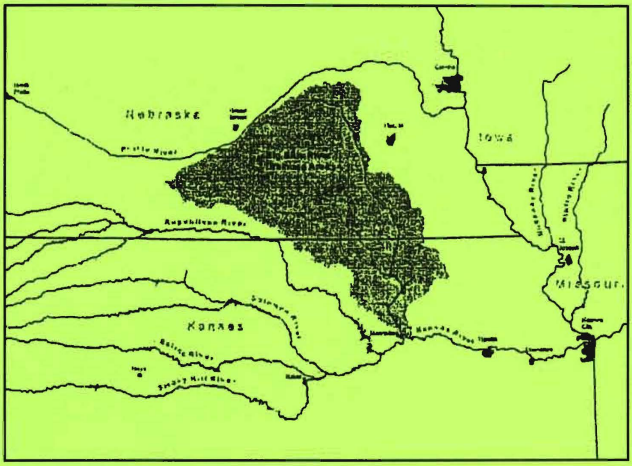
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT

FORTIETH ANNUAL REPORT



FISCAL 2013

Beatrice, NE
May 15, 2013

KANSAS – NEBRASKA BIG BLUE RIVER

COMPACT ADMINISTRATION

May 9, 2014

The Honorable Barack H. Obama
President of the United States of America

The Honorable Sam Brownback
Governor of Kansas

The Honorable Dave Heineman
Governor of Nebraska

Pursuant to Article VIII, Section 1 of the Rules and Regulations of the Kansas-Nebraska Big Blue River Compact Administration, I submit the Fortieth Annual Report. The report covers the activities of the Administration of the compact for the Fiscal Year 2013.

Respectfully,

Gary R. Mitchell
Federal Compact Chairman

TABLE OF CONTENTS

STATE OF NEBRASKA

Dave Heineman
Governor

DEPARTMENT OF NATURAL RESOURCES
Brian P. Dunnigan, P.E.
Director

May 21, 2013

IN REPLY TO:

Gary Mitchell, Chairman
Kansas-Nebraska Big Blue River Compact
325 2600 Avenue
Solomon, KS 67480

David Barfield, P.E., Commissioner
Kansas-Nebraska Big Blue River Compact
109 SW 9th Street, 2nd Floor
Topeka, KS 66612-1283

Kenneth Reiger, Nebraska Advisor
Kansas-Nebraska Big Blue River Compact
215 Donegal
Aurora, NE 68818

Sharon Schwartz, Kansas Advisor
Kansas-Nebraska Big Blue River Compact
2051 20th Road
Washington, KS 66968

Dear Compact Members:

As was noted at the May 15, 2013, meeting of the Compact Administration, the agenda that was distributed incorrectly noted the meeting as the 39th annual meeting of the Kansas-Nebraska Big Blue River Compact Administration. Attached with this letter, is a corrected agenda, noting the 2013 meeting as the 40th annual meeting of the Compact Administration. Please include this corrected copy in your records.

Nebraska is scheduled to host the 2014 annual meeting of the Kansas-Nebraska Big Blue River Compact Administration. I propose the meeting be held Wednesday, May 14, 2014, at the Lower Big Blue Natural Resources District office located at 805 Dorsey Street in Beatrice, Nebraska.

Please provide suggested changes or edits to the attached draft proposed meeting agenda or alternative meeting dates by July 1, 2013. A draft proposed meeting agenda is included with this letter for your review and comment.

Sincerely,

Brian P. Dunnigan, P.E.
Commissioner

Enclosures

cc via email only: Budget Committee – Bob Lytle, Jim Schneider
Legal Committee – Matt Spurgeon, LeRoy Sievers
Engineering Committee – Bob Lytle, Katie Tietsort, Jeremy Gehle, James Gilbert
Water Quality Committee – Tom Stiles, Greg Foley, Dan Howell, Annette Kovar, Rich Reiman, Marty Link
NRDs – Michael Onnen, David Clabaugh, John Turnbull, John Thorburn
Add'l – Tom O'Connor, Jesse Bradley, Pat Rice, Scott Ross

KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION
40th ANNUAL MEETING

May 15, 2013
9:30 a.m.
Lower Big Blue Natural Resources District
805 Dorsey Street
Beatrice, Nebraska

CORRECTED AGENDA 5/17/2013

1. Call to order
2. Introductions and Announcements
3. Minutes of the 39th Annual Meeting
4. Chairman's Report
5. Kansas Report
6. Nebraska Report
7. United States Geological Survey Report
8. Secretary Report
9. Treasurer/Budget Report
10. Committee Reports
    a. Legal
    b. Engineering
    c. Water Quality
11. Old Business
12. New Business
13. Committee Membership and Special Assignments
14. Adjourn

MINUTES OF THE 40TH ANNUAL MEETING
OF THE
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION

Call to Order

The fortieth annual meeting of the Kansas-Nebraska Big Blue River Compact Administration was held on May 15, 2013 in the Lower Big Blue Natural Resource District Office in Beatrice Nebraska. The meeting was called to order at 9:45 am by Compact Chairman, Gary Mitchell. Mr. Mitchell introduced himself and suggested that those in attendance introduce themselves.

Introductions

Those in attendance were:

Gary Mitchell	Compact Chairman and Federal Member
Brian Dunnigan	Nebraska Ex Officio Member, Director of the Nebraska Department of Natural Resources
Ken Regier	Nebraska Compact Advisory Member
Jim Schneider	Deputy Director of the Nebraska Department of Natural Resources
LeRoy Sievers	Legal Counselor for the Nebraska Department of Natural Resources,
Jeremy Gehle	Nebraska Department of Natural Resources, Lincoln Field Office,
Tom Stiles	Kansas Department of Health and Environment, Water Quality Committee
Marty Link	Nebraska Department of Environmental Quality
Jason Lambrecht	United States Geological Survey, Lincoln Data Chief
Bob Lytle	Compact Secretary, Kansas Department of Agriculture, Division of Water Resources
Katie Tietsort	Topeka Field Office Water Commissioner, Kansas Department of Agriculture, Division of Water Resources
Jennifer Schellpeper	Nebraska Department of Natural Resources
David Barfield	Kansas Ex Officio Member, Chief Engineer, Kansas Department of Agriculture, Division of Water Resources
Dave Clabaugh	Lower Big Blue Natural Resources District General Manager
Jessie Winter	Nebraska Department of Natural Resources
John Turnbull	Upper Big Blue Natural Resources District General Manager
Bob Lorenz	Little Blue Natural Resource District
Daryl Anderson	Little Blue Natural Resources District

Approval of the Minutes of the 39th Annual Meeting

Compact Chairman Mitchell and Compact Secretary, Bob Lytle, noted that the minutes of the 2012 Annual Meeting were e-mailed to the appropriate parties prior to today's meeting for comments, corrections and additions. Those received were made, and a final version was e-mailed to those who attended the 39th annual meeting. Copies of the minutes were distributed to those who needed them. Chairman Mitchell inquired if there were any additional comments or corrections. Hearing none, a

motion was made and seconded for the approval of the minutes of the 39th annual meeting of the Big Blue River Compact. The motion was passed.

Kansas Report

Kansas Commissioner, David Barfield began the report by indicating that he would provide a brief update on several things in general and that Water Commissioner Katie Tietsort would provide more detail as it pertains to the eastern part of the State and the Big and Little Blue River Basins. The climatic conditions for the 2012 calendar year in Kansas were very hot and dry everywhere across Kansas and among the most extreme on record. As a result a record amount of water administration was undertaken across the state.

In terms of legislative activities, the 2012 session was very active for the Division of Water Resources with numerous water related legislation. SB 272 made some amendments to a provision that is known as multi-year flex accounts (MYFA.) It provided better flexibility to the water user by enabling the use of greater than the face value of a water right in years, but insures that the overall 5 year amount of the right is not exceeded. Prior to these amendments very little use was made of MYFA, but in 2012 approximately 750 were filed for. SB 350 dealt with what are known as Local Enhanced Management Areas (LEMAs). They provide for additional management practices on a more local level as proposed by the stakeholders. In Groundwater Management District No. 4 a hearing was held to determine the effectiveness of a proposed plan, and the Chief Engineer ruled in favor of the proposed enhanced management plan. HB 2363 known as the Water Omnibus Bill, provided for several things. Principally, it increased the amount of water that can be used under a temporary permit for hydraulic fracking operations in South Central Kansas, and also provided exemptions for small and low hazard dams from stream obstruction permitting.

Commissioner Barfield noted that the Division is working on promulgating regulations for implementing last year's legislation and statutes. He concluded his remarks by indicating that the Kansas Department of Agriculture will be moving to Manhattan, Kansas in the summer of 2014. When asked to elaborate on the move Mr. Barfield acknowledged the relationship with agriculture and Kansas State University but admitted it is a difficult proposition for a large majority of the Department's staff.

Topeka Field Office Report

Water Commissioner, Katie Tietsort, elaborated further on the drought that Kansas has been experiencing noting that for the 2012 calendar year the state received only 66% of the normal amount of precipitation. She highlighted the precipitation graphs on her written report and pointed out that while the entire state has seen significant departures from normal precipitation, the bull's eye of the drought has been in Eastern Kansas.

2012 started out with close to median streamflow throughout the Blue Basin but by May and June streamflow was diminishing and by September values fell below minimum desirable streamflow (MDS) criteria at both the Marysville gage on the Big Blue and the Barnes gage on the Little Blue. Administration for MDS on the Big Blue began July 19, 2012 till October 30, 2012, and on the Little Blue administration began August 3, 2012, until November 30, 2012. The compact gages at Barneston and Hollenberg also fell below the compact targets in early and late July and only briefly jumped back above until the end of the regulation period through September. Kansas was notified by Nebraska that they had initiated regulating junior water right holders to the compact.

There was significant administration in multiple basins in Kansas, including Chapman Creek, Chikaskia River, Cottonwood River, Neosho River, Delaware River, Little Arkansas, Medicine Lodge River, Mill Creek, Ninnescah River, Saline River, Smoky Hill, Spring River, Walnut River, Whitewater River, and the Republican River. In addition, there were water releases from storage in Federal Reservoirs for water supply contracts and river water assurance districts on the Neosho, Kansas and Marias des Cygnes Rivers had to be protected from diversion by non contract and non-water assurance district member users. In 2012 several streams particularly in southern Kansas were actually almost dry without the releases from water marketing storage reservoirs, the Neosho and Verdigris being among those. At the peak of all this administration, nearly 725 water rights were involved and currently 250 water rights are under administration. There was some non-compliance and illegal diversions which resulted in civil penalties and the "paying back" of water diverted illegally.

There was only limited new development within the Big and Little Blue River Basins in 2012. In the Big Blue seven new permits were issued: four replacement wells for Manhattan, two new surface permits for irrigators near Marysville and one small dam. There were four new permits in the Little Blue Basin: one for additional rate and quantity for a dairy farm water well, two new irrigation wells, and one irrigation pond project. All water meter orders in the compact basins have been completed at this time, so all diversions have installed acceptable meters that meet the current specs, or they have received a Notice of Non-Compliance and must cease diversion until they do.

There had been a hydropower project under consideration at Tuttle Creek Reservoir by a company called Riverbank Power Corporation. However, the Federal Energy Regulatory Commission issued on April 8, 2013 a finding that the third progress report had not been filed. No further information is available at this time.

Commissioner Mitchell inquired about users being required to replace water meters and how often that occurs, and if municipalities are often asked to so because they are losing a lot of water? The latest meter order was issued in 2000 to try to achieve an optimal meter for accurately accounting for water diversions, and yes municipalities that have a large amount of unaccounted for water will be encourage to check and or replace faulty meters.

Commissioner Barfield indicated that Representative Sharon Schwartz, Kansas Advisor to the Compact, regretted missing the meeting, but was unable to attend due to the extended Legislative Session.

Nebraska Report

Compact Advisor, Ken Regier of Aurora, Nebraska and a member elected board of directors of the Upper Big Blue Natural Resources District (NRD), began the Nebraska Report by stating that 2012 ended up being a very dry year in Nebraska and going into the fall of the year things were very dry. However, this spring things are looking a little better, but could still use some more rainfall. Producers in his area relied heavily on irrigation in 2012. With that reliance there is a price, and there was a significant drop in groundwater levels. A recent press release indicating that average decline across the District was 4.38 feet. Last year there was a 0.41 rise in the water level. If the District loses an additional 3 feet this year, District policy of additional water restrictions will be initiated.

Commissioner Dunnigan continued the Nebraska Report by thanking Dave Clabaugh and the Lower Big Blue NRD for hosting this year's annual meeting and acknowledged the efforts of all the NRD's in managing the groundwater resources of the state. The drought of 2012 put a great deal of strain on the water resources across Nebraska and it resulted in the Department having to carry out significant water administration throughout the state. At its peak, the Department had to administer closures of 1,300 irrigation appropriations. The Big and Little Blue Basins were no exceptions to the drought, with over 950 closures issued for both storage and natural flow appropriations. Early rainfall in 2013 has provided hope that this amount of administration will be reduced although it is unlikely to be eliminated.

Integrated Management Planning efforts continue to be a major initiative in Nebraska. To date integrated management plans have been completed with ten of the 23 Natural Resource Districts in Nebraska, with six currently working on voluntary management plans. The Department is also excited to be implementing new rules for use in its annual evaluation of hydrologically connected water supplies. This statutorily required evaluation is used to assess the water supply availability and is a key tool for protecting existing water uses. This new evaluation process will focus on new supplies and uses at the sub-basin level and help support future integrated management practices. To complement the new methods for the evaluation process, the Department has been involved with the development of several groundwater models. These models will be available on the Department's new website, INSIGHT, this fall along with water supply information at the sub-basin level.

Nebraska Administrative Report

Jeremy Gehle gave an update on the administrative activities in Nebraska. He noted that 2012 was an extremely hot and dry year and demand for irrigation water was high and supplies were low. Consequently surface water administration in both the Big and Little Blue Basins were extensive.

The Little Blue headwaters are near Minden and it exits the state south of Fairbury. The basin encompasses 2,700 square miles in all or parts of 10 counties, and has 244 irrigation permits and 129 storage rights. On July 20, 2012, the flows at the Hollenberg gage fell below the compact target and 111 junior irrigation rights and 129 storage rights were closed. The 133 senior irrigators to the compact were allowed to operate but were closely regulated. Heavy rainfall in early August brought the state line flow back above the target opening up the basin to junior users. On August 8 juniors were again closed and remained so through September 30, 2012, ending the compact target flow period.

The Big Blue River runs from Hastings to the state line south of Beatrice encompassing 4,450 square miles in all or part of 15 counties and has 822 surface irrigation rights and 346 storage permits. On July 9, 2012, closure notices were sent to 385 irrigation rights and 346 storage rights, senior rights were closely regulated. The entire basin remained closed through the remainder of the compact time period.

Flows in both basins are currently hovering around the 50 percent of long term median flows. The current U.S. Seasonal Drought Outlook indicates that the drought will be ongoing with the possibility of improvement. The eastern portions of the basins are showing the most likelihood for improving conditions. The U.S. Drought Monitor currently designates the majority, or 95 percent of the basin, as impacted by either Moderate or Severe drought. In short the Department is hoping for increased rainfall.

Commissioner Barfield noted that it appeared that there was some lack of communication last year as to when and what Nebraska had done in terms of administration of junior users, and that Kansas

constituents want to be kept informed. Mr. Gehle indicated that he had taken over the Blue Basins last year for Keith Paulsen and there was some lack of communication but that he does not anticipate any problems going forward. He will be in contact with Katie Tietsort of the Topeka Field Office. Katie indicated that in the past she had been in contact with Mr. Paulsen when flows were nearing the target levels, but that in 2012 she received perhaps incorrect information about a higher level person being in communication with her or perhaps with Commissioner Barfield. She questioned if that was in fact the case and things would be communicated differently. Commissioner Dunnigan and Jeremy Gehle indicated that going forward Jeremy will be working directly with Katie as it had been with Mr. Paulsen. Both parties agreed that would be the best way to handle notification of administrative activities.

