maximum daily demand" of 340 gallons per day per capita (gpd) for an estimated population, in the year 2011, of 346 would need a capacity of 235,000 gallons.

If a two-well system is used, the requirement is that the average daily demand of 125 gpd must be stored. Therefore, a smaller, less expensive storage reservoir can be used when two wells are on-line. This reservoir, given a population of 346 in the year 2011, must store approximately 44,000 gallons. The smaller the reservoir, the less expensive it will be to install and the easier it will be to meet any concerns, regarding visual impacts.

SYSTEM CONTROLS

Storage Reservoir

Instrumentation will be installed in the water storage reservoir to monitor the water level and operate the well pumps. The water level in the reservoir will be monitored for five pre-set depths. From top to bottom, these will be high-level alarm, pump off, lead pump on, lag pump on, and low-level alarm. When the water level in the storage reservoir drops to a predetermined depth, the first well pump will start. If the pumping rate exceeds the withdrawal rate from the reservoir, the well pump will shut down when the reservoir is full. However, if the distribution system withdrawal rate exceeds the pumping rate, the water depth will continue to drop until the second well pump is started. Both well pumps will continue until the reservoir is full; once the high-level alarm is tripped, both pumps will automatically shut off. The high-level alarm will activate if the water level approaches the overflow level of the reservoir. In the event that both well pumps fail to keep up with the distribution system demand, the water level will continue to drop until the low-level alarm is activated. In the event there is a failure of one of the pumps, an alarm will be activated. Every time the reservoir is filled and the pump or pumps are shut down, the lead and lag pumps will automatically alternate to equalize the run time on each of the pumps.
WELLS

High and low water level probes will be installed in each well. Low-level cutoff probes will be installed to shut the pump off in the unlikely event the water level in the well should drop to within 10 feet of the pump. High-level activation probes can be installed to reactivate the pumping equipment once the water level in the well recovers to near static conditions. The control panel for the pumping equipment in the wells will be designed for both automatic and hand activation.

TRANSMISSION LINE

The Alternate No. 1 transmission line from the storage reservoir to the Ryan Park distribution system, as shown in Figure 4-1, passes through that portion of Ryan Park with the least population density and then passes through the platted area of Ryan Park. The transmission line is extended through Ryan Park to the northwesterly edge of Ryan Park in anticipation of possible future development in that area. A 6-inch diameter line is necessary to minimize head loss along the transmission line when providing daily demand.

The transmission line for Alternate No. 2 will extend from the storage area to the Northwest corner of the platted area and to the Northeast corner of the platted area, thus providing for possible future expansion of the water system to serve the balance of the private lands lying within the boundaries of the Medicine Bow National Forest.

WATER PRESSURE

The proposed service area, which would serve existing houses within the Ryan Park Area, has ground elevations ranging from 8,280 feet to 8,450 feet. With the water storage reservoir located at the proposed elevation of 8,560 feet, the static pressure over the delivery system would range from a low pressure of 51 pounds per square inch (psi) to a high pressure of 125 psi. PRV's (Pressure Reducing Valves) should be used for all taps with static pressure over 90 psi or lower than 8,361 feet in elevation.

PIPE MATERIALS

PVC and ductile iron pipe are acceptable alternatives for the proposed transmission system. While PVC is easier to handle and is less susceptible to corrosion, ductile iron is more forgiving of rough handling and installation practices.
APPURTENANCES

A blow-off device is recommended at each line which is not looped to allow rapid release of water in the line to clear the line of debris from the construction process or from future repairs.

ELECTRICAL SUPPLY

Electricity to serve the wells and controls will be provided by Carbon Power & Light, Inc. The storage facility will have enough water to provide maximum daily flow for the present population. This should be adequate, since power outages longer than 24 hours are unusual. All electrical service lines installed within the Medicine Bow National Forest must be buried.

PHASED CONSTRUCTION

The proposed water system for the Ryan Park Area is based on state regulations and the location of the well and storage reservoir. The system is proposed as a base system, the sizing and configuration of which is necessary for the system to function.

There are very few options available in terms of building the system in stages to minimize initial cost. For example, to delay the construction of the second well would require a large increase in the amount of storage. The trade-off is in favor of a second well at the outset.

If the formation of the "Ryan Park Water District" includes only the platted areas of Ryan Park and the necessary wells are located in close proximity to this "area," it is possible to construct a system which could then be extended at a later date. This option is explored further in Chapter 5 as Alternative No.2.

PERMITS AND MITIGATION OF PROJECT IMPACTS

As one or both wells, along with collection lines, electrical lines, and transmission lines, may ultimately lie on Medicine Bow National Forest land, it will be necessary to obtain Special Use Permits and to mitigate impacts, due to this project. It may be necessary to conduct Threatened and Endangered Species investigations and review portions of the project which could disturb candidates being considered for classification as Endangered Species. Jurisdictional Wetlands Analysis may be necessary for transmission lines and for distribution system lines crossing Barrett Creek and crossing Wetlands near Barrett Creek. A Corps of Engineers Nationwide Permit, or a 404 Permit, will be necessary for crossing of Wetlands and Barrett Creek. Additionally, cultural resources may require an inventory of all easements and Rights-of-Way.
COST OF ACQUIRING ACCESS AND RIGHTS-OF-WAY

The primary expense of acquiring Access and Rights-of-Way will be in the easterly two-thirds of the Southwest 1/4 of Section 28, Township 16 North, Range 81 West and in Sections 27 and 33, Township 16 North, Range 81 West. The balance of the Rights-of-Way in Section 28 are either Public Right-of-Way or are essentially held by a single entity. Approximately 11,000 feet of Right-of-Way must be obtained for the transmission/distribution lines and approximately 20 owners must be dealt with. This could be a major, time-consuming, and expensive undertaking. Acquisition cost for Rights-of-Way in Ryan Park will probably vary from $0 per rod up to $20.00 per rod, depending upon the individual owner's motivation and attitude toward the project.
CHAPTER 5

PROJECTED COSTS AND ECONOMIC ANALYSIS

INTRODUCTION

This chapter provides (1) an explanation of the estimated total project costs including operation and maintenance expenses; (2) a brief analysis of project funding; and (3) the resultant financial impact on Ryan Park Area water consumers. Project costs will first be divided into the components of: (1) wells, transmission and storage; (2) distribution; and (3) operation and maintenance. This division reflects the availability of funding for the various components of the total system. Following development of total costs, a brief discussion of project financing is presented and the monetary obligations of the Ryan Park Area district is reduced to a projection of individual user fees.

PROJECT LEGAL EXPENSES

Legal expenses for this project may vary, due to potential problems with acquisition of Rights-of-Way and Easements. Estimated costs are based upon a similar project in Centennial and discussions with two attorneys who have worked with Water and Sewer Districts.

ESTIMATED PROJECT COSTS -- BASIS OF COST ESTIMATES

A preliminary level of engineering detail was used to determine total project costs. Costs generated for a basic water system included two wells, storage, transmission line and appurtenances, electrical services, together with engineering costs, permitting costs, legal fees, Right-of-Way acquisition costs, and contingencies. The accuracy of these costs is in the range of minus 20 per cent to plus 30 per cent of actual costs.

To determine total project costs, preliminary designs of a water distribution system were completed. The accuracy of these costs is within plus or minus 35 per cent, as determined using a preliminary level of engineering detail.

WELLS, TRANSMISSION AND STORAGE

Two wells are included in the basic system, as well as a storage reservoir and transmission line and appurtenances. Table 5-1 shows cost estimates, including the additional costs of Engineer-ing Design plus associated costs of Permitting and Mitigation, Legal Fees, and Acquisition of Access and Rights-of-Way for Alternate No. 1. Table 5-2 shows the same cost estimates for Alternate No. 2.
Well cost summaries found in A-4 and A-5 give a relatively detailed summary of anticipated construction costs for both the Barrett Creek Site and for the Ryan Park Deep Well Site. In addition to these costs, estimated engineering design and construction supervision costs for each well are approximately $25,000.00. Certainly, two wells drilled at the same time would result in lower engineering costs. Additionally, it is recommended that a geophysical study of the area be completed prior to exploratory drilling at the Ryan Park Deep Well Site. At both the Barrett Creek Site and the alternative Barrett Creek Site, near the Forest Service Leases in the NE1/4 of Section 33, there are existing artesian wells. Prior to exploring near these sites, a well pumping and monitoring program would cost approximately $12,000 to $15,000.

### TABLE 5-1

**WELLS, TRANSMISSION, AND STORAGE**

**ALTERNATE NO. 1**

**FINAL COST ESTIMATES**

*(1991 DOLLARS)*

| Preparations of Final Designs and Specifications | $101,000 |
| Permitting and Mitigation | $10,000 |
| Legal Fees | $10,000 |
| Acquisition of Access and Rights-of-Way | $15,000 |
| Cost of Project Components | |
| Wells (2) | $87,578 |
| Control/Treatment Building | $17,000 |
| 44,000 Gallon Reservoir | 44,000 |
| 6-Inch Transmission Line..13,100 L.F. | 248,900 |
| Valves - 8 | 5,360 |
| Fittings - 27 | 13,500 |
| Blow-Off | 2,000 |
| Electrical Services (2) | 10,000 |
| Construction Cost Sub-Total #1 | $428,338 |
| Engineering Costs = CCS #1 X 10% | $42,833 |
| Sub-Total #2 | $471,171 |
| Contingency = Sub-Total #2 X 15% | $70,676 |
| Construction Cost Total | $541,847 |
| Project Cost Total | $677,847 |

*(Use $678,000)*
<table>
<thead>
<tr>
<th>Description</th>
<th>Cost (1991 Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparation of Final Designs and Specifications</td>
<td>$87,000*</td>
</tr>
<tr>
<td>Permitting and Mitigation</td>
<td>$6,000</td>
</tr>
<tr>
<td>Legal Fees</td>
<td>$6,000</td>
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<tr>
<td>Acquisition of Access and Rights-of-Way</td>
<td>$3,000</td>
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<tr>
<td><strong>Cost of Project Components</strong></td>
<td></td>
</tr>
<tr>
<td>Well (Barrett Creek)</td>
<td>$43,789</td>
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<tr>
<td>Well (Ryan Park Deep Well)</td>
<td>91,188**</td>
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<tr>
<td>Control/Treatment Building</td>
<td>17,000</td>
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<tr>
<td>44,000 Gallon Reservoir</td>
<td>44,000</td>
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<tr>
<td>6-Inch Transmission Line .8,364 L.F.</td>
<td>158,916</td>
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<tr>
<td>Valves</td>
<td>3,350</td>
</tr>
<tr>
<td>Fittings - 18 @$500/Ea.</td>
<td>9,000</td>
</tr>
<tr>
<td>Blow-Off</td>
<td>4,000</td>
</tr>
<tr>
<td>Electrical Services (2)</td>
<td>10,000</td>
</tr>
<tr>
<td><strong>Construction Cost Sub-Total #1</strong></td>
<td>$381,243</td>
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<tr>
<td>Engineering Costs = CCS #1 X 10%</td>
<td>$38,124</td>
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<tr>
<td><strong>Sub-Total #2</strong></td>
<td>$419,367</td>
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<tr>
<td>Contingency = Sub-Total #2 X 15%</td>
<td>$62,905</td>
</tr>
<tr>
<td><strong>Construction Cost Total</strong></td>
<td>$482,272</td>
</tr>
<tr>
<td><strong>Project Cost Total</strong></td>
<td>$584,272</td>
</tr>
</tbody>
</table>

(Use $584,000)

* Includes $25,000 per well for Engineering Design and Construction Supervision

** Includes $14,000 Geophysical Investigation
DISTRIBUTION SYSTEM

A distribution system is an obviously necessary component of a water system, although it is not funded by the Wyoming Water Development Commission (WWDC). Following in Table 5-2 are preliminary cost estimates which are the result of a limited distribution system analysis. This cost estimate includes the cost to install meter pits and meters, which are necessary to control system use and to allow efficient system operation and maintenance. Similarly, Table 5-4 contains preliminary cost estimates for the Alternate No. 2 distribution system.

