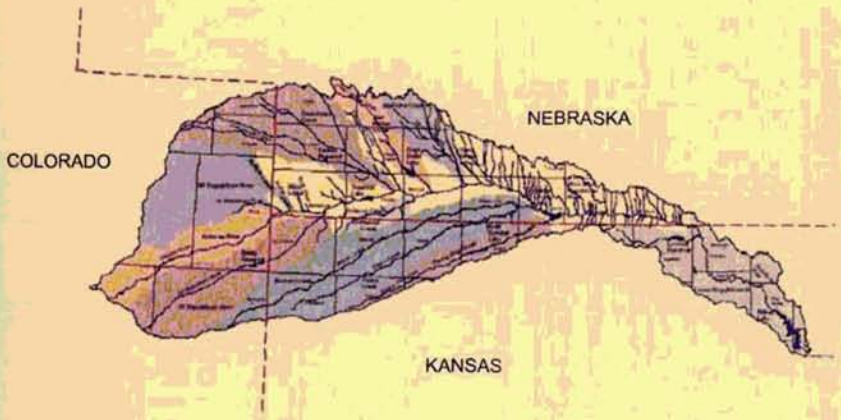
REPUBLICAN RIVER COMPACT ADMINISTRATION

FORTY-FOURTH ANNUAL REPORT



For the Year 2004

Special Meeting
Denver, Colorado
January 12, 2005

Annual Meeting
Burlington, Colorado
June 9, 2005

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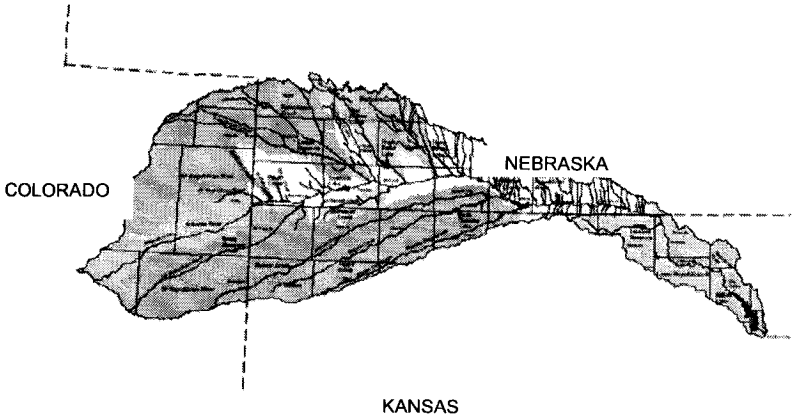

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SPECIAL MEETING OF THE
REPUBLICAN RIVER COMPACT ADMINISTRATION
January 12, 2005
Denver, Colorado

I. Welcome

The meeting was called to order by Chairman Simpson at 1:10 p.m., January 12, 2005, at Fairfield Inn in Denver, Colorado. Those in attendance were:

Name	Representing
Hal D. Simpson	Colorado Commissioner
Roger K. Patterson	Nebraska Commissioner
David L. Pope	Kansas Commissioner
Ken Knox	Colorado Division of Water Resources
Peter Ampe	Colorado Attorney General's Office
Ann Bleed	Nebraska Department of Natural Resources
Mike Thompson	Nebraska Department of Natural Resources
Paul Koester	Nebraska Department of Natural Resources
David Barfield	Kansas Department of Agriculture, Division of Water Resources
Scott Ross	Kansas Division of Water Resources, Stockton, Kansas
Leland E. Rolfs	Kansas Department of Agriculture, Topeka, Kansas
Dale Book	Spronk Water Engineers, engineering consultant for Kansas
Willem Schreüder	Principia Mathematica, engineering consultant for Colorado
James Slattery	Helton-Williamsen, engineering consultant for Colorado
Megan Sullivan	Colorado Division of Water Resources
Scott Richrath	Colorado Division of Water Resources
Marta Ahrens	Colorado Division of Water Resources

II. Action Items

A. Republican River Compact Administration Ground Water Model Changes

Mr. Ken Knox stated that the Engineering Committee is offering a series of changes to the RRCA Ground Water Model, including changes to the state inputs and changes to the pre- and post-processing programs. Mr. Willem Schreüder has summarized these changes in the attached two-page document entitled, "Republican River Compact Administration Ground Water Model Update 2001-2003". The Engineering Committee recommends approval of the revised model by the Compact Administration and use of the model from this point forward, which will be referred to as version 12S. Commissioner Patterson moved the adoption of the changes to the ground water model as provided on DVD by Mr. Schreüder this morning that will result in version 12s. The motion was seconded by Commissioner Pope with a procedural clarification, and was approved unanimously.

B. Republican River Compact Administration Accounting Procedures and Reporting Requirements

Mr. Ken Knox stated that the Engineering Committee had completely reviewed the RRCA Accounting Procedures and Reporting Requirements (Accounting Procedures) and is offering a revised version for approval of the Compact Administration dated January 12, 2005. Attached is a one-page summary of the changes to the specific formulas. Mr. Knox noted that additional minor corrections were made to the Accounting Procedures just prior to this special meeting, and the intent was to include the corrections in order to have the most complete and accurate document as possible for consideration by the Commissioners. Mr. Knox noted for the record that the changes that were made are pertinent to Tables 3a through c as well as Tables 5a through d. A decision was made to strike the words "credits from" in column 3 in Tables 3a, b and c. Mr. Barfield suggested using the words "imported water supply credit" with the formula shown in the column header, and to fix the strike-outs in the Table of Contents in the final version. Mr. Knox will make the suggested corrections and provide a clean version to the Commissioners. Commissioner Pope made a motion to approve the amended Accounting Procedures and to give permission for the Engineering Committee to publish these in a booklet; the motion was seconded by Commissioner Patterson and was approved unanimously.

C. Republican River Compact Administration Accounting Spreadsheet

Mr. Knox reported that the changes are on page 34 of the most recent draft, and suggested inserting the words "N/A" for not-applicable. The changes are in Tables 3, 4 and 5, including extending the print range on Table 4b. Ms. Ann Bleed clarified that the spreadsheets need to be approved as the tool that will be used to do the accounting. Commissioner Pope moved to approve the spreadsheet with the recognition that the tool will likely need to be updated from time to time, including 2004. The motion was seconded by Commissioner Patterson and approved unanimously.

D. Year 2003 Accounting

No further discussion on this agenda item took place. Commissioner Patterson moved approval of the 2003 Accounting; the motion was seconded by Commissioner Pope, and approved unanimously. Summary tables 1 and 3 are attached to this report.

E. Map of the Republican River Designated Drainage Basins and Amendments to the Rules and Regulations

Corrections were made on the map to reflect more accurately what was done in the accounting procedures and the Compact related to the North Fork Republican River in Nebraska. Commissioner Pope moved to approve the revised map dated Jan 12, 2005; the motion was seconded by Commissioner Patterson, and approved unanimously.

F. Amended Rules and Regulations

Mr. Peter Ampe reported that the major change in the Rules and Regulations is in paragraph 14, which adopts the revised RRCA Ground Water Model and the revised Accounting Procedures and clarifies that the rules and regulations are changed to recognize this. Additional changes/corrections were suggested by Mr. Leland Rolfs and were jointly agreed upon. Commissioner Patterson moved to approve the amended rules; the motion was seconded by Commissioner Pope and approved unanimously. The amended rules were printed and signed during the meeting. They are attached to this report.

III. Update on Compliance Activities

Commissioner Pope reported on items that Kansas is involved in either directly or indirectly regarding compact compliance. He stated that Kansas was fully in compliance with its Compact obligations in 2003 and believes its existing rules will be sufficient, except under very unusual conditions. Kansas remains diligent with regard to changes to existing water rights so it does not result in an increase in consumptive use. Commissioner Pope reported that Northwest Kansas Groundwater Management District No. 4 has decided to require the installation of water meters on large capacity wells within the District. This is in addition to the mandatory metering for all alluvial wells going back into mid to late 90's. Kansas, through its state water planning process, continues to explore strategies for extending the life of the Ogallala and reducing depletions, which will result in actions targeted to high priority areas that have the biggest problems. While this is not related to the compact, it should reduce their depletions. Commissioner Pope reported that the Kansas Department of Wildlife and Parks is attempting to negotiate a deal with the Almena Irrigation District to acquire water rights for enhanced recreation at the reservoir or a total conversion to recreation at the reservoir. This would essentially reduce or stop releases for irrigation delivery and let the additional water be stored. They have cautioned the parties involved in any change to the water right must be done in such a way to not increase consumptive use. Discussion ensued on Kansas' metering program.

Commissioner Patterson reported that their implementation of the compact is not going as smoothly as in Kansas, however, they are making progress. In part of the basin, they are starting from scratch, and in other parts they are concerned about high ground water levels. They are four NRDs in the basin that regulate ground water. In December, the Department and the Middle Republican NRD reached agreement on and adopted an integrated management plan and rules and regulations imposing a 13-inch base allocation for ground water use in the district. The Department and the Upper Republican NRD are also working on a plan and are considering reducing their allocation to 13.5 inches. Commissioner Patterson stated that the Department is starting to work on a plan with the Lower Republican NRD. Commissioner Patterson reported that the goal is to have agreements and rules adopted for the 2005 irrigation season. The fourth NRD, Tri-basin, was left out of the moratorium area, but the NRD adopted a rule prohibiting new irrigated acres, and they adopted a plan stating that they will maintain the ground water levels in the "mound" area so that the imported water credit is maintained. Nebraska also finished adjudicating all surface water rights, which resulted in the cancellation of a

large number of surface water rights. Last year, there were no deliveries of storage water from reservoirs, which caused several problems. On the brighter side, the state was able to get money from the Bureau of Reclamation to compensate the irrigation districts for their willingness to leave their water in the lakes. The state is also working hard on developing incentive programs and using the EQIP program to reduce their overall use of irrigation water. Discussions are also underway to apply for the 10- to 15-year CREP program with the USDA that would pay a landowner not to irrigate land enrolled in the program. The application indicates an average payment of $126 per acre per year, but the USDA has not determined what the final rate of payment will be. In summary, Commissioner Patterson stated that they are making progress on several fronts, but they are still experiencing battles on the regulation side.

Commissioner Simpson reported that a Republican River Water Conservation District has been established and the board has met numerous times since its first meeting on August 10, 2004. The District adopted a mechanism to fund various programs that they may be intending to implement including EQIP, CREP, and interruptible water supply agreements. They have adopted a water use fee of $5.50 per irrigated acre for lands irrigated by ground water, $5.10 per acre-foot diverted by post-compact surface water rights, and $4.40 per acre-foot for municipal, industrial or commercial uses to generate a revenue stream of $3.5 million. They are moving forward and going through the process needed to function as a District which includes hiring a district manager and legal counsel, looking for a consulting engineer, and are in the process of promulgating rules and approving by-laws. Commissioner Simpson stated that Colorado is making progress on the settlement agreement with getting ten percent of the wells metered. Colorado has asked for additional staff, through the legislative process, for enforcement of wells in the Republican River basin.

IV. Potential Engineering Committee Task Assignments

A. Year 2004 accounting

Mr. Knox stated that it might be difficult to produce a final accounting for 2004 prior to an early June 2005 meeting. Ms. Bleed stated that there is a concern regarding implementation by Nebraska, the sooner they have the final numbers, the better. Mr. Barfield stated that Kansas can deliver preliminary numbers on April 15, and the Engineering Committee can run those numbers for a ballpark figure for the model. A more final set of numbers will be provided by early July. It was the consensus between the states to use the best data available to run the model by April 15; then later run data with final numbers with compact meeting to be held in late July. The next annual meeting of the Compact Administration was scheduled for July 27. The RRCA work session will be held on the afternoon of July 26.

B. Years 1995-2002 annual accounting

The 1995-2002 annual accounting was assigned to the Engineering Committee with the July 2005 meeting as the timeline.

C. **Ground water irrigation system efficiencies**

This was assigned to the Engineering Committee at the last annual meeting. Ms. Bleed stated that she did not realize the magnitude of this project and does not believe that Nebraska can have this accomplished by the annual meeting in July. Commissioner Simpson stated that the study take into consideration the effect of soil type. It was agreed that the Engineering Committee would draft scope of work for the assignment for review at the coming annual meeting when the compact administration would provide further direction on the assignment.

V. **Other Business**

Minutes from 2004 Annual Meeting - Commissioner Simpson asked the Commissioners review the Minutes from last year's annual meeting and provide comments by the end of this month so the Minutes can be finalized.

Agreement with Principia – The contract with Principia is needed very soon so invoices can be sent to the states.

2003 Annual Report - Nebraska will publish the 2003 Annual Report, which will include the Minutes and the report that was approved at the 2004 meeting.

Feedlot issue - Commissioner Pope reported on a feedlot that sits inside northwest Kansas just inside the stateline. The water supply is from two wells in Nebraska; the question is how to export water across the stateline and insure that both states have the correct jurisdiction to regulate this properly. Commissioner Pope proposed drafting a compact rule that would make it clear conceptually that the accounting would be done according to the settlement stipulation so that the consumptive use is taken care of. Commissioner Pope will circulate a draft, have the legal advisers for each state review it and approve it at the July meeting.

VI. **Adjourn**

The meeting was adjourned at 4:05 p.m.

Hal D. Simpson
Colorado Commissioner (Chairman)

Roger K. Patterson
Nebraska Commissioner

David L. Pope
Kansas Commissioner

Attachments

Republican River Compact Administration Groundwater Model Update 2001-2003

Summary of Changes to the Republican River Compact Settlement Appendix C, IV B: Specific Formulas for Each Sub-basin and the Main Stem

Tables 1 and 3 from the 2003 accounting

Revised Rules and Regulations of the RRCA, January 12, 2005

Republican River Compact Administration
Groundwater Model Update 2001-2003
January 12, 2005

Changes to the RRCA groundwater model from V12p7 to the 2001, 2002 and 2003 model update consists of three types:

1. Changes to the model;
2. Changes to the state inputs;
3. Changes to pre- and post-processing programs.

For model years 2004 and beyond, further changes may be required as a result of changes in the available data, but these changes should generally be incrementally small compared to the changes described here.