Upper Big Blue NRD Report

John Turnbull, District General Manager, distributed copies of his report and summarized it. In 2012, 425 permits were issued for irrigation: 322 for new wells and 93 replacement wells. During the time period from spring of 2012 to spring of 2013 the average groundwater level declined 4.38 feet. With this decline, the average level is only 3.03 feet above the allocation trigger. As of January 1, 2013, there were 1,186,404 groundwater acres certified by the NRD, an increase of 9,587 from January 2012. Groundwater withdrawal reports have been required since 2007. In 2012 the average withdraw was 12.2 inches. Irrigation wells are not currently required to have meters, however many do. Those not metered must provide a pumping rate and hours of operation. Mr. Turnbull noted the type of use table in his written report and that 98 percent of all groundwater used in the District is for irrigation.

The NRD is divided into 12 management zones. Nitrate is the primary water quality management concern. There are three phases of management. In 2012 the District modified its regulations, lowering the Phase II trigger from 9 parts per million (ppm) to 7 ppm and the Phase III trigger from 12 ppm to 10 ppm. Phase II requires farm operators to attend a training session on best management practices related to fertilizer and irrigation management, and requires deep soil sampling, irrigation scheduling and annual BMP reports. Phase III requires the additional management practice of including a nitrification inhibitor when anhydrous ammonia fertilizer is applied from November 1st through February 28th. Currently, the District has a ten township area in York County and two townships in Hamilton County that are under Phase II management. The rest of the District is under Phase I which prohibits application of anhydrous until November 1 and nitrogen fertilizers until March 1.

The District continues its work with CROP-TIP, an irrigation demonstration field near York where ways to decrease groundwater withdrawals and nitrate leaching by irrigation and fertilizer scheduling are exhibited. Another program to encourage producers to improve irrigation scheduling is the use of ET gages and watermark sensors to determine crop water needs. This equipment is sold by the District at a reduced cost to encourage their use. Data collected from these practices are also posted on the District's website, and the University of Nebraska plans to have an interactive website up to allow producers to post their own data for others to use.

In 2011 and 2012 the District funded 86 soil and water conservation projects with landowners. These projects ranged from conversion to subsurface drip irrigation, the construction of terraces, buffer strips and planting of trees for wildlife windbreaks. Funds of $221,540 came from the Nebraska Soil and Water Conservation Program and local NRD property tax revenue. The District also is assisting communities to develop Wellhead Protection Area Plans. Twenty-six communities have approved WHPA plans. To learn more about any District program visit www.upperbigblue.org

Lower Big Blue NRD Report

Dave Clabaugh, District General Manager, distributed copies of the latest Lower Big Blue NRD Newsletter and summarized it. Dave mentioned that with the past drought year, the real time gage data on the river gages were very closely monitored. The rural water project for 200 plus households who have signed up in eastern and southern Gage County is almost complete. The source of the water supply will be the City of Wymore, and 99 percent of the distribution lines are in place and pressure testing is currently being conducted. It is estimated to be 30 to 60 days until water will be delivered to District customers. A 100,000 gallon water tower is in place east of Wymore.

Groundwater levels in the 34 Blue River Compact wells located within two miles of the river showed an overall decline of 2.55 feet. Levels in the District as a whole from the base line year of 1982 declined 3.77 feet. With the dry conditions, the District received numerous reports of domestic well interference. These were not localized but scattered throughout the District.

The District had two watershed projects that were targeted for water quality initiatives by the NRCS. One was the Big Indian Reservoir Project south of Wymore. The project was started in 2009 and targeted lake renovation including sediment removal, installation of rip rap, work in the upstream drainage basin with BMPs and the installation of small sediment trapping reservoirs. The other project targeted for similar water quality initiatives was the Cub Creek Recreational Project located south of Plymouth in Jefferson County. This watershed has always had high levels of bacteria and the goal is to reduce this through best management practices, buffer strips and similar drainage basin efforts.

Katie Tietsort wondered about the rise in water levels in the compact wells from spring and fall measurements. Is that a reflection of a rebound from non-pumping in the fall measurements or is it reflective of good recharge? Dave indicated that it is more likely due to rebound from not pumping, but it can reflect good recharge years but last year was not one.

Little Blue NRD Report

Daryl Anderson distributed the Little Blue NRD Report and summarized portions of it. A large dam site has been proposed about two miles north of Davenport in the Big Sandy Creek Drainage area. There is a large amount of opposition from landowners in the project area. It would be the biggest reservoir in the District. A public meeting is scheduled in the next 30 days to help the NRD Board to make a decision on the proposal.

The District is planning to do a whole Little Blue River Basin Watershed planning effort to determine the needs of the basin and develop a 25 year plan for addressing water quality and quantity. This is scheduled to begin in the summer of 2013. The District is also beginning an effort to eradicate invasive plant species like salt cedar and encroaching willow, while clearing log jams and undercut trees along the banks in an effort to increase flows. The District has had public meetings and is obtaining permission from the landowners. The removal effort is to begin this summer.

The groundwater levels overall in the district were down a little over two feet last year from spring to spring. In 2012, the crop water use data for the irrigation season was collected and the District had a slight increase from past years. The average was 10.2 inches compared to 10.0 inches over the past 14 years. Gravity irrigation used 13.2 inches and center pivot used 8.2 inches per acre in 2012. There has been a lot of conversion from gravity to pivot.

The District is working closely with the City of Fairbury, which is located right on the Little Blue River and is and dealing with high nitrates. The District did extensive sampling of wells for nitrate levels with the average level reaching 8.7 ppm in the Fairbury Area. Mr. Anderson highlighted the District wide map showing a slight increase throughout the NRD.

The Little Blue NRD and the Upper Big Blue NRD are working together with the City of Hastings to implement a wellhead protection area around the community's water supply wells. The District is also working with the Upper Big Blue NRD and Hastings on a pilot aquifer storage and restoration project. This involves pumping nitrate contaminated water and using a portion of it for irrigation. The remaining portion of the pumped water is treated and re-injected upstream of the municipal well field.

A few years ago it was reported that the District is working with the Corps of Engineers and the Meat Animal Research Center (MARC) of Clay Center NE on developing a groundwater clean –up project at the old Navel Ammunition Depot which became contaminated during bomb production during World War II. This project is now in place and pumping and treating the contaminated water. It is discharged into Big Sandy Creek where MARC is using it for irrigation.

Katie Tietsort wondered about the way they eradicate the invasive plant species and in particular log jams and how large they are. Mr. Anderson indicated that for the log jams they use a large caterpillar to clear them out and that they are not that large, certainly not like she had described on the Neosho River in Kansas.

United States Geological Survey Report

Jason Lambrecht, USGS Data Chief, Lincoln, distributed a written report as well as gaging station data for the Compact stateline gaging stations, the Big Blue River at Barneston and the Little Blue River at Hollenberg. These gaging stations provide 15 minute data, transmitted every hour, for streamflow and water levels which are available on the USGS water data website. These gaging sites are visited generally eight to ten times per year, but this past year a couple of extra measurements were made to maintain and calibrate the sensing and recording equipment, make discharge measurements and establish the rating curves that are used to convert stage values to corresponding discharge values and best quantify the drought conditions.

The annual mean discharge at the Big Blue River at Barneston for the 2012 water year was 327 cubic feet per second (cfs) which was 1.8 times less than the 2011 water year discharge of 607 cfs, and was 2.6 times less than the historical mean of 840 cfs for 80 years of record. The minimum flow was 18 cfs on August 23, 2012 and the maximum was 7,430 cfs on April 15, 2012. The past 33 years of record at the Barneston gage are from the same location as the gage was moved to its current location in 1979.

The annual mean discharge at the Little Blue River at Hollenberg for the 2012 water year was 184 cfs which was 1.9 times less than the 2011 water year discharge of 348 cfs and 2.6 times less than the new historical mean of 489 cfs for 38 years of record. The maximum daily discharge was 4,300 cfs on April 15, 2012 and the minimum was 24 cfs on September 12, 2012. All 38 years of record at this gage are from the exact same location. Data from the USGS can be viewed at the website http://water.usgs.gov/

Secretary's Report

Compact Secretary, Bob Lytle, asked for everyone to be sure to sign the attendance sheet and to include a current e-mail address so that he can forward the draft minutes of today's meeting for everyone's

review and comments/corrections later. He indicated that he intends to have the Annual Report from today's 40th Annual Meeting printed prior to next year's Annual Meeting so that the majority of the reports can be distributed at the meeting and reduce the amount of reports that have to be mailed. Those in attendance today should look for an e-mail a few months before next year's meeting with the draft minutes attached. The Compact Commissioners agreed to proceed with this approach.

Treasurer / Budget Report

Jim Schneider distributed the Treasurer's Report and a budget analysis table. Mr. Schneider summarized the Treasurer's Report by indicating the Compact budget is doing well with the balance on hand as of May 14, 2013, being $26,920.05 and the estimated balance at the end of the Fiscal Year 2013 to be $20,393.05. He then summarized the budget analysis table by indicating the far right column is what is proposed for Fiscal Year 2015 budget. It was recommended that the State's assessments remain at $8,000 per State. Commission Barfield commented that it appears the overall budget is being reduced by one to two thousand dollars per year, but there is a large enough balance to counter act that for several years. Mr. Schneider agreed with that summary. Audits will be prepared for the fiscal years 2011 and 2012 which will be paid for this year (2013). A table showing the various types of accounting reviews that can be made and their associated costs was distributed. The next audits, given the two-year cycle will be for the fiscal years 2013 and 2014 and will be conducted in 2016. A motion was made and seconded that the proposed Budget for the fiscal year 2014 be approved. The Budget was approved by the Administration.

Legal Committee Report

LeRoy Sievers of the Legal Committee indicated that the Committee does not have a report, and was given no assignments for this meeting. He confirmed during a brief discussion that the Compact Secretary was correct in that the rules and regulations of the compact had been changed to reflect that the required audit can be conducted biannually. The Legal Committee was given the assignment of providing a proposal for a language change in the Compact rules and regulations audit requirement to allow for a review or a compilation as a means of saving the compact money since an audit every other year has not.

Engineering Committee Report

Jeremy Gehle, Engineering Committee Chairperson, distributed the Engineering Committee Report. He indicated that much of the data was provided by the USGS and the Lower Big Blue NRD. The report lists the Compact minimum mean daily flows for May through September. In 2012, both rivers fell below the minimum mean daily flows as detailed earlier. The mean daily flow on the Little Blue River at the Hollenberg gage was below the minimum mean daily flows for 69 days. The mean flow on the Big Blue at Barenston gage fell below for a total of 79 days. The daily mean value of 24 cfs on September 12, 2012 was the lowest in 38 years of record at the Hollenberg gage. Jeremy highlighted the attachments to the Engineering Report and noted that for the most part they are the same as those in the USGS report, except the Lower Big Blue NRD Compact well measurements and the list of the wells that have been completed in the regulatory reaches of the two rivers.

Water Quality Committee

Tom Stiles with the Kansas Department of Health and Environment and Committee Chair, distributed the Water Quality Committee Report. The Water Quality Committee met on May 7th in Marysville,

Kansas. The meeting was well attended with nineteen participants. Mr. Stiles provided a summary of the agenda items discussed at the Water Quality Committee Meeting.

Both states have established total maximum daily loads (TMDLs) for 303d listed impairments in the Big and Little Blue Basins. Nebraska has developed E coli bacteria TMDLs for a 10 segments and atrazine for 13 segments. A sedimentation and phosphorous TMDL has also been developed for Big Indian Lake. Kansas has developed numerous long standing TMDLs including eutrophication, siltation, atrazine, and alachlor centering around Tuttle Creek Lake and up into the Big and Little Blue Basins. Additionally, additional 303d listings in both basins include phosphorus, suspended solids, copper and lead impairments associated with sediment during high runoff events, and biological and sulfate impairments in some tributaries. Kansas does not intend to set new TMDLs for these impairments until the next scheduled cycle in 2019.

An inventory of point sources in the basins or NPDES facilities was done. Nebraska has a large number of facilities that discharge to the Big and Little Blue Rivers and tributaries, while Kansas has fewer with most of those using lagoon systems with design flows of 3 cfs or less. Except in localized areas, the water quality of the overall basin is influenced by hydrology and land use (non point sources). This reinforces that the approach both states are taking as it relates to the non-point source introduction of pollutants is appropriate.

In Kansas there have been numerous WRAPS projects (watershed restoration and protection strategies) with Tuttle Creek being among the first with a watershed plan. The 40 year plan intends to reduce sediment by 3 million tons annually by the implementation of BMPs with cropland, livestock areas buffer strips and zones and streambanks. The Division of Conservation in the Department of Agriculture has spent nearly $600,000 in cost share funds above Tuttle Creek during 2011-2013. 4,400 acres of water quality buffers have been installed above the lake. Participation has been stifled by current commodity prices and rules for installing certain BMPs.

Nebraska is encouraging the NRDs to update their watershed plans addressing water quality issues with funding up to $200,000. LB517 establishes a task force to look at water resource sustainability and infrastructure investment. Nitrate contamination continues to plague ground water areas in the NRDs.

Nebraska chose to develop water criteria for nitrogen, phosphorus and chlorophyll in its lakes in the eastern and western halves of the state but excluded the sandhills area. The EPA however rejected a clause that identified impairments as dual violations of chlorophyll and phosphorus or nitrogen values. EPA has been inconsistent with this stance and Nebraska is considering re-submitting the rejected clause.

Nebraska is active in promoting buffer strips as a way of reducing pesticides, herbicides and sediment into waterways. There has been $682,000 allocated annually from registration fees to fund 6400 acres of buffer strips. Kansas implementation efforts, including buffer strips, have been mainly through its WRAPS programs.

Nebraska has been conducting monthly biologic sampling at numerous locations throughout the basin in 2012 and it is planned to return in six years for follow up. Kansas has routine, long term and rotational stations on the major streams in the basin. These stations will provide a baseline of the conditions and an assessment of how our water quality efforts are impacting the basin hopefully in an improving trend.

EPA does not yet know how it will evaluate the implementation sections of TMDLs supported by 319 funds for adequacy. Nebraska says it will not be using 319 funding for TMDL development. Kansas has used 319 funding for development of many of its TMDLs. We are expecting EPA to define what the atrazine criteria levels are to be sometime this summer. Currently Nebraska is 12 parts per billion and Kansas is 3 ppb.

Old Business

There was no old business to be discussed.

New Business

Commissioner Dunnigan thanked the Lower Big Blue NRD for hosting this year's meeting, and announced that next year's annual meeting of the Compact Administration will be held on May 14, 2014 again in the offices of the Lower Big Blue NRD in Beatrice, NE.

Committee Membership and Special Assignments

Committee appointments were made as follows:

Budget Committee

Jim Schneider NE Chair
Bob Lytle KS Member

Legal Committee

LeRoy Sievers NE Chair
Matt Spurgen KS Member

Water Quality Committee

Tom Stiles KS Chair
Annette Kovar NE Member
Rich Reiman NE Member
Greg Foley KS Member
Dan Howell KS Member
Marty Link NE Member

Engineering Committee

Jeremy Gehle NE Chair
James Gilbert NE Member
Bob Lytle KS Member
Katie Tietsort KS Member

Adjournment

At 11:50 am Chairman Gary Mitchell declared the Fortieth Annual Meeting of the Big Blue River Compact Administration adjourned.

Gary R. Mitchell, Compact Chairman

Brian P. Dunnigan, Nebraska Commissioner

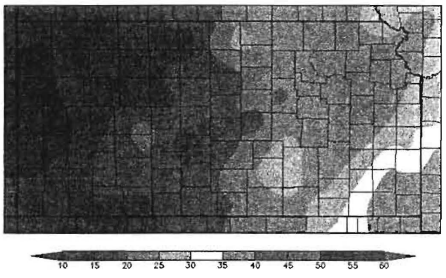
David W. Barfield, Kansas Commissioner

Kansas- Nebraska Big Blue River Compact Meeting 2013
Report by Kansas Department of Agriculture- Division of Water Resources
Topeka Field Office- Katherine A. Tietsort
May 15, 2013

Climatic Conditions- Precipitation & Temperatures

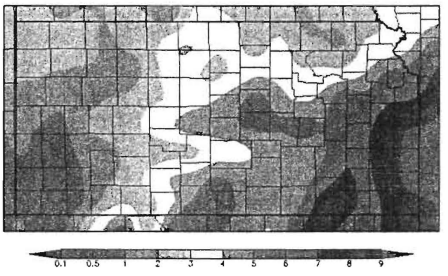
The High Plains Regional Climate Center reported only 20 to 25 inches of precipitation in calendar year 2012 generally across the Big and Little Blue River basin area in Kansas, including the Mill Creek and Black Vermillion subbasins, against an average annual of 30 to 35 inches in this region, or about 66% of normal. This was the first year during this recent drought that dry conditions were felt widespread across the entire basin area. However, the first quarter calendar year 2013 precipitation values are improved. Temperatures for the calendar year 2012 were 2 to 6 degrees warmer across the entire state, with a small geographical area in Marshall County, Kansas, centered directly over the main stem Big Blue River, where temperatures were only 0 to 2 inches warmer in 2012.

