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: Petroleum County Conservation District
PO Box 118
Winnett, MT 59087

2. Type of action: Application for Beneficial Water Use Permit 30047744-40C

3. Water source name: Musselshell River

4. Location affected by project: The point of diversion (POD) is the existing Melstone Canal, which is located in the SW NW NW of Section 28, T9N R29E in Musselshell County. Water will be stored by a dam proposed to be located in the SW NE SW of Section 27 T10N R31E in Rosebud County. The place of use is generally located in the following Townships and Ranges: T10N R31E; T11N R31E; T12N R31E; T13N R30E; T14N R30E; T15N R30E; T16N R30E; T17N R29E; T17N R30E; T18N R29E; T18N R30E & T19N R29E.

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

The Applicant proposes to divert 3,950 acre-feet (AF) of water from the Musselshell River by means of a headgate on the Melstone Canal, from March 1 to June 30 and from October 1 to November 15, inclusive of each year. The application is filed in conjunction with permit application 40C 30047745, which requests 560 AF annually from Horse Creek, a tributary of the Musselshell River. The requested flow rate varies from a maximum of 90 cubic feet per second (CFS) in March, May & June, to 80 CFS in April, 50 CFS in October and 60 CFS in November. Water will be diverted via the Melstone Canal, which in turn supplies water to the South Canal, which conveys the water for approximately 17 miles to the reservoir location. The water will be stored in a proposed 46-foot deep reservoir that has a capacity of 4,464 AF with a corresponding inundated surface area of just over 323 acres. The purpose of the requested permit is water marketing that will supply irrigation water to a general service area from June 1 to September 30. This permit would authorize the Applicant to appropriate water when it is legally available, to allow for distribution from the reservoir during the irrigation season when flows in the Musselshell River have diminished.

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 in 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: Minor impact.

Water quantity would be diminished by up to 3,950 AF in some years. However, the timing of diversions and releases from the proposed storage reservoir will both negatively and positively impact water quantity. Stream depletions will occur during periods that diversions are occurring, and stream flows will be increased when water is released from the reservoir to supply downstream irrigation. The Musselshell River has been identified as chronically dewatered and has been closed to most new appropriations from July 1 through September 30 by administrative rule. The Applicant has not applied to divert water during the closure period. Montana Department of Fish, Wildlife & Parks (FWP) has an instream flow reservation of 70 CFS in the stream reach from the Musselshell Diversion Dam, the Applicants' POD, downstream to Fort Peck Reservoir. Records from the USGS Stream Gage at Mosby, downstream of the Applicants' POD, indicate that FWP's instream flow of 70 CFS has been met approximately 54% of the time since measurement began at this site in 1929. Mosby stream gage records for the years 2005 through 2010 indicate that the FWP flow has been present in the Musselshell River approximately 46% of the time.

The Musselshell River Basin Water Management Study indicates that in at least five out of ten years, a total volume of 81,500 AF is available for appropriation during the March 1 through June 30 period at the Musselshell USGS gage, one mile upstream of the project. This volume takes into account 2,029 AF, the amount of water authorized for all new appropriations developed since the time the study analysis was completed in 1989. The study indicates even more water is available at the Mosby gage location. The depletion of 3,950 AF from this total volume during the specified months will have a minor impact on water quantity.

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: Minor impact.

The reach of the Musselshell River from Roundup to the confluence with Flatwillow Creek has been designated as needing a TMDL plan. The 2000 303d listing identifies impairments to aquatic life support & warm water fishery probably caused by flow alteration, riparian degradation and other habitat alterations. This application could have both negative and positive impacts caused by flow alteration. At times, water will be diverted at a flow rate of up to 90 cfs and 3,950 AF annually, which will cause stream depletions and further negatively impact flow alteration. At other times, water will be released from the reservoir to supply downstream irrigation, which will increase flows in the river, thereby positively affecting flow alteration. In addition, a portion of the water not consumed by irrigated crops is expected to return to the system, thereby positively increasing flows on a delayed basis. There will be both positive and negative impacts to water quality because of this proposed project.

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 localized groundwater table under the requested place of use may increase slightly, due to legally stored water now being available for application at later times during the irrigation season. Base flows in the Musselshell River could also show a slight increase later in the year due to return flows associated with this seasonal irrigation. There is a low likelihood that groundwater will be adversely affected as a result of this proposal.

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: Minor impact.

The Melstone Canal was originally designed to hold a maximum flow of 220 CFS and has been used to divert water from the Musselshell River since the late 1940's. The South Canal was originally designed for a maximum capacity of 135 CFS, but according to the canal manager, is currently able to convey about 90 CFS near its split from the Melstone Canal. The Applicant estimates the current efficiency of the South Canal to be 60%. The Applicant proposes to inundate the historic Melstone South Canal by constructing a large dam in the Horse Creek drainage. Final design specifications for the dam have not been completed at this time; therefore, it is unclear if the reservoir would allow gravity fed releases back into the South Canal. Flows originating in the Horse Creek drainage would now be captured and impounded by the proposed dam, and thus modifying the flow regime for that drainage basin. The reservoir will have a maximum capacity of 4,464 AF, which would equate to an inundated surface area of approximately 323 acres. It is likely that the project will have some minor impacts related to the dam construction phase of the project.

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: Temporary minor impact.

