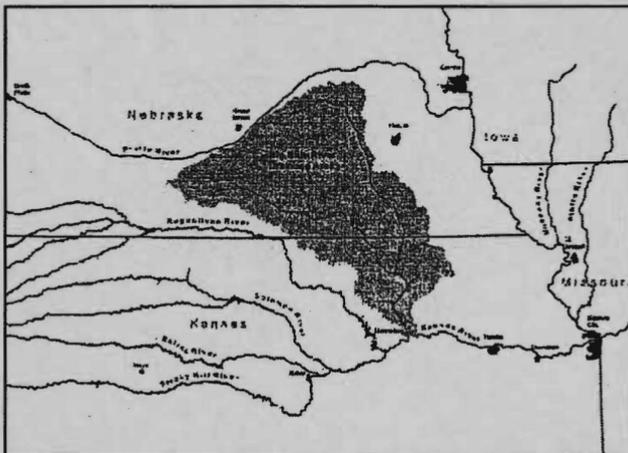


# KANSAS-NEBRASKA BIG BLUE RIVER COMPACT

FORTY FIRST TH ANNUAL REPORT



FISCAL 2014

Beatrice, NE  
May 14, 2014

KANSAS – NEBRASKA BIG BLUE RIVER  
COMPACT ADMINISTRATION

April 24, 2015

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 Forty First Annual Report. The report covers the activities of the Administration of the Compact for the Fiscal Year 2014 while I was still presiding as the Federal Chairman.

Respectfully,



Gary R. Mitchell  
Former Federal Compact Chairman

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Dave Heineman  
Governor

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

March 31, 2014

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

Larry Moore, 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:

Nebraska is scheduled to host the 2014 annual meeting of the Kansas-Nebraska Big Blue River Compact Administration. The meeting is scheduled for 9:30 a.m. on Wednesday, May 14, 2014, at the Lower Big Blue Natural Resources District office located at 805 Dorsey Street in Beatrice, Nebraska.

Please provide any suggested changes or edits to the attached draft proposed meeting agenda by April 16, 2014. The draft proposed meeting agenda is included with this letter for your review and comment.

Sincerely,

Brian P. Dunnigan, P.E.  
Director

Enclosure

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

**KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION  
41<sup>st</sup> ANNUAL MEETING**

**May 14, 2014**

9:30 a.m.

Lower Big Blue Natural Resources District  
805 Dorsey Street  
Beatrice, Nebraska

**AGENDA**

1. Call to order
2. Introductions and Announcements
3. Minutes of the 40<sup>th</sup> 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
    - i. report on options to amend the rules for annual audit
  - b. Engineering
  - c. Water Quality
11. Old Business
12. New Business
13. Committee Membership and Special Assignments
14. Adjourn

**MINUTES OF THE 41st ANNUAL MEETING  
OF THE  
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION**

**Call to Order**

The Forty-First annual meeting of the Kansas-Nebraska Big Blue River Compact Administration was held on May 14, 2014 in the Lower Big Blue Natural Resource District Office in Beatrice Nebraska. The meeting was called to order at 9:35 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
Larry Moore	Nebraska Compact Advisor
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,
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
Melissa Mosier	Nebraska Department of Natural Resources
Craig Romary	Nebraska Department of Agriculture
Katie Tietsort	Topeka Field Office Water Commissioner, Kansas Department of Agriculture, Division of Water Resources
Chris Beightel	Kansas Department of Agriculture, Division of Water Resources
Sharon Schwartz	Kansas State Representative, Kansas Compact Advisor
Dave Clabaugh	Lower Big Blue Natural Resources District General Manager
Mike Onnen	Little Blue Natural Resources District General Manager
John Turnbull	Upper Big Blue Natural Resources District General Manager
Curt Inbody	Nebraska Department of Natural Resources
Bob Lorenz	Little Blue Natural Resource District
Darrel Rains	Upper Big Blue Natural Resources District

**Approval of the Minutes of the 40<sup>th</sup> Annual Meeting**

Compact Chairman Mitchell and Compact Secretary, Bob Lytle, noted that the minutes of the 2013 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 40<sup>th</sup> annual meeting. The minutes of the 40<sup>th</sup> annual meeting were subsequently signed by the Compact Commissioners. Copies of the minutes were distributed to those who needed them. Chairman Mitchell inquired if there were any additional comments. Hearing none, a motion was made

and seconded for the approval of the minutes of the 40<sup>th</sup> annual meeting of the Big Blue River Compact. The motion was passed.

### **Kansas Report**

Chris Beightel, representing Kansas Commissioner David Barfield, gave the Kansas Report. He began the report by indicating that he would discuss only one statewide issue and that other members of the Kansas delegation would provide additional information.

At the 2013 Governor's Conference on the Future of Water in Kansas, Governor Brownback called for there to be an action that would be a 50 Year Vision of the water resources conditions in Kansas, a plan that would balance conservation with economic growth. Water officials and stakeholders were given two main issues to guide this effort. One was the long-term decline of the Ogallala Aquifer, not a new condition but one that had recently been the subject of studies by K-State professor David Stewart who concluded that the Ogallala will be 70% depleted in 50 years and that 40% of the lands irrigated by the aquifer would not support a 400 gallon per minute well. The second was guided toward eastern Kansas and the problems associated with a loss of reservoir storage space due to siltation, and that if nothing is done five of seven major river basins in fifty years will not be able to meet demands in times of drought.

A Water Vision Team was subsequently formed to address this charge lead by officials from the Kansas Department of Agriculture, the Kansas Water Office, and the Kansas Department of Wildlife, Parks and Tourism. A series of 150 meetings with stakeholders have been held across the State. There will be additional public meetings and the Team is working on drafting the 50 Year Vision Report to be presented at the 2014 Governor's Conference to be held in November in Manhattan, Kansas. This 50 Year Water Vision is the biggest state wide undertaking that has been ongoing this past year.

Kansas Advisor, Representative Sharon Schwartz, provided a legislative update. The 2014 Legislative Session was recently completed lasting 79 of the allocated 90 days. One of the shortest sessions she has experienced, partially due to the fact that last year a two-year budget was passed so this year only minor adjustments were debated. There were a few water related bills introduced, but those were for the most part tabled to wait for the completion of the ongoing 50 Year Vision Study discussed by Mr. Beightel. The budget did provide for bonding to begin a project for the dredging of John Redmond Reservoir. Also pending is a proposal to allow for flex accounts on surface water rights annual allocations.

As a State Representative and Chair of the Agriculture Committee, most of the concerns expressed by constituents that she heard about centered on the ongoing drought. In her area of the Big and Little Blue Basins as well as part of the Republican River Basin, producers are beginning to drill wells in the alluvium of those rivers, which in her perspective reduces flows in those stream courses. Some people are switching to pivots instead of flood irrigation in these areas as well. Although there has been some buried pipe as opposed to open canals installed to help with conservation, as well as increased cover crops. She also hears from constituents concerned about the Federal Government intruding on State rights and issues.

### **Topeka Field Office Report**

Katie Tietsort gave the Topeka Field Office Report. She began her report by highlighting the climatic conditions in the Big and Little Blue River Basins. In 2013 the area received between 25 and 40 inches of precipitation, up from 20 to 25 in 2012. So, in 2013 parts of the basin were above and below the departure from normal precipitation. Thus far in 2014 the basin as a whole has seen about 3 inches less rainfall than normal. Temperatures were one to three degrees cooler in 2013 and so far in 2014 temperatures have been four to six degrees cooler. The Standardized Precipitation index (SPI) is showing a trend towards drier in 2014.

Streamflow records at the Big Blue gage at Marysville reflect 29 years, and at the Barnes gage on the Little Blue River, 55 years of data. Streamflow in the early part of 2013 was below median flows. We did see several runoff events in the spring, by July they were diminished, followed by rainfall producing median fall flows, and ending with winter flows again below median. Minimum Desirable Streamflow (MDS) administration on the Big Blue River for junior water rights began on July 25, 2013 and was rescinded on August 23, 2013. Administration of MDS on the Little Blue River began July 19, 2013 thru August 13, 2013. The lowest streamflow at the Marysville gage was 30 cfs and at the Barnes gage the lowest flow was 20 cfs. Additional administration in 2013 occurred in Mill Creek, Chapman Creek, Marais des Cygnes, Cottonwood, Neosho, and Republican Rivers. This administration included the protection of releases from Federal Reservoirs for water supply and quality associated with River Water Assurance Districts and Water Marketing Contracts. Kansas was notified by Nebraska when stateline compact gages fell below the Compact values and what administration was taken to junior water right holders.

The Division initiated civil penalties or enforcement actions on 14 water right owners in the Blue Basins ranging from chronic water use reporting deficiencies to over-pumping their water right quantities.

Limited requests for new development were made in the Blue Basins in 2013. There were 18 new permits issued in the Compact area, nine in the Big Blue for irrigation projects, one stock watering facility, one municipal use permit and one sediment dam. There were six new permits in the Little Blue, five for irrigation and one for industrial use. Two irrigation permits were granted in Mill Creek Basin and one irrigation permit in the Black Vermillion.

The Topeka Field Office is continuing its metering project. All the meter inspections for the Pottawatomie Creek Order are nearly complete, as well as the south half of the eastern third of the state. Orders have been issued to Stranger Creek and the Wakarusa River, tributaries to the Kansas River, and we have announced a major metering effort for the Kansas River, Vermillion Creek and the Delaware River affecting 1000 plus water rights. We are having meetings with water right holders, meter manufacturers and venders to ensure that they have the information needed to comply.

The Lake Level Management Plan for Tuttle Creek Reservoir was approved in the fall of 2013. The proposed plan for 2014 is the same as the 2013. One of the major objectives of the plan is to recruit or promote crappie spawning. This intent is often difficult to control due to large inflow events, flood pool storage of water for endangered and threatened species in summer months, and late season releases for navigation on the Missouri River. However, State and Federal Agencies have been doing the best coordinating they can to help achieve this objective. And as reported upon the past few years, the proposed hydroelectric project at Tuttle Creek Reservoir had its preliminary permit closed by the Federal Energy Regulatory Commission on September 8, 2013 and was a final action. No new permitting has been initiated.

## **Nebraska Report**

Commissioner Dunnigan began 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. Last year's continued dry conditions placed stress on many areas of state of Nebraska. That stress resulted in the Department having to again carry out significant water administration across the state. The water resources in the Blue River Basins were no exception to these drought-induced stresses. In total, the Department issued over 2,400 closing notices throughout the Blue River Basins to both storage and natural flow appropriations.

Integrated management planning continues to be a major focus of the Department. To date, the Department has completed integrated management plans with 12 of 23 natural resource districts in the state, with an additional six districts currently working on voluntary integrated management plans.

Many of these voluntary integrated management plans are aimed at building a solid scientific foundation and an increased understanding of expected future water needs so that future plans can be targeted in ensuring protection of existing water uses while providing flexibility and management actions aimed at meeting future demands.

The Department is also excited to have launched its new INSIGHT website. This new interactive website allows for users of varying backgrounds to acquire information on water budgets and how water is utilized, including water supplies, water demands, and long-term uses of water supplies. The information available through INSIGHT provides a solid foundation for understanding the challenges and opportunities that exist in working toward balancing water supplies and water demands in the various basins across the state.

The Nebraska Legislature finished up the 2014 session by passing a new water funding process. LB 1098 was passed by the Legislature and signed into law on April 17, 2014. This new set of laws defines governance for administering the new Water Sustainability Fund which was created in LB 906 with an initial appropriation of \$21 million dollars in FY 2015 and intent language for continued annual appropriations of \$11 million dollars. This fund represents a significant increase in funding for water projects aimed at addressing water quality and water quantity issues across the state. LB 1098 also provides for additional basin-wide planning processes in certain areas of the state. These basin wide planning processes encourage greater stakeholder participation into the integrated management planning process and increased feedback loops for assessing the effectiveness of the integrated management plans.

Nebraska Compact Advisor, Larry Moore, indicated that in his area of the state near Ulysses, they had recently received about five to six inches of rain all in about six hours. It was amazing how little erosion occurred from that much rain because of conservation tillage. Mr. Moore indicated that in the Upper Big Blue NRD they are expecting about 5000 new meter to be installed in the next 12 months. The District has approximately 12,500 irrigation wells and they are about half way done with meter installations. The current generation of farmers is better at managing the state's water resources than that of the past and he believes that is a good thing.

## **Nebraska Administrative Report**

Jeremy Gehle gave an update on the administrative activities in Nebraska. He noted that 2013 was a slight improvement from 2012 in regards to target flows being met. The Big and Little Blue Basins received near normal precipitation in the spring, but below in the summer. Demand for irrigation water was high and supplies were low, and as a result surface water administration was extensive.

#### Little Blue Administration

The Little Blue's headwaters are near Minden and it exits the state south of Fairbury. The basin has 2700 square miles in 10 counties and it has 249 irrigation permits and 128 storage rights. On July 7<sup>th</sup> the flow at the Hollenberg gage fell below the compact target and 116 junior irrigation rights and 128 storage rights in the basin were closed. One Hundred thirty-three senior irrigators were allowed to continue operating but were regulated closely. Rainfall in the basin brought flows above the target on July 25<sup>th</sup> allowing 24 irrigators junior to the compact but prior to November 1, 1973, to be opened on July 26<sup>th</sup>. By July 30<sup>th</sup> the flow exceeded the compact flow enough and the basin was open to all junior irrigators and storage rights. On August 29<sup>th</sup> all junior rights were closed but then opened on September 16<sup>th</sup>. Streamflow fell below the target value again at the Hollenberg gage and on September 27<sup>th</sup> all junior rights were closed through September, the end of the compact target flow period.

#### Big Blue Administration

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 828 surface irrigation rights and 348 storage permits. On July 11<sup>th</sup> closing notices were issued in the Basin to 391 junior irrigators and 348 storage rights, 437 senior appropriators were closely monitored. The flow at the Barneston gage exceeded the target flow on July 30<sup>th</sup> and junior irrigation rights and storage rights were opened. The flows however fell again below the target on August 26<sup>th</sup> and junior rights were again closed. The target flow was exceeded for a short period of time between September 1<sup>st</sup> through the 6<sup>th</sup>, and 197 irrigators prior to November 1<sup>st</sup>, 1978, were allowed to operate. On September 13<sup>th</sup> the flows again exceeded the compact target and all junior rights were opened through the remainder of the compact period. Localized shortages on the upper end of the Big Blue River started on August 21<sup>st</sup> and ran through September 4<sup>th</sup>.

Prior to last weekend's rain, flows were hovering around 50% of the long-term median. The current U.S. Seasonal Drought Outlook indicates that the drought designation will likely be removed by the end of the April 17<sup>th</sup> to July 31<sup>st</sup> time period. The U.S. Drought Monitor designates the majority of the basin as in "Moderate Drought".

#### **Lower Big Blue NRD Report**

Dave Clabaugh, District General Manager, distributed copies of the latest Lower Big Blue NRD Newsletter and summarized it. The Wymore project that he had reported on the last couple of years has been completed. Construction on this 5 million dollar project started last year and now there are 230 customers being served water. When the project started about 60 customers were anticipated, but now up to 230. The project has about 150 miles of pipeline and fortunately there has been only one pipeline break so far. The District is pleased to have this project online. Another project that has been mentioned is the Lower Turkey Creek Flood Control Project that consists of seven flood control dams. The 5<sup>th</sup> dam was completed last year, and the sixth dam has had construction bids complete and the final dam site has land rights negotiated with construction hopefully to begin this fall. This watershed effort is in northern Saline County and is one of the last areas in the district without a series of flood control dams. There are about 250 total reservoir-size dams in the district.

The NRD Board looked at its Groundwater Management Plan and decided to make some revisions. Last November a 180 day moratorium was placed on new irrigation wells to allow an opportunity to revise the management plan. From 1997 to 2010 the district average about 30 wells per year, the past three years the average was 90 well permits and last year there was 155 permits issued. New rules and regulations have been implemented and some of them include: A set back of irrigation wells from domestic wells of 500 feet, a test hole requirement, a ranking system for evaluating new permit applications, a certification of irrigated acres in the district, a limit on groundwater transfers, no more wells in a series to achieve practical irrigation, and additional management criteria have been put in place.

The District measures 95 irrigation wells throughout the area. The groundwater levels measurements were about a wash from the spring of 2013 to the spring of 2104, with an average of 0.08 decline so really no change. There are readings that are made in the fall as well which shows the amount of recovery or recharge to the well levels. The District does require meters on all new wells, with a cost share to assist producers with the purchase of their meters. The District continues to update its groundwater monitoring system with some new dedicated monitoring wells installed. The District is still working with the ET gages and soil sensors to help with determining efficient water usage.

Dave noted the map showing the location of the public recreation areas that the Lower Big Blue NRD manages and the Free Family Fishing Day at the Willard Meyer Recreation Area on May 17<sup>th</sup>, 2014.

Dave was asked about the meter cost sharing. He explained that the money is from the District and generated by fertilizer sales. There is a maximum of \$500 per well, and meter installations have gone from about \$800 to \$1500.

### **Upper Big Blue NRD Report**

John Turnbull, District General Manager, distributed copies of his report and summarized it. The District, which does require a permit to be issued before a well can be drilled, issued 287 permits in 2013. Two hundred eighteen were new and 69 were replacement wells for older wells with casing problems. At the end of 2013, there were 12,009 irrigation wells registered in the District.

The average groundwater change in the District from the spring of 2013 to the spring of 2014 was a decline of 2.10 feet. This was in addition to a 4.4 foot drop last year (2012 to 2013), reflective of dry conditions the past two years. The year 2013 was the sixth year that reporting on groundwater withdrawals has been required in the Upper Big Blue NRD. Wells not metered are required to provide an estimate based on pumping time and rate. About half the wells are metered now, with the average water withdraw in 2103 being 10.0 inches per acre. There were 1,202,016 groundwater irrigated certified acres in the District on January 1, 2014. All wells district wide are to be metered by January 1, 2016. John noted the map on the back of his report showing the groundwater changes in the District.

One of the main revisions to the Districts Regulations was to require water meters on all high capacity wells by January 1, 2016. The District did have a cost share program but that was discontinued last year at the start of the new fiscal year. They have about 6,000 meters installed and 6,000 wells yet to be metered. Allocations are set at 30 inches for three years, followed by 45 over five years. Allocation will go into effect if the groundwater drops an additional .93 feet below the spring 2014 levels. A chart at the end of the report was also noted showing when groundwater allocations are triggered because of groundwater declines.

On April 17, 2014 the District Directors declared an immediate 180-day stay on well drilling in 1,064 square miles of the NRD. This was done because in these parts of the District the aquifers are less productive or depleted and irrigation may not be reasonable. There are some communities in the stay area with diminished well capacities causing concern about health and safety. Additional revisions to District rules and regulations are being drafted to address this concern.

The NRD is divided into 12 management zones for water quality. Nitrate is the primary water quality management concern. There are three phases of management. Three zones are currently designated as Phase II areas, and one (Zone 5) was elevated to Phase III. Phase II management 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. An added requirement in 2012 is the operator must schedule irrigation using soil moisture sensors in at least on field. Phase III management requires the additional management practice of including a nitrification inhibitor when anhydrous ammonia fertilizer is applied from November 1<sup>st</sup> through February 28<sup>th</sup>. The rest of the District is under Phase I which prohibits application of anhydrous until November 1 and nitrogen fertilizers until March 1, while application of dry and liquid nitrogen fertilizers must wait until March 1. The District is working with the City of Hastings and the Little Blue NRD on nitrate concerns in their Wellhead Protection Area.

CROP-TIP is an irrigation demonstration field sponsored by the District and Cornerstone bank near York, Nebraska where ways to decrease groundwater withdrawals and nitrate leaching by irrigation and fertilizer scheduling are exhibited. In 2007, a subsurface drip irrigation system was installed on half of the 20 acre demonstration field. The benefits of irrigation scheduling and the use of more environmentally friendly methods of fertilizer application are demonstrated. In 2013 corn was grown.

The Nebraska Agricultural Water Management Demonstration Network is another program to encourage producers to improve irrigation scheduling by using ET gages and watermark sensors to determine crop water needs. This program began in the Upper Big Blue NRD in 2005 with a collaborative effort with the University of Nebraska Extension and 18 collaborators. Now it is being implemented in several NRDs and by over 1000 producers. This equipment is sold by the District at a reduced cost to encourage their use. Data collected from these practices is 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 2012 and 2013 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 \$210,468 came from the Nebraska Soil and Water Conservation Program (\$119,244) and local NRD property tax revenue (\$91,224). The District is also assisting communities to develop Wellhead Protection Area Plans. Twenty-six communities have approved WHPA plans.

The Upper Big Blue NRD is the lead agency for the Blue Basin groundwater modeling effort to identify the hydraulic connection between the aquifer and the Blue River system. Currently we are working on revisions to finalize a fully transient sub-regional model in a portion of Seward County. The model is expected to be completed this June. New model runs will be made and compared with the first model completed a few years ago for similar output and if comparable the new model area will be expanded to include the entire basin.

For more information about all the Upper Big Blue NRD programs go to: [www.upperbigblue.org](http://www.upperbigblue.org).

Chairman Mitchell wondered if they had seen a decline in water quality associated with conservation tillage or no till as many farmers will load fertilizer on top with little or no incorporation. The use of an inhibitor and the required water quality management practices in Phase II and III have kept that from being a correlation with conservation and no till practices in Mr. Turnbull's and Mr. Moore's opinion.

### **Little Blue NRD Report**

Mike Onnen distributed the Little Blue NRD Report and summarized portions of it. Mr. Onnen noted that his report is similar to the other two districts as NRDs are pretty uniform in their practices. The Districts' 25-year basin wide water quality effort kicked off by taking deep core soil samples to evaluate if our management efforts have been helpful in reducing nitrate loading. With the assistance of an engineering firm from Lincoln, 881 shallow-soil samples, 329 deep-soil samples and 7 groundwater samples have been collected. Funding was provided by grants from 319 water quality funds from DEQ and the NE Environmental Trust. Along with this effort, the District has installed lysimeters at a depth of about six feet in four locations to track movement of nitrates. These efforts are located in existing water quality areas and should be helpful if the District decides to do an integrated management plan.