Precipitation (in)
1/1/2012 – 12/31/2012



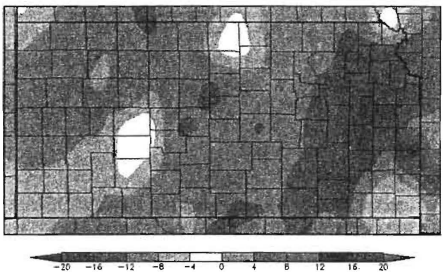
Generated 1/11/2013 at HPRCC using provisional data. Regional Climate Centers

Precipitation (in)
1/1/2013 – 3/31/2013



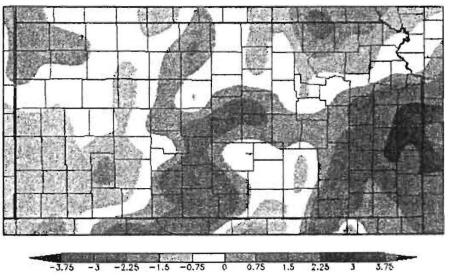
Generated 4/11/2013 at HPRCC using provisional data. Regional Climate Centers

Departure from Normal Precipitation (in)
1/1/2012 – 12/31/2012



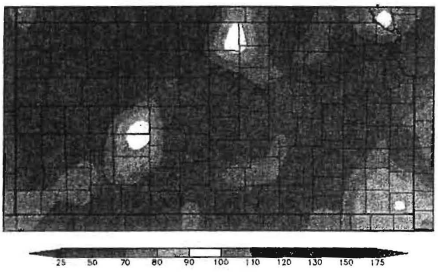
Generated 1/11/2013 at HPRCC using provisional data. Regional Climate Centers

Departure from Normal Precipitation (in)
1/1/2013 – 3/31/2013



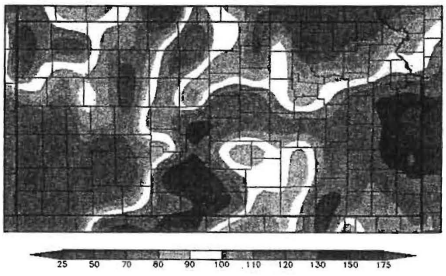
Generated 4/11/2013 at HPRCC using provisional data. Regional Climate Centers

Percent of Normal Precipitation (%)
1/1/2012 – 12/31/2012



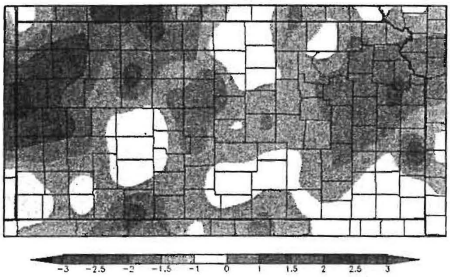
Generated 1/11/2013 at HPRCC using provisional data. Regional Climate Centers

Percent of Normal Precipitation (%)
1/1/2013 – 3/31/2013



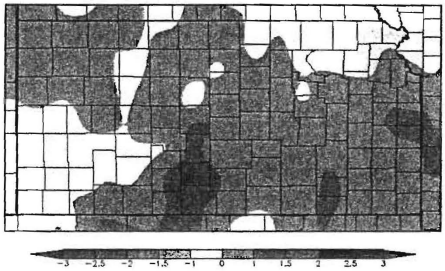
Generated 4/11/2013 at HPRCC using provisional data. Regional Climate Centers

12-Month SPI
1/1/2012 – 12/31/2012



Generated 1/11/2013 at HPRCC using provisional data. Regional Climate Centers

3-Month SPI
1/1/2013 – 3/31/2013



Generated 4/11/2013 at HPRCC using provisional data. Regional Climate Centers

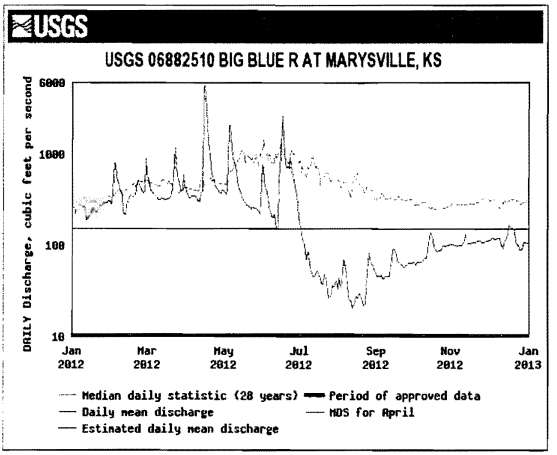
The Standardized Precipitation Index (SPI) is like the Palmer Drought Index (PDI) but considers only precipitation and does not also consider evapotranspiration and runoff as does the PDI. The index is positive (greens) for wet and negative (reds) for dry conditions. The SPI, which compares the precipitation for 12 consecutive months with the same 12 consecutive months during all previous years of available data, is now apparently indicating a dry trend in comparison to previous years of record. The comparisons to the first three months of 2013 are favorable at this point.

Streamflow

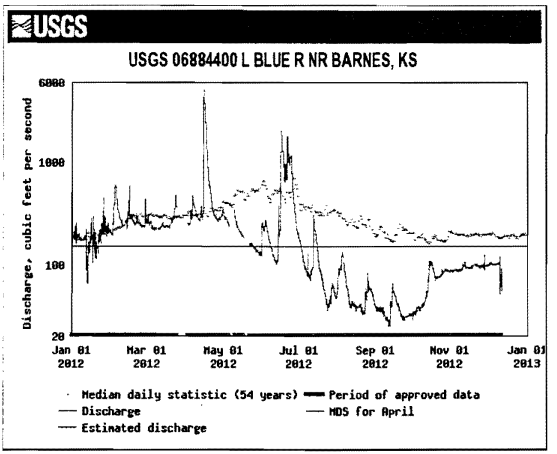
Statistics reflect 28 years of data at Marysville (Big Blue) and 54 years of data at Barnes (Little Blue). While 2012 started out with close to median streamflow throughout the basin, by May and June streamflow was diminishing as the overall drought impact was moving into this basin. By September, streamflow basin wide was showing the effects of the drought. Streamflow values fell below Minimum Desirable Streamflow (MDS) criteria at both MDS gages (at Marysville, Kansas and near Barnes, Kansas) and MDS administration did occur in 2012. Low Streamflow events occurred on both Little and the Big Blue rivers, with both bottoming out near 20 c.f.s. The Big Blue near Marysville gage was at a low in August and the Little Blue near Barnes was at its low for the year in September.

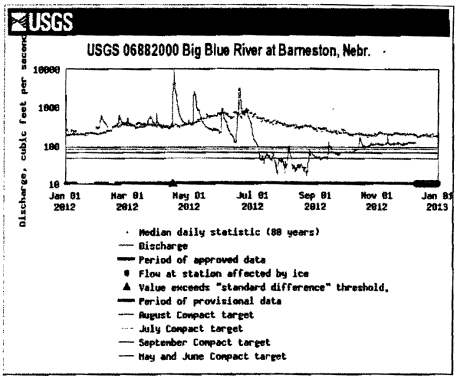
Compact gages at Barneston and Hollenberg fell below compact criteria in 2012. The Big Blue River at Barneston, NE fell below the 80 cfs compact criteria in early July and remained below criteria until early August (90 cfs criteria), then fell back below criteria through the remainder of August and early September (65 cfs criteria). The Little Blue River at Hollenberg, KS fell below the 75 cfs compact criteria late in July then flows improved late in July and early August. By late August and through much of September, flows remained below compact criteria of 80 cfs and 60 cfs, respectively. We were notified of compact restrictions in Nebraska in August 2012.

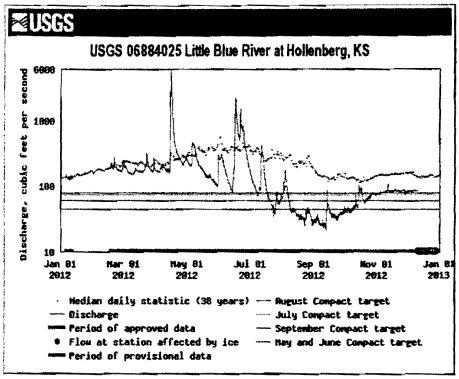
USGS 06882510 BIG BLUE R AT MARYSVILLE, KS



USGS 06884400 L BLUE R NR BARNES, KS







Administration Activities

Minimum Desirable Streamflow (MDS) on the Big Blue River at the Marysville U.S.G.S. gage ranges by month from 65 cubic feet per second (CFS) (fall) to 150 cfs (spring). MDS on the Little Blue River at the Barnes U.S.G.S. gage ranges by month from 60 cfs (fall) to 150 cfs (spring).

Minimum Desirable Streamflows (cfs)

Watercourse	Month											
	J	F	M	A(a)	M(a)	J(a)	J	A	S	O	N	D
Big Blue												
Marysville	100	100	125	150	150(d)	150(d)	80	90	65	80	80	80
Little Blue												
Barnes	100	100	125	150	150(d)	150(d)	75	80	60	80	80	80

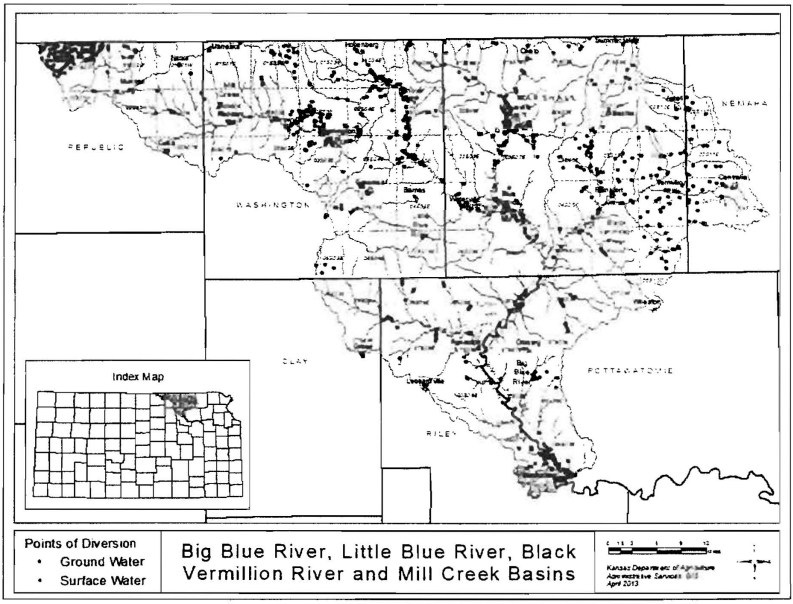
(d) Subject to the stateline flows contained in the Blue River Compact.

The Division on Water Resources administered MDS on the Big Blue River by order to 9 water right files junior to April 12, 1984, beginning on July 19, 2012 until October 30, 2012. MDS was administered on the Little Blue River and Mill Creek by order to 11 water right files junior to April 12, 1984, beginning on August 3, 2012 until November 30, 2012.

In addition to administration in this basin, the Division administered a significant number of files in multiple basins throughout the 2012 calendar year. Additional basins administered for MDS include: Chapman Creek, Chikaskia River, Cottonwood River, Neosho River, Delaware River, Little Arkansas River, Medicine Lodge River, Mill Creek (Kansas tributary), Ninnescah River, Saline River, Smoky Hill River, Spring River, Walnut River, Whitewater River, and the Republican River. Also, the Division protected releases from federal reservoirs made for water supply (Water Assurance District and Water Marketing Contracts) and water quality from federal reservoirs in the Verdigris river, Elk River, Fall River, Cottonwood River, Neosho River, and Marais des Cygnes River. At the peak of administration, nearly 725 water rights were under administration, with approximately 550 water rights being administered for MDS and an additional 175 water rights under administration to protect releases from reservoirs. Currently, the number of water rights being administered is about 250. At the height of the drought in 2012, widespread administration was occurring state-wide.

Compliance & Enforcement

Previously we reported that due to our attempted curtailment of diversions by one public water supplier pumping under a junior priority in the Verdigris basin, DWR was restrained and litigation was pending. The case continues. Additionally, we issued 5 civil penalties for pumping against orders in 2012. Two of the cases are completed now, with one "paying back" water pumped unlawfully. Two cases have pending change applications to correct place of use problems and are working to better meter their diversions, and one case is pending an appeal hearing. $6,500 has been paid in penalties regarding these cases to date. Water was released back to the stream that was stored unlawfully by 2 water right owners and one water right owner has been ordered to reduce 2013 pumping to "pay back" water. We did not have overpumpers in the compact basin in 2011.



New Development

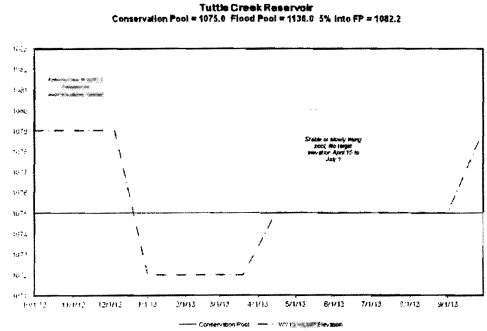
While 2012 brought record numbers of new applications files, modest filings occurred within the compact basin. There were 12 new permits issued within the compact area in Kansas in 2012. In the Big Blue River basin a total of 7 new permits were issued. Four (replacement) wells were permitted for the City of Manhattan, 2 new surface water direct diversion permits were issued for irrigators near Marysville, and one new flood detention dam was permitted. Four new projects were permitted in the Little Blue River basin. A dairy farm added quantity and rate under a new permit for an existing facility utilizing groundwater, one new groundwater well battery permit was issued to an irrigator, and two permits to one new irrigator to cover an irrigation pond and to cover off-season direct diversion use. Finally, one new permit was granted in the Mill Creek basin for an irrigation pond project.

Metering

As reported last year, all meter orders in the compact basin have been completed at this time, so all diverters have the most current metering requirements in place and have installed acceptable meters that meet or exceed the Division's regulations or they have received a Notice of Non-Complaince- Cease Diversion until they do so. The Topeka Field Office has also completed the Cottonwood-Neosho Meter Order (a very large order), which results in all water rights located in the south half of the eastern third of the state being all under the most recent requirements or not diverting. We still have several large basins to issue orders to (Marais des Cygnes, Kansas, Missouri) and several small basins left (Pottawatomie Creek, Delaware River, Wakarusa, Vermillion Creek, Stranger Creek). We will re-issue orders for the Smoky Hill, Chapman Creek and Republican basins. We anticipate issuing the order for the Pottawatomie Creek files in the next 30 days and if precipitation continues, the Marais des Cygnes in mid-summer.

Tuttle Creek Reservoir

Lake Level Management plans were approved in fall of 2012. One of the main objectives of water level managemer at Tuttle Creek Lake is to increase recruitment of crappie in the lake. The success or failure of past management plans at this Lake in many cases has been out of human control due to uncontrollable inflow rates, storage of wate in the flood control pool for T&E species in the summer months, and late season releases in support of navigation c the Missouri River. However, coordination between state and Federal agencies during moderate flood and drough events can minimize damage to the lake's shoreline habitat that is essential for crappie spawning success from suc uncontrolled events. The request for the lake level to be lowered in the winter months is to serve primarily as additional storage for frequent spring rises in lake levels which would require untimely releases. This request was intended to lessen the probability of untimely reservoir releases that adversely impact crappie spawning success.



