USDA United States Department of Agriculture

Natural Resources Conservation Service

Soil and Plant Sciences Division

Soil Survey Region 5 Office

Ft. Morgan MLRA Soil Survey Office, Colorado

EQIP Funds Highly Effective Irrigation System in Colorado

Purpose

Established in the late 1800s, the Price Ranch is a family-owned cattle operation located in eastern Arapahoe County, Colorado. John Price and his children are the fifth and sixth generations now working this land with a large herd of Red Angus cattle, also farming both dryland and irrigated crops.

The Price Ranch has a long history of working with both the Deer Trail Conservation District and the NRCS. Over the years, Price Ranch has been involved in multiple conservation programs, including the Great Plains Conservation Program in the 70s, long-term agreement contracts, district grants, and the Environmental Quality Incentive Program (EQIP).

John is interested in installing a subsurface drip irrigation system (SDI). SDI is ideal for smaller, irregularly-shaped fields. These systems tend to be highly efficient and utilize lower pressures and gallons per minute (GPMs) than a standard sprinkler. The rate of water evaporation when using SDI is very low compared to any other irrigation method, which makes SDI a highly effective system for water conservation. John is also hoping to lessen the amount of labor and maintenance that the old irrigation system requires. Depending upon cost, he would like to install a highly automated SDI that he can run from a computer or iPad.

NRCS sent soil scientists and technicians to determine if the soils on location would be suitable for an SDI system. The NRCS team consulted the soil map and pulled soil cores from within the areas of concern. The properties they checked to help determine the potential success of the SDI system in this area included soil type, flooding frequency, permeability, water-holding capacity, salts, and drainage. They determined that this area is on a terrace landform that is higher on the landscape than the nearby flood-plain step; they then determined that this area very likely would not flood. The soil tests revealed a lower permeability rate than the sandy soil that was mapped here in an older soil survey. The soil cores showed no presence of salts within the soil profile.

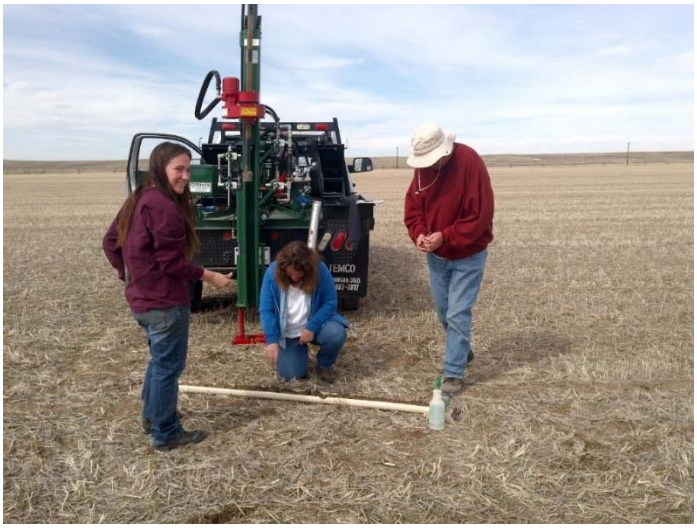
Key Outcomes

The soils data and interpretations provided on-site by the Ft. Morgan MLRA Soil Survey Office and the Byers Field Office moved this project forward to the next steps of planning, engineering, and construction.

With the assistance of an Air Quality EQIP contract, John Price finally can implement the SDI system on his ranch this year. This will be highly efficient, with a lower rate of evaporation and fewer gallons of water used on his 35 acres.

Through EQIP, the producer also will implement Irrigation Water Management to further enhance the water savings. One ranch at a time, NRCS employees in Colorado are *helping people help the land*.

The NRCS team brought the Giddings soil probe.



Checking out one of the soil cores.

Looking down to the flood-plain step from the terrace.