The District continues its' efforts to eliminate invasive plant species like phragmites, salt cedar and encroaching willow, while clearing log jams and undercutting trees along the banks in an effort to increase flows in the Little Blue River. They don't have many phragmites or salt cedars, but there is a problem with willows growing in sand bars. They are working with Twin Valley Weed Management and have received an environmental trust grant for \$277,146. Along with this effort the District has initiated stream bank stabilization efforts. Their first project was just completed a little west of Davenport.

Last year we reported on a large proposed dam and reservoir project, the Davenport Dam site. The District conducted a feasibility study, and although it was found to be a viable site, further planning has been suspended because of significant opposition, project costs and extensive permitting requirements.

The spring 2014 groundwater level measurements were made on 334 wells. The average decline was 1.0 feet from the 2013 readings. Overall the water levels are approximately 10 feet below that of pre-development times. Mike noted the map in his report that shows the wells that have reached their historic low point. Although triggers for allocating water have not been hit, the Board is re-evaluating the formula for allocation and may make changes next year. The trend line for decline district wide is similar to what Mr. Turnbull showed for the Upper Big Blue NRD. The average irrigation application for the 2013 crop year was 9.8 inches, also similar to the Upper Big Blue. This data is volunteered, the District is not certified in acres or metered, however that leads to our new rules and regulations.

The District adopted new rules and regulations on groundwater management. They took effect last Monday, May the 12<sup>th</sup>. We also had a temporary stay on new wells until the regulations were adopted. The main highlights are below as discussed by Mr. Onnen:

- Flow meters are required on all high capacity wells prior to March 31, 2017. The District has about 6,500 wells with about 2,500 already metered.
- All high capacity water users must report their water use beginning with the 2014 crop year.
- All irrigated acres will be certified by April 2015.

- All operators must be certified by April 1, 2018.
- Any new wells to be placed in "Very high risk areas" of the hydrogeologic study must prove the well capacity and that it will not impair nearby wells.
- All new high capacity wells must be at least 500 feet from any domestic wells.
- A permanent stay has been put on areas with smaller groundwater supplies.

On groundwater quality, the District took 2,647 samples last year and will do the same in 2014. About 40% of the samples analyzed were provided by producers. The average nitrate level appears to be around 8.0 ppm in many areas, and the District is considering new rules and regulations to protect the good quality water as we are seeing the trend line rising. Mr. Onnen highlighted the water quality map found in his written report.

It has been reported at past meetings about the District working with the Corps of Engineers and the USDA Meat and Animal Research Center near Clay Center, NE on a groundwater remediation project. Twenty-two wells have been completed and are pumping approximately 3,600 gpm of contaminated groundwater that is being treated and then discharged into a tributary to Big Sandy Creek. Along the creek, nine grade stabilization structures have been installed to enhance groundwater recharge. Water not diverted or recharged ends up in a 256 acre reservoir near the edge of the research property. This has provided excellent wetland habitat for wildlife and has been a real win-win for everyone.

Mr. Beightel wondered how an applicant for a new well would demonstrate non-interference or impairment with nearby wells in "high risk areas". Mr. Onnen explained that they have not had this happen yet because it was just passed, but that the applicant would have to take the capital risk and complete the well and have pump tests conducted to prove it. If impairment is found the well would be decommissioned or limited to domestic use. They did recently deny a transfer of water for similar reasons. Chairman Mitchell asked Commissioner Dunnigan if Nebraska was considering conducting something similar to the Kansas 50 Year Water Vision? Jim Schneider explained that not necessarily per se, but that the integrated management statutes of 2004 were a product of similar thinking in terms of a long range water supply and quality planning approach. Mr. Beightel asked for information on a Nebraska Water Sustainability Task Force. Mr. Dunnigan explained that it was a task force established by the Legislature last year to give recommendations this session. The group met 5 months and what came out of that was LB 1098 as mentioned in his report.

#### **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 sites are budgeted for eight visits per year, but this past year 14 discharge measurements were taken at the Barneston gage and 13 at the Hollenberg gage. The USGS often likes to have a few extra measurements to establish the rating curves that are used to convert stage values to corresponding discharge values and best quantify the flow conditions accurately.

The 2013 Water Year will be the last Annual Data Report published. The first report was published in 1962, but all the data is easily assessable on the USGS Website.

The annual mean discharge at the Big Blue River at Barneston for the 2013 water year was 407 cubic feet per second (cfs) which was about 20% higher than the previous 2012 water year discharge of 327 cfs and about half the historical mean discharge of 835 cfs for 81 years of record. The minimum flow

was 33 cfs on August 30, 2013 and the maximum was 10,900 cfs on May 31, 2013. The 2013 annual mean discharged ranked as the 22<sup>nd</sup> lowest in 81 years of record

The annual mean discharge at the Little Blue River at Hollenberg for the 2013 water year was 207 cfs which was 1.1 times higher than the 2012 water year discharge of 184 cfs and 2.3 times less than the new historical mean of 482 cfs for 39 years of record. The maximum daily discharge was 4,710 cfs on May 30, 2013 and the minimum was 38 cfs on July 18, 2013. All 39 years of record at this gage are from the exact same location. The 2013 Annual Mean Discharge ranked as the fifth lowest on record.

The USGS was able to install a new gaging house and station at the Barneston location this past year because the old bridge over the Big Blue River on Highway 8 had finally been replaced. This Fiscal Year the Nebraska USGS was given a bump in funding from Congress for the National Streamflow Information Program and was therefore able to replace the gage that was at the Westport Big Blue River site at Dorchester. In response to Mr. Beightel's inquiry, all the years of USGS data is historically archived for all time and paper copies are being stored in salt mines in Kansas City.

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 and corrections later. He indicated that he intends to have the Annual Report from today's 41<sup>th</sup> 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 strong with the balance on hand as of May 14, 2014, being \$21,189.15 and the estimated balance at the end of the Fiscal Year 2013 to be \$20,030.15. He then summarized the budget analysis table by indicating the column highlighted in yellow is what is proposed for the next fiscal year (2015) with increases in printing costs and \$1,600 for the next two years of audits. The far right column is what is proposed for Fiscal Year 2015-2016 budget with an estimated end of year balance of \$15,280.15. This includes a small increase in the stateline gaging stations. It was recommended that the State's assessments remain at \$8,000 per State. The Legal Committee will present information about changing the compact requirement of an annual audit to a less expensive alternative, but we are currently budgeting for an audit. Mr. Schneider pointed out in last year's annual report the other options to an audit. Mr. Lambrecht noted that the stream gages should be less than projected for 2014 and 2015 so the numbers should be stronger. A motion was made and seconded that the proposed Budget for the fiscal year 2015 be approved. The Budget was approved by the Administration.

#### **Legal Committee Report**

LeRoy Sievers noted in last year's annual report that the Legal Committee was given the assignment of modifying the Compact Rules to allow for a compilation or a review instead of an audit and distributed copies of proposed language to allow this. Mr. Sievers language proposals were provided to the Legal Committee Representative for Kansas, Matt Spurgin but an opinion on them was not received. Mr. Lytle subsequently shared the language changes with appropriate Kansas representatives. Mr. Beightel noted that Matt Spurgin is no longer with the Agency and will be replaced on the Committee. Chairman Mitchell indicated that the two states should decide which option to go forward with now that Mr. Sievers has found no issue with modifying the rules of the compact. Commissioner Dunnigan and Mr. Beightel on behalf of Kansas both agreed to adopt a Review to replace the Audit requirement. Mr. Sievers stated that the Administration needs to adopt option B to change the rules. Option B was so approved and adopted.

### **Engineering Committee Report**

Jeremy Gehle, Engineering Committee Chairperson, distributed the Engineering Committee Report. He indicated that the Committee was not given any special assignments and that much of the data in the report 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 2013, both rivers fell below the compact targets minimum mean daily flow as detailed earlier. The mean daily flow on the Little Blue River at the Hollenberg gage was below the compact target minimum mean daily flow for 31 days. The mean flow on the Big Blue at Barneston gage fell below the compact target for a total of 32 days. 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. Exhibit D of the Report indicates that a new well was completed in the regulatory reach of the Big Blue River.

### **Water Quality Committee**

Marty Link with the Nebraska Department of Water Quality presented the Water Quality Committee Report, which was an update of what the Committee discussed at last year's Water Quality Committee Meeting and presented to the Administration last year. The Committee did not meet this year. The first item of the update is a listing of the approved Nebraska 303(d) list, impairments requiring a total maximum daily load standard in the Big and Little Blue Basins, and a map of the area showing the locations of those impairments. The same information is part of the update for Kansas. The update also has a report of ongoing activities in the basins by the Nebraska Department of Agriculture's Pesticide Program.

### **Old Business**

There was no old business to be discussed.

### **New Business**

Mr. Beightel announced that next year's annual meeting of the Compact Administration will be held on May 13, 2015 and will be held in the new offices of the Kansas Department of Agriculture, 1320 Research Park Drive, Manhattan, Kansas.

Committee Membership and Special Assignments

Committee appointments were made as follows:

Budget Committee

Jim Schneider NE Chair  
Bob Lytle KS Member

Water Quality Committee

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

Legal Committee

LeRoy Sievers NE Chair  
Robert Large KS Member

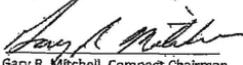
Engineering Committee

Jeremy Gehle NE Chair  
Bob Lytle KS Member  
Katie Tietzort KS Member

There were no special assignments made.

Adjournment

At 11:45 am Chairman Gary Mitchell declared the Forty First Annual Meeting of the Big Blue River Compact Administration adjourned.



Gary R. Mitchell, Compact Chairman

for   
David W. Barfield, Kansas Commissioner



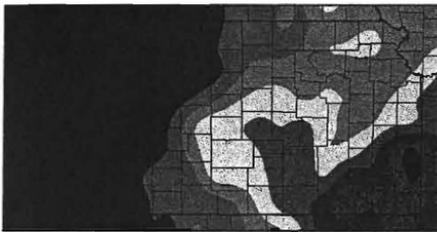
Brian P. Dunningan, Nebraska Commissioner  
James C. Schneider,

**1Kansas- Nebraska Big Blue River Compact Meeting 2014**  
**Report by Kansas Department of Agriculture- Division of Water Resources**  
**Topeka Field Office- Katherine A. Tietsort**  
**May 14, 2014**

**Climatic Conditions- Precipitation & Temperatures**

The High Plains Regional Climate Center reported between 25 and 40 inches of precipitation in calendar year 2013 across the entire Big and Little Blue River basin area in Kansas, including their tributary basins, the Mill Creek and Black Vermillion River and reported ½ inch to 2 ½ inches so far this year. This is up from 20 to 25 inches in 2012. The average annual precipitation is normally 30 to 35 inches. Therefore, the Basin ranged in 2013 from above to below in departure from normal precipitation, but so far in 2013, the entire basin has seen about 3 inches less than normal precipitation. Temperatures for the calendar year 2013 were generally 1 to 3 degrees cooler in this area. Temperatures have been 4 to 6 degrees cooler throughout the basin so far this year.

Precipitation (in)  
1/1/2013 – 12/31/2013



Generated 1/11/2014 at HPRCC using provisional data.

Regional Climate Centers

Departure from Normal Precipitation (in)  
1/1/2013 – 12/31/2013

Precipitation (in)  
1/1/2014 – 3/31/2014



Generated 4/11/2014 at HPRCC using provisional data.

Regional Climate Centers

Departure from Normal Precipitation (in)  
1/1/2014 – 3/31/2014



Generated 1/11/2014 at HPRCC using provisional data.

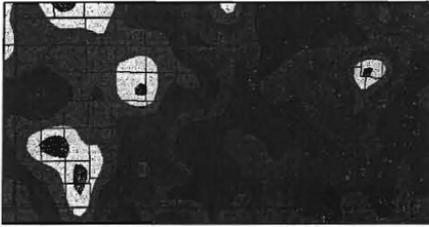
Regional Climate Centers



Generated 4/11/2014 at HPRCC using provisional data.

Regional Climate Centers

Departure from Normal Temperature (F)  
1/1/2013 – 12/31/2013



Generated 1/11/2014 at HPRCC using provisional data.

Regional Climate Centers

12-Month SPI  
1/1/2013 – 12/31/2013



Generated 1/11/2014 at HPRCC using provisional data.

Regional Climate Centers

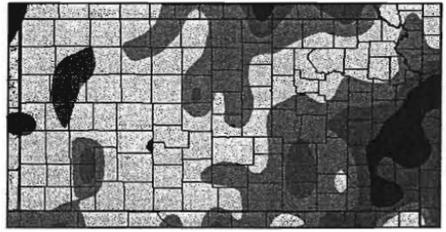
Departure from Normal Temperature (F)  
1/1/2014 – 3/31/2014



Generated 4/11/2014 at HPRCC using provisional data.

Regional Climate Centers

3-Month SPI  
1/1/2014 – 3/31/2014



Generated 1/11/2014 at HPRCC using provisional data.

Regional Climate Centers

Generated 4/11/2014 at HPRCC using provisional data.

Regional Climate Centers

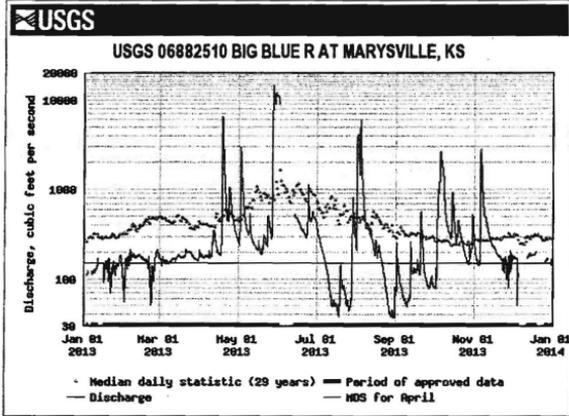
The Standardized Precipitation Index (SPI) (like the Palmer Drought Index (PDI) but considers only precipitation and not other factors) showed greens for 2013 indicating a wetter trend, which was experienced here as compared to conditions in 2012. The SPI is showing a trend towards dry again so far in 2014.

### Streamflow

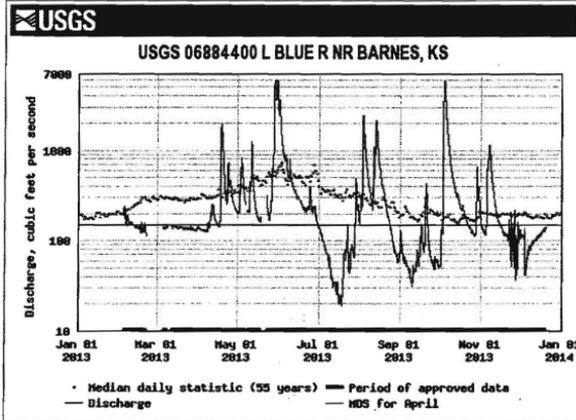
Statistics reflect 29 years of data at Marysville (Big Blue) and 55 years of data at Barnes (Little Blue). While the Streamflow in the early part of 2013 was below median flows, several runoff events occurred through the spring. In July, streamflow diminished and while we saw some rainfall events generate additional flow in the fall, flows were below median again by winter. Streamflow values fell below Minimum Desirable Streamflow (MDS) criteria and MDS administration of junior rights was initiated on the Big Blue River to the Marysville gage effective July 25, 2013. These orders were rescinded August 13, 2013. MDS administration of the Little Blue River to the Barnes gage occurred effective July 19, 2013 through to August 13, 2013. Low Streamflow events occurred on the Little Blue, which bottomed out near 20 cfs and the Big Blue River flow got as low as about 30 cfs.

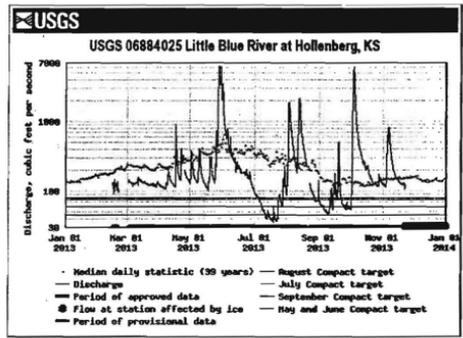
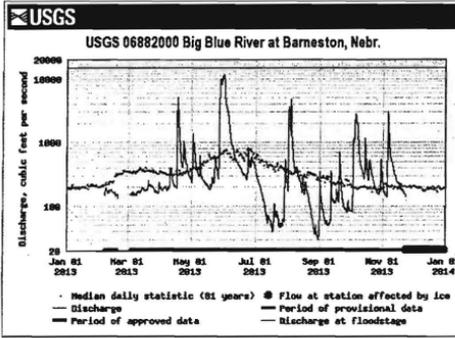
Compact gages at Barneston and Hollenberg fell below compact criteria in 2013. We were notified of compact restrictions in Nebraska on both the Little blue and Big Blue Rivers in 2013.

### 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.

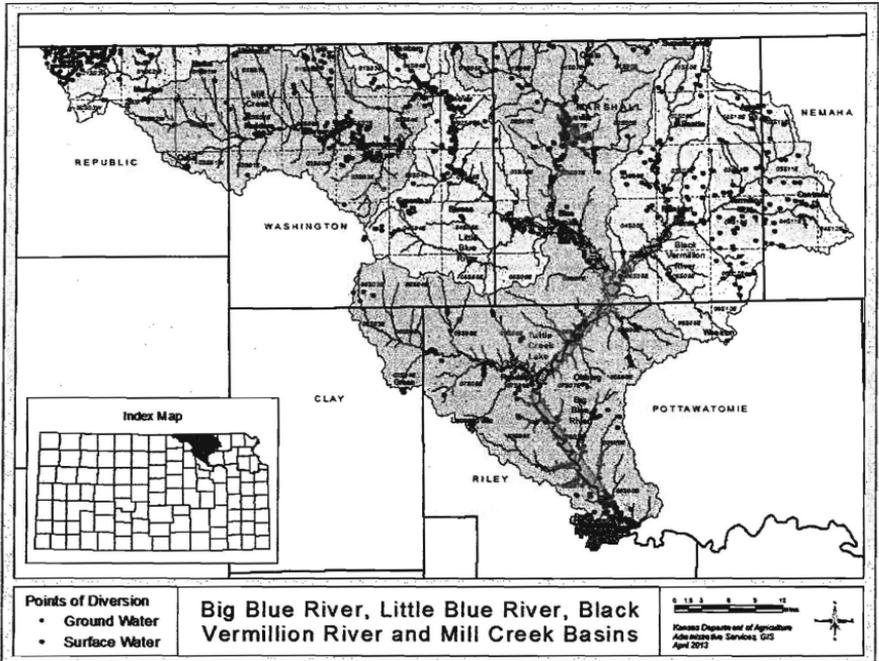
The Division on Water Resources administered MDS on the Big Blue River by order to 12 water right files junior to April 12, 1984, beginning on July 25, 2013 until August 13, 2013. MDS was administered on the Little Blue River and Mill Creek by order to 12 water right files junior to April 12, 1984, beginning on July 19, 2013 until August 13, 2013.

In addition to administration in the Big and Little Blue River Basins and Mill Creek, the Division administered the other basins throughout Kansas in 2013 including Chapman Creek, Marais des Cygnes River, Cottonwood River, Neosho River, and the Republican River. This administration included MDS administration and protection of releases from federal reservoirs made for water supply (Water Assurance District and Water Marketing Contracts) and water quality.

Currently, the Division is administering a total of 232 water rights for MDS in the Republican River, Smoky Hill River, Saline River, Mill Creek (at Paxico, Kansas River), Little Arkansas River, and the Medicine Lodge River Basins.

**Compliance & Enforcement**

The Division initiated civil penalty and/or other enforcement action against the owners of 14 water rights in the basin in 2013. These ranged from chronic water use reporting deficiencies (civil penalties) to overpumping (reductions to "pay-back" water and civil penalties).



### **New Development**

While 2013 brought continued interest in new permitting state-wide, limited requests were seen in this area. There were 18 new permits issued within the compact area in Kansas in 2013. In the Big Blue River basin a total of 9 new permits were issued, 4 surface water and 5 groundwater permits. These were for new irrigation projects, a stock facility, a municipal use permit, and a sediment dam. There were 6 new projects permitted in the Little Blue River basin, 5 irrigation use and 1 industrial use all groundwater. There was 1 new irrigation project permitted in the Black Vermillion basin using off-stream storage surface water. Finally, 2 new permits were granted in the Mill Creek basin for irrigation projects; one was a groundwater permit and the other a surface water permit (off-stream storage).

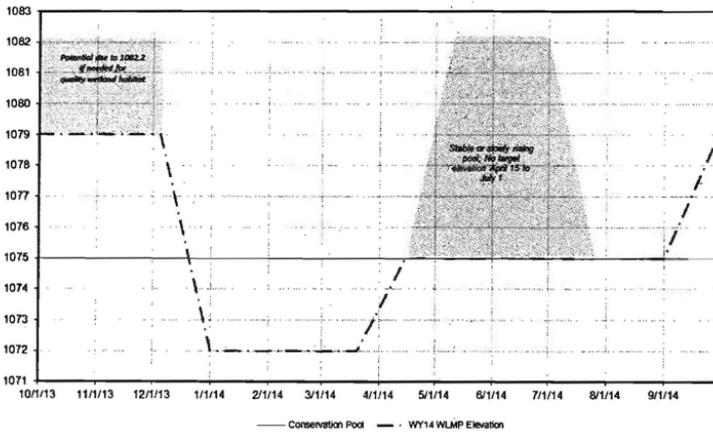
### **Metering**

The Topeka Field Office continues the metering project. We completed all the inspections for the Pottawatomie Creek order and are nearly complete all metering in the south half of the Eastern third of the state now. We issued the meter orders for files in the Stranger Creek and Wakarusa River, both tributaries of the Kansas and have announced a large meter order (1,000+) files to be issued in late November or early December to water right owners in the Kansas River, and it's Vermillion Creek and Delaware River tributaries. We will be conducting stakeholder meetings this summer with the owners, meter vendors manufacturers to ensure they have the information and contacts necessary to successfully meter.

