

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:* Town of Melstone
 P.O. Box 237
 Melstone, MT 59054

2. *Type of action:* Application for Beneficial Use Permit (40C-30024071)

3. *Water source name:* Groundwater (Cretaceous Lance Formation)

4. *Location affected by project:*

The point of diversion, a well, is located in the NW SE NE Section 20, T9N, R31E, Musselshell County. The place of use for this project is located in the Town of Melstone, formally described as:

NWSW Section 29	NESW Section 30	NW Section 31
	SE Section 30	N2NE Section 31
	SWSW Section 30	
	SESW Section 30	

All lands listed above are found in T10N R31E, Musselshell County.

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

The application is to appropriate groundwater from the Cretaceous Lance Formation. This well, known as Melstone #2, is located in the NW SE NE Section 20 T9N R31E. The applicant requests a flow rate of 11 gallons per minute (GPM) and a volume not to exceed 10.5 acre-feet (AF). Melstone #2 will be part of a manifolded project that includes a deeper existing well, known as Melstone #1, completed in the Fox Hills Formation. A Provisional Permit for Melstone #1 (40C-30014686) was issued on 8/10/2006. Both wells will supply water for municipal purposes to the Town of Melstone.

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)*

MT Dept. of Environmental Quality Website - TMDL 303d listing
MT National Heritage Program Website - Species of Concern
MT Dept. of Agriculture - Weed Survey and Mapping System
MT State Historic Preservation Office - Archeological/Historical Sites
USDI Fish & Wildlife Service – Wetlands Online Mapper
USDI Fish & Wildlife Service Website - Endangered and Threatened Species Musselshell County, MT

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: Low likelihood of impact.

The Musselshell River lies approximately 3 miles north of the well location. The Musselshell River has been identified as chronically dewatered and has been closed to new appropriations from July 1 through September 30 by administrative rule. The regional dip of the Lance Formation in the area of interest trends away from the Musselshell River. A lack of perennial streams in the near vicinity of the well could indicate that little, if any, groundwater recharge is occurring to surface water sources. In much of the adjacent area; ephemeral stream channels are separated from the water bearing zone of the Lance Formation by layers of low permeability mudstone. The project will not likely impact surface water flows.

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: Low likelihood of impact.

This reach of the Musselshell River from the hydrologic boundary southwest of Roundup to the confluence of Flatwillow Creek has been designated as not requiring a TMDL plan by DEQ. No pollutant-related use impairment has been identified. The 2006 303d listing identifies impairments to aquatic life & warm water fishery uses; probably caused by low flow alterations, riparian degradation, and other physical habitat alterations. The project likely will not impact water quality in the Musselshell, as the river is located approximately 3 miles away.

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: Low likelihood of impact.

The proposed project will consist of two wells; an existing permitted well, Melstone #1 (820' deep), drilled into the Fox Hills Formation and Melstone #2 (254' deep) drilled into the Lance Formation. A Provisional Permit for Melstone #1 (40C-30014686) was issued on 8/10/2006.

The consultant estimated the total volume of water physically available from Darcy's law, calculating the total flux based upon a 20,000 foot flow-width, a transmissivity value of 8 ft²/day, and a gradient ranging from 0.05 ft/ft to 0.005 ft/ft. Volumetric flows based on these parameters varied from 6.7 AF/YR to 67 AF/YR. The mean estimated flux was 21 AF/YR.

As stated above, the lack of any perennial flow in the adjacent area infers that the ephemeral streams in the area are supplied by runoff verses groundwater recharge. The appropriation of waters by the Town of Melstone from these formations is not expected to impact surface water flows.

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 – minor adverse impact.

The proposed project will consist of two wells; a permitted well, Melstone #1 (40C-30014686) drilled into the Fox Hills Formation and Melstone #2 drilled into the Lance Formation. Melstone #2 will be manifolded in to the existing system, which includes a 4" HDPE pipeline buried 6.5 to 7 feet deep used to convey water to the Town of Melstone. It is unlikely that any significant impacts would occur because of the diversion works; the major part of the construction phase has been completed.

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 – minor adverse impact.

The Montana National Heritage Program lists 2 species as Species of Concern within Township 9 North Range 31 East. Common names for these two species are Peregrine Falcon and the Spiny Softshell (Turtle). The USDI Fish & Wildlife Service Website shows that Musselshell County has 1 species listed as threatened; the Bald Eagle. The website also lists the Black-footed Ferret as endangered in Musselshell County. The project could cause temporary displacement of wildlife during construction, with a return to historic patterns upon completion.

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 project location.

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

Determination: Low likelihood of impact.

There are no known ponds associated with this application.

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.

Lance Formation:

Light-orange or light-tan, fine- to coarse-grained, massive to cross-bedded sandstone in lenses and channels interbedded with light-gray or greenish-yellow sandy shale. Calcium carbonate-cemented concretions occur locally in fine-grained sandstone. The Lance Formation represents a facies change from the Hell Creek Formation and is almost entirely lacking dark smectitic shale and mudstone which is characteristic of the Hell Creek Formation. Sandstone in the Lance Formation is dominantly orange or tan and coarse-grained with few interbeds of finer-grained deposits, whereas sandstone in the Hell Creek Formation is dominantly gray and medium- to fine-grained with relatively thick interbeds of smectitic shale and mudstone. Thickness of Lance Formation 0-300 ft.

No impacts to soil quality, stability or moisture content are expected. While soil erosion and compaction may occur during project construction, impacts will be minimal. The Sodium Adsorption Ratio is relatively low, indicating little danger from sodium.

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 – minor adverse impact.

Dalmation Toadflax is present in the project area. While the aforementioned disturbance from project construction may encourage the establishment of noxious weeds, the disturbance should be localized. In addition, it is expected that the Town of Melstone will utilize existing transportation corridors so any incremental impact from this project will be minimized. 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 would be impacted; as this project would have no emissions other than normal construction activities.

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.

There are several historic sites in the project area. Most are designated as Historic Euro-American sites and relate to the town itself. There are also prehistoric sites of interest in the area. All but one of the locations are located on private land. Given this information, the Montana Historical Society recommends a cultural resource inventory be conducted. This Cultural Resource File Search was adopted from the previous request for assistance relating to the Melstone Well #1 application (40C-30014686).

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: The proposed action is consistent with environmental plans in the area.

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.

The proposed action will not impact recreational activities in the area.

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

Determination: Low likelihood of impact.

The proposed action will have no impacts on 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.

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: May provide a more reliable water supply for the Town of Melstone.

Cumulative Impacts: No cumulative impacts are anticipated.

3. *Describe any mitigation/stipulation measures:*

As indicated on the application form, an in-line meter will be employed on each well. The applicant will be able to shut off the pump should a call on water occur.

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 to the Town of Melstone

PART III. Conclusion

1. Preferred Alternative: Action Alternative.

The preferred alternative is the proposed alternative.

2. Comments and Responses

None Received.

4. 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, Lewistown Regional Office

Date: 2/27/07