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:

   Arnold Thiel

   Arnold Thiel Water Service
   12297 County Road 348 #1
   Sidney, MT 59270

2. Type of action: Application for Beneficial Use, Application 40S 30064191

3. Water source name: Fox Hills – Hell Creek Aquifer

4. Location affected by project:

   T22N 59E
   Section: 14 - Richland County

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.

   The Applicant proposes to pump water from a 1,410 foot deep well completed in the Fox Hills – Hell Creek aquifer at a point in the NESWSE of Section 14 T22N R59E in Richland County. Water will be pumped from the well at a rate of 45.8 gpm from January 1st through December 31st up to a maximum volume of 23.2 Acre-Feet annually. Water appropriated from this well will be sold through an on-site bulk sales depot, where it will be loaded onto trucks and taken to oil wells for hydraulic formation fracturing operations and production of drilling fluids.

   This well has been completed and in operation for approximately thirty years. Modifications will not be made to the structure, nor to the depot facility itself.

6. Agencies consulted during preparation of the Environmental Assessment:
   (include agencies with overlapping jurisdiction)

   Montana Natural Heritage Program

Montana Department of Environmental Quality Website (TMDL 303(d) Listing)
Montana Fish, Wildlife & Parks
United States Fish & Wildlife Service National Wetlands Inventory

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: This application primarily pertains to a groundwater depletion. The appropriation will eventually equilibrate and draw water from the Yellowstone River at a rate of 14.38 gallons per minute. This is not a dewatered source, although at times flows dip below Montana Department of Fish, Wildlife & Parks instream flow reservations.

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: The project does not pose a risk of affecting water quality, it draws water from a deep aquifer with limited connectivity to the Yellowstone River.

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: The Applicant has shown water to be physically and legally available for appropriation, including impacts to the Yellowstone River at a rate of 14.38 gpm.

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: The primary diversion works for this proposed appropriation has been in place for approximately sixty years. The secondary means of diversion for this proposed appropriation consists of tank mounted vacuums operated by individual trucks at a point on the road atop the dam. This type of diversion should pose no impacts to channel or flow characteristics, nor present obstructions to the flow. The dam affected should not differ in operation by any means, and the appropriation will have no effect on well construction.

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:

A total of 18 species of concern were identified within T22N R59E through a search with the Montana Natural Heritage Program. 17 of these 18 species identified are associated with riparian ecology, which does not exist at the Point of Diversion or Place of use. This application pertains to an existing well several miles from the Yellowstone River; this well has been used in the manner specified by the Applicant for the past three decades. Any impacts to threatened and/or endangered species would be observed within this timeframe.

Concerning this well's hydrologic connection to the Yellowstone River, the average depletion of 14.38 gpm is spread out over several miles of the river. This flow rate does not pose a significant risk to aquatic or riparian animals including mammals, reptiles, birds or insects.

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: This Project does not impede or impair functionality of any identified wetlands, as confirmed with a search utilizing the United States Fish & Wildlife Service National Wetlands Inventory interactive mapper utility. Small fragments of shrub riparian habitat were identified approximately 500 feet from the well, however water drawn by the well comes from approximately one thousand feet bgs, making a connection unlikely.

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

Determination: The affected area does not include any natural ponds or lakes, it pertains to a deep aquifer well.

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: This project is completed several miles from the east bank of the Yellowstone River. Typical soil profiles in this area are silty loams, often with sandy loam in higher elevations of the watershed. This area is underlaid with Lebo shale and Fort Union formations extending up to 900 feet below ground surface. Soils and the underlying formations in this area are known to be calcareous, and naturally occurring saline seeps are not uncommon for this region. The water pumped from this well has a high content of calcium and sodium, however the vast majority of this water will end up in deep injection wells far below potable aquifers, limiting the concern of saline seep.

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: Vegetative cover is predominantly grasses and forbs for this site. The proposed appropriation should not have an impact on vegetative cover. Significant alterations to the diversity and quality of the watershed vegetation are not anticipated.

AIR QUALITY - *Assess whether there will be a deterioration of air quality or adverse effects on vegetation due to increased air pollutants.*

Determination: Air quality reduction may occur as a secondary effect of idling trucks waiting to fill at the reservoir; however significant effects are not anticipated to occur on this site at this time.

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: Not Applicable. The project is 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: Water is currently legally available in the specified area of this aquifer, as well as on the Yellowstone River through the affected reach. No additional significant impacts are anticipated as a result of this project. The Well and depot facility has been in operation for thirty years, any known adverse issues would be documented at this point in time.

HUMAN ENVIRONMENT

LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS - *Assess whether the proposed project is inconsistent with any locally adopted environmental plans and goals.*

Determination: This project does not appear inconsistent with any observed environmental plans or goals.

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: The proposed site is not with a wilderness area or setting. Impacts to recreation are anticipated to be minimal to nonexistent.

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

Determination: No known impacts are anticipated to affect 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: **NA**

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 anticipated

(*b)* *Local and state tax base and tax revenues?* None anticipated

(c) *Existing land uses?* No impacts are anticipated..

(*d)* *Quantity and distribution of employment?* Increased employment through oilfield expansion & associated services.

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

(f) *Demands for government services?* None anticipated

(g) *Industrial and commercial activity?* Purpose is to provide available water for oilfield development & servicing.

(h) *Utilities?* No significant impact anticipated.

(i) *Transportation?* Site utilization will increase truck traffic on local roads.

(j) *Safety?* None anticipated, although increased truck traffic has the potential to detrimentally affect safety on public roads.

(k) *Other appropriate social and economic circumstances?* None anticipated

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

Secondary Impacts: **None anticipated**

Cumulative Impacts: **Impact to human health and safety is anticipated to be relatively minor.**

3. ***Describe any mitigation/stipulation measures:***

No mitigation measures have been planned on this project.

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:***

None, not applicable

PART III. Conclusion

1. Preferred Alternative

Utilizing the proposed action, significant impacts are not expected to occur and the project will likely develop as proposed. A no action alternative exists, although unlikely.

2. Comments and Responses

None..

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:

An EIS is not required because the level of impact is not anticipated to be found significant. The term 'significant impact' has some level of subjectivity, in this context the level of significance is assessed from the paradigm of the responsibilities of a Water Resource Specialist. Other agencies and entities may find the proposed developments to be significant.

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

Name: Jonathan Staldine
Title: Water Resource Specialist
Date: March 21, 2013