**Tuttle Creek Reservoir**

Lake Level Management plans were approved in fall of 2013. The plan this water year is identical to the previous year. One of the main objectives of water level management 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 water in the flood control pool for T&E species in the summer months, and late season releases in support of navigation on the Missouri River. However, coordination between state and Federal agencies during moderate flood and drought events can minimize damage to the lake's shoreline habitat that is essential for crappie spawning success from such 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.

**Tuttle Creek Reservoir**  
 Conservation Pool = 1075.0 Flood Pool = 1136.0 5% into FP = 1082.2



	Time	Elevation	Comment
<b>TUTTLE CREEK LAKE</b>	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 then hold through Sep 1
	Sep 1 – Sep 30	1079	Rise to inundate wetland habitat and attract migrating waterfowl

**Tuttle Creek Hydropower**

Update. On August 9, 2011, the Federal Energy Regulatory Commission issued the Order Cancelling Preliminary Permit granted to the Riverbank Hydro No. 14, LLC regarding the Tuttle Creek Hydroelectric Project No. 14170-000 (Tuttle Creek Dam Water Power Project). The order cancelled the preliminary permit as of September 8, 2013 as a final action. We have not been made aware of any further action.

**Nebraska State Report for  
the Big Blue River Compact Meeting  
May 14, 2014**

I would first of all like to thank the Lower Big Blue Natural Resources District for hosting the Big Blue River Compact meeting this year. The Department appreciates the efforts of all of the natural resources districts in managing the groundwater resources of the basin.

Last year's continued dry conditions placed stress on the water resources for many areas of the state. That stress resulted in the Department having to again carry out significant water administration across many areas of the state. The water resources in the Blue River Basins were no exception to these drought-induced stresses. In total, the Department issued over 2,400 closing notices throughout the Blue River Basins to both storage and natural flow appropriations in 2013.

Integrated management planning efforts continue to be a major focus of the Department. To date, the Department has completed integrated management plans with 12 of the 23 natural resources districts in the state with an additional 6 natural resources districts currently working on voluntary integrated management plans.

Many of these initial voluntary integrated management plans are aimed at building a solid scientific foundation and an increased understanding of expected future water needs so that future plans can be targeted in ensuring protection of existing water uses while providing flexibility and management actions aimed at meeting future water demands.

The Department is also excited to have launched its new INSIGHT website. This new interactive website allows for users of varying backgrounds to acquire information on water budgets and how water is utilized, including water supplies, water demands, and long-term uses of water supplies. The information available through INSIGHT provides a solid foundation for understanding the challenges and opportunities that exist in working toward balancing water supplies and water demands in the various basins across the state.

The Nebraska Legislature finished up the 2014 session by passing a new water funding process. LB 1098 was passed by the Legislature and signed into law on April 17, 2014. This new set of laws defines governance for administering the new Water Sustainability Fund that was created in LB 906 with an initial appropriation of \$21 million in FY 2015 and intent language for

continued annual appropriations of \$11 million. This fund represents a significant increase in funding for water projects aimed at addressing water quality and water quantity issues across the state. LB 1098 also provides for additional basin-wide planning processes in certain areas of the state. These basin-wide planning processes encourage greater stakeholder participation into the integrated management planning process and increased feedback loops for assessing the effectiveness of the integrated management plans.

I will now turn it over to Jeremy Gehle who will provide Nebraska's full water administration activities report for 2013.

## **2014 Big Blue River Compact Administration Report**

### **2013 Water Administration Activities in Nebraska**

Conditions in 2013 improved slightly from the previous year. The Little and Big Blue River Basins received near normal precipitation in the spring, but below normal precipitation in the summer. Between precipitation events, 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 249 irrigation permits and 128 storage rights.

On July 7<sup>th</sup> the flow on the Little Blue at Hollenberg fell below the compact target and 116 junior irrigation rights and 128 storage rights in the basin were closed. The 133 senior irrigators in the basin were allowed to continue operating, but were closely regulated. Rain in the basin caused the flow at Hollenberg to exceed the target on July 25<sup>th</sup>, allowing 24 irrigation appropriations junior to the compact, but younger than 11/1/1973 to be opened on July 26<sup>th</sup>. Due to additional rain, by July 30<sup>th</sup> the flow at the state-line exceeded the compact target flow by a wide margin, and the basin was opened to all junior irrigators and storage rights. On August 29<sup>th</sup>, the junior irrigation rights and the storage rights were closed again and then opened again on September 16<sup>th</sup>. The flow at Hollenberg fell below the target again and the junior irrigation rights and the storage rights were closed on September 27<sup>th</sup> and remained closed through September 30<sup>th</sup> 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 828 surface water irrigation permits and 348 storage permits.

On July 11<sup>th</sup> closing notices were issued in the Basin to 391 junior irrigation rights and 348 storage rights. The 437 senior appropriators were closely regulated. A timely rain at the end of July caused the flow at Barneston to exceed the target, and the junior irrigation rights and storage rights were opened on July 30<sup>th</sup>. The flow at Barneston once again fell below the target and the junior irrigation rights and the storage rights were closed on August 26<sup>th</sup>. The target was exceeded for a short period of time from September 1<sup>st</sup> through September 6<sup>th</sup>, during which 197 junior irrigators with priority dates older than 11/1/1978 were opened for a four day period and then closed again. The flow at Barneston once again rose above the target, and all junior irrigation rights and storage rights were opened on September 13<sup>th</sup>. The flow at Barneston exceeded the target through the end of the administration period.

Localized shortages requiring water rights regulation on the upper end of the Big Blue River started on August 21<sup>st</sup> and ran through September 4<sup>th</sup>.

**Concluding Thoughts**

Prior to last weekend's rain, flows in both basins were hovering around 50% of long term median flows. The current U.S Seasonal Drought Outlook indicates that the drought designation will likely be removed by the end of the April 17<sup>th</sup> to July 31<sup>st</sup> time period. The U.S. Drought Monitor as of May 6<sup>th</sup> designates the majority of the basin as being in "Moderate" drought.

U.S. Seasonal Drought Outlook

[http://www.cpc.ncep.noaa.gov/products/expert\\_assessment/seasonal\\_drought.html](http://www.cpc.ncep.noaa.gov/products/expert_assessment/seasonal_drought.html)

U.S. Drought Monitor

<http://droughtmonitor.unl.edu/>

Protecting Lives. Protecting Property. Protecting the Future.

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[www.lbbnrd.net](http://www.lbbnrd.net)

**Lower Big Blue**  
Natural Resources District



Watershed Capital of Nebraska

"Protecting Lives, Protecting Property,  
Protecting The Future."

May 2014

# BLUZZ

## LOWER BLUE NRD

### Springing Toward Summer

While the calendar has turned to Spring, the weather has seemed to suggest that we wait just a little longer to get out in the field, the garden or on the lake if we're fortunate. Nonetheless, it won't be long before crops cascade the landscape, farmers' markets fire up again and backyard barbecues and county fairs provide a brief respite from the rigors of busy summer schedules.

In the coming months the Lower Big Blue Natural Resources District will be assisting producers in incorporating irrigation scheduling equipment into their operations, conducting chemigation inspections, collecting irrigation samples, participating in Earth Day festivities, the Annual Free Family Fishing Day and taking care of the District's other recreation areas. This issue of *The Blue Buzz* contains details on those items and more.

Inside you'll find updates on the Groundwater Management Plan, results of our Spring 2014 Static Well Levels, information on NRD Recreation Areas and pre-registration information/form for the upcoming Youth Fishing & Geomorphology.

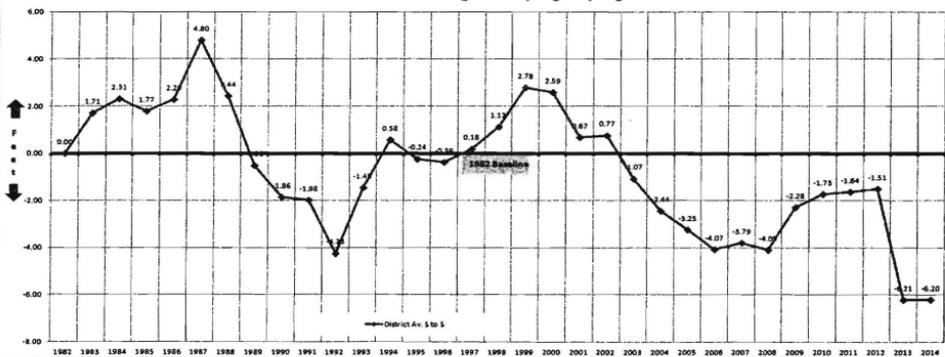
As always, we hope this issue finds you doing well and anticipating all that spring and summer in southeast Nebraska have to offer.

## Spring 2014 Groundwater Level Measurements

The Lower Big Blue NRD measures the static water level of 95 irrigation wells around the District every Spring (usually the first week in April) and Fall (usually the first week in November). Spring 2014 county average readings are listed below as well as a district wide graph showing the levels from 1982.

County	No. of Wells	Change Spring '13 to Spring '14	Change Fall '13 to Spring '14
Gage	28	+0.15'	+2.65'
Saline	43	-0.46'	+1.90'
Jefferson	24	+0.34'	+3.11'

District Wide Average From Spring to Spring



## Recreation Areas Open for the Season

All nine of the Lower Big Blue NRD recreation areas are officially open. No park permit is required to visit NRD operated recreation.

## Lower Big Blue NRD Newsletter

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Questions or comments regarding the newsletter may be directed to the office of the Lower Big Blue NRD by phone at (405) 228-6402, by fax at (405) 228-6401, or by email at [news@lbbnr.net](mailto:news@lbbnr.net) or [info@lbbnr.net](mailto:info@lbbnr.net).

Lower Big Blue NRD  
804 Dorson Street  
Beatrice, NE 68310

The Lower Big Blue NRD is an Equal Opportunity Provider and Employer

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Beatrice—Sub-District 1
- Delferd Schlake**  
Blue Springs—Sub-District 1
- Darrell Rains**  
Beatrice—Sub-District 2
- James Damrow**  
Diller—Sub-District 2
- Larry Barta**  
Swanton—Sub-District 3
- Doug Stokebrand**  
DeWitt—Sub-District 3
- Robert J. Lorenz**  
Crete—Sub-District 4
- Barney Skidlar**  
Wilber—Sub-District 4
- Dean Boyer**  
Beatrice—Sub-District 5
- Ronald Wiens**  
Beatrice—Sub-District 5
- Steven A. Kelley**  
Beatrice—Sub-District 6
- Doug Pieper**  
Beatrice—Sub-District 6
- Norman Stokebrand**  
DeWitt—At-Large Member

## Lower Big Blue NRD Staff

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- LaRita Sudik**  
Gage County NRCS Clerk  
Jane Filipi  
Saline County NRCS Clerk  
**Nick Schroeder**  
Technical Assistance

## NRD Board Adopts Revisions to the Groundwater Management Plan; Lifts Moratorium

Due to concerns about the sustainability of groundwater supplies in the area, the Lower Big Blue Natural Resources District Board of Directors, on November 26, 2013, imposed a 180-day temporary moratorium, or stay, on the construction of new irrigation wells within the district. The primary purpose for the stay was to provide the NRD with an opportunity to revise and implement its Groundwater Management Plan, a process the Board had been working through with Olsson Associates.

While the LBBNRD has monitored groundwater levels for years, since 1982, to help determine sustainability, it has also received a growing number of reports about the reduced capacity of irrigation wells and/or reduced capacity or failure of domestic wells in the District. The District has issued well permits since 1997. From 1997 to 2010 the district averaged 34 well permits per year. The past 3 years the district averaged 90 well permits a year with 155 well permits issued last year. Due to an increase in the number of new wells constructed, groundwater declines, and the dry conditions in recent years there was a need to update the District's Groundwater Management Plan to address sustainability and maximize economic viability.

Although 2013 was better because of more rainfall than 2012 the long term impacts from the drought, heavy pumping, and installation of new wells are still unknown. About 1/2 of the 23 NRDs have imposed new regulations or are proposing regulations to address these concerns this year. The majority of the NRDs already have addressed the management items under consideration by the LBBNRD board.

After numerous committee meetings, public comments, and public hearings, the Board of Directors, at the monthly board meeting on March 27, 2014, approved the proposed revisions to the NRD's groundwater management plan. This allowed the revisions to the plan to be fully implemented throughout the District. The adoption of these new rules and regulations then allowed the Board to unanimously vote to lift the moratorium on well drilling in the district. The termination of the moratorium came 60 days prior to the 180-day temporary stay limit allowed by state statute. A summary of the revisions to the Groundwater Management Plan is provided below.

- **Setback of irrigation wells from domestic wells** – 300 feet of spacing is required from a domestic well.
- **Test Hole Requirement** – In order to provide the needed information for the well permit ranking system, a test hole log is required. Testholes must be drilled within 300 feet of proposed well location.
- **Ranking system for the evaluation of new well permits** – A ranking system was implemented for new well permits to determine well performance and water availability at the proposed well location. New wells are to meet a threshold of acceptability based on hydrogeologic parameters as well as proximity to existing wells. Evaluation criteria include thickness of the aquifer, transmissivity, well density around the proposed new well, and proposed irrigation method.
- **Certification of Acres** – The district will require certification of irrigated acres throughout the District. By knowing the location and number of irrigated acres and the amount of water applied to those acres, groundwater management decisions can be made to ensure that the groundwater resources are being used efficiently and effectively.
- **Groundwater Transfers** – Transfers are limited to an adjacent section—A transfer must be no more than 3000 feet from the source—Transfer acres must be equal to or less than the amount of acres irrigated from the source well—Total irrigated acres in a transfer is limited to 160 acres—The source and destination section must be within District—May deny transfer of groundwater into surface water impoundments.
- **Wells in a series** - No more than two irrigation wells will be approved to apply water in a series.
- **Groundwater Management Areas** – The language of the groundwater management areas from the existing plan changed from control and management areas to Phase I, II, and III, but the same triggers were used from the original plan. Language was included to specify when an area could come out of the different Phases. Additional management options were made available to the board in Phase II. Options available to the board include: well spacing, flow meter requirements, water allocation, crop rotation, and other options.

## Dam Maintenance

The Lower Big Blue NRD is responsible for the maintenance and upkeep of over 270 dams and grade stabilization structures in the District. This includes everything from tree, shrub and debris removal to nest control. For proper riparian habitat, the NRD is asking for help from landowners. Any conservation improvements (sediment removal and fill, buildings/houses, etc.) must be approved by the NRD Board of Directors prior to starting. Emergency spillways are to be maintained unobstructed (trees, buildings, etc.) and beavers and other creatures are to be removed to be 100% free of obstructions.

30/05/2013

## Planning Ahead

April 29 & 30—Earth Festival at Camp Jefferson

May 17—Free Family Fishing Day and Youth Fishing Derby

June 1—Applications for Chemigation are due to be completed (blank applications can be found at [lbbnrd.net](http://lbbnrd.net))

# Free Family Fishing Day!

## 13th Annual

# Youth Fishing & Casting Derby

**May 17, 2014**

**9:30-11:00 a.m.**

### At Willard Meyer Recreation Area (Swan 5)

Located: 3 miles east and 2 miles north of Tobias OR from Hwy 74 & 15, it's 5 miles west and 2 miles north

Everyone must pre-register by May 15th.  
Check-In: 8:30-9:30 a.m.

### Prizes & Free Hot Dog Lunch for All Participants

### Pre-Registration Form | Deadline May 15, 2014

Complete and mail form to: Lower Big Blue NRD, PO Box 826, Beatrice, NE 68310  
Call (402) 228.3402 or email: [sobotka@lbbnrd.net](mailto:sobotka@lbbnrd.net)  
PLEASE PRINT CLEARLY

Name/Age/City: \_\_\_\_\_

Name/Age/City: \_\_\_\_\_

Name/Age/City: \_\_\_\_\_

Name/Age/City: \_\_\_\_\_

Total Number Eating Lunch: \_\_\_\_\_ Total Number of Rods/Reels Needed: \_\_\_\_\_

(Limited Rods/Reels Available)

Your Contact Information: \_\_\_\_\_

\_\_\_\_\_

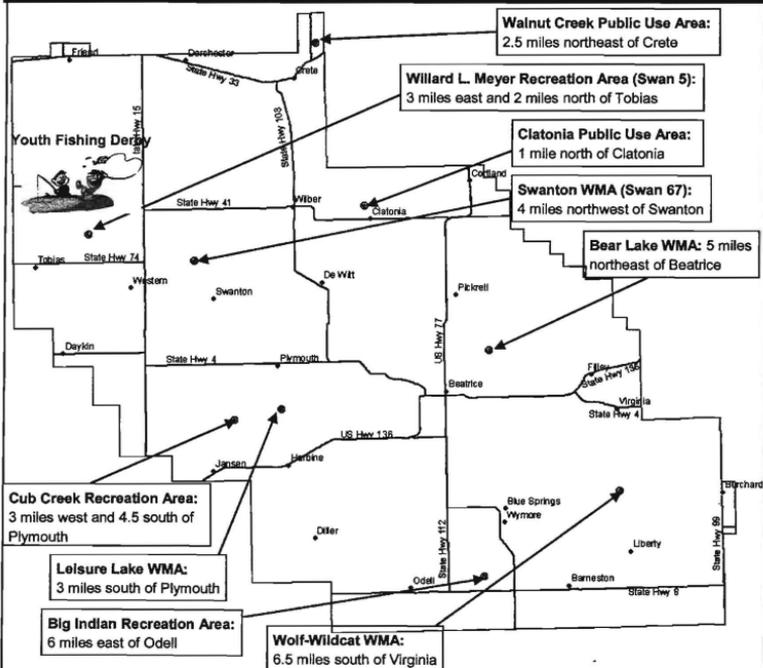
\_\_\_\_\_

**Pre-Registration is Required**



## Lower Big Blue NRD Recreation Area Locations

Camper Fees: \$5.00/night non-electric; \$10.00/night electric (where available)



## Fishing Day Activities

- Adults & Kids Fish Free! (No license required)
- Medals in four age groups for Largest Fish, Smallest Fish and Most Fish Caught
- Crete TrueValue Bounce House
- Youth Casting Contest
- Boat Rides with Boat Safety Presentation
- Nebraska Game & Parks Fishery Display
- Hands-On Archery Demonstration by Archery Club Members

For more information, call (402) 228.3402 or email [sobotka@lbbnrd.net](mailto:sobotka@lbbnrd.net)

Sponsored by Optimist Club of Beatrice, Lower Big Blue NRD & Swan 5 Advisory Council

For more information on individual recreation areas and amenities, stop by or contact the Lower Big Blue NRD. Smartphone users can download the NRD Outdoor Recreation Areas app from your app store.

Kansas-Nebraska Big Blue River Compact  
Nebraska Report - Upper Big Blue NRD  
Rod DeBuhr, Water Department Manager  
May 14, 2014

### Well Drilling Activities

Two hundred eighty seven permits were issued for irrigation wells (218 new & 69 replacements) in 2013. At the end of 2013 there were registered 12,009 irrigation wells in the District. This is an increase of 301 active irrigation wells compared to the end of 2012.

### Groundwater Level Changes

The average groundwater level change for the District from spring 2013 to spring 2014 was a decline of 2.10 feet. The attached map shows the area of greatest changes and the county averages. With this change, the average ground water level is 0.93 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, 2014, there were 1,202,026 ground water irrigated acres certified by the NRD. This represents an increase of 15,622 acres since January 1, 2013.

### 2012 Groundwater Withdrawal

2013 was the sixth year that ground water withdrawal reports were required in the Upper Big Blue NRD. Wells that are not metered must provide an estimate of pumping rate and time of operation. About one half of the wells are metered now. The average water withdrawal for irrigation in 2013 was 10.0 inches per acre. Other users of groundwater are also required to report withdrawals. The following is a summary of groundwater withdrawal by category of use.

	Acre Feet	% Use
Irrigation	999,845	96.68%
Wetlands	14,615	1.41%
Municipal	7,798	0.75%
Ethanol	3,537	0.34%
Other Commercial	3,495	0.34%
Lake supply	2,366	0.23%
Livestock	1,586	0.15%
Aquaculture	908	0.09%
All Others	83	0.01%
TOTAL	1,034,233	

### Revised Regulations adopted in December 2013

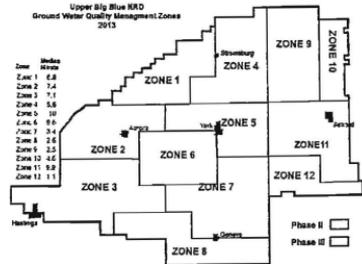
Water meters are now required to be on all high capacity wells by January 1, 2016. Allocation is set at 30 inches over 3 years followed by 45 inches over 5 years. Allocation will go into effect when the groundwater level drops .93 of a foot from the spring 2014 levels.

## Temporary Stay on Well Drilling

On April 17, 2014 the District Board of Directors declared an immediate 180 day temporary stay on well drilling in parts of the NRD. The Stay covers approximately 1,064 square miles. Concerns were raised by several people over the expansion of irrigation into some areas of the NRD that have aquifers that were less productive and experience severe groundwater level drawdown during the irrigation season. Some communities in the stay area have diminished well capacity which is raising concerns over health and safety. The District is drafting revisions to the Groundwater Management Areas rules and regulations to try and address these concerns.

