

**Final Deliverable Report
WSRF Grant –POGG1 PDAA 2017-342
Ditch Mapping of Colona Area in Gunnison River Basin**

Date: April 11, 2017

Agreement Project Period: August 19, 2016 - March 31, 2017

Agreement Recipient: Shavano Conservation District

Recipient Contact Person: Bert Earle, SCD District Manager

Progress Achieved in Accomplishing Project Objectives:

Objective No. 1 – GIS Ditch Mapping

Planned Progress: Obtain permission from individuals and entities for mapping activities. Complete the on-the-ground GIS mapping of 10 ditches in the Colona area sub-basin 3195 (Uncompahgre at Colona) and 3199 (Uncompahgre at Ft. Crawford).

Actual Progress: 70% completed. Seven of the 10 originally proposed ditches were mapped. Mike Zeman, Ditch Mapping Technician (DMT), was unable to map three of the ditches (Pinion Ditch, Alkali Ditch No. 80 and Alkali Ditch #2) because the ditch company or individual shareholders on the ditches chose not to allow the mapping. Additional GPS work was required on McDonald Ditch #145 and five additional laterals were mapped.

Objective No. 2 – Operational Worksheets and Supporting Data

Planned Progress: Download GPS data for each ditch and create an Excel spreadsheet that depicts the average daily flows for each turnout along the ditch, along with providing supporting documents, GIS shapefiles, and CDSS structure summaries with diversion records.

Actual Progress: 100% completed for ditches that were mapped. Copies of completed ditch files and data sheets were sent electronically to the U.S. Bureau of Reclamation (USBR), Shavano Conservation District (SCD), the Lower Gunnison Basin Salinity Field Coordinator, and to ditch companies as requested. Hard copies of these files and large format maps were also presented to the participating ditch companies.

Objective No. 3 – Data Backup and Ditch Files

Planned Progress: Backup up all data electronically to a storage drive for SCD along with providing a hard copy of completed ditch data. Maps and Data for all ditches mapped are available in the SCD office at 102 Par Place, Suite 4, Montrose, CO.

Actual Progress: 100% completed.

Objective No. 4 – Provide Data and Information – to enable area ditches to apply for USBR Colorado River Basinwide Salinity Control Program funding of improvements, which will have agricultural as well as water quality related environmental benefits.

Planned Progress: Provide assistance to ditch owners with data generated by the mapping program.

Actual Progress: 100% Completed. DMT assisted and/or met with various ditch companies or landowners with mapping needs for their irrigation improvement projects.

Ditches Completed: Mapping data was completed on 8 ditches covering 29.848 miles for this contract. Data was researched on 25 smaller ditches that might have an effect on flows for priority ditches. The total number of ditches mapped in the Shavano Conservation District is 31, which totaled 142.586 miles.

Difficulties Encountered:

- Three of the larger ditches have a complicated series of ditch laterals. In a number of instances, laterals from the main ditch had different names and water decrees. Some ditches get water from multiple sources, which include storage water, natural seeps, wastewater, and other ditches. Some ditches transfer water via other ditches or natural drainages. The actual flow of water through these types of ditches will probably be higher than the amounts calculated on the flow spreadsheets.
- Multiple laterals, mixed with underground piping and poor ditch maintenance, made mapping difficult. It was sometimes very difficult to distinguish between a lateral delivery ditch and a wastewater ditch.
- Some landowners distrust government and feared that ditch mapping might be used to reduce or take away their water rights. The ditch mapping program is completely voluntary. In order to map a ditch, cooperation from all landowners on the ditch was needed. Some members on a ditch did not agree and were frustrated when other shareholders would not allow the project to proceed.