	Time	Elevation	Comment
TUTTLE CREEK LAKE	Oct 1 – Dec 1	1079-1082.2	Attract migrating waterfowl, achieve quality habitat
	Dec 5- Jan 1	1072	Reduce ice damage potential and provide water storage, then hold through Mar 20
	Mar 20 – Apr 15	1075	Rise to reach top of conservation pool and enhance boating the hold through Sep 1
	Sep 1 – Sep 30	1079	Rise to inundate wetland habitat and attract migrating waterfo

Tuttle Creek Hydropower

Update. On April 8, 2013, the Federal Energy Regulatory Commission issued a letter to Mr. Kuo-Bao Tong o Riverbank Power Corporation regarding the Tuttle Creek Hydroelectric Project No. 14170-000 (Tuttle Creek Dam Water Power Project). The letter reminded the Corporation that the preliminary permit requires the submittal of a progress report every six months on the feasibility studies conducted and that the 3rd progress report, which was due March 31, 2013 had not been filed.

Jeremy F. Gehle 5/15/2013

2013 Big Blue River Compact Administration Report

2012 Water Administration Activities in Nebraska

2012 was an extremely hot and dry year in the Little and Big Blue River Basins. Demand for irrigation water was high and supplies were low. Consequently, surface water administration efforts in these basins were extensive.

Little Blue Administration

The Little Blue's headwaters are near Minden and the river exits the state south of Fairbury. The basin encompasses some 2,700 square miles in all or parts of 10 counties. It has 244 irrigation permits and 129 storage rights.

On July 20th the flows on the Little Blue at Hollenberg fell below the compact target and 111 junior irrigation rights and 129 storage rights in the basin were closed. The 133 senior irrigators in the basin were allowed to continue operating, but were closely regulated. Due to some heavy rain, by August 3rd the flow at the state-line exceeded the compact target flow and the basin was opened to junior irrigators and storage rights. On August 8th, the junior irrigation rights and the storage rights were closed again and they remained closed through September 30th which is the end of the compact period for target flows.

Big Blue Administration

The Big Blue River Basin in Nebraska extends from Hastings to the state line south of Beatrice encompassing 4,450 square miles in all or parts of 15 counties, has 822 surface water irrigation permits and 346 storage permits.

On July 9th closing notices were issued in the Basin to 385 junior irrigation rights and 346 storage rights. The 437 senior appropriators were closely regulated. The entire Big Blue River Basin remained closed for the compact until the end of the administration period. Localized shortages requiring water rights regulation on the upper end of the Big Blue started on July 25th and ran through September.

Concluding Thoughts

Flows in both basins are currently hovering around 50% of long term median flows. The current U.S Seasonal Drought Outlook indicates that the drought will be ongoing with some improvement. The U.S. Drought Monitor currently designates the majority of the basin as being in either "Moderate" or "Severe" drought.

U.S. Seasonal Drought Outlook
http://www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.html

U.S. Drought Monitor
http://droughtmonitor.unl.edu/

Kansas-Nebraska Big Blue River Compact
Nebraska Report - Upper Big Blue NRD
Rod DeBuhr, Water Department Manager
May 15, 2013

Well Drilling Activities

One four hundred and twenty-five permits were issued for irrigation wells (332 new & 93 replacements) in 2012. At the end of 2012 there were registered 11,708 irrigation wells in the District. This is an increase of 117 active irrigation wells compared to the end of 2011.

Groundwater Level Changes

The average groundwater level change for the District from spring 2012 to spring 2013 was a decline of 4.38 feet. The attached map shows the area of greatest changes and the county averages. With this change, the average ground water level is 3.03 feet above the allocation trigger. Mandatory reporting of irrigated acres and other water uses began in 2006.

Certified Irrigated Acres

Mandatory reporting of irrigated acres and other water uses began in 2006.
As of January 1, 2013, there were 1,186,404 ground water irrigated acres certified by the NRD, an increase of 9,587 acres since January 1, 2012.

2012 Groundwater Withdrawal

2012 was the fifth year that ground water withdrawal reports were required in the Upper Big Blue NRD. Metering is not required at this time. Wells that are not metered must provide an estimate of pumping rate and time of operation. The average water withdrawal for irrigation in 2012 was 12.2 inches per acre.

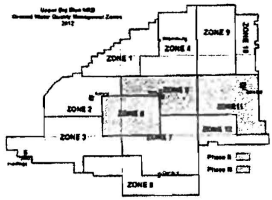
Irrigation Water Use as reported by producers for 1,074,000 acres (2007) to 1,181,542 acres (2012)					
2007	2008	2009	2010	2011	2012
5.0"	4.3"	7.1"	5.2"	4.7"	12.2"

Other users of groundwater are also required to report withdrawals. The following is a summary of groundwater withdrawal by category of use.

TYPE OF USE	AMOUNT (acre feet)	%
Irrigation	1,203,884	98.16%
Municipal/Public	9,045	0.73%
Ethanol/Commercial	7,261	0.59%
Aquaculture/Livestock	2,586	0.21%
Golf course/Lake fill	2,521	0.21%
Wetlands	927	0.08%
All other	224	0.02%
TOTAL	1,226,507 acre feet	

Groundwater Nitrates

The district is divided into twelve management zones for ground water quality management. The primary ground water quality management concern is nitrate. A ten township area York County and two townships in Hamilton County (Zones 5 & 6) were designated a Phase II management area to address increased ground water nitrate approximately eight years ago. In 2012 the District modified its regulations, lowering the Phase II nitrate trigger from 9 ppm to 7 ppm and the Phase III trigger from 12 ppm to 10 ppm.



The rule change also limits the designation of a phase II management area to one zone per year. In 2012 Zone 11 was designated a Phase II management area and zone 5 was elevated to a Phase III management area.

Phase II management requires farm operators to attend a training session on best management practices related to fertilizer and irrigation management. It also requires deep soil sampling, irrigation scheduling and annual BMP reports. An added phase II requirement in 2012 is that each operator must schedule irrigation using soil moisture sensors in at least one field.

In a phase III management zone all of the phase I and II requirements continue plus, anhydrous ammonia fertilizer applied from November 1st through February 29th must include a nitrification inhibitor.

The rest of the district remains in phase I management for groundwater nitrates. Under phase I management the application of anhydrous ammonia may not occur until November 1, while application of dry and liquid nitrogen fertilizers must wait until the 1st of March.

The District is also working with the City of Hastings and the Little Blue NRD on a special water quality management area to address nitrate contamination in the Hastings Wellhead Protection Area.

CROP-TIP

CROP-TIP is an irrigation demonstration sponsored by The District and Cornerstone Bank near York. The purpose of the project is to show producers ways to reduce groundwater withdrawal and reduce nitrate leaching through improvements in irrigation methods. Corn and soybeans were grown in the 20 acre demonstration field in 2012. In the spring of 2007 a subsurface drip irrigation system was installed on one-half of the project acres. The benefits of irrigation scheduling and the use of more environmentally friendly methods of fertilizer application are also demonstrated.

Nebraska Agricultural Water Management Demonstration Network

This is another program to encourage producers improve irrigation scheduling using Et gages and Watermark sensors to determine crop water use. The Et gage simulates crop water use through evaporation through ceramic and green canvas membrane. Watermark sensors are used to measure soil moisture in a nearby field to confirm the ET gage's accuracy. This program began In the Upper Big Blue NRD in 2005 with a collaborative effort with the University of Nebraska Extension and 18 collaborators. The program is now being implemented in several NRDs and over 800 collaborators. The Upper Big Blue NRD is selling this equipment to irrigators at a reduced cost to encourage adoption of the scheduling practice. The data collected has been posted on the NRD's website. This year the University of Nebraska plans to have an interactive website up and running to allow cooperators to post data directly to the website where it can be used by other irrigator.

Soil and Water Conservation Cost-share Assistance

In FY 11-12 the District funded 86 soil and water conservation projects with landowners. These ranged from irrigation practices such as buried pipelines and conversion to subsurface drip irrigation to construction of terraces, waterways and planting of trees for windbreaks and wildlife. The funds totaling $221,540.82 came from the Nebraska Soil and Water Conservation Program ($130,542.26 and local NRD property tax revenue ($90,998.56).

Groundwater Modeling

The Upper Big Blue NRD is the lead agency for the Blue Basin groundwater modeling effort to identify the hydrologic connection of the aquifer and the Blue River system. This is a cooperative effort among the NRDs in the basin. The District is currently working on revision o the model and expanding the model area to include parts of the Upper and Lower Platte river basins along the northern border of the Upper Big Blue NRD.

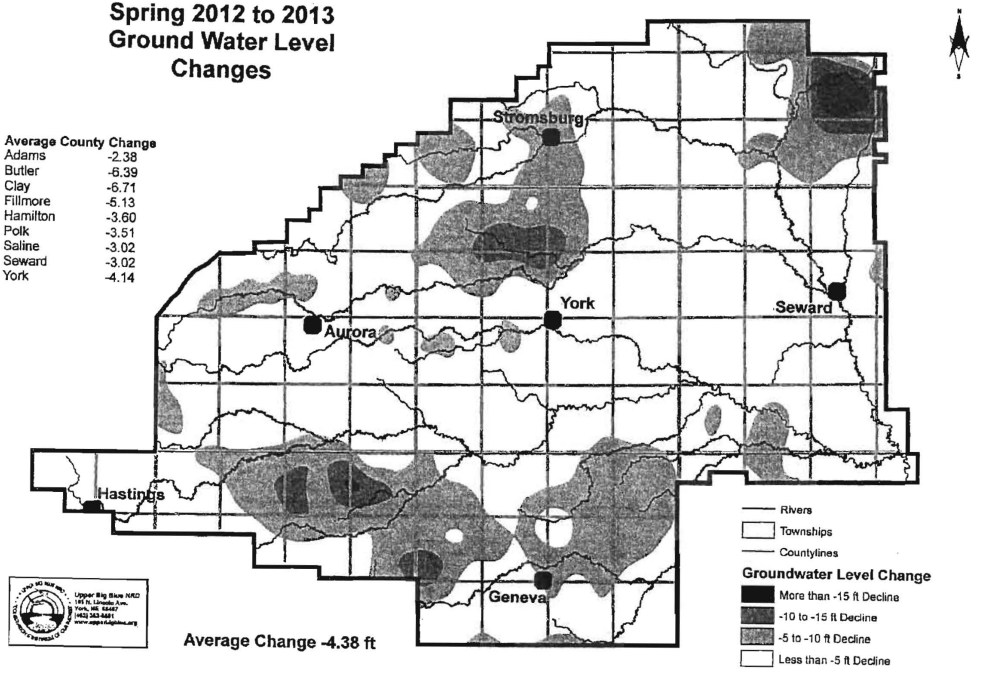
Wellhead Protection Planning

The District continues to assist communities to develop Wellhead Protection Area (WHPA) Plans. There are currently 26 communities that have approved WHPA plans. The District also assists communities with implementation of some plan components. These include water sample collection and analysis from rural wells and soil samples collection of the unsaturated zone for nitrates WHPA to evaluate potential for future contamination and potential public water well sites.

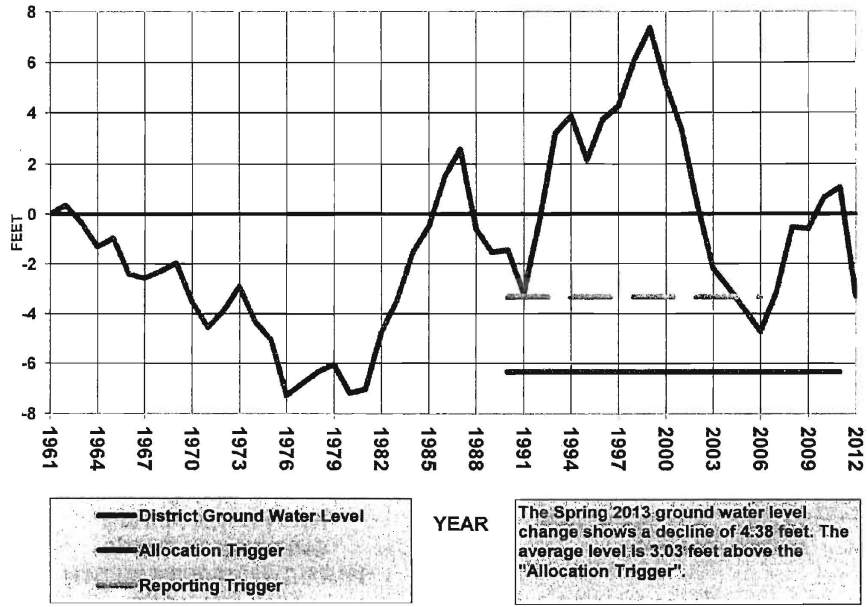
Visit our Website

You can learn all about the District's programs and activities at www.upperbigblue.org.

Upper Big Blue Natural Resources District Spring 2012 to 2013 Ground Water Level Changes



UPPER BIG BLUE NRD - AVERAGE GROUND WATER LEVELS
TRIGGERS COMPARED TO HISTORIC LEVELS
SPRING 2013



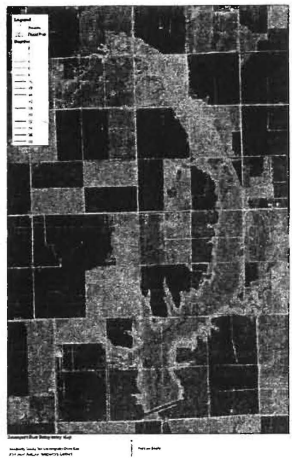
The Spring 2013 ground water level change shows a decline of 4.38 feet. The average level is 3.03 feet above the "Allocation Trigger".

KANSAS-NEBRASKA BIG BLUE RIVER COMPACT
Nebraska Report - Little Blue Natural Resources District
Mike Onnen, General Manager
MAY 15, 2013

Watershed Projects

The Little Sandy Creek Watershed project was completed in the fall of 2012 with the construction of Dam Site 73. The completed watershed controls nearly 24,900 acres of drainage and provides 7,587 acre feet of flood storage. It also hosts the Little Blue NRD's most highly developed public recreation site in the Lone Star Recreation Area which has been a very popular site for camping and fishing.

The District has contracted for a reconnaissance level study for a large flood control, groundwater recharge and perhaps public recreation structure two miles north of Davenport. The dam would be the largest in our district with a drainage area of 75.8 square miles, permanent pool of 625 acres and flood detention storage of 8,100 acre feet. The dam would be in the Big Sandy Creek Drainage area in a location where historical groundwater decline have been most prevalent. Groundwater levels have stabilized over the past 25 years but statewide groundwater maps still show declines in excess of 25' from pre-development.



The Board has not made a decision about the future of the project but has received significant opposition from landowners in the project site. A public informational meeting is scheduled in the next 30 days to present the study results, take public reactions and help the board make a final decision.

Watershed Planning

The District is planning to do a whole Little Blue River Basin Watershed planning effort to determine total watershed needs and develop a 25 year plan for addressing various water quality issues. The plan, although focused on water quality will help us develop measures to support groundwater quantity as well. We hope to begin the planning process in the summer of 2013.

Invasive Species Control on Little Blue River

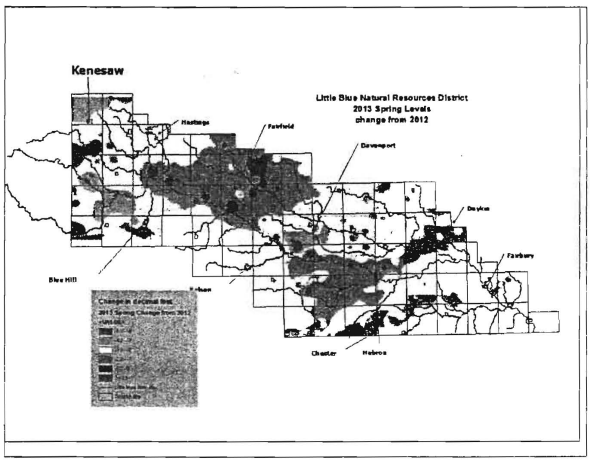
The LBNRD has joined the Twin Valley Weed Management Area's effort to identify and eradicate invasive species on the Little Blue River. The TVWMA secured a $568,000 grant through the Nebraska Environmental Trust for spraying of phragmities, salt cedar and some encroaching willows, while clearing log jams and undercut trees along the river's banks to maintain unimpeded channel flow and reduce bank erosion. There are about 265 landowners involved in the Blue River corridor from Campbell to Gilead. Plans are to begin work this summer with clearing activities and do spraying of invasive species in September.