## Groundwater Nitrates

The district is divided into twelve management zones for ground water quality management. The primary ground water quality management concern is nitrate. Three zones are currently designated a Phase II management area and one (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 1<sup>st</sup> through February 29<sup>th</sup> 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 March 1.



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 was grown in the 20 acre demonstration field in 2013. 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 Etagages and Watermark sensors to determine crop water use. The Etagage 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 Etagage'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 1,000 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 12-13 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 \$210,468.23 came from the Nebraska Soil and Water Conservation Program (\$119,243.94) and local NRD property tax revenue (\$91,224.51).

## **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. The District is currently working on revisions to finalize a fully transient sub-regional model in a portion of Seward County. The model is expected to be complete in June. Model runs will be done to compare this new model output to the original quasi-steady state model completed a few years ago. If the new model output is comparable to the original model the District will be looking in expanding the model area to include the entire basin.

## **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**

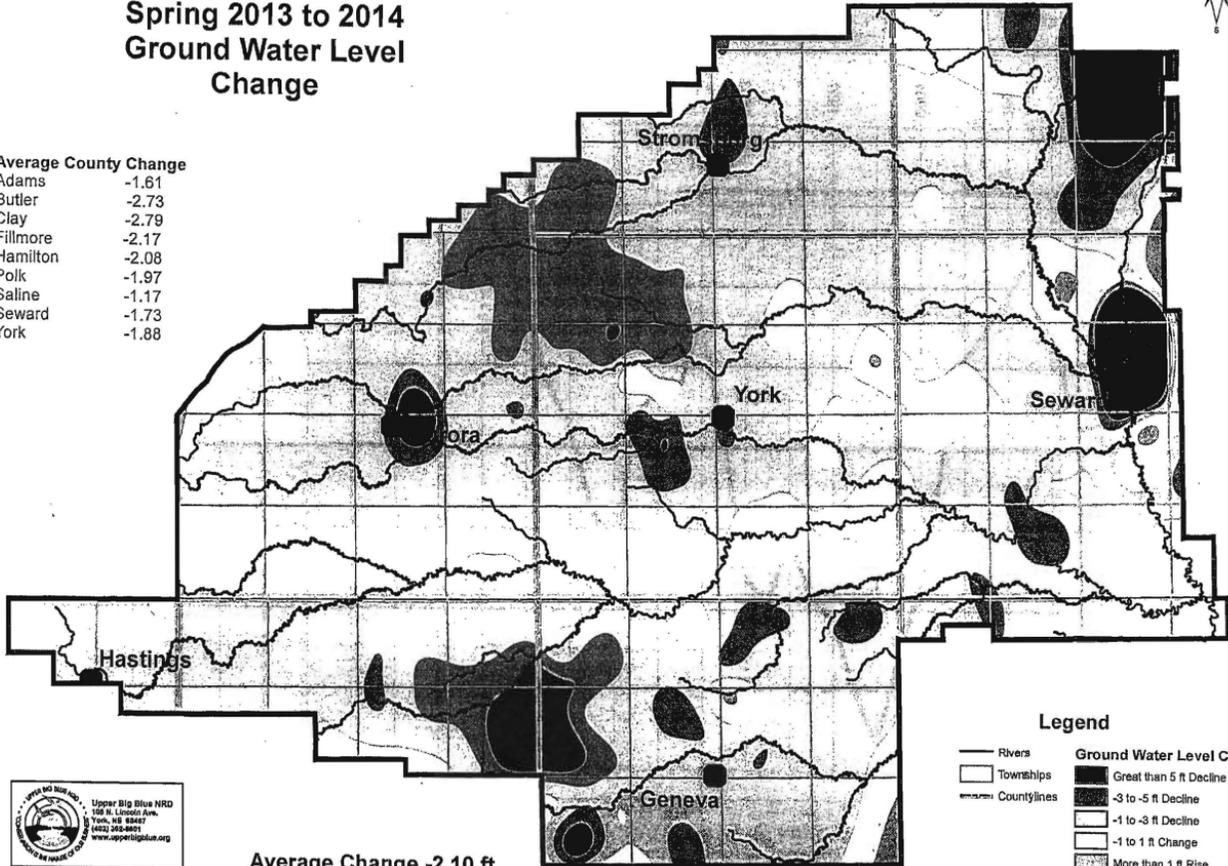
You can learn all about the District's programs and activities at [www.upperbigblue.org](http://www.upperbigblue.org).

# Upper Big Blue Natural Resources District Spring 2013 to 2014 Ground Water Level Change



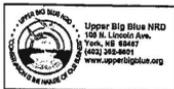
### Average County Change

Adams	-1.61
Butler	-2.73
Clay	-2.79
Fillmore	-2.17
Hamilton	-2.08
Polk	-1.97
Saline	-1.17
Seward	-1.73
York	-1.88



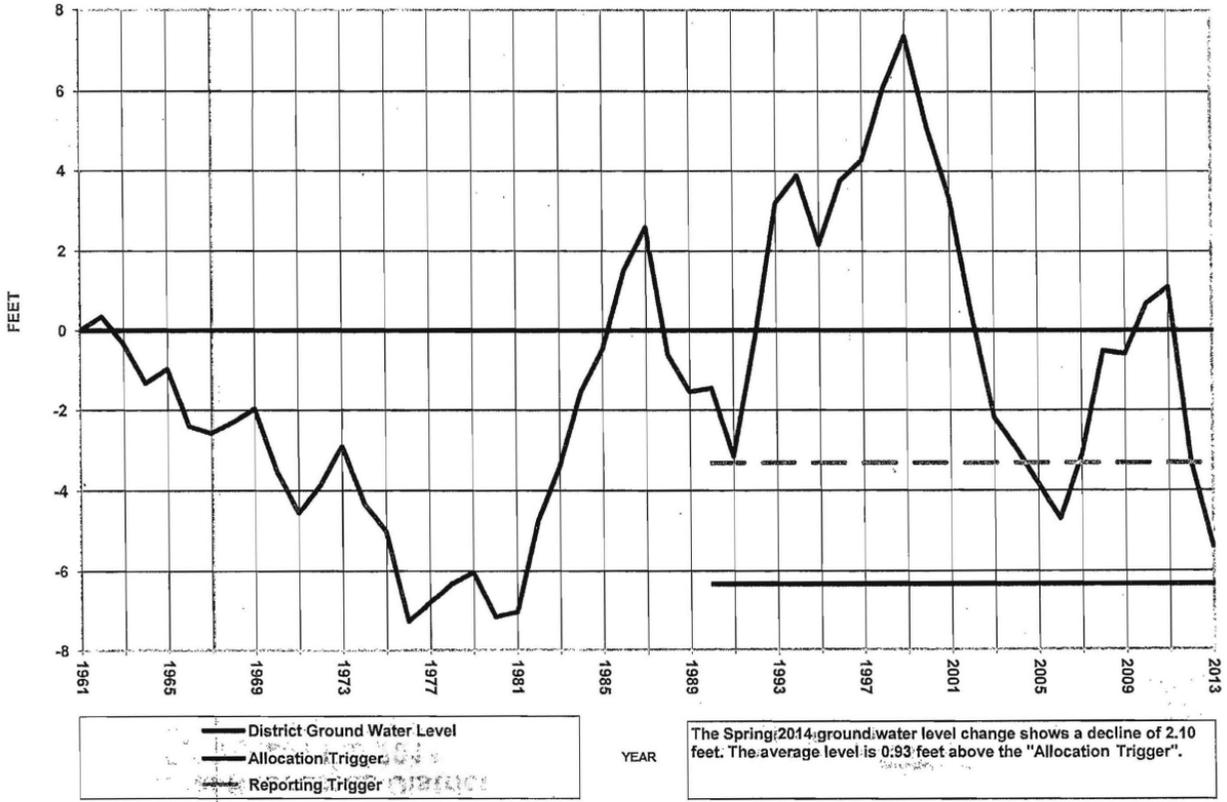
### Legend

- Rivers
- Townships
- Countylines
- Ground Water Level Change
- Great than 5 ft Decline
- 3 to -5 ft Decline
- 1 to -3 ft Decline
- 1 to 1 ft Change
- More than 1 ft Rise



Average Change -2.10 ft

UPPER BIG BLUE NRD - AVERAGE GROUND WATER LEVELS  
TRIGGERS COMPARED TO HISTORIC LEVELS  
SPRING 2014

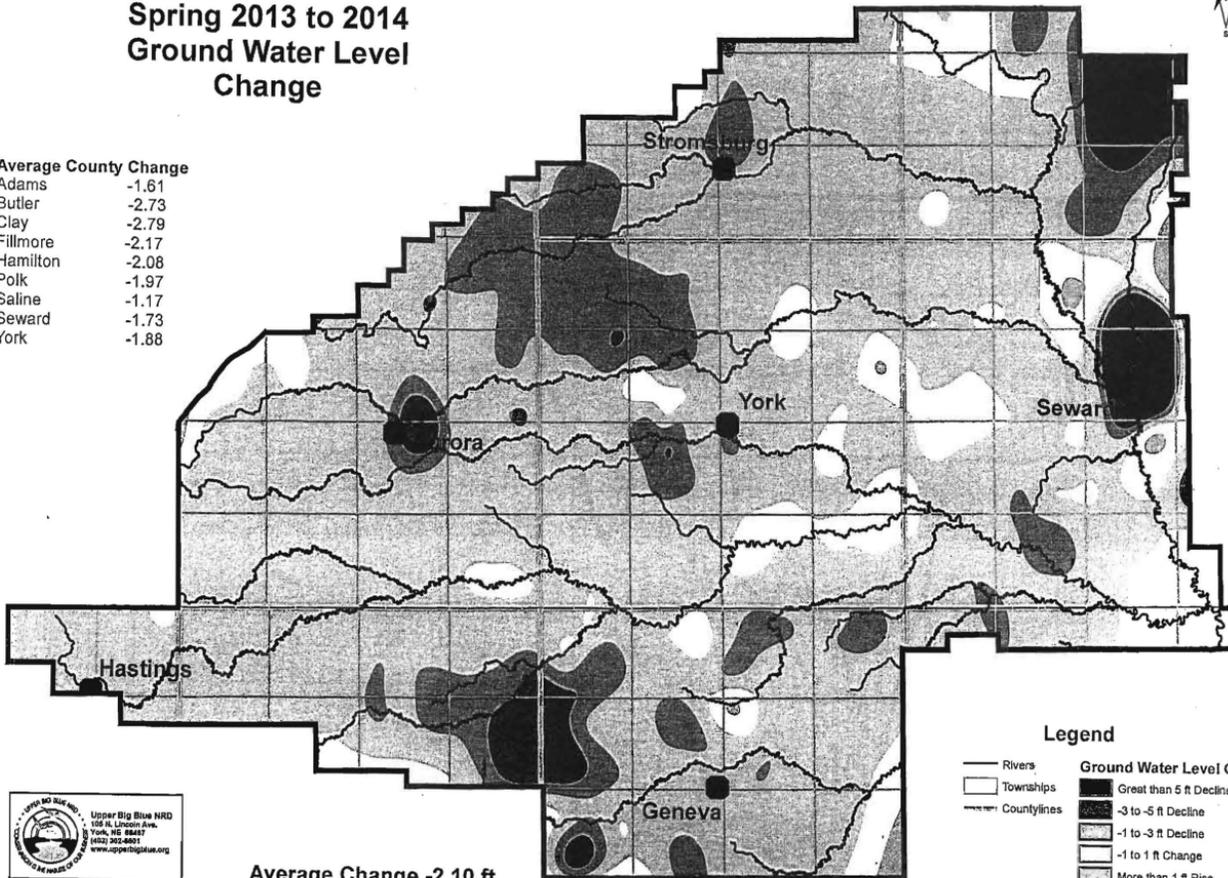


# Upper Big Blue Natural Resources District Spring 2013 to 2014 Ground Water Level Change



**Average County Change**

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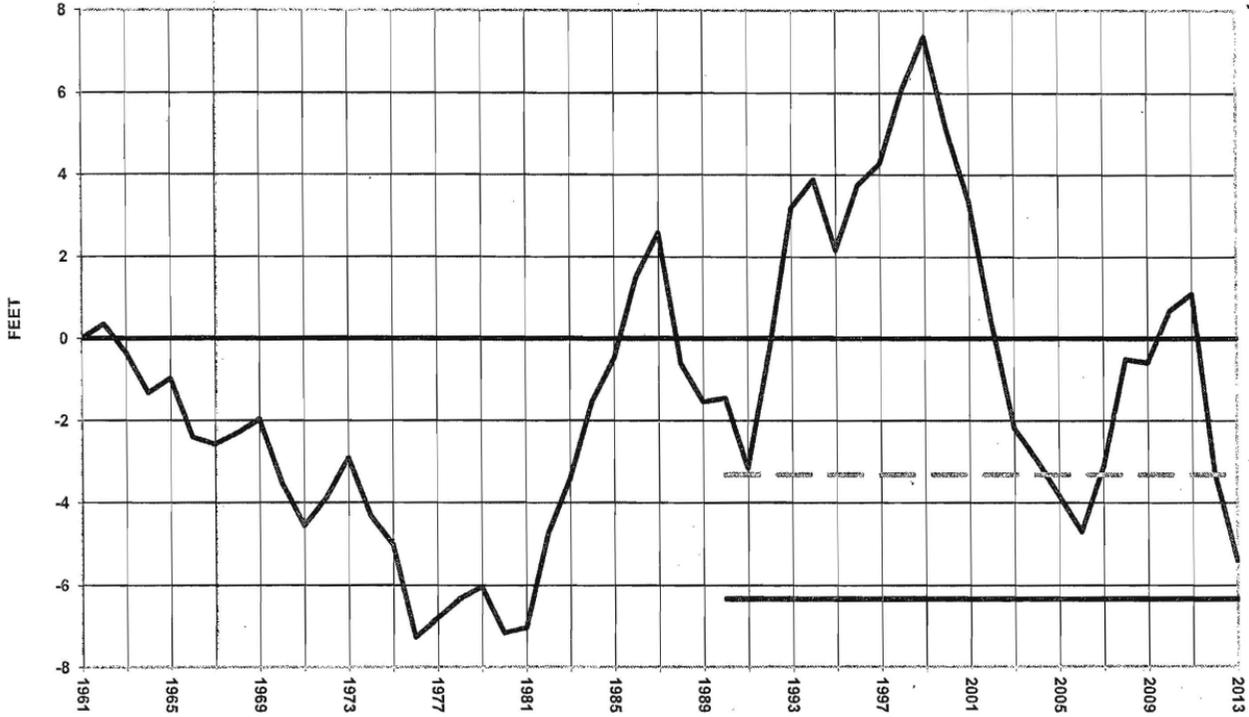
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- Rivers
- Townships
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- Ground Water Level Change  
Great than 5 ft Decline
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- 1 to 1 ft Change
- More than 1 ft Rise



**Average Change -2.10 ft**

UPPER BIG BLUE NRD - AVERAGE GROUND WATER LEVELS  
TRIGGERS COMPARED TO HISTORIC LEVELS  
SPRING 2014



District Ground Water Level  
 Allocation Trigger  
 Reporting Trigger

The Spring 2014 ground water level change shows a decline of 2.10 feet. The average level is 0.93 feet above the "Allocation Trigger".

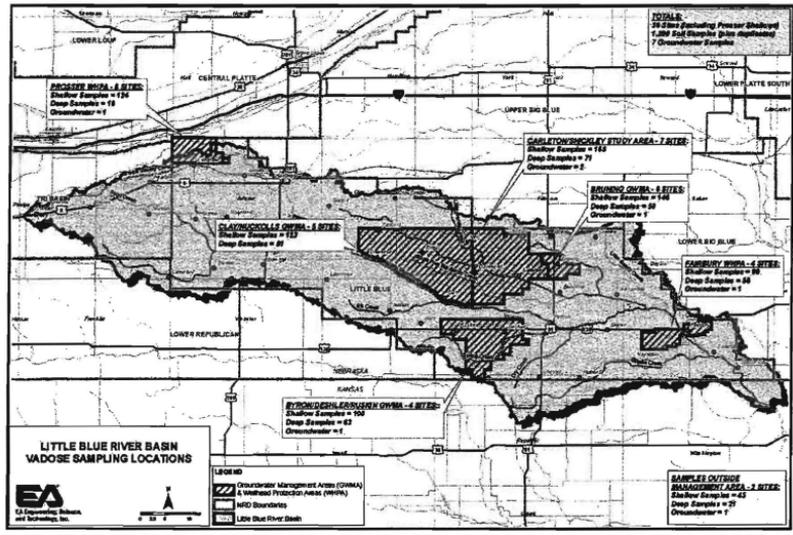
YEAR

# KANSAS-NEBRASKA BIG BLUE RIVER COMPACT

Mike Onnen, General Manager  
 Little Blue Natural Resources District  
 MAY 14, 2014

## Watershed Planning

The District began a Blue Basin-wide water quality planning effort to develop a 25 year plan for addressing various water issues, primarily water quality in nature. We kicked off the project with a deep soil coring project to evaluate the success of our management activities over the past 10 years or so and try to determine if nitrate loading of the soil profile is improving. There were 881 shallow soil samples, 329 deep samples and 7 groundwater samples collected primarily from our existing water quality management areas. The plan, although focused on water quality, should help us develop tools to pursue an integrated water management plan if the Board chooses to do so.



## River Flow Enhancement on Little Blue River

The Twin Valley Weed Management Area worked several weeks late last summer clearing log jams and undercut trees along the river's banks to improve channel flow and reduce bank erosion. The TVWMA/LBNRD secured a second Nebraska Environmental Trust grant of \$277,146 for spraying phragmites, salt cedar and some encroaching willows. This work will be accomplished in the fall of 2014.





### **River Bank Erosion Program**

The LBNRD has initiated a bank stabilization cost-share practice to address problems that were identified along the river. The first practice was completed this spring just west of Davenport and will help to protect some irrigated bottomland. We have had several additional requests for assistance.

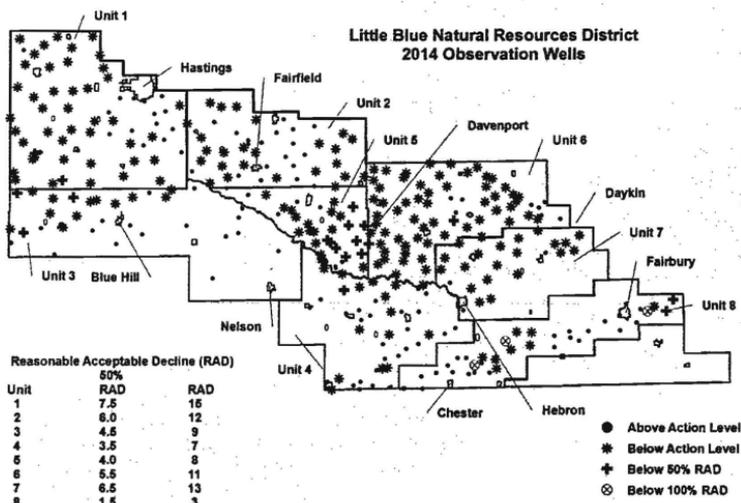
### **Watershed Development**

The District conducted a preliminary feasibility study of the Davenport Dam site as reported last year. The project had a drainage area of 75.8 square miles and would have had a permanent pool of 650 acres. Although the project appeared to be feasible, further planning for the project was suspended by the Board after significant opposition surfaced. Projects of this type are getting more difficult with each passing year, due in part to expensive land, project costs, and extensive environmental and permitting requirements.

### **Groundwater Quantity**

The spring 2014 static water level readings of 334 wells showed declines of 1.0' since the 2013 spring readings. Overall water levels are approximately 10' below predevelopment levels across the district. The effects of drought years are still being experienced as evidenced by the fact that we had more wells reach their lowest level of record this spring. The map below shows the wells that have reached their historical low point. The District's groundwater management plan established the 1994 water levels as the Action Level for all monitored wells in the District. The Plan also established a Reasonable Acceptable Decline (RAD) based on a Board agreed upon percentage of aquifer use before allocations occurred. Although we have not hit the triggers for allocating water, the Board is re-evaluating the trigger formula and may make changes next year.

The average Little Blue NRD irrigation water application for the 2013 crop year was 9.8" which is slightly lower than our 10.0" long-term average. That data was collected from volunteer reporters on 117,400 acres of cropland. The pivot average was 9.0 compared to the gravity average of 15.5". The reporting has also helped us identify operators who need assistance in making management or technology changes to increase water use efficiency.

