

Montana Department of Natural Resources and Conservation
Water Resources Division
Water Rights Bureau

ENVIRONMENTAL ASSESSMENT
For Routine Actions with Limited Environmental Impact

Part I. Proposed Action Description

1. Applicant/Contact name: Geyser Judith Basin County Water & Sewer District
PO Box 95
Geyser, MT 59447

2. Type of action: Application for Beneficial Water Use Permit 30047266-41R

3. Water source name: Ground Water

4. Location affected by project: The proposed point of diversion is a well located in the NE quarter Section 18 T17N, R10E. The proposed places of use are located within the SE quarter of Section 6 T17N, R10E, all in Judith Basin County.

5. Narrative summary of the proposed project, purpose, action to be taken, and benefits:

The Applicant requests 65 gallons per minute (gpm) up to 51.5 acre-feet (AF) per year to supply a public water supply system for the town of Geyser, MT. The public water supply system proposes to utilize a new well to serve the municipal needs of Geyser, as existing points of diversion have declined and are currently insufficient to supply the community's requirements. The period of diversion and period of use for the municipal purpose is from January 1 to December 31.

The DNRC shall issue a water use permit if an applicant proves the criteria in 85-2-311 MCA are met.

6. Agencies consulted during preparation of the Environmental Assessment:
(include agencies with overlapping jurisdiction)

Dept. of Environmental Quality Website - TMDL 303d listing
MT. National Heritage Program Website - Species of Concern
USDI Fish & Wildlife Service Website - Endangered and Threatened Species Judith Basin County, MT
MT State Historic Preservation Office - Archeological/Historical Sites
USDA Natural Resources Conservation Service – Web Soil Survey
USDI Fish & Wildlife Service – Wetlands Online Mapper

Part II. Environmental Review

1. **Environmental Impact Checklist:**

PHYSICAL ENVIRONMENT

WATER QUANTITY, QUALITY AND DISTRIBUTION

Water quantity - Assess whether the source of supply is identified as a chronically or periodically dewatered stream by DFWP. Assess whether the proposed use will worsen the already dewatered condition.

Determination: Not Applicable.

The source of supply is ground water.

Water quality - Assess whether the stream is listed as water quality impaired or threatened by DEQ, and whether the proposed project will affect water quality.

Determination: Not Applicable.

The source of supply is ground water.

Ground water - Assess if the proposed project impacts ground water quality or supply. If this is a ground water appropriation, assess if it could impact adjacent surface water flows.

Determination: Minor impact.

The proposed ground water appropriation includes the use of a municipal well pumping at a maximum flow rate of 65 gpm with an associated annual volume of up to 51.5 AF per year. The well is completed in the Kootenai Formation, a well-known water bearing strata in central Montana.

The Applicant's consultant determined a maximum width for the radius of influence (ROI) based on revised aquifer test conclusions, of approximately 129,950 feet. The consultant used Darcy's law to estimate the total flux through the aquifer based upon the estimated ROI, a hydraulic conductivity value of 58.05 ft/day, an aquifer thickness of 20 ft, and a hydraulic gradient of 0.017 ft/ft. The annual volume of water passing through the potential zone of influence was calculated as 21,506 AF. The total legal demands on the aquifer through this same transect are 5,300.8 AF/YR. Given that the existing legal demands are less than 25% of the available flux and given that the maximum projected drawdown in the closest well is expected to be less than two feet, this appropriation of water is not expected to significantly affect ground water quality or supply.

This appropriation should not have a substantial adverse impact to nearby surface water sources. Few hydrogeological conditions exist in the area that would allow water confined in deeper aquifers to reach the surface. Streams in the area of interest are generally non-perennial, indicating they are more dependent on runoff from snowmelt and precipitation events and not recharge from ground water sources.

DIVERSION WORKS - *Assess whether the means of diversion, construction and operation of the appropriation works of the proposed project will impact any of the following: channel impacts, flow modifications, barriers, riparian areas, dams, well construction.*

Determination: Low likelihood of impact.

The Applicant is requesting a ground water appropriation utilizing a well that provides a maximum flow rate of 65 gpm. The Applicants' well was completed by a licensed well driller (WWC-482) in accordance with MCA Title 37, Chapter 43 and ARM Title 36, Chapter 21. Applicant's well has a total depth of 330 feet, with a stainless screen installed from 265 to 285 feet. The well was constructed with 8-inch steel casing and shows a closed-in pressure of 60 pounds per square inch (psi) on the well test data. A 65,000-gallon storage tank will be incorporated into the supply system, with flow demands controlled by the water level in the tank. The water is conveyed through 4-inch water line from the well to the pump house and a similar 4-inch line from the pump house to the storage tank. Water mains after the tank range from 10-inch lines near the tank to 6-inch mains in town. Residential units will have 3/4 - inch service lines with individual meters from the main line.

The Applicant says they will utilize the approximately 35 gpm artesian flow to fill the storage tank whenever possible and the pump will operate only when flows above the 35 gpm are needed. The supply system is expected to be fully automatic, as it will utilize a pressure transducer and radio telemetry to operate the control valve. If the artesian flow exceeds system demands, the valve will close when water levels in the tank reach the high-limit switch. If the system demands exceed the artesian flow and levels in the tank decline to the low-limit switch elevation, the pump will be signaled for operation. The Applicant believes that during the winter months, the well can meet system demands with artesian flow occurring about 10 hours per day and the pump running for about an hour each day. They say that during the summer months, the pump could be expected to run about 8 hours per day, with artesian flow occurring the other 16 hours. The pump is a 5-hp 17 amp 3-phase Goulds Model 55G-550. Other than temporary disturbances created by construction of the well and conveyance facility connections, no substantial impacts are expected as a result of the diversion works.

UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES

Endangered and threatened species - *Assess whether the proposed project will impact any threatened or endangered fish, wildlife, plants or aquatic species or any "species of special concern," or create a barrier to the migration or movement of fish or wildlife. For groundwater, assess whether the proposed project, including impacts on adjacent surface flows, would impact any threatened or endangered species or "species of special concern."*

Determination: Low likelihood of impact.

The Montana National Heritage Program currently lists two animal species as Species of Concern within Township 17 North Range 10 East. Common names for the two animal species are the Gray Wolf and the Long-billed Curlew. The USDI Fish & Wildlife Service Website indicates that Judith Basin County has no species listed as threatened or endangered. Since this project is associated to ground water withdrawals and the project area already has significant existing development, there is a low likelihood of impact to endangered or threatened species because of this appropriation.

Wetlands - Consult and assess whether the apparent wetland is a functional wetland (according to COE definitions), and whether the wetland resource would be impacted.

Determination: Low likelihood of impact.

There are no known wetlands associated with this application. The USDI Fish & Wildlife Service Wetlands Online Mapper has no data available for the area of interest.

Ponds - For ponds, consult and assess whether existing wildlife, waterfowl, or fisheries resources would be impacted.

Determination: Low likelihood of impact.

The project does not involve nor affect any ponds.

GEOLOGY/SOIL QUALITY, STABILITY AND MOISTURE - Assess whether there will be degradation of soil quality, alteration of soil stability, or moisture content. Assess whether the soils are heavy in salts that could cause saline seep.

Determination: Low likelihood of impact.

The two predominant soil units in the Geysers area are the Judith gravelly clay loam and the Judith clay loam, both having non-saline or very slightly saline soil characteristics. There is a low likelihood of impact to soil quality because of this project, the town of Geysers has been developed for many years and water use will remain largely the same.

VEGETATION COVER, QUANTITY AND QUALITY/NOXIOUS WEEDS - Assess impacts to existing vegetative cover. Assess whether the proposed project would result in the establishment or spread of noxious weeds.

Determination: Low likelihood of impact.

Typical construction activities associated with well installation may cause short-term disturbances to vegetative cover; however, there is a low likelihood of any long term or significant impact because of this project. It is the responsibility of the property owner to control noxious weeds on their property.

AIR QUALITY - Assess whether there will be a deterioration of air quality or adverse effects on vegetation due to increased air pollutants.

Determination: Low likelihood of impact.

It is unlikely air quality will be deteriorated; this project will utilize an electrically driven pump to divert the water.

HISTORICAL AND ARCHEOLOGICAL SITES - Assess whether there will be degradation of unique archeological or historical sites in the vicinity of the proposed project.

Determination: Low likelihood of impact.

The well has been drilled and the place of use has been developed for many years. There is a low likelihood cultural properties will be affected; a cultural resource inventory is unwarranted at this time.

DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AND ENERGY - *Assess any other impacts on environmental resources of land, water and energy not already addressed.*

Determination: Low likelihood of impact.

No additional impacts are anticipated.

HUMAN ENVIRONMENT

LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS - *Assess whether the proposed project is inconsistent with any locally adopted environmental plans and goals.*

Determination: Low likelihood of impact.

No locally adopted environmental plans or goals have been identified.

ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES - *Assess whether the proposed project will impact access to or the quality of recreational and wilderness activities.*

Determination: Low likelihood of impact.

This proposal should not impact recreational activities in the area.

HUMAN HEALTH - *Assess whether the proposed project impacts on human health.*

Determination: Positive impact.

This new well is expected to supply good quality drinking water to the town of Geysers.

PRIVATE PROPERTY - *Assess whether there are any government regulatory impacts on private property rights.*

Yes ___ No X *If yes, analyze any alternatives considered that could reduce, minimize, or eliminate the regulation of private property rights.*

Determination: No known impacts.

OTHER HUMAN ENVIRONMENTAL ISSUES - For routine actions of limited environmental impact, the following may be addressed in a checklist fashion.

Impacts on:

- (a) Cultural uniqueness and diversity? None
- (b) Local and state tax base and tax revenues? None
- (c) Existing land uses? None
- (d) Quantity and distribution of employment? None
- (e) Distribution and density of population and housing? None
- (f) Demands for government services? None
- (g) Industrial and commercial activity? None
- (h) Utilities? None
- (i) Transportation? None
- (j) Safety? None
- (k) Other appropriate social and economic circumstances? None

2. *Secondary and cumulative impacts on the physical environment and human population:*

Secondary Impacts - No secondary impacts have been identified.

Cumulative Impacts – The development of a deeper aquifer well for the town of Geysers should provide a more reliable quantity and quality of water for the community.

3. *Describe any mitigation/stipulation measures:*

No mitigation or stipulation measures have been identified at this time

4. *Description and analysis of reasonable alternatives to the proposed action, including the no action alternative, if an alternative is reasonably available and prudent to consider:*

No action alternative: Deny the application. This alternative would result in none of the benefits being realized by the Applicant.

PART III. Conclusion

1. Preferred Alternative

The preferred alternative is the proposed alternative.

2 Comments and Responses

None Received.

3. Finding:

Yes ___ No X Based on the significance criteria evaluated in this EA, is an EIS required?

If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action:

None of the identified impacts for any of the alternatives are significant as defined in ARM 36.2.524.

Name of person(s) responsible for preparation of EA:

Name: Douglas Mann

Title: Water Resources Specialist - LRO

Date: 8/4/2010