Groundwater Quantity

The district approved 177 well permits in 2012, of which 27 were replacement wells. So far in 2013, we've received 50 permit requests with 11 of those replacement wells. Many of the new wells are for lands that had not been previously developed but with high grain prices and very dry conditions in 2012, producers are making the switch to irrigation.

In 2011, the District implemented a procedure to evaluate new well permits in those areas identified as "high risk" areas on the basis of hydrogeologic data, or for lands identified as having highly erodible soils. We required all new permits in those areas to undergo a hydrologic scoring analysis or irrigation soils suitability analysis to determine if special conditions would be required for those permits. Wells which fall below a board designate score for hydrology have been required to install flow meters, report water pumpage, not only at the end of the season, but also during the season to determine if pumping levels are dropping off and in a few cases, new irrigation scheduling technology. For those with low soil scores, the district has required the development of conservation farm plans, residue management, and in some cases cover crop seeding, or fertilizer restrictions.

The dry conditions and lengthy irrigation season of 2012 also had a negative impact on the water table. The spring 2103 readings showed declines which we anticipated of 2.07' from the 2012 spring readings. This was the single largest spring decline recorded by the NRD since we've been taking the water levels.

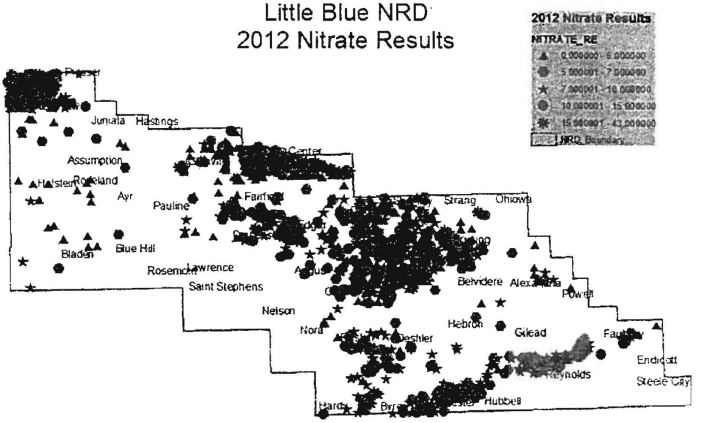


The dedicated monitoring well network of the district continues to provide valuable information and an outstanding graphical picture of the seasonal variations in the water tables. It has been most interesting to document those areas of the district where seasonal drawdowns show little fluctuation to those which are most dramatic.

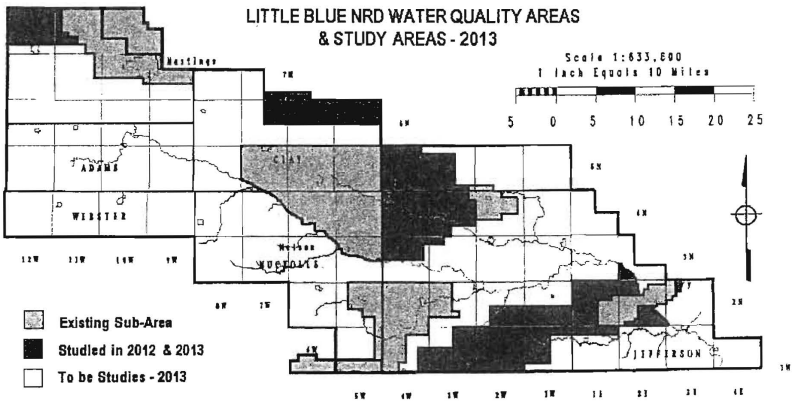
Crop water use data for the 2012 irrigation season voluntarily collected from 114,500 acres in LBNRD lands showed an increase over the past several years. The average water applied per irrigated acre was 10.2" compared to the average of 10.0" over the past 14 years. Gravity irrigation required an average of 13.2" however, we've seen a dramatic conversion of gravity to center pivot in recent years. Center pivot water use averaged 8.2" per acre in 2012.

Groundwater Quality

The Little Blue NRD did extensive water sampling during 2012 in which over 1,000 samples were collected. The City of Fairbury has been in contact with the LBNRD on rising nitrates in their municipal wells, in which their wells have risen over the 10 mg/l one quarter in the last year. The NRD did an extensive sampling of irrigation wells within the area with an average nitrate reaching 8.7 in water samples collected in the Fairbury Area.



District wide, as indicated by map on the right, nitrates has risen throughout the District. The NRD continues to increase its sampling areas, as one of the NRD goals is to find areas of "good" water as communities continue to ask the LBNRD where they can drill a new well.



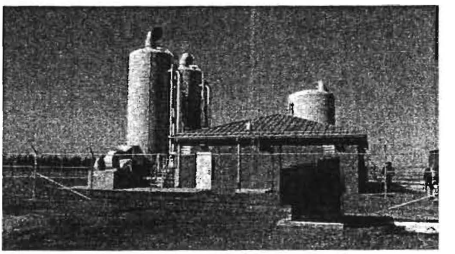
Wellhead Protection Activity

The Little Blue and Upper Big Blue NRDs are working cooperatively with Hastings to implement a management area encompassing the wellhead protection area of the City. The 61,440 acre area requires many of the same nitrogen management practices implemented in the other designated sub-areas; however this one requires nitrogen inhibitor use with nitrogen fertilizer applications prior to March 1st.

The district are also participating in a pilot water study with Hastings and the UBBNRD in an Aquifer Storage and Restoration Project which involves pumping water at multiple levels, pumping off the highest nitrates laden water for storage and use for irrigation, and treating and re-injecting a portion of the water upstream of municipal wells. The objective is to use the aquifer as the storage vessel for lower nitrate water, thus preventing the need for expensive treatment of all water needed for urban uses.

Groundwater Contamination Cleanup and Water Recycling

We reported a couple years ago that the NRD was working with the Corps of Engineers and the Meat Animal Research Center (MARC) of Clay Center, Nebraska to develop a project for groundwater clean-up on the old Naval Ammunition Depot which had been contaminated during bomb production of World War II. The project is now in place and is pumping approximately 3,000 gpm and treating the contaminated water. The water is then discharged to the Big Sandy Creek where MARC is capturing it for irrigation on their property. MARC has also developed additional irrigation facilities to utilize water stored in a 1,370 ac. ft. dam managed by the LBNRD so they can draw water down levels during the summer period, creating storage for remediation water in the off season. Pump and treatment is anticipated to take 30 years, with ongoing monitoring to extend to nearly 90 years. So far, the project is working well.



KANSAS-NEBRASKA BIG BLUE RIVER COMPACT REPORT
U.S. Geological Survey—Water Year 2012

The U.S. Geological Survey (USGS) continues to operate two streamflow gaging stations for the Compact Administration—Big Blue River at Barneston, NE (06882000), and Little Blue River at Hollenberg, KS (06884025). An electronic data logger (EDL) at each station automatically records streamflow stage every 15 minutes. Every hour, these instantaneous values are transmitted via satellite to USGS offices, where they are used to compute preliminary values of instantaneous and daily discharge that are immediately posted to the Web (addresses shown below). Before the data are finalized, updates and revisions are made as needed, based on a series of quality checks and reviews. Finalized values of daily discharge and daily gage height, along with associated summary statistics are published annually on a site-by-site basis on a national Web page (address shown below).

During water year (WY) 2012 (October 1, 2011 to September 30, 2012), periodic visits were made to the stations to maintain and calibrate the sensing and recording equipment, make discharge measurements, and download the data directly from the EDLs, as a backup to the satellite-telemetered data. The discharge measurements were used to determine shifts from the stage-discharge relations (rating curves) that were then used to convert stage values to corresponding values of discharge.

For each of the State delegations and the Compact chairman, copies of the WY 2012 published data (manuscript; discharge and gage height daily values; statistics tables; and discharge and gage height hydrographs) from *WDR2012: Water-Data Report 2012* are attached for each station. These site-data sheets (PDF files) are available online at http://wdr.water.usgs.gov/wy2012/search.jsp along with data for other streamgages for the Nation. Also attached are plots of the annual mean discharges for the periods of record, and plots of the daily discharges for WY 2012 compared to those for the median daily statistic for each day of the year.

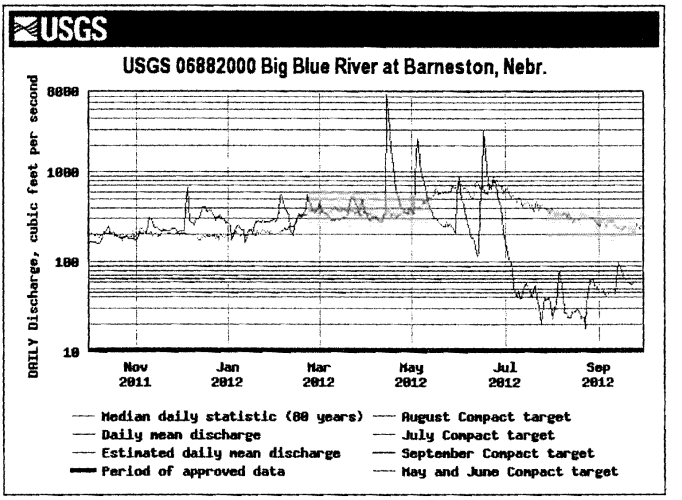
Current (real-time) and historical data on surface water, groundwater, and water quality for the Nation can be accessed and downloaded via the National Water Resources website (http://water.usgs.gov/) or from the Nebraska Water Resources website (http://ne.water.usgs.gov/). Daily, monthly, and annual streamflow statistics are also available under "Surface Water" on the National site and under "Historical data: Streamflow" on the Nebraska site. Up to 120 days of unit values data and all daily values can be accessed using the real-time options.

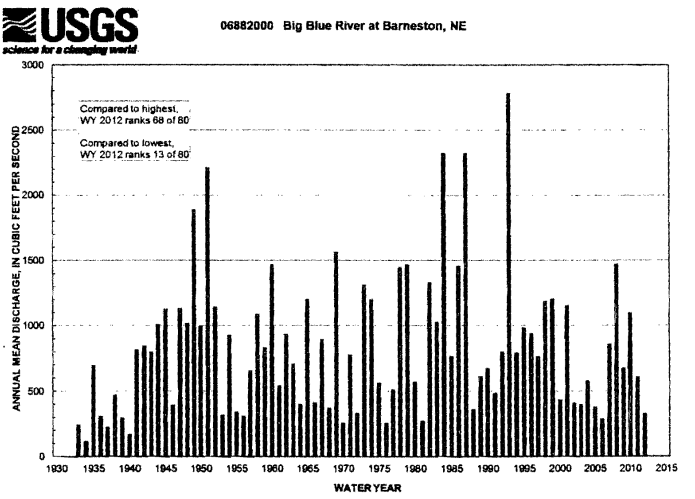
Jason Lambrecht
Chief, Hydrologic Data Section

U.S. Geological Survey, Nebraska Water Science Center
5231 S. 19th St., Lincoln, NE 68512-1271
(jmlambre@usgs.gov)
402-328-4124 (office), 402-328-4101 (fax), 402-416-2363 (mobile)

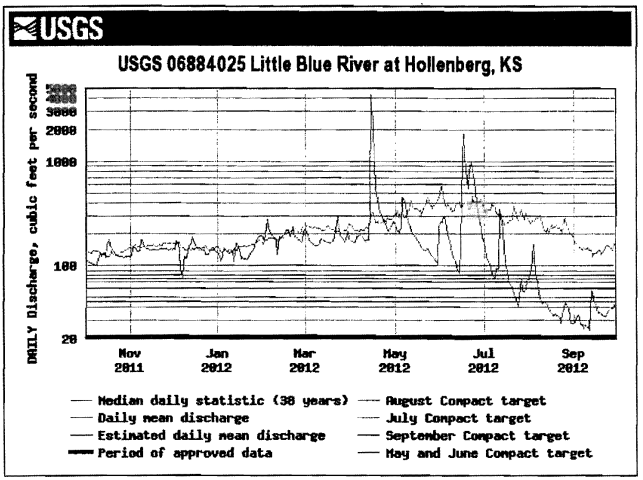
May 14, 2013

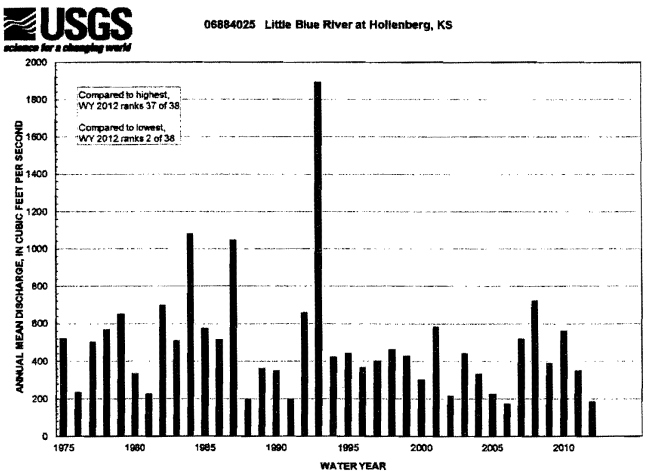
For **Big Blue River at Barneston**, eleven discharge (and stage) measurements, ranging from 18.8 ft^3/s (2.77 ft) to 737 ft^3/s (4.85 ft), and two inspections were made during WY 2012. The annual mean discharge of 327 ft^3/s was 1.8 times less than that of the WY 2011 mean of 607 ft^3/s; and 2.6 times less than the new historical mean of 840 ft^3/s for WYs 1933–2012 (80 years of record). The maximum and minimum daily discharges were 7,430 ft^3/s on April 15, 2012; and 18 ft^3/s on August 23, 2012.





For **Little Blue River at Hollenberg**, eleven discharge (and stage) measurements, ranging from 39.1 ft^3/s (1.99 ft) to 267 ft^3/s (2.75 ft) were made during WY 2012. The annual mean discharge of 184 ft^3/s was 1.9 times less than that of the WY 2011 mean of 348 ft^3/s; and 2.6 times less than the new historical mean of 489 ft^3/s for WYs 1975–2012 (38 years of record). The maximum and minimum daily discharges were 4,300 ft^3/s on April 15, 2012; and 24 ft^3/s on September 12, 2012.





REPORT OF THE TREASURER
TO THE
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION
May 15, 2013

Balance on Hand July 1, 2012	$ 22,213.61
State Assessments	$ 16,000.00
Interest Income through April 29, 2013	$ 23.44
Funds Available as May 14, 2013	**$ 38,237.05**
Expenditures as of May 14, 2013	
USGS	$ (11,317.00)
Balance on Hand	**$ 26,920.05**
Estimated Expenditures through June 30, 2013	
USGS	$ 3,780.00
Dana Cole - Audit	$ 1,600.00
Lower Big Blue Natural Resources District	$ 680.00
Printing Annual Report	$ 270.00
Postage and Office Supplies	$ 100.00
Miscellaneous	$ 100.00
Total Estimated Additional Expenditures	**$ 6,530.00**
Estimated Income through June 30, 2012	
Interest Income	**$ 3.00**
Estimated End of Fiscal Year Balance	**$ 20,393.05**

Treasurer/Budget Report, May 15, 2013

- First handout is the Treasurer's Report
    - We are doing well overall for funds, have $26,787.00 on hand and expect to end the year around $20,393.05. Down about $2,000.00 from the beginning year balance of $22,213.61.
    - Checks have been cut for the Kansas Division of Printing ($131.01), USGS ($3,780), and LBBNRD ($680) but they have not cleared the account as of today.