TABLE 5-3

ALTERNATE NO. 1
WATER DISTRIBUTION SYSTEM
PRELIMINARY COST ESTIMATES

| 4-Inch Diameter | 4,250 l.f. @$16.50 | $70,125 |
| 2-Inch Diameter | 12,400 l.f. @$16.00 | 198,400 |

FITTINGS:

<table>
<thead>
<tr>
<th>Service</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water Services</td>
<td>83</td>
<td>@$1,050.00</td>
<td>87,150</td>
</tr>
<tr>
<td>(Tap Saddle, Corp, 15 ft. service line, meter pit w/valve, meter, check valve)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 4-Inch Valves w/Risers | 2 | @$ 600.00 | 1,200 |
| 2-Inch Valves w/Risers | 21 | @$ 500.00 | 10,500 |
| Blow-Offs | 7 | @$1,200.00 | 8,400 |
| Fittings | 42 | @$ 350.00 | 14,700 |

SUB-TOTAL $390,475

Design $43,000
Legal and Administration 5,000
Construction Management (10%) 39,000
Contingencies (15%) 58,600

TOTAL $536,075
**TABLE 5-4**

**ALTERNATE NO. 2**

**WATER DISTRIBUTION SYSTEM**

**PRELIMINARY COST ESTIMATES**

<table>
<thead>
<tr>
<th>Diameter</th>
<th>Length</th>
<th>Rate</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Inch Diameter</td>
<td>2,700 L.F.</td>
<td>$16.50</td>
<td>$44,550</td>
</tr>
<tr>
<td>2-Inch Diameter</td>
<td>10,400 L.F.</td>
<td>$16.00</td>
<td>166,400</td>
</tr>
</tbody>
</table>

**FITTINGS:**

- **Water Services:** 57 @ $1,050
  (Tap, Saddle, Corp,
  15 ft. service line,
  meter pit w/valve, meter,
  check valve)

- **4-Inch Valves w/Risers:** 2 @ $600

- **2-Inch Valves w/Risers:** 15 @ $500

- **Blow-Offs 2" -** 5 @ $1200

- **Fittings -** 22 @ $350

**SUB-TOTAL** $287,150

**Design** $34,500

**Legal and Administration** 3,000

**Construction Management (10%)** 28,715

**Contingencies (15%)** 43,073

**TOTAL** $396,438

**OPERATION AND MAINTENANCE**

The successful operation of a water system requires qualified operators and continued maintenance, as well as successful administration of the system. Table 5-3 shows projected operating and maintenance costs on a yearly basis. These costs are not eligible for the types of funding which are available for construction, hence they will constitute a large part of the District's financial obligation.
TABLE 5-5
RYAN PARK WATER SYSTEM
OPERATION AND MAINTENANCE
ALTERNATES 1 AND 2

ITEM

<table>
<thead>
<tr>
<th>COST PER YEAR</th>
</tr>
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<tr>
<td>Administrative Expenses</td>
</tr>
<tr>
<td>Legal</td>
</tr>
<tr>
<td>Accounting</td>
</tr>
<tr>
<td>Billing</td>
</tr>
<tr>
<td>Operator</td>
</tr>
<tr>
<td>Equipment Repair/Replacement</td>
</tr>
<tr>
<td>Electrical Power</td>
</tr>
<tr>
<td>SUB-TOTAL</td>
</tr>
<tr>
<td>15% Contingency</td>
</tr>
<tr>
<td>TOTAL</td>
</tr>
</tbody>
</table>

(Use $ 12,000)

PROJECT FINANCING

The Ryan Park Water District (RPWD), when formed, will have little or no cash reserves. The RPWD will rely entirely on grants-in-aid, loans, and additional user fees to finance construction and operation of a water system.

GRANTS AND LOANS

Typically, grant/loan packages are available from various sources to help finance the construction of projects such as the Ryan Park Water System. The terms of the funding packages vary, depending upon the funding entity and the financial ability of the community.

The Wyoming Water Development Commission participates in the funding of high necessity projects. The sponsor of a project must be a public entity, such as a Water District, Water and Sewer District, or an Improvement District. WWDC funding is limited to development of water services, water transmission lines, and storage facilities. WWDC participation in the funding of a project is largely dependent upon the ability of the district to pay its share. The WWDC staff is limited and may recommend no higher than a 67% grant. Some projects have received grants as large as 75% upon application by the District to the Commission.
Table 5-6 presents the Grant/Loan/Interest combination for both Alternates No. 1 and No. 2.

**TABLE 5-6**

**A WWDC LOAN REPAYMENT ALTERNATIVE WELL, STORAGE AND TRANSMISSION LINE ALTERNATES NO. 1 AND 2**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>ALTERNATE NO. 1</th>
<th>ALTERNATE NO. 2</th>
<th>ANNUAL LOAN REPAYMENT 30 YRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$678,000 Cost (33% Loan, 67% Grant) 4% Interest</td>
<td>$584,000 Cost (33% Loan, 67% Grant) 4% Interest</td>
<td>$ 9,040 $ 7,787</td>
</tr>
</tbody>
</table>

Table 5-7 provides a similar alternative for financing the distribution portion of the Ryan Park Water System. This information was developed based upon terms typically offered by the Wyoming Farm Loan Board and the Farmers Home Administration.

**TABLE 5-7**

**A LOAN REPAYMENT ALTERNATIVE FOR THE DISTRIBUTION SYSTEM ALTERNATES NO. 1 AND 2**

<table>
<thead>
<tr>
<th>ITEM</th>
<th>ALTERNATE NO. 1</th>
<th>ALTERNATE NO. 2</th>
<th>ANNUAL LOAN REPAYMENT 30 YRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$536,075 Cost (50% Loan, 50% Grant) 8.5%</td>
<td>$396,438 Cost (50% Loan, 50% Grant) 8.5%</td>
<td>$22,783 $16,849</td>
</tr>
</tbody>
</table>

The Farmers Home Administration grant eligibility requirements, as well as other funding sources, should be studied in detail at the time when water sources have been developed and more detailed plans and cost estimates can be developed.
A likely grant scenario is that the Wyoming Water Development Commission and the Farm Loan Board would provide partial grants for construction costs. The District would be responsible for repayment of loans for the balance of the construction costs and for operations and maintenance, as shown in Table 5-8.

<table>
<thead>
<tr>
<th>ITEM</th>
<th>ALTERNATE NO.1 ANNUAL COST</th>
<th>ALTERNATE NO.2 ANNUAL COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wells, Transmission and Storage</td>
<td>$9,040</td>
<td>$7,787</td>
</tr>
<tr>
<td>Distribution System</td>
<td>$22,783</td>
<td>$16,849</td>
</tr>
<tr>
<td>Operation and Maintenance</td>
<td>$12,000</td>
<td>$12,000</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>$43,823</strong></td>
<td><strong>$36,636</strong></td>
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</tbody>
</table>

**TAP FEES**

The first source of user-based funding for the Ryan Park Water District is the tap fees, which may be assessed when a user is initially connected to the system. This fee may provide start-up capital and may be used to encourage early participation by offering substantial discounts for an initial limited time period. The basic tap fee is usually for a basic 3/4-inch tap. Commercial establishments are generally charged a larger fee. If 83 users each paid an initial $500.00 tap fee, $41,500.00 would be generated, providing a necessary operation and maintenance fund or to be applied to loan balances. Tap fees for those participating at a later date could be set higher.

**MONTHLY USE FEES**

There are a number of ways to assess monthly use fees, including uniform rates for all users, unit costs per gallon of water actually used, or a combination of methods. It may be desirable to set water rates which encourage conservation of water. It has been suggested that lawn watering is not necessary in the Ryan Park Area. A method of supporting the cost of annual water system expenses is to divide system expense among users. If the Alternate No. 1 projected annual water system expenses are divided among 83 users, an average monthly fee of $44.00 per unit could result. As additional users are added to the system, additional capital construction may be required, but for any additions to the system an annual expense would be apportioned between more users.
If the Alternate No. 2 projected annual water system expenses are divided among 57 users, an average monthly fee of $53.56 per unit would result.

The above calculation was based upon one of many possible financial scenarios. Another possible scenario is that which allows the district to place an assessment upon lands owned in the district through the County Assessor's Office. This approach may be useful as landowners whose property value may increase due to access to the water through the district, but who does not have improvements on their land, can share in the basic cost of construction of the water system.

ABILITY TO PAY

A determination of the ability to pay may be made by comparing rates with the normal rates charged by similar entities. In the Centennial Water and Sewer District monthly fees will be $30.00 per month. In the Poison Spider Water and Sewer District the average user in 1989 was paying $43.20 per month plus a $15.00 per month surcharge for additional treatment facilities. Pioneer Water and Sewer District assesses fees of $53.00 per month for the first 15,000 gallons. The additional 5,000 gallons per month used by the typical user is another $7.50. The South Riverside Acres Water, Improvement and Sewer District, located East of Casper, charges $65.00 per month, including the first 10,000 gallons, and $5.00 per 1,000 gallons thereafter.
CHAPTER 6
CHAPTER 6

CONCLUSIONS AND RECOMMENDATIONS

This chapter presents a brief summary of two alternative water systems, water system costs for the alternative systems, and recommendations.

