

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:* MT Department of Health & Human Services
 Montana Veteran’s Home
 PO Box 250
 Columbia Falls, MT 59912

2. *Type of action:* Permit to Appropriate Water 76LJ 30048051

3. *Water source name:* Ground water

4. *Location affected by project:* SW¼ SE¼ NE¼ of Section 18, Township 30N, Range 20W, Flathead County

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

The applicant proposes to divert water from ground water from January 1 through December 31 at a rate of 300 gallons per minute (GPM) up to 126 ac-ft per year (AF/yr) for geothermal heating and cooling use from January 1 through December 31. The place of use is generally located 1.3 miles southwest of Columbia Falls, Flathead County, MT, and approximately 33 miles north of Flathead Indian Reservation’s most northern boundary.

Ground water will be used to supply a geothermal, or ground source, heat pump for year-round heating and cooling purposes at the Montana Veterans’ Home located at 400 Veterans Dr, Columbia Falls, Montana. The system consists of two wells completed in the deep alluvial aquifer; a 269 ft deep supply well and a 305 ft deep injection well that is approximately 477 ft down-gradient from the supply well. The entire diverted amount from the supply well will be returned to the source through the injection well, which is approximately 450 ft north of the Flathead River, is located between the river and the supply well, and will therefore prevent depletions from the Flathead River.

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

Montana Natural Resource Program Species of Concern
 Montana DEQ..... MT Clean Water Act Information Center

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: The source is groundwater, therefore this is not applicable.

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: The source is groundwater, therefore this is not applicable.

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 appropriation includes the use of two wells completed in the deep alluvial aquifer; a 269 ft deep supply well and a 305 ft deep injection well that is approximately 477 ft down-gradient from the supply well. The entire diverted amount from the supply well will be returned to the source through the injection well, which is approximately 450 ft north of the Flathead River, is located between the river and the supply well, and will therefore prevent depletions from the Flathead River.

Determination: This is a non-consumptive use of water, and as a result, no depletions will occur from either ground water or surface 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.

The Applicant is requesting a ground water appropriation using two wells, including a supply well and an injection well. Each well was drilled by a licensed well driller (license # WWC-458) in accordance with MCA Title 37, Chapter 43 and ARM Title 36, Chapter 21. The supply well was completed to a depth of 269 ft below ground surface, has a minimum casing diameter of eight-inches, has a static water level of 75 ft, and contains 0.25 inch slot perforations from 254 to 269 ft. The injection well was completed to a depth of 305 ft below ground surface, has a minimum casing diameter of 10-inches, has a static water level of 77 ft, and contains 0.25 inch slot perforations from 285 to 305 ft.

The supply well will contain a 15 h horsepower (hp) pump capable of producing the requested 300 GPM with a total minimum head of 122 ft. The flow rate produced by the pump will be controlled by a variable frequency drive, which will be programmed not to exceed 300 GPM. The pump will supply water to a four-inch galvanized steel drop pipe in the well, which is

then conveyed to a closed system plate frame heat exchanger by means of a six-inch PVC pipe. After the water is run through the heat exchange system it is returned to the source aquifer through the injection well. The distribution pipeline will be equipped with a totalizing flow meter, which will be monitored by MT Veteran's Home personnel to ensure operations are within water right parameters.

Determination: No 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 website was referenced to determine if there are any threatened or endangered fish, wildlife, plants or aquatic species or any "species of special concern" in vicinity of Township 30N and Range 20W, that could be impacted by the proposed project. The US Fish and Wildlife Service identified the threatened Canada Lynx (*Lynx canadensis*), Grizzly Bear (*Ursus arctos*), and Bull Trout (*Salvelinus confluentus*). In addition the State of Montana, US Forest Service, and Bureau of Land Management identified the following species of special concern: Wolverine (*Gulo gulo*); Fisher (*Martes pennanti*); Peregrine Falcon (*Falco peregrines*); Bald Eagle (*Haliaeetus leucocephalus*); Western Toad (*Bufo boreas*); Westslope Cutthroat Trout (*Onchorhynchus clarkia lewisi*); and Smoky Taildropper (*Prophyaon humile*).

Determination: This proposed project is associated with the use of groundwater for a non-consumptive geothermal heating use, and therefore should not impact the above listed species.

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: The proposed place of use is not within the boundaries of wetlands mapped by the national wetlands inventory program.

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

Determination: N/A

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: No degradation of soils is expected.

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: There will be no change in land-use characteristics associated with this application so there will be no significant impact.

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

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.*

Determination: There will be no change in land-use characteristics associated with this application so there will be no significant 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.*

Determination: None

HUMAN ENVIRONMENT

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

Determination: The project is consistent with planned land use.

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: There should be no significant impacts on recreational or wilderness activities from this proposed use.

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

Impacts on:

- (a) Cultural uniqueness and diversity? No
- (b) Local and state tax base and tax revenues? No
- (c) Existing land uses? No
- (d) Quantity and distribution of employment? No
- (e) Distribution and density of population and housing? No
- (f) Demands for government services? No
- (g) Industrial and commercial activity? No
- (h) Utilities? No
- (i) Transportation? No
- (j) Safety? No
- (k) Other appropriate social and economic circumstances? No

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

Secondary Impacts: None

Cumulative Impacts: None

3. Describe any mitigation/stipulation measures: None

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:

The “no action” alternative to this proposed project will result in the landowner not having access to water for domestic purposes.

PART III. Conclusion

1. Preferred Alternative: As proposed

2 **Comments and Responses:** None

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: No significant impacts have been identified; therefore, no EIS is necessary.

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

Name: Tim Eichner

Title: Water Resources Specialist

Date: June 4, 2010