In addition to model runs for 2001, 2002 and 2003, the model was also run for 1993 through 2000 to ensure that the new model results agree with the V12p7 model.

Changes to the model.

Experts for Nebraska pointed out a problem with the stream routing on Medicine Creek above Harry Strunk. In essence, the problem was that nine model river cells between the Medicine Creek above Harry Strunk Lake gage and Harry Strunk Lake were omitted in the V12p7 stream package starting with the construction of Harry Strunk reservoir.

A correction to this problem called V12s was implemented by restoring the omitted stream cells above Harry Strunk reservoir by extending the stream segment 170 from the Medicine Creek above Harry Strunk Lake gage to Harry Strunk Lake, and shortening stream segment 183 to consist only of Harry Strunk Lake.

As a result of the change to the stream package, the accounting point on Medicine Creek above Harry Strunk Lake was updated to reflect the change.

The V12s correction was reviewed by the RRCA on January 7, 2004 and the RRCA decided that this correction would be applied to the model starting in model year 2001. The V12s stream package therefore applies to the 2001, 2002 and 2003 model years, and in future model years.

Changes to State Inputs

The pumping and return flow recharge calculations for Kansas were substantially modified from V12p7 to the 2001 to 2003 updates. Starting in 2001, Kansas applied water user reports to calculate these quantities on an individual field basis, whereas in V12p7 calculations were made on a county basis and distributed to individual wells.

The pumping and return flow calculations for Colorado remain identical to what was used in V12p7. However, instead of using the appropriated acreage defined on individual well permits for the precipitation recharge calculation, the actual irrigated acreage as defined by the appropriate County Assessors Office is used in the pumping calculations

that are relevant to the precipitation recharge calculations starting in 2001.

In V12p7, all Nebraska pumping was calculated using electrical power records.

Starting in 2001, because of the quality of the district's well meter program, Nebraska decided to use metered values of pumping for the Upper Republican Natural Resource District (Perkins, Chase and Dundy Counties). Nebraska continues to use the power-record methodology for all other counties. In V12p7, private canals and river pumpers were treated separately, while starting in 2001, these categories are subsumed in the surface water category.

Changes to pre- and post-processing programs.

In order to facilitate running the model on a yearly basis, the pre- and post-processing programs and directory structure were reorganized

Cosmetic changes were made to the pre- and post-processing programs to use the new directory structure.

Binary files are used to transfer heads from one run to the next. Therefore, the results produced by running the model on an annual basis are absolutely identical to running the model for multiple years.

In V12p7, sub-basin factors were used to change the ET area over time. From 1993, this area does not change. The ET pre-processing program mket was modified to use an ET area distribution that does not change with time.

The procedure by which the maximum monthly ET is calculated was streamlined. The new streamlined procedure was not used in 2001 through 2003, but will be used starting in 2004. The ET Changes section describes the changes in more detail.

The stream package pre-processor mkstr was modified to allow both the V12p7 and the V12s stream routing to be used. The V12p7 routing is used until model year 2000 for model verification purposes. The V12s routing is used starting in 2001.

The accounting program acct was modified to summarize impacts on an annual basis. The county-by-county summary program mkcty was enhanced to calculate additional water budget terms for each county.

A number of utility programs were developed to streamline running the model. For example, the mkinp program creates the input files needed by MODFLOW and other pre-processing programs. These programs as well as other pre- and post-processing programs are described in detail in the User Manual.

Summary of Changes to

Republican River Compact Settlement Appendix C, IV B:

Specific Formulas for Each Sub-basin and the Main Stem

Other than the changes that were agreed to in the settlement, there were no changes to the formulas in Appendix C, IV B that will result in changes to the calculations of Virgin Water Supply and Computed Beneficial Consumptive Use (CBCU) that are different from those used previous to the Settlement. The changes to Appendix C, IV B include simplifications and changes in format of the formulas and additional definitions and clarifications.

The following is a summary of the changes to the formulas in Appendix C, IV B, Specific Formulas for Each Sub-basin and the Main Stem:

1. For each state in each sub-basin terms for CBCUs were added even though those used do not currently occur. For example, a term for beneficial consumptive uses from non-bureau canals or ditches and for municipal uses was added to each formula even though those uses do not currently exist in the sub-basin. These terms are highlighted by yellow shading.
2. Changed the formulas to match the terms used in the accounting spread sheet and vice-versa.
3. Changed the format of all formulas for Virgin Water Supply to list CBCUs as single terms rather than listing all the components of these terms. In some cases this required the addition of terms to account for complications in how the flows in the sub-basin interact with the main stem of the Republican River, e.g. accounting for CBCUs below the gage used in the sub-basin calculation .
4. Added clarification describing how CBCU and return flows were calculated between a sub-basin and the main stem.
5. Added clarification on how CBCU from the Courtland Canal in Kansas is calculated and changed Table 7 to reflect this clarification.
6. Drops the language which states the split of Lovewell Reservoir evaporation between the Republican River and White Rock Creek is to be based on the ratios of annual inflows of the two sources. The engineering committee is returning to the historic practice of using a monthly accounting of Lovewell Reservoir inflows, outflows and two storage accounts, to determine the split.

~~6.~~7. Added additional definitions of abbreviations used in the formulas.

~~7.~~8. Added a "0" before a decimal point.

Table 1: Annual Virgin and Computed Water Supply, Allocations, and Computed Beneficial Consumptive Uses by State, Main Stem, and Sub-Basin

2003	Virgin Water	Computed	Allocations				Computed Beneficial Consumptive Use		
Basin	Supply	Water Supply	Colorado	Kansas	Nebraska	Unallocated	Colorado	Kansas	Nebraska
North Fork	40,730	40,730	9,120	0	10,020	21,590	16,640	20	4,380
Arikaree	1,910	1,910	1,500	100	320	-10	240	100	510
Buffalo	6,100	6,100	0	0	2,010	4,090	270	0	3,740
Rock	8,190	8,190	0	0	3,280	4,910	60	0	3,420
South Fork	21,500	23,730	10,540	9,540	330	3,320	16,090	5,380	1,350
Frenchman	105,700	105,920	0	0	56,770	49,150	40	0	91,760
Driftwood	2,490	2,490	0	170	410	1,910	0	0	1,390
Red Willow	17,350	14,400	0	0	2,760	11,640	0	0	8,310
Medicine	38,930	35,550	0	0	3,240	32,310	0	0	21,440
Beaver	1,290	1,290	260	500	520	10	0	290	780
Sappa	190	190	0	80	80	30	0	-260	510
Prairie Dog	3,350	7,690	0	3,510	580	3,600	0	6,600	40
Main Stem	126,210	168,590	0	86,150	82,440	0	130	36,780	125,150
Total All Basins	373,940	416,780	21,420	100,050	162,760	132,550	33,470	48,910	262,780
Main Stem Including Unallocated		301,140	0	153,880	147,260				
Total	373,940	416,780	21,420	167,780	227,580	0	33,470	48,910	262,780

Table 3A: Colorado's Five-Year Average Allocation and CBCU

Year	Allocation	Computed Beneficial Consumptive Use	Imported Water Supply Credit	Allocation - CBCU - IWS Credit
2003	21,420	33,470	NA	-12,050
2004			NA	
2005			NA	
2006			NA	
2007			NA	
Average	21,420	33,470		-12,050

Table 3B: Kansas's Five-Year Average Allocation and CBCU

Year	Allocation	Computed Beneficial Consumptive Use	Imported Water Supply Credit	Allocation - CBCU - IWS Credit
2003	167,780	48,910	NA	118,870
2004			NA	
2005			NA	
2006			NA	
2007			NA	
Average	167,780	48,910		118,870

Table 3C: Nebraska's Five-Year Average Allocation and CBCU

Year	Allocation	Computed Beneficial Consumptive Use	Imported Water Supply Credit	Allocation - CBCU - IWS Credit
2003	227,580	262,780	9,780	-25,420
2004				
2005				
2006				
2007				
Average	227,580	262,780	9,780	-25,420

Rules and Regulations

Republican River Compact Administration

Revised January 12, 2005

1. Pursuant to Article IX of the Republican River Compact ("Compact"), the States of Colorado, Nebraska and Kansas have the duty to administer the Compact through the officials in such States who are now or may hereafter be charged with the duty of administering the public water supplies in each of such States. Such officials shall be the members of an administrative body hereby designated as the Republican River Compact Administration ("RRCA"). The purpose of the RRCA shall be to administer the Compact. Such administration shall include but not be limited to the responsibilities as are assigned to it in the Final Settlement Stipulation dated December 15, 2002, approved by the States of Colorado, Nebraska and Kansas and filed in the case of *Kansas v. Nebraska and Colorado*, No. 126, Original, in the Supreme Court of the United States ("Final Settlement Stipulation").

2. As of the effective date of these Rules and Regulations, the officials who are charged with the duty of administering the public water supplies in each of the three States, and who therefore constitute the Members[1] are the individuals who hold the following offices: the State Engineer of the Division of Water Resources of the Colorado Department of Natural Resources; the Director of Natural Resources for the State of Nebraska; and, the

1 Reference in the RRCA records to "Commissioner(s)" refers to the Members as described in these Rules and Regulations.

Chief Engineer of the Division of Water Resources of the Kansas Department of Agriculture.

3. Each RRCA Member's term shall run concurrent with his or her term of office as the official charged with administering the public water supplies in his or her State.

4. Each State official shall be recognized as a Member of the RRCA upon furnishing to the other Members satisfactory evidence that he or she is the official in his or her State charged with the duty of administering the public water supplies in such State.

5. Any Member of the RRCA may appoint an alternate person to serve in his or her place. In the event any Member is unable to perform his or her official duties, the appointing authority of the State represented by that Member may appoint the Member's alternate to serve in his or her place. Any such alternate shall be recognized as that State's representative to the RRCA upon presentation to the Members from the other States of a written appointment letter signed by the absent Member, or, as applicable, by the appointing authority of the State involved. An appointment of an alternate shall be valid only for the period of the appointment.

6. The Chair of the RRCA shall be a Member of the RRCA. Each Chair shall serve a term encompassing two annual meetings. The Chair's term shall begin upon the conclusion of the last meeting chaired by the previous Chair and shall expire at the conclusion of the second annual meeting at which he or she serves as Chair. Unless otherwise agreed by all Members, the rotation of the Chair shall be by State in the following order beginning at the conclusion of the annual meeting in 2003: Colorado; Kansas; and, Nebraska.

7. The Chair, or his or her alternate, shall preside at all meetings of the RRCA. The Chair may initiate or second motions and vote on all matters coming before the RRCA. The Chair shall issue notice of all meetings to all members as to the time, place, and agenda of the meeting at least 15 days in advance of any regular meeting, unless otherwise agreed by the Members, and as soon as possible prior to any special meeting. Any issue to be raised for dispute resolution at a regular meeting pursuant to paragraph 15 of these Rules and Regulations shall be distributed to the members at least 30 days in advance of the regular meeting. The agenda shall include all items for which a Member makes a timely request for inclusion on the agenda. The Chair or other person designated by the RRCA shall also keep a record of the proceedings, including official meeting minutes, of all meetings and of all transactions of the RRCA during his or her term of office. The record of proceedings shall include: minutes; Annual Report; reports required by the Final Settlement Stipulation; committee and subcommittee reports; the data, computations and results required in the Accounting Procedures; and such other matters as deemed appropriate by the RRCA. Meeting minutes will not be official until approved by the RRCA. Unless otherwise agreed to by all the Members of the RRCA, the Chair shall be responsible for the preparation of an electronic recording of each meeting, unless any Member requests in advance a transcript of each meeting. The Chair will be responsible for providing a copy of the record of proceedings for that year. The RRCA, through the Chair, will maintain an official repository of records of the proceedings.

8. The RRCA hereby creates a standing Engineering Committee that shall be composed of one representative from each State appointed by the RRCA Member from that State. The

RRCA may create other standing, ad hoc or special committees composed of the members of the RRCA and/or other persons appointed by the Members. The RRCA may assign to such committees any tasks that it determines to be appropriate.

9. The RRCA shall hold a regular annual meeting prior to August 1st each year. However, the Chair may waive an annual meeting, or hold the meeting at a later date, upon the unanimous written consent of the Members. The annual meeting shall be held at a location in the Chair's State at a time and place acceptable to the other members.

10. The RRCA shall hold a special meeting, other than a meeting to address a "fast track issue" as provided for in the Section VII of the Final Settlement Stipulation, upon written request of any Member and with the concurrence of the other two Members. The Chair of the RRCA shall poll all of the Members prior to setting the meeting date, time, and place of a specially scheduled meeting. All Members shall make a good faith effort to arrange a mutually agreeable date, time, and place for all meetings.

11. A quorum for a RRCA meeting shall be present only when all of the Members or their duly appointed alternates are in attendance. The RRCA may act only by unanimous vote of all members or duly appointed alternates. Each State shall have one vote. The Chair shall document each action of the RRCA by formal written resolution or such action shall be recorded in the approved minutes. The RRCA shall honor a request by any Member or duly appointed alternate that action on any matter be by formal resolution.

12. The RRCA shall prepare and approve an annual report that includes the official actions taken by the RRCA at the annual meeting and at any special meetings, a summary of the compact accounting for the previous year and such other matters as the RRCA may deem

appropriate. The Chair shall furnish copies of the report to the President of the United States, the Governors of the States of Colorado, Nebraska and Kansas, the officials of appropriate State and federal agencies and to any other person, as the RRCA determines appropriate.

13. The RRCA may make amendments, revisions, deletions, or additions to these Rules and Regulations at any meeting of the RRCA. Unless otherwise agreed to by the RRCA, written notice and a copy of any proposed change must be sent to all Members by the Member proposing the change at least 15 days in advance of any meeting at which the RRCA shall consider such changes. Any Member may offer modifications of any such proposed changes at any time prior to the RRCA acting on those proposed changes.