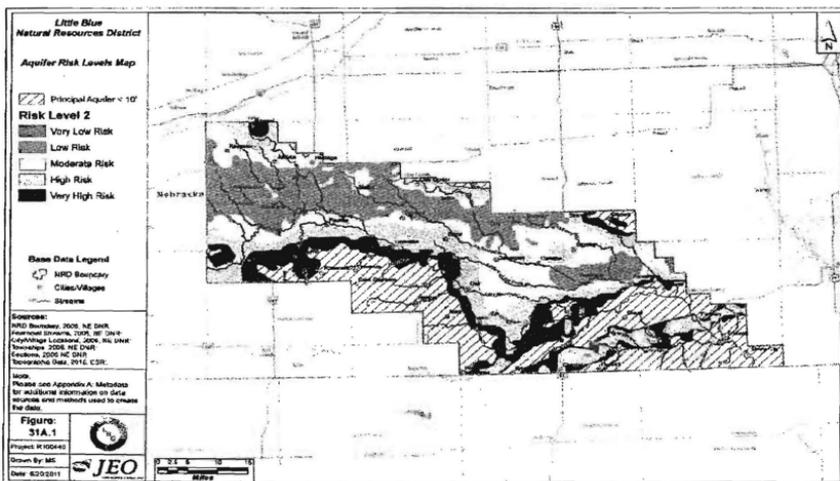
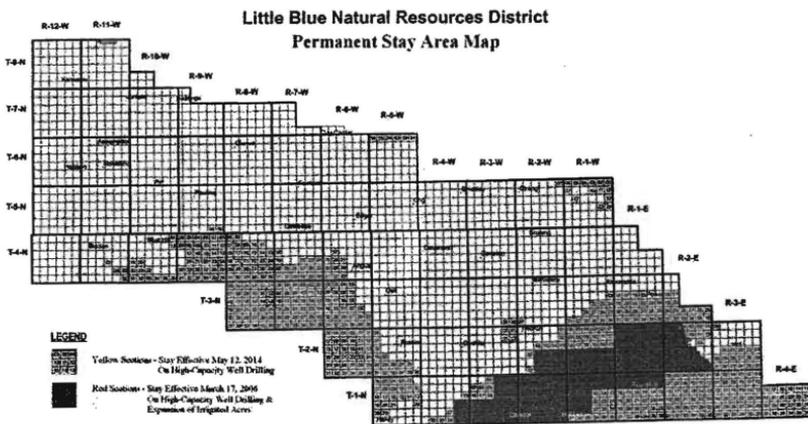


### New Groundwater Rules and Regulations

The District adopted new rules and regulations for groundwater management in the NRD. Those rules took effect Monday, May 12, 2014. Although the District wanted to make changes in our water quality rules too, they decided to hold off until the results of our deep soil coring project were available. Here are the highlights of the significant changes:

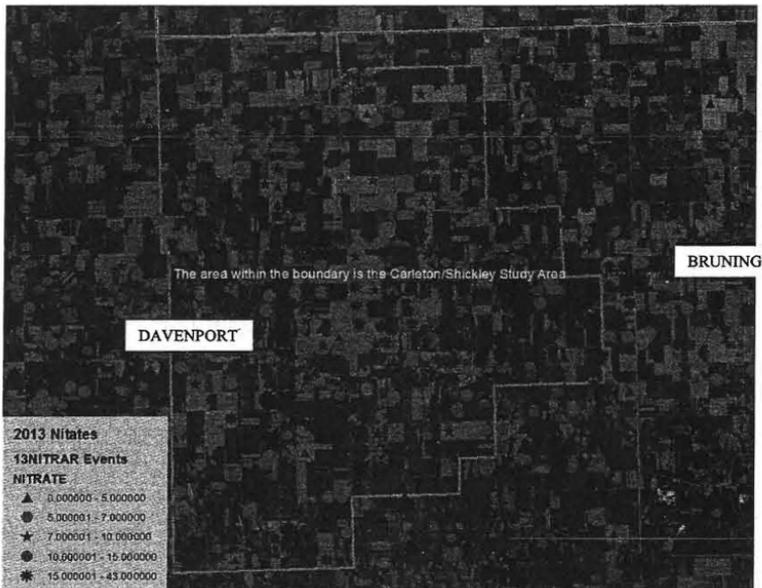
- Flow meters will be required on all high-capacity wells prior to March 31, 2017.
- All irrigated acres will be certified by April 1, 2015
- All high-capacity water uses must be reported beginning with the 2014 crop year. Reporting will be required of all irrigation, municipal, industrial, livestock, wildlife and recreation uses.
- All dryland and irrigated operators and those who make decisions on the land's management, must be certified by April 1, 2018, and every four years thereafter.
- Any new intended irrigation well which would lie in the area identified as "Very High Risk Areas" (See map on next page) in the district's Hydrogeologic Study of 2011 will be required to prove well capacity without surrounding well impacts before they will receive a permit for construction. That will require installing the well and test pumping for 24 hours with minimum output of 300 gpm. If the well fails the test, it must be abandoned.

- All high-capacity water wells must now be at least 500' from any registered domestic water well.
- An area of the District with an Aquifer Less than 10' in the Hydrogeologic Study of 2011 now has a stay on new high-capacity well drilling. That stay area covers approximately 362,240 acres and is in addition to the 124,160 acre stay of Unit 8.



### Groundwater Quality

The Little Blue NRD sampled 2,647 water samples during 2013 with the highest irrigation nitrate reading of 27 ppm. About 40% of the samples analyzed were brought in by producers. The average nitrate now appears to be around 8.0 ppm in many areas of the District. The Board is now considering placing the entire district in an intensive water quality management area to protect the good water quality areas as well implementation of restrictions in poorer areas. As an example of the challenges of analyzing nitrate results to determine regulatory boundaries, below are the results of a two-year study area. You can see the diversity in nitrate levels even within the same land section.



We've also learned that some areas high in iron and manganese tend to be lower in nitrates. In the Hastings well head protection area, we have been in conversation with the University of Nebraska about how elevated nitrate levels in the soil are changing soil chemistry. Those changes appear to be causing a biological shift which facilitates the release of uranium that would otherwise bound up in the soil sediments by bacteria. Stay tuned.

### Groundwater Contamination Cleanup and Water Recycling

Last year I reported that the NRD was working with the Corps of Engineers and USDA Meat Animal Research Center (MARC) near Clay Center, Nebraska on a groundwater remediation project in the old Naval Ammunition Depot. All 22 wells have now been completed and are in full production pumping approximately 3,600 gpm of contaminated groundwater. Full treatment is being provided by the Corps before the water is then discharged into a tributary of

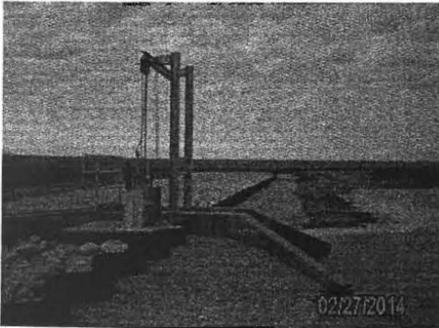
the Big Sandy Creek. The MARC captures water in a large wet well for utilization of the water for irrigation on their property. Water not used in the upper portion of the drainage is captured by nine grade stabilization structures along the Big Sandy tributary and spread for groundwater recharge. They also provide some outstanding wetland habitat. MARC also is developing facilities on the MARC dam, a 256 acre reservoir near the edge of their property, to utilize water stored during the offseason from the remediation process, for irrigation. Pump and treatment is anticipated to take 30 years, with ongoing monitoring to extend to nearly 90 years. This project is a real win-win situation as the groundwater is being cleaned up while using the remediated water to offset water that would otherwise be withdrawn for irrigation. The created wetlands provide groundwater recharge and a wildlife habitat bonus.



Water Treatment Plant



A grade stabilization structure just finished.



Shallow wetlands provided by the remediation process.

**KANSAS-NEBRASKA BIG BLUE RIVER COMPACT REPORT**  
**U.S. Geological Survey—Water Year 2013**

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 USGS National Water Information System (NWIS) website (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 the NWIS web page (address shown below).

During water year (WY) 2013 (October 1, 2012 to September 30, 2013), 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 2013 published data (manuscript; discharge and gage height daily values; statistics tables; and discharge and gage height hydrographs) from *WDR-US-2013: Water-Data Report 2013* are attached for each station. These site-data sheets (PDF files) are available online at <http://wdr.water.usgs.gov/wy2013/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 2013 compared to those for the median daily statistic for each day of the year.

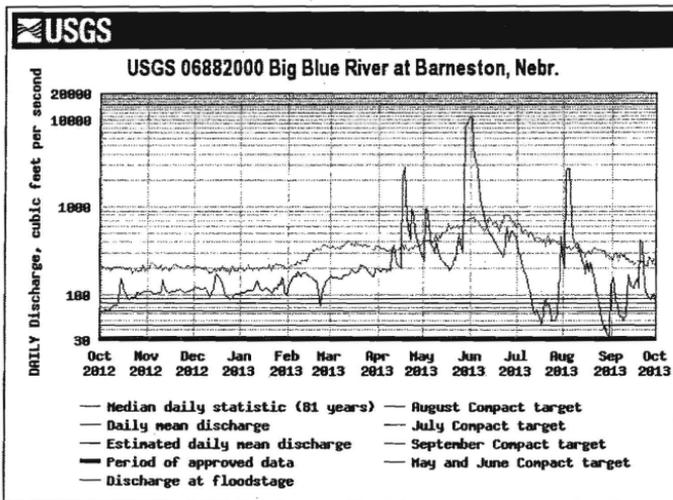
Current (real-time) and historical data on surface water, groundwater, and water quality for the Nation can be accessed and downloaded via the Water Resources for the United States website (<http://water.usgs.gov/>) or from the Nebraska Water Resources website (<http://ne.water.usgs.gov/>). Daily, monthly, 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

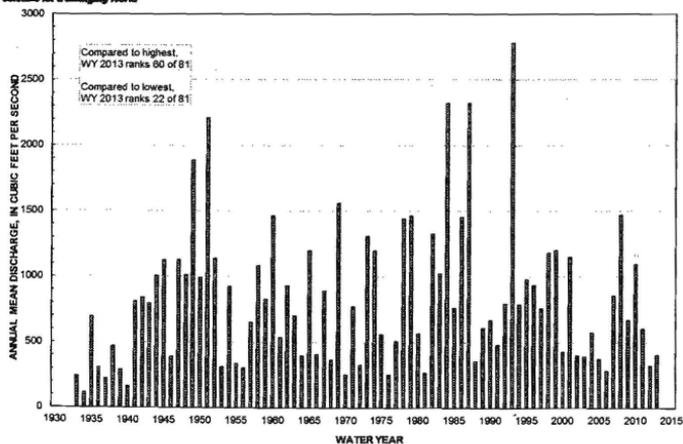
U.S. Geological Survey, Nebraska Water Science Center  
5231 S. 19th St., Lincoln, NE 68512-1271  
([jlambre@usgs.gov](mailto:jlambre@usgs.gov))  
402-328-4124 (office), 402-328-4101 (fax), 402-416-2363 (mobile)

May 7, 2014

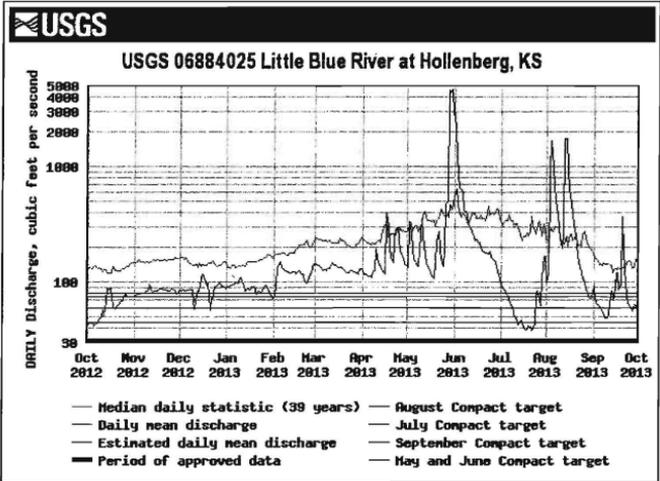
For Big Blue River at Barneston, fourteen discharge (and stage) measurements, ranging from 42.1 ft<sup>3</sup>/s (2.91 ft) to 9,890 ft<sup>3</sup>/s (13.85 ft), and two inspections were made during WY 2013. The annual mean discharge of 407 ft<sup>3</sup>/s was 1.2 times greater than that of the WY 2012 mean of 327 ft<sup>3</sup>/s; and 2.0 times less than the new historical mean of 835 ft<sup>3</sup>/s for WYs 1933–2013 (81 years of record). The maximum and minimum daily discharges were 10,900 ft<sup>3</sup>/s on May 31, 2013; and 33 ft<sup>3</sup>/s on August 30, 2013.



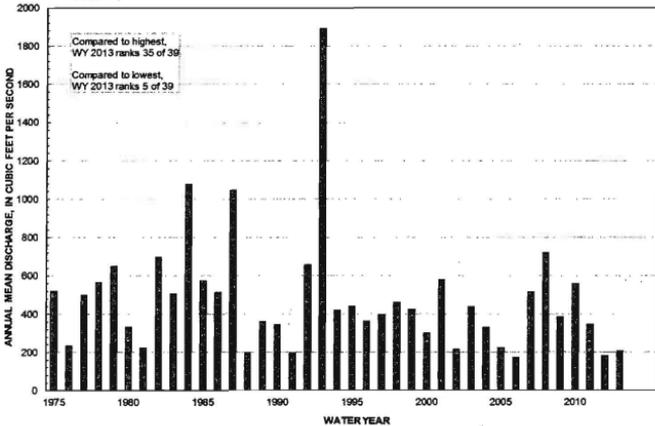
06882000 Big Blue River at Barneston, NE



For Little Blue River at Hollenberg, thirteen discharge (and stage) measurements, ranging from 46.3 ft<sup>3</sup>/s (2.10 ft) to 6,010 ft<sup>3</sup>/s (9.16 ft), and three inspections were made during WY 2013. The annual mean discharge of 207 ft<sup>3</sup>/s was 1.1 times greater than that of the WY 2012 mean of 184 ft<sup>3</sup>/s; and 2.3 times less than the new historical mean of 482 ft<sup>3</sup>/s for WYs 1975–2013 (39 years of record). The maximum and minimum daily discharges were 4,710 ft<sup>3</sup>/s on May 30, 2013; and 38 ft<sup>3</sup>/s on July 18, 2013.



06884025 Little Blue River at Hollenberg, KS



## U.S. DEPARTMENT OF THE INTERIOR - U.S. GEOLOGICAL SURVEY - WATER RESOURCES

## Short-Form Discharge Measurement Summary With Inspections

STATION NUMBER 06882000 Big Blue River at Barneston, Nebr. TYPE:Stream AGENCY USGS STATE 31 COUNTY 067

LATITUDE 400241 LONGITUDE 0963514 NAD83 DRAINAGE AREA 4447 CONTRIBUTING DRAINAGE AREA 4370.00 DATUM 1162.20 NGVD29

Date Processed:2014-05-07 07:42 By jmlambre

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.....
MEAS NO.* DATE * TIME * MADE BY * GAGE * DISCHARGE * RATING * INDIC * APPLD * UNSFT * SHIFT * GHT. * TIME * RATED * STATUS
* HEIGHT * CFS * SHIFT * SHIFT * DIFF * DIFF * CHG.
.....
1391 2012/10/26 1109 CDT gsn 3.31 97.6 35.1 -0.01 0.01 -2.1 -4.3 0.0 0.5 F L
CONTROL LOCATION: CONDITION: Clear
CONTROL REMARKS: rock riffle control dwnstr of gage 650ft

1392 2012/12/05 1027 CST gsn 3.32 116 35.1 0.05 0.05 13.7 0.9 0.0 0.43 F L
CONTROL LOCATION: CONDITION: Clear
CONTROL REMARKS: low flow rock riffle control. no ice.

1393 2013/01/15 1123 CST bhi 3.60 114 35.1 -0.23 0.01 -37.7 -38.7 -0.28 1.52 P L
CONTROL LOCATION: CONDITION: Ice cover
CONTROL REMARKS: 100 percent ice covered at line and dstrm about 200ft. further dstrm it becomes more open in the middle. 50 percent
MEASUREMENT REMARKS: The cross section was deep and the water was moving slow.

1394 2013/03/07 1004 CST bhi 3.49 146 35.1 -0.01 -0.01 -1.4 0 0.01 0.93 F L
CONTROL LOCATION: CONDITION: Clear
CONTROL REMARKS: 100 percent open

1395 2013/04/04 1043 CDT gsn/bhi 3.63 186 35.1 -0.02 -0.01 -3.6 -1.6 0.02 0.68 F L
CONTROL LOCATION: CONDITION: Clear

INSP 2013/04/04 1200 CDT gsn/bhi L
INSP 2013/04/04 1348 CDT gsn/bhi L

1396 2013/04/17 1239 CDT gsn 6.26 1370 35.1 -0.49 -0.42 -20.8 -3.5 1.03 0.5 F L
CONTROL LOCATION: CONDITION: Clear
CONTROL REMARKS: dead veg on lower banks
MEASUREMENT REMARKS: Adjusted final discharge using the "Rating Adjustment for Changing Discharge - Wiggins Method" - see attached
printout.

1397 2013/04/18 1055 CDT gsn/bhi 7.90 2990 35.1 -0.08 0.0 -2.3 -2.3 -0.06 1.1 F L
CONTROL LOCATION: CONDITION: Clear
CONTROL REMARKS: higher flow

