

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:
LIVINGSTON HEALTHCARE
504 SOUTH 13TH STREET
LIVINGSTON, MT 59047
2. Type of action: Groundwater Application for Beneficial Water Use Permit (43B 30070969) for 1100 gallons per minute (GPM) up to 1774 acre-feet (AF) for geothermal heating/cooling of new hospital near Livingston, MT. Groundwater will be pumped from the aquifer, through the heat exchange system of the hospital, and discharged into the aquifer through an infiltration trench. The proposed use is non-consumptive.
3. Water source name: Water will be pumped from an alluvial aquifer approximately 20 to 30 feet below ground surface. Four production wells will be located on the hospital's property east of Livingston in the NWNWSW of Section 8, T2S, R10E, Park County. The wells will be approximately 2,300 feet east of the Yellowstone River. Groundwater modeling by the DNRC indicates the proposed pumping will not cause depletions in the Yellowstone River
4. Location affected by project: Production wells and the infiltration trench will be installed on Livingston HealthCare's property at 2800 E Park Street, Livingston, MT 59047.
5. Narrative summary of the proposed project, purpose, action to be taken, and benefits:
Applicant proposes to pump groundwater up to 1100 GPM and 1774 AF per year for geothermal heating/cooling a new hospital. Groundwater will be pumped from the aquifer, through the heat exchange system of the hospital, and discharged into the aquifer through an infiltration trench. A water right will be issued if the criteria are proven by the Applicant. Energy savings for the hospital are the primary benefit of this project. Geothermal heating/cooling is a recognized beneficial use of water by Montana.
6. Agencies consulted during preparation of the Environmental Assessment:
Montana Fish, Wildlife, and Parks – Montana Fisheries Information System
Montana Department of Environmental Quality - Clean Water Act Information Center website
Montana National Heritage Program

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.*

Determination: Not Applicable. The permit application is for the use of groundwater. The alluvial aquifer is hydraulically connected to the Yellowstone River, however, modeling by the DNRC suggests depletions to the river will not occur. Water pumped from the aquifer will be returned through the infiltration trench, and water will not be consumed during the heating/cooling process.

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 Yellowstone River near Livingston is not listed as impaired by the DEQ as confirmed by a search of the 2014 303(d) list at the Clean Water Act Information Center website, <http://cwaic.mt.gov/instruct.aspx>. Further, it is unlikely the non-consumptive groundwater pumping would have any effect on pertinent water quality parameters.

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.*

Determination: No impact. The proposed project will not impact groundwater quality or supply because the proposed use is non-consumptive. Water will be returned to the aquifer at the same rate it is pumped. Due to the nature of the use (geothermal heating/cooling), water returning to the aquifer may differ in temperature than the water extracted from the aquifer. However, due to the thermal mass of the aquifer, the temperature difference in the return water is unlikely to cause any significant effect.

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: No impact. The permit involves the installation four groundwater production wells and an infiltration trench 100 feet in length. Piping for these systems will be underground and will not impact hydraulic features.

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: No impact. There are 7 animal (Wolverine, Hoary Bat, Grizzly Bear, Sprague’s Pipit, Golden Eagle, Sagebrush Sparrow, and Yellowstone Cutthroat Trout) species of concern, and zero animal Potential Species of Concern (Uinta Ground Squirrel) listed by the Montana National Heritage Program website, <http://mtnhp.org/SpeciesOfConcern> (Search date 4/14/15) for Township 2S, Range 10E, Park County. No plant Species of Concern or Potential Species of Concern exist. As this proposed application is to pump groundwater and return it to the aquifer without consumption, no impacts will occur to threatened or endangered species, or any “species of special concern.”

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: Not applicable. No wetlands are involved in this project.

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

Determination: Not applicable. No ponds are involved in this project.

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 impact. Pumping groundwater for geothermal heating/cooling will not impact soil quality, stability or moisture.

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: No impact. Establishment and/or spread of noxious weeds will not occur as a result of pumping groundwater for geothermal heating/cooling. Owners of the new hospital will be responsible for controlling noxious weeds.

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. No deterioration of air quality will result from pumping groundwater for geothermal heating/cooling. Air quality may improve from this project as the hospital will experience significant energy savings with geothermal heating/cooling compared to traditional heating/cooling methods.

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. If it is not on State or Federal Lands simply state NA-project not located on State or Federal Lands.

Determination: NA – project not located on State or Federal Lands.

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: 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.

Determination: No impact. Geothermal heating/cooling is a locally accepted practice to minimize energy costs.

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: No impact. The proposed project will not impact access to or the quality of recreational and wilderness activities.

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

Determination: The project is to construct a new hospital near Livingston. The hospital will improve human health.

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: The project does not impact government regulations on private property rights.

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

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

Secondary Impacts: No secondary impacts have been identified.

Cumulative Impacts: No cumulative impacts have been identified.

- 3. *Describe any mitigation/stipulation measures:*** No mitigation/stipulation measures are necessary.
- 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 human/environmental impacts exist as a result of the groundwater permit for geothermal heating/cooling. No prudent alternative to consider exists.

PART III. Conclusion

- 1. *Preferred Alternative*** No significant impacts exist that would require an alternative to provide mitigation.
- 2. *Comments and Responses*** None at this time.

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: The EA is the appropriate level of analysis because the proposed project is to pump groundwater for geothermal heating/cooling of a hospital and no significant impacts are anticipated.

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

Name: Troy Benn

Title: Engineer

Date: 4/14/2015