14. Compact accounting and data exchanges among the States shall be done annually in accordance with the Final Settlement Stipulation, including the RRCA Accounting Procedures and Reporting Requirements, dated January 12, 2005, and the Republican River Compact Administration Groundwater Model, Version 12s (V12s), dated January 12, 2005. Unless otherwise agreed to by the RRCA Members, the annual accounting shall be completed by the Engineering Committee and submitted to the RRCA no later than June 1st of the year following the year for which the accounting is being done. The RRCA may modify the RRCA Accounting Procedures and the RRCA Groundwater model only by contemporaneously amending these Rules and Regulations to show the date, title or version, as appropriate, of the RRCA Accounting Procedures and/or the RRCA Groundwater model that the RRCA shall use. At the time of any modification, the RRCA shall specify the time and method for implementation of each modification.

15 Any dispute arising among the States shall be resolved in accordance with the procedures set forth in Article VII of the Final Settlement Stipulation.

Adopted by the Republican River Compact Administration this 12th day of January, 2005.

Hal D. Simpson
Chair, Republican River Compact Administration
Commissioner for Colorado

David L. Pope
Commissioner for Kansas

Roger K. Patterson
Commissioner for Nebraska

ANNUAL REPORT
45th ANNUAL MEETING
REPUBLICAN RIVER COMPACT ADMINISTRATION

Minutes

In lieu of a transcript of this meeting, an audio CD of the meeting was provided to each of the states since a court reporter did not attend the meeting. Below is a summary of the meeting.

Introductions

The meeting was called to order by Chairman Simpson at 9:00 a.m., July 27, 2005, at The Route Steak House in Burlington, Colorado. Chairman Simpson welcomed everyone in attendance and stated that this may be the largest turnout on record for this meeting. Those in attendance were:

Name	Representing
Hal D. Simpson	Colorado Commissioner, Chairman
Roger Patterson	Nebraska Commissioner
David L. Pope	Kansas Commissioner
Ken Knox	Colorado Division of Water Resources
Megan Sullivan	Colorado Division of Water Resources
Jim Hall	Colorado Division of Water Resources
Scott Richrath	Colorado Division of Water Resources
Marta Ahrens	Colorado Division of Water Resources
Peter Ampe	Colorado Attorney General's Office
Jim Slattery	Helton-Williamsen / Colorado Division of Water Resources
Willem Schreüder	Principia Mathematica, Colorado
Ann Salomon Bleed	Nebraska Department of Natural Resources
Brad Edgerton	Nebraska Department of Natural Resources
Mike Thompson	Nebraska Department of Natural Resources
Scott E. Ross	Kansas Division of Water Resources / Department of Agriculture
Leland E. Rolfs	Kansas Department of Agriculture
Katherine A. Tietsort	Kansas Division of Water Resources / Department of Agriculture
George A. Austin	Kansas Division of Water Resources / Department of Agriculture
Mike Adamson	Pioneer Irrigation, Colorado
Roy Patterson	Frenchman-Cambridge Irrigation District, Nebraska
Ralph Best	Frenchman-Cambridge Irrigation District, Nebraska
Kenneth Albert	Frenchman Valley Irrigation District, Nebraska
Don Felker	Frenchman Valley Irrigation District, H&RW, Nebraska
Bob Andrews	Self
Dennis Montgomery	Republican River Water Conservation District, Colorado
David Robbins	Republican River Water Conservation District, Colorado
Dennis Coryell	Republican River Water Conservation District, Colorado
Timothy Pautler	Republican River Water Conservation District, Colorado

Steven Kramer	Republican River Water Conservation District, Colorado
Stan Murphy	Republican River Water Conservation District, Colorado
Shawn Schulte	Plains Ground Water Management District, Colorado
Robert Swanson	USGS / Nebraska Water Science Center
Phil Soenksen	USGS / Nebraska Water Science Center
Wayne Bossert	Northwest Kansas Groundwater Management District 4
Jack Dowell	W-Y Ground Water Management District / RRWCD, Colorado
Allen Tool	U. S. Army Corps of Engineers, Kansas City
Christopher Purzer	U. S. Army Corps of Engineers, Kansas City
Mike Clements	Lower Republican NRD, Nebraska
Dan Smith	Middle Republican NRD, Nebraska
Robert Merrigan	Middle Republican NRD, Nebraska
Steve Ronshaugen	Bureau of Reclamation, Grand Island, Nebraska
Jack Wergin	Bureau of Reclamation, Grand Island, Nebraska
Marv Swanda	Bureau of Reclamation, McCook, Nebraska
Bill Peck	Bureau of Reclamation, McCook, Nebraska
R. Scott Guenthner	Bureau of Reclamation, Billings, Montana
Gordon Aycock	Bureau of Reclamation, Billings, Montana
John Thorburn	Tri-Basin NRD, Nebraska
Jasper Fanning	Upper Republican NRD, Imperial, Nebraska
Fred Rogge	Kansas River Water Assurance District, Topeka
Justin Lavene	Nebraska Attorney General's Office
Donna Karspeck	Idalia Ag Education, Colorado
Andrea Knodel	Idalia FFA Chapter, Colorado
Steve Knodel	Idalia, CO, farmer, Colorado
Sen. Ralph Ostmeyer	Farmer, Colorado

Approval of Agenda

The agenda was approved as proposed:

1. Introduction
2. Adoption of Agenda
3. Approval of Previous Annual Meeting Minutes
4. Report of Chairman
5. Commissioners' Reports
   - Kansas
   - Nebraska
6. Federal Reports
   - Bureau of Reclamation
   - Corps of Engineers
   - Geological Survey
7. Engineering Committee Report
8. Unfinished Business
9. New Business and Assignments to the Compact's Committees
10. Remarks from the Public
11. Future Meeting Arrangements
12. Adjournment

Approval of 44th Annual Meeting Minutes

Commissioner Patterson moved to approve the Minutes of 44th Annual Meeting for publication in the 43rd Annual Report. The motion was seconded by Commissioner Pope and approved unanimously.

Commissioner Patterson moved to approve the Minutes of the Special Meeting of the Republican River Compact Administration held on January 12, 2005 in Denver; the motion was seconded by Commissioner Pope and approved unanimously.

Report of the Chairman

Commissioner Simpson reported that Commissioner Roger Patterson is leaving his position as Director of the Nebraska Department of Natural Resources to go into private consulting. Commissioner Patterson's last day is August 19. Commissioner Simpson thanked him for his five and one-half years of service and stated that he has enjoyed working with him and wished him the best.

With respect to Legislation, Commissioner Simpson reported that one additional staff person was allocated to the Republican River Basin to assist with various on-going enforcement activities in this area. There are now one and one-half FTEs to follow up on issues of expanded use, illegal pumping, etc.

Commissioner Simpson reported that the water supply continues to be marginal in this part of the state. He stated that there has not been significant improvement in runoff. Colorado needs increased runoff to reflect a higher allocation for consumptive use and is hopeful to get significant storms this year to increase runoff, resulting in increased allocations. Bonny Reservoir has had no significant inflow.

With regard to activities of the Republican River Water Conservation District, Commissioner Simpson stated that the county commissioners and the ground water management districts appointed a 15-person board. In the last 11 months, the board has made significant progress to assist the state of Colorado in dealing with ways to reduce the consumption of ground water and stream depletions. The District hired attorneys, a manager, and a consulting engineer. The board imposed a water use fee of $5.50 per irrigated acre for lands irrigated by ground water to generate a revenue stream of over $3 million per year to proactively reduce consumptive use. The EQIP program was initiated this year on 3,000 acres or about 30 center pivots and will continue into next year. Three thousand acres were not irrigated this year under this program. The Conservation Reserve Enhancement Program (CREP) was filed with the NRCS and is under review in Washington to reduce irrigation on thirty thousand acres. There are incentives in the program so that the closer the land irrigated is to a stream, a financial incentive will be added by the district to make it more attractive to participate in the program. The board is also looking at interruptible water supply agreements with some senior ditches on the North Fork to compensate them for not irrigating next year to further increase streamflow and reduce depletions.

Commissioner Simpson reported that Pioneer and Laird ditches have filed a petition for a hearing before the Ground Water Commission to have the Commission consider undesignating the Northern High Plains ground water basin and to curtail well pumping

in sufficient amounts to restore these water rights to the original amount. The petition was assigned to the Hearing Officer and the process is underway. Commissioner Simpson stated that discussion was held last night with the Pioneer board, including Nebraska officials, to listen to some of their concerns.

Report of the Commissioner from Kansas

Commissioner Pope reported on the significant legislative activities. He stated that a number of bills were considered, but no major legislation was passed that would affect their department. One bill was passed that allowed some funds collected by public water supply systems that go into the general fund to be shifted over to the state water plan fund to generate additional revenues for water-related activities in future years.

Commissioner Pope reported on volunteer incentive based programs, which involves working with local associations and groups to come up with programs to help reduce water use and consumptive use in several areas of the state where water is limited. They have groups looking at coming up with something that will be acceptable in dealing in shortages with less regulation and more incentive based programs. He stated that discussions since the legislative session have shifted to seriously considering a CREP program similar to what Colorado has applied for. Nebraska has already applied and been approved for a large program of this nature.

Commissioner Pope reported that there have been significant discussions with regard to the NRCS on the EQIP program, and incentive payments for not using water to deal with water short areas identified in each of the ground water management districts. A few years ago, the Kansas state water plan included a provision to deal with the declines in Ogallala, and this effort continues. They are also working towards other activities at their level regarding enforcement activities. There is a lot of interest in Kansas to deal with long-term water issues and diminishing supplies.

With regard to the Upper Republican River Compact area, Commissioner Pope stated that their office reached an agreement on the mandatory metering program for the entire Ground Water Management District No. 4. This agreement has not yet been signed, however, all non-domestic wells in northwest Kansas will be under mandatory water metering requirements.

Finally, Commissioner Pope reported that they are now in their second year for the Almena Irrigation District agreeing to not take water under an agreement with the Department of Wildlife and Parks, who compensated them to leave water in storage, which will enhance the recreation values of that project which has a significant recreation base.

Report of the Commissioner from Nebraska

Commissioner Patterson reported that Nebraska continued to deal with the impacts of the ongoing drought. He stated that other than Medicine Creek Reservoir, all other reservoirs were low and the water supply was limited last year.

Commissioner Patterson stated that there was no major water legislation in the last session. The major improvement was the update of the Dam Safety Act for the state. The big water legislation for last year was LB-962, which created a task force that is authorized through 2009 to continue to refine water legislation in the state. The most significant issue is how to obtain funding to implement what they need to do with the new law. A committee is looking at ways to fund activities. Commissioner Patterson stated that their big effort was to get management plans in place in the Republican River Basin using statutory framework in LB-962.

Commissioner Patterson stated that all four NRDs are represented at the meeting today and they put tremendous work into adopting their management plans. Some of the elements in the management plans include a mandatory requirement that every well be metered, annual allocations for all wells in the basin, penalty provisions for those who overuse water, and incentive programs (the two major programs are CREP and enhanced EQIP). The legislature provided enough money through 2006 to keep Nebraska in compliance with the compact.

Commissioner Patterson asked Mr. Brad Edgerton, of the NDNR in Cambridge, to report on water administration below Harlan County Reservoir. Mr. Edgerton distributed his 2004 report on surface water administration in Nebraska.

Commissioner Patterson commended Commissioner Simpson and the Republican River Water Conservation District for the speed of putting the district together. He stated that this is his last meeting and, with his departure, Ms. Ann Bleed will take over as interim director of the department and as Compact Commissioner for Nebraska. In addition, Mike Thompson will be the interim representative for Nebraska on the Engineering Committee.

Report by the U. S. Bureau of Reclamation

Mr. Marv Swanda, on behalf of the Bureau of Reclamation, extended their appreciation to Roger Patterson for his efforts and cooperation they received over the last five years. He stated that Mike Ryan is the new Regional Director for the Great Plains Region. They built a new office in McCook, Nebraska and moved in May. Mr. Swanda summarized the highlights of the 2004 operations, which are included in the Bureau of Reclamation report. He stated that they have a very active emergency management program and appreciated the states participating in the exercises and activities.

Mr. Jack Wergin, from Grand Island, reported on their planning studies, drought activities, and water conservation activities. In January 2005, they published and finished the Lower Republican Appraisal Study, which looks at more effective ways to utilize water supplies in the lower part of the Republican basin. The study determined that there were flows that were not being utilized and could be better utilized if additional storage could be developed. The next step requires congressional authorization and appropriations to proceed to a feasibility study, which will take legislation. Another study that will begin in FY 2006 is the Frenchman Valley Appraisal Study, which will focus on problems and opportunities to improve water supplies. Mr. Wergin reported on the drought activities and water conservation activities that the BOR was involved with. Commissioner Simpson thanked the BOR for providing technical support to the Pioneer

Irrigation District boards from both states, which was echoed by Commissioner Patterson.

Mr. Gordon Aycock, from the BOR in Billings, represented the Republican River Conservation Study Committee, which is made up of representatives of the three states, the BOR and the NRCS. He reported that as part of settlement of the Republican River Compact, the final settlement stipulation required that a study be made of the impacts of non-federal reservoirs and land terraces in the Republican River Basin. The committee developed a proposal for the 5-year study, and the Compact administration approved the study one year ago. Mr. Aycock provided a brief synopsis of the first annual status report. The study is on schedule and consists of four primary components which include: the development of databases, on-the-ground verification of the pertinent data for the study, evaluation and modification of existing water balance models used to determine how the water is affected, and the application of these water balance models to the study area. The plans for year two are to continue to collect data from the sample reservoirs and also from the terrace sites. Inventory of land terraces will be a major effort and they requested that the Compact Administration send a letter to the state conservationists with NRCS to request their assistance. Databases are being set up to handle the large amount of data collected from the study.