1398 2013/05/13 1100 CDT gsn 3.73 243 35.1 0.04 0.04 7.0 0.4 0.0 0.53 F L

```

CONTROL LOCATION:       CONDITION: Clear  
CONTROL REMARKS: rock riffle dnwnstr 500 ft

1399 2013/05/28 1546 CDT   bhi   13.85     9890   35.1   0.44   0.0   5.9    5.9 0.06 1.92   P   L  
CONTROL LOCATION:       CONDITION: Moderate debris  
CONTROL REMARKS: Moderate to heavy debris flowing along the left side.  
MEASUREMENT REMARKS: Along left side had to move to half counts and .6 method due to debris.

1400 2013/06/28 0944 CDT   gsn   4.42     537   35.1   0.02   0.0   1.7    1.7 0.0 0.53   F   L  
CONTROL LOCATION:       CONDITION: Clear  
CONTROL REMARKS: large debris pile on upstream side of bridge pier on old bridge(middle pier). rock riffle control downstream submerged.

1401 2013/07/16 1015 CDT   bhi   2.98     57.5   35.1   0.14   0.13 67.6   2.3 -0.01 0.58   F   L  
CONTROL LOCATION:       CONDITION: Clear  
CONTROL REMARKS: Sandbar in the middle of the channel on the dstrm side of the middle pier. Rock riffle 400ft dstrm. See pictures.

1402 2013/08/09 1234 CDT   gsn   4.11     375   35.1   -0.01   0.0   -1.6   -1.6 0.02 0.75   F   L  
CONTROL LOCATION:       CONDITION: Clear  
CONTROL REMARKS: submerged rock riffle control

1403 2013/08/28 1019 CDT   bhi   2.91     42.1   35.1   0.12   0.13 71.1   -3.9 0.0 0.68   F   L  
CONTROL LOCATION:       CONDITION: Clear  
CONTROL REMARKS: sandbar in middle of channel, rock riffle 400 ft dstrm  
MEASUREMENT REMARKS: Along the left side the btm of channel was mainly limestone rocks, became more sandy towards the right side.

1404 2013/10/28 1100 CDT   gsn   3.44     158   35.1   0.08   0.08 17.9   0.6 0.0 0.68   F   L  
CONTROL LOCATION:       CONDITION: Clear  
CONTROL REMARKS: rock riffle control dnwnstr approx 750-1000ft.  
MEASUREMENT REMARKS: Mamt did not compute properly in SxS Pro. Had to use the spreadsheet print out for Q, A, W and V.  
REVIEWER NAME:

Water-Data Report 2013

**06882000 Big Blue River at Barneston, Nebr.**

Big Blue Basin  
Middle Big Blue Subbasin

LOCATION.--Lat 40°02'41", long 96°35'14" referenced to North American Datum of 1983, in NE ¼ NW ¼ sec.24, T.1 N., R.7 E., Gage County, NE, Hydrologic Unit 10270202, on right bank just downstream of bridge on State Highway 8, 0.6 mi southwest of Barneston, 1.3 mi upstream from Plum Creek, and 4.3 mi upstream from Nebraska-Kansas State line.

DRAINAGE AREA.--4,447 mi<sup>2</sup> of which 77 mi<sup>2</sup> probably is noncontributing.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--DAILY DISCHARGE--May 1932 to current year.

PERIOD OF RECORD.--DAILY GAGE HEIGHT--October 2009 to current year.

REVISED RECORDS.--WSP 896: 1932, 1935. WSP 1919: Drainage area.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 1,162.20 ft above sea level. Prior to June 9, 1941, water-stage recorder at site 0.3 mi downstream at datum 1.56 ft higher. June 9 to Nov. 17, 1941, non-recording gage, and Nov. 18, 1941 to Sept. 30, 1979, water-stage recorder at site 0.7 mi upstream at datum 2.0 ft higher.

REMARKS.--Records good except for estimated daily discharges, which are poor.

## 06882000 Big Blue River at Barneston, Nebr.—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**  
**DAILY MEAN VALUES**  
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	65	109	114	e103	e110	e160	193	242	10,200	382	199	130
2	63	109	121	e106	e128	e157	182	933	4,990	311	2,430	155
3	64	107	118	e106	e140	154	180	959	3,740	271	2,750	119
4	66	104	118	e106	e150	155	191	640	3,260	235	2,790	88
5	66	101	116	e110	e160	157	195	439	2,620	213	1,440	75
6	65	102	116	e113	162	152	194	362	1,740	187	738	61
7	67	103	115	e113	183	151	179	323	1,230	161	458	55
8	70	104	117	e110	173	153	192	300	942	140	352	56
9	73	106	118	e110	162	161	189	418	843	121	376	50
10	74	112	101	e115	172	167	293	303	698	102	390	53
11	75	147	e98	e136	176	167	367	274	589	80	311	56
12	74	118	e93	e142	178	167	292	252	539	68	281	166
13	87	108	101	e130	167	178	232	240	491	59	247	151
14	153	108	119	e120	165	194	214	231	464	67	212	125
15	142	106	156	e111	161	189	202	215	440	60	172	118
16	117	109	169	e112	154	177	199	214	409	55	248	118
17	102	108	160	e115	148	175	2,180	196	382	46	180	133
18	98	108	157	e117	146	180	2,880	185	343	47	233	149
19	91	109	142	e115	e142	184	1,370	202	322	84	206	120
20	86	111	e128	e112	e124	217	742	215	311	88	167	410
21	92	110	e110	e106	e106	214	485	259	297	74	145	389
22	93	114	e100	e105	e75	212	429	246	274	79	115	197
23	94	112	e96	e114	e95	204	936	397	290	66	99	131
24	94	109	e89	e117	e115	201	774	499	586	50	79	106
25	104	106	e87	e115	e135	189	521	375	498	51	63	95
26	105	105	e90	e128	e140	175	450	305	420	50	52	89
27	102	108	e94	e130	e145	169	363	1,250	531	54	41	87
28	105	107	e99	e155	e155	167	322	8,200	527	61	43	97
29	104	110	e101	e150	---	162	289	8,870	485	185	38	102
30	108	112	e103	e105	---	190	264	9,830	457	458	33	86
31	108	---	e103	e100	---	200	---	10,900	---	289	33	---
<b>Total</b>	<b>2,807</b>	<b>3,282</b>	<b>3,549</b>	<b>3,627</b>	<b>4,067</b>	<b>5,478</b>	<b>15,499</b>	<b>48,274</b>	<b>38,918</b>	<b>4,194</b>	<b>14,921</b>	<b>3,767</b>
<b>Mean</b>	<b>90.5</b>	<b>109</b>	<b>114</b>	<b>117</b>	<b>145</b>	<b>177</b>	<b>517</b>	<b>1,557</b>	<b>1,297</b>	<b>135</b>	<b>481</b>	<b>126</b>
<b>Max</b>	<b>153</b>	<b>147</b>	<b>169</b>	<b>155</b>	<b>183</b>	<b>217</b>	<b>2,880</b>	<b>10,900</b>	<b>10,200</b>	<b>458</b>	<b>2,790</b>	<b>410</b>
<b>Min</b>	<b>63</b>	<b>101</b>	<b>87</b>	<b>100</b>	<b>75</b>	<b>151</b>	<b>179</b>	<b>185</b>	<b>274</b>	<b>46</b>	<b>33</b>	<b>50</b>
<b>Ac-ft</b>	<b>5,570</b>	<b>6,510</b>	<b>7,040</b>	<b>7,190</b>	<b>8,070</b>	<b>10,870</b>	<b>30,740</b>	<b>95,750</b>	<b>77,190</b>	<b>8,320</b>	<b>29,600</b>	<b>7,470</b>

## STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2013, BY WATER YEAR (WY)

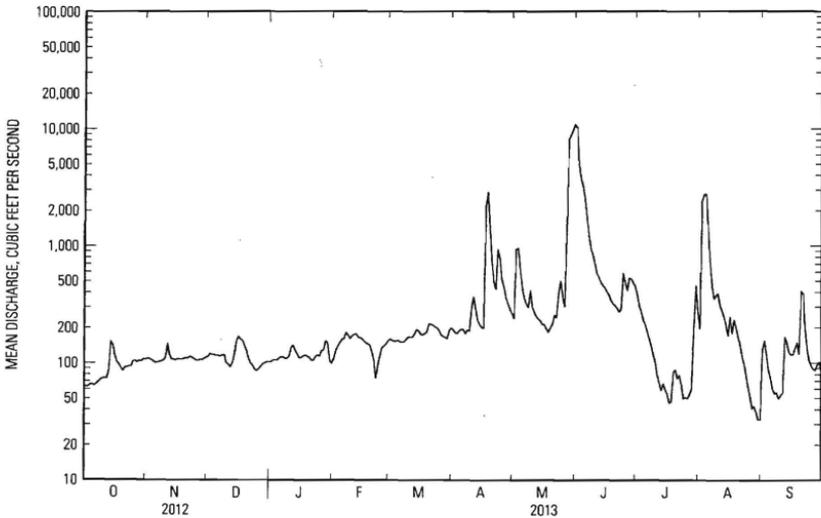
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	545	308	239	290	605	1,268	836	1,318	2,007	1,258	674	667
<b>Max</b>	7,451	1,526	851	1,596	2,876	10,560	5,280	5,207	10,460	12,270	5,227	3,420
<b>(WY)</b>	(1974)	(1999)	(1998)	(1973)	(1984)	(1979)	(1984)	(1995)	(1951)	(1993)	(1954)	(1989)
<b>Min</b>	61.5	77.5	87.4	67.6	116	137	132	96.0	69.3	30.7	21.1	50.6
<b>(WY)</b>	(1941)	(1937)	(1977)	(1937)	(1940)	(1968)	(1934)	(1934)	(1934)	(1934)	(1934)	(1939)

06882000 Big Blue River at Barneston, Nebr.—Continued

SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1933 - 2013	
Annual total	106,189		148,383		835	
Annual mean	290		407		2,781	
Highest annual mean					1993	
Lowest annual mean					1934	
Highest daily mean	7,430	Apr 15	10,900	May 31	50,000	Jun 9, 1941
Lowest daily mean	18	Aug 23	33	Aug 30	1.0	Nov 30, 1945
Annual seven-day minimum	25	Aug 17	43	Aug 25	15	Aug 3, 1934
Maximum peak flow			11,500	Jun 1	57,700	Jun 9, 1941
Maximum peak stage			15.57	Jun 1	<sup>a</sup> 34.30	Jun 9, 1941
Annual runoff (ac-ft)	210,600		294,300		605,000	
10 percent exceeds	507		498		1,700	
50 percent exceeds	156		146		279	
90 percent exceeds	43		74		105	

<sup>a</sup> At site and datum then in use.

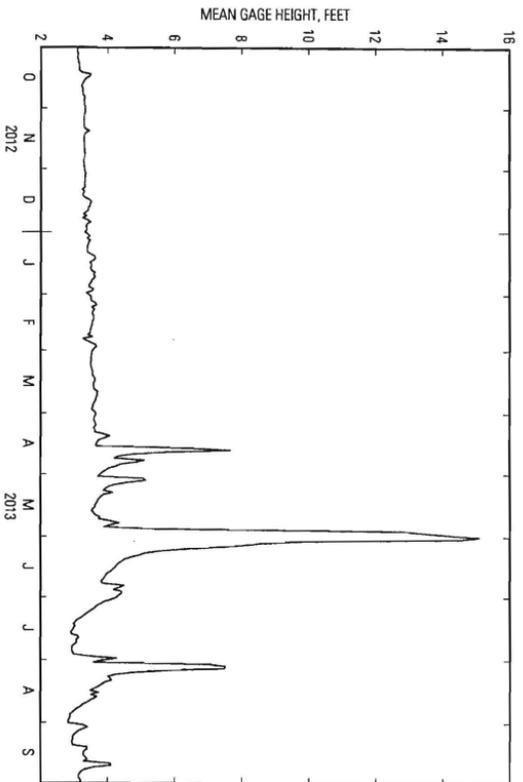


## 06882000 Big Blue River at Barneston, Nebr.—Continued

**GAGE HEIGHT, FEET**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	3.12	3.33	3.33	3.42	3.52	3.54	3.64	3.73	14.51	4.11	3.59	3.26
2	3.10	3.33	3.35	3.47	3.50	3.53	3.61	5.07	9.95	3.92	7.05	3.42
3	3.11	3.32	3.34	3.40	3.53	3.52	3.60	5.15	8.67	3.81	7.52	3.29
4	3.12	3.31	3.34	3.49	3.64	3.52	3.63	4.62	8.14	3.70	7.49	3.15
5	3.12	3.30	3.33	3.45	3.68	3.53	3.65	4.24	7.38	3.64	5.84	3.08
6	3.11	3.30	3.33	3.43	3.54	3.51	3.65	4.06	6.27	3.55	4.79	3.01
7	3.13	3.30	3.32	3.41	3.61	3.51	3.60	3.95	5.56	3.46	4.28	2.97
8	3.14	3.30	3.33	3.41	3.58	3.52	3.64	3.89	5.12	3.38	4.03	2.98
9	3.16	3.31	3.33	3.40	3.55	3.54	3.63	4.17	4.96	3.30	4.09	2.95
10	3.16	3.34	3.25	3.41	3.58	3.56	3.90	3.90	4.72	3.22	4.13	2.96
11	3.17	3.46	3.32	3.52	3.59	3.56	4.08	3.82	4.53	3.11	3.92	2.98
12	3.16	3.36	3.28	3.62	3.60	3.56	3.91	3.76	4.44	3.05	3.84	3.40
13	3.23	3.31	3.27	3.64	3.56	3.60	3.75	3.72	4.35	3.00	3.74	3.41
14	3.50	3.31	3.34	3.60	3.55	3.64	3.70	3.69	4.29	3.04	3.63	3.32
15	3.47	3.30	3.47	3.48	3.54	3.63	3.67	3.65	4.24	3.00	3.50	3.29
16	3.37	3.32	3.52	3.53	3.52	3.59	3.66	3.64	4.17	2.98	3.74	3.29
17	3.31	3.31	3.49	3.52	3.50	3.59	6.45	3.58	4.11	2.92	3.52	3.35
18	3.28	3.31	3.48	3.51	3.49	3.60	7.67	3.54	4.01	2.93	3.70	3.41
19	3.25	3.32	3.43	3.53	3.49	3.61	5.75	3.60	3.95	3.13	3.61	3.30
20	3.23	3.32	3.44	3.63	3.42	3.71	4.79	3.64	3.92	3.15	3.48	4.09
21	3.26	3.32	3.38	3.59	3.56	3.70	4.33	3.78	3.88	3.08	3.40	4.11
22	3.26	3.33	3.29	3.63	3.28	3.70	4.22	3.74	3.82	3.10	3.27	3.58
23	3.27	3.32	3.38	3.60	3.38	3.67	5.11	4.10	3.86	3.04	3.21	3.34
24	3.27	3.31	3.27	3.53	3.51	3.66	4.85	4.36	4.51	2.95	3.10	3.23
25	3.31	3.30	3.42	3.51	3.64	3.63	4.40	4.09	4.36	2.95	3.02	3.18
26	3.32	3.29	3.50	3.46	3.68	3.59	4.26	3.91	4.20	2.95	2.96	3.15
27	3.30	3.30	3.40	3.45	3.61	3.57	4.06	5.41	4.42	2.97	2.89	3.15
28	3.32	3.30	3.37	3.58	3.56	3.56	3.95	12.85	4.42	3.01	2.90	3.19
29	3.31	3.31	3.39	3.56	---	3.54	3.86	13.46	4.33	3.46	2.87	3.22
30	3.33	3.32	3.38	3.38	---	3.63	3.79	14.24	4.28	4.28	2.84	3.14
31	3.33	---	3.33	3.46	---	3.66	---	15.10	---	3.86	2.84	---
Mean	3.24	3.32	3.37	3.50	3.54	3.59	4.23	5.31	5.31	3.29	3.96	3.27
Max	3.50	3.46	3.52	3.64	3.68	3.71	7.67	15.10	14.51	4.28	7.52	4.11
Min	3.10	3.29	3.25	3.38	3.28	3.51	3.60	3.54	3.82	2.92	2.84	2.95

Water-Data Report 2013  
0682000 Big Blue River at Barneston, Neb.—Continued



U.S. DEPARTMENT OF THE INTERIOR - U.S. GEOLOGICAL SURVEY - WATER RESOURCES

Short-Form Discharge Measurement Summary With Inspections

STATION NUMBER 06884025 Little Blue River at Hollenberg, KS TYPE:Stream AGENCY USGS STATE 20 COUNTY 201

LATITUDE 395849 LONGITUDE 0970017 NAD83 DRAINAGE AREA 2752 CONTRIBUTING DRAINAGE AREA DATUM 1216.10 NGVD29

Date Processed:2014-05-07 07:58 By jmlambre

MEAS NO.*	DATE	TIME	MADE BY *	GAGE * HEIGHT *	DISCHARGE * CFS	RATING *	INDIC * SHIFT *	APPLD * SHIFT *	UNSF * DIFF *	SHIFT * DIFF *	GHT. * CHG.	TIME	RATED	STATUS
503	2012/10/26	1332	CDT gsn	2.18	75.3	10.1	-0.19	-0.18	-39.8	-4.4	0.0	0.43	G	L
CONTROL LOCATION: CONDITION: Clear														
CONTROL REMARKS: sandbars														
504	2012/12/05	1212	CST gsn	2.21	88.0	10.1	-0.17	-0.18	-33.8	2.3	0.0	0.5	F	L
CONTROL LOCATION: CONDITION: Clear														
CONTROL REMARKS: no ice														
505	2013/01/08	1138	CST gsn/pab	2.71	101	10.1	-0.62	-0.12	-65.9	-60.1	0.0	0.62	P	L
CONTROL LOCATION: CONDITION: Ice cover														
INSP	2013/01/28	0952	CST bhi	2.66										L
CONTROL LOCATION: CONDITION: Ice cover														
CONTROL REMARKS: 50 percent ice cover, mainly open along left side. sandbars 150 dstrm in middle of channel.														
INSP	2013/02/14	0953	CST gsn	2.34										L
CONTROL LOCATION: CONDITION: Clear														
CONTROL REMARKS: no ice present														
506	2013/03/07	1207	CST bhi	2.33	125	10.1	-0.15	-0.14	-25.6	-2.3	0.0	0.66	F	L
CONTROL LOCATION: CONDITION: Clear														
CONTROL REMARKS: Braided dstrm of bridge. Large sandbar in middle of channel 150ft dstrm. 100 percent open.														
507	2013/04/05	1235	CDT gsn	2.28	114	10.1	-0.14	-0.14	-25.5	0	0.0	0.5	F	L
CONTROL LOCATION: CONDITION: Clear														
CONTROL REMARKS: sandbars														
508	2013/05/13	1307	CDT gsn	2.40	150	10.1	-0.13	-0.13	-21.1	0	0.0	0.6	G	L
CONTROL LOCATION: CONDITION: Clear														
CONTROL REMARKS: sandbars														
INSP	2013/05/22	1003	CDT bhi	2.53										L
CONTROL LOCATION: CONDITION: Clear														
CONTROL REMARKS: Large sandbar in the middle of the channel, see pictures.														
509	2013/05/28	1351	CDT bws	9.16	6010	10.1	-0.07	0.0	-1.6	-1.6	0.07	1.53	P	L

CONTROL LOCATION:      CONDITION: Submerged  
 CONTROL REMARKS: moderate submerged shore and channel veg/debri.  
 MEASUREMENT REMARKS: poor Qm due to hf counts, floating debri, subm. veg.

510 2013/06/28 1239 CDT    gsn    2.50      141      10.1    -0.26   -0.25   -36.5   -2.8   -0.01   0.77    F    L  
 CONTROL LOCATION:      CONDITION: Clear  
 CONTROL REMARKS: sandbars. channel shifted after event at end of June

511 2013/07/16 1244 CDT    bhi    2.10      46.3     10.1    -0.25   -0.25   -55.0    0.2    0.0    0.5    G    L  
 CONTROL LOCATION:      CONDITION: Clear  
 CONTROL REMARKS: Large sandbars downstream, braided conditions.

512 2013/08/06 1117 CDT    bhi    3.72      677      10.1    -0.11   -0.10   -7.6    -1.0   -0.03   1.22    F    L  
 CONTROL LOCATION:      CONDITION: Clear  
 CONTROL REMARKS: Higher than normal flow, see pictures.

513 2013/08/23 1201 CDT    gsn    2.44      133      10.1    -0.23   -0.23   -34.5    0      -0.01   0.65    G    L  
 CONTROL LOCATION:      CONDITION: Clear  
 CONTROL REMARKS: sandbars

514 2013/09/05 1130 CDT    LWN    2.04      61.2     10.1    -0.12   -0.13   -30.8    4.6    0.01   0.65    F    L  
 CONTROL LOCATION:      CONDITION: Clear  
 CONTROL REMARKS: some rock debris, old bridge foundation on right bank in the river.

515 2013/10/28 1251 CDT    gsn    2.35      119      10.1    -0.19   -0.19   -31.6    0      0.0    0.4    G    L  
 CONTROL LOCATION:      CONDITION: Clear  
 CONTROL REMARKS: few sandbars

Water-Data Report 2013

**06884025 Little Blue River at Hollenberg, KS**

Big Blue Basin  
Lower Little Blue Subbasin

LOCATION.--Lat 39°58'49", long 97°00'17" referenced to North American Datum of 1983, in NE ¼ SW ¼ sec.8, T.1 S., R.4 E., Washington County, KS, Hydrologic Unit 10270207, on right bank just downstream from bridge on county road, 0.6 mi west of Hollenberg, 1.8 mi downstream from Nebraska-Kansas State line, and at mile 43.1.

DRAINAGE AREA.--2,752 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--DAILY DISCHARGE--March 1973 to February 1974 (discharge measurements only), March 1974 to current year.

PERIOD OF RECORD.--DAILY GAGE HEIGHT--October 2009 to current year.

GAGE.--Water-stage recorder with satellite telemetry. Datum of gage is 1,216.10 ft above sea level.

REMARKS.--Records good except for estimated daily discharges, which are poor. Discharge measurements made prior to 1974 water year are published in table of miscellaneous sites in WDR NE-73.

EXTREMES OUTSIDE PERIOD OF RECORD.--A gage height of 23.07 ft, present datum, from floodmark, discharge not determined, occurred October 12, 1973.

## 06884025 Little Blue River at Hollenberg, KS—Continued

**DISCHARGE, CUBIC FEET PER SECOND**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**  
**DAILY MEAN VALUES**  
 [e, estimated]

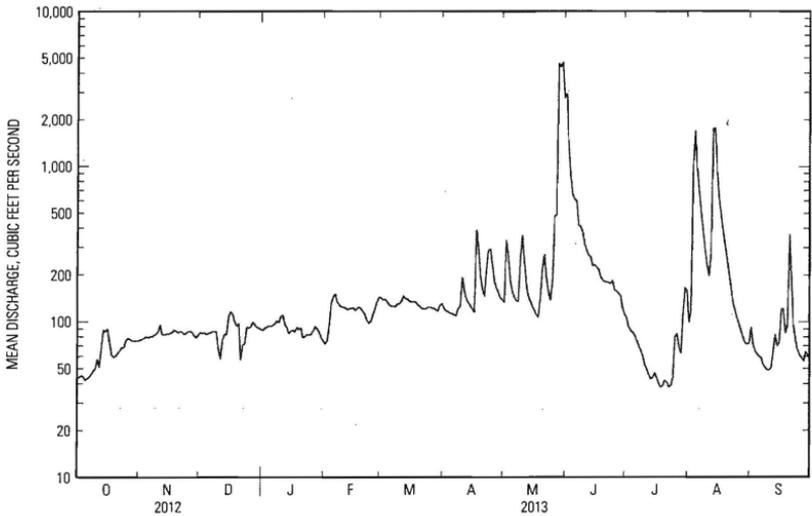
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	43	76	85	e88	e72	e143	122	134	2,940	106	100	92
2	44	77	84	e91	e75	e139	118	335	1,310	94	117	71
3	45	78	85	e92	e96	140	116	267	828	88	922	65
4	44	80	83	e94	e132	135	114	187	657	86	1,690	62
5	42	79	84	e93	e145	129	113	157	620	82	1,010	60
6	43	80	85	e95	e150	126	111	145	597	76	684	59
7	44	80	86	e97	e134	127	110	137	421	70	514	53
8	46	82	86	e101	e128	125	122	136	411	66	381	51
9	48	83	86	e99	e125	130	126	261	379	61	296	49
10	50	86	e67	e108	e124	131	193	362	316	53	238	49
11	57	95	e58	e110	e123	136	160	249	290	50	198	51
12	51	83	e76	e96	e120	147	141	173	269	46	275	65
13	68	82	e83	e92	e121	141	133	148	263	43	1,760	83
14	88	83	e83	e84	e122	140	127	136	231	44	1,770	70
15	86	83	e108	e87	123	136	121	127	234	47	930	74
16	90	84	e116	e88	118	134	116	119	226	44	620	121
17	73	85	e111	e86	123	134	389	112	217	40	482	121
18	61	88	e100	e92	124	134	302	107	196	38	385	85
19	59	87	e94	e89	121	129	197	145	186	39	316	95
20	60	85	e97	e81	116	126	163	222	e182	42	255	366
21	62	86	e57	e79	e111	122	147	272	e181	41	e210	183
22	65	86	e71	e80	e102	121	218	192	180	38	e168	95
23	68	83	e72	e83	e98	121	288	155	177	39	e135	76
24	68	84	e92	e82	e101	124	294	138	185	44	120	66
