EA Form R 1/2007

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: Michael O'Brien
   Linda O'Brien
   PO Box 921
   Conrad, MT 59425

2. Type of action: The applicants have proposed to establish a new groundwater well for the purposes of irrigation and household use. Groundwater pumping will occur throughout the entire year (January 1-December 31) with a maximum pumping rate of 300 gpm producing a yearly volume of 3.8 acre-feet. The unconfined aquifer is part of a paleochannel comprised of well sorted gravels and sands which extend to a depth of about 40 feet below ground surface as determined via well logs. The water table occurs at 4.76 feet below ground surface. Design requires the well to be set at a depth of eight feet below ground surface and constructed of 36-inch corrugated metal pipe. One-inch diameter perforations will be drilled into the lowest two feet of pipe, with the pipe being open on the bottom. A 2,000 gallon tank hauled by a truck will be used to transport water from the proposed point of diversion to the place of use.

3. Water source name: Groundwater

4. Location affected by project: The place of use is located in the Northeast quarter of the Northeast quarter of the Southeast quarter of Section 1, Township 27 North, Range 3 West. The proposed point of diversion would be located in the Southeast quarter of the Southwest quarter of the Northwest quarter of Section 20, Township 27 North, Range 2 West. Both the place of use and proposed point of diversion would be located in basin 41P of Pondera County. This is a location that is not affected by Montana basin closures or controlled groundwater areas. See Figure 1 on the following page for a project location map.

5. Narrative summary of the proposed project, purpose, action to be taken, and benefits: 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: United States Geological Survey, Montana Natural Heritage Program, Natural Resources Conservation Service (NRCS) Soils Data Website, Department of Environmental Quality, National Wetlands Inventory Website, Natural Resources Information System.

Figure 1-A map of the proposed project.

Part II. Environmental Review

1. **Environmental Impact Checklist:**

PHYSICAL ENVIRONMENT

WATER QUANTITY, QUALITY, AND DISTRIBUTION

Water quantity –The proposed appropriation is from a groundwater source. However, surface water and groundwater are expected to behave as hydraulically connected for this highly permeable and shallow aquifer. As a result, research was conducted to discover any preexisting dewatered streams that could be negatively affected by the pumping of groundwater. The Department of Fish, Wildlife, and Parks reported that there are currently no chronically or periodically dewatered streams located within basin 41P.

Determination: It is unlikely that the proposed project will have an effect on any preexisting dewatered streams.

Water quality –No data exists for quality of water in South Pondera Coulee. South Pondera Coulee meets Pondera Coulee several miles downstream from the proposed well. According to the Montana Department of Environmental Quality, Pondera Coulee is listed as impaired from the headwaters to its convergence with the Marias River. There are several causes for the stream to be listed as impaired, all traced to an agricultural source. Impairment consists of alteration in stream-side or littoral vegetative covers, physical substrate habitat alterations, and salinity. Because no data exists for South Pondera Coulee, it is unknown whether further degradation will occur or if the stream experiences any current impairment.

Determination: Further degradation to water quality is not anticipated in conjunction with this proposed project.

Groundwater –Technical analysis of the aquifer had to be completed to ensure that the aquifer would be appropriate to support a 300 gallon per minute flow and a volume of 3.8 acre-feet of water per year. Pumping tests were conducted primarily to estimate yearly aquifer flux and the zone of influence, but other aquifer properties were exposed following the tests and analysis. It was estimated through computer modeling and tests that there is a zone of influence with a 3,000 foot radius. Within this zone of influence, three preexisting wells reside. Those preexisting wells divert a volume of approximately 220 acre-feet of water per year. According to the aquifer testing report, approximately 4,920 acre-feet of groundwater flux occurs each year. After taking into account the preexisting legal demands and the groundwater flux, approximately 4,700 acre-feet of water is available per year for the proposed O'Brien well.

Flows in South Pondera Coulee will be impacted by the proposed well because of the hydraulically connected behavior between surface water and groundwater for this case. Accordingly, a U.S. Geological Survey report was utilized to estimate yearly flow volume of South Pondera Coulee upgradient from the proposed well. The methods used in the USGS report

suggested that there is a 90% chance every year that actual volumetric flow South Pondera Coulee would exceed approximately 1,200 acre-feet and a 20% chance that actual volumetric flow would exceed 3,900 acre-feet. The accuracy of the USGS report and methodology holds a standard error ranging from 35%-97%.

Determination: Minimal impacts to surface water are expected to result from the pumping of 3.8 acre-feet of groundwater per year.