Report by the U. S. Army Corps of Engineers

Mr. Chris Purzer, Chief of the Water Management Section in the Kansas City District, reported on three issues: the Kansas River Basin Comprehensive study, the Kansas River Model, and Harlan County Lake. The Kansas River Basin Comprehensive study which is not yet in existence, would be a reconnaissance level study, and 100 percent federally funded, to use a comprehensive basin approach to evaluate federal interest in systematic projects to achieve flood protection, habitat restoration, conservation, water supply and other beneficial uses in partnership with state and local agencies. The Kansas River Model has been ongoing for some time. It was developed within the Kansas City District, and will incorporate hydrologic, economic and environmental impacts into one overall modeling module to assess impacts. The timeframe anticipated is 18-24 months. Finally, Mr. Purzer reported that Harlan County Lake achieved a historic low at the end of the year. There is an on-going dam safety assurance study to identify several alternatives that might be successful in addressing deficiencies and to recommend solutions. It was determined that the deficiencies include: the volume of the flood control pool is inadequate, the tainter gate bearings are 50 years old, and the deteriorating quality of the concrete causes a safety concern. Public meetings will be held between now and the end of the year.

Report by the U. S. Geological Survey

Mr. Phil Soenksen, Hydrologist, Nebraska Water Science Center, provided a presentation on USGS's preliminary and historic data, which is available on their website. He reported on the typical continuous-record discharge gage operation and stated that the flow rate is measured every six weeks or more often when it is flooding. The stage is measured at the sites and recorded electronically every 15 minutes to hourly, then the stage data is transmitted via satellite on one to four hour intervals, and processed and posted on the web. He reported the potential move of the North Fork

Gage. Mr. Soenksen also discussed and showed the data charts for the ten Federal compact stations and presented a summary report for seventeen Republican River Basin stream gaging stations.

Engineering Committee Report

Mr. Ken Knox provided the highlights of the Engineering Committee Report. He stated that the Engineering Committee met and accomplished their tasks to outline the accounting of virgin water supply, beneficial consumptive use, and the allocations for compact year 2004. They completed the accounting for the periods 1995-2002 which was used for informational purposes only. Mr. Knox summarized the four tasks that they recommend the Compact Administration assign to them next year which include the following: develop a users manual for the Compact Administration accounting; perform the accounting for 2005; provide a scope of work for a comprehensive study of ground water irrigation recharge within the Republican River Basin and related issues by July 1, 2006; and lastly, to provide a draft rule, regulation, and/or procedures to the Compact Administration to address the permitting of a new water appropriation or use in one state for the eventual use in another state. The Engineering Report and accounting spreadsheet will be posed on the web at www.republicanrivercompact.org.

Commissioner Patterson moved the acceptance of the Engineering Committee Report as discussed, which would be the approval of the 2004 accounting numbers and acceptance of the 1995-2002 numbers with the understanding that the Lovewell Reservoir evaporation numbers will be corrected before the report is published. Commissioner Pope seconded the motion and was approved unanimously.

Unfinished Business

There was no unfinished business.

New Business

Commissioner Pope moved to assign the Engineering Committee those four items and related to the proposed rules that they would consult with the respective legal staffs as needed. The motion was seconded by Commissioner Patterson and approved unanimously.

Chairman Simpson read the resolution with regard to the on-going maintenance of the ground water model for calendar year 2006 whereby the Republican River Compact Administration resolved and agreed that Principia Mathmatica shall continue to maintain and operate the ground water model for calendar year 2006, and shall bill to the states of Colorado, Kansas and Nebraska the actual costs incurred therefore and not to exceed $12,000 in total, that each state shall pay to Principia Mathmatica one-third of the total amount incurred, and billed for maintenance and operation of the ground water model. Commissioner Patterson moved approval of the motion. It was seconded by Commissioner Pope and approved unanimously.

Chairman Simpson reported on the letter to the state conservationists for Nebraska, Kansas and Colorado that was discussed at the work session and was finalized. It would request the NRCS to provide assistance to locate and conduct site visits on terrace fields in the Republican River Basin. Commissioner Pope made a motion to send the proposed letter to the respective state conservationists of the three states and approve letter as proposed. The motion was seconded by Commissioner Patterson and approved unanimously.

Chairman Simpson offered a Resolution of the Republican River Compact Administration to recognize Roger Patterson. Commissioner Pope moved approval of the resolution; seconded by Commissioner Simpson and approved unanimously. The Resolution will be included in the next annual report, which will be prepared by Colorado.

Remarks from the Public

There were no remarks from the public.

Future Meeting Arrangements

Kansas will host the Compact meeting for the next two years. Commissioner Pope suggested holding one of the two meetings in the upper basin in northwest Kansas, and the second meeting in the lower basin. A specific date was not selected, however, the meeting will be held sometime in July of 2006 after reviewing calendars.

Adjournment

The meeting adjourned at 11:00 a.m. Commissioner Simpson moved to adjourn, and was seconded by Commissioner Patterson.

Hal D. Simpson
Colorado Commissioner (Chairman)

Ann Salomon Bleed for
Roger K. Patterson, Nebraska Commissioner

David L. Pope
Kansas Commissioner

Exhibits

Bureau of Reclamation Report
U. S. Geological Survey Report
Engineering Committee Report
Resolution for Roger Patterson
Resolution for Principia Mathematica
Letter to State Conservationists

EXHIBIT 1

BUREAU OF RECLAMATION REPORT

RECLAMATION

Managing Water in the West

OPERATION

AND

MAINTENANCE

REPORT

REPUBLICAN RIVER

COMPACT MEETING

BURLINGTON, COLORADO

U.S. Department of the Interior
Bureau of Reclamation
Great Plains Region
Nebraska-Kansas Area Office

July 27, 2005

REPUBLICAN RIVER COMPACT MEETING
July 27, 2005
Burlington, Colorado

2004 Operations

As shown on the attached Table 1, precipitation in the Republican River Basin varied from 90 percent of normal at Bonny Dam to 142 percent of normal at Trenton Dam. Total precipitation at Reclamation dams ranged from 15.60 inches at Bonny Dam to 30.73 inches at Lovewell Dam.

Inflows varied from 18 percent of the most probable forecast at Harlan County Lake to 81 percent of the most probable forecast at Harry Strunk Lake. Inflows into Harlan County Lake totaled 25,099 AF while inflows at Lovewell Reservoir totaled 30,821 AF.

Average farm delivery values for each irrigated acre were as follows:

District	Farm Delivery
Frenchman Valley	3.2 inches
H&RW	0.0 inches
Frenchman-Cambridge	
- Meeker-Driftwood, Bartley, Red Willow	0.0 inches
- Cambridge Canal	7.8 inches
Almena	0.0 inches
Bostwick in NE	
- Franklin, Franklin Pump, Naponee, Courtland	0.0 inches
- Superior Canal	2.9 inches
Kansas-Bostwick	
- Above Lovewell	0.1 inches
- Below Lovewell	6.4 inches

2004 Operation Notes

Bonny Reservoir--Started the year 15.1 feet below the top of conservation. Annual computed inflow of 5,390 AF was the lowest ever recorded at this site. Below normal inflows were recorded during every month of the year. Due to the low water supply, releases were not made to Hale Ditch (third consecutive year). The end of year storage was at an historical low, 17.6 feet below the top of active conservation.

Enders Reservoir--Started the year 26.5 feet below the top of conservation. Annual computed inflow of 4,876 AF was the lowest ever recorded. Seven of the twelve months recorded record low inflows. Storage water was not released from Enders Reservoir for either Frenchman Valley or H&RW irrigation districts. This was the third consecutive year that H&RW Irrigation District did not divert water due to the extremely low water supply. Frenchman Valley Irrigation District diverted water under their natural flow water right. The end of the year storage was 26.0 feet below the top of conservation.

Swanson, Hugh Butler, and Harry Strunk Lakes—Swanson, Hugh Butler and Harry Strunk lakes started the year 24.2 feet, 15.9 feet and 9.5 feet below the top of conservation. Annual computed inflows were the lowest ever recorded at Swanson and Harry Strunk lakes and the second lowest at Hugh Butler Lake. Harry Strunk Lake did not fill for only the fourth time in 54 years. Due to the low water supply, releases were not made from Swanson or Hugh Butler lakes for diversion into Meeker-Driftwood, Bartley and Red Willow canals (second consecutive year). At the end of the year, Swanson Lake was 22.5 feet below the top of conservation, Hugh Butler Lake was 13.2 feet below and Harry Strunk Lake was 9.8 feet below.

Keith Sebelius Lake—The lake elevation at the first of the year was 2287.46 feet (16.9 feet below full). The annual inflow of 3,704 AF was between the dry and normal-year forecasts. The reservoir level peaked at elevation 2287.99 feet on April 15th. Due to the low water supply, irrigation releases were not made from the lake. In May of 2004, the Kansas Department of Wildlife and Parks and the Almena Irrigation District entered into a Memorandum of Agreement (MOA) that provided for no irrigation releases during 2004 and 2005 when the reservoir level was below 2288.0 feet. The reservoir ended the year 17.9 feet below conservation.

Harlan County Lake—The lake elevation at the beginning of 2004 was at an historical low level, 19.4 feet below the top of conservation. Inflow for the year totaled 25,099 AF, the lowest ever recorded. There was no available irrigation supply from Harlan County Lake in 2004 as the lake level never exceeded the 1927.00 shutoff elevation. "Water-Short Year Administration" was in effect. This was the first time since deliveries began in the early 50's that irrigation releases were not made from the lake. The lake level at the end of the year reached a new historical low level of 1925.44 feet (20.3 feet below full).

Lovewell Reservoir—The reservoir level was only 2.6 feet below the top of conservation at the beginning of the year. Inflows from White Rock Creek and diversion of Republican River flows via Courtland Canal combined to fill the reservoir conservation pool (elevation 1582.6 feet) on March 29th. Following approval from the Corps of Engineers, the reservoir was allowed to fill to elevation 1584.20 feet on May 17th. Runoff from storms in early July resulted in a peak elevation of 1584.7 feet on July 10th. Irrigation demands reduced the pool elevation to 1573.0 feet on August 29th. The reservoir level was maintained below the spillway crest (elevation 1573.0 feet) until mid December while a construction contract to rehabilitate the spillway and outlet works gates was completed. Diversions of Republican River flows into Lovewell Reservoir resumed after completion of the contract. The water surface elevation at the end of the year was 8.3 feet below the top of conservation at 1574.30 feet.

Current Operations

Table 2 shows a summary of data for the first six months of 2005.

Bonny Reservoir – Currently 17.3 feet from full. Reservoir level is 1.6 feet below last year at this

time. Reservoir storage continues to decline despite no releases being made since 2001.

Swanson Lake – Currently 19.1 feet from full. Inflows for 2005 are only 39% of most probable. Lake level is 2.8 feet above last year at this time. Frenchman-Cambridge Irrigation District is not irrigating from Swanson Lake for the third consecutive year due to the low water supply.

Enders Reservoir - Currently 24.9 feet from full. Inflows for 2005 are only 39% of most probable. Reservoir level is only .9 foot above last year at this time. Due to the water supply shortage, H&RW Irrigation District is not irrigating for the fourth year in a row. This is second consecutive year that Frenchman-Valley Irrigation District has not received storage water for irrigation.

Hugh Butler Lake – Currently 11.0 feet from full. Lake level is 2.1 feet above last year at this time. Frenchman-Cambridge Irrigation District is not irrigating from Hugh Butler Lake for the third consecutive year due to the low water supply.

Harry Strunk Lake – Currently 3.7 feet below the top of conservation. Lake filled on June 7th (elevation 2366.1 feet). Irrigation releases began on June 27th. Frenchman-Cambridge Irrigation District expects to deliver 8 inches to acres served by Cambridge Canal.

Keith Sebelius Lake – Currently 17.4 feet below full. Lake level is .3 foot below last year at this time. This is second consecutive year that Almena Irrigation District has not requested release for irrigation due to the short water supply.

Harlan County Lake – Currently 16.1 feet below full. Lake level is 3.0 feet above last year at this time. Inflow for first six months of 2005 is greater than 2003 and 2004 annual inflow, but still only 54% of most probable. The available irrigation supply from Harlan County Lake on June 30th was only 14,100 acre-feet, indicating that "Water-Short Year Administration" would be in effect. At this time, neither Bostwick Irrigation District in Nebraska or Kansas Bostwick Irrigation District anticipates a release of irrigation water from Harlan County Lake. This would be the second consecutive year that irrigation releases have not been made from Harlan County Lake.

Lovewell Reservoir – Currently 3.6 feet below the top of conservation pool. Lake was filled on May 13th by diverting Republican River flows via Courtland Canal. Corps of Engineers allowed storing 10 percent in flood pool (elevation 1584.2 feet) just prior to irrigation season. Irrigation releases began on June 20th. Kansas Bostwick Irrigation District expects to deliver 6 inches below Lovewell.

Other Items

Inspections

Comprehensive Facility Reviews (CFR) were conducted at Enders, Trenton, Lovewell, Box Butte and Glen Elder dams in 2004. Annual inspections were conducted at the remaining project dams in 2004.

Safety of Dams

Virginia Smith Dam—In 2002 the drain system under the river outlet works structure was determined to have failed. This system was grouted shut in the spring of 2003. A

similar drainage system is located beneath the spillway outlet structure. A risk analysis completed in September 2003 recommended that the drain system under the spillway basin be grouted. Grouting of the drains is expected to begin this September.

Norton Dam—At the present time there are concerns related to seepage through the left abutment foundation. A final issue evaluation report of findings in 2003 concluded that action should be taken to reduce risk. Topographic surveys and additional instrumentation were installed near the outlet works in 2004. Plans and specifications are scheduled to be completed in 2005.

Enders Dam – A small depression was discovered near the outlet works stilling basin in August of 2004. Reclamation has installed instrumentation in the area to collect additional data. Investigations and additional analysis are scheduled in 2005.