- Second handout is our budget tracking document.
    - First two columns are closing the book on FY 11-12.
        - The $292.61 for Annual Report printing includes invoices from 2010 and 2011 which were both paid during FY 11-12
        - $100 budgeted for Postage and Office Supplies and $100 budgeted for Miscellaneous Expenses were not spent.
    - The next two columns show how the Compact Administration Budget has been spent this FY 12-13.
        - The audit payment will be more this year as it is for 2 fiscal years, FY10-11 and FY11-12. It exceeds the estimate in the budget from last year, but was approved by Brian Dunnigan and Dave Barfield when the contract was signed. This payment will most likely not be made until next fiscal year, depending on when the audit is completed, but it is included in the budget estimate for this year.
    - The next two columns are the budget for FY 13-14
        - First set of numbers was estimated last year and the second set is what I propose we adopt today.
        - USGS – Expect to spend approximately 3% more each fiscal year
        - The Audit is now being conducted every 2 years. We have contracted this fiscal year to have the audit done for the two prior fiscal years (10-11, 11-12). The audit is not included in budget for next year (FY 13-14). The next audit of FY 12-13 and 13-14 will be contracted in FY 14-15 and will be approximately $1,600.
        - Interest rates continue to go lower; therefore, the budget reflects this with $25 of interest estimated for FY 13-14.
        - With the state assessments staying at $8,000 per state per fiscal year, expect to see decreases in carryover each year.
    - The final column on the right is the estimated budget for FY 14-15
        - This includes the 2-year financial audit

Fiscal Year 2012-2013

Date				Bank Account		USGS		Annual Audit		Postage/Supplies		Printing	
				Amount	Balance	Amount	Balance	Amount	Balance	Amount	Balance	Amount	Bal.
7/1/2012	check #	Pay to	Description		$ 22,213.61		$ 14,500.00		$800.00		$100.00		
7/31/2012			Interest	$ 3.12	$ 22,216.73	$ -	$ 14,500.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
8/31/2012			Interest	$ 3.02	$ 22,219.75	$ -	$ 14,500.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
9/5/2012	1065	USGS	USGS	$ (3,757.00)	$ 18,462.75	$ (3,757.00)	$ 10,743.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
9/28/2012			Interest	$ 2.33	$ 18,465.08	$ -	$ 10,743.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
10/31/2013			Interest	$ 2.67	$ 18,467.75	$ -	$ 10,743.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
11/30/2013			Interest	$ 2.43	$ 18,470.18	$ -	$ 10,743.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
12/11/2013	1066	USGS	USGS	$ (3,780.00)	$ 14,690.18	$ (3,780.00)	$ 6,963.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
12/31/2013			Interest	$ 2.16	$ 14,692.34	$ -	$ 6,963.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
1/31/2013			Interest	$ 2.00	$ 14,694.34	$ -	$ 6,963.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
2/28/2013			Interest	$ 1.80	$ 14,696.14	$ -	$ 6,963.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
3/29/2013			Interest	$ 1.87	$ 14,698.01	$ -	$ 6,963.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
4/16/2013	1067	USGS	USGS	$ (3,780.00)	$ 10,918.01	$ (3,780.00)	$ 3,183.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
4/23/2013			Nebraska Dues	$ 8,000.00	$ 18,918.01	$ -	$ 3,183.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
4/23/2013			Kansas Dues	$ 8,000.00	$ 26,918.01	$ -	$ 3,183.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
4/30/2013			Interest	$ 2.04	$ 26,920.05	$ -	$ 3,183.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
					$ 26,920.05	$ -	$ 3,183.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
					$ 26,920.05	$ -	$ 3,183.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
					$ 26,920.05	$ -	$ 3,183.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
					$ 26,920.05	$ -	$ 3,183.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
					$ 26,920.05	$ -	$ 3,183.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
					$ 26,920.05	$ -	$ 3,183.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
						$ -	$ 3,183.00	$ -	$ 800.00	$ -	$ 100.00	$ -	$
					$ -							$ -	
				$ 4,706.44	$ 26,920.05	$ (11,317.00)		$ -		$ -		$ -	

Notes:

Check number 1068 to the Kansas Division of Printing for $131.01 was written 4/3/2013 but the check has not cleared the account as of the statement ending 4/30/2013 s

Check number 1069 to the USGS for $3,780 was written 5/7/2013 but an end of month statement has not yet been received for May to know the date it cleared the accou

Check number 1070 to the LBBNRD for $680 was written 5/14 but an end of month statement has not yet been received for May to know the date it cleared the account s

36

BIG BLUE RIVER COMPACT BUDGET ANALYSIS May 2013								
Column A	Column D FY 2011-2012		Column E FY 2012-2013		Column F FY 2013-2014		FY 2014-2015	
	Actual	Adopted May 2011	Estimated May 2013	Adopted May 2012	Estimate May 2012	Proposed May 2013	Estimate May 2013	
EXPENDITURES								
Operations								
Stateline Gages	$ (15,023.00)	$ 15,000.00	$ 15,097.00	$ 15,500.00	$ 15,500.00	$ 15,550.00	$ 16,000.00	
Observation Wells	$ (680.00)	$ 700.00	$ 680.00	$ 700.00	$ 700.00	$ 680.00	$ 700.00	
Water Quality Committee	$ -	$ -	$ -	$ -	$ -			
Annual report - Printing	$ (292.61)	$ 200.00	$ 270.00	$ 200.00	$ 200.00	$ 200.00	$ 200.00	
Annual Audit	$ (800.00)	$ 800.00	$ 1,600.00	$ 800.00	$ -	$ -	$ 1,600.00	
Postage and Office Supplies	$ -	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00	
Miscellaneous Expenses	$ -	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00	$ 100.00	
Total Expenses	$ (16,795.61)	$ 16,900.00	$ 17,847.00	$ 17,400.00	$ 16,600.00	$ 16,630.00	$ 18,700.00	
INCOME & CARRY OVER								
Assessments (Both States)	$ 16,000.00	$ 16,000.00	$ 16,000.00	$ 16,000.00	$ 16,000.00	$ 16,000.00	$ 16,000.00	
Interest earned	$ 56.38	$ 90.00	$ 26.44	$ 90.00	$ 90.00	$ 25.00	$ 25.00	
Carry Over from Prior Year	$ 22,952.84	$ 20,698.92	$ 22,213.61	$ 19,678.92	$ 18,368.92	$ 20,393.05	$ 19,788.05	
Total Income and Carry Over	$ 39,009.22	$ 36,788.92	$ 38,240.05	$ 35,768.92	$ 34,458.92	$ 36,418.05	$ 35,813.05	
Balance End of Year	$ 22,213.61	$ 19,888.92	$ 20,393.05	$ 18,368.92	$ 17,858.92	$ 19,788.05	$ 17,113.05	

Information on the Difference between Accounting Reviews
Presented by the Blue Basin Treasurer
At the May 15, 2013
Blue River Compact Meeting

COMPARATIVE SNAPSHOT			
	Compilation	**Review**	**Audit**
Estimated Cost per Fiscal Year	**$300**	**$435**	**$800**
Differences in costs for each level of service	Involves **the lowest amount of work** and as a result is **far less costly** than a review or audit	**More costly** than a compilation but **substantially lower in cost** than an audit	**Involves the most work** and therefore the **cost is substantially higher** than a review or compilation
Level of Assurance Obtained by the Accountant/Auditor that the Financial Statements are Not Materially Misstated	Accountant **does not obtain or provide any assurance** that there are no material modifications that should be made to the financial statements	Accountant **obtains limited assurance** that there are no material modifications that should be made to the financial statements	The auditor **obtains a high, but not absolute, level of assurance** about whether the financial statements are free of material misstatements
Objective	To assist management in presenting financial information in the form of financial statements **without undertaking to provide any assurance** that there are no material modifications that should be made to the financial statements	To obtain **limited assurance** that there are no material modifications that should be made to the financial statements	To obtain a **high level of assurance** about whether the financial statements as a whole are free of material misstatement thereby enabling the auditor to express an opinion on whether the financial statements are presented fairly, in all material respects
Assurance provided to the User of the Financial Statements	None – the report states that **no assurance is provided**	None – the report provides a statement that **the accountant is not aware of any material modifications** that should be made to the financial statements	None – **the auditor provides an opinion** as to whether the financial statements present fairly in all material respects, the company's financial position, results of operations and cash flows
The accountant is required to obtain an understanding of the entity's internal control and assess fraud risk	----	----	✔
The accountant is required to perform inquiry and analytical procedures	----	✔	✔
The accountant is required to perform verification and substantiation procedures	----	----	✔
Situations requiring different levels of service	Generally appropriate for privately held companies and **are often prepared for simple situations** (e.g., a lender needs GAAP financial statements instead of the statement the internal accounting system produces or the lender needs the comfort provided by knowing that an accountant read the financial statements)	**Often prepared for privately held companies because of requirements of outside third parties** (such as banks, creditors and potential purchasers) that are looking for comfort that the financial statements are not materially misstated	**Often prepared for companies because outside third parties** (such as banks, creditors, potential purchasers and outside investors) **require an auditor's opinion** on the financial statements

REPORT OF THE ENGINEERING COMMITTEE
TO THE
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION

May 15, 2013

The engineering committee was not given any special assignments from the Compact Administration and did not meet during the past year. The 2012 data for this report were collected as provided by the United States Geological Survey (USGS) and the Lower Big Blue Natural Resources District (LBBNRD).

Review of Streamflow Data

The Compact sets forth the following streamflow targets at the stateline gaging stations:

	Big Blue River	Little Blue River
May	45 cfs	45 cfs
June	45 cfs	45 cfs
July	80 cfs	75 cfs
August	90 cfs	80 cfs
September	65 cfs	60 cfs

During the May through September time period of the 2012 water year (October 1, 2011 thru September 30, 2012) both basins fell below Compact target flows. The mean daily streamflow at the Barneston gage on the Big Blue River (Exhibit A) fell below the target a total of 79 days. The mean daily streamflow on the Little Blue River at the Hollenberg gage (Exhibit B) was below target flows for 69 days. The daily mean value of 24 cfs on September 12, 2012 was the lowest in 38 years of record at the Hollenberg gage.

Real-time and historical data for these gaging stations can be found at the following websites:
Big Blue River – http://waterdata.usgs.gov/ne/nwis/uv/?site_no=06882000
Little Blue River – http://waterdata.usgs.gov/ne/nwis/uv/?site_no=06884025

Review of Groundwater Data

The Lower Big Blue Natural Resources District provided the groundwater levels (Exhibit C) for the Big Blue Basin near Beatrice.

Review of Wells in the Regulatory Reaches

Exhibit D is a listing of the irrigation wells within the regulatory reaches. There were no irrigation wells drilled in either of the regulatory reaches during this reporting period.

Respectively Submitted,

Jeremy F. Gehle, Chair
Nebraska

Robert F. Lytle Jr.
Kansas

06882000 Big Blue River at Barneston, Nebr.—Continued

SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1933 - 2012	
Annual total	214,758		119,565			
Annual mean	588		327		840	
Highest annual mean					2,781	1993
Lowest annual mean					115	1934
Highest daily mean	7,470	May 21	7,430	Apr 15	50,000	Jun 9, 1941
Lowest daily mean	160	Oct 6	18	Aug 23	1.0	Nov 30, 1945
Annual seven-day minimum	164	Oct 2	25	Aug 17	15	Aug 3, 1934
Maximum peak flow			9,540	Apr 15	57,700	Jun 9, 1941
Maximum peak stage			14.01	Apr 15	[a]34.30	Jun 9, 1941
Annual runoff (ac-ft)	426,000		237,200		608,800	
10 percent exceeds	1,200		510		1,720	
50 percent exceeds	332		248		280	
90 percent exceeds	190		43		106	

[a] At site and datum then in use.

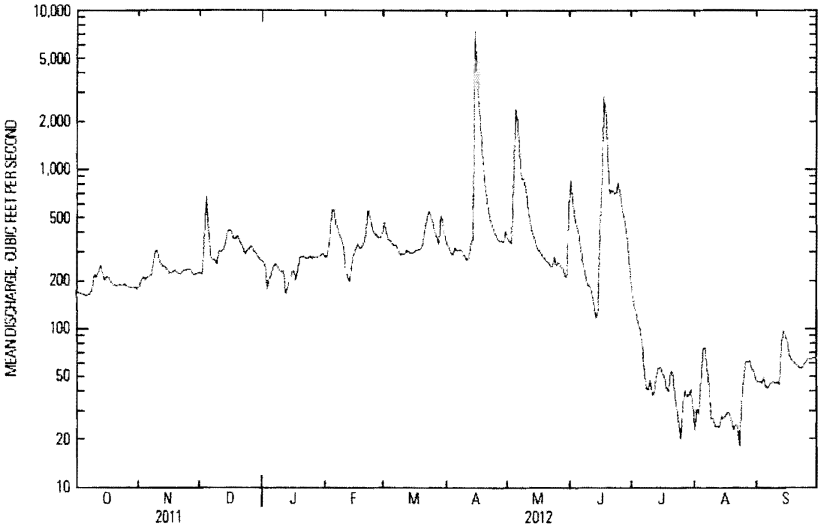


Exhibit A

06884025 Little Blue River at Hollenberg, KS—Continued

SUMMARY STATISTICS

	Calendar Year 2011		Water Year 2012		Water Years 1975 - 2012	
Annual total	124,214		67,452			
Annual mean	340		184		489	
Highest annual mean					1,891	1993
Lowest annual mean					173	2006
Highest daily mean	9,200	May 21	4,300	Apr 15	39,300	Jul 26, 1992
Lowest daily mean	76	Dec 7	24	Sep 12	24	Sep 12, 2012
Annual seven-day minimum	104	Oct 2	26	Sep 6	26	Sep 6, 2012
Maximum peak flow			5,860	Apr 15	47,800	Jul 26, 1992
Maximum peak stage			8.98	Apr 15	21.21	Jul 26, 1992
Annual runoff (ac-ft)	246,400		133,800		354,500	
10 percent exceeds	580		258		810	
50 percent exceeds	197		142		198	
90 percent exceeds	131		39		102	

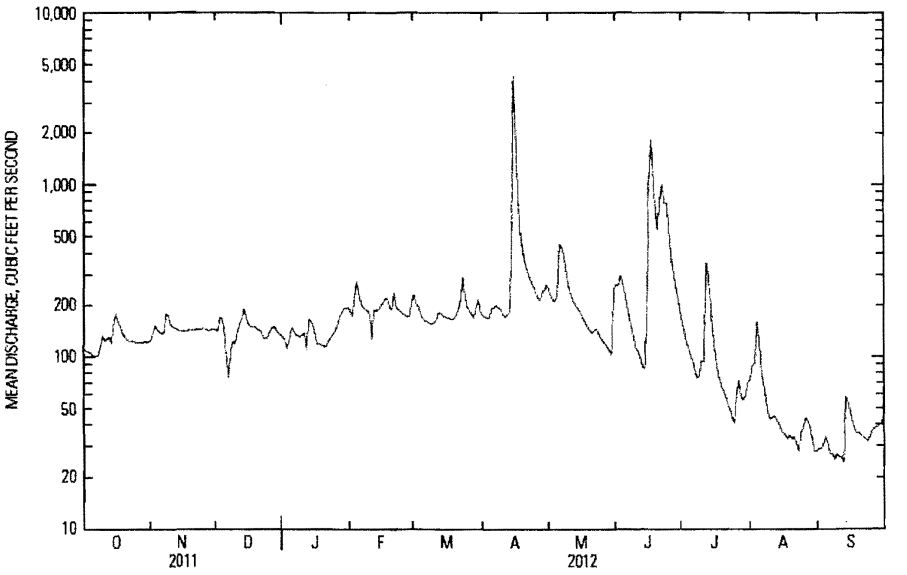


Exhibit B

BIG BLUE RIVER COMPACT STATIC WATER LEVELS 2012					
LEGAL	SECT	SITE	TYPE	Spring Depth	Fall Depth
4N-5E	2	AAAA	OW	94.49	98.12
4N-5E	2	DDAA	IW	18.59	22.15
4N-5E	4	BBBC	IW	20.75	25.17
4N-5E	9	CBCC	IW	73.33	77.77
4N-5E	10	DDAA	IW	27.07	30.93
4N-5E	11	DACA	IW	16.99	18.61
4N-5E	14	ABBB	IW	14.09	16.57
4N-5E	25	AACD	IW	20.46	20.80
5N-4E	12	ABBA	IW	19.13	21.11
5N-4E	13	BADD	IW	16.87	17.92
5N-4E	23	BABB	IW	16.35	18.10
5N-4E	24	AACD	IW	19.06	20.31
5N-5E	7	CADD	IW	62.30	67.25
5N-5E	20	BCCD	IW	19.99	21.58
5N-5E	21	DDBB	IW	54.98	65.00
5N-5E	29	CBBB	IW	14.57	18.41
5N-5E	33	AADD	IW	19.28	22.99

