

2009 Progress Report

Big Sandy Salinity Control Area

This report serves as the final Monitoring and Evaluation Report for the Big Sandy Salinity Control Project located near Farson, Wyoming. Although we will continue to monitor the project in terms of operation and maintenance of the in-place systems, we will no longer monitor the wells, river and wildlife habitat replacement activities. We will continue to provide an annual status report on the project in terms of systems and wildlife replacement practices as well as other activities that affect salt savings.

The purpose of this final Monitoring and Evaluation Report is to close out the formal Monitoring and Evaluation protocols that were established in the Big Sandy Monitoring and Evaluation Plan published in 1988.

As proposed in the EIS, the objectives of the Big Sandy Unit of the Colorado River Salinity Control Program were:

- *treatment of 15,700 acres with improved irrigation systems*
- *reduction of salt loads by 52,900 tons/year*
- *conservation of 20,470 acre-feet of water;*
- *hayland production increases from 1.6 tons/acre to 4 tons/acre*
- *replacement of any wetland wildlife values foregone estimated at 860 acres of Type 3, 4, and 10 wetlands (USFWS Circ. 39).*

Hydro-salinity: (see 2006 M& E report)

Irrigation Monitoring and Evaluation

As proposed in the EIS, the project would treat 15,700 acres and save a total of 52,700 tons of salt. The 2000 M & E report stated the project had treated 9,221 acres and reduced salt loading by 32,245 tons. The 2005 Mason report showed 11,220 treated acres and a total of 42,805 tons of salt saved. A half-pivot of 61 acres were added to the project in 2005, with no additional acreage in 2006.

Since the 2000 evaluation and 2000 report, there have been 1,999 acres added to the project, or about double what was expected. However, during 2005 and 2006, additional treated acreage have been negligible, and in fact the pivot in 2005 was funded from the Sweetwater County regular EQIP allocation. It is anticipated that this would continue as long as EQIP funding is kept at its current level within the state. Changes in land ownership or the implementation of the pipeline projects could increase the need for on-farm fundng.

The 2006 Mason report indicated a total FA expenditure of \$8,972,633, and associated 40% TA of \$3,555,053 for a total of \$12,527,686. Amortized at 5.375 for 25 years and using the 42,805 tons of salt saved, calculates a cost effectiveness of \$21.55 per ton of salt saved.

A complete review of the Big Sandy Project was undertaken in an effort to reconcile treated acres and the salt savings as reported in previous M & E and Mason reports. However, due the logistics of assessing all previous payments by program, this attempt was ultimately abandoned.

The project was funded initially with CRSCP money with NRCS making the payments. In 1996 interim EQIP and Forum Parallel dollars were used, and in 1997 EQIP coupled with Forum Parallel dollars were used on the same projects. Payments were made by FSA and by the State Engineers office. We have some accounting but not a complete accounting of these dollars and it is beyond the scope of the Monitoring and Evaluation Report to try and rectify those figures. We do have an accounting spread sheet for the Parallel dollars from the Forum. There were a total of \$761,325 dollars obligated in contracts, \$540,425 paid out to producers. There are still \$36,953 obligated in contracts with \$183,947 of slippage. Slippage are dollars that were obligated to a contract and that remained unspent when the contract was completed.

The 2006 Mason report shows a sum of 11,222 acres of land under contract. This report is inaccurate. Early in the project there was 186 acres of improved flood. From 2001 to 2006 this acreage was added annually, resulting in an error in the report. In an attempt to correct this error, two data sources were reviewed. One source was a geospatial layer originally completed to assist the Eden Valley Irrigation District in confirming their water rights. This GIS layer shows a total of 10,595 acres installed and 41 acres still under contract awaiting installation.

The second data source was a spread sheet that tracks the contracted acres and the acres under design. In addition, this spread sheet also showed the total cost and the cost-share obligated to the contract, but unfortunately, not the cost-share expended. The spread sheet tallies 10,879 acres of improved irrigation systems installed.

Sixty acres has been taken out of contract and the pivot sold with the water right. The new owner has installed this on new land but the same water and salt savings would be achieved so no adjustments are made. The design information is considered the best of the two sources. The difference in the two is 247 acres. The amount of error in digitizing these acres is plus or minus two acres per pivot because of scale and resolution of the photos. This would account for the difference in the amount.

Historically, 1.4 acre-feet per acre has been used as the water savings figure for treated acres and 2.6 tons per acre-foot for the associated salt savings.

