REVIEW OF THE 20 JANUARY 2009 REPORT PREPARED BY SPRONK WATER ENGINEERS, INC FOR THE STATE OF KANSAS

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17 February 2009

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Nebraska
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Review of the 20 January 2009 Report Prepared by Spronk Water Engineers, Inc for the State of Kansas

1. Summary of Findings

This report reviews the approach taken by the State of Kansas' engineering experts who presented a water budget analysis (Spronk, 2009) of a hypothetical additional water supply available to the State of Kansas for the years 2005 and 2006. The water supply was to be equal to Nebraska's alleged overuse of Republican River water as determined by the Republican River Compact Administration (RRCA) Accounting Procedures. This review concludes that the alleged overuse volume of 78,906 acre-feet (ac-ft) presented in the Spronk report was incorrect because it fails to incorporate preliminary rulings of the Arbitrator and to correct errors in the accounting spreadsheets used to calculate the value. After correcting the spreadsheet errors and fully incorporating the preliminary rulings of the Arbitrator, the correct water supply to begin the analysis is at most 71,475 ac-ft.

This report differs from the Spronk report in the approach taken regarding calculation of transportation losses in Nebraska. The Spronk report appears to subtract from the available supply a "paper" quantity of lost water rather than the actual physical loss of "wet" water between the Courtland Canal diversion point near Guide Rock, NE and the Courtland Canal gage near the Nebraska-Kansas state line border. After accounting for the additional evaporation from Harlan County Reservoir (HCR) using the approach described in the Spronk report, and subtracting an estimate of the actual transmission loss of water that is fully the responsibility of Kansas based on division of water usage between Nebraska Bostwick Irrigation District (NBID) and Kansas Bostwick Irrigation District (KBID) for the years in question, the estimated supply available to KBID at the Nebraska-Kansas state line is reduced from the 73,156 ac-ft estimate in the Spronk report to at most 56,941 ac-ft.

This report additionally differs from the Spronk report in the methods used to route the available state line flows through the KBID system. Attempts to reproduce the results, specifically the KBID delivery numbers, presented in the Spronk report were unsuccessful given the information provided in the report. The methods used in the Spronk report did not appear to consider temporal aspects of the annual flow volumes, nor did they appear to address storage capacity limitations in Lovewell Reservoir. Accounting for these issues and by using relationships derived from historical records, the two year estimate of KBID farm deliveries is reduced from 41,372 ac-ft to at most 20,574 ac-ft. These projections do not include our understanding that all 2005 HCR evaporation would have been assigned to Kansas had KBID taken deliveries from HCR storage in 2005.

A number of different approaches could be used in developing estimates of return flows. It is questionable that return flows from seepage and deep percolation from mid summer deliveries would be available in time for down stream users to reuse within the growing season or that the entire 100% of these flows would ever be available to down stream irrigators due to potential ground water well pumping interference, but for the purposes of discussion in this paper the methods employed in the Spronk report were accepted. However, in order to better reflect times

when water is available, but not used by down stream users, and the fact that for seven points of diversion the greatest amount of use occurred in either 2005 or 2006, different values were used for estimating down stream diversions. The Spronk report used the *maximum* annual usage from 1994-2004 to determine potential down stream diversions in 2005 and 2006, even though many users had not diverted water in many years. For the reasons listed above, in this report the *average* annual usage from 1994-2006 was used to determine potential down stream diversions. This reduced the two-year down stream diversion volume from 9,124 ac-ft in the Spronk report to at most 2,369 ac-ft in this report.

In sum, total impacts to Kansas were, at most, 20,574 ac-ft within KBID and 2,369 ac-ft outside of KBID (for a total impact of 22,943 ac-ft). We say "at most" because there are many variables that could have reduced further the amount of water available within and outside of KBID. For example, we believe it is likely that wells inside KBID capture some portion of the return flows theoretically available below KBID before that water reaches the stream. However, we have not been able to explore fully these potential variables given time constraints imposed by the Arbitration schedule. In addition, we have not evaluated the possible effects to the water budget related to overuse of Republican River water by the State of Colorado, which would, of course, alter the volume of consumption attributable to Nebraska. The impact related to the CBCU and accounting point locations have also not been included, which could further reduce the predicted impact to Kansas.

2. Description of Corrected Accounting and Results

In determining the appropriate impacts resulting from activities occurring in 2005 and 2006, one of the first and most important steps is determining the correct results through the RRCA Accounting Procedures. To do this we incorporated the Arbitrator's recent rulings and corrected a number of errors within the accounting spreadsheets. For this report, the Arbitrator's ruling for Non Federal Reservoirs (NFR) and Harlan County Evaporation (HCE) were represented in the spreadsheets for 2005 and 2006. While the accounting spreadsheets in the Spronk report recognized the NFR ruling, it appears to ignore the corresponding HCE decision. Because the exact method used in the Spronk report used to split HCE was not defined, it is not possible to determine the accounting difference between using the Spronk report HCE split method versus using the method determined by the Arbitrator's decision (the method used in this report).