The Montana National Heritage Program lists eight animal species as Species of Concern and three Potential Species of Concern within Township 10 North Range 31 East. Common names for the six bird, one amphibian and one fish listed as Species of Concern are the Greater Sage-Grouse, Great Blue Heron, Chestnut-collared Longspur, Loggerhead Shrike, Sage Thrasher, Brewer's Sparrow, Northern Leopard Frog and the Sauger. The common names for the three Potential Species of Concern, a fish and two insects are the Plains Minnow, Emma's Dancer (damselfly) and a dragonfly, the Plains Clubtail. The website does not identify any Plant Species of Concern in the area of interest. The USDI Fish & Wildlife Service Website shows that Rosebud County, the proposed dam location, has five species on Montana's Threatened and Endangered Species list. There are two species listed as endangered, the Black-footed Ferret and the Interior Least Tern. The website also shows two candidate species, the Greater Sage-Grouse and Sprague's Pipit. One additional species has been proposed for listing, the Mountain Plover. The places of use requested for irrigation in this application have been historically utilized for agriculture production and are consistent with other agricultural developments commonly found in the area. Reservoir construction and the potential inundation of about 320 acres may cause displacement of some species; however, impacts are expected to be temporary and relatively inconsequential. There is a temporary minor 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 project location.

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

Determination: Minor impact.

As mentioned above under the endangered and threatened species impacts, the inundation of approximately 320 acres of land may temporarily displace some wildlife species. However, the reservoir impacts to wildlife and waterfowl are anticipated to be beneficial after the initial construction and filling phases of the project. Though the period of diversion from the river will be slightly longer, the maximum flow rate diverted by the Melstone Canal is limited by design capacity and should mimic typical historic use. Minimum stream flow conditions will be required by the Department to help ensure protection of the wildlife, waterfowl and fisheries resources along the Musselshell River corridor.

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: Minor impact.

The USDA-NRCS Web Soil Survey indicates that the dominant soil unit in the area of the proposed dam is the Gerdum-Vanda silty clays with 0 to 4 percent slopes. The pond reservoir area description says this type of soil has no limitations, indicating this soil type is very favorable for holding water behind a dam or embankment. Soil Moisture content may increase later in the irrigation season depending on available storage.

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.

The project would result in increased forage production on land used for agriculture purposes. Typical farm weed management should be used to control noxious weeds potentially invading disturbed areas. 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: Temporary minor impact.

Temporary impacts to air quality during the reservoir construction phase of the project may occur, however they are expected to be short-lived. It is unlikely air quality will be significantly affected after construction; this project will utilize an existing canal to divert water from the Musselshell River to the reservoir. The project is designed to release water both down the Horse Creek channel and through the existing South Canal after construction.

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

Determination: Minor impact.

There is likelihood that cultural resources could be affected by the proposed project. The State Historic Preservation Office (SHPO) found that there has been one previously recorded cultural resource site located within the area of interest, the historic Delphia-Melstone irrigation ditch (Site 24RB1881). The Delphia-Melstone irrigation ditch is the proposed conveyance ditch for the project and has been determined to be eligible for the National Register of Historic Places. SHPO has recommended that a cultural resources inventory be conducted in order to determine whether or not such sites exist and if they will be impacted by this project, which proposes to inundate the historic irrigation ditch. The proposed reservoir will be located on private land where the decision to carry out a cultural resource survey of the project area would be at the discretion of the landowner or the lead funding agency.

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.

The proposed action is consistent with historic agricultural practices 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.

This proposal should not negatively affect recreational activities in the area. It may increase future recreational activities based on whether the public is allowed to use the reservoir for fishing, hunting and/or wildlife viewing purposes.

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

Determination: Low likelihood of impact.

Since its introduction to the U.S. in 1999, West Nile virus has become a potential threat in many states. In 2006, 4 in every 1000 mosquitoes captured on the Milk River near Malta, MT were infected with West Nile. Mosquito habitat development has been associated with standing water containing debris and vegetation. Proper weed management and reservoir maintenance will help to control the conditions required for larva growth, making the impacts on human health associated with the stagnant water insignificant. The reservoir is located in a remote area with little population.

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?* Local and state tax base may increase slightly due to land classification changes for new irrigation.

(c) *Existing land uses?* Project may provide additional irrigation water for farmland.

(*d)* *Quantity and distribution of employment?* None.

(e) *Distribution and density of population and housing?* None.

(f) *Demands for government services?* Project may require additional government funding.

(g) *Industrial and commercial activity?* None.

(h) *Utilities?* None.

(i) *Transportation?* None.

(j) *Safety?* Applicant needs to apply for DNRC dam hazard classification.

(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 on the physical environment and human population are indicated as a result of this assessment.

Cumulative Impacts - Since the administrative closure of the Musselshell River to new appropriations in 1992, only 14 new water rights are currently authorized. Given that the period of appropriation is limited, few applications are received and even fewer water rights granted. Therefore, the economic implications of having less than full-service diversionary requirements and/or full-season irrigation render the cumulative impacts of limited development minor.

3. *Describe any mitigation/stipulation measures:*

The Applicant will be required to measure and record all diversions to ensure they will not exceed the authorized appropriation and will not adversely affect required minimum stream flow levels in the Musselshell River.

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 of increased forage production and the related economic benefits being realized by the water users.

PART III. Conclusion

1. Preferred Alternative

The preferred alternative is the proposed alternative, but only if the Applicant provides the necessary criteria required for issuance of a new Provisional Permit.

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:

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Date: 4/4/2011