

FINAL PROJECT SUMMARY

Convert Open Irrigation Ditch to a Delivery Pipe System

DNRC Grant #223-13-3313

Sponsored By: Cascade Conservation District

February 27, 2014

PREPARED BY: Elliot Merja

1. **Project name:** Open Irrigation Ditch to a Delivery Pipe System
2. **Project time frame:** August 2013 - September 2013
3. **Project location:** 28 Adams Rd est to 51 Adams Rd, Sun River, MT. Adams Rd is one mile south of Sun River Mt. on the Sun River. The pump site is at the edge of Adams Rd 12 miles east of the Sun River – Cascade Road.
4. **Project costs & cooperative partners:** Cascade Conservation District (CCD). Cooperative Partners included Merja Farms, Inc., Dusty and Jessida Fryberger, Ben and Rachael Zetsike, Paul and Christie Leach – producers. Fort Shaw Irrigation District (FSID).

Grant Budget:

Line Item	GRANT ALLOCATED	GRANT SPENT	GRANT REMAINING
Materials and Supplies (see attached invoice for pipe and fittings)	\$ 14,500.00	\$ 14,500.00	\$0.00
Administration	\$ 500.00	\$ 500.00	\$0.00
TOTAL	\$ 15,000.00	\$ 15,000.00	\$0.00

Invoice #1

RPH Irrigation Services, LLC.	- \$ 3,047.80
Big Sky Irrigation, Inc.	- \$ 1,286.00
Big Sky Irrigation, Inc.	- \$11,880.00
Less In Kind Cost	+\$ 1,713.80
Admin Fee	- \$ 500.00
TOTAL	=\$15,000.00

Total Project Budget:

Line Item	CASH SOURCE	GRANT FUNDING	IN-KIND SOURCE	TOTAL
Salaries			Labor \$4800.00	\$ 4,800.00
Equipment			see below*	\$ 9,420.00
Materials		\$ 14,500.00	Turnout \$1600 Lining \$880	\$ 16,980.00
Administrations		\$ 500.00		\$ 500.00
TOTAL				\$ 31,700.00

*The producers supplied the equipment ie: backhoe, skid steer, excavator, dozer, Telehandler, earthmover, dump truck and all fuel, labor and additional materials. FSID supplied 2 (two) 5" waterman head gates.

5. **Project Purpose:** The intent of the project was to replace a 2,480' leaky open ditch with a pipeline. This project was designed to save water that was being lost thru a very old and poorly maintained irrigation canal. The pipe delivery method distributes a more reliable water supply for the four producers on the

end of the canal. This results in lowered sediment deposits, better flow and fewer blockages thus reducing damage to the facility, adjacent properties and less pollution in surface waters. Added benefits from this project are lowered erosion in the coulees that returned water that was lost from the ditch and the change from flood irrigation to sprinkler to using less water on all the acres involved.

6. **Accomplishments:** 4730 feet of canal was cleaned out and 2100 feet of 15 inch pipe was laid. There are 16 (sixteen) people that directly are involved, benefiting from this change in delivery system resulting in better water conservation and less erosion. FSID gained badly needed infrastructure that eases the call for water at the end of the canal. There will be 249 (two hundred forty-nine) acres sprinkler irrigated. This had been mostly flood irrigated prior to the delivery system causing the supply of water to be very sporadic. The tax base for FSID will be increased roughly \$2700(two thousand seven hundred dollars) annually. Silt in the Sun River will be reduced as the erosion in the 2 (two) coulees will be nearly stopped.
7. **Conclusions, outcomes and long-term benefits from the project:** In conclusion, the project was in operation for approximately one month at the end of the 2013 irrigation season. The Pipeline and structures worked well. The portion of the project that the grant funding was allocated for is complete. The inlet containment is only half its design size so that the pipeline portion of the project could be tested. The total project will be finalized over the winter and spring as the weather permits. We foresee this project being in place 25 (twenty-five) years or more with very little maintenance required resulting in a much longer total life expectancy.

Conservation Benefits include:

- Reduced Evaporations
- Reduced salinity
- Eliminates end of channel water losses
- Enables more precise flow measurements
- Allows installation of automated control valves
- Enables automation of entire system

8. **Opportunities for project continuation or expansion:** This project has shown promise in that it has educated some local producers to change their irrigation from flood to sprinkler, saving water and lowering erosion from run off. There is potential to irrigate some acres that are in district now currently not being irrigated at this time by producers connecting to the pipeline delivery system.
9. **Recommendations:** The Project went well and is working very much as expected. There will be monitoring daily thru the irrigation season by FSID employees and by the producers during their irrigation cycles. The project is designed to last years with little maintenance once the banks of the containment are vegetated.

Project photos and media documents attached