



Water Resources  
Received

**JUL 16 2018**

KS Dept Of Agriculture

Mr. David Barfield, P.E.  
Chief Engineer  
Division of Water Resources - KDA  
1320 Research Park Drive  
Manhattan, Kansas 66502

July 10, 2018

Dear Chief Engineer Barfield:

RE: Comments on Draft Master Order dated May 4, 2018, Cities of Hays and Russell Contingent Approval of Change Applications regarding R9 Water Rights

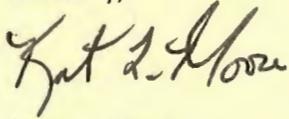
1. In 2014 the membership of Water PACK, at our Annual Meeting, voted the policy that "any water transfer in Kansas must be from an area of excess groundwater supply to an area of need". In 2015, at our Annual Meeting, our membership passed unanimously to "oppose the Hays-Russell plan to transfer water out of Edwards County".
2. In 2016, 2017 and 2018 we have upheld the 2014 policy, but amended the 2015 policy to state "Water PACK is not against the Water Transfer by Hays/Russell as long as the maximum amount of water that is allowed to be transferred per year is sustainable and does not contribute to present and future lowering of the water table in and around the R9 Ranch adjacent to the Arkansas River southwest of Kinsley, Kansas in Edwards County".
3. Water PACK does not believe that the Master Order mentioned above in any way is in accordance with the above policy as mentioned in # 2.
4. Therefore, our priority going forward is to do everything we can to make sure that the quantities of water allowed for transfer meet this stated goal. This is in the best interest of the cities of Hays/Russell as well, as it would be foolhardy, not to mention uneconomical, to start transferring unsustainable amounts and run out of water in the aquifer in a few years. Furthermore, allowing unsustainable quantities will cause impairments that the cities will invoke against all junior agricultural water right holders within the vicinity of the Ranch. Conversely, those with senior water rights to Hays will certainly have grounds to file impairments against the Cities of Hays/Russell in the future. Would it not be better to use sound science at this point in time to make sure that only sustainable quantities of water are allowed to be transferred?
5. Water PACK will continue alliances with other agricultural organizations in the state who have similar policies regarding the necessary sustainability of the water supply for any water transfer application in Kansas.
6. Water PACK is in agreement with the entire audio-visual presentation given by our consultant, Dr. Andy Keller, President, Keller-Bliesner Engineering, LLC, at the June 21<sup>st</sup> Public Meeting hosted by the Division of Water Resources and the cities of Hays/Russell. Water PACK encourages and would arrange direct personal contact between Dr. Keller and the Chief Engineer to further discuss Dr. Keller's findings in order to foster understanding of the science presented.

7. Water PACK believes strongly in the lack of recharge available from the base flow of the Arkansas River from the Dodge City area downstream to the R9 Ranch. The Mid-Arkansas Sub-Basin, in which the R9 Ranch is located, has the weakest base flow in the SW corner of the Sub-Basin, and is unlikely to improve over time. This is due to the absence of flow in the Arkansas River in this reach of the river, plus the heavy pumping from irrigators just a few miles west in GMD # 3, who are allowed to pump up to 24 inches of water each year.
8. It is likely that in the near future irrigators in this area around and adjacent to the R9 Ranch will need to create solutions, such as WCA's or similar programs, to address a declining water table, which they will almost certainly continue to experience in the alluvial and surrounding area aquifers. A good question is whether the cities of Hays/Russell will participate in these programs, or will they be allowed to continue to draw down the water table in the area (especially if allowed to pump the quantities given in the Master Order). Their legal representatives at the June 21 meeting in Greensburg alluded to the thought that their client cities would be exempt from these types of programs!
9. In 2003, the Division of Water Resources determined that the Mid-Ark Sub-Basin was in overdraft by irrigation pumping by some 41,000 Acre-Feet per year, with the SW area of the Sub-Basin being the prime area where this is occurring. Subsequent analysis by Dr. Andy Keller, Keller-Bliesner Engineering, on behalf of Water PACK, determined the overdraft to be closer to 10,000 Acre-Feet per year. He also confirmed the SW area as the area where this is predominant. Whichever number you prefer, this is a good snapshot of what was happening in the early 2000's. Water PACK's analysis of the static water levels in the area of the R9 Ranch from state & GMD data give strong evidence that this lowering of the water tables is continuing to occur, and Dr. Keller's updated analysis indicates that the decline is accelerating.
10. Years of experience by agricultural irrigators in the area of the R9 Ranch provide insight into what it is like to irrigate the sandy soil types with shallow aquifer depths and declining pumping rates during the irrigation season. A study of the R9 Ranch soil types using the Edwards County Soil Survey Maps ( USDA/ Soil Conservation Service, now NRCS) yields the following information: Approximately 17 % of the R9 Ranch has a Tivoli Fine Sand Soil Type. The manual states that this soil type is not suitable for irrigation due to its extreme permeability. About 67 % of the R9 Ranch is Pratt-Tivoli Loamy Fine Sand soil type. The USDA manual states that this soil has "extremely low water holding capacity, rapid permeability, and subject to blowing". Taken together, 84 % of the R9 Ranch has extremely low water holding capacity. With declining pumping rates in shallow aquifer areas during the summer months, this is hardly a place to be growing economical alfalfa or corn. Local area irrigators know this, and verify the low levels of production from either crop. Alfalfa is recognized as a "cover crop" in that only one or 2 cuttings of alfalfa are possible unless there is abnormally high rainfall. Yet this is the basis for the Division of Water Resources determination that alfalfa and corn were able to consumptively use 88 % of applied irrigation water during the irrigation season within the perfection period of 1984 and 1985! And this leads to the overstatement of water that could be converted from agricultural to municipal use in the Master Order.
11. Dr. Andy Keller has indicated to us that he has a list of concerns and deficiencies that he has noted in the work performed by Burns-McDonnell regarding the 4,800 Acre-Feet per year that Burns-McDonnell has determined to be sustainable for transfer out of the Mid-Ark Sub-Basin in Edwards County to the Cities of Hays and Russell. Water PACK is waiting to see if any of these are identified by Balleau Groundwater as a part of their review of this work on behalf of GMD # 5.
12. Water PACK would like to emphasize that there is zero return flow to the aquifer when water is pumped to be transferred out of the Mid-Ark Sub-Basin in SW Edwards County. This makes it all the more critical to get these sustainability calculations scientifically accurate. We feel that our consultant, Dr. Andy Keller, has made a good start on this by determining a maximum amount for transfer of 3,790 Acre-Feet per year. Further analysis is

required to find the sustainable amount below the 3,790 Acre-Feet per year that is actually sustainable in the long term.

The members and Board of Directors of Water PACK are made up of businessmen and business women whose intent is to use irrigation to grow grain, feed, fiber and livestock for profit, but with an important difference: we all intend to leave our farms and ranches sustainable for future generations. With our knowledge and experience in irrigated crop and livestock production, water rights, and the use of the Central Kansas Water Bank Association, surely we have what it takes to help find a truly scientifically-sound sustainable solution to this water transfer issue. We stand ready to work with the Division of Water Resources and the cities of Hays and Russell to ensure this result.

Sincerely,

A handwritten signature in black ink that reads "Kent L. Moore". The signature is written in a cursive style with a large initial "K" and "M".

Kent L. Moore  
President

Copy: Dr. Andy Keller, P.E.