The accounting spreadsheet used to begin our analysis was provided to us by the Nebraska Department of Natural Resources (DNR) and represented Nebraska's version of the 2006 accounting. Two errors in this spreadsheet were identified and corrected. A third error was corrected by DNR prior to our receiving the spreadsheet. One of these errors had a negative impact to Nebraska and the other two had a positive impact to Nebraska. Corrections were made for each of these errors to determine the most accurate water balance according to the RRCA Accounting Procedures in combination with the Arbitrator's ruling as noted above. Because the assumptions made in the development of the Spronk report estimate for Table 5C accounting are not known, a complete explanation of the differences between the Spronk report Table 5C estimates and the estimates defined in this report is not possible. This section documents each of the corrections that were made to the latest versions of the 2006 accounting spreadsheet. The effect of each correction for Nebraska is presented in Table 2-1.

2.1 Correction #1: Surface Water Diversions – Small Pumps

Within the "Input" worksheet, in the "SW (Surface Water) Pumping Data" section, there is a row for small irrigation pumps in Nebraska within the Mainstem (titled "SW Diversions - Irrigation - Small Pumps – Nebraska"). These data were taken from a pdf file prepared by the State of Nebraska titled "SW 2006 FINAL PRIVATE DIVERSION REPORT.pdf. An error was made for 2006, in which only the portion of diversions ABOVE Guide Rock was included in the spreadsheet, instead of summing the values for both above and below Guide Rock. The pdf file includes separate entries for above and below Guide Rock, and apparently only the first entry (for above Guide Rock) was used for this particular year, with the balance accidently omitted. When this correction is made, it results in negative impacts to Nebraska's overall accounting balance for 2006 by 270 acre-feet for Table 5C.

2.2 Correction #2: Swanson Reservoir Evaporation

This error, also in the "Input" worksheet, is within the "Reservoir Data" section, with the "Swanson Lake Evaporation" entry under the Main Stem Sub-basin for the year 2006. This error involved a mistyped link in the cell equation, which incorrectly linked the entry to the gross evaporation value in the "FedReservoir" worksheet, instead of the net evaporation value, as was

done for all other years. By correcting this value, the overall accounting balance for Nebraska improves by 2,400 acre-feet for the year 2006 in Table 5C.

2.3 Correction #3: Republican River Flow at Guide Rock

In addition to the above two errors, prior to our receiving the spreadsheet, a separate error was found and corrected by DNR in the "Attachment 6" worksheet, in the "Superior Courtland Diversion Dam" entry, for year 2006. This entry, which measures Republican River flow at the Superior-Courtland Diversion Dam, was incorrectly linked to the "Superior Canal Diversions" cell under the "Canal Data" section in the "Input" worksheet (0 acre-feet for 2006) instead of the "Republican River At Guide Rock" cell under the "Stream Gage Data" section of the "Input" worksheet (2,711 acre-feet). This error was acknowledged by David Barfield in a January 8, 2008 communication to James Williams, stating that the error was a mistake made by George Austin. By making this correction, the overall accounting balance for Nebraska improved by 1,326 acre-feet in 2006 for Table 5C.

2.4 Summary

A summary of these corrections, along with their impacts to Nebraska's accounting balance, is included in Table 2-1. Table 2-2 shows the resulting RRCA Accounting Procedures Table 5C results when these changes are adopted. It is important to note that these impacts and results do not include the potential impacts from other accounting changes currently being proposed by the State of Nebraska, such as the Computed Beneficial Consumptive Use (CBCU) issue or the relocation of certain accounting points. These separate issues could result in additional changes to the Table 5C numbers, which serve as the basis for the water-short year compliance evaluation.

TABLE 2- 1: Impacts to Nebraska Accounting Balance From Corrections (acre-feet)

Correction	**2005 Table 5C**	**2006 Table 5C**
1. SW Diversions	0	-270
2. Swanson Evap	0	+2,400
3. Rep. R. Flow at Guide Rock	0	+1,326
TOTAL	0	+3,456

Applying these corrections through the current RRCA Accounting Procedures results in the following results for RRCA Accounting Procedures Table 5C calculations.

TABLE 2- 2 Nebraska's Compliance During Water-Short Year Administration, RRCA Accounting Procedures Table 5C