CONCEPTUAL DESIGN OF THE WATER SYSTEM AND PROPOSED OPERATING PLAN

The proposed water systems each consist of two wells, a 44,000 gallon reservoir, a control building which houses chlorination equipment, and a transmission line. The 44,000 gallon reservoir is sized to serve the 20-year projected population of 346 people. Both wells will operate on an alternating basis with controls housed in a central control building, which also contains chlorination equipment for treating water prior to storage. Stored water will be transported to the District via a 6-inch transmission line. Fire protection is not addressed by any portion of this system.

Two alternative water systems are addressed herein. The first system provides water service to all lands lying within the Ryan Park Area. The second system is designed for serving the "platted" area of Ryan Park. This is the area of Ryan Park which has the greatest population density. Those considering the formation of a "District" in Ryan Park through which to seek further funding for a water system should recognize that the costs presented herein are based strictly on reimbursement by users. Some types of Districts allow system construction costs to be assessed to individual landowners.

PROJECT COSTS

Total construction and engineering cost estimates for the proposed water system, including distribution, are approximately $1,214,000 for Alternate No. 1 and $980,500 for Alternate No. 2. Estimated operation and maintenance costs for the proposed system are approximately $12,000 per year.

A variety of funding packages are available to the Ryan Park Water District. Loan repayment and operation and maintenance funds can be supported through monthly user assessments and through water system tap fees. An alternate funding source is through assessments assigned to each tract of land in the District. This requires formation of the proper type of District.
A preliminary projection of average monthly water fees for the average user within Alternate No. 1 is $44.00 per month, based upon 83 users. Projected average monthly water fees for Alternate No. 2 is $53.56 per month, based upon 57 users. It is anticipated that addition of users can be made with small increased costs, thus reducing the cost per user.

RECOMMENDATION

If the residents of the Ryan Park Area wish to pursue the construction of a community water system, they should actively pursue the formation of a "District" and encourage the Wyoming Water Development Commission to proceed with a Level II Project to develop water sources so that more specific preliminary design and cost estimates can be completed and the final decision to pursue construction of a community water system can be made with adequate information.

The Medicine Bow National Forest personnel in Saratoga should be contacted at the earliest possible date, regarding any potential exploration within the Forest. They may require extensive lead time to issue Special Use on Exploration Permits.
APPENDIX
### Primary EPA Parameters

<table>
<thead>
<tr>
<th>Contaminant</th>
<th>Level</th>
<th>Tract A Springs 7/18/91</th>
<th>Tract B Springs 7/18/91</th>
<th>Johnson Well</th>
<th>Brinkman Well</th>
<th>Domman Well</th>
<th>Brush Creek Well 7/18/91 &amp; 7/21/91</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDWA Pesticides/Herbicides</td>
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<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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<tr>
<td>Eight Regulated VOC's</td>
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<td>NA</td>
<td>NA</td>
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<td>NA</td>
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<td>&lt;0.2</td>
<td>&lt;0.2</td>
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<td>Silver</td>
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<td>NA</td>
<td>NA</td>
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<td>Turbidity (NTU)</td>
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<td>NA</td>
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<td>Uranium</td>
<td>NS</td>
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<td>NA</td>
<td>NA</td>
<td>NA</td>
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<td>Radium 226, pCi/l</td>
<td>3.0</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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<td>Radium 228, pCi/l</td>
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<td>NA</td>
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<td>NA</td>
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<td>Gross beta, pCi/l</td>
<td>50.0</td>
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<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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<tr>
<td>Total Coliform</td>
<td>NS</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>NA</td>
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<tr>
<td>Fecal Coliform</td>
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<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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</table>

### Secondary EPA Parameters

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Tract A Springs 7/18/91</th>
<th>Tract B Springs 7/18/91</th>
<th>Johnson Well</th>
<th>Brinkman Well</th>
<th>Domman Well</th>
<th>Brush Creek Well 7/18/91 &amp; 7/21/91</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color (units)</td>
<td>15</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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<td>Corrosivity (langlier)</td>
<td>NS</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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<tr>
<td>Temperature °C</td>
<td>NS</td>
<td>7</td>
<td>7</td>
<td>5</td>
<td>7.5</td>
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<td>11</td>
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<tr>
<td>pH (units)</td>
<td>6.5-8.5</td>
<td>7.8</td>
<td>7.1</td>
<td>7.9</td>
<td>8.1</td>
<td>7.0</td>
<td>7.8</td>
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<tr>
<td>Total Dissolved Solids</td>
<td>500</td>
<td>50</td>
<td>50</td>
<td>220</td>
<td>115</td>
<td>115</td>
<td>85</td>
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<tr>
<td>Conductivity (mmhos/cm @ 25°C)</td>
<td>NS</td>
<td>66.5</td>
<td>47.1</td>
<td>364</td>
<td>191</td>
<td>144</td>
<td>131</td>
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<tr>
<td>Acidity</td>
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<td>NS</td>
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<td>21</td>
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<td>66</td>
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<td>Hardness</td>
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<td>NA</td>
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</tr>
<tr>
<td>Calcium</td>
<td>NS</td>
<td>6.2</td>
<td>3.6</td>
<td>69</td>
<td>25</td>
<td>15</td>
<td>18</td>
</tr>
<tr>
<td>Magnesium</td>
<td>NS</td>
<td>1.6</td>
<td>1.1</td>
<td>4.2</td>
<td>5.0</td>
<td>4.0</td>
<td>3.5</td>
</tr>
</tbody>
</table>

A-1
<table>
<thead>
<tr>
<th>Parameters (mg/l except as noted)</th>
<th>EPA Contaminant Level&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Tract A Springs 7/19/91</th>
<th>Tract B Springs 7/19/91</th>
<th>Johnson Well 7/18/91</th>
<th>Brinkman Well 7/18/91</th>
<th>Domman Creek Well 7/18/91 &amp; 7/21/91</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium</td>
<td>NS</td>
<td>0.3</td>
<td>&lt;0.1</td>
<td>0.5</td>
<td>1.7</td>
<td>1.8</td>
</tr>
<tr>
<td>Sodium</td>
<td>250</td>
<td>4.2</td>
<td>3.9</td>
<td>4.3</td>
<td>6.6</td>
<td>7.7</td>
</tr>
<tr>
<td>Bicarbonate</td>
<td>NS</td>
<td>36</td>
<td>26</td>
<td>230</td>
<td>120</td>
<td>77</td>
</tr>
<tr>
<td>Carbonate</td>
<td>NS</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Chloride</td>
<td>250</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
<td>&lt;1.0</td>
<td>1.2</td>
<td>3.0</td>
</tr>
<tr>
<td>Sulfate</td>
<td>250</td>
<td>6.1</td>
<td>5.7</td>
<td>&lt;3.0</td>
<td>&lt;3.0</td>
<td>&lt;3.0</td>
</tr>
<tr>
<td>Boron</td>
<td>NS</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
<td>&lt;0.01</td>
<td>0.04</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Copper</td>
<td>1.0</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Iron</td>
<td>0.3</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Manganese</td>
<td>0.05</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Silica</td>
<td>NS</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
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<tr>
<td>Zinc</td>
<td>5.0</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Odor</td>
<td>3.0</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Surfactants (MBAS)</td>
<td>0.5</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>Fluoride</td>
<td>2.0</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

<sup>a</sup> NS = No Standard  
<sup>b</sup> NA = Not Analyzed  
<sup>c</sup> Laboratory Data Sheets in Appendix
## BARRETT CREEK SITE
## COST ESTIMATE

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT COST</th>
<th>TOTAL COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>WELL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Mobilization/Demobilization</td>
<td></td>
<td>$ 6,500</td>
<td></td>
</tr>
<tr>
<td>2. Drill For, Furnish, Install &amp; Cement Surface Casing</td>
<td>20 L.F.</td>
<td>$ 60</td>
<td>1,200</td>
</tr>
<tr>
<td>3. Drill 7 7/8-inch Dia. Hole</td>
<td>130 L.F.</td>
<td>23</td>
<td>2,990</td>
</tr>
<tr>
<td>4. Furnish &amp; Install 5-inch Casing</td>
<td>112 L.F.</td>
<td>9.50</td>
<td>1,064</td>
</tr>
<tr>
<td>5. Furnish &amp; Install 5-in P.S. SS Screen</td>
<td>40 L.F.</td>
<td>55</td>
<td>2,200</td>
</tr>
<tr>
<td>6. Furnish &amp; Install Gravel Pack</td>
<td>130 L.F.</td>
<td>4.50</td>
<td>585</td>
</tr>
<tr>
<td>7. Cement Top of 5-in Casing</td>
<td></td>
<td></td>
<td>300</td>
</tr>
<tr>
<td>8. Development</td>
<td>12 HRS.</td>
<td>150</td>
<td>1,800</td>
</tr>
<tr>
<td>9. Air Development</td>
<td>6 HRS.</td>
<td>175</td>
<td>1,050</td>
</tr>
<tr>
<td>10. Geophysical Logging</td>
<td></td>
<td></td>
<td>2,500</td>
</tr>
<tr>
<td>11. Furnish Install &amp; Remove Test Pump</td>
<td>L.S.</td>
<td></td>
<td>3,800</td>
</tr>
<tr>
<td>12. Test Pumping</td>
<td>176 HRS.</td>
<td>50</td>
<td>8,800</td>
</tr>
<tr>
<td>13. Final Pump 100 GPM</td>
<td></td>
<td></td>
<td>11,000</td>
</tr>
<tr>
<td>From 75 FT (Includes Controls Wiring &amp; Pitless)</td>
<td>5 HRS.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>$ 43,789</strong></td>
</tr>
</tbody>
</table>

A-3
## RYAN PARK DEEP WELL COST ESTIMATE

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT COST</th>
<th>TOTAL COST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobilization/Demobilization</td>
<td></td>
<td>$6,500</td>
<td></td>
</tr>
<tr>
<td>Drill For, Furnish, Install, &amp; Cement Surface Casing</td>
<td>20 L.F.</td>
<td>$80</td>
<td>1,600</td>
</tr>
<tr>
<td>Drill 10 3/4-inch Hole</td>
<td>200 L.F.</td>
<td>28</td>
<td>5,600</td>
</tr>
<tr>
<td>Furnish &amp; Install 8 5/8-inch Casing</td>
<td>221 L.F.</td>
<td>18</td>
<td>3,978</td>
</tr>
<tr>
<td>Cement 8 5/8-inch Casing</td>
<td></td>
<td></td>
<td>3,500</td>
</tr>
<tr>
<td>Drill 7 7/8-inch Hole</td>
<td>280 L.F.</td>
<td>19</td>
<td>5,320</td>
</tr>
<tr>
<td>Geophysical Logs</td>
<td></td>
<td></td>
<td>2,500</td>
</tr>
<tr>
<td>Furnish &amp; Install 4 1/2-inch O.D. Casing</td>
<td>220 L.F.</td>
<td>10.50</td>
<td>2,310</td>
</tr>
<tr>
<td>Furnish &amp; Install 4-inch Channel Pack Screen</td>
<td>100 L.F.</td>
<td>110</td>
<td>11,000</td>
</tr>
<tr>
<td>Furnish &amp; Install Liner/Hanger/Packer Assembly</td>
<td></td>
<td></td>
<td>3,200</td>
</tr>
<tr>
<td>Development (R.6)</td>
<td>16 HRS.</td>
<td>150</td>
<td>2,400</td>
</tr>
<tr>
<td>Development (Air)</td>
<td>16 HRS.</td>
<td>175</td>
<td>2,800</td>
</tr>
<tr>
<td>Standby Time</td>
<td>8 HRS.</td>
<td>100</td>
<td>800</td>
</tr>
<tr>
<td>Furnish, Install &amp; Remove Test Pump</td>
<td></td>
<td></td>
<td>5,500</td>
</tr>
<tr>
<td>Test Pumping</td>
<td>176 HRS.</td>
<td>55</td>
<td>9,680</td>
</tr>
<tr>
<td>Final Pump 100 GPM from 150' 7 1/2 H.P. (include Controls, Wiring, Drop Pipe &amp; Pitless)</td>
<td></td>
<td>12,500</td>
<td></td>
</tr>
<tr>
<td>Geophysical Exploration</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: ____________________________
Address or Lot Number: ____________________________