25	75	86	e91	e83	e111	124	e235	187	162	80	106	61
26	78	87	e93	e87	e121	123	182	476	158	84	97	59
27	77	85	e99	e93	e134	122	166	497	154	70	88	56
28	75	81	e96	e90	e144	119	155	4,620	147	63	80	64
29	75	79	e92	e86	---	118	143	4,390	124	110	73	61
30	75	82	e91	e79	---	128	139	4,710	113	166	72	58
31	75	---	e89	e75	---	131	---	2,780	---	159	73	---
<b>Total</b>	1,935	2,495	2,700	2,790	3,314	4,035	5,061	22,076	12,354	2,109	14,165	2,521
<b>Mean</b>	62.4	83.2	87.1	90.0	118	130	169	712	412	68.0	457	84.0
<b>Max</b>	90	95	116	110	150	147	389	4,710	2,940	166	1,770	366
<b>Min</b>	42	76	57	75	72	118	110	107	113	38	72	49
<b>Ac-ft</b>	3,840	4,950	5,360	5,530	6,570	8,000	10,040	43,790	24,500	4,180	28,100	5,000

**STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1975 - 2013, BY WATER YEAR (WY)**

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Mean</b>	320	223	172	177	305	666	486	788	930	855	497	354
<b>Max</b>	2,163	1,113	424	576	1,059	3,816	2,379	2,302	4,373	9,014	2,572	1,320
<b>(WY)</b>	(1987)	(1997)	(1993)	(1984)	(1993)	(1993)	(1987)	(1995)	(1984)	(1993)	(1985)	(1977)
<b>Min</b>	45.3	81.1	87.1	90.0	115	118	123	108	151	68.0	51.5	32.0
<b>(WY)</b>	(1992)	(1992)	(2013)	(2013)	(1992)	(1981)	(2003)	(1992)	(1981)	(2013)	(2012)	(1991)

**SUMMARY STATISTICS**

	Calendar Year 2012		Water Year 2013		Water Years 1975 - 2013	
Annual total	62,077		75,555			
Annual mean	170		207		482	
Highest annual mean					1,891	1993
Lowest annual mean					173	2006
Highest daily mean	4,300	Apr 15	4,710	May 30	39,300	Jul 26, 1992
Lowest daily mean	24	Sep 12	38	Jul 18	24	Sep 12, 2012
Annual seven-day minimum	26	Sep 6	40	Jul 17	26	Sep 6, 2012
Maximum peak flow			6,400	May 28	47,800	Jul 26, 1992
Maximum peak stage			9.36	May 28	21.21	Jul 26, 1992
Annual runoff (ac-ft)	123,100		149,900		349,300	
10 percent exceeds	258		292		799	
50 percent exceeds	113		101		195	
90 percent exceeds	39		59		100	



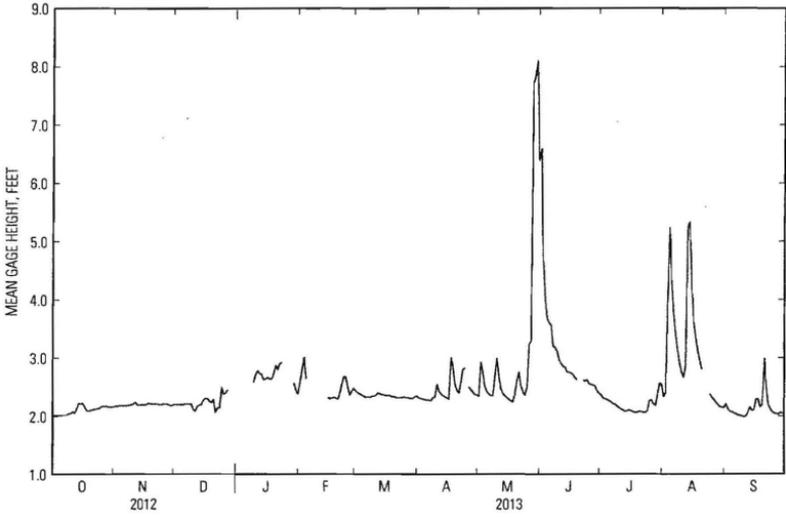
## Water-Data Report 2013

## 06884025 Little Blue River at Hollenberg, KS—Continued

**GAGE HEIGHT, FEET**  
**WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013**  
**DAILY MEAN VALUES**

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2.01	2.17	2.21	---	2.58	2.43	2.31	2.34	6.58	2.36	2.33	2.21
2	2.02	2.17	2.20	---	2.78	2.40	2.30	2.92	4.73	2.31	2.40	2.12
3	2.02	2.18	2.20	---	3.01	2.38	2.29	2.74	3.99	2.29	3.94	2.08
4	2.02	2.18	2.20	---	2.64	2.36	2.28	2.52	3.67	2.28	5.23	2.07
5	2.01	2.18	2.20	---	---	2.34	2.27	2.42	3.60	2.26	4.32	2.05
6	2.02	2.18	2.21	---	---	2.32	2.27	2.38	3.55	2.24	3.72	2.04
7	2.02	2.18	2.21	---	---	2.33	2.26	2.35	3.20	2.21	3.39	2.01
8	2.03	2.19	2.21	---	---	2.32	2.31	2.35	3.17	2.20	3.11	2.01
9	2.04	2.20	2.21	2.58	---	2.34	2.32	2.71	3.11	2.17	2.91	2.00
10	2.05	2.21	2.12	2.71	---	2.34	2.54	2.99	2.96	2.14	2.76	1.99
11	2.08	2.24	2.09	2.78	---	2.36	2.43	2.69	2.90	2.12	2.66	2.00
12	2.05	2.20	2.17	2.73	---	2.40	2.38	2.47	2.85	2.10	2.85	2.07
13	2.13	2.19	2.19	2.72	---	2.38	2.35	2.39	2.83	2.08	5.25	2.15
14	2.22	2.20	2.20	2.63	---	2.37	2.33	2.35	2.75	2.09	5.33	2.09
15	2.21	2.20	2.28	2.64	2.32	2.36	2.31	2.32	2.75	2.10	4.17	2.11
16	2.22	2.20	2.31	2.66	2.30	2.35	2.29	2.29	2.73	2.09	3.60	2.29
17	2.16	2.21	2.30	2.64	2.31	2.35	3.00	2.26	2.71	2.07	3.32	2.29
18	2.10	2.22	2.26	2.64	2.32	2.35	2.84	2.24	2.65	2.06	3.11	2.15
19	2.09	2.21	2.23	2.73	2.31	2.33	2.55	2.38	2.62	2.06	2.95	2.20
20	2.10	2.21	2.29	2.87	2.29	2.33	2.44	2.61	---	2.08	2.80	2.98
21	2.11	2.21	2.07	2.80	2.39	2.31	2.39	2.75	---	2.07	---	2.49
22	2.12	2.21	2.14	2.90	2.53	2.31	2.59	2.52	2.61	2.06	---	2.20
23	2.13	2.20	2.14	2.92	2.68	2.31	2.80	2.41	2.60	2.06	---	2.12
24	2.13	2.20	2.49	---	2.67	2.32	2.82	2.36	2.62	2.09	2.38	2.07
25	2.16	2.21	2.38	---	2.51	2.32	---	2.51	2.55	2.26	2.32	2.05
26	2.17	2.21	2.40	---	2.36	2.31	2.50	3.22	2.54	2.27	2.28	2.04
27	2.17	2.21	2.45	---	2.42	2.31	2.45	3.30	2.53	2.21	2.24	2.03
28	2.17	2.19	---	---	2.48	2.30	2.41	7.72	2.51	2.18	2.20	2.06
29	2.16	2.18	---	2.57	---	2.30	2.37	7.83	2.43	2.37	2.16	2.05
30	2.16	2.19	---	2.45	---	2.33	2.36	8.10	2.39	2.56	2.15	2.04
31	2.16	---	---	2.38	---	2.34	---	6.39	---	2.54	2.14	---
Mean	2.10	2.20	---	---	---	2.34	---	3.19	---	2.19	---	2.14
Max	2.22	2.24	---	---	---	2.43	---	8.10	---	2.56	---	2.98
Min	2.01	2.17	---	---	---	2.30	---	2.24	---	2.06	---	1.99

06884025 Little Blue River at Hollenberg, KS—Continued



**REPORT OF THE TREASURER  
TO THE  
KANSAS-NEBRASKA BIG BLUE RIVER COMPACT ADMINISTRATION  
May 14, 2014**

Balance on Hand July 1, 2013	\$ 22,334.32
State Assessments	\$ 16,000.00
Interest Income through April 30, 2014	<u>\$ 19.57</u>
<b>Funds Available as of May 14, 2014</b>	<b>\$ 38,353.89</b>
 Expenditures as of May 14, 2014	
USGS	\$ (15,143.00)
Printing Annual Report	\$ (421.74)
Dana Cole - Audit	\$ (1,600.00)
 Balance on Hand	 <b>\$ 21,189.15</b>
 Estimated Expenditures through June 30, 2014	
Lower Big Blue Natural Resources District	\$ 680.00
Printing Annual Report	\$ 282.00
Postage and Office Supplies	\$ 100.00
Miscellaneous	<u>\$ 100.00</u>
 Total Estimated Additional Expenditures	 <b>\$ 1,162.00</b>
 Estimated Income through June 30, 2014	
Interest Income	<b>\$ 3.00</b>
 <b>Estimated End of Fiscal Year Balance</b>	 <u><u><b>\$ 20,030.15</b></u></u>

BIG BLUE RIVER COMPACT BUDGET ANALYSIS May 2014							
Column A	FY 2012-2013		FY 2013-2014		FY 2014-2015		FY 2015-2016
	Actual	Adopted May 2012	Estimate May 2014	Adopted May 2013	Estimate May 2013	Proposed May 2014	Estimate May 2014
<b>EXPENDITURES</b>							
Operations							
Stalene Gages	\$ (15,097.00)	\$ 15,500.00	\$ 15,143.00	\$ 15,550.00	\$ 16,000.00	\$ 16,000.00	\$ 16,500.00
Observation Wells	\$ (680.00)	\$ 700.00	\$ 680.00	\$ 680.00	\$ 700.00	\$ 700.00	\$ 700.00
Water Quality Committee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Annual report - Printing	\$ (131.01)	\$ 200.00	\$ 703.74	\$ 200.00	\$ 200.00	\$ 450.00	\$ 450.00
Annual Audit	\$ -	\$ 800.00	\$ 1,600.00	\$ -	\$ 1,600.00	\$ 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
<b>Total Expenses</b>	<b>\$ (15,908.01)</b>	<b>\$ 17,400.00</b>	<b>\$ 18,326.74</b>	<b>\$ 16,630.00</b>	<b>\$ 18,700.00</b>	<b>\$ 18,950.00</b>	<b>\$ 17,850.00</b>
<b>INCOME &amp; CARRY OVER</b>							
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	\$ 28.72	\$ 90.00	\$ 22.57	\$ 25.00	\$ 25.00	\$ 25.00	\$ 25.00
Carry Over from Prior Year	\$ 22,213.61	\$ 19,678.92	\$ 22,334.32	\$ 16,618.33	\$ 16,013.33	\$ 20,090.15	\$ 17,105.15
<b>Total Income and Carry Over</b>	<b>\$ 38,242.33</b>	<b>\$ 35,768.92</b>	<b>\$ 38,356.89</b>	<b>\$ 32,643.33</b>	<b>\$ 32,038.33</b>	<b>\$ 36,055.15</b>	<b>\$ 33,130.15</b>
<b>Balance End of Year</b>	<b>\$ 22,334.32</b>	<b>\$ 18,368.92</b>	<b>\$ 20,030.15</b>	<b>\$ 16,013.33</b>	<b>\$ 13,338.33</b>	<b>\$ 17,105.15</b>	<b>\$ 15,280.15</b>

BIG BLUE RIVER COMPACT BUDGET ANALYSIS May 2014							
Column A	FY 2012-2013		FY 2013-2014		FY 2014-2015		FY 2015-2016
	Actual	Adopted May 2012	Estimate May 2014	Adopted May 2013	Estimate May 2013	Proposed May 2014	Estimate May 2014
<b>EXPENDITURES</b>							
Operations							
Staseline Gages	\$ (15,097.00)	\$ 15,500.00	\$ 15,143.00	\$ 15,550.00	\$ 16,000.00	\$ 16,000.00	\$ 16,500.00
Observation Wells	\$ (680.00)	\$ 700.00	\$ 680.00	\$ 680.00	\$ 700.00	\$ 700.00	\$ 700.00
Water Quality Committee	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Annual report - Printing	\$ (131.01)	\$ 200.00	\$ 691.74	\$ 200.00	\$ 200.00	\$ 450.00	\$ 450.00
Annual Audit	\$ -	\$ 800.00	\$ 1,600.00	\$ -	\$ 1,600.00	\$ 1,600.00	\$ -
Postage and Office Supplies	\$ -	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$100	\$ 100.00
Miscellaneous Expenses	\$ -	\$ 100.00	\$ 100.00	\$ 100.00	\$ 100.00	\$100	\$ 100.00
<b>Total Expenses</b>	<b>\$ (15,908.01)</b>	<b>\$ 17,400.00</b>	<b>\$ 18,314.74</b>	<b>\$ 16,630.00</b>	<b>\$ 18,700.00</b>	<b>\$ 18,950.00</b>	<b>\$ 17,850.00</b>
<b>INCOME &amp; CARRY OVER</b>							
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	\$ 28.72	\$ 90.00	\$ 19.74	\$ 25.00	\$ 25.00	\$ 25.00	\$ 25.00
Carry Over from Prior Year	\$ 22,213.61	\$ 19,678.92	\$ 22,334.32	\$ 16,618.33	\$ 16,013.33	\$ 20,039.32	\$ 17,089.32
<b>Total Income and Carry Over</b>	<b>\$ 38,242.33</b>	<b>\$ 35,768.92</b>	<b>\$ 38,354.06</b>	<b>\$ 32,643.33</b>	<b>\$ 32,038.33</b>	<b>\$ 36,039.32</b>	<b>\$ 33,114.32</b>
<b>Balance End of Year</b>	<b>\$ 22,334.32</b>	<b>\$ 18,368.92</b>	<b>\$ 20,039.32</b>	<b>\$ 16,013.33</b>	<b>\$ 13,338.33</b>	<b>\$ 17,089.32</b>	<b>\$ 15,264.32</b>

May 14, 2014

## BBRCA TREASURER/BUDGET REPORT

- **First handout is the Treasurer's Report**

- We are doing well overall for funds, with \$24,973.32 on hand and we expect to end the year at around \$20,039.32. (Down about \$2,000.00 from the beginning year balance of \$22,334.32).
- Checks have been cut for USGS (\$3,787.00) and Lower Big Blue NRD (\$680.00), but they have not cleared the account yet.

- **Second handout is our budget tracking document.**

- **First two columns are closing the book on FY 12-13.**
  - The \$800 budgeted for the Annual Audit was spent in the current fiscal year (FY 13-14).
  - \$100 budgeted for Postage and Office Supplies and \$100 budgeted for Miscellaneous Expenses were not spent.
  - The actual interest earned in FY 2012-2013 was lower than the budgeted amount due a lower than expected interest rate.
- **The next two columns show how the Compact Administration Budget has been spent this FY 13-14.**
  - The Annual Report Printing budget was exceeded this year due to unforeseen printing problems. The budgeted amount was \$200.00, but the final cost of printing the report was \$421.74. We may want to discuss options for how we budget for the printing of the report:
    - One option is to discontinue the printing of the annual report and begin digitally sharing the information contained in it.
    - If we continue to print the annual report, we should consider increasing the printing budget.
  - The audit payment was larger this year (\$1,600.00) because it was for two fiscal years, FY10-11 and FY11-12. Payment for the audit was planned to have been made in FY12-13, but was not made until this fiscal year (FY13-14).

**Comment [MMM1]:** This figure will be \$21,186.57 if the USGS check clears by the time we receive the April account statement.

**Comment [MMM2]:** Based on the cost of last year's printing, I would suggest budgeting \$450.00. Because 2 annual reports have been printed and paid for within this same fiscal year in the past, we may want to consider budgeting \$500 for printing.

May 14, 2014

- **The next two columns are the budget for FY 14-15**
  - First set of numbers is what 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 proposed figure for this year is \$16,000.00.
    - The Audit is now being conducted every 2 years. The audit of fiscal years 12-13 and 13-14 will be contracted in this fiscal year and will cost approximately \$1,600.00.
      - The Legal Committee has brought a report on possible alternatives to the annual audit available to the Compact Administration.
    - The budget reflects the declining interest rate on the BBRCA account with an Interest Income estimate of ~~\$25,00~~ for FY14-15.
    - With the state assessments staying at \$8,000.00 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 15-16**
  - As in the budget for FY 2014-2015, the USGS figure is higher due to the approximately 3% annual increase.
  - The estimated budget for the observation wells is ~~\$700,00~~.
  - The estimated budget for Annual Report Printing is ~~\$450,00~~.
  - There is not a figure included for the Annual Audit budget due to the current plan to have the audit conducted every two years, rather than every year.
  - \$100 each for the Postage & Office Supplies and the Miscellaneous Expenses budgets will remain the same.

Comment [MMM3]: Proposed Figure is \$25. In the calendar year of 2013, the account earned \$24.50

Comment [MMM4]: Over the past three fiscal years, we have gone back and forth between \$680 and \$700 for this item. I suggest that we propose \$100, as that was the figure estimated at last year's meeting.

Comment [MMM5]: See comment MMM2 above.



At the most recent meeting of the Big Blue River Compact Administration, the Legal Committee was directed to prepare for consideration by the Administration at its next meeting, options as alternatives to the performance of audits every two years (Article VII. 4.).

In his presentation at the May 15, 2013 meeting, Jim Schneider, the Blue River Basin Treasurer, provided a handout comparing a Compilation, a Review and an Audit. My understanding is that we are to develop alternative rule changes for the Administration to consider. Article VI. 2. prescribes that rules may be amended at the annual meeting provided that proposed amendments of changes are mailed to each Member of the Administration at least 15 days prior to the meeting. Thus whatever options may be developed will need to be mailed no later than in April, 2014.

Rule VII. 4. specifies the current requirement of an audit occurring every two years. Additionally Article VIII. 2.(c) specifies that the annual report include in even numbered years the report of the biennial audit. Unless I have missed a reference to the audit elsewhere, which is certainly possible, I do not believe that it is otherwise mentioned. Please let me know if you believe any other provisions need to be amended or changed if the Administrators decide to move ahead with a change in the rules.

I suggest that Option A utilize the "Compilation" as the basis for the financial examination. Thus I suggest that VII.4. be changed to read:

All receipts and disbursements of the Administration shall *undergo a compilation examination* by a certified public accountant to be selected by the Administration. The *compilation report* shall be included and become a part of the annual report of the Administration.(revised language in italics)

Additionally VIII.2. shall be changed to read:

The annual report shall include, among other things, the following:

(c) *The report of the annual compilation* of the Kansas-Nebraska Big Blue Compact Administration Funds;

I suggest that Option B utilize the "Review" as the basis for the financial examination. Thus I suggest that VII.4. be changed to read:

All receipts and disbursements of the Administration shall *undergo a review examination* by a certified public accountant to be selected by the Administration. The *review examination report* shall be included and become a part of the annual report of the Administration.

Additionally VIII.2. shall be changed to read:

The annual report shall include, among other things, the following:

(c) *The report of the annual review* of the Kansas-Nebraska Big Blue Compact Administration Funds;

KANSAS-NEBRASKA BIG BLUE RIVER COMPACT

May 14, 2014

Option "A", changes to Section VII.4.:

All receipts and disbursements of the Administration shall *undergo a compilation examination* by a certified public accountant to be selected by the Administration. The *compilation report* shall be included and become a part of the annual report of the Administration. (revised language in italics)

Changes to Section VIII.2.:

The annual report shall include, among other things, the following:

(c) *The report of the annual compilation* of the Kansas-Nebraska Big Blue Compact Administration Funds; (revised language in italics)

Option "B", changes to Section VII.4.:

All receipts and disbursements of the Administration shall *undergo a review examination* by a certified public accountant to be selected by the Administration. The *review examination report* shall be included and become a part of the annual report of the Administration. (revised language in italics)