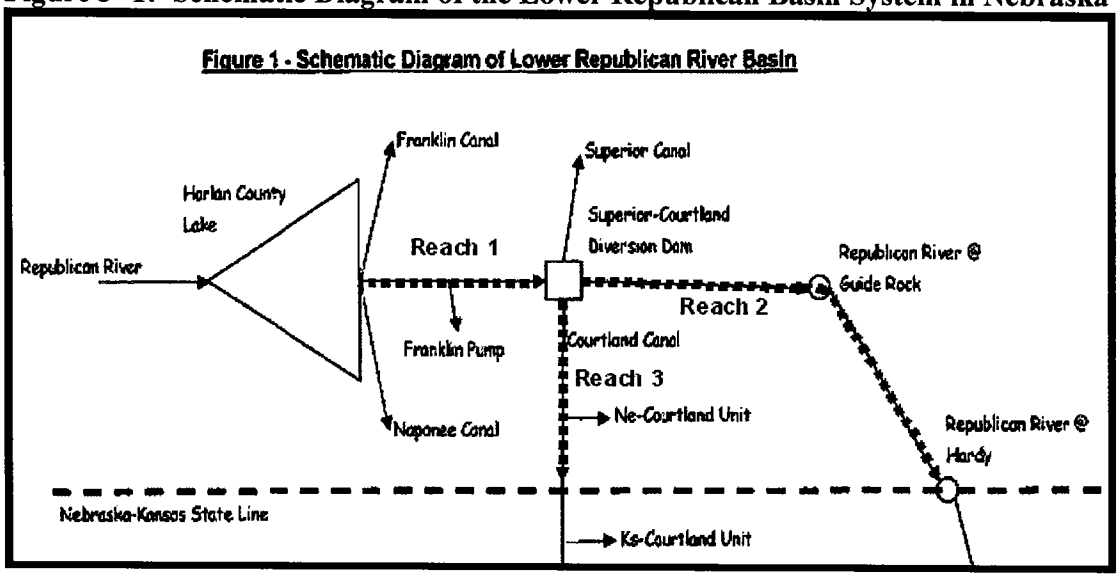
	Allocation			Computed Beneficial Consumptive Use				
Year	State-Wide Allocation	Allocation Below Guide Rock	Allocation Above Guide Rock	State-Wide CBCU	CBCU Below Guide Rock	CBCU Above Guide Rock	Imported Water Supply Credit above Guide Rock	Allocation - (CBCU - IWS above Guide Rock)
2005	199,450	4,586	194,864	253,740	4,052	249,689	11,965	(42,860)
2006	187,350	2,286	185,064	228,950	3,057	225,893	12,214	(28,615)
Average	193,400	3,440	189,960	241,350	3,550	237,790	12,090	(35,740)
Total								(71,475)

Applying the Arbitrator's rulings to the accounting spreadsheets and correcting several mistakes in the spreadsheets results in a corrected total of Nebraska's Allocation – CBCU – IWS above Guide Rock of 71,475 ac-ft for 2005 and 2006. As mentioned previously, it is not possible to determine the precise reasons for the difference between this Table 5C accounting value and that presented by Spronk (78,960 ac-ft). The fact that Spronk used a different HCE split procedure could account for at least a portion of this difference. It is also not certain if the Spronk report adopted some or all of the corrections identified above.

3. State Line Flows Calculation Methodology and Results

For the purposes of this report, we accept Spronk's assumption that the additional supply volume would have been regulated through HCR. Referring to Figure 3-1, Nebraska's compliance is measured by flows both at the Courtland Canal diversion near Guide Rock, NE and a down stream gage near Hardy, NE. It is questionable whether the increased flows potentially resulting from a reduction in Nebraska's consumptive use in the manner proposed by Kansas would in fact be physically available for diversion into Courtland Canal.

Figure 3- 1: Schematic Diagram of the Lower Republican Basin System in Nebraska



The methods described in the Spronk report to estimate additional evaporation from HCR, but with corrected input values, have been used in this report as well for comparative purposes. The relationship between evaporation rates and HCR supply volumes, as presented in Appendix A of the Spronk report, was used to calculate corrected estimates of evaporation. As shown on Table 3-1, the additional supply to HCR resulted in an increase of 3,808 ac-ft of net evaporation which was allocated to the State of Kansas.

TABLE 3- 1: Additional HCR Evaporation Analysis

	Additional Supply	Adjusted Supply	Adjusted Gross Evap	Adjusted Net Evap	Additional Net Evap (resulting from additional supply)	Additional Supply (Less Net Evap)
Year	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft	ac-ft
2005	42,860	182,301	35,091	19,046	1,341	**41,519**
2006	28,615	165,391	34,091	18,765	2,467	**26,148**
Totals	71,475				**3,808**	**67,667**

For this analysis, the historical HCR evaporation split for 2005 was assumed for the remainder of the reservoir evaporation. This split apportioned evaporation between Nebraska and Kansas

based on 2001 and 2003 diversion averages, since neither state took HCR diversions through the Courtland Canal. If Kansas had taken HCR diversions through the Courtland Canal in 2005, however, the Arbitrator's ruling would require all of the historical 17,706 ac-ft of HCR evaporation to be assigned to Kansas, instead of splitting this 8,951 ac-ft to Kansas and 8,756 ac-ft to Nebraska. This reduction in Nebraska's CBCU, as a result, was not included in this report but may be considered in future damage estimates.

For this report, the calculation of additional transportation losses was conducted using reach gain-loss calculations based on historical stream flow gage data. Nebraska agrees with the implicit assumption made in the Spronk report that for the period 2005 and 2006 there would likely be minimal losses to the additional stream flow in the reach between HCR and the Courtland Canal diversion point near Guide Rock, NE (Reach 1 on Figure 3-1).