Telephone Number: ________________________________

Do you rent or own the property? Rent [ ] Own [ ]

What is your water supply? Well [ ] Spring [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? ____________ Don't know [ ]
Who drilled your well? ____________________________ Don't know [ ]

Does your well have a permit from the State Engineer's Office?
Yes [ ] # ______________ No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served: ______
Livestock [ ] Irrigation [ ]

How deep is your well? ____________ Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to ____________ ft in depth
Screen: Steel [ ] PVC [ ] at ____________ ft in depth
Gravel Pack: Yes [ ] No [ ] Don't know [ ]
Open Hole: from ____________ ft to ____________ ft

What kind of pump is in your well?
Submersible [ ] Turbine [ ] Other [ ]
None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute [ ] 5-10 gallons per minute [ ]
10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

JMM James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group

A-5
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Hardy O. and Vera Brinkman
Address or Lot Number: #9 Spring & well on 10

Telephone Number: 726-5476

Do you rent or own the property? Rent [ ] Own [X]

What is your water supply? Well [X] Spring [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? [ ] Yes [X] Don't know [ ]
Who drilled your well? [X] Tom Gale [ ] Don't know [ ]

Does your well have a permit from the State Engineer's Office? [ ] Yes [X] No [ ] Don't know [ ]

Use: Human Consumption [ ] Well [ ] No. of people served: 2 to 20 on spring
Livestock [ ] Irrigation [ ] Not used [ ]

How deep is your well? [ ] 76 [ ] Don't know [ ]

Do you know how your well was constructed? [ ] Don't know [ ]

Casing: Steel [ ] PVC [X] to 225' ft in depth
Screen: Steel [ ] PVC [X] at 185' to 195' ft in depth

Gravel Pack: [X] Yes [ ] No [ ] Don't know [ ]
Open Hole: from 220' ft to 305' ft

What kind of pump is in your well?

Submersible [X] Turbine [ ] Other [ ]


How much water can be pumped or flows from your well/spring?

0-5 gallons per minute [X] 5-10 gallons per minute [X]
10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [X] Fair [ ] Poor [X]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? [X] Yes [ ] No [ ]

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Well pumps sand.
Well/Spring Owner Name: ERNEST R. CASON Jr.
Address or Lot Number: 507 S CHRISTIAN
Telephone Number: 406-442-7725

Do you rent or own the property? Rent [ ] Own [x]

What is your water supply? Well [ ] Spring [x]

Please locate your well or spring on the attached lot map

When was your well drilled? [ ] Don't know [ ]

Who drilled your well? [ ] Don't know [ x]

Does your well have a permit from the State Engineer's Office? Yes [x] No [ ] Don't know [ ]

Use: Human Consumption [x] No. of people served: 4 (idwelling)

Livestock [ ] Irrigation [x]

How deep is your well? [ ] Don't know [x]

Do you know how your well was constructed? [ ] Don't know [x]

Casing: Steel [ ] PVC [ ] to [ ] ft in depth

Screen: Steel [ ] PVC [ ] at [ ] ft in depth

Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from [ ] ft to [ ] ft

What kind of pump is in your well? NA

Submersible [ ] Turbine [ ] Other [ ]

None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring? [ ]

0-5 gallons per minute [ ] 5-10 gallons per minute [ ]

10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ] NA

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [x] No [ ]

Thank you!

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Todd | Joel & I apologize for the late response. I
have been in Cody, WY
and need to catch up.

Hope this helps —
We would support a
centralized H2O system
in the area.

Ernest, Assn
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: ____________________________________________
Address or Lot Number: ____________________________________________

Telephone Number: ______________________________________________

Do you rent or own the property? Rent [ ] Own [ ]

What is your water supply? Well [ ] Spring [ ]
Please locate your well or spring on the attached lot map

When was your well drilled? __________________ Don't know [ ]
Who drilled your well? ____________________________ Don't know [ ]

Does your well have a permit from the State Engineer's Office? Yes [ ] No [ ]
Don't know [ ]

Use: Human Consumption [ ] No. of people served: ______
Livestock [ ] Irrigation [ ]

How deep is your well? __________ Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to _______ ft in depth
Screen: Steel [ ] PVC [ ] at _______ ft in depth
Gravel Pack: Yes [ ] No [ ] Don't know [ ]
Open Hole: from _______ ft to _______ ft

What kind of pump is in your well? Submersible [ ] Turbine [ ] Other [ ]
None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring? 0-5 gallons per minute [ ] 5-10 gallons per minute [ ]
10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well
May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Sir:

Our land at Ryan Park is undeveloped. No buildings etc.

Thank you

D.W.S.

D.W. Temple
703 Maple St.
Rawlins, WY

RENTAL UNIFORM SUPPLIERS
DUST CONTROL TREATED MOPS
ENTRANCE MATS — LINEN SERVICE
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Norman J. and Frances E. Holcomb
Address or Lot Number: Ryan Park, Bl 3, Lot 8

Telephone Number: (503) 832-2369

Do you rent or own the property? Rent [ ] Own [ ]

What is your water supply? Well [ ] Spring [ ] [ ] N/A

Please locate your well or spring on the attached lot map

When was your well drilled? [ ] N/A [ ] Don't know [ ]

Who drilled your well? [ ] N/A [ ] Don't know [ ]

Does your well have a permit from the State Engineer's Office? Yes [ ] No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served: [ ]

Livestock [ ] Irrigation [ ]

How deep is your well? [ ] N/A [ ] Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to [ ] ft in depth

Screen: Steel [ ] PVC [ ] at [ ] ft in depth

Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from [ ] ft to [ ] ft

What kind of pump is in your well?

Submersible [ ] Turbine [ ] Other [ ]

None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring?

0-5 gallons per minute [ ] 5-10 gallons per minute [ ]

10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
We have not developed a water supply.

---

As soon as you know your new address, mail this card to all of the people, businesses, and publications who send you mail.

For publications, tape an old address label over name and old address sections and complete new address.

<table>
<thead>
<tr>
<th>Your Name</th>
<th>Holcomb, Norman and Frances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old Address</td>
<td>5201 Summerhill Road</td>
</tr>
<tr>
<td>No. &amp; Street</td>
<td>Apt./Suite No. 100A</td>
</tr>
<tr>
<td>City</td>
<td>Texarkana</td>
</tr>
<tr>
<td>New Address</td>
<td>5000 Pleasant Grove Rd</td>
</tr>
<tr>
<td>No. &amp; Street</td>
<td>Apt./Suite No.</td>
</tr>
<tr>
<td>City</td>
<td>Texarkana</td>
</tr>
<tr>
<td>ZIP +4</td>
<td>75501</td>
</tr>
<tr>
<td>RR No.</td>
<td></td>
</tr>
<tr>
<td>Rural Box No.</td>
<td></td>
</tr>
</tbody>
</table>

Sign Here: __________________________ Date new address in effect: July 29, 1991

Keyline No. (If any)
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

RECEIVED AUG - 6 1991

Well/Spring Owner Name: Josephine McClellan
Address or Lot Number: Lasalle 6/8 8200
Telephone Number: 307-745-4322

Do you rent or own the property? Rent □ Own □

What is your water supply? Well □ Spring □

Please locate your well or spring on the attached lot map

When was your well drilled? ___________________ Don't know □
Who drilled your well? ___________________ Don't know □

Does your well have a permit from the State Engineer’s Office?
Yes □ # □ No □ Don't know □

Use: Human Consumption □ No. of people served:_______
Livestock □ Irrigation □

How deep is your well? ___________________ Don't know □

Do you know how your well was constructed? Don't know □

Casing: Steel □ PVC □ to_________ft in depth
Screen: Steel □ PVC □ at_________ft in depth
Gravel Pack: Yes □ No □ Don't know □
Open Hole: from _________ft to _________ft

What kind of pump is in your well?
Submersible □ Turbine □ Other ____________
None □ Why? Well Abandoned □ Well Flows □

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute □ 5-10 gallons per minute □
10-20 gallons per minute □ Over 20 gallons per minute □

Water Quality: Good □ Fair □ Poor □

Please use reverse side of page to describe problems with well
May we contact you for access to your well? Yes □ No □

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Dear Susan,

Jarin Magruder and myself have filled on the spring in back of the cabin. You can get this info from Jim if you need more info.

Please let me know if I need to do anything else.

Thanks

Sincerely

[Signature]
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Corinne Halsey
Address or Lot Number: Lot #
Willing address Margaret Rogers 10 Mary Anne Dr Riverton WY
Telephone Number: 552-9544

Do you rent or own the property? Rent [ ] Own [ ]

What is your water supply? Well [ ] Spring [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? [about 1976] [ ] Don't know [ ]
Who drilled your well? [ ] Don't know [ ]

Does your well have a permit from the State Engineer's Office? Yes [ ] No [ ] [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served: [ ]

Livestock [ ] Irrigation [ ]

How deep is your well? [about 57 feet] [ ] Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to [ ] ft in depth

Screen: Steel [ ] PVC [ ] at [ ] ft in depth

Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from [ ] ft to [ ] ft

What kind of pump is in your well? Submersible [ ] Turbine [ ] Other [ ]

Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring? 0-5 gallons per minute [ ] 5-10 gallons per minute [ ]

10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

James M. Montgomery
Consulting Engineers Inc.
Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Sorry am so long in returning this to you.
I am going to get someone to put a pump in the well so we can finish the filing.
I have the letter telling Dad what he needs to do in order to register the well, but he just didn't get to it, with all that happened before he died.
We measured the depth with a weighted string the last time I was up.