Emergency Management Operations

Orientation Meetings are held annually to discuss the Emergency Action Plan (EAP) for all NKAO dams. Federal, state, county and local organizations that would be impacted by an emergency at NKAO dams are invited to attend. Radios which contact the downstream 24-hour warning points are tested monthly.

Tabletop exercises were held for the Emergency Action Plans (EAP) of Bonny, Enders, Lovewell, Kirwin and Webster dams in 2004.

Standing Operating Procedures

The Standing Operating Procedures (SOP) for Box Butte, Red Willow, Medicine Creek and Webster dams were republished in 2004. All the SOP's for the 15 dams are scheduled to be republished by the end of 2005.

Sedimentation

A sedimentation re-survey was done for Merritt Reservoir in 2003 with new area-capacity data available in January 2005.

Water Conservation

Increased emphasis is being placed on water conservation by Reclamation. A full time employee is available in the Area Office to work with the irrigation districts on their water conservation efforts.

Security

Security at all Reclamation dams has increased since September 11, 2001. We have installed or are installing security fencing around the critical facilities at nearly all of the NKAO dams and maintaining close communication with local law enforcement at all sites. A threat assessment leading to a risk analysis is underway on project dams. Once the risk analyses are complete, we will make structural and non-structural changes to ensure a proper level of security and safety.

Hydromet

Data collection equipment (DCPs) has been installed at all canal sites in the basin. In cooperation with Nebraska Department of Natural Resources, five DCPs were installed

in 2002 at key locations between Harlan County Dam and the Superior-Courtland Diversion Dam to improve stream flow monitoring and enhance project operations. Additional instrumentation equipment was added at the Superior-Courtland Diversion Dam in the spring of 2003 to monitor river flows passing through the sluice gates as well as the river flows passing over the control weir. Remote monitoring equipment has also been installed at several canal wasteways within the Basin.

Historical data collected by the DCPs as well as real time data during the operation season are available by accessing Reclamation Hydromet Data System through the Internet site (www.usbr.gov/gp).

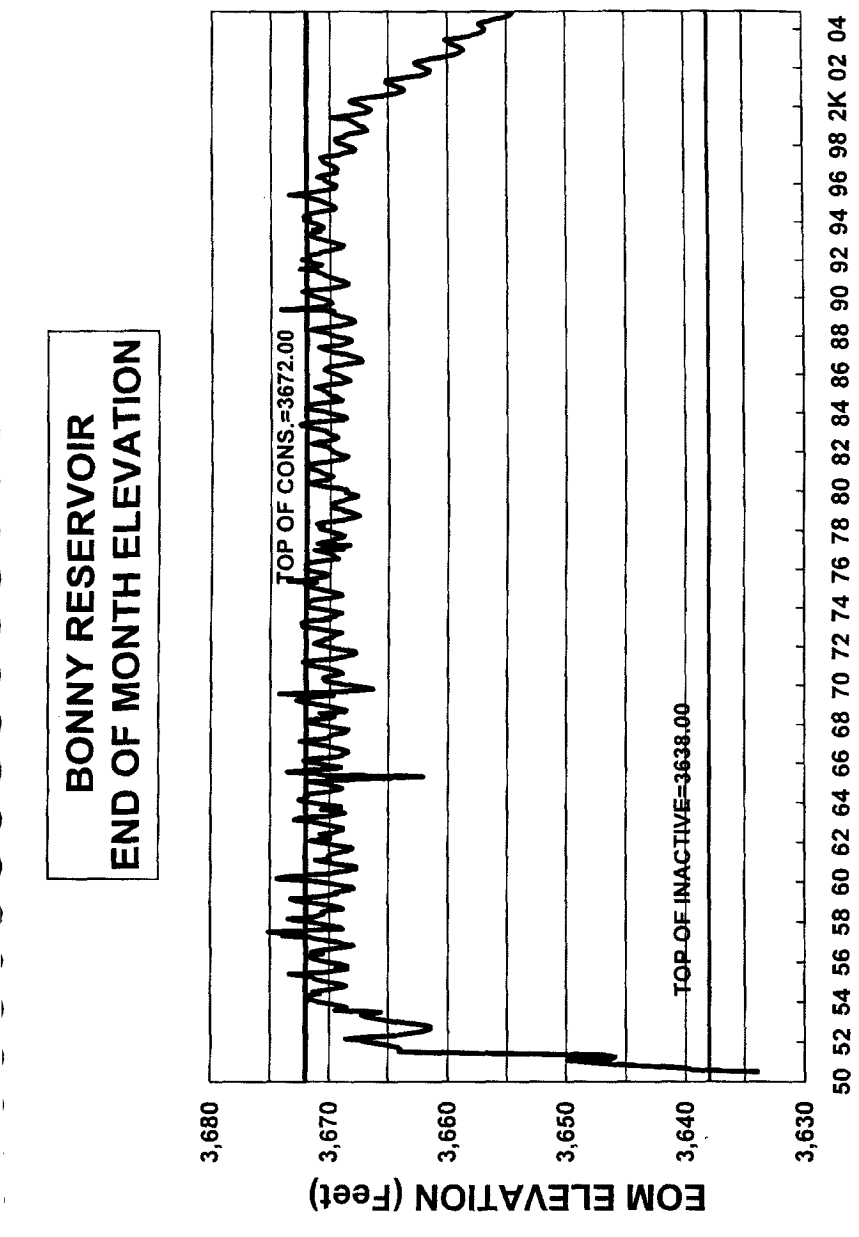
TABLE 1
NEBRASKA-KANSAS PROJECTS
Summary of Precipitation, Reservoir Storage and Inflows
CALENDAR YEAR 2004

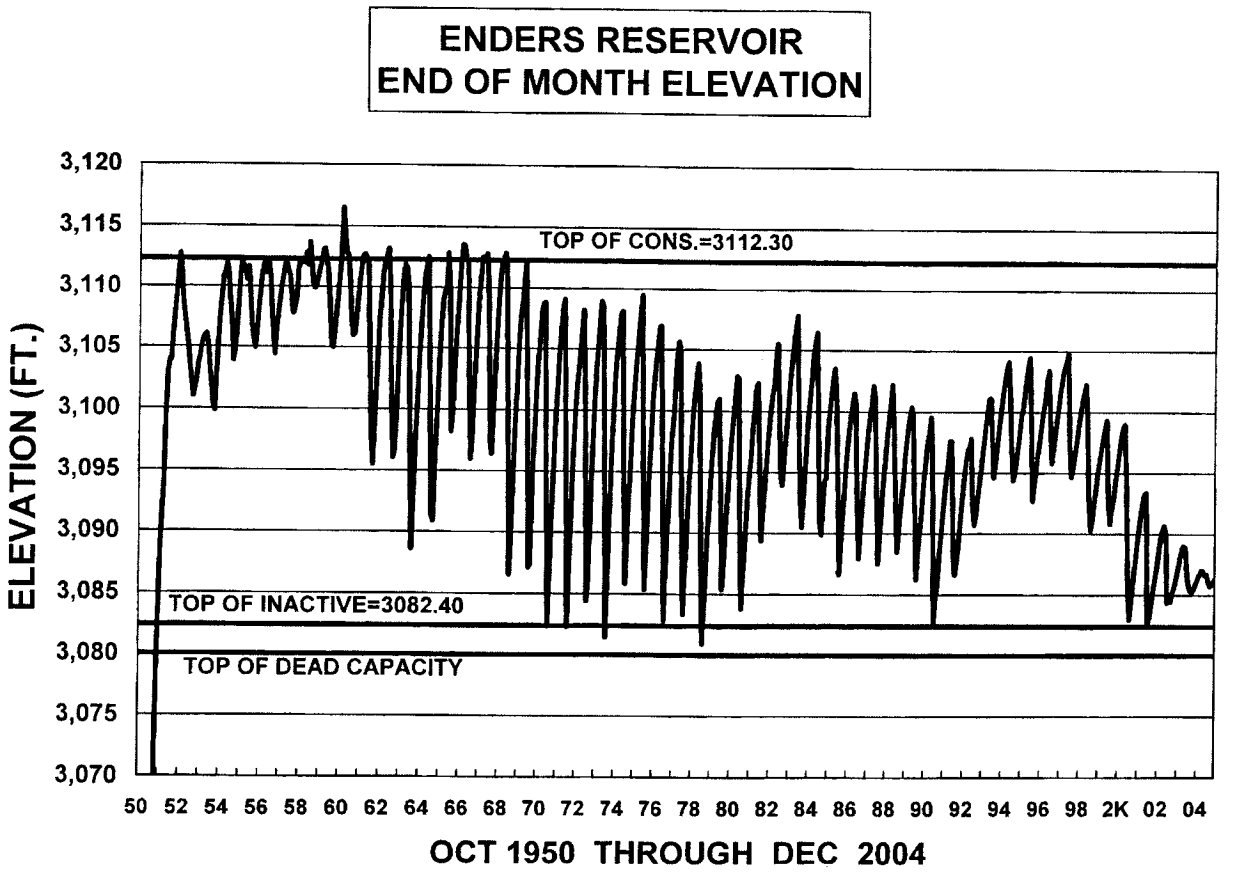
Reservoir	Total Precip. Inches	Percent Of Average %	Storage 12-31-03 AF	Storage 12-31-04 AF	Gain or Loss AF	Maximum Storage Content AF	Maximum Storage Date	Minimum Storage Content AF	Minimum Storage Date	Total Inflow AF	Percent Of Most Probable %
Box Butte	16.15	94	6,895	7,768	873	11,893	MAY 19	3,423	AUG 31	12,527	75
Merritt	24.21	120	68,831	69,110	279	74,781	JUN 21	29,330	SEP 15	180,572	96
Calamus	20.86	88	87,654	100,649	12,995	129,667	MAY 23	67,235	SEP 21	249,768	94
Davis Creek	20.58	87	10,111	9,345	-766	31,123	JUN 28	7,423	SEP 10	51,783	107
Bonny	15.60	90	16,726	13,754	-2,972	17,318	MAY 6	13,719	DEC 23	5,390	39
Enders	22.77	120	11,267	11,632	365	12,175	MAY 1	11,210	SEP 21	4,876	28
Swanson	28.43	142	26,599	30,489	3,890	32,168	JUL 26	26,577	JAN 2	12,714	27
Hugh Butler	21.70	110	15,587	18,387	2,800	18,571	AUG 2	15,607	JAN 1	9,632	61
Harry Strunk	24.66	120	21,540	21,177	-363	31,860	JUN 20	13,755	SEP 3	28,707	81
Keith Sebelius	23.11	93	9,172	8,247	-925	9,649	APR 15	8,107	NOV 8	3,704	49
Harlan County	22.83	100	113,346	107,050	-6,296	117,883	MAY 23	107,050	DEC 26	25,099	18
Lovewell	30.73	113	28,358	15,904	-12,454	42,173	JUL 10	12,512	NOV 15	30,821	54
Kirwin	21.51	92	24,575	14,414	-10,161	25,264	MAR 9	14,400	NOV 10	4,009	18
Webster	21.47	91	19,143	10,153	-8,990	19,437	MAR 5	10,113	OCT 6	4,033	22
Waconda	24.41	95	168,625	159,801	-8,824	179,256	JUL 31	159,504	DEC 25	49,217	33
Cedar Bluff	19.51	92	130,225	117,211	-13,014	130,282	MAR 1	117,211	DEC 27	10,496	81

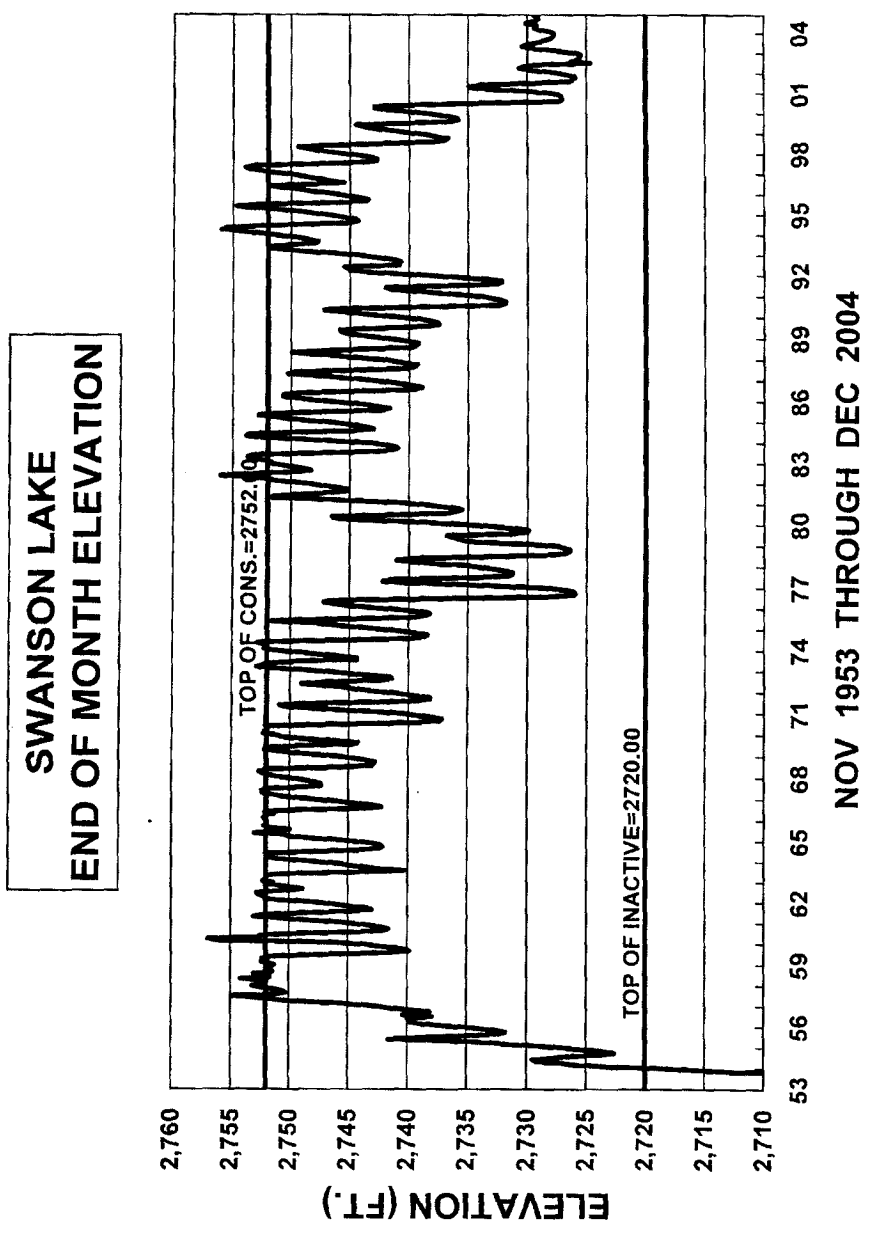
TABLE 2
NEBRASKA-KANSAS AREA OFFICE
Summary of Precipitation, Reservoir Storage and Inflows