For the Reach 3 analysis, the approach taken in this report differs greatly from the approach taken in the Spronk report. The Spronk report does not appear to calculate a volume of physically lost water so as to arrive at an actual amount of water available for diversion past the state line. The number calculated in the Spronk report appears to be an accounting number of some fractional volume of total loss which the State of Kansas believes to be attributable to the State of Nebraska. That approach fails to provide an accurate supply volume from which diversions in Kansas can be computed.

The approach taken in this report to calculate the available supply at the Nebraska-Kansas state line considers both the timing of available flows and the potential actual physical loss of water in Reach 3. The Spronk report makes the assumption that 100% of the additional flows are diverted into Courtland Canal and that none of the additional water enters Reach 2. While this would have been unlikely, again, that assumption is used here solely to provide a comparison to the Spronk report.

To begin the Reach 3 analysis for this report, an estimate on the temporal availability of the additional flows was made. Monthly stream flow and canal diversion records between 1994 and 2006 were used to distribute monthly flow volumes from the annually calculated adjusted additional supply volumes highlighted in Table 3-1. The period 1994 to 2006 was selected as it is representative of recent distributions of flows. Appendix B contains the gage record information for the United States Bureau of Reclamation (BOR) gage located 0.7 miles down the canal from the Courtland Canal diversion point at Guide Rock used to make these estimates. Table 3-2 provides the percentages used to distribute the adjusted additional annual supply volumes and the resultant monthly values.

TABLE 3- 2: Monthly Distribution Percentages and Resultant Monthly Volumes

Month	1994-2007 Percentage of Annual Volume	Additional Supply Volume 2005	Additional Supply Volume 2006
January	5.19%	2,154	1,356
February	5.62%	2,335	1,471
March	8.94%	3,711	2,337
April	9.47%	3,933	2,477
May	12.3%	5,106	3,215
June	11.3%	4,692	2,955
July	16.6%	6,894	4,342
August	11.46%	4,756	2,996
September	4.69%	1,947	1,226
October	4.93%	2,048	1,290
November	4.7%	1,950	1,228
December	4.8%	1,993	1,255
TOTAL	100%	41,519	26,148

The physical loss of water in Reach 3 was estimated again using the gage record information located in Appendix B. To estimate the percentage of the water diverted into Courtland Canal near Guide Rock, NE that would be available for diversion at the Nebraska-Kansas state line, historical records from two BOR gages and one United States Geological Society (USGS) gage were used. The gages used were:

Gage 1: BOR Gage CCNE located 0.7 miles from the Courtland Canal diversion
Gage 2: Nebraska-Courtland diversions from BOR Annual Operating Plans
Gage 3: USGS Gage 06852500 located near the Nebraska-Kansas state line

The percentage values were calculated by dividing the summation of Gage 2 and Gage 3 values by the Gage 1 value. Table 3-3 presents estimated percentages of loss by month for this reach. Current accounting allocates the losses based on the proportion of water used by NBID or KBID. Since this water is for the benefit of KBID, the losses occurring in this Reach for the additional KBID supply water do not materially impact Nebraska's water short year accounting results.

TABLE 3- 3: Average Annual Monthly Percentage of Courtland Canal diversions reaching Nebraska-Kansas state line.

AVERAGE VALUES 1994 – 2006					
DATE	GAGE 1 BOR CCNE CRTLND 0.7 MI AC FT	GAGE 2 BOR NE CRTLND DIV AC FT	GAGE 3 USGS 06852500 USGS STATELINE AC FT	GAGE 1 + GAGE 2 AC FT	**(GAGE 1+ GAGE2)/ GAGE 3 %**
JAN	2,104	0	1,711	1,711	**81%**
FEB	1,435	0	1,211	1,211	**84%**
MAR	1,972	0	1,651	1,651	**84%**
APR	2,721	0	2,348	2,348	**86%**
MAY	3,824	0	3,026	3,026	**79%**
JUN	9,406	236	7,621	7,857	**84%**
JUL	19,794	777	16,677	17,454	**88%**
AUG	15,467	580	12,979	13,560	**88%**
SEP	4,818	31	4,220	4,252	**88%**
OCT	2,676	0	2,103	2,103	**79%**
NOV	1,853	0	1,518	1,518	**82%**
DEC	1,978	0	1,565	1,565	**79%**
ANNUAL	68,049	1,625	56,631	58,256	**86%**

The percentage results from Table 3-3 were used to estimate the monthly volume of water available at the state line. Tables 3-4 and 3-5 present these volumes for 2005 and 2006, respectively.