Thanks
Margaret
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: **ELIZABETH STORER**
Address or Lot Number: **SM 47 P.K**
Telephone Number: **326-981**

Do you rent or own the property? **Own**

What is your water supply? **Well**

Please locate your well or spring on the attached lot map.

When was your well drilled? **1976**

Who drilled your well? **James M. Montgomery**

Does your well have a permit from the State Engineer's Office? **Yes**

Use: **Human Consumption**

Livestock **No**
Irrigation **No**

How deep is your well? **175' deep**

Do you know how your well was constructed? **Don't know**

Casing: **Steel**

Screen: **Steel**

Gravel Pack: **Yes**

Open Hole: from **to**

What kind of pump is in your well? **Submersible**

Submersible **Yes** Turbine **No** Other **None**

Why? **Well Abandoned**

How much water can be pumped or flows from your well/spring?

0-5 gallons per minute **5-10 gallons per minute**

10-20 gallons per minute **Over 20 gallons per minute**

Water Quality: **Good**

Fair **Poor**

Please use reverse side of page to describe problems with well.

May we contact you for access to your well? **Yes**

Thank you!

---

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Fire sand in the water requires extensive filtering systems. Otherwise water quality appears to be good. I bought the cabin 10/4/89 - it was built in 1976; 2 previous owners were part-time users, I live here year round. What I know of the well is what Louis S., or Floyd Flader (original builder) has told me.

(Sorry I missed the 6/24 meeting, Joe - I had to get my SB married. Let me know if I can be of help.)

- Liz
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Lynn D. Fern R. Ryan
Address or Lot Number: Lot 11 Block 2 Ryan Park Addition

Telephone Number: 501-452-4982

Do you rent or own the property? Rent Own

What is your water supply? Well Spring None

Please locate your well or spring on the attached lot map

When was your well drilled? Don't know

Who drilled your well? Don't know

Does your well have a permit from the State Engineer's Office? Yes No Don't know

Use: Human Consumption Livestock Irrigation

Number of people served: __________

How deep is your well? Don't know

Do you know how your well was constructed? Don't know

Casing: Steel PVC to ______ ft in depth
Screen: Steel PVC at ______ ft in depth at ______ ft in depth

Gravel Pack: Yes No Don't know

Open Hole: ______ ft to ______ ft

What kind of pump is in your well?

Submersible Turbine Other

None Why? Well Abandoned Well Flows

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute 5-10 gallons per minute 10-20 gallons per minute Over 20 gallons per minute

Water Quality: Good Fair Poor

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes No

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
so well on property
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Darlene Bilding
Address or Lot Number: 20 - Block 3

Telephone Number: 324-4708 or 324-8433

Do you rent or own the property? Rent [ ] Own [X] 

What is your water supply? Well [X] Spring [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? [ ] Don't know [ ]

Who drilled your well? [ ] Don't know [ ]

Does your well have a permit from the State Engineer's Office? Yes [ ] No [ ] Don't know [ ]

Use: Human Consumption [X] No. of people served: 4

Livestock [ ] Irrigation [ ]

How deep is your well? 224 feet [ ] Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [X] to 224 feet in depth

Screen: Steel [ ] PVC [ ] at _______ feet in depth

Gravel Pack: Yes [X] No [ ] Don't know [ ]

Open Hole: from _______ feet to _______ feet

What kind of pump is in your well? Submersible [X] Turbine [ ] Other [ ]

None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring? 0-5 gallons per minute [ ] 5-10 gallons per minute [X]

10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [X] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [X] No [ ]

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Notes:
- No map to indicate location or well
- Problems with well are Sand and occasionally poor water quality
- Seepage from Septic Tanks is now probably a valid concern — There was little thought given to the location of lots — The number of lots sold plus the number of Septic Tanks plus the number of wells equals lethal water!

Ryan Park was plotted for money not for living. Concerns once the lots were sold and inhabited. No developers should now be made to be responsible for the mess that is developing at Ryan Park.

As well, the developers have established Covenants for land owners, but the developers inconsistently and unfairly enforce the Covenants. Again, the land developers are concerned only about their own fat, deep pockets!
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Robert J. Cunningham
Address or Lot Number: Lot 12 Trust A, Ryan Park
Telephone Number: 327-5737

Do you rent or own the property? Rent [ ] Own [X]

What is your water supply? Well [ ] Spring [ ] None [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? ________ Don't know [ ]
Who drilled your well? ________ Don't know [ ]

Does your well have a permit from the State Engineer's Office? Yes [ ] No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served: ________
Livestock [ ] Irrigation [ ]

How deep is your well? ________ Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to ________ ft in depth
Screen: Steel [ ] PVC [ ] at ________ ft in depth
Gravel Pack: Yes [ ] No [ ] Don't know [ ]
Open Hole: from ________ ft to ________ ft

What kind of pump is in your well? Submersible [ ] Turbine [ ] Other [ ___ ]
None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring? 
0-5 gallons per minute [ ] 5-10 gallons per minute [ ]
10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
We carry water from Encampment for overnight or week-end use.
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Ryan Park Land Co.
Address or Lot Number: Used by Mr/Mrs. James F. Wilson, Jr
Telephone Number: (307) 638-8095

Do you rent or own the property? Rent ☐ Own ☑

What is your water supply? Well ☐ Spring ☑

Please locate your well or spring on the attached lot map

When was your well drilled? ☐ Don't know ☑
Who drilled your well? ☐ Don't know ☑

Does your well have a permit from the State Engineer's Office? Yes ☐ No ☐ Don't know ☑

Use: Human Consumption ☑ No. of people served: ☐
Wild animals ☐ Livestock ☐ Overflow ☐ Irrigation ☐

How deep is your well? ☐ Don't know ☑

Do you know how your well was constructed? Don't know ☑

Casing: Steel ☐ PVC ☐ to ________ ft in depth
Screen: Steel ☐ PVC ☐ at ________ ft in depth
Gravel Pack: Yes ☐ No ☐ Don't know ☑
Open Hole: from ________ ft to ________ ft

What kind of pump is in your well? Submersible ☐ Turbine ☐ Other ☑ (Gravity)
None ☑ Why? Well Abandoned ☐ Well Flows ☑

How much water can be pumped or flows from your well/spring? ☐
0-5 gallons per minute ☐ 5-10 gallons per minute ☐
10-20 gallons per minute ☐ Over 20 gallons per minute ☐

Water Quality: Good ☐ Fair ☐ Poor ☑

Please use reverse side of page to describe problems with well
May we contact you for access to your well? Yes ☐ No ☐

Thank you! Contact Ryan Park Land Co.

James M. Montgomery
Consulting Engineers Inc.
Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Water tested almost mineral-free, but high in bacteria (animal feces); we were advised to boil it 2 min, or add Clorox. Spring’s water is piped (underground) to our cabin + other row-cabins in old section of former logging camp, from wooden water-tank on hot #12. Other residents drink this water, as is — we do not. However, we only use water at 2 sinks (bath + kitchen) and not for toilet or shower; they drain, automatically, away from Cabin interior. (Cold water only.)

J.H.W.

You may test from our outside water off/on valve, if needed, as long as we are not charged for it — Mrs J. Wilson
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Ryan Park Land Co. JE Wagner
Address or Lot Number: 1086 Hwy 92, Senate, Wt
Telephone Number: 307-326-8629

Do you rent or own the property? Rent [ ] Own [X]

What is your water supply? Well [ ] Spring [X]

Please locate your well or spring on the attached lot map

When was your well drilled? [ ] Don't know [ ]
Who drilled your well? [ ] Don't know [ ]

Does your well have a permit from the State Engineer's Office?
Yes [ ] No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served: [ ]
Livestock [ ] Irrigation [ X]

How deep is your well? [ ] Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to _______ ft in depth
Screen: Steel [ ] PVC [ ] at _______ ft in depth
Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from _______ ft to _______ ft

What kind of pump is in your well?
Submersible [ ] Turbine [ ] Other [ ]

None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute [ ] 5-10 gallons per minute [X]
10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [X]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
New had wells drilled for various property owners in some of
Ryan Park Land Co. Also, there is a spring owned by
Ryan Park Land Co. which provides water to a number
of resident property owners. Water, to my knowledge is
frequently, if not always unsuitable for human consumption.
Hence, it is being consumed by some residents.
The spring is located on Lot 12, Block 41, Ryan Park
3rd Addition.

Ryan Park Land Co. has some 20 lots for sale in platted
areas. They are presently engaged in having an additional
area platted with some 12-15 lots of 1 acre each.
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Lillian Murray
Address or Lot Number: Lot No. 14
925-11th, Rawlins, WY 82301
Telephone Number: 324-2907

Do you rent or own the property? Rent [ ], Own [ ]

What is your water supply? Well [X] Spring [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? ______ Don't know [ ]
Who drilled your well? ______ Don't know [ ]

Does your well have a permit from the State Engineer's Office?
Yes [ ] # ______ No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served: ______
Livestock [ ] Irrigation [ ]

How deep is your well? ______ Don't know [ ]
Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to ______ ft in depth
Screen: Steel [ ] PVC [ ] at ______ ft in depth
at ______ ft in depth
Gravel Pack: Yes [ ] No [ ] Don't know [ ]
Open Hole: from ______ ft to ______ ft

What kind of pump is in your well?
Submersible [ ] Turbine [ ] Other ______
None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute [ ] 5-10 gallons per minute [ ]
10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Sirs

Spring has dried up - We bring water to cabin.
I would like to know more on your plans.

Do they include, leased land from forest service?

Murry
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Rex W. Foster

Address or Lot Number: ____________________________

Telephone Number: 324-4702 - Rawlings

Do you rent or own the property? Rent ☐ Own ✓

What is your water supply? Well ✓ Spring □

Please locate your well or spring on the attached lot map

When was your well drilled? 1969 □ Don't know ☐

Who drilled your well? Lew's Stahl's daughter □ Don't know ☐

Does your well have a permit from the State Engineer's Office? Yes ☑ No □ Don't know □

Use: Human Consumption ✓ No. of people served: 1 to 10

Livestock ☐ Irrigation ☐

How deep is your well? 58' ☐ Don't know □

Do you know how your well was constructed? Don't know □

Casing: Steel ☐ PVC ☐ to 50' ft in depth

Screen: Steel ☐ PVC ✓ at 40' to 48' ft in depth

Gravel Pack: Yes ☐ No ☑ Don't know □

Open Hole: from _________ ft to __________ ft

What kind of pump is in your well?

Submersible ✓ Turbine ☐ Other _________

None ☐ Why? Well Abandoned ☐ Well Flows ☐

How much water can be pumped or flows from your well/spring?