OW - OBSERVATION WELL
IW - IRRIGATION WELL

Exhibit C

Big Blue River Regulatory Area Wells					
Registration Number	Location T-R-S	Completion Date	Depth (FT)	Registration Pumping Capacity (GPM)	Filing Date
G-036485	4N-5E-11BC	3/28/1972	82	750	4/24/1972
G-038314	4N-5E-2DD	1/16/1973	188	1,300	1/29/1973
G-047820	4N-5E-12BB	11/1/1975	117	1,200	12/4/1975
G-050086	5N-5E-33AD	5/26/1976	123	800	6/9/1976
G-054047	4N-5E-24BB	3/1/1976	84	800	1/6/1977
G-054260	4N-5E-14AA	6/1/1974	70	800	1/14/1977
G-054261	4N-5E-14AB	5/2/1970	70	800	1/14/1977
G-056152	4N-5E-4BB	4/14/1977	91	1,000	5/11/1977
G-059128	5N-5E-29AA	4/25/1977	60	400	1/4/1978
G-059727	5N-5E-33CB	4/19/1978	91	1,200	4/20/1978
G-081769	4N-5E-13CD	4/22/1994	65	250	6/24/1994
G-100788	5N-5E-29AB	3/19/1999	65	500	6/2/1999
G-110669	4N-5E-13CC	7/12/1995	64	375	6/29/2001
G-110847	4N-5E-3DA	5/4/1979	82	800	7/2/2001
G-110849	5N-5E-29DD	4/30/1983	102	800	7/2/2001
G-151969	5N-5E-33BB	12/11/2008	112	800	1/20/2009
G-155061	4N-5E-10BB	12/4/2009	98	800	1/27/2010

Little Blue River Regulatory Area Wells					
Registration Number	Location T-R-S	Completion Date	Depth (FT)	Registration Pumping Capacity (GPM)	Filing Date
G-058158	2N-2E-16AD	8/15/1977	29	650	9/6/1977
G-139240	2N-2E-9DD	0/0/1956	50	400	3/23/2006

Exhibit D

Agreement
Between the
Engineering Committee of the Big Blue River Compact Administration
And the
Lower Big Blue Natural Resource District

That on this the 15th day of May, 2013, the Director of the Lower Big Blue River Natural Resource District, and the Chairperson of the Engineering Committee of Big Blue River Compact Administration, mutually agree to the following:

That the Lower Big Blue NRD will take a total of 34 ground water level measurements from observation wells during the spring and fall of the 2013 calendar year as enumerated on the attachment to this agreement identified as "Attachment A".

The two parties further agree to allow for variances from the wells identified on Attachment A if necessary.

This agreement is as provided by the Contract between the Kansas-Nebraska Big Blue River Compact Administration and the Lower Big Blue Natural Resources District for Ground Water Measurement Tabulations dated May 19, 2010.

Dated this 15 day of May,

David S. Clabaugh, Manager
Lower Big Blue Natural Resource District

Jeremy Gehle, Chair
Engineering Committee

Report of Water Quality Committee to the

2013 Kansas-Nebraska Big Blue River Compact Administration

May 15, 2013

Beatrice, NE

The Water Quality Committee met in Marysville, Kansas on May 7, 2013. The attendance list is attached; attendees included five representatives from Kansas, eight from Nebraska, four from EPA, one from NRCS and one from Syngenta. The agenda from the meeting is attached as are all handouts presented at the meeting in support of agenda items. The following is a brief summary of key points made during each of the agenda items.

1. 303d listings and developed TMDLs: both States have developed TMDLs and have a number of listings for impairments on streams and lakes in the Big and Little Blue basins. Nebraska has developed bacteria and atrazine TMDLs for a number of segments of the Big and Little Blue Rivers. Nebraska is in the process of developing TMDLs for 10 segments impaired by E coli bacteria and 13 segments impaired by atrazine. A sedimentation and phosphorus TMDL has also been developed for Big Indian Lake.

   Kansas has developed TMDLs for eutrophication, siltation, atrazine and alachlor for Tuttle Creek Lake as well as an atrazine TMDL for the Big and Little Blue watersheds. Bacteria TMDLs are in place for the Big Blue River, Black Vermillion River, Horseshoe Creek, Fancy Creek, the Little Blue Rvier and Mill Creek. Centralia Lake in the Black Vermillion watershed also has a eutrophication TMDL, and a few other lakes have nutrient-driven impairments. There are numerous 303(d) listings in the basin, including excessive phosphorus and total suspended solids in streams, copper and lead impairments (attached to sediment and occurring during runoff events), biological impairments, and high sulfate in some tributaries. Kansas does not plan to produce more TMDLs in the basin until 2019.

2. Inventory of NPDES facilities in the Basin: Nebraska has a large number of facilities that discharge to the Big or Little Blue Rivers or their tributaries. Kansas has fewer facilities, most all using lagoon systems for wastewater treatment with a total design flow of about 3 cfs. Except in localized areas, the water quality of the basin is chiefly influenced by hydrology and land use.

3. Tuttle Creek WRAPS: The Tuttle Creek WRAPS was the original 9-element NPS/Watershed Plan established in Kansas. The plan addresses the bacteria, atrazine, siltation and eutrophication impairments of streams above and including Tuttle Creek Lake. Critical areas are targeted for implementation of cropland, livestock and streambank BMPs. The 40-year plan intends to reduce sediment by 3 million tons annually, almost 3 million pounds of phosphorus and 56,000 pounds of atrazine.

   The Division of Conservation of the Kansas Department of Agriculture has spent almost $600,000 in cost-share funds for management practices above Tuttle Creek Lake over State Fiscal Years 2011 – 2013. Additionally, 4400 acres of water quality buffers have been installed above the lake. Participation in the cost-share programs has been stifled by current commodity prices and rules and specifications for installing certain practices.

4. Nebraska sediment/nutrient controls: Nebraska is looking to fund $200,000 for NRDs to update watershed plans, dealing with water quality issues. Legislation, LB517, establishes a task force to look at water resource sustainability and infrastructure investment. A priority list of programs, projects and activities dealing with management, conservation and preservation of water resources is envisioned. Water quality, though not mentioned explicitly, may be tied into management and preservation efforts. Nitrate contamination continues to plague a number of ground water areas in the NRDs. Some discussion ensued regarding the potential impact of tile outlets on loading to streams.

5. Nebraska lake nutrient criteria: Nebraska has established criteria for nitrogen, phosphorus and chlorophyll in its lakes in the eastern and western halves of the state, but excluding lakes in the sandhills area. A clause that tied impairment to dual violations of the chlorophyll and phosphorus or nitrogen values was rejected by EPA, thereby invoking independent applicability of any of the criteria for assessing the lakes. Nebraska is considering re-submitting the rejected clause within its water quality standards. There are no point sources located above Nebraska lakes, but it is highly unlikely the suggested criteria can be achieved in the short term.

6. Atrazine management: the Nebraska Department of Agriculture continues to be active in promoting buffer strips as a means of reducing pesticides and sediment in runoff water to Nebraska waterways. Approximately $682,000 is available annually from pesticide registration fees to fund up to 6400 acres of buffer strips. Kansas efforts are chiefly delivered through the Tuttle Creek WRAPS. EPA indicates that the next iteration of a revised atrazine criteria for aquatic life should come out this summer.

7. Monitoring plans: Nebraska has conducted monthly sampling on numerous locations in the basin on a routine basis. Biological sampling occurred at random locations in 2012 with plans to return in six years for follow up monitoring. Beach sampling for bacteria and cyanotoxins occurs weekly at lakes with swimming beaches. Kansas has routine, long term stations and rotational stations (once every 4 years) on the major stream in the basin. A number of smaller tributaries have been sampled four times in a given year as part of the probabilistic monitoring program. Five stations have been established at the outlets of HUC12 subwatersheds, coincidental to critical areas of implementation under the Tuttle Creek WRAPS. These stations will provide a baseline of conditions and the first assessment of improvement trends resulting from watershed treatment on a smaller scale than the routine network.

8. EPA: EPA does not yet know how it will be evaluating the implementation sections of TMDLs supported by 319 funds for adequacy. Nebraska indicates it will not be using 319 funds for any TMDL development.

Big Blue River Compact Water Quality Committee Meeting

May 7, 2013

Marysville, Kansas

Agenda

1. Introductions

2. Status of 303d listings and TMDL development in Big and Little Blue Basins
    a. NDEQ
    b. KDHE

3. Inventory of NPDES facilities discharging into the Big and Little Blue Basins above Tuttle Creek Lake
    a. NDEQ
    b. KDHE

4. Status of implementation by Tuttle Creek WRAPS
    a. KDHE, KDA & WRAPS

5. Sediment and nutrient management in Nebraska
    a. NDEQ

6. Status of nutrient criteria on Nebraska lakes in basin
    a. NDEQ

7. Update on atrazine management
    a. NDA
    b. KDA

8. Monitoring plans for 2013 & 2014 in basin
    a. NDEQ
    b. KDHE

9. Closing Comments

Sign In — Big Blue Compact — 5/7/2013

1)	Trevor Flynn	KDHE	tflynn@kdheks.gov
2)	Daniel L Howell	Rancher/Farmer, KLR, Leadership Tuttle Creek WCD	
3)	Dave Schumacher	NDEQ	david.schumacher@nebraska.gov
4)	Laura Johnson	NDEQ	laura.r.johnson@nebraska.gov
5)	~~Patrick Hartman~~	NDEQ	~~Patrick.Hartman@Nebraska.gov~~
6)	Daryl Andersen	LBNRD	dandersen@lbnrd.org
	Dave Griffith	NRCS/NDEQ	david.griffith@ne.usda.gov
8)	Doug Jones	EPA R7	jones.doug@epa.gov
9	Todd Barlow	Syngenta	todd.barlow@Syngenta.com
10)	SAM COWAN	NRCS/Gage Co NE	sam.cowan@ne.usda.gov
11)	Tim Creger	NDA - Lincoln	tim.creger@nebraska.gov
12)	PAT O'BRIEN	NE Assn of Resource Dist.	pobrien@nrdnet.org
13)	Damon Frizzell	EPA R7	frizzell.damon@epa.gov
14)	Pete Davis	EPA R7	davis.peter@epa.gov
15)	Tom Stiles	KDHE	tstiles@kdheks.gov
16)	Marty Link	NDEQ	marty.link@nebraska.gov
17)	Jaime Gaggero	KDHE	jgaggero@kdheks.gov
18)	Steve Schaff	EPA	Schaff.steve@epa.gov
19)	Don Jones	DOC-KDA	don.jones@kda.ks.gov

Nebraska 303d listings and TMDL development in the Big & Little Blue Basins

Assessment categories for waterbodies in the 2012 Integrated Report:

Category 1 – Waterbodies where all designated uses are met.

Category 2 – Waterbodies where some of the designated uses are met but there is insufficient information to determine if all uses are being met.

Category 3 – Waterbodies where there is insufficient data to determine if any beneficial uses are being met. *2012 Water Quality Integrated Report*

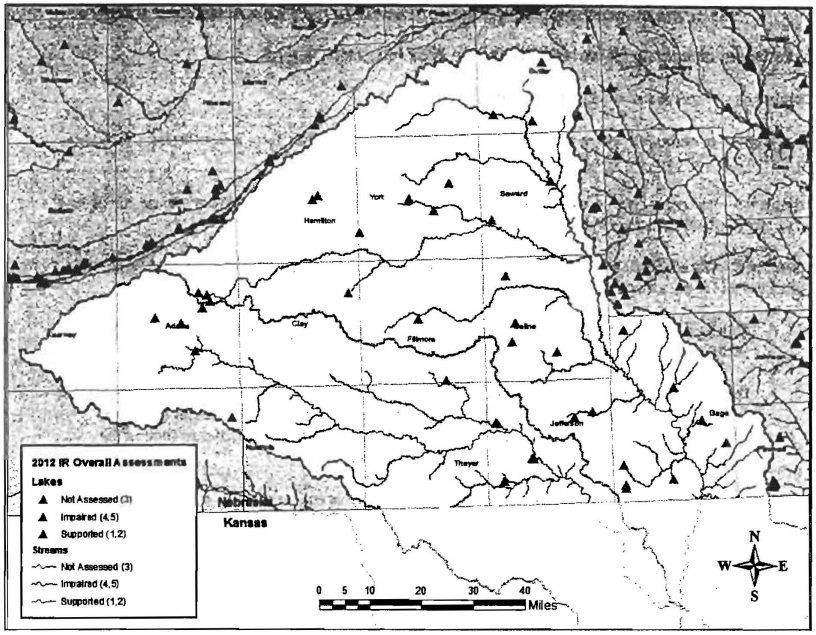
Category 4 – Waterbody is impaired, but a TMDL is not needed. Sub-categories 4A, 4B, 4C and 4R outline the rationale for the waters not needing a TMDL:

> ***Category 4A*** – Waterbody assessment indicates the waterbody is impaired, but all of the required TMDLs have been completed.
>
> ***Category 4B*** – Waterbody is impaired, but "other pollution control requirements" are expected to address the water quality impairment(s) within a reasonable period of time. Other pollution control requirements include but are not limited to, National Pollutant Discharge Elimination System (NPDES) permits and best management practices.
>
> ***Category 4C*** – Waterbody is impaired but the impairment is not caused by a pollutant. This category also includes waters where natural causes/sources have been determined to be the cause of the impairment. In general, natural causes/sources shall refer to those pollutants that originate from landscape geology and climactic conditions. It should be noted; this general description does not exclude parameters and can be utilized when appropriate justification is provided.
>
> ***Category 4R*** – Waterbody data exceeds the impairment threshold, however a TMDL may not be needed. The category will only be used for nutrient assessments in new or renovated lakes and reservoirs. Newly filled reservoirs usually go through a period of trophic instability – a trophic upsurge followed by the trophic decline (Holdren, et. al. 2001). Erroneous or non representative water quality assessments are likely to occur during this period. To account for this, all new or renovated reservoirs will be placed in this category for a period not to exceed eight years following the fill or re-fill process. After the eighth year monitoring data will be assessed and the waterbody will be appropriately placed into category 1, 2, or 5.