TABLE 3- 4: Projected Additional KBID Supply Water Available at the Nebraska-Kansas State Line in 2005

	Additional Supply at CRTLND 0.7 ac-ft	Percentage of New Flows reaching state line %	Projected Additional State Line Supply ac-ft
January	2,154	81%	1,745
February	2,335	84%	1,961
March	3,711	84%	3,117
April	3,933	86%	3,382
May	5,106	79%	4,034
June	4,692	84%	3,941
July	6,894	88%	6,067
August	4,756	88%	4,185
September	1,947	88%	1,713
October	2,048	79%	1,618
November	1,950	82%	1,599
December	1,993	79%	1,574
Annual Total	41,519		**34,938**

TABLE 3- 5: Projected Additional KBID Supply Water Available at the Nebraska-Kansas State Line in 2006

	Additional Supply at CRTLND 0.7 ac-ft	Percentage of New Flows reaching state line %	Projected Additional State Line Supply ac-ft
January	1,356	81%	1,098
February	1,471	84%	1,236
March	2,337	84%	1,963
April	2,477	86%	2,130
May	3,215	79%	2,540
June	2,955	84%	2,482
July	4,342	88%	3,821
August	2,996	88%	2,636
September	1,226	88%	1,079
October	1,290	79%	1,019
November	1,228	82%	1,007
December	1,255	79%	991
Annual Total	26,148		**22,003**

3.1 Summary

Based on this analysis, for the two year period 2005 – 2006, an additional 56,941 ac-ft (34,938 ac-ft in 2005, and 22,003 in 2006) of water was calculated to be available at the Nebraska-Kansas state line for routing through the KBID system.

4. KBID Routing Methodology and Results

Once an estimate of new flow in the Courtland Canal at the State Line was derived, on a monthly basis for the years 2005 and 2006, these new flows were used as input in a spreadsheet routing model developed to estimate how the flows would be passed downstream. A brief description is included here, describing how these new flows were routed for delivery to Upper and Lower KBID service areas. Figure 4-1 below shows how historical flows at the State Line gage for Courtland Canal compare with this "adjusted" flow, which includes the additional 34,938 acre-feet and 22,003 acre-feet of flows for 2005 and 2006, respectively. The methodology used in this report relies on observations of actual historic KBID operations.

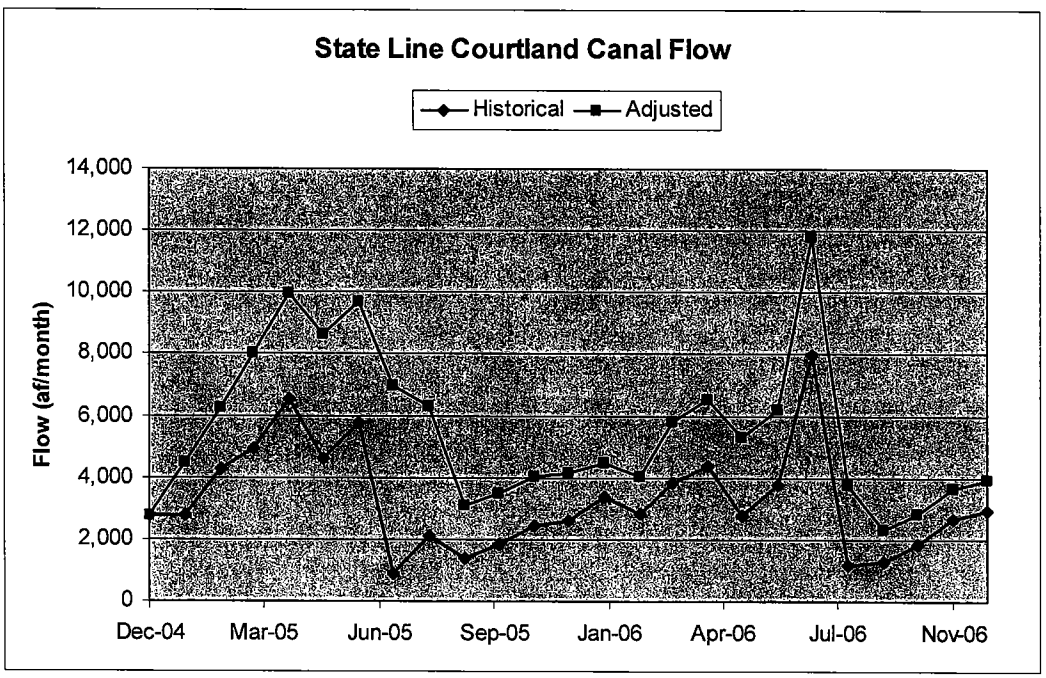


Figure 4- 1: State Line Courtland Canal Flow, Historical and With Additional Flows (Adjusted)

4.1 Upper KBID Diversions

The first step in translating the new flows downstream involved developing a regression for Upper KBID diversions based on historical diversions and State Line flows. Monthly Courtland Canal flows at the State Line for the period of 1994 to 2007 were compared with Upper KBID diversions over the same period (see Appendix A). The period of 1994 to 2007 was selected as it is representative of current operations. For each month, an average percentage was developed to translate the additional State Line flow into additional Upper KBID diversions (see Table 4-1). In addition, a "scaling factor" was applied to each month to allow the overall diversions to increase or decrease while preserving at least a portion of the temporal distribution:

Additional Upper KBID Diversion = Additional Courtland Canal State Line Flow × Monthly Percent × Scaling Factor

Additional Upper KBID diversions were capped not to exceed available flows, and the scaling factor was adjusted to balance Upper KBID and Lower KBID diversions, using historical diversion data for both areas as a guide (see Figure 4-2). A scaling factor of six was used for this analysis, as this choice allowed for almost all of the additional Courtland Canal flow available during the irrigation season to be diverted by Upper KBID.

