MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION
WATER RESOURCES DIVISION
WATER RIGHTS BUREAU

ENVIRONMENTAL ASSESSMENT

PART I. PROPOSED ACTION DESCRIPTION

1. Type of action: WATER RIGHT CHANGE APPLICATION NO. 40B-G(W)015534-00

2. Applicant/Contact name and address:
SILVER SAGE RANCH
PO BOX 3075
ROUNDUP, MT 59072

3. Water source name: FLATWILLOW CREEK

4. Location affected by action: SECTIONS 22 & 24, T12N, R25E, PETROLEUM COUNTY
SECTION 19, T12N, R26E, PETROLEUM COUNTY
APPROXIMATLEY 18 MILES SOUTHWEST OF WINNETT.

5. Narrative summary of the proposed project and action to be taken: The DNRC shall issue an authorization to change if an applicant proves the criteria in 85-2-402, MCA are met. This application is to change the place of use and add a point of diversion. 95.7 acres of existing flood irrigation will be replaced with 55.2 acres of sprinkler irrigation and 19.7 acres of flood irrigation. The single center pivot sprinkler system will be supplied by a gravity pressure pipeline from an existing reservoir.

6. Agencies consulted during preparation of the environmental assessment:
State Historic Preservation Office
Montana Natural Heritage Program (MTNHR) Web-site
Montana Dept. of Environmental Quality TMDL Listing
Montana Rivers Information System Web-site
USDA Soil Survey of Petroleum County, Montana
Montana Dept. of Fish, Wildlife, & Parks (DFWP) – Anne Tews, Fisheries Biologist

PART II. ENVIRONMENTAL REVIEW

On site investigation was completed by Andy Brummond on 7/27/00.

1. Environmental Impact Checklist:

PHYSICAL ENVIRONMENT

Soils/Geologic Features:
Degradation of soil quality or alteration of soil stability, moisture content, geologic substructure, unique geologic features, archeological sites?

NO SIGNIFICANT IMPACT

The USDA Soil Survey of Petroleum County, Montana identifies the soils in the project area to be Gerdrum-Vanda complex, Harlem-Havre complex, and Kobar-Zatoville silty clay loams. The site investigation confirmed these general soil types. In general these soils perc slowly and have a slow intake. They also are susceptible to erosion. These soil may develop salinity problems when irrigated.

The only ground that will be newly irrigated with this project will be irrigated by a center pivot sprinkler. All ground that will be flood irrigated has been previously flood irrigated. Because of the greater ability to control the sprinkler irrigation, erosion and salinity problems will likely decrease over present conditions. Soil stability should improve with proper management practices.

No unique geologic structures were identified during the site investigation.

Erosion:
Alteration of erosion or siltation patterns which modify stream beds or lake shores?

BENEFICIAL IMPACT

The conversion of 55.2 acres of flood irrigation to sprinkler irrigation should reduce stream bank erosion and siltation in Flatwillow Creek as runoff carrying sediment and causing bank erosion should decrease with the use of sprinkler irrigation.

Erosion patterns may change slightly to due a small change in distribution of water in Flatwillow Creek and less diversion of water.

Vegetation/Noxious weeds:
Change in or adverse affect on diversity and production of local plant species including any unique or endangered species (including trees, shrubs, grass, and aquatic plants)? Establishment or spread of noxious weeds?

NO SIGNIFICANT IMPACT

Vegetation in the irrigated areas includes alfalfa, smooth brome, various wheatgrasses Foxtail Barley, and Showy Milkweed. Vegetation in the non-irrigated areas includes primarily Silver Sagebrush, Greasewood, Crested Wheatgrass, and a sparse population of Russian Olive Trees. Noxious weeds including Canadian Thistle and Field Bindweed are present in the irrigated areas.

The irrigated areas will likely re-vegetate quickly given the increase water availability to newly seeded crops. The non-irrigated area disturbed in the construction of the pipeline should re-vegetate if seeded native and/or non-native grass species. Without seeding, the potential for erosion exists until the existing vegetation can repopulate the disturbed area. The significance of this potential erosion is very limited.

The spread of noxious weeds is a potential problem. With proper management, the spread should be limited to likely only the newly irrigated area. Given that the intention is to raise hay, the Canadian Thistle will be easily controlled by harvesting the hay. The Field Bindweed will not proliferate due to competition from alfalfa. At times when the area is actively cultivated, chemical herbicides would be required to control these noxious weeds. This project should not introduce noxious weeds into region.

A check of the Montana Natural Heritage Program web-site identified no plant species of concern in the area. The site investigation found the same.

Air:
Deterioration of air quality, or adverse effects on vegetation due to increased air pollutants.

NO IMPACT

Water:
Alteration of surface water or groundwater quality including but not limited to temperature, dissolved oxygen or turbidity or quantity or distribution?

NO SIGNIFICANT IMPACT

Water distribution patterns will change slightly as a point of diversion will move upstream approximately 1.5 miles. The quantity of water in Flatwillow Creek should remain relatively unchanged. Less water will likely be diverted with the change from flood to sprinkler irrigation, but at the same time return flows will also decrease.