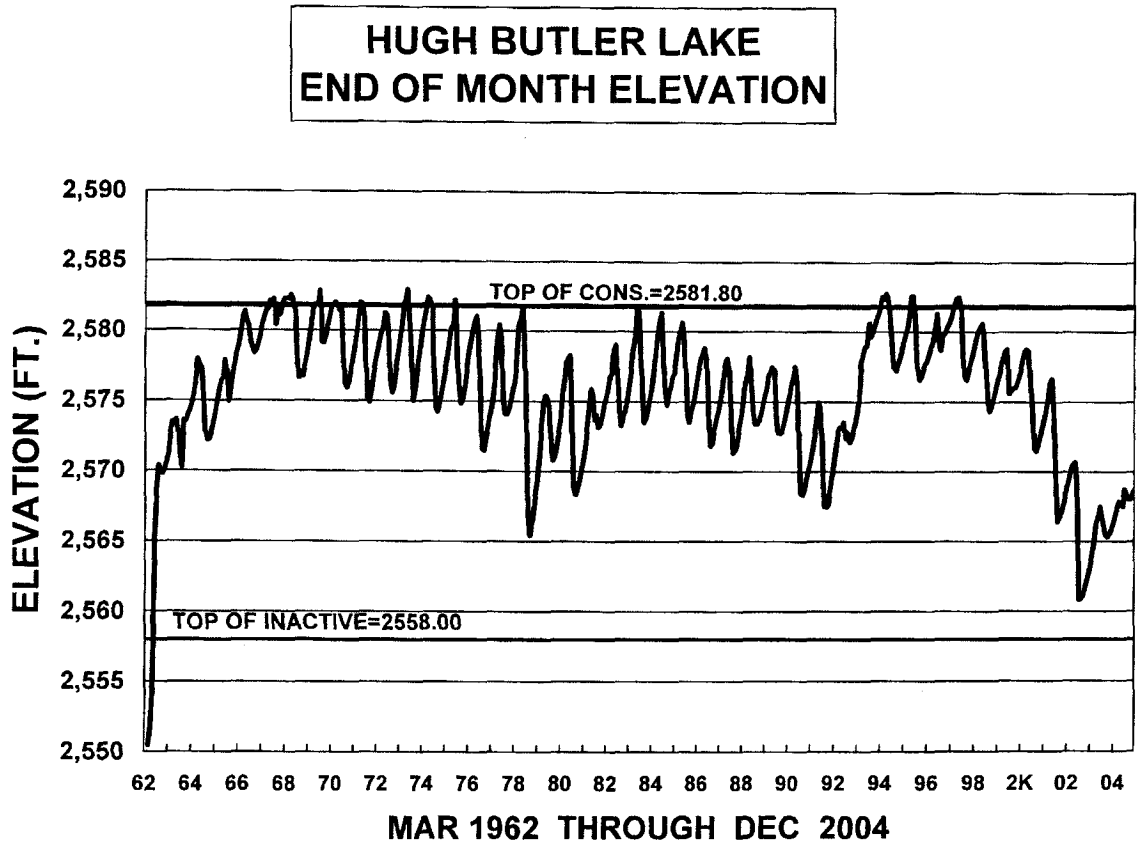
JANUARY - JUNE 2005

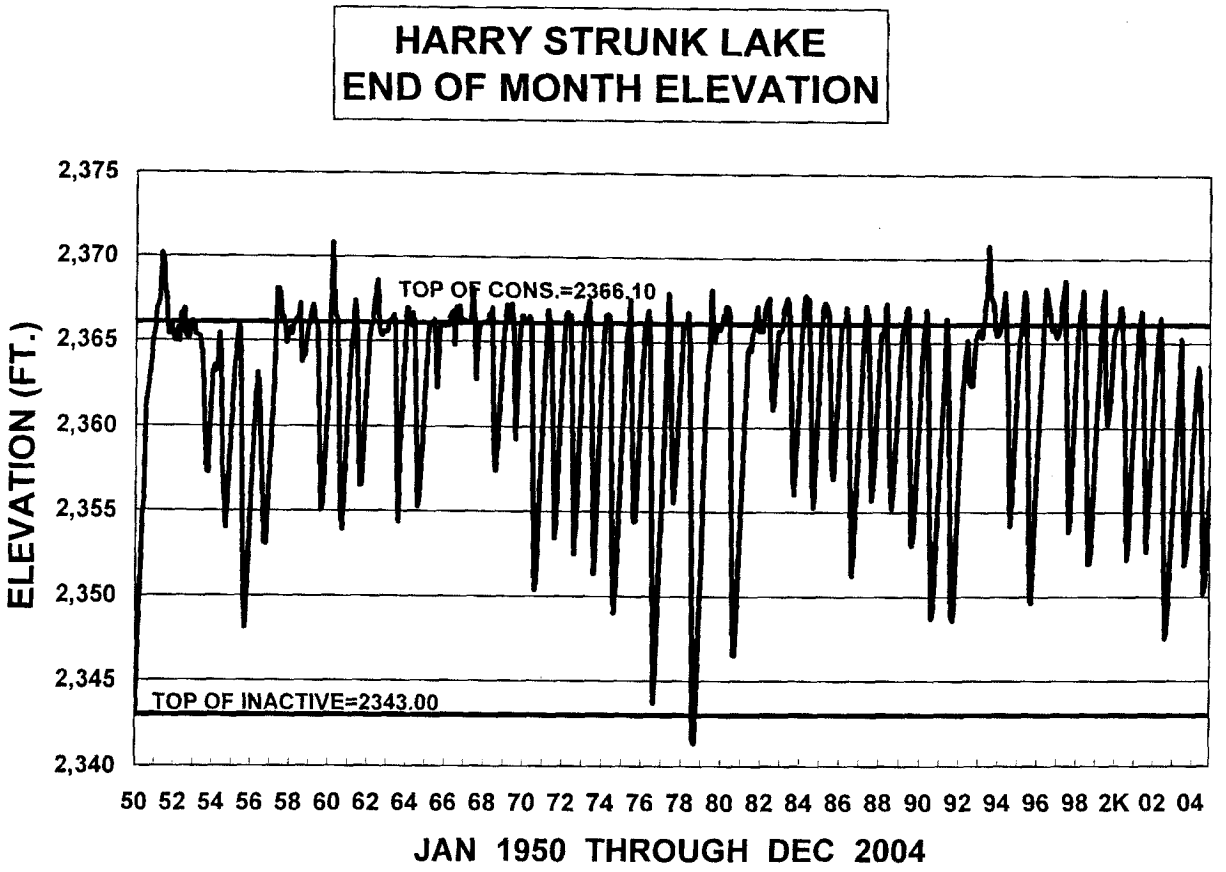
Reservoir	Precip. Inches	Percent Of Average %	Storage 6/30/2004 AF	Storage 6/30/2005 AF	Gain or Loss AF	Inflow AF	Percent Of Most Probable %
Bonny	9.13	100	16,171	14,746	(1,425)	5,183	58
Enders	14.64	145	11,868	12,918	1,050	3,414	39
Swanson	9.88	94	29,908	39,770	9,862	13,748	39
Hugh Butler	12.24	123	17,191	21,440	4,249	6,345	72
Harry Strunk	11.47	106	29,099	36,056	6,957	19,139	96
Keith Sebelius	13.89	110	8,953	9,023	70	2,709	60
Harlan County	13.42	116	114,139	141,112	26,973	44,431	54
Lovewell	11.86	90	39,138	36,965	(2,173)	29,292	76
Kirwin	16.30	135	23,775	18,141	(5,634)	6,154	45
Webster	11.72	98	17,937	12,033	(5,904)	4,411	37
Waconda	12.49	98	163,809	172,497	8,688	38,984	46
Cedar Bluff	9.96	94	125,727	112,731	(12,996)	5,130	77

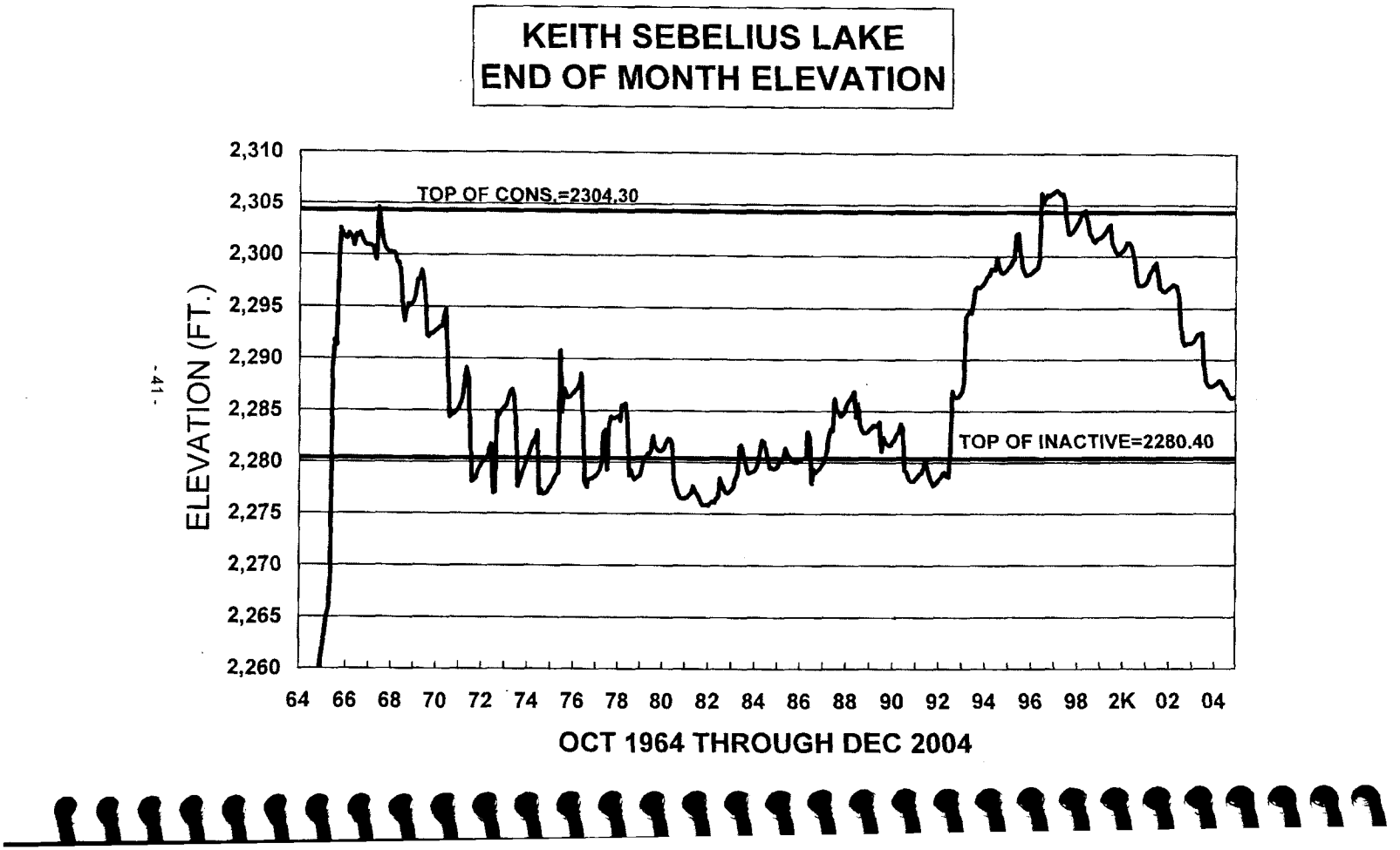

BONNY RESERVOIR
END OF MONTH ELEVATION
TOP OF CONS.=3672.00
TOP OF INACTIVE=3638.00
EOM ELEVATION (Feet)
3,680
3,670
3,660
3,650
3,640
3,630
50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 2K 02 04
JUL 1950 THROUGH DEC 2004

