Part I. Proposed Action Description

1. Applicant/Contact name and address: Robert E. Stephens
   PO Box 292
   Augusta, MT 59410

2. Type of action: The applicant has requested authorization to change the place of use and method of irrigation (Application to Change a Water Right No. 410 30103564). The perfected change would consist of retiring 195.0 acres of flood irrigation at the historic location and adding 120.1 acres of center pivot sprinkler irrigation at a new location about 8.5 miles up-canal. A new point of diversion has been added to supply water to the sprinkler.

3. Water source name: Deep Creek via Cascade Canal

4. Location affected by project: The historic place of use is located in Sections 19, 20, 29, and 30 of Township 23 North, Range 3 West, Teton County. This historic irrigation was serviced by Cascade Canal, which has a point of diversion located in the Southeast quarter of the Northwest quarter of the Northwest quarter of Section 15, Township 23 North, Range 5 West, Teton County. The addition of 120.1 acres of sprinkler irrigation is located in the North ½ of Section 17 and the Southeast quarter of the Southwest quarter of Section 8, Township 23 North, Range 4 West, Teton County. The proposed pump location is the Northwest quarter of the Northwest quarter of the Northeast quarter of Section 17, Township 23 North, Range 4 West, Teton County. 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 85-2-402 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:

<table>
<thead>
<tr>
<th>PHYSICAL ENVIRONMENT</th>
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</thead>
</table>

WATER QUANTITY, QUALITY, AND DISTRIBUTION

*Water quantity* – Deep Creek is identified as chronically dewatered by the Department of Fish, Wildlife, and Parks from Willow Creek to Deep Creek’s mouth. This section of stream is from which Cascade Canal diverts water. A lower volume of water is expected to be diverted from Deep Creek as a result of the proposed change.

*Determination:* Diversion estimations suggest that a small savings in diverted volume is expected from the historic case to the proposed case. It is unlikely that the proposed project will have any positive or negative impact on any preexisting dewatered streams.

*Water quality* – The Cascade Canal operates by drawing water from Deep Creek. Wastewater and irrecoverable losses from the Cascade Canal enter surface waters in the area. Deep Creek is listed as impaired due to alteration in stream-side or littoral vegetative covers, alterations in wetland habitats, low flow alterations, nitrogen, phosphorus, and sedimentation/siltation. The impairments are the result of agriculture, water diversions, hydrostructure flow regulations, loss of riparian habitat, and streambank modifications. The canal has been operating since the late 1800s, so no effects to water quality are expected due to the change.

*Determination:* Fertilizers and pesticides might cause a slight increase in nitrogen and phosphorus concentrations for surface waters surrounding the area. However, the results will be minimal and further degradation to water quality is not anticipated in conjunction with this proposed project.

*Groundwater* – The proposed change would move historically flood irrigated land near the end of the Cascade Canal to center pivot irrigation further up-canal (about 8.5 miles from historic location). Because of the acreage retired near the end of the canal, less water will be needed to irrigate the additional flood acreage, resulting in a lower amount of infiltration losses. Return flows are expected to decrease for the proposed change. Infiltration losses and return flows behave as groundwater in the form of shallow subsurface flows, but most of the shallow subsurface flow returns to surface waters in the area.

*Determination:* Minimal impacts to groundwater quality or supply are anticipated. A majority of the return flows and infiltration losses return to surface waters.

*Diversion Works* – The center pivot will be supplied by a 75 horsepower pump diverted water from the Cascade Canal. Water will be conveyed from the canal to the pivot through about 590.0 feet of 10” diameter pipeline. The center pivot is constructed of 12 spans totaling 1,834.0 feet.
UNIQUE, ENDANGERED, FRAGILE, OR LIMITED ENVIRONMENTAL RESOURCES

Endangered and threatened species – The Montana Natural Heritage Program lists 18 species of birds, one species of reptile, one species of fish, and one species of plant on a species of concern list. The tables below contain specific information about the species of concern.