0-5 gallons per minute □ 5-10 gallons per minute □

10-20 gallons per minute □ Over 20 gallons per minute ✓

Water Quality: Good ✓ Fair ☐ Poor □

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes ✓ No □

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
We are located about 1/2 miles east of Ryan Park as the crow flies.

We struck quick sand twice on the mason, light stuff, first 2 feet of white lime stone at 5½', granite at 58'. The well was going to flow after bailing. Water came within 18" of top of casing. I pumped it for 8 hrs with a 1½" pump and took it down 3 feet. It is good cold and clear water. If it is not used for a few weeks you can notice a very little sand. It does have a little iron in it, we have quite a bit in water, you are welcome to come and take a look and have a cold drink of water. We have 5 acres of ground.

[Signature]

[Diagram]
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: John G. Bush
Address or Lot Number: N A mills South East of Ryan Park

Telephone Number: None

Do you rent or own the property? Rent ☐ Own ☑

What is your water supply? Well ☑ Spring ☐

Please locate your well or spring on the attached lot map

When was your well drilled? 1957 ☐ Don't know ☐

Who drilled your well? Stalens & Sons ☐ Don't know ☑

Does your well have a permit from the State Engineer's Office? Yes ☒ No ☐ Don't know ☐

Use: Human Consumption ☑ No. of people served: 2

Livestock ☐ Irrigation ☐

How deep is your well? 60 ft ☐ Don't know ☐

Do you know how your well was constructed? Don't know ☐

Casing: Steel ☑ PVC ☐ to 60 ft in depth

Screen: Steel ☐ PVC ☑ at __________ ft in depth

Gravel Pack: Yes ☑ No ☐ Don't know ☐

Open Hole: from __________ ft to __________ ft

What kind of pump is in your well?

Submersible ☑ Turbine ☐ Other __________

None ☐ Why? Well Abandoned ☑ Well Flows ☐

How much water can be pumped or flows from your well/spring?

0-5 gallons per minute ☐ 5-10 gallons per minute ☑

10-20 gallons per minute ☐ Over 20 gallons per minute ☐

Water Quality: Good ☑ Fair ☐ Poor ☐

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes ☑ No ☐

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Calvin T. Domman
Address or Lot Number: Star Rt. Box 9M
                                          Saratoga WY 82331
Telephone Number: 326-8820

Do you rent or own the property? Rent [ ] Own [ X ]

What is your water supply? Well [ X ] Spring [ X ]

Please locate your well or spring on the attached lot map

When was your well drilled? 1981 [ ] Don't know [ ]

Who drilled your well? Louis Stokes - Saratoga [ ] Don't know [ ]

Does your well have a permit from the State Engineer's Office?

   Yes [ ] # _____________ No [ ] Don't know [ ]

Use: Human Consumption [ X ] No. of people served: Varies
   Livestock [ ] Irrigation [ ]

How deep is your well? 110 ft [ ] Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

   Casing: Steel [ ] PVC [ X ] to_________ft in depth
   Screen: Steel [ ] PVC [ ] at_________ft in depth
               at_________ft in depth
   Gravel Pack: Yes [ X ] No [ ] Don't know [ ]
   Open Hole: from_________ft to_________ft

What kind of pump is in your well?

   Submersible [ X ] Turbine [ ] Other ____________
   None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring?

   0-5 gallons per minute [ ] 5-10 gallons per minute [ ]
   10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ X ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Gerald E. Fritz
Address or Lot Number: N 132 1 of NE 1/4 SE 1/4 S1/4 SE 1/4 sec 28 T 16 R 81 W
Telephone Number: 307-328-0125

Do you rent or own the property? Rent [ ] Own [ ]

What is your water supply? Well [ ] Spring [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? __________ Don't know [ ]

Who drilled your well? __________ Don't know [ ]

Does your well have a permit from the State Engineer's Office? Yes [ ] # ________ No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served: __________

Livestock [ ] Irrigation [ ]

How deep is your well? __________ Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to __________ ft in depth

Screen: Steel [ ] PVC [ ] at __________ ft in depth

Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from __________ ft to __________ ft

What kind of pump is in your well?

Submersible [ ] Turbine [ ] Other [ ]

None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring?

0-5 gallons per minute [ ] 5-10 gallons per minute [ ]

10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

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A member of the KLH Group

James M. Montgomery Consulting Engineers Inc.
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Margareta Griffin
Address or Lot Number: 233 E Teffers Dr, Pinedale, WY
Telephone Number: 328-0605

Do you rent or own the property? Rent [ ] Own [x]
What is your water supply? Well [ ] Spring [x]

Please locate your well or spring on the attached lot map.

When was your well drilled? [ ] Don't know [x]
Who drilled your well? [ ] Don't know [x]
Does your well have a permit from the State Engineer's Office? Yes [ ] No [ ] [x] Don't know [x]

Use: Human Consumption [x] Livestock [ ] Irrigation [ ]

How deep is your well? [ ] Don't know [x]

Do you know how your well was constructed? [ ] Don't know [x]
Casing: Steel [ ] PVC [ ] to _______ ft in depth
Screen: Steel [ ] PVC [ ] at _______ ft in depth
Gravel Pack: Yes [ ] No [ ] Don't know [x]
Open Hole: from _______ ft to _______ ft

What kind of pump is in your well?
Submersible [ ] Turbine [ ] Other [ ]
None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute [ ] 5-10 gallons per minute [ ]
10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [x]

Please use reverse side of page to describe problems with well
May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

James M. Montgomery
Consulting Engineers Inc.
Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Veronica E. Hayes
Address or Lot Number: Circle Cross #54
Rawlins, WY 82301

Telephone Number: 367-324-5301

Do you rent or own the property? Rent [ ] Own [ ]

What is your water supply? Well [ ] Spring [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? [ ] Don't know [ ]
Who drilled your well? [ ] Don't know [ ]

Does your well have a permit from the State Engineer's Office? Yes [ ] No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served: ________
Livestock [ ] Irrigation [ ]

How deep is your well? [ ] Don't know [ ]

Do you know how your well was constructed? [ ] Don't know [ ]

Casing: Steel [ ] PVC [ ] to ________ ft in depth
Screen: Steel [ ] PVC [ ] at ________ ft in depth

Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from ________ ft to ________ ft

What kind of pump is in your well?
Submersible [ ] Turbine [ ] Other [ ]

None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring? 0-5 gallons per minute [ ] 5-10 gallons per minute [ ]
10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Jerry & Karen Jenkins

Address or Lot Number: Members of Ryan Park Tract "B" Water Co., Inc.

Telephone Number: ____________________________________________

Do you rent or own the property? Rent ☐ Own ☐

What is your water supply? Well ☐ Spring ☐

Please locate your well or spring on the attached lot map

When was your well drilled? __________________________ Don't know ☐

Who drilled your well? __________________________ Don't know ☐

Does your well have a permit from the State Engineer's Office?
Yes ☐ # _______________ No ☐ Don't know ☐

Use: Human Consumption ☐ No. of people served: ________
Livestock ☐ Irrigation ☐

How deep is your well? __________________________ Don't know ☐

Do you know how your well was constructed? Don't know ☐

Casing: Steel ☐ PVC ☐ to _______ ft in depth
Screen: Steel ☐ PVC ☐ at _______ ft in depth
Gravel Pack: Yes ☐ No ☐ Don't know ☐

Open Hole: from _______ ft to _______ ft

What kind of pump is in your well?
Submersible ☐ Turbine ☐ Other __________
None ☐ Why? Well Abandoned ☐ Well Flows ☐

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute ☐ 5-10 gallons per minute ☐
10-20 gallons per minute ☐ Over 20 gallons per minute ☐

Water Quality: Good ☐ Fair ☐ Poor ☐

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes ☐ No ☐

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Richard + Maureen Johnson
Address or Lot Number: 72 mi east of Ryan Park

Telephone Number: 745-9476

Do you rent or own the property? Rent ☐ Own ☒

What is your water supply? Well ☐ Spring ☐

Please locate your well or spring on the attached lot map

When was your well drilled? 1961 ☐ Don't know ☐

Who drilled your well? State/Local ☐ Don't know ☐

Does your well have a permit from the State Engineer's Office? Yes ☐ Human Consumption ☒ No ☐ Don't know ☐

Use: Human Consumption ☑ No. of people served: 3 + a dog
□ Livestock ☐ Irrigation ☐

How deep is your well? 31' ☐ Don't know ☐

Do you know how your well was constructed? Don't know ☐

Casing: Steel ☐ PVC ☐ to _______ ft in depth
Screen: Steel ☐ PVC ☐ at _______ ft in depth
at _______ ft in depth
Gravel Pack: Yes ☐ No ☐ Don't know ☐
Open Hole: from _______ ft to _______ ft

What kind of pump is in your well?
Submersible ☐ Turbine ☐ Other ☒ Free Flowing
None ☐ Why? Well Abandoned ☐ Well Flows ☒

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute ☐ 5-10 gallons per minute ☐
10-20 gallons per minute ☐ Over 20 gallons per minute ☐

Water Quality: Good ☒ Fair ☐ Poor ☐

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes ☒ No ☐

Thank you!

Coffey Engineering and Surveying, Inc.
A member of the KLH Group

James M. Montgomery
Consulting Engineers Inc.
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: 
Address or Lot Number: 

Telephone Number: 

Do you rent or own the property? Rent [ ] Own [ ]

What is your water supply? Well [ ] Spring [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? __________________________ Don't know [ ]

Who drilled your well? __________________________ Don't know [ ]

Does your well have a permit from the State Engineer's Office? Yes [ ] # _________ No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served: _______

Livestock [ ] Irrigation [ ]

How deep is your well? ________________________ Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to ________ ft in depth
Screen: Steel [ ] PVC [ ] at ________ ft in depth

Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from ________ ft to ________ ft

What kind of pump is in your well? Submersible [ ] Turbine [ ] Other [ ]

None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring? 0-5 gallons per minute [ ] 5-10 gallons per minute [ ]

10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

James M. Montgomery
Consulting Engineers Inc.

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A member of the KLH Group
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Lester Haban
Address or Lot Number: 1215 (large)

Telephone Number: 334-5785

Do you rent or own the property? Rent ☐ Own ☐

What is your water supply? Well ☐ Spring ☐ Neither ☐

Please locate your well or spring on the attached lot map.