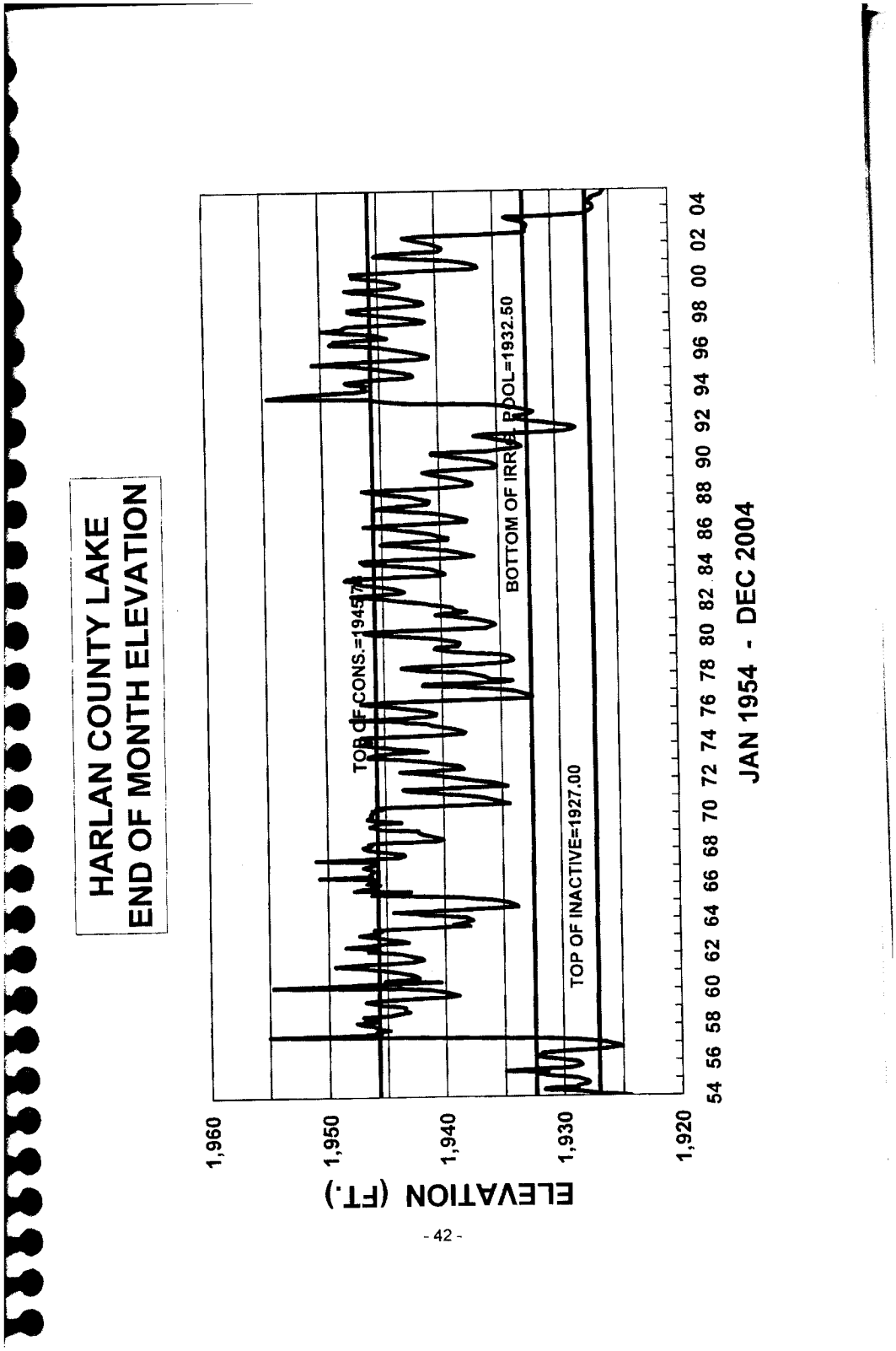

ENDERS RESERVOIR
END OF MONTH ELEVATION
ELEVATION (FT.)
3,120
3,115
3,110
3,105
3,100
3,095
3,090
3,085
3,080
3,075
3,070
TOP OF CONS.=3112.30
TOP OF INACTIVE=3082.40
TOP OF DEAD CAPACITY
50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 2K 02 04
OCT 1950 THROUGH DEC 2004


SWANSON LAKE
END OF MONTH ELEVATION
TOP OF CONS.=2752.0
TOP OF INACTIVE=2720.00
ELEVATION (FT.)
2,760
2,755
2,750
2,745
2,740
2,735
2,730
2,725
2,720
2,715
2,710
53 56 59 62 65 68 71 74 77 80 83 86 89 92 95 98 01 04
NOV 1953 THROUGH DEC 2004




HARRY STRUNK LAKE
END OF MONTH ELEVATION
ELEVATION (FT.)
2,375
2,370
2,365
2,360
2,355
2,350
2,345
2,340
TOP OF CONS.=2366.10
TOP OF INACTIVE=2343.00
50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 2K 02 04
JAN 1950 THROUGH DEC 2004


KEITH SEBELIUS LAKE
END OF MONTH ELEVATION
ELEVATION (FT.)
2,310
2,305
2,300
2,295
2,290
2,285
2,280
2,275
2,270
2,265
2,260
TOP OF CONS.=2304.30
TOP OF INACTIVE=2280.40
64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 2K 02 04
OCT 1964 THROUGH DEC 2004


HARLAN COUNTY LAKE
END OF MONTH ELEVATION
ELEVATION (FT.)
1,960
1,950
1,940
1,930
1,920
TOP OF CONS.=1945.00
BOTTOM OF IRR. POOL=1932.50
TOP OF INACTIVE=1927.00
54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 00 02 04
JAN 1954 - DEC 2004

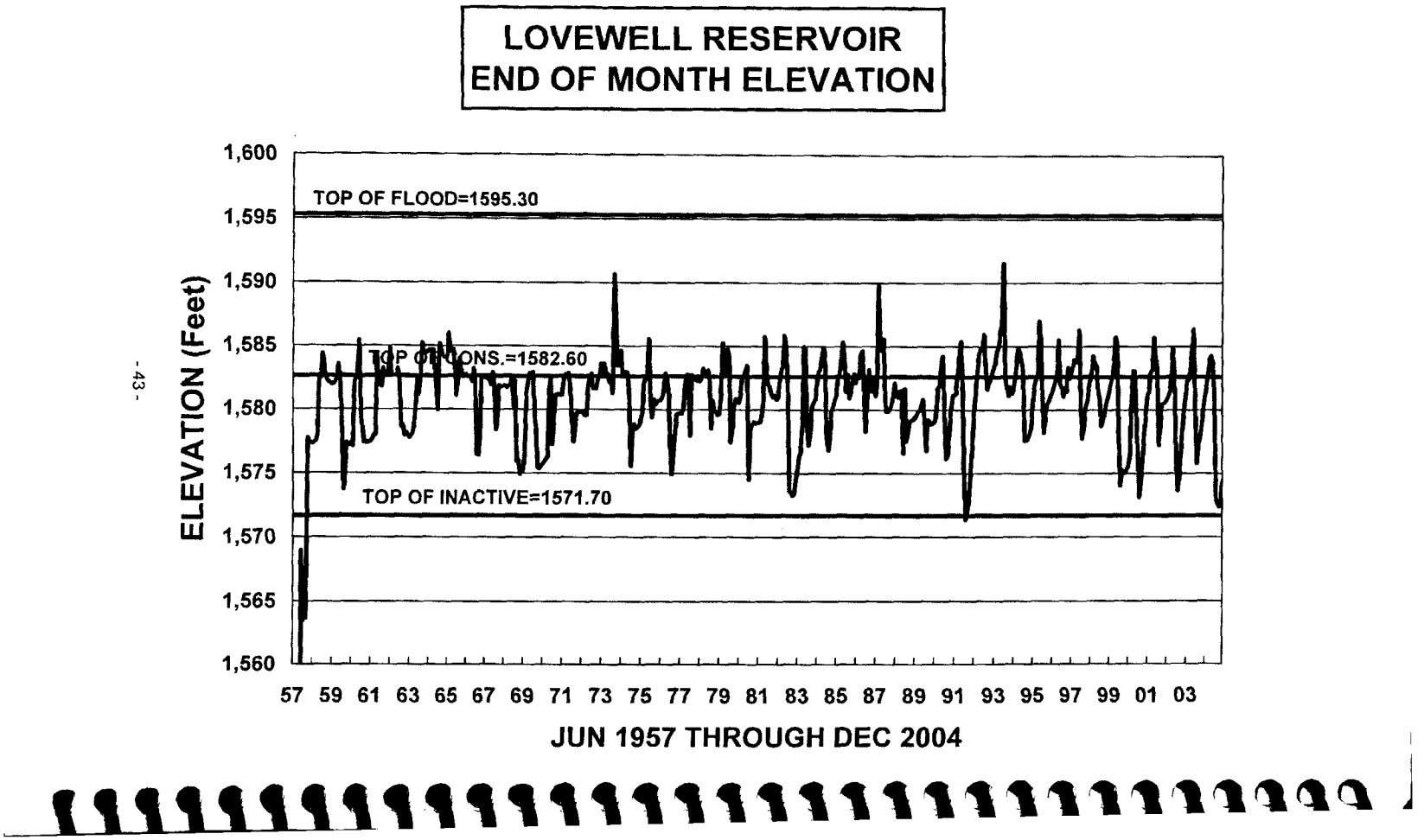

LOVEWELL RESERVOIR
END OF MONTH ELEVATION
ELEVATION (Feet)
1,600
1,595
1,590
1,585
1,580
1,575
1,570
1,565
1,560
TOP OF FLOOD=1595.30
TOP OF CONS.=1582.60
TOP OF INACTIVE=1571.70
57 59 61 63 65 67 69 71 73 75 77 79 81 83 85 87 89 91 93 95 97 99 01 03
JUN 1957 THROUGH DEC 2004

EXHIBIT 2

U. S. GEOLOGICAL SURVEY REPORT

Republican River Basin streamflow gaging stations with records published by USGS for water year (WY) 2004

Station ID	Station Name	Telemetry	Annual mean flow (ft^3/s) WY 2004	Period of record	Percent of long-term mean	Record high/low	WYs used for period of record	Remarks
USGS Compact stations supported by the National Streamflow Information Program (NSIP)								
06821500	Arikaree River at Haigler, Nebr	Satellite	0.49	18.3	2.7%		1932 - 2004	2nd lowest
06823000	N Fk Republican River at Colo-Nebr State Line	Satellite	25.6	43.2	59.3%		1935 - 2004	3rd lowest
06823500	Buffalo Creek near Haigler, Nebr	Satellite	2.81	6.51	43.2%		1941 - 2004	3rd lowest
06824000	Rock Creek at Parks, Nebr	Satellite	6.57	12.5	52.6%	Record low	1941 - 2004	
06827500	S Fk Republican River near Benkelman, Nebr	Satellite	0	38.5	0.0%	Record low	1938 - 2004	
06835500	Frenchman Creek at Culbertson, Nebr	Satellite	21.4	70.5	30.4%		1951 - 2004	2nd lowest; since Enders Reservoir
06836500	Driftwood Creek near McCook, Nebr	Satellite	1.61	9.02	17.8%		1947 - 2004	4th lowest
06838000	Red Willow Creek near Red Willow, Nebr	Satellite	4.75	12.7	37.4%	Record low	1962 - 2004	since Hugh Butler Lake
06847500	Sappa Creek near Stamford, Nebr (USACE funds DCP)	Satellite	0.12	42.8	0.3%	Record low	1946 - 2004	
06852500	Courtland Canal at Nebr-Kans State Line (USBR DCP)	Satellite	35.9	78.4	45.8%		1950 - 2004	6th lowest
USGS stations supported by USACE								
06837000	Republican River at McCook, Nebr	Satellite	19.0	137	13.9%		1955 - 2004	2nd lowest
06844500	Republican River near Orleans, Nebr	Satellite	9.44	242	3.9%	Record low	1948 - 2004	
06849500	Republican River below Harlan County Dam	Satellite	1.42	210	0.7%	Record low	1953 - 2004	
Nebr DNR stations with USGS/USACE support for DCP, review, and publishing								
06834000	Frenchman Creek at Palisade, Nebr	Satellite	19.6	66.4	29.5%		1951 - 2004	2nd lowest; since Enders Reservoir
06843500	Republican River at Cambridge, Nebr	Satellite	41.0	225	18.2%	Record low	1950 - 2004	since Harry Strunk Lake
06853020	Republican River at Guide Rock, Nebr	Satellite	20.9	280	7.5%	Record low	1951 - 2004	
USGS stations with support from USACE and Nebr DNR								
06828500	Republican River at Stratton, Nebr	Satellite	12.1	104	11.6%	Record low	1951 - 2004	

Indicates less than previous WY

Links to USGS data, publications, studies, ...
National http://water.usgs.gov/
Nebraska http://ne.water.usgs.gov/

Phil Soenksen, Hydrologist
402-328-4150
pjsoenks@usgs.gov

Republican River Basin streamflow gaging stations with records published by USGS for water year (WY) 2004

Station ID	Station Name	Telemetry	Annual mean flow (ft^3/s) WY 2004	Period of record	Percent of long-term mean	Record high/low	WYs used for period of record	Remarks
USGS Compact stations supported by the National Streamflow Information Program (NSIP)								
06821500	Arikaree River at Haigler, Nebr	Satellite	0.49	18.3	2.7%		1932 - 2004	2nd lowest
06823000	N Fk Republican River at Colo-Nebr State Line	Satellite	25.6	43.2	59.3%		1935 - 2004	3rd lowest
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06827500	S Fk Republican River near Benkelman, Nebr	Satellite	0	38.5	0.0%	Record low	1938 - 2004	
06835500	Frenchman Creek at Culbertson, Nebr	Satellite	21.4	70.5	30.4%		1951 - 2004	2nd lowest; since Enders Reservoir
06836500	Driftwood Creek near McCook, Nebr	Satellite	1.61	9.02	17.8%		1947 - 2004	4th lowest
06838000	Red Willow Creek near Red Willow, Nebr	Satellite	4.75	12.7	37.4%	Record low	1962 - 2004	since Hugh Butler Lake
06847500	Sappa Creek near Stamford, Nebr (USACE funds DCP)	Satellite	0.12	42.8	0.3%	Record low	1946 - 2004	
06852500	Courtland Canal at Nebr-Kans State Line (USBR DCP)	Satellite	35.9	78.4	45.8%		1950 - 2004	6th lowest
USGS stations supported by USACE								
06837000	Republican River at McCook, Nebr	Satellite	19.0	137	13.9%		1955 - 2004	2nd lowest
06844500	Republican River near Orleans, Nebr	Satellite	9.44	242	3.9%	Record low	1948 - 2004	
06849500	Republican River below Harlan County Dam	Satellite	1.42	210	0.7%	Record low	1953 - 2004	
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06843500	Republican River at Cambridge, Nebr	Satellite	41.0	225	18.2%	Record low	1950 - 2004	since Harry Strunk Lake
06853020	Republican River at Guide Rock, Nebr	Satellite	20.9	280	7.5%	Record low	1951 - 2004	
USGS stations with support from USACE and Nebr DNR								
06828500	Republican River at Stratton, Nebr	Satellite	12.1	104	11.6%	Record low	1951 - 2004	

Record low indicates less than previous WY

Links to USGS data, publications, studies, ...
National http://water.usgs.gov/
Nebraska http://ne.water.usgs.gov/

Phil Soenksen, Hydrologist
402-328-4150
psoenk...@usgs...