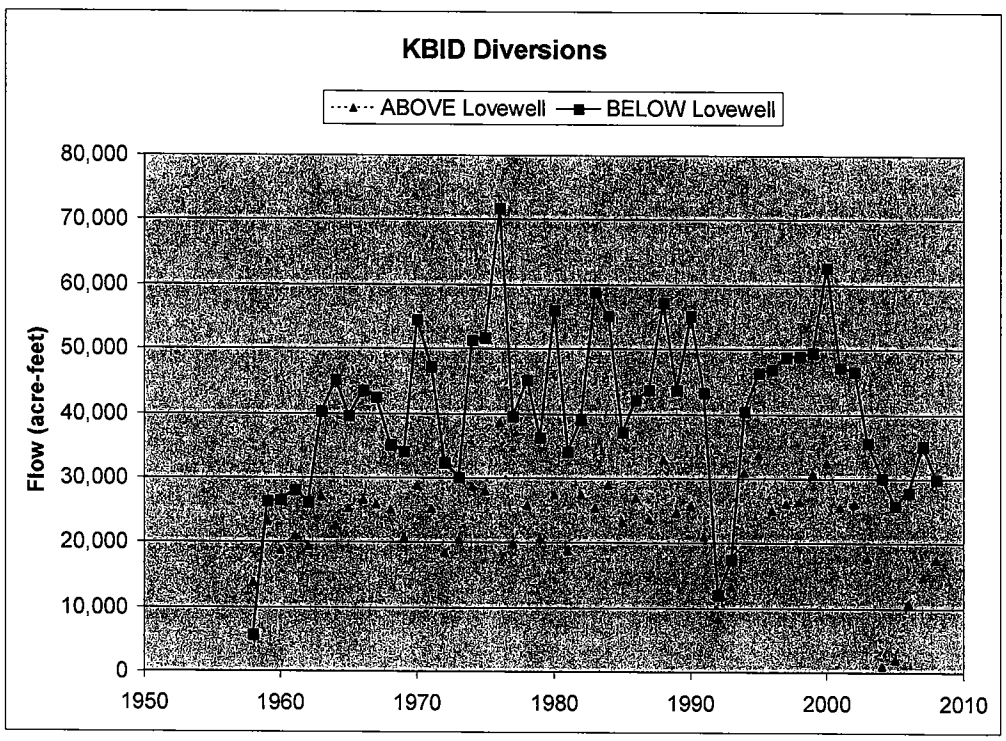


Figure 4- 2: Historical KBID Diversions from Courtland Canal (Source: BOR Data)

Using these techniques, additional diversions of 15,590 and 9,819 acre-feet were available for Upper KBID for 2005 and 2006, respectively. Historical and adjusted Upper KBID diversions are shown graphically in Figure 4-3.