Therefore,

10,879 acres treated x 1.4 acre-feet per acre = 15,230 acre-feet of annual water savings

15,230 acre-feet of annual water savings x 2.6 tons of salt per acre-foot = 39,600 tons

If we consider the total funds expended (FA + TA) of \$12,527,686 and amortize that at 5.375 for 25 years, we calculate a Total Annual Cost of \$922,969. Dividing that by our Annual Salt Savings of 39,600, results in a project life cost of \$23.60 per ton of salt saved.

<i>Total Treated Acres</i>	<i>Total Water Saved</i>	<i>Total Salt Reduction</i>	<i>Cost Effectiveness</i>
<i>10,879 Ac.</i>	<i>15,230 Ac.-Ft.</i>	<i>39,600 Tons</i>	<i>\$23.60 per Ton</i>

It should also be noted that producers in the area have treated an additional 1,000 acres (via the installation of center pivots) without program assistance. This brings the total treated acres to about 11,900 acres out of the average irrigated acreage of 15,700 or 75% treatment.

Evidently, one aspect of the project that has never been tracked are the numbers of acres that are no longer irrigated. This actual amount is not known exactly and is hard to determine. Each irrigator has a water right for X amount of acres. When converting to pivot some irrigators were able to exchange acres and irrigate their acres allotted. However, because of the use of pivots, some acres in the corners have been idled. In good water years, and where those acres are close to a ditch, some of these acres still flooded, although many are not. It is really impossible to tell exactly how many acres this effects, although NRCS' estimate puts this number between 500 and 750 acres. These acres are no longer flooded so a salt savings is being realized, but since there is no cost-share component, no attempt has been made to quantify the exact acreage nor report the salt savings. In the future, these acres might be pooled or the water rights transferred to other acres. These acres would mostly likely be sprinkled, so the water savings would be calculated based on the 1.4 acre-feet per acre, and the salt savings would be calculated using the 2.6 tons of salt per acre foot saved.

Monitoring Wells: (see 2006 M&E report)

- I know we talked about the monitoring wells and that is closed. No monitoring has taken place for at least 4 years and the deep wells have been sealed and are no longer.

Wildlife Habitat and Wetlands: (see 2006 M&E report)

- The wetland replacement acres have been exceeded by 10+ acres. So we have accomplished our goal there.

In summary, after extrapolating the data from the 2000 Monitoring and Evaluation Report, concluded that the project area's habitat replacement projects offset the impacts of the project and resulted a net gain of wetland acres. We estimated there to be 10.77 acres of additional wetlands in the project area that were replaced to offset the impacts of the flood to pivot irrigation contracts.

After seeing the structures and discussing them, the group decided that the benefits of the structures would provide not only improve fish habitat but habitat for migratory birds and provide other benefits to the riparian zone. The group then decided that this project would be appropriate as replacement for the possible impacts to the canal wetland areas. We also discussed maintaining flow to the northern portion of the E-9 lateral to sustain the wetlands currently on this portion of the canal and maybe enhance this area for additional acres of wetland – because this area has a variety of wetland types (saline influenced PEM, POW with fringe PEM vegetation, PEM wetlands and linear wetlands).

Project Status:

Land Treatment Contracts

Currently there are 177 contracts. Of these, 175 are active in terms of operation and maintenance agreements (O&M) still in place. The first contracts signed in 1988 under the old CRSCP, will have their O&M terminated at the end of 2013. The older contracts under CRSCP had O&M agreements that were in effect for 25 years. The contracts under the other programs have life of practice O&M agreements. These are for the life of the longest expected practice with most of these being 15 years. 34 contracts were funded in 2009.

Eden Pipeline – Phase 1

- Phase 1 has been completed.

Eden Pipeline – Phase 2

- Phase 2 is under construction. Currently, E-13 is being installed and designs are being done on E-7 and the West Side Lateral. JUB Engineering out of Orem, UT is doing the design and inspection.

Area Impacts:

Urban Sprawl in the Big Sandy Salinity Control Area

- Currently, there is some urban sprawl going on in the area. The majority of it has not affected any of the past installed practices with the exception of one pivot for 40 acres. The ground which the pivot was on, forfeited its water rights, so the outcome of salt savings is better than with the pivot on it.
- The majority of the new building in the Farson-Eden area is basically around the crossroads of the Farson area.

Energy Prices

- Current prices of diesel, gasoline, and propane have definitely affected agriculture.
- Currently, there are three individuals converting from diesel generators to electricity due to the high costs.

Land Values

- Land values are rising in the Farson-Eden area just like all areas in the west. Ten years ago, the price per acre for irrigated hayland was around the \$700.00 mark.
- Today, land prices are in the \$1700.00 and higher category for irrigated ground in the Farson-Eden area.