

## SOLOMON WORKING GROUP MEETING NOTES

3:00 p.m. Tuesday, July 15

Stockton, Kansas

*Attendees: Ray Luhman (GMD4), Andy Lyon (DWR), Darci Paull (DWR), Tara Lanzrath (DWR), Diane Coe (KWO), Tina Alder (DWR), Jack Wergin (USBR), Bill Peck (USBR), Scott Voss (DWR),Carolynn Nichols (WRAPS), Scott Ross (DWR), Jacqui Haffner, Mike Nyhoff (KDWP), Mark Shaw (KDWP), Steve Larson, (SSPA) and Alex Spiliotopoulos (SSPA) were in attendance via telephone.*

Tina opened the meeting by outlining the agenda explaining that the modeler, Steve Larson, would be joining the group via conference call and glance session to update the progress on the Solomon portion of the NWKS groundwater model.

### Model Presentation

Steve Larson began by explaining that pumping data for years of record from 1990 to 2005 compiled by Sam Perkins (DWR) had been incorporated into the models and recalibration was completed to accommodate for the new data.

He then began a presentation explaining the water budget and its components for both the North and South Fork domains. He stated that in terms of the water budget, the model had two basic inputs; groundwater inflow from the Ogallala and precipitation. He then showed the significance of both precipitation and baseflow components upon the water budget for each model domain. The North Fork inputs are largely dominated by precipitation infiltration, while the South Fork inputs are predominantly from boundary inflow, or baseflow.

He defined the *River* component as how much water is moving easterly into the reservoirs. Storage was explained to be the depletion of the aquifer in AF/yr and is accounted for as a positive value in the budget because water is taken out of storage to contribute to baseflow.

Steve displayed a map of the model domain and explained that because the model domains are alluvial, there is very little Ogallala pumping occurring within the domains. He then questioned what the working group meant by turning off Ogallala pumping as turning off all pumping within the domains would not make a significant impact upon the budget. He explained that if he were to turn off Ogallala pumping outside the domains, it would require running the RRCA model first. Steve revisited the budget tables and pointed out that the North Fork has a very small Ogallala outflow component, where as the South Fork has a much larger contribution from the Ogallala

Steve had questions for the group regarding the dry year scenario he was asked to run, whereby the anomalously high precipitation years would be eliminated. He needed the group to define a percentage chance cut-off value(s). He then displayed figures showing a regression line using 1000 random sequences from the 1970-2006 indicating the recharge value per precipitation year occurrence distribution for the North Fork. Under a 50<sup>th</sup> percentile precipitation year, the budget would expect to see 18,500 AF/yr of recharge, while a 10<sup>th</sup> percentile precipitation year would yield 16,500 AF/yr of recharge. He also provided the 25<sup>th</sup> percentile figure which was only about 700-800 AF/yr more than the 10<sup>th</sup> percentile value. Steve recommended using the 10<sup>th</sup> percentile value for the model run scenario.

### Work Group Discussion

After some discussion the group decided to shut off all Ogallala pumping within the upper Solomon basins to use for the scenario run. As the time period of 1990-2005 has the most accurate pumping data, Steve plans to use this time period picking out the distribution that will most closely mimic the longer period (1970-2006) used for current analysis.

The phreatophyte scenario was visited to discuss whether a 10% reduction would be performed as an across-the-board or a target area approach. The group decided to have Steve run both options for the phreatophyte scenario.

The marginal soils coverage developed by Andy Lyon (DWR) with direction from NRCS was reviewed by the group and it was determined by insight from Ray Luhman and Scott Ross that the criteria used to determine marginal soils needed to be revisited. They offered suggestions and Andy said it shouldn't be a problem to go back and modify the coverage to address their concerns.

### Comments

Tina had let the group know that analysis of manual streamflow measurements is being performed to determine which stretches of the upper North and south Forks are gaining versus losing stretches. In addition, there will be work to look at water use density in these reaches to determine if there is any relationship between gaining/losing stretches and water use density.

Jacqui Haffner: Is the goal of this modeling stuff to shut off all pumping? She then stated her concerns about the economy of western KS, her lack of confidence in models of any kind whatsoever and asked "what are we saving the water for?"

The Groups' response: The model runs that Steve has been asked to run are extremes and are needed to consider boundary conditions/effects first and foremost. The management decisions come later. Tina added that these model runs may show that very little actually needs to be done, or that it is a possibility that only in dry years some more stringent management will be needed.

Darci alerted the board that the Basin Team website is being updated, so there may be a number of changes seen recently and a few things may be missing from some pages at times until the updating process is complete. She also informed the board about the Solomon basin newsletter and encouraged everyone to sign up for it.

### Next meeting

Nothing officially decided, but there was talk of trying to get it scheduled for the end of September and on the same day as the Solomon BAC meeting again.