

Natural Resources Conservation Service

CONSERVATION Showcase

Eastern Iowa Airport Commits to Soil Health, Water Quality on Their Cropland

by Jason Johnson, Public Affairs Specialist, July 2019

A simple, yet effective soil health demonstration called a Slake Test, or Soil Stability Test, presented by USDA helped convince Eastern Iowa Airport officials to step up measures to reduce erosion, improve soil health and protect water quality on the airport's 2,000 cropland acres.

Like most airports, Iowa's second busiest airport owns extra land surrounding their terminal. The Eastern Iowa Airport has leased their open space as cropland since the 1960s, according to Airport Director Marty Lens. They currently lease their prime acres to five farm operators.

Lens recognized that water quality is an important Iowa issue soon after moving to the Cedar Rapids-based airport from Rochester, Minn., in 2015. "One of our core values is environmental stewardship, so we want to show the public that we are serious about taking care of our land in a sustainable way," said Lens.

NRCS Planning Assistance

Lens reached out to John Bruene, longtime District Conservationist for USDA's Natural Resources Conservation Service (NRCS) in Linn County, to discuss ways to improve water quality running off their property and develop a conservation plan.

"We needed to reduce soil erosion and reshape and install more grassed waterways," said Lens.

Bruene says the grassed waterways were installed to treat the land's ephemeral gully issues. Some of the

erosion is related to airport runway runoff, but some is caused by soil type, terrain, tillage practices, and even extreme weather.



A terminated cereal rye cover crop and cornstalks are ready to be planted into on the Eastern Iowa Airport cropland in Cedar Rapids.

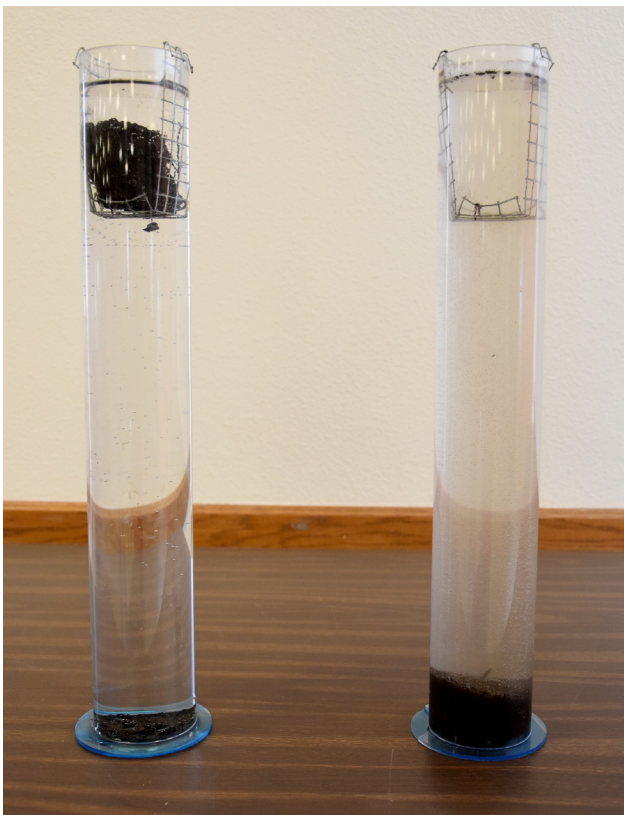
Bruene brought USDA staff to a meeting, which included the farm operators and Senior Farm Manager John Yeomans, with Farmers National Company. USDA staff demonstrated the impacts of good soil conservation practices on soil health and water quality compared to tilling the soil. "I really wanted to show Marty and the farmers that there were management changes that could be made to improve water quality running off the farm," said Bruene, "and then there were long-term management changes that require significant airport commitment."