Water quality in Flatwillow Creek should improve with the decrease or return flows. This reach of Flatwillow Creek has been classified as C-3 and having a low priority for TMDL development by the MT DEQ. It partially supports aquatic life and a warm water fishery. Siltation, flow alteration, and bank erosion likely caused by agricultural use and practices have been identified as the probable cause of impairment. This project should help alleviate the possible causes of impairment.

Floodplain:
Changes in drainage patterns, course or magnitude of flood flows, or exposure of people/property to hazards (flood)?

NO SIGNIFICANT IMPACT

The project does not lie in an identified flood plain and therefore no floodplain permitting is required. It is unlikely that any portion of center pivot or pipeline would be in the 100 year floodplain unless the outer portions of the center pivot were in close proximity to Flatwillow Creek. This project will not change the course or magnitude of flood flows or increase the exposure of people/property to food hazards.

Wildlife Habitat/Migration:
Deterioration of critical fish or wildlife habitat? Creation of a barrier to the migration or movement of fish or wildlife?

NO SIGNIFICANT IMPACT

Reaches of Flatwillow Creek have been designated as chronically de-watered by the DFWP. The approximate 1.5 mile reach between the current point of diversion and the additional point of diversion may experience additional de-watering as a result of this project. Anne Tews, DFWP Fisheries Biologist does not believe that this possible de-watering will create a significant deterioration of fish habitat. Because no new diversion structure will be constructed as a part of this project, no changes in barriers to the migration of fish will occur.

This project will not impact the migration of wildlife.

Endangered Species:
Adverse effects on any unique or endangered species?

NO IMPACT

The MTNHP web-site indicated that no bird species of concern have been observed in the project area. The site investigation found no species of concern.

HUMAN ENVIRONMENT

Existing Land Use:
Alteration of or interference with the productivity or profitability of the existing land use of an area?

BENEFICIAL IMPACT

The productivity and possible the profitability of the land use in the area will increase due to the increase production associated with the conversion from flood to sprinkler irrigation.

Historical Significance:
Destruction or alteration of a natural area of scientific or educational value or prehistoric or paleontological importance?

NO SIGNIFICANT IMPACT

The State Historic Preservation Office feels that the likelihood of an impact to cultural resources is low if no new ground disturbance has occurred. The project area has been the site of somewhat intense agricultural use, including farming, for many years. The areas of ground disturbance are very limited and no cultural resources were found during the site investigation.

Populace:
Alteration of the location, distribution, density, or growth rate of the human population of an area? Alteration of social structure of community?

NO IMPACT

Transportation:
Increased traffic hazards or effects on existing transportation facilities or patterns of movement of people and goods?

NO IMPACT

Safety:
Creation of any health hazard or affect on existing emergency response or evacuation plans?

NO IMPACT

Public Services:
Have an effect upon or result in a need for new or altered governmental services in any of the following areas: fire or police protection, schools, parks/recreational facilities, roads or other public maintenance, water supply, sewer or septic systems, solid waste disposal, health, or other governmental services? Have an effect upon local or state tax base?

BENEFICIAL IMPACT

The center pivot system should increase the tax base.

Utilities:
Creates need for new or altered facilities for any of the following utilities: electric power, natural gas, other fuel supply or distribution systems, or communications?

NO SIGNIFICANT IMPACT

New utility lines will be required to power the center pivot system. Because the system is a gravity pressure system, no power for pumping will be needed. This will place only a very limited demand on the electric distribution system for power to move the center pivot.

Aesthetics:
Alteration of any scenic vista or recreation opportunity or creation of an aesthetically offensive site to the public?

NO SIGNIFICANT IMPACT

The project will be visible from public roads. The project does not include any structures that are not commonly found irrigated agricultural areas of Montana.

Other:

NONE

---

2. Secondary and cumulative impacts:

Widespread conversion of flood irrigation to sprinkler irrigation in the Flatwillow Drainage Basin could result significant cumulative impacts to water distribution patterns due to decrease diversions and decreased return flows. Cumulative impacts related to such development could impact the electric distribution system as power demands would increase.

3. Reasonable alternatives to the proposed action, including the no action alternative:

ALTERNATIVE 1 - NO ACTION

The no action alternative would result in some of the beneficial impacts of this project not being realized. No new significant negative impacts would result form this alternative.

ALTERNATIVE 2 – WELLS AS A SOURCE OF WATER

This alternative would have added initial expenses related to the well drilling costs. Long term added expenses would include increased power costs and pump

maintenance costs. Shallow wells could possibly negatively impact the flows in Flatwillow Creek. Both deep and shallow wells could potentially have total dissolved solids in excess of agricultural irrigation tolerances. Wells would however provide source of water that would be more dependable and containing less debris. Less debris in the water would lead to increase efficiencies as sprinkler heads would be less likely to plug. This alternative would potentially decrease diversions from Flatwillow Creek, although it alone would not significantly impact the current de-watering problem.

PART III. CONCLUSION

Based on the significance criteria evaluated in this EA, is an EIS required? NO

If an EIS is not required, explain why the EA is the appropriate level of analysis for this proposed action:

An EA is adequate for this action. There will be no significant negative impacts, therefore, and EIS is not required.

PREPARED BY:

NAME: Andy Brummond
TITLE: Water Resources Specialist
DATE: [Automatic date code removed]