

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 and address: Matthew & Melissa Arno
P.O. Box 956
Bonner, Montana 59823
2. Type of action: Application for Beneficial Water User Permit 76K – 30072309 – Ground Water
3. Water source name: Unnamed tributary (Burnt Bridge Creek)
4. Location affected by project: NE of Section 25, T14N R17W, Missoula County
5. Narrative summary of the proposed project, purpose, action to be taken, and benefits:

Matthew and Melissa Arno (Applicants) submitted an Application for Beneficial Water Use Permit to DNRC requesting an appropriation of 100 gallons per minute (GPM) up to 68.5 acre-feet (AF) of groundwater from an unnamed tributary of Burnt Bridge Creek (tributary to Gold Creek) by means of a developed spring. The water will be used to generate domestic hydropower in one home and one shop between October 16th and May 14th. The Applicants propose to convey water from the developed spring using a gravity-fed 1,480-foot long, 4-inch diameter HDPE pipe to a power house containing a micro hydroelectric turbine setup. After it has served its purpose, the diverted water will be gravity-discharged by a 20-foot long, 6-inch diameter pipe into Burnt Bridge Creek. The DNRC shall issue a water use permit if the Applicants prove the criteria in 83-2-311, MCA, are met.

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

Montana Natural Heritage Program	Species of Concern
Montana Department of Fish, Wildlife and Parks	2005 Dewatered Stream List
Montana Department of Environmental Quality	303(d) list of impaired streams
USDA Natural Resources Conservation Service	Web Soil Survey

Part II: Environmental Review

1. Environmental Impact Checklist:

<h2>PHYSICAL ENVIRONMENT</h2>

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.

Burnt Bridge Creek is listed on the 2005 Department of Fish, Wildlife and Parks Impaired Stream List as chronically dewatered. The application is for a diversion out of an unnamed tributary of Burnt Bridge Creek, which is tributary to Gold Creek. No net depletion of surface water is expected from the proposed generation of hydropower as the total volume of water diverted will be discharged approximately 1,530 feet from the point of diversion at the developed spring into Burnt Bridge Creek via an enclosed pipeline system once it has been used for its beneficial use. In addition, the absence of a pump within the conveyance system eliminates otherwise unnatural diversion of groundwater from the source aquifer, which is considered to be extensive in size. The appropriation of 100 GPM up to 68.5 AF of groundwater from the unnamed tributary of Burnt Bridge Creek will not cause or worsen dewatering in the stream.

Determination: No impact.

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.

Burnt Bridge Creek is not listed as water quality impaired or threatened by DEQ. The non-consumptive delivery of all diverted water into Burnt Bridge Creek after it has been put to beneficial use will not result in impairment of water quality.

Determination: No impact.

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

The proposed purpose is supplied groundwater by means of a developed spring and a system which conveys diverted water to the place of use entirely by gravity (rather than groundwater) pumping which will not have an impact on the source aquifer. Once it has been put to beneficial use for the generation of hydropower, all diverted water will be discharged by pipe directly into Burnt Bridge Creek, to which it is tributary. This proposed purpose will not have an impact on groundwater quality or supply, or adjacent surface water flows.

Determination: No impact.

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.*

This project's proposed point of diversion consists of a developed spring and groundwater delivery system that is entirely enclosed in pipeline from the point of diversion to the place of use as well as the reach of Burnt Bridge Creek where diverted water, once used, will be discharged, making this a non-consumptive beneficial use of water. The 4-inch pipeline that will convey water 1,480 feet from the point of diversion to the place of use, and the 6-inch pipeline that will discharge water approximately 20 feet from the micro hydroelectric turbine back into Burnt Bridge Creek both have minimal profiles and are not expected to disturb riparian habitats.

The spring's flow rate will be reduced by 100 GPM while it is in use. Flow measurements taken immediately downgradient of the spring indicate that year-round flow rates are at least twice what that being asked by the Applicants. The spring will resume its natural flow and will continue to discharge into Burnt Bridge Creek when the gravity-fed diversion system is not in use between May 15th and October 15th.

Determination: No significant impact.

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."*

The Montana Natural Heritage Program was consulted to determine if there are any threatened or endangered fish, wildlife, plants or aquatic species or any "species of special concern" that could be impacted by the proposed project.

Canada Lynx, Northern Bog Lemming, Wolverine, Hoary Bat, Westslope Cutthroat Trout, and Bull Trout were identified as occurring within the vicinity of Township 14 North, Range 17 West, Missoula County. In addition, the following sensitive plant species were also identified: Whitebark Pine, Howell's Gumweed, Pod Grass, and Streamside Sphagnum moss.

The location of the proposed appropriation is west of Burnt Bridge Creek in the NE of Section 25, which is largely undeveloped. The spring development and groundwater diversion proposed by the Applicants does not consume water nor operate using groundwater pumping, and will not disrupt the natural flow of groundwater in the source aquifer. Furthermore, the requested appropriation of 100 GPM comprises less than half of the total flow rate observed for the natural spring. The small profile of the diversion pipelines along with the non-consumptive design of the whole diversion system limits any impact to sensitive animal and plant species that may result from development.

Determination: No significant impact.

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: N/A project does not involve wetlands.

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

Determination: N/A project does not involve 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.

The use of water from the unnamed tributary of Burnt Bridge Creek for domestic hydropower generation will not cause degradation of soil quality or stability. The soils surrounding Burnt Bridge Creek are not susceptible to saline seep.

Determination: No impact.

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.

Disturbance to existing vegetative cover will be minimal, as the pipe will remain stationary and has a small diameter. The project is located entirely on private property, and the Applicants will be responsible for controlling noxious weeds.

Determination: No impact.

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

Adverse air quality impacts from increased air pollutants are not expected as a result of this project. No air pollutants were identified as resulting from the Applicants' proposed use of Burnt Bridge Creek for domestic hydropower purposes.

Determination: No impact.

HISTORICAL AND ARCHEOLOGICAL SITES - Assess whether there will be degradation of unique archeological or historical sites in the vicinity of the proposed project if it is on State or Federal Lands.

NA: Project not located on State or Federal Lands.

Determination: No impact.

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

All impacts to land, water, and energy have been identified and no further impacts are anticipated.

Determination: No impact.

HUMAN ENVIRONMENT

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

The project is located in an area with no locally adopted environmental plans.

Determination: No impact.

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.*

The proposed project will not inhibit, alter or impair access to the present recreational opportunities in the area. The project is not expected to create any significant pollution, noise, or traffic congestion in the area that may alter the quality of recreational opportunities.

Determination: No impact.

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

The project does not pose a significant risk to the human health.

Determination: No impact.

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 impact.

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

1. Impacts on:

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

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

Secondary Impacts None identified.

Cumulative Impacts None identified.

3. Describe any mitigation/stipulation measures:

No reasonable alternatives were identified in the EA.

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:

Part III. Conclusion

1. ***Preferred Alternative:*** None identified.
2. ***Comments and Responses***
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:

An EA is not the appropriate level of analysis for the proposed action because no significant impacts were identified.

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

Name: Danika Holmes

Title: Hydrologist/Water Resource Specialist

Date: July 28, 2016