When was your well drilled? _______________ Don't know ☐

Who drilled your well? _______________ Don't know ☐

Does your well have a permit from the State Engineer’s Office? Yes ☐ No ☐ Don’t know ☐

Use: Human Consumption ☐ No. of people served: __________
Livestock ☐ Irrigation ☐

How deep is your well? _______________ Don’t know ☐

Do you know how your well was constructed? Don’t know ☐

Casing: Steel ☐ PVC ☐ to __________ ft in depth
Screen: Steel ☐ PVC ☐ at __________ ft in depth
at __________ ft in depth

Gravel Pack: Yes ☐ No ☐ Don’t know ☐

Open Hole: from __________ ft to __________ ft

What kind of pump is in your well?
Submersible ☐ Turbine ☐ Other _______________
None ☐ Why? Well Abandoned ☐ Well Flows ☐

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute ☐ 5-10 gallons per minute ☐
10-20 gallons per minute ☐ Over 20 gallons per minute ☐

Water Quality: Good ☐ Fair ☐ Poor ☐

Please use reverse side of page to describe problems with well.
May we contact you for access to your well? Yes ☐ No ☐

Thank you!

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WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Joseph and Beverly Miller
Address or Lot Number: Ryan Park

Telephone Number: 307-324-4562

Do you rent or own the property? Rent [ ] Own [ ]

What is your water supply? Well [ ] Spring [ ]

Please locate your well or spring on the attached lot map [ ]

When was your well drilled? July 22, 1955 Don't know [ ]

Who drilled your well? ________________________ Don't know [ ]

Does your well have a permit from the State Engineer's Office? Yes [ ] No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served: 4

Livestock [ ] Irrigation [ ]

How deep is your well? 31' Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to ______ ft in depth

Screen: Steel [ ] PVC [ ] at ______ ft in depth

Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from ______ ft to ______ ft

What kind of pump is in your well?

Submersible [ ] Turbine [ ] Other [ ] Don't Know [ ]

None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring?

0-5 gallons per minute [ ] 5-10 gallons per minute [ ]

10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

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WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Carter & Heidi Naylor
Address or Lot Number: Ryan Park

Telephone Number: 326-9621

Do you rent or own the property? Rent ☐ Own ☑

What is your water supply? Well ☑ Spring ☐

Please locate your well or spring on the attached lot map

When was your well drilled? 1980 ☐ Don't know ☐

Who drilled your well? Stahlings ☐ Don't know ☐

Does your well have a permit from the State Engineer's Office? Yes ☑ No ☐ Don't know ☐

Use: Human Consumption ☐ No. of people served: 6-9

Livestock ☐ Irrigation ☐

How deep is your well? 110 ft ☐ Don't know ☐

Do you know how your well was constructed? Don't know ☐

Casing: Steel ☐ PVC ☐ to _______ ft in depth
Screen: Steel ☐ PVC ☐ at _______ ft in depth

Gravel Pack: Yes ☐ No ☐ Don't know ☐

Open Hole: from _______ ft to _______ ft

What kind of pump is in your well?
Submersible ☑ Turbine ☐ Other _______

None ☐ Why? Well Abandoned ☐ Well Flows ☐

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute ☐ 5-10 gallons per minute ☑
10-20 gallons per minute ☐ Over 20 gallons per minute ☐

Water Quality: Good ☑ Fair ☐ Poor ☐

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes ☑ No ☐

Thank you!

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WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Michael + Dorothy Ormsby
Address or Lot Number: Lot 26, Tract A Ryan Park

Telephone Number: (307) 234-8403

Do you rent or own the property? Rent ☐ Own ☒

What is your water supply? Well ☐ Spring ☒

Please locate your well or spring on the attached lot map

When was your well drilled? ______________ Don't know ☐

Who drilled your well? ______________ Don't know ☐

Does your well have a permit from the State Engineer's Office? Yes ☐ ≠ No ☐ Don't know ☐

Use: Human Consumption ☐ No. of people served: _____

Livestock ☐ Irrigation ☐

How deep is your well? ______________ Don't know ☐

Do you know how your well was constructed? Don't know ☐

Casing: Steel ☐ PVC ☐ to __________ ft in depth

Screen: Steel ☐ PVC ☐ at __________ ft in depth

Gravel Pack: Yes ☐ No ☐ Don't know ☐

Open Hole: from __________ ft to __________ ft

What kind of pump is in your well?

Submersible ☐ Turbine ☐ Other __________

None ☐ Why? Well Abandoned ☐ Well Flows ☐

How much water can be pumped or flows from your well/spring?

0-5 gallons per minute ☐ 5-10 gallons per minute ☐

10-20 gallons per minute ☐ Over 20 gallons per minute ☐

Water Quality: Good ☐ Fair ☐ Poor ☐

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes ☐ No ☐

Thank you!

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WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: GLAHRD.K. RUSEL
Address or Lot Number: __________________________________________
Telephone Number: 36/924-6625

Do you rent or own the property? Rent [ ] Own [X]

What is your water supply? Well [X] Spring [ ]

Please locate your well or spring on the attached lot map.

When was your well drilled? ________________ Don't know [X]
Who drilled your well? ____________________ Don't know [X]

Does your well have a permit from the State Engineer's Office?
Yes [X] No [ ] Don't know [ ]

Use: Human Consumption [X] No. of people served: ______
Livestock [ ] Irrigation [ ]

How deep is your well? ________________ Don't know [X]

Do you know how your well was constructed? Don't know [X]

Casing: Steel [ ] PVC [ ] to ___________ ft in depth
Screen: Steel [ ] PVC [ ] at ___________ ft in depth
Gravel Pack: Yes [X] No [ ] Don't know [ ]
Open Hole: from ___________ ft to ___________ ft

What kind of pump is in your well?
Submersible [X] Turbine [ ] Other ___________
None [X] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute [ ] 5-10 gallons per minute [X]
10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [X] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well.

May we contact you for access to your well? Yes [X] No [ ]

Thank you!

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Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Ryan Ranches Inc
Address or Lot Number: None; population 0

Telephone Number: 742 - 5798

Do you rent or own the property? Rent [ ] Own [ ]

What is your water supply? Well [ ] Spring [ ] None [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? [ ] Don't know

Who drilled your well? [ ] Don't know

Does your well have a permit from the State Engineer's Office? Yes [ ] No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served: [ ]
Livestock [ ] Irrigation [ ]

How deep is your well? [ ] Don't know

Do you know how your well was constructed? [ ] Don't know

Casing: Steel [ ] PVC [ ] to ______ ft in depth
Screen: Steel [ ] PVC [ ] at ______ ft in depth
Gravel Pack: Yes [ ] No [ ] Don't know [ ]
Open Hole: from ______ ft to ______ ft

What kind of pump is in your well?
Submersible [ ] Turbine [ ] Other [ ]
None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute [ ] 5-10 gallons per minute [ ]
10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

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WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: **RANDAL C. JOHN**

Address or Lot Number: PO. Box 490
Sanford, WY 82331

Telephone Number: 307-326-8628 - 307-326-5605

Do you rent or own the property? Rent [ ] Own [✓]

What is your water supply? Well [✓] Spring [ ]

*Please locate your well or spring on the attached lot map*

When was your well drilled? 1978 [ ] Don't know [ ]

Who drilled your well? **Louie Stolns, Sr.** [ ] Don't know [ ]

Does your well have a permit from the State Engineer's Office?  Yes [ ] No [ ] Don't know [ ]

Use: Human Consumption [✓] No. of people served: 2

Livestock [ ] Irrigation [ ]

How deep is your well? 65 ft. [ ] Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to ________ ft in depth

Screen: Steel [ ] PVC [ ] at ________ ft in depth

at ________ ft in depth

Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from ________ ft to ________ ft

What kind of pump is in your well?

Submersible [✓] Turbine [ ] Other [ ]

None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring?

0-5 gallons per minute [ ] 5-10 gallons per minute [✓]

10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [✓] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [✓] No [ ]

Thank you!

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WELL/SPRING OWNER RESPONSE FORM

WELL/Spring Owner Name: Eric Smith

Address or Lot Number: Ryan Park Cabin - Lots 21 - 26
OWN - LOT 21 BLK 3 Ryan Park 2nd Addn. Sec 28 T 16 R 61

Telephone Number: 324-4463

Do you rent or own the property? Rent [ ] Own [x]

What is your water supply? Well [ ] Spring [x]

Please locate your well or spring on the attached lot map

When was your well drilled? ___________ Don't know [ ]

Who drilled your well? ______________ Don't know [ ]

Does your well have a permit from the State Engineer's Office?

Yes [ ] # ___________ No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served:______

Livestock [ ] Irrigation [ ]

How deep is your well? ________________ Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to ________ ft in depth

Screen: Steel [ ] PVC [ ] at ________ ft in depth

at ________ ft in depth

Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from ________ ft to ________ ft

What kind of pump is in your well?

Submersible [ ] Turbine [ ] Other ____________

None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring?

0-5 gallons per minute [ ] 5-10 gallons per minute [ ]

10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

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WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Miltie V. Sprinkel
Address or Lot Number: Lot 1, Tract B, Ryan Park

Telephone Number: (307) 726-5608

Do you rent or own the property? Rent ☐ Own ☒

What is your water supply? Well ☒ Spring ☐

Please locate your well or spring on the attached lot map

When was your well drilled? Aug 1989 ☐ Don't know ☐

Who drilled your well? STEIN'S & SOON'S ☐ Don't know ☐

Does your well have a permit from the State Engineer's Office? Yes ☒ No ☐ Don't know ☐

Use: Human Consumption ☒ Livestock ☐ Irrigation ☐

No. of people served: 3

How deep is your well? 16.5 ft ☐ Don't know ☐

Do you know how your well was constructed? Don't know ☐

Casing: Steel ☒ PVC ☐ to 16.5 ft in depth
Screen: Steel ☐ PVC ☒ at _________ ft in depth
Gravel Pack: Yes ☒ No ☐ Don't know ☐
Open Hole: from _________ ft to _________ ft

What kind of pump is in your well?

Submersible ☒ Turbine ☐ Other ☐
None ☐ Why? Well Abandoned ☒ Well Flows ☐

How much water can be pumped or flows from your well/spring?

0-5 gallons per minute ☒ 5-10 gallons per minute ☐
10-20 gallons per minute ☐ Over 20 gallons per minute ☐

Water Quality: Good ☒ Fair ☐ Poor ☐

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes ☒ No ☐

Thank you!

