

Final Report

TO: Colorado Water Conservation Board
1313 Sherman Street, Room 718
Denver, CO 80203

Rio Grande Basin Account
Effective Grant Date: 2/18/19 – 12/31/19
PO: POGG1,PDDAA,201900002697
SLV Recharge Optimization Pilot Project

From: Mosca Hooper Conservation District (MHCD)
101 S. Craft Drive
Alamosa, CO 81101
Robin Cope, District Manager

Time Period: 02/19/19 – 12/31/19

Summarize project and how completed:

As of 2012, San Luis Valley water users have been mandated by the State of Colorado to achieve recharge in aquifer systems to the point of reaching State-defined sustainable water levels by the year 2032. To accomplish this task valley-wide, in excess of 600,000 acre-feet of water will need to be recharged into the aquifer systems of the region to meet this requirement during the remaining 14 years of the recovery period.

The “San Luis Valley Targeted Recharge Project – Pilot Project at Township Scale” (SLVTRP) will use targeted intensive geologic and novel geophysical instrumentation & analysis to demonstrate aquifer recharge optimization. Identifying where the nearest potential recharge “sweet spots” may exist across our landscapes would allow for improved collaboration between water users and managers to target surface water inputs most efficiently. This pilot project at the scale of a township is intended to demonstrate the applicability of this approach for strategic use by water conservancy districts, groundwater management districts, ditch companies, and individual landowners.

The District and Contractor worked together and deployed the ERI arrays over a 40-acre parcel near Mosca and retrieved a significant amount of data for four and a half arrays. The geology team and the District worked with the well drillers to drill five test wells. During drilling, the well cuttings were analyzed for rock type and a hydraulic profiling tool (HPT) was run down each borehole to determine transmissivity of the various layers

of sand, gravel and clay. The District also collected preliminary static water level data for each of the five boreholes. The ERI data was processed by the geophysicist. The data shows interesting patterns of gravels in the shallow subsurface that correspond well to channel gravels from old Rio Grande deposits, as well as showing the position of the water table. The HPT information, well cuttings data and ERI images all correspond well with one another. In addition, the image emerging from the shallow subsurface matches the observations shared with the team by the landowner regarding where "good" water occurs in the area. Finally, the geology team worked with the web specialist to prepare interpreted imagery of the ERI data to be showcased on the web to inform landowners of the results of the project. This data appears on the Mosca-Hooper Conservation District Website. Follow link for data, <https://mhcd.colorado.gov/aquifer-targeted-recharge>.

Describe obstacles and how overcome:

There were no significant obstacles to overcome.

Explain proposed budget versus actual budget

Proposed CWCB budget and actual budget were the same, total project: \$83,630

Hard Cash contributions included:

- CWCB - \$43,100
- CSCB - \$20,265
- Miller/Coors - \$10,000
- Rio Grande Water Conservation District - \$4200

In-kind contributions included:

- \$6065 by MHCD Board Outreach & District Manager Hours

Confirm all matching commitments fulfilled:

See attached All Grant Tracking Spreadsheet

Photos and summaries of meetings and engineering reports:

Photographs or Images & Map attached also appear on MHCD website data link:

<https://mhcd.colorado.gov/aquifer-targeted-recharge>.

- The San Luis Rift Valley
- Understanding Hydraulic Profiling Tool – HPT Graphs
- Map Location

Regards,

Robin Cope

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