Diversion Works –The proposed O'Brien well will be a 36" diameter, eight foot long corrugated plastic pipe set in an excavated pit. The pipe will be placed vertically, and surrounded by drain rock. Perforations will be drilled into the bottom two feet of pipe, and will be drilled with a one inch drill bit. Inside the corrugated plastic pipe, two three inch diameter PVC pipes will be placed vertically and will be coupled to a single PVC pipe which exits the corrugated tube horizontally and has a ball valve near its end. This allows for a connection between the well and storage tank to be made. Connection to the well will be made with a three inch diameter hose. A gas powered trash pump will draw water from the well and will discharge the water into a 2000 gallon tank for transport to the place of use. Upon transporting the water to the place of use, irrigation or usage can take place.

UNIQUE, ENDANGERED, FRAGILE, OR LIMITED ENVIRONMENTAL RESOURCES

Endangered and threatened species –The Montana Natural Heritage Program does not list any plants or animals as species of special concern for the proposed project area. It is not anticipated that a major impact will be observed due to the O'Brien well. According to the U.S. Geological Survey, South Pondera Coulee is intermittent, which would not support fish.

Determination: The small volume of surface water that is lost to groundwater will have no chance to affect fish populations, migratory patterns, or endangered species.

Wetlands –According to the U.S. Fish and Wildlife Service National Wetlands Inventory, both the place of use and the proposed point of diversion are outside of a wetland boundary.

Determination: Because no wetlands are contained within the boundary of the proposed project, no impacts are anticipated.

Ponds –No ponds or reservoirs are associated with the project.

Determination: Because no ponds or reservoirs are associated with the project, assessment is not applicable.

GEOLOGY/SOIL QUALITY, STABILITY, AND MOISTURE –At the place of use, soils are composed of Scobey-Kevin clay loam and Hillon-Yawdim complex as described by the Natural Resource Conservation Service. The Scobey-Kevin clay loam is listed as very slightly

saline to moderately saline. The Hillon-Yawdim complex is listed as nonsaline to very slightly saline. Added irrigation might cause a slight increase in saline seep.

Determination: Due to only slight to moderate saline levels, significant saline seep is not expected to occur. Soil moisture will increase slightly due to added irrigation. Degradation of soil quality is expected to be minimal.

VEGETATION COVER, QUANTITY, AND QUALITY/NOXIOUS WEEDS –Plants and the orchard that will be irrigated already exist, so no changes are expected to occur.

Determination: It is the responsibility of the landowner to ensure noxious weeds do not become out of control.

AIR QUALITY –Because a gas powered water pump will be introduced to withdraw groundwater from the well, a slight increase in emissions will be observed. Additional emissions will be produced by the truck hauling the water tank.

Determination: Although a minimal increase in emissions is expected, the pollution sources will not be concentrated enough to negatively affect the area.

HISTORICAL AND ARHEOLOGICAL SITES –N/A: The proposed project does lie within State or Federal land boundaries.

Determination: No assessment of unique archeological or historic sites have been performed.

DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AND ENERGY –No additional impacts on other environmental resources were identified.

HUMAN ENVIRONMENT

LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS –Currently, no environmental plans or goals have been identified in the area.

ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES –No wildlife areas or recreational land are situated adjacent to the proposed project area. Recreational and wilderness activities will not be affected by the project.

HUMAN HEALTH –Human health will not be affected by the project.

PRIVATE PROPERTY –No adverse effect on private property rights is anticipated from this development.
*Yes___ No_**x**_*

OTHER HUMAN ENVIRONMENTAL ISSUES –

Impacts on:

(a) *Cultural uniqueness and diversity?* No significant impact.
(b) *Local and state tax base and tax revenues?* No significant impact.
(c) *Existing land uses?* No significant impact. Proposed project is consistent with other land uses in the region.
(d) *Quantity and distribution of employment?* No significant impact.
(e) *Distribution and density of population and housing?* No significant impact.
(f) *Demands for government services?* No significant impact.
(g) *Industrial and commercial activity?* No significant impact.
(h) *Utilities?* No significant impact.
(i) *Transportation?* No significant impact.
(j) *Safety?* No significant impact.
(k) *Other appropriate social and economic circumstances?* No significant impact.

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:*** 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:***

   No action alternative: The applicant would not be able to develop the project as proposed.

   Alternative one: Approve the application if the applicant proves the statutory criterion has been met.

Part III. Conclusion

1. ***Preferred alternative:*** Alternative one.

2. ***Comments and Responses:*** None to date.

3. ***Finding:***
   *Yes___ No_**x**_ Based on the significance criteria evaluated in this Environmental Assessment, is an EIS required?*

   An Environmental Assessment is the appropriate level of assessment for the proposed action because no significant impacts have been identified.

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Date: September 10, 2015