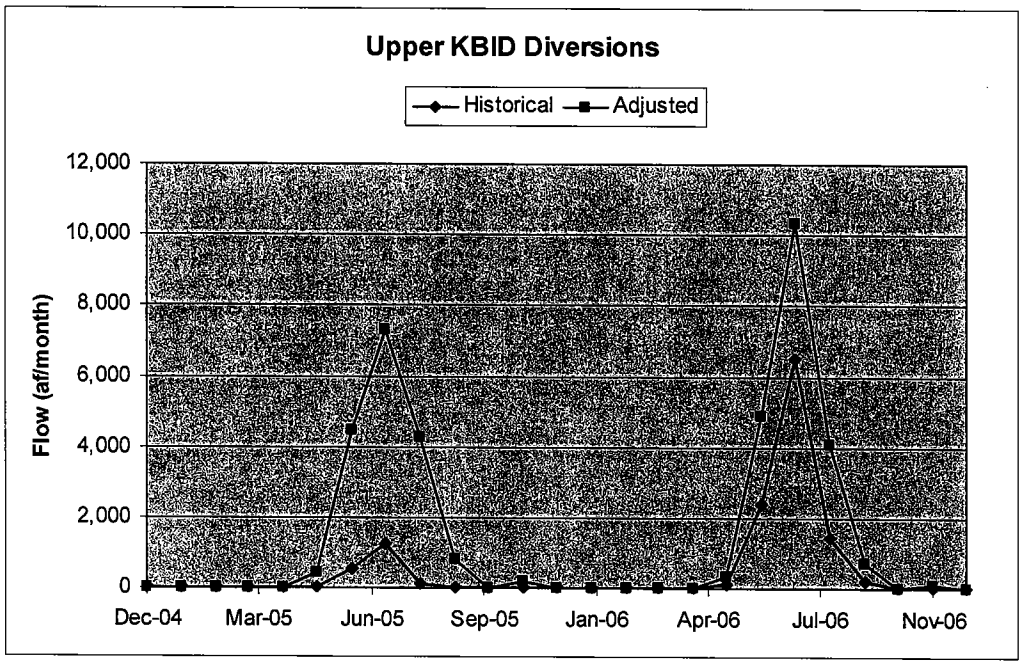


Figure 4- 3: Upper KBID Diversions, Historical and Adjusted

It is unclear from the Spronk report as to how decisions were made to distribute available flows to Upper KBID, versus allowing flows to continue downstream to Lovewell Reservoir. Historical flow data at the Lovewell terminus of the upper Courtland Canal show that in almost all cases, at least some of the flows at the State Line were allowed to continue to Lovewell – even during the irrigation season in 2005 and 2006. Using a monthly time step captures temporal factors, such as Upper KBID diversion patterns, that were apparently not included in the Spronk report.

4.2 Upper KBID Deliveries

Once additional monthly diversions were estimated for Upper KBID, loss factors were applied to the new flows to estimate actual deliveries within the service area. Historical loss percentages for each month were developed based on 1994 to 2007 historical diversion and delivery data for Upper KBID (see Appendix A). These loss rates (see Table 4-1) were applied to the new diversion data for each month to determine new monthly system losses for Upper KBID. These losses were then subtracted from the new monthly diversions to determine additional Upper KBID deliveries:

Additional Upper KBID Deliveries = Additional Upper KBID Diversions - (Additional Upper KBID Diversions × Monthly Loss Percent)

Additional system (lateral) losses for Upper KBID, using this procedure, would be approximately 9,204 acre-feet and 5,795 acre-feet for 2005 and 2006, respectively. As a result, additional deliveries of 6,386 and 4,022 acre-feet were available for Upper KBID for 2005 and 2006, respectively. These results are shown graphically in Figure 4-4.

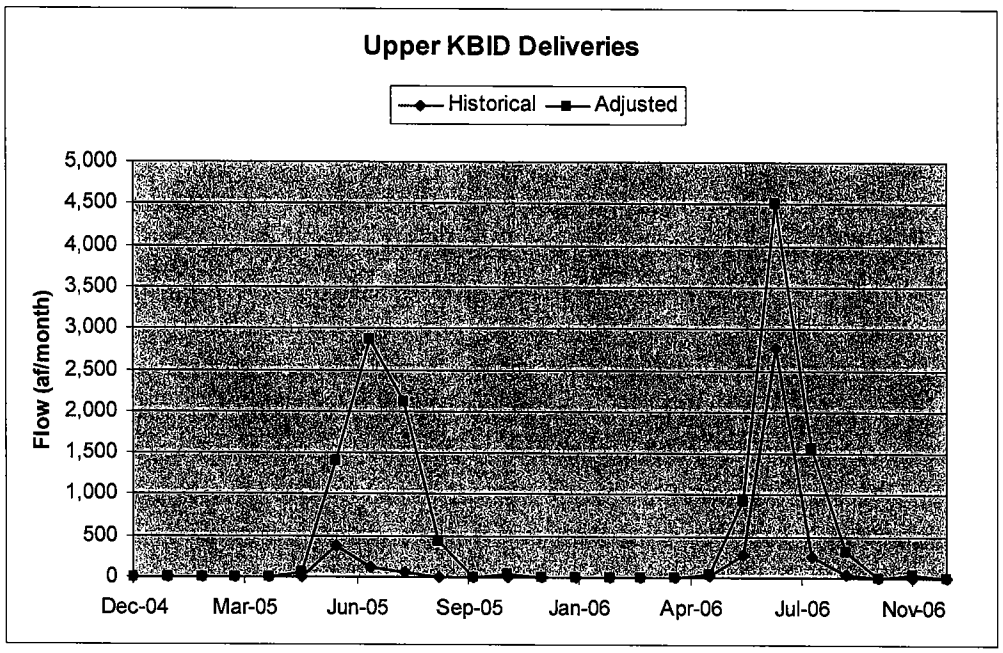


Figure 4- 4: Upper KBID Deliveries, Historical and Adjusted

4.3 Courtland Canal Flows into Lovewell Reservoir

After determining deliveries to Upper KBID, Courtland Canal losses were estimated for the reach starting at the state line and ending at the canal inlet to Lovewell Reservoir. These losses were estimated using historical gage data from the BOR for the State Line gage and Lovewell Inlet gage for Courtland Canal (see Appendix A). Monthly loss rates, based on 1994 to 2007 averages, were calculated, as shown in Table 4-1. These loss rates were applied to the new flows at the state line to determine transit losses, which were then subtracted from the new flow at the state line, along with new Upper KBID diversions, to determine new inflows into Lovewell Reservoir:

Additional Courtland Canal Flow into Lovewell Reservoir = Additional Courtland Canal Flows at State Line - (Additional Courtland Canal Flows at State Line × Monthly Loss Percent) – Additional Upper KBID Diversions

Using this procedure, additional canal losses of 6,478 acre-feet and 4,079 acre-feet resulted for 2005 and 2006, respectively. This resulted in additional inflows into Lovewell Reservoir from the Courtland Canal of about 12,870 and 8,105 acre-feet for 2005 and 2006, respectively, as shown in Figure 4-5.