Soil Health Demonstration

Lens says the Slake Test performed by one of the USDA staff members was an "eye-opener." A Slake Test shows the stability of soil aggregates in water. In this instance, the demonstration compared soils from a farm using no-till and cover crops to a farm that tills the soil annually. The results indicated tilled soils fall apart and "slake" very easily from the im-



NRCS District Conservationist John Bruene looks at the airport's cereal rye cover crop stand after it was terminated. Airport tenants planted about 300 acres of cover crops in Fall 2018.



A Slake Test demonstration shows how no-till soils absorb water and keep water clean (left), while tilled soils "slake" and fall apart producing cloudy water.

pacts of water and make the water dirty and cloudy. Undisturbed soils that are high in organic matter stay intact and absorb water like a sponge, keeping the water clean and clear.

"The demo was so effective we ran it again six months later for the Airport Commission and again recently for another event," said Lens. "(The Slake Test) was so visual it made deciding on our next steps very easy."

The airport worked with Bruene and the farm manager, Yeomans, to develop a five-year plan to address ephemeral gullies and other resource concerns on the farm. "NRCS has been a great partner in helping us identify those problem areas first and to set the game plan around them," said Lens.

First Step to Sustainability

In Fall 2016, the airport took a step forward by adjusting farm leases to include no fall tillage or fertilizer application. "Eliminating soil disturbing activities in the fall greatly reduces erosion potential during the winter months, including erosion from snow melt," said Bruene. "And then waiting to apply fertilizers until spring, when the plants need it most, is important for controlling leaching and off site nitrogen losses."



The new lease agreement also includes incremental steps to no-till and cover crop adoption. “We’ve had the same operators for many years with a great partnership,” said Lenss. “We wanted to be respectful of that relationship and move slowly toward aggressive conservation practices.”

“We’ve found that if farmers adopt management practices that improve soil health, such as no-till, cover crops, and extended crop rotations that promote keeping the soil covered, minimally disturbing the soil, and keeping living roots in the soil more often, a lot of the other resource concerns are greatly minimized,” said Bruene.

By Fall 2018, about 300 acres were totally no-till and cover crops. Early in 2019 the airport sent notices to the operators that they would be re-bidding the leases for the 2020 planting season and will require no-till and cover crops on all cropland acres.

Despite the new farming requirements, Yeomans believes there will be great competition to farm the airport land. He says many operators in the area no-till or used reduced tillage, and are looking to expand. “I manage a number of custom farms and no-till is the preferred choice among many of my clients to build soil health and reduce input costs,” he said.

Other Airport Conservation Projects

Bruene says the airport also deserves a lot of credit for their financial commitment to the grassed waterway projects. “The airport is planning to spend more than \$1 million of their own money through 2023 on grassed waterway reshaping, seeding and tile installation,” he said. “In a few years when the land is completely no-till and cover crops, and the grassed waterways are complete, this will be a farm the airport can show off and be proud of.”

Yeomans says the recent waterway work had an impact during record rains this spring. “The recent improvements allowed the waterways to capture water underground coming off the airfield and the grass to become established,” he said.

Other on-farm projects the airport is involved in:

- For the past three years, Eastern Iowa Airport has collaborated with the University of Iowa to grow about 200 acres of Miscanthus grass at the airport



There are some conservation practices in place, such as terraces (above), that help to reduce soil erosion. Farm operators will be required to no-till and plant cover crops beginning in Fall 2020.

farm. The University is harvesting and blending Miscanthus with energy pellets as a campus energy source. The University of Iowa has a goal of being coal-free by 2025.

- In several drainage areas, the airport installed Prairie Strips in a partnership with Iowa State University. Using Prairie Strips will help attract pollinators, but also further reduce sediment, phosphorus, and nutrient runoff.
- In September, the airport will kick off a new program called “Wings2Water” that helps promote new water quality projects through Johnson and Linn County Conservation.

For more information about conservation planning and programs to help you protect natural resources on your farm, visit your local NRCS office or go to www.ia.nrcs.usda.gov. For more details about Eastern Iowa Airport projects, visit flycid.com.