<table>
<thead>
<tr>
<th>SCIENTIFIC NAME (AVES)</th>
<th>FAMILY (SCIENTIFIC) FAMILY (COMMON)</th>
<th>GLOBAL RANK</th>
<th>STATE RANK</th>
<th>USES</th>
<th>USES</th>
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<td>Aechmophorus chilensis</td>
<td>Chick's Grebe</td>
<td>G4</td>
<td>SGCN</td>
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<td>1%</td>
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<tr>
<td>Aquila chrysaetos</td>
<td>Bald Eagle</td>
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<td>SGCN</td>
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<tr>
<td>Ardea herodias</td>
<td>Great Blue Heron</td>
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<td>SGCN</td>
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<tr>
<td>Athene cunicularia</td>
<td>Little Owl</td>
<td>G4</td>
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<td>10%</td>
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<tr>
<td>Bubo virginianus</td>
<td>Northern Hawk Owl</td>
<td>G4</td>
<td>SGCN</td>
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<td>Calcarius ornatus</td>
<td>American Pipit</td>
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<tr>
<td>Centropus sinuatus</td>
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<tr>
<td>Chlidonias niger</td>
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<tr>
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<tr>
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<td>SGCN</td>
<td>10%</td>
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<tr>
<td>Hydroprogne caspius</td>
<td>Caspian Tern</td>
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<td>SGCN</td>
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<tr>
<td>Lasius indicus</td>
<td>Indian Grasshopper</td>
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<td>Macrurus americana</td>
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<td>Mycteria cinerea</td>
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<tr>
<td>Nann鹬us poliocephalus</td>
<td>Red-Naped Nighthawk</td>
<td>G4</td>
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<td>1%</td>
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<tr>
<td>Podiceps auritus</td>
<td>Barrow's Goldeneye</td>
<td>G4</td>
<td>SGCN</td>
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<td>10%</td>
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<tr>
<td>Podiceps nigricollis</td>
<td>White-faced Ibis</td>
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<td>SGCN</td>
<td>1%</td>
<td>1%</td>
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<tr>
<td>Sterna fuscata</td>
<td>Roseate Tern</td>
<td>G4</td>
<td>SGCN</td>
<td>10%</td>
<td>10%</td>
</tr>
<tr>
<td>Sterna hirundo</td>
<td>Common Tern</td>
<td>G4</td>
<td>SGCN</td>
<td>10%</td>
<td>10%</td>
</tr>
</tbody>
</table>
**Determination:** The proposed project is located in a sparsely populated area primarily composed of cropland and grassland. Only one species is a candidate to be listed as a threatened or endangered species according to the U.S. Fish and Wildlife Service Endangered Species Act. It is unlikely that transferring 120.1 acres of grassland to irrigated cropland will impact migratory patterns, breeding, or pose a habitat threat to species of concern.

**Wetlands**—According to the U.S. Fish and Wildlife Service National Wetlands Inventory, both the historic place of use and the proposed place of use 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:** Assessment is not applicable because no ponds or reservoirs are associated with the project.

**GEOLOGY/SOIL QUALITY, STABILITY, AND MOISTURE**—At the historic place of use, soils are composed of Trudau loam, Marcott silty clay loam, Kremlin clay loam, Marvan clay, Marvan silty clay, Ethridge clay loam, and Marcott silty clay loam. The proposed place of use overlies Rothiemay-Delpoint gravelly clay loam, Kremlin clay loam, Kremlin loam, and Yamacall-Delpoint loam. The Cascade Canal crosses 18 different soil types with an average seepage rate of 0.97 ft³/ft²/day. At the proposed place of use, the soils are nonsaline-slightly saline.
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:_ Saline levels in the soils at the proposed place of use have a low level of salinity. Degradation of soil quality is expected to be minimal.

**VEGETATION COVER, QUANTITY, AND QUALITY/NOXIOUS WEEDS** – No impacts are expected because aerial imagery indicates that the system has already been constructed.

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

**AIR QUALITY** – The pump selected is electric driven.

_Determination:_ No deterioration of air quality or adverse effects on vegetation due to an increase in air pollutants is expected.

**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.
Name: Mike Mahowald
Title: Water Resource Specialist
Date: December 31, 2015