Exhibit 12

Barfield, Dave

From: Barfield, Dave
Sent: Monday, January 05, 2004 3:42 PM
To: Pope, David L.; Rolfs, Lee; Austin, George; Ross, Scott; Dale Book (E-mail); John Draper (E-mail); Steve Larson (E-mail)
Subject: RRCA team call - model issues

Team,

Below is an outline of issues related to the model that I expect during the RRCA meeting as background for our conference call and discussions.

All three states have exchanged their 2001-2 data and Willem has run the model. I sent you some of the results earlier today. The states have not exchanged all the supporting data.

Below are excerpts from an e-mail I sent to Ann and Ken on December 3rd which lays out the issues that are not fully resolved including

a) how to apply the model fix
b) whether, for purposes of the annual accounting, we should running the model one year at a time vs. for the entire period with the additional year's data
c) whether we should use common irrigation efficiencies
d) Colorado supporting data requirements.

Regarding the model fix issue, the model error impacts Medicine Creek only. Willem applied the fix starting in 2001. We would prefer to apply the fix from the beginning. With respect to the different starting points for the fix, there is a difference in results for 2001 and 2002, but there would likely be little differences in the future. I think it is more of a precedent issue: when adopt a revised version of the model, do we only do it prospectively or do we fix it from the beginning.

I think the only new issue is that we have found that discrepancy between CO and NE/KS increase in CU for 2002. See the attached pdf. Kansas had a 25% increase in pumping from 2001 to 2002 and NE had a 41% increase. CO's increase was only 3.4%. Why?

Summary of 2001 2002 data.pdf

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-----Original Message-----
From: Barfield, Dave [mailto:DBARFIELD@KDA.STATE.KS.US]
Sent: Wednesday, December 03, 2003 12:37 PM
To: Ann Bleed (E-mail); Ken Knox (E-mail)
Cc: Pope, David L.; Steve Larson (E-mail); Dale Book (E-mail); Willem Schreuder (E-mail); Austin, George
Subject: RRC model work

Pope
EXHIBIT NO. 12
APPINO & BIGGS

Ann and Ken,

I would suggest we have a conference call this week to discuss the RRCA model update for 2001-02 that is due by the end of the year. For our part, we are active in developing our data sets and have reviewed Willem's work to a degree. We appreciate Willem's work to develop the model fix and the framework for developing the annual accounting.

Below is a summary of issues arising from our work to complete the 2001-2 update and our review of Willem's work.

Model fix

We have reviewed Willem's model fix and agree with it except we believe the model fix should be applied to the entire calibration period, not starting in 2001.

Annual updates

Our reading of the current accounting procedures / model documentation is that we will run the model by appending the new data and re-running the entire model as is. Willem has proposed that we run the model one year at a time, starting with the ending heads of the previous year, and he has demonstrated that it is computationally equivalent. We believe the year-by-year approach has many advantages and few disadvantages and thus we should discuss whether we wish to recommend the change to the RRCA.

Irrigation Efficiencies

We believe we should be seeking agreement on a common set of recharge rates for various irrigation system types. This commitment was made in the FSS's attachment on the modeling effort. To complete the model effort, we agreed on final recharge data sets that did not use common efficiencies but we believe it was all of our intent to agree on common values to use in future accounting. It does not make sense to be using differing values for the same systems .

The RRCA accounting procedures prescribe in Section IV.A.2 consumptive use and return flow fractions for surface water irrigation listed below, unless data is provided to substantiate a different number:

- For non-federal canals: 60%/40%
- For small individual surface pumpers without system information: 75%/25%
- For small individual surface pumpers with the following system types:
- Gravity: 70%/30%
- Center Pivot: 83%/17%
- LEPA: 90%/10%.

As part of our wateruse reporting system, Kansas requests system type information. For several years in the 1990's, we included the choices gravity, center pivot, and LEPA. Many people that had added drop nozzles to their center pivot systems chose LEPA even though they were not true LEPA systems. We have since modified the options to include both center pivot and center pivots with drops.

We would propose to use the listing above as a starting point for our discussion on common recharge rates by system type for the model but would request we add center pivot with drops as a category since it is fairly dominant in Kansas and we believe elsewhere. We would propose using a recharge rate of 12% for such systems.

[FYI, my review of our wateruse reporting data is the 85% of pivots in NW Kansas now include drops. I don't know why it would be significantly different in Colorado or Nebraska. When weighing the 17% and 12% recharge rates for pivots without and with drops respectively which we have proposed with the 15% / 85% populations, I get an average recharge rate of just under 13%.]

Colorado data requirements

The Accounting procedures require the following data of Colorado related to groundwater pumping and irrigated acreage:

"Colorado - will provide an estimate of pumping based on a county format that is based upon system type, Crop Irrigation Requirement (CIR), irrigated acreage, crop distribution, and irrigation efficiencies. Colorado will require installation of a totalizing flow meter, installation of an hours meter with a measurement of the pumping rate, or determination of a power conversion coefficient for 10% of the active wells in the Basin by December 31, 2005. Colorado will also provide an annual tabulation for each groundwater well that

measures groundwater pumping by a totalizing flow meter, hours meter or power conversion coefficient that includes: the groundwater well permit number, location, reported hours, use, and irrigated acreage."

For both Kansas and Nebraska, well specific reporting is required. Under the language above, Colorado must only provide well specific information for those installations that measure groundwater pumping. However, under the verification section of the accounting procedures, certain data is available for inspection by the other states including irrigated acreage. It is our understanding that Colorado intends to rely upon county assessor records as a primary means of developing irrigated acreage estimates. Kansas will want a tabulation, by well or tract of land, of the data Colorado is relying upon to develop its county totals for irrigated acreage. We believe this should be part of the annual exchange of data and thus would ask if Colorado would agree to amend the accounting procedures to include this tabulation.

I am available for a conference call anytime Thursday or Friday.

David Barfield

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Division of Water Resources

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Nebraska

	pumping	gw return	acres	return flow percentage	depth of pumping
2001	1,758,755	360,454	1,494,699	20.49%	1.18
2002	2,476,413	508,128	1,507,713	20.52%	1.64
	140.8%				

Colorado

	pumping	gw return	acres	return flow percentage	depth of pumping
2001	876,397	155,370	673,974	17.73%	1.30
2002	906,631	161,160	673,974	17.78%	1.35
	103.4%				

Kansas

	pumping	gw return	acres	return flow percentage	depth of pumping
2001	451,729	65,601	412,540	14.52%	1.09
2002	569,190	80,805	422,121	14.20%	1.35
	126.0%				