EXHIBIT 3

ENGINEERING COMMITTEE REPORT

Republican River Compact Administration
Engineering Committee Report
July 27, 2005

At the 2004 annual meeting of the Republican River Compact Administration, the Commissioners assigned the Engineering Committee ten tasks:

1. Continue development of the RRCA Accounting Spreadsheet and reach mutual acceptance of the accounting spreadsheet by July 31, 2004.
2. Complete a checklist of data exchange and reporting requirements described in the Final Settlement Stipulation and RRCA Accounting Procedures by July 31, 2004.
3. Reach mutual acceptance of ground water pumping, diversion, consumptive use and other requisite data for the Accounting Procedures for the period 1995 through 2003 by August 31, 2004.
4. Complete the final RRCA Ground Water Model runs for the years 1995 through 2003 by September 15, 2004.
5. Complete RRCA accounting for the years 1995 through 2003 by September 30, 2004.
6. Develop a users manual for the RRCA Accounting Procedures by September 30, 2004
7. Develop a users manual for the RRCA Ground Water Model by September 30, 2004.
8. Develop a GIS coverage (electronic map) of the Republican River Basin and the designated drainage basins by September 30, 2004.
9. By April 15, 2005, exchange the data required by the Republican River Compact accounting procedure, and use these data to complete the accounting of the virgin water supply, the computed water supply, and the beneficial consumptive uses in the Basin for the calendar year 2004.
10. Investigate the irrigation efficiencies and recharge values for different types of ground water irrigation systems and prepare a report that includes definitions, literature review, and findings for submittal to the RRCA by June 1, 2005.

The Engineering Committee and technical representatives from the States of Colorado, Kansas, and Nebraska participated in numerous collaborative work activities, meetings and phone conferences.

The following assignments and work activities were completed:

1. The aforementioned tasks with the exception of number 6 and 10. In regard to number 10, at the January 12, 2005 Special Meeting of the RRCA held in Denver, Colorado – the task assignment was modified from the original June 9, 2004 assignment to preparation of a draft Scope of Work for the proposed study by the July 2005 RRCA meeting to be prepared by the State of Kansas. The State of Kansas prepared a draft discussion paper for presentation and consideration by the RRCA at the July 2005 RRCA annual meeting.

2. Exchanged model data sets and supporting data as well as streamflow, climatological, diversion, reservoir evaporation, and ground water well permitting information and data by the three states and in cooperation with the U.S. Geological Survey, U.S. Bureau of Reclamation, and U.S. Army Corps of Engineers for 2004.
3. Assumed operation and maintenance of the RRCA Ground Water model in cooperation with Principia Mathematica to maintain and operate the website that hosts the model, its datasets, and reporting functions.
4. The 2004 accounting of the virgin water supply, the computed water supply, and the beneficial consumptive uses in the Republican River Basin was completed, including the ground water impacts computed by the RRCA Ground Water Model in conformance with the procedures described in the RRCA Ground Water Model Users Manual.
5. Accounting of the virgin water supply, the computed water supply, and the beneficial consumptive uses in the Republican River Basin was completed for the period of 1995 through 2002 for informational purposes only. The calculation of Lovewell Reservoir evaporation during this period was computed by the same equation used in the RRCA accounting for calendar years 2003 and 2004.
6. In addition to the assignments listed above, the Engineering Committee also developed a recommendation for charging annual net evaporation from Harlan County Lake to Kansas and Nebraska in years when no irrigation releases are made from Harlan County Lake, a situation that was not previously addressed in the RRCA accounting procedures. The recommendation is to insert the language described below after the first sentence in paragraph three on page 23 that begins "The total net evaporation (Acre-feet) will be charged..,

> "For any year in which no irrigation releases were made from Harlan County Lake, the annual net evaporation charged to Kansas and Nebraska will be based on the average of the above calculation for the most recent three years in which irrigation releases from Harlan County Lake were made."

The Engineering Committee recommends the Republican River Compact Administration assign the following tasks be completed by the indicated dates:

1. Develop a users manual for the RRCA Accounting Procedures by July 1, 2006.
2. In addition to providing by April 15 the information listed in Section V of the Accounting Procedures and Reporting Requirements, exchange by July 15, 2006 all finalized data required by the Republican River Compact accounting procedure, and use these data to complete the accounting of the virgin water supply, the computed water supply, and the beneficial consumptive uses in the Basin for the calendar year 2005.
3. Provide a Scope of Work for a comprehensive study of ground water irrigation recharge within the Republican River Basin and related issues to the RRCA by July 1, 2006.

4. Provide a draft rule, regulation, and/or procedure to the RRCA by July 1, 2006 to address the permitting of a new appropriation of water in one state to be beneficially consumed in another state.

Kenneth W. Knox
Engineer Committee Member for Colorado

David W. Barfield
Engineer Committee Member for Kansas

Ann Salomon Bleed
Engineer Committee Member for Nebraska

EXHIBIT 4

RESOLUTIONS

RESOLUTION
OF THE
REPUBLICAN RIVER COMPACT ADMINISTRATION

July 27, 2005

Be it hereby resolved the Republican River Compact Administration recognizes Mr. Roger K. Patterson for his professional and benevolent efforts to his colleagues and the citizens of the Republican River Basin as Commissioner for the State of Nebraska from 1999 to 2005.

Through challenges and opportunities, Mr. Patterson always exhibited honor, integrity, and perseverance in addressing complex water administration and interstate compact compliance issues.

The Republican River Compact Administration wishes to express its deepest appreciation to Mr. Patterson and extends it best regards to his future endeavors.

Hal D. Simpson
Colorado Commissioner

David L. Pope
Kansas Commissioner

Ann Salomon Bleed
Nebraska Engineer Committee Member
On behalf of the State of Nebraska

RESOLUTION OF THE REPUBLICAN RIVER COMPACT ADMINISTRATION
July 27, 2005

WHEREAS, Principia Mathmatica has maintained and operated the Groundwater Model during calendar years 2003 and 2004;

WHEREAS such model is required for Compact Accounting purposes.

THEREFORE, the Republican River Compact Administration does resolve and agree that Principia Mathmatica shall continue to maintain and operate the Groundwater Model for calendar year 2006, and shall bill to the States of Colorado, Kansas and Nebraska the actual costs incurred therefore, not to exceed twelve thousand dollars ($12,000) in total, and each State shall pay to Principia Mathmatica one-third (1/3) of the total amount incurred and billed for such maintenance and operation of the Groundwater Model.

Hal D. Simpson
Commissioner for Colorado

David L. Pope
Commissioner for Kansas

Roger K. Patterson
Commissioner for Nebraska

EXHIBIT 5

LETTER TO STATE CONSERVATIONISTS

study is a five-year effort and after one year field experiments, data collection, and database development has begun.

During development of the study plan, NRCS personnel estimated through the National Resource Inventory (NRI) that land terraces serve approximately two million acres in the Republican River Basin. The study plan calls for an inventory of land terraces; field visits to assess the type of terraces and functioning condition of a selected sample of the terraces; and detailed data collection on a small number of land terraces to understand the water balance associated with terraces. The inventory and detailed data collection components are presently in progress.

The States are by this letter requesting assistance from the NRCS with the field visit component of the study plan for field terraces. Specifically, the States need your assistance to identify the location of representative terraced fields in each county in the basin and assistance in doing the field visits at the selected terraced fields. It is anticipated that 20 to 25 representative terraced fields per county will need to be located and visited as part of this effort. Conservation Committee discussion with some of your staff suggests that for the six counties in Kansas it may take interns or temporary staff, supervised by a cartographer, approximately 200 hours of office time to locate the sample of terraced fields. It is believed that a statistical evaluation of the existing NRI and associated databases on soil types and slopes will yield the fields most likely to have controlling terraces within each 14 digit hydrologic unit code (HUC 14). Additional time will be needed to complete the office work for the counties in Nebraska and in Colorado.

Those fields selected under the office part of the task would need to be inspected by county level staff working through the NRCS county field offices. It is the Conservation Committee understanding that your county level staff has the best understanding of the characteristics of the terraced fields in the counties. The county level staff will review of the files at the county level and do a field inspection of the fields selected by the office groups. The final product will include the completion of the field inventory sheets developed for this purpose. Please see the enclosure for an example of the field inventory sheet. The county level staff time including case file review, travel and field inspection are expected to involve approximately 3 hours per site.

Although the study will be a five-year effort, the information we are requesting your assistance with is needed by about January 1, 2007. The information about terraced fields is needed at that time in order to complete the remainder of the study.

Your expertise and effort in this matter would be a benefit to the States and be valuable for the study. Please seriously consider this request. If you would like to discuss this request in more detail, please contact Gordon Aycock with the Bureau of Reclamation and chairman of the Conservation Committee at 406-247-7756. Gordon can arrange a conference call between yourself and other members of the Conservation Committee to discuss the work being contemplated.

3

Sincerely,

Hal D. Simpson
Commissioner for Colorado
State Engineer
Colorado Division of Water Resources
1313 Sherman Street, Room 818
Denver, CO 80203

David L. Pope
Commissioner for Kansas
Chief Engineer
Division of Water Resources
Kansas Department of Agriculture
109 SW 9th Street, 2nd Floor
Topeka, KS 66612-1283

Roger K. Patterson
Commissioner for Nebraska
Director
Nebraska Department of Natural Resources
301 Centennial Mall South
P.O. Box 94676
Lincoln, NE 68509-4676

Enclosure

cc w/enc.:

Marv Swanda
Supervisory General Engineer
Bureau of Reclamation
McCook Field Office
1706 West 3rd, Rural Route 1
McCook, NE 69001

Doug Christensen
Assistant State Conservationist
Natural Resources Conservation Service
Nebraska State Office
100 Centennial Mall North, Room 152
Lincoln, NE 68508-3866

Gayle Starr
Administrative Officer
Nebraska Department of Natural Resources
301 Centennial Mall South
Lincoln, NE 68509-4676

Derrel Martin
Biological Systems Engineering
230 LWC
University of Nebraska
Lincoln, NE 68583-0726

George Austin
Interstate Water Issues Team
Kansas Department of Agriculture
109 SW 9th Street, 2nd Floor
Topeka, KS 66612-1283

Dave Barfield
Technical Services
Division of Water Resources
Kansas Department of Agriculture
109 SW 9th Street, 2nd Floor
Topeka, KS 66612-1283

Scott Ross
Water Commissioner
Division of Water Resources
Kansas Department of Agriculture
Stockton, KS 67669

James Koelliker
Biological and Agricultural Engineering
147 Seaton Hall
Kansas State University
Manhattan, KS 66506-2906

Megan Sullivan
Department of Natural Resources
1313 Sherman St., Room 818
Denver, CO 80203

Dan Meyerhoff
Natural Resources Conservation Service
Assistant State Conservationist
Hays Area Office
1010 E 17th Street
Hays, KS 67601-2418

Frank Riggle
Natural Resources Conservation Service
Assistant STC – Water Resources
655 Parfet Street Room E200C
Lakewood CO 80215-5517

5

bc w/enc.:
GP-4600 (G. Aycock, S. Guenthner)
NK-100 (A. Johns), NK-320 (J. Wergin)
NK-300 (M. Kube)
(w/encl to each)

Inspector: _____ County: _____ State: _____ Date: _____

Terrace Type (Mark cell below the type of terrace that most closely matched this terrace)

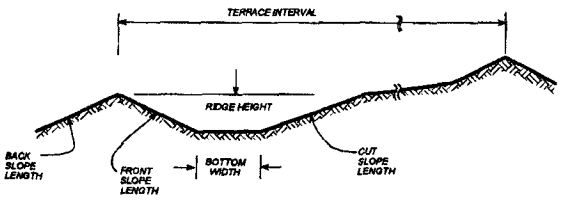
Gradient (pipe or grassed waterway)	Level Open end	Level Closed end	Level Bench Closed end

Please complete the following information for this terrace:

GPS Coordinates, or Legal: Township, Range, Section, QTR/qtr		Rating of Terrace Condition[1]	
Field Characteristics: Area, acres		Terrace Characteristics: Average Spacing/Interval, feet	
Portion of Field Above Top Terrace (%)		Average Length, feet	
Average Residue Cover (%)		Type of Outlet System	
Cross-sectional Information[2]:		Evidence of Ponding in Channel (Yes/No)	
Front Slope Length, feet		Land Use Practices: Crops (row crops, small grains, alfalfa, CRP, other)	
Back Slope Length, feet			
Cut Slope Length, feet		Production System (rotation, fallow, ecofallow, etc.)	
Bottom Width, feet		Farming Direction (relative to terrace, degrees)	
Height of Ridge, inches		Irrigated or Dryland	
Outlet Elevation Relative to Ridge, inch			

1. *Terrace Condition Rating System:*
   - *1 = Nearly new or excellent terrace that is functioning very close to the design storage capacity*
   - *2 = Excellent condition; functioning at more than 75% of design storage capacity*
   - *3 = Good condition; functioning at about 50% of design storage capacity*
   - *4 = Poor condition; functioning at less than 25% of design storage capacity*
   - *5 = Non-functional terrace with very little storage capacity*

2. *Terrace Cross Section Information: See needed dimensions to the right.*



Comments:

_____

_____