Changes to Section VIII.2.:

The annual report shall include, among other things, the following:

(c) *The report of the annual review* of the Kansas-Nebraska Big Blue Compact Administration Funds; (revised language in italics)

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

May 14, 2014

The engineering committee was not given any special assignments from the Compact Administration and did not meet during the past year. The 2013 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 2013 water year (October 1, 2012 thru September 30, 2013) 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 31 days. The mean daily streamflow on the Little Blue River at the Hollenberg gage (Exhibit B) was below target flows for 32 days.

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](http://waterdata.usgs.gov/ne/nwis/uv/?site_no=06882000)

Little Blue River – [http://waterdata.usgs.gov/ne/nwis/uv/?site\\_no=06884025](http://waterdata.usgs.gov/ne/nwis/uv/?site_no=06884025)

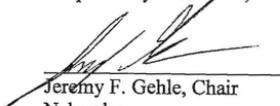
**Review of Groundwater Data**

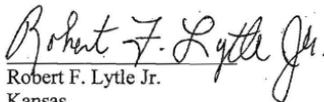
The Lower Big Blue Natural Resources District provided the groundwater levels (Exhibit C) for the Big Blue Basin near Beatrice.

**Review of Wells in the Regulatory Reaches**

Exhibit D is a listing of the irrigation wells within the regulatory reaches. There was one new irrigation well drilled in the Big Blue River regulatory area and no new wells in the Little Blue River regulatory area during this reporting period.

Respectively Submitted,

  
Jeremy F. Gehle, Chair  
Nebraska

  
Robert F. Lytle Jr.  
Kansas

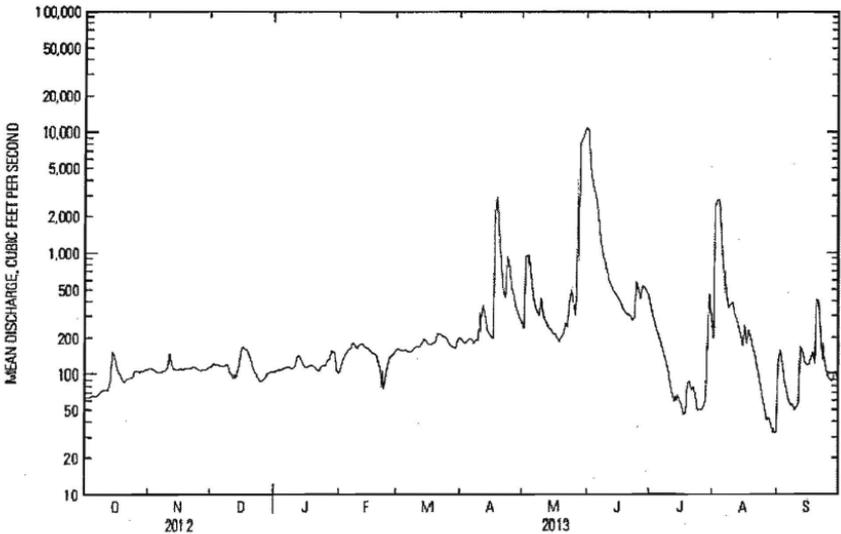
Water-Data Report 2013

06882000 Big Blue River at Barneston, Nebr.—Continued

SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1933 - 2013	
Annual total	106,189		148,383			
Annual mean	290		407		835	
Highest annual mean					2,781	1993
Lowest annual mean					115	1934
Highest daily mean	7,430	Apr 15	10,900	May 31	50,000	Jun 9, 1941
Lowest daily mean	18	Aug 23	33	Aug 30	1.0	Nov 30, 1945
Annual seven-day minimum	25	Aug 17	43	Aug 25	15	Aug 3, 1934
Maximum peak flow			11,500	Jun 1	57,700	Jun 9, 1941
Maximum peak stage			15.57	Jun 1	<sup>a</sup> 34.30	Jun 9, 1941
Annual runoff (ac-ft)	210,600		294,300		605,000	
10 percent exceeds	507		498		1,700	
50 percent exceeds	156		146		279	
90 percent exceeds	43		74		105	

<sup>a</sup> At site and datum then in use.



06894025 Little Blue River at Hollenberg, KS—Continued

SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 1975 - 2013	
Annual total	62,077		75,555			
Annual mean	170		207		482	
Highest annual mean					1,891	1993
Lowest annual mean					173	2006
Highest daily mean	4,300	Apr 15	4,710	May 30	39,300	Jul 26, 1992
Lowest daily mean	24	Sep 12	38	Jul 18	24	Sep 12, 2012
Annual seven-day minimum	26	Sep 6	40	Jul 17	26	Sep 6, 2012
Maximum peak flow			6,400	May 28	47,800	Jul 26, 1992
Maximum peak stage			9.36	May 28	21.21	Jul 26, 1992
Annual runoff (ac-ft)	123,100		149,900		349,300	
10 percent exceeds	258		292		799	
50 percent exceeds	113		101		195	
90 percent exceeds	39		59		100	

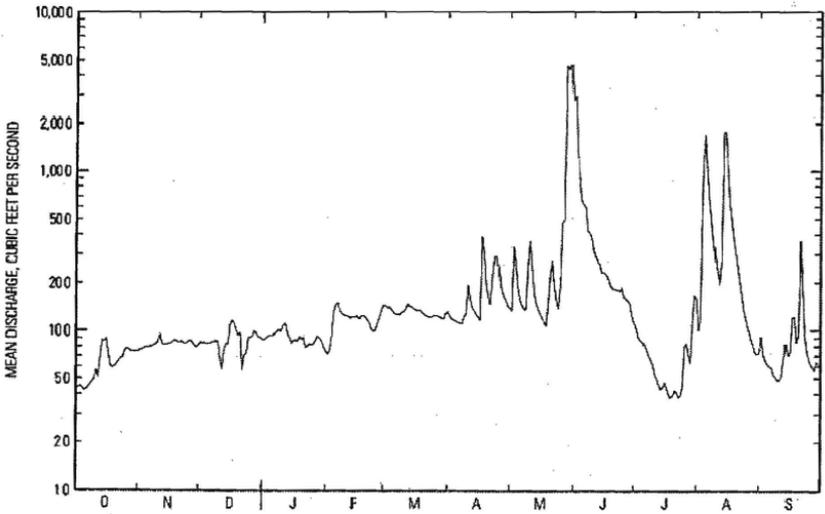


Exhibit B

BLUE RIVER COMPACT STATIC WATER LEVELS 2013

LEGAL	SECT	SITE	TYPE	SPRING 2013	FALL 2013
4N-5E	2	AAAA	OW	97.81	96.83
4N-5E	2	DDAA	IW	20.85	21.03
4N-5E	4	BBBC	IW	23.49	23.80
4N-5E	9	CBCC	IW	76.26	77.28
4N-5E	10	DDAA	IW	29.34	29.12
4N-5E	11	DACA	IW	18.01	17.24
4N-5E	14	ABBB	IW	15.88	14.24
4N-5E	25	AACD	IW	22.60	21.42
5N-4E	12	ABBA	IW	20.63	20.64
5N-4E	13	BADD	IW	17.98	17.06
5N-4E	23	BABB	IW	17.40	16.67
5N-4E	24	AACD	IW	20.06	19.11
5N-5E	7	CADD	IW	65.10	66.50
5N-5E	20	BCCD	IW	20.74	20.14
5N-5E	21	DDBB	IW	59.32	62.82
5N-5E	29	CBBB	IW	17.05	17.29
5N-5E	33	AADD	IW	21.18	21.52

IW - IRRIGATION WELL

OW - OBSERVATION WELL

Exhibit C

<b>Big Blue River Regulatory Area Wells</b>					
Registration Number	Location T-R-S	Completion Date	Depth (FT)	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-48B	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	1/29/2009
G-155061	4N-5E-10BB	12/4/2009	98	800	1/27/2010
G-166637	5N-5E-33BC	3/29/2013	120	1,200	3/28/2013

<b>Little Blue River Regulatory Area Wells</b>					
Registration Number	Location T-R-S	Completion Date	Depth (FT)	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

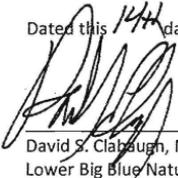
That on this the 14<sup>th</sup> day of May, 2014, the Director of the Lower Big Blue River Natural Resource District, and the Chairperson of the Engineering Committee of Big Blue River Compact Administration, mutually agree to the following:

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 2014 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 14<sup>th</sup> day of May,



\_\_\_\_\_  
David S. Claiborn, Manager  
Lower Big Blue Natural Resource District



\_\_\_\_\_  
Jeremy Gehle, Chair  
Engineering Committee



Dave Heineman  
Governor

State of Nebraska

Department of Agriculture  
Gregory A. Ibach  
Director

MAY 12 2014

P.O. Box 94947  
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(402) 471-2341  
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Nebraska Department of Agriculture (NDA)

Report to Big Blue River Compact-Water Quality Committee

NDA's pesticide program continues to conduct outreach promoting label compliance for reducing water quality problems. Targeted inspections have been conducted in atrazine-impaired watersheds within the Big Blue and Little Blue River basins and violations have been handled according to the Nebraska Pesticide Act and regulations.

NDA works closely with the University of Nebraska's Pesticide Safety Education Program and Extension Educators to develop testing and training material for applicators required to obtain certification. Water quality has been an ongoing topic for the last several years for both private and commercial applicators.

NDA continues to develop a proposed policy for pesticides and water quality, which would formally initiate a stakeholder committee of agencies and interest groups for making recommendations to NDA in these matters. It is uncertain when this policy proposal will be completed.

NDA administers, with assistance from Nebraska's Natural Resource Districts (NRDs) and USDA Natural Resource Conservation Services, the voluntary Nebraska Buffer Strip Program, which is paid for by registration fees paid by pesticide manufacturers. Currently, approximately 6,200 acres are contracted in the program, with approximately 1,300 (21%) of these occurring within the Upper Big Blue, Lower Big Blue, and Little Blue NRDs. Of this amount, 60% are contracted solely through this state program.

More information on NDA's Pesticide Program, including the Nebraska Buffer Strip Program and water quality information links, can be found at [bit.ly/NDAPP](http://bit.ly/NDAPP).

**Kansas 2014- 303(d) and TMDL Update for Blue River Compact  
May 7, 2014**

**2014 - 303(d) Listing Impairments requiring a TMDL**

*Lower Big Blue HUC8:10270205*

Waterbody Name	IMPAIRMENT	STATION	COUNTIES	TMDL Development Year
Big Blue River Near Oketo	Total Phosphorus	SC233	MS	2019
Horseshoe Creek Near Marysville	Total Phosphorus	SC717	MR, CS	2019
Big Blue River Near Blue Rapids	pH	SC240	MS	2019
Big Blue River Near Blue Rapids	Total Phosphorus	SC240	MS	2019
North Elm Creek Near Oketo	Total Phosphorus	SC731	MS, NM	2019
Big Blue River Near Oketo	pH	SC233	MS	2019
Black Vermillion River Near Frankfort	Total Phosphorus	SC505	MS, NM	2019
Robidoux Creek near Frankfort	Total Phosphorus	SC754	MS	2019
North Fork Black Vermillion River Near Vliets	Biology	SC128	MS, NM	2021
Big Blue River Near Oketo	Biology	SC233	MS	2021
Black Vermillion River Near Frankfort	Biology	SC505	MS, NM	2021
Horseshoe Creek	Biology	SB475	MS	2021
Spring Creek	Biology	SB476	MS	2021
Big Blue River Near Blue Rapids	Copper	SC240	MS	2023
Big Blue River Near Blue Rapids	Total Suspended Solids	SC240	MS	2023
Big Blue River Near Oketo	Total Suspended Solids	SC233	MS	2023
Fancy Creek Near Randolph	Sulfate	SC502	WS, CY, RL	2023
Horseshoe Creek Near Marysville	Sulfate	SC717	MR, CS	2023
Black Vermillion River Near Frankfort	Total Suspended Solids	SC505	MS, NM	2023
Big Blue River Near Oketo	Copper	SC233	MS	2023

*Lower Little Blue HUC8: 10270207:*

Waterbody Name	IMPAIRMENT	STATION	COUNTIES	TMDL Development Year
Little Blue River Near Waterville	Total Phosphorus	SC741	WS, MS	2019
Little Blue River Near Hollenberg	Total Phosphorus	SC232	RP, WS	2019
Rose Creek Near Narka	Total Phosphorus	SC712	RP	2019
Little Blue River Near Hollenberg	pH	SC232	RP, WS	2019
Little Blue River Near Hollenberg	Biology	SC232	RP, WS	2021
Little Blue River Near Hollenberg	Total Suspended Solids	SC232	RP, WS	2023
Rose Creek Near Narka	Copper	SC712	RP	2023
Little Blue River Near Hollenberg	Copper	SC232	RP, WS	2023
Washington Co. SFL	Eutrophication	LM010901	WS	2023
Mill Creek Near Hanover	Total Suspended Solids	SC507	RP, WS	2023
Washington W.A.	Lead	LM010941	WS	2023
Little Blue River Near Waterville	Total Suspended Solids	SC741	WS, MS	2023

## Approved KS TMDLs

### Lower Big Blue HUC8:10270205

Waterbody Name	IMPAIRMENT	STATION	COUNTIES	TMDL Priority
Black Vermillion River Near Frankfort	E. coli	SC505	MS, NM	High
Tuttle Creek Lake	Eutrophication	LM021001	MS, RL, PT	High
Big Blue River Near Blue Rapids	Atrazine	SC240	MS	High
Big Blue River Near Blue Rapids	E. coli	SC240	MS	High
Tuttle Creek Lake	Atrazine	LM021001	MS, RL, PT	High
Big Blue River Near Oketo	Atrazine	SC233	MS	High
Big Blue River Near Oketo	E. coli	SC233	MS	High
Tuttle Creek Lake	Alachlor	LM021001	MS, RL, PT	High
Centralia Lake	Eutrophication	LM073701	NM	Medium
Black Vermillion River Near Frankfort	Atrazine	SC505	MS, NM	High
Tuttle Creek Lake	Siltation	LM021001	MS, RL, PT	High
Centralia Lake	Aquatic Plants	LM073701	NM	Medium
Fancy Creek Near Randolph	Atrazine	SC502	WS, CY, RL	High
Horseshoe Creek Near Marysville	E. coli	SC717	MR, CS	High
Horseshoe Creek Near Marysville	Atrazine	SC717	MR, CS	High
Fancy Creek Near Randolph	E. coli	SC502	WS, CY, RL	Medium
North Elm Creek Near Oketo	Atrazine	SC731	MS, NM	High
Centralia Lake	pH	LM073701	NM	Medium

### Lower Little Blue HUC8: 10270207:

Waterbody Name	IMPAIRMENT	STATION	COUNTIES	TMDL Priority
Little Blue River Near Waterville	E. coli	SC741	WS, MS	High
Washington W.A.	Siltation	LM010941	WS	Low
Little Blue River Near Hollenberg	Atrazine	SC232	RP, WS	High
Little Blue River Near Hollenberg	E. coli	SC232	RP, WS	High
Washington W.A.	Eutrophication	LM010941	WS	Low
Mill Creek Near Hanover	Atrazine	SC507	RP, WS	High
Little Blue River Near Waterville	Atrazine	SC741	WS, MS	High
Lake Idlewild	Eutrophication	LM061201	MS	Low
Rose Creek Near Narka	Atrazine	SC712	RP	High
Washington Co. SFL	Dissolved Oxygen	LM010901	WS	Low
Mill Creek Near Hanover	E. coli	SC507	RP, WS	High
Washington Co. SFL	Aquatic Plants	LM010901	WS	Low

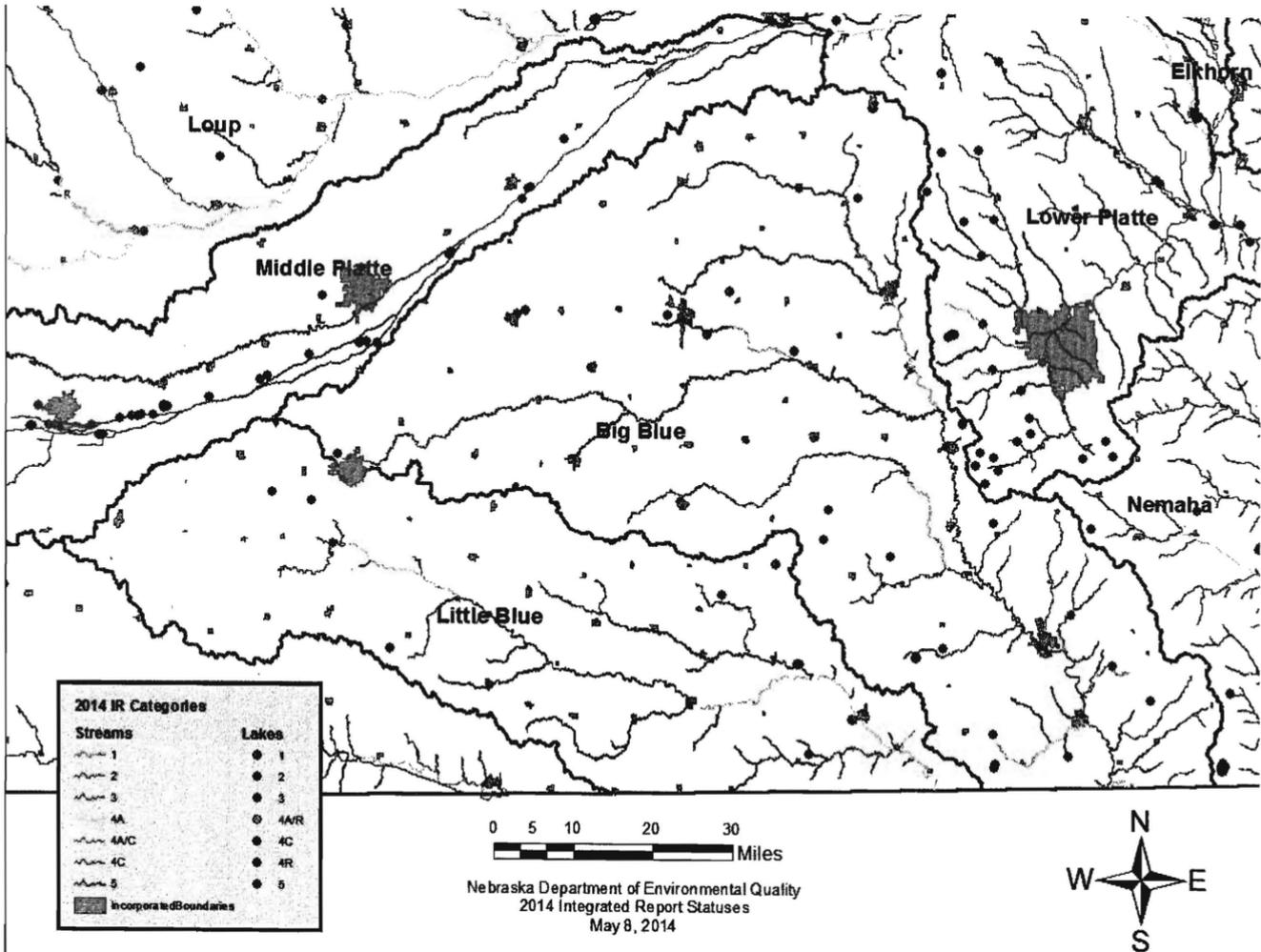
**Nebraska 2014 - 303(d) and TMDL Update for Blue River Compact  
May 9, 2014**

<b>Waterbody ID</b>	<b>Waterbody Name - Big Blue River Basin</b>	<b>2014 IR</b>
BB1-L0030	Big Indian Lake (11A)	4R
BB1-10100	Mission Creek	4A
BB1-10800	Big Indian Creek	4A
BB1-10900	Big Indian Creek	4A
BB2-20000	Turkey Creek	4A
BB3-10300	Beaver Creek	4A
BB4-10000	Big Blue River	4A
BB4-20000	Big Blue River	4A
BB1-10000	Big Blue River	5
BB1-20000	Big Blue River	5
BB2-10000	Turkey Creek	5
BB3-10000	West Fork Big Blue River	5
BB3-10200	Walnut Creek	5
BB3-10400	Beaver Creek	5
BB3-20000	West Fork Big Blue River	5
BB3-20100	School Creek	5
BB4-20800	Lincoln Creek	5
BB4-20900	Lincoln Creek	5
BB4-40000	Big Blue River	5
BB1-L0010	Donald Whitney Memorial Lake	5
BB1-L0020	Diamond Lake South	5
BB1-L0040	Arrowhead Lake	5
BB1-L0050	Wolf Wildcat Lake	5
BB1-L0060	Rockford Lake	5
BB1-L0080	Cub Creek Lake	5
BB1-L0100	Walnut Creek Lake (2A)	5
BB2-L0005	Swanton Lake	5
BB2-L0010	Swan Creek Lake 2A	5
BB2-L0020	Swan Creek Lake 5A	5
BB3-L0030	Waco Basin	5
BB3-L0040	Henderson Pond	5
BB3-L0050	Lake Hastings	5
BB3-L0060	Hastings Northwest Dam Lake	5
BB3-L0070	Heartwell Lake	5
BB3-L0080	Recharge Lake	5
BB4-L0010	David City Park Lake	5
BB4-L0035	Oxbow Trail Reservoir	5

**Nebraska 2014 - 303(d) and TMDL Update for Blue River Compact  
May 9, 2014**

Waterbody ID	Waterbody Name - Little Blue River Basin	2014 IR
LB1-L0050	Lone Star Reservoir (Little Sandy Creek Reservoir)	4R
LB1-10000	Little Blue River	4A
LB1-10200	Rock Creek	4A
LB2-10000	Little Blue River	4A
LB2-30000	Little Blue River	4A
LB2-10100	Big Sandy Creek	5
LB2-10200	Big Sandy Creek	5
LB2-10500	Spring Creek	5
LB2-10600	Spring Creek	5
LB2-20000	Little Blue River	5
LB1-L0010	Buckley Reservoir (3F)	5
LB1-L0020	Crystal Springs Northwest Lake	5
LB1-L0030	Crystal Springs Center Lake	5
LB1-L0040	Crystal Springs East Lake	5
LB2-L0010	Alexandria Lake No. 1 & 2	5
LB2-L0030	Alexandria Lake No. 3	5
LB2-L0050	Liberty Cove Lake	5

Approved TMDLs	E.Coli	Atrazine
BB1-10000	x	x
BB1-10100	x	x
BB1-10600	x	x
BB1-10900		x
BB1-20000	x	x
BB2-10000	x	x
BB2-20000	x	x
BB3-10000	x	x
BB3-10300		x
BB3-20000	x	x
BB4-10000	x	x
BB4-20000	x	
BB4-20800		x
BB4-4000		x



## **Resolution of Appreciation to Gary Mitchell**

### **RESOLUTION**

WHEREAS, Mr. Gary Mitchell served as the Federal Chairman of the Kansas-Nebraska Big Blue River Compact Administration for a period of twelve years, beginning in 2003 and ending in 2014.

WHEREAS, in 2014 Mr. Mitchell was replaced by the President of the United States as Federal Chairman of the Kansas-Nebraska Big Blue River Compact Administration.

WHEREAS, Mr. Mitchell did faithfully and diligently serve on the Compact Administration as the Federal Chairman providing excellent representation and positive input and attitude.

NOW, THEREFORE, BE IT RESOLVED, That the Kansas-Nebraska Big Blue River Compact Administration hereby recognizes the dedicated service of Gary Mitchell to the States of Kansas and Nebraska, and expresses on behalf of the citizens of both States sincere appreciation and commendation for his service, and extends to him best wishes for the future.

BE IT FURTHER RESOLVED, That this resolution be entered into the record of the 2015 Annual Compact Commission Meeting Minutes and the 2014 Annual Report, and a copy of the Annual Report be presented to Mr. Mitchell.

Adopted at the Forty Second Annual Meeting of the Kansas-Nebraska Big Blue River Compact Administration in Manhattan, Kansas on this 13th day of May, 2015.

## **Resolution of Appreciation to Ken Regier**

### **RESOLUTION**

WHEREAS, Mr. Ken Regier served as the Nebraska Advisor of the Kansas-Nebraska Big Blue River Compact Administration for a period of twenty four years, beginning in 1990 and ending in 2013.

WHEREAS, in 2013 Mr. Regier elected not to serve another term as Nebraska Advisor to the Kansas-Nebraska Big Blue River Compact Administration.

WHEREAS, Mr. Regier did faithfully and diligently serve on the Compact Administration as the Nebraska State Advisor providing excellent representation and positive input and attitude.

NOW, THEREFORE, BE IT RESOLVED, That the Kansas-Nebraska Big Blue River Compact Administration hereby recognizes the dedicated service of Ken Regier to the States of Nebraska and Kansas, and expresses on behalf of the citizens of both States sincere appreciation and commendation for his service, and extends to him best wishes for the future.

BE IT FURTHER RESOLVED, That this resolution be entered into the record of the 2015 Annual Compact Commission Meeting Minutes and the 2014 Annual Report, and a copy of the Annual Report be presented to Mr. Regier.

Adopted at the Forty Second Annual Meeting of the Kansas-Nebraska Big Blue River Compact Administration in Manhattan, Kansas on this 13th day of May, 2015.