Category 5 – Waterbodies where one or more beneficial uses are determined to be impaired by one or more pollutants and all of the TMDLs have not been developed. ***Category 5 waters constitute the Section 303(d) list subject to EPA approval/disapproval.***

303d Listing: 2012 Integrated Report Assessment Statuses

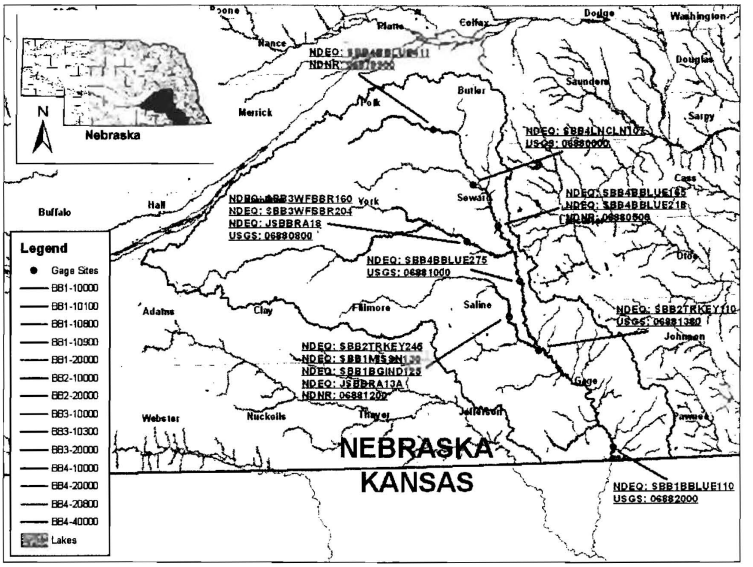
Basin	Category								Basin Total
	1	2	3	4A	4B	4C	4R	5	
Big Blue Streams	1	15	31	0	0	0	NA	16	63
Big Blue Lakes	0	6	6	1	0	0	0	18	31
Little Blue Streams	0	5	24	0	0	0	NA	9	38
Little Blue Lakes	0	3	1	0	0	0	1	8	13



TMDL Development: Blue River Basin Waterbodies with Established/Approved TMDLs

Basin	Stream/Lake	Impairment	Impairment	Impairment
BB	Big Indian Lake	Sedimentation	Phosphorus	
	BB1-10000	E. coli	Fecal Coliform	
	BB1-20000	E. coli	Fecal Coliform	
	BB3-10000	E. coli	Fecal Coliform	
LB	LB1-10000	E. coli (Phase II)	Fecal Coliform	Atrazine
	LB1-10200	E. coli		
	LB2-10000	E. coli (Phase II)	Fecal Coliform	Atrazine
	LB2-20000	E. coli	Atrazine	
	LB2-10100	E. coli	Atrazine	
	LB2-30000	E. coli		

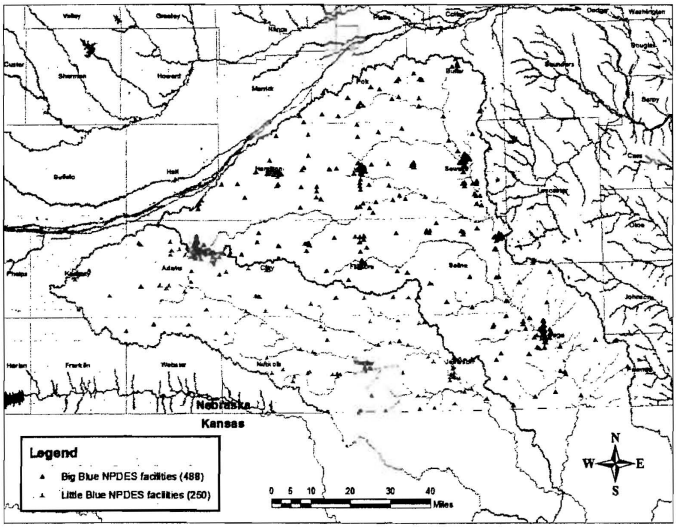
NDEQ is in the process of developing TMDLs in the Big Blue Basin for ten stream segments impaired by E. coli, three of which are Phase II TMDLs from 2005, and thirteen stream segments impaired by Atrazine. See the map and tables below.



Impaired Segment	Waterbody Name	2007 Seasonal Geometric Mean (#/100ml)	E.Coli Above WQS (#/100ml)
BB1-10000	Big Blue River	268	142
BB1-10100	Mission Creek	211	85
BB1-10800	Big Indian Creek	148	22
BB1-20000	Big Blue River	1414	1288
BB2-10000	Turkey Creek	1033	907
BB2-20000	Turkey Creek	1079	953
BB3-10000	West Fork Big Blue River	1699	1573
BB3-20000	West Fork Big Blue River	2019	1893
BB4-10000	Big Blue River	776	650
BB4-20000	Big Blue River	782	656

Segment	Beneficial Use Governing Standard	Atrazine Applicable Standard (µg/l)	Number of Samples	Number of Samples > WQS	# Allowed
BB1-10000	Aquatic Life	12	73	27	11
BB1-10100	Aquatic Life	12	8	3	2
BB1-10800	Aquatic Life	12	47	18	7
BB1-10900	Aquatic Life	12	26	10	5
BB1-20000	Aquatic Life	12	43	14	7
BB2-10000	Aquatic Life	12	53	16	8
BB2-20000	Aquatic Life	12	34	17	6
BB3-10000	Aquatic Life	12	59	18	9
BB3-10300	Aquatic Life	12	26	9	5
BB3-20000	Aquatic Life	12	8	4	2
BB4-10000	Aquatic Life	12	8	3	2
BB4-20800	Aquatic Life	12	47	12	7
BB4-40000	Aquatic Life	12	47	27	7

Inventory of NPDES facilities discharging into the Big & Little Blue Basins above Tuttle Creek



2012 303(d) List of All Impaired/Potentially Impaired Waters
Kansas Lower Republican Basin

10270205
Lower Big Blue

Cat.	Stream/Lake	Impaired Use	Impairment	Station	Counties	Body Type	Priority	Comment
5	Big Blue River Near Oketo	Aquatic Life	Biology	SC233	MS	Watershed	Low	
5	Black Vermillion River Near Frankfort	Aquatic Life	Biology	SC505	MS,NM	Watershed	Low	SB128
5	Big Blue River Near Blue Rapids	Aquatic Life	Copper	SC240	MS	Watershed	Low	
5	Big Blue River Near Oketo	Aquatic Life	Copper	SC233	MS	Watershed	Low	
5	Black Vermillion River Near Frankfort	Aquatic Life	Copper	SC505	MS,NM	Watershed	Low	Recent Trends indicate concern
5	Big Blue River Near Blue Rapids	Aquatic Life	Lead	SC240	MS	Watershed	Low	
5	Big Blue River Near Oketo	Aquatic Life	Lead	SC233	MS	Watershed	Low	
5	Fancy Creek Near Randolph	Water Supply	Sulfate	SC502	WS, CY, RL	Watershed	Low	
5	Horseshoe Creek Near Marysville	Water Supply	Sulfate	SC717	MR, CS	Watershed	Low	
5	Big Blue River Near Blue Rapids	Aquatic Life	Total Phosphorus	SC240	MS	Watershed	Low	median value: 0.63 > median flag value:0.201
5	Big Blue River Near Oketo	Aquatic Life	Total Phosphorus	SC233	MS	Watershed	Low	median value: 0.8675 > median flag value:0.201
5	Black Vermillion River Near Frankfort	Aquatic Life	Total Phosphorus	SC505	MS,NM	Watershed	Low	median value: 0.259 > median flag value:0.201
5	Horseshoe Creek Near Marysville	Aquatic Life	Total Phosphorus	SC717	MR, CS	Watershed	Low	median value: 0.287 > median flag value:0.201
5	North Elm Creek Near Oketo	Aquatic Life	Total Phosphorus	SC731	MS, NM	Watershed	Low	median value: 0.2195 > median flag value:0.201

2012 303(d) List of All Impaired/Potentially Impaired Waters
Kansas Lower Republican Basin

10270205
Lower Big Blue

Cat.	Stream/Lake	Impaired Use	Impairment	Station	Counties	Body Type	Priority	Comment
5	Robidoux Creek near Frankfort	Aquatic Life	Total Phosphorus	SC754	MS	Watershed	Low	median value: 0.257 > median flag value:0.201
5	Big Blue River Near Blue Rapids	Aquatic Life	Total Suspended Solids	SC240	MS	Watershed	Low	median value: 89 > median flag value:50
5	Big Blue River Near Oketo	Aquatic Life	Total Suspended Solids	SC233	MS	Watershed	Low	median value: 106 > median flag value:50
5	Black Vermillion River Near Frankfort	Aquatic Life	Total Suspended Solids	SC505	MS,NM	Watershed	Low	1990-2011 median ~ 56 mg/l
4a	Tuttle Creek Lake	Aquatic Life	Alachlor	LM021001	MS, RL, PT	Lake	High	TMDL Approved on 1/26/2000
4a	Centralia Lake	Recreation	Aquatic Plants	LM073701	NM	Lake	Medium	TMDL Approved on 1/26/2000
4a	Big Blue River Near Blue Rapids	Aquatic Life	Atrazine	SC240	MS	Watershed	High	TMDL Approved on 8/3/2007
4a	Big Blue River Near Oketo	Aquatic Life	Atrazine	SC233	MS	Watershed	High	TMDL Approved on 8/3/2007
4a	Black Vermillion River Near Frankfort	Aquatic Life	Atrazine	SC505	MS,NM	Watershed	High	TMDL Approved on 8/3/2007
4a	Fancy Creek Near Randolph	Aquatic Life	Atrazine	SC502	WS, CY, RL	Watershed	High	TMDL Approved on 8/3/2007
4a	Horseshoe Creek Near Marysville	Aquatic Life	Atrazine	SC717	MR, CS	Watershed	High	TMDL Approved on 8/3/2007
4a	North Elm Creek Near Oketo	Aquatic Life	Atrazine	SC731	MS, NM	Watershed	High	TMDL Approved on 8/3/2007
4a	Tuttle Creek Lake	Aquatic Life	Atrazine	LM021001	MS, RL, PT	Lake	High	TMDL Approved on 8/3/2007

2012 303(d) List of All Impaired/Potentially Impaired Waters
Kansas Lower Republican Basin

10270205
Lower Big Blue

Cat.	Stream/Lake	Impaired Use	Impairment	Station	Counties	Body Type	Priority	Comment
4a	Big Blue River Near Blue Rapids	Recreation	E. coli	SC240	MS	Watershed	High	old FCB vio TMDL Approved on 1/26/2000
4a	Big Blue River Near Oketo	Recreation	E. coli	SC233	MS	Watershed	High	old FCB vio TMDL Approved on 1/26/2000
4a	Centralia Lake	Aquatic Life	Eutrophication	LM073701	NM	Lake	Medium	TMDL Approved on 1/26/2000
4a	Tuttle Creek Lake	Aquatic Life	Eutrophication	LM021001	MS, RL, PT	Lake	High	TMDL Approved on 1/26/2000
4a	Black Vermillion River Near Frankfort	Recreation	Fecal Coli	SC505	MS,NM	Watershed	High	old FCB vio TMDL Approved on 1/26/2000
4a	Fancy Creek Near Randolph	Recreation	Fecal Coli	SC502	WS, CY, RL	Watershed	Medium	old FCB vio TMDL Approved on 1/26/2000
4a	Horseshoe Creek Near Marysville	Recreation	Fecal Coli	SC717	MR, CS	Watershed	High	old FCB vio TMDL Approved on 1/26/2000
4a	Centralia Lake	Aquatic Life	pH	LM073701	NM	Lake	Medium	TMDL Approved on 1/26/2000
4a	Tuttle Creek Lake	Water Supply	Siltation	LM021001	MS, RL, PT	Lake	High	TMDL Approved on 1/26/2000
3	Centralia Lake	Water Supply	Arsenic	LM073701	NM	Lake		
3	North Fork Black Vermillion River Near Vliets	Aquatic Life	Biology/Sediment	SC128	MS, NM	Watershed		
3	Horseshoe Creek Near Marysville	Aquatic Life	Copper	SC717	MR, CS	Watershed	Low	Pending flow analysis
3	Horseshoe Creek Near Marysville	Aquatic Life	Lead	SC717	MR, CS	Watershed	Low	Pending unstable flow analysis
3	Rocky Ford W.A.	Food Procurement	Mercury	LM020601	RL	Lake		Small sample size
3	Big Blue River Near Blue Rapids	Aquatic Life	pH	SC240	MS	Watershed		

2012 303(d) List of All Impaired/Potentially Impaired Waters
Kansas Lower Republican Basin

10270205
Lower Big Blue

Cat.	Stream/Lake	Impaired Use	Impairment	Station	Counties	Body Type	Priority	Comment
3	Big Blue River Near Oketo	Aquatic Life	pH	SC233	MS	Watershed		

2012 303(d) List of All Impaired/Potentially Impaired Waters
Kansas Lower Republican Basin

10270207
Lower Little Blue

Cat.	Stream/Lake	Impaired Use	Impairment	Station	Counties	Body Type	Priority	Comment
5	Little Blue River Near Hollenberg	Aquatic Life	Biology	SC232	RP, WS	Watershed	Low	
5	Little Blue River Near Hollenberg	Aquatic Life	Copper	SC232	RP, WS	Watershed	Low	
5	Little Blue River Near Waterville	Aquatic Life	Copper	SC741	WS, MS	Watershed	Low	
5	Mill Creek Near Hanover	Aquatic Life	Copper	SC507	RP, WS	Watershed	Low	Recent Trends indicate concern
5	Rose Creek Near Narka	Aquatic Life	Copper	SC712	RP	Watershed	Low	
5	Washington Co. SFL	Aquatic Life	Eutrophication	LM010901	WS	Lake	Low	
5	Little Blue River Near Hollenberg	Aquatic Life	Lead	SC232	RP, WS	Watershed	Low	
5	Little Blue River Near Waterville	Aquatic Life	Lead	SC741	WS, MS	Watershed	Low	
5	Mill Creek Near Hanover	Aquatic Life	Lead	SC507	RP, WS	Watershed	Low	
5	Rose Creek Near Narka	Aquatic Life	Lead	SC712	RP	Watershed	Low	
5	Washington W.A.	Aquatic Life	Lead	LM010941	WS	Lake	Low	
5	Little Blue River Near Hollenberg	Aquatic Life	Total Phosphorus	SC232	RP, WS	Watershed	Low	median value: 0.4295 > median flag value:0.201
5	Little Blue River Near Waterville	Aquatic Life	Total Phosphorus	SC741	WS, MS	Watershed	Low	median value: 0.353 > median flag value:0.201
5	Rose Creek Near Narka	Aquatic Life	Total Phosphorus	SC712	RP	Watershed	Low	median value: 0.407 > median flag value:0.201
5	Little Blue River Near Hollenberg	Aquatic Life	Total Suspended Solids	SC232	RP, WS	Watershed	Low	median value: 60 > median flag value:50

2012 303(d) List of All Impaired/Potentially Impaired Waters
Kansas Lower Republican Basin

10270207
Lower Little Blue

Cat.	Stream/Lake	Impaired Use	Impairment	Station	Counties	Body Type	Priority	Comment
5	Little Blue River Near Waterville	Aquatic Life	Total Suspended Solids	SC741	WS, MS	Watershed	Low	median value: 51 > median flag value:50
5	Mill Creek Near Hanover	Aquatic Life	Total Suspended Solids	SC507	RP, WS	Watershed	Low	median value: 54.5 > median flag value:50
4a	Washington Co. SFL	Recreation	Aquatic Plants	LM010901	WS	Lake	Low	TMDL Approved on 1/26/2000
4a	Little Blue River Near Hollenberg	Aquatic Life	Atrazine	SC232	RP, WS	Watershed	High	TMDL Approved on 8/3/2007
4a	Little Blue River Near Waterville	Aquatic Life	Atrazine	SC741	WS, MS	Watershed	High	TMDL Approved on 8/3/2007
4a	Mill Creek Near Hanover	Aquatic Life	Atrazine	SC507	RP, WS	Watershed	High	TMDL Approved on 8/3/2007
4a	Rose Creek Near Narka	Aquatic Life	Atrazine	SC712	RP	Watershed	High	TMDL Approved on 8/3/2007
4a	Washington Co. SFL	Aquatic Life	Dissolved Oxygen	LM010901	WS	Lake	Low	TMDL Approved on 1/26/2000
4a	Lake Idlewild	Aquatic Life	Eutrophication	LM061201	MS	Lake	Low	TMDL Approved on 1/26/2000
4a	Washington W.A.	Aquatic Life	Eutrophication	LM010941	WS	Lake	Low	TMDL Approved on 1/26/2000
4a	Little Blue River Near Hollenberg	Recreation	Fecal Coli	SC232	RP, WS	Watershed	High	old FCB vio TMDL Approved on 1/26/2000
4a	Little Blue River Near Waterville	Recreation	Fecal Coli	SC741	WS, MS	Watershed	High	old FCB vio TMDL Approved on 1/26/2000
4a	Mill Creek Near Hanover	Recreation	Fecal Coli	SC507	RP, WS	Watershed	High	old FCB vio TMDL Approved on 1/26/2000

2012 303(d) List of All Impaired/Potentially Impaired Waters
Kansas Lower Republican Basin

10270207
Lower Little Blue

Cat.	Stream/Lake	Impaired Use	Impairment	Station	Counties	Body Type	Priority	Comment
4a	Washington W.A.	Water Supply	Siltation	LM010941	WS	Lake	Low	TMDL Approved on 1/26/2000
3	Washington W.A.	Aquatic Life	Dissolved Oxygen	LM010941	WS	Lake		Small sample size