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WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Chula J. Thrasher
Address or Lot Number: Lot 9 Block 3 Ryan Park Second Addition

Telephone Number: ________________________________

Do you own or rent the property? Rent [ ] Own [ ]

What is your water supply? Well [ ] Spring [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? [ ] Don't know [ ]

Who drilled your well? [ ] Don't know [ ]

Does your well have a permit from the State Engineer's Office?
Yes [ ] # [ ] No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served: ________
Livestock [ ] Irrigation [ ]

How deep is your well? [ ] Don't know [ ]

Do you know how your well was constructed? [ ] Don't know [ ]

Casing: Steel [ ] PVC [ ] to ______ ft in depth

Screen: Steel [ ] PVC [ ] at ______ ft in depth

Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from ______ ft to ______ ft

What kind of pump is in your well?
Submersible [ ] Turbine [ ] Other [ ]

None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute [ ] 5-10 gallons per minute [ ]
10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well
May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

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WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Terry Titus
Address or Lot Number: Ryan Park Tract B, Lots 8, 9

Telephone Number: 245-8999

Do you rent or own the property? Rent [ ] Own [ ]

What is your water supply? Well [ ] Spring [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? ________________ Don't know [ ]

Who drilled your well? ________________ Don't know [ ]

Does your well have a permit from the State Engineer's Office? Yes [ ] No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served: ________

Livestock [ ] Irrigation [ ]

How deep is your well? ________________ Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to __________ ft in depth

Screen: Steel [ ] PVC [ ] at __________ ft in depth

Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from __________ ft to __________ ft

What kind of pump is in your well? Submersible [ ] Turbine [ ] Other __________

None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring? 0-5 gallons per minute [ ] 5-10 gallons per minute [ ] 10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [X] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

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WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Bernice C. Wagner
Address or Lot Number: Star Rt. Box 9-K, Saratoga WY 82331

Telephone Number: 307-326-8629

Do you rent or own the property? Rent [ ] Own [ ]

What is your water supply? Well [ ] Spring [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? 1979 [ ] 1989 [ ] Don't know [ ]

Who drilled your well? [ ] Don't know [ ]

Does your well have a permit from the State Engineer's Office? Yes [ ] No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served:

Livestock [ ] Irrigation [ ]

How deep is your well? Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to _______ ft in depth

Screen: Steel [ ] PVC [ ] at _______ ft in depth

Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from _______ ft to _______ ft

What kind of pump is in your well? Submersible [ ] Turbine [ ] Other [ ]

None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring? 0-5 gallons per minute [ ] 5-10 gallons per minute [ ] 10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ] Varies (Summer bacteria)

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

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Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: HERBERT R. & FERRER R. WOLJHN
Address or Lot Number: LOT 2, BLK 3, RYAN PARK 1ND ADD.

Telephone Number: 307 386 5512

Do you rent or own the property? Rent ☐ Own ☒

What is your water supply? Well ☒ Spring ☐

Please locate your well or spring on the attached lot map

When was your well drilled? ☐ 1989 Don't know ☐

Who drilled your well? STOLNS DRILLING ☐ Don't know ☐

Does your well have a permit from the State Engineer's Office?
Yes ☒ No ☐ Don't know ☐

Use: Human Consumption ☒ No. of people served: 2

Livestock ☐ Irrigation ☐

How deep is your well? 70' ☐ Don't know ☐

Do you know how your well was constructed? Don't know ☐

Casing: Steel ☒ PVC ☐ to __ ft in depth

Screen: Steel ☐ PVC ☒ at __ ft in depth

Gravel Pack: Yes ☒ No ☐ Don't know ☐

Open Hole: from ____________ ft to _______________ ft

What kind of pump is in your well?
Submersible ☒ Turbine ☐ Other ☐

None ☐ why? Well Abandoned ☐ Well Flows ☐

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute ☐ 5-10 gallons per minute ☐

10-20 gallons per minute ☒ Over 20 gallons per minute ☐

Water Quality: Good ☒ Fair ☐ Poor ☐

Please use reverse side of page to describe problems with well
May we contact you for access to your well? Yes ☒ No ☐

Thank you!

JMM James M. Montgomery
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Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Merwin W. Cour
Address or Lot Number: One Mile East of Ryan Park

Telephone Number: No Phone, Property/307-484-4208

Do you rent or own the property? Rent □ Own □

What is your water supply? Well □ Spring □

Please locate your well or spring on the attached lot map

When was your well drilled? Yes □ Don't know □

Who drilled your well? Steves - 520-790-922 □ Don't know □

Does your well have a permit from the State Engineer's Office?
Yes □ No □ Don't know □

Use: Human Consumption □ No. of people served:
Livestock □ Irrigation □

How deep is your well? 45 - 45 ft in depth

Do you know how your well was constructed? Don't know □

Casing: Steel □ PVC □ to 45 ft in depth
Screen: Steel □ PVC □ at 45 ft in depth
Gravel Pack: Yes □ No □ Don't know □
Open Hole: from ________ ft to ________ ft

What kind of pump is in your well?
Submersible □ Turbine □ Other □

None □ Why? Well Abandoned □ Well Flows □

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute □ 5-10 gallons per minute □
10-20 gallons per minute □ Over 20 gallons per minute □

Water Quality: Good □ Fair □ Poor □

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes □ No □

Thank you!

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Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Schon + Allen
Address or Lot Number: Ryan Park Lot 22 Block 3

Telephone Number: 702 - 736 - 7127

Do you rent or own the property? Rent [ ] Own [X]

What is your water supply? Well [X] Spring [ ]

Please locate your well or spring on the attached lot map.

When was your well drilled? ______________ Don't know [ ]
Who drilled your well? ______________ Don't know [ ]

Does your well have a permit from the State Engineer's Office? Yes [X] No [ ] Don't know [ ]

Use: Human Consumption [X] No. of people served: __________ Livestock [ ] Irrigation [ ]

How deep is your well? ______________ Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [X] PVC [ ] to _______ ft in depth
Screen: Steel [X] PVC [ ] at _______ ft in depth

Gravel Pack: Yes [X] No [ ] Don't know [ ]

Open Hole: from _______ ft to _______ ft

What kind of pump is in your well? Submersible [X] Turbine [ ] Other [ ]

None [ ] Why? Well Abandoned [X] Well Flows [ ]

How much water can be pumped or flows from your well/spring? 0-5 gallons per minute [X] 5-10 gallons per minute [ ]

10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [X] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with your well.

May we contact you for access to your well? Yes [X] No [ ]

Thank you!

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Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Jim Oaks
Address or Lot Number: Lot 21 Block 2
Ryan Park Second Addition
Telephone Number: 324 5454

Do you rent or own the property? Rent ☐ Own ☑

What is your water supply? Well ☐ Spring ☐ None ☐

Please locate your well or spring on the attached lot map

When was your well drilled? Don't know ☐

Who drilled your well? Don't know ☐

Does your well have a permit from the State Engineer's Office?
Yes ☐ No ☐ Don't know ☐

Use: Human Consumption ☐ No. of people served: ______
Livestock ☐ Irrigation ☐

How deep is your well? Don't know ☐

Do you know how your well was constructed? Don't know ☐

Casing: Steel ☐ PVC ☐ to ______ft in depth
Screen: Steel ☐ PVC ☐ at ______ft in depth
Gravel Pack: Yes ☐ No ☐ Don't know ☐
Open Hole: from ______ft to ______ft

What kind of pump is in your well?
Submersible ☐ Turbine ☐ Other ☐

None ☐ Why? Well Abandoned ☐ Well Flows ☐

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute ☐ 5-10 gallons per minute ☐
10-20 gallons per minute ☐ Over 20 gallons per minute ☐

Water Quality: Good ☐ Fair ☐ Poor ☐

Please use reverse side of page to describe problems with well
May we contact you for access to your well? Yes ☐ No ☐

Thank you!

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WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Jerald D. Dukes
Address or Lot Number: Lots 2 and 3, Block 2,
2nd Addition to Ryan Park

Telephone Number: ____________________________

Do you rent or own the property? Rent [ ] Own [X]

What is your water supply? [NONE] Spring [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? N/A [ ] Don't know [ ]

Who drilled your well? None [X] Don't know [ ]

Does your well have a permit from the State Engineer's Office? Yes [ ] No [ ] Don't know [ ]

Use: Human Consumption [ ] No. of people served: ________ Livestock [ ] Irrigation [ ]

How deep is your well? N/A [ ] Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to ______ ft in depth
Screen: Steel [ ] PVC [ ] at ______ ft in depth
Gravel Pack: Yes [ ] No [ ] Don't know [ ]
Open Hole: from ______ ft to ______ ft

What kind of pump is in your well? N/A [ ]
Submersible [ ] Turbine [ ] Other [ ]
None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring? 0-5 gallons per minute [ ] 5-10 gallons per minute [ ] 10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [X]

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: jane t. Garrett
Address or Lot Number: east of ryan park

Telephone Number: 326-5736

Do you rent or own the property? Rent [ ] Own [X] 

What is your water supply? Well [X] Spring [ ]

Please locate your well or spring on the attached lot map

When was your well drilled? [ ]

Who drilled your well? [ ]

Does your well have a permit from the State Engineer's Office?
Yes [ ] No [ ] Don't know [ ]

Use: Human Consumption [X] No. of people served: 3
Livestock [ ] Irrigation [ ]

How deep is your well? 60' [ ] Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [X] PVC [ ] to _____ ft in depth

Screen: Steel [ ] PVC [X] at _____ ft in depth

Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from _____ ft to _____ ft

What kind of pump is in your well?
Submersible [X] Turbine [ ] Other [ ]

None [ ] Why? Well Abandoned [X] Well Flows [ ]

How much water can be pumped or flows from your well/spring?

0-5 gallons per minute [ ] 5-10 gallons per minute [X]
10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [X] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well

May we contact you for access to your well? Yes [ ] No [X]

Thank you!

James M. Montgomery
Consulting Engineers Inc.

Coffey Engineering and Surveying, Inc.
A member of the KLH Group
Ryan Park Water Supply Project
WELL/SPRING OWNER RESPONSE FORM

Well/Spring Owner Name: Ryan J. Bevans
Address or Lot Number: Ryan Park Tract 18 #1

Telephone Number: ____________________________________________

Do you rent or own the property? Rent [ ] Own [ ]

What is your water supply? Well [ ] Spring [ ]

Please locate your well or spring on the attached lot map.

When was your well drilled? _______________ Don't know [ ]

Who drilled your well? _______________ Don't know [ ]

Does your well have a permit from the State Engineer's Office?
Yes [ ] No [ ]

Use: Human Consumption [ ] No. of people served: ________
Livestock [ ] Irrigation [ ]

How deep is your well? _______________ Don't know [ ]

Do you know how your well was constructed? Don't know [ ]

Casing: Steel [ ] PVC [ ] to _______ ft in depth
Screen: Steel [ ] PVC [ ] at _______ ft in depth

Gravel Pack: Yes [ ] No [ ] Don't know [ ]

Open Hole: from _______ ft to _______ ft

What kind of pump is in your well?
Submersible [ ] Turbine [ ] Other [ ]

None [ ] Why? Well Abandoned [ ] Well Flows [ ]

How much water can be pumped or flows from your well/spring?
0-5 gallons per minute [ ] 5-10 gallons per minute [ ]
10-20 gallons per minute [ ] Over 20 gallons per minute [ ]

Water Quality: Good [ ] Fair [ ] Poor [ ]

Please use reverse side of page to describe problems with well.

May we contact you for access to your well? Yes [ ] No [ ]

Thank you!

James M. Montgomery
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