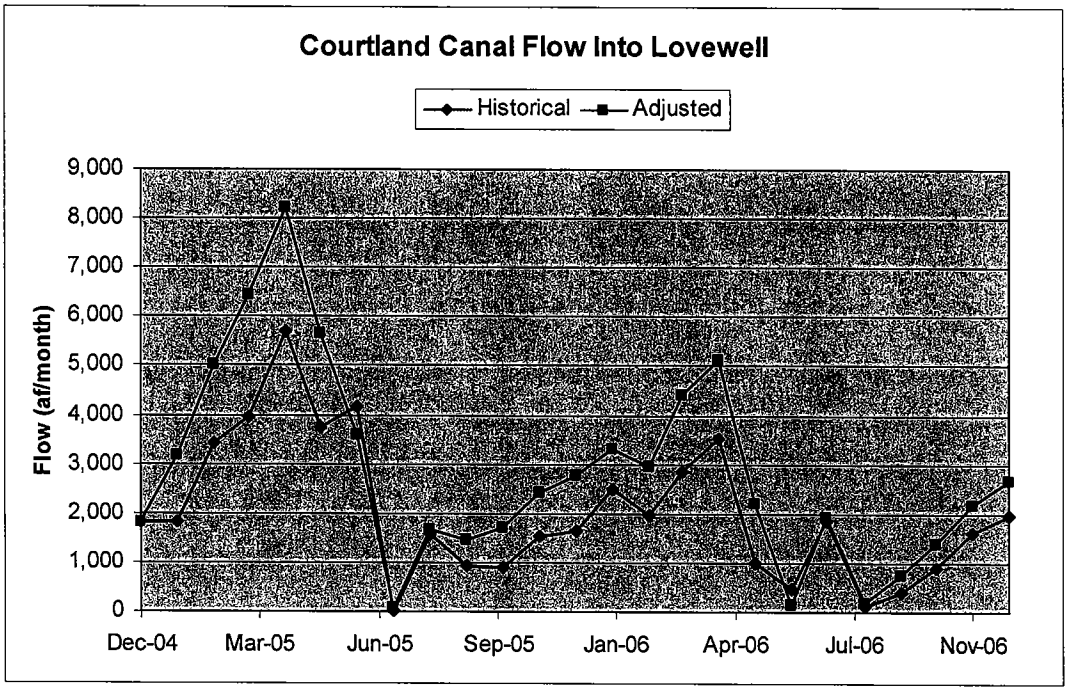


Figure 4- 5: Courtland Canal Inflows into Lovewell Reservoir

4.4 Lovewell Reservoir Operations

Once new flows were determined at the Courtland Canal inlet to Lovewell Reservoir, a monthly reservoir water balance was used to determine reservoir operations, and to estimate reservoir evaporation and reservoir releases. The basic equation governing the water balance is included here:

Storage at end of $Month_t$ = Storage at end of $Month_{t-1}$ + Inflow from Upper Courtland Canal + Inflow from White Rock Creek – Evaporation - Releases to Courtland Canal – Releases to White Rock Creek

In this equation, $Month_t$ and $Month_{t-1}$ represent sequential months, such as March and April, or July and August. All other variables represent conditions for $Month_t$ (i.e. if $Month_t$ is November, Inflow from Upper Courtland Canal is also for the month of November). Inflows from the upper portion of the Courtland Canal (the portion above Lovewell) were calculated by adding the historic inflow for a particular month to the additional Courtland Canal inflow derived through the process described above. Inflows from White Rock Creek into Lovewell Reservoir were obtained from BOR historical inflow records.

To determine monthly reservoir evaporation, an estimate was made for end-of-month storage levels. This was done by solving the equation above using estimates for releases to Courtland Canal, known storage levels at the end of the previous month, known inflows from the Upper Courtland Canal and White Rock Creek, and using historical evaporation and White Rock Creek release levels (see Appendix A). Elevation-area-storage curves provided by the BOR were then used to translate the estimated end-of-month storage level into an estimate for reservoir surface

area at the end of the month. Pan evaporation values for the given month (also provided by BOR) were then used in the following equation to determine monthly evaporation values:

Evaporation = (Average End-Of-Month Surface Area for Months t and t-1) × Pan Evaporation × 0.7

In this equation, 0.7 is the factor used by the BOR to convert pan evaporation into net reservoir evaporation for Lovewell. As mentioned above, the surface area value used in the evaporation equation for month t is an estimate based on projected end-of-month conditions.

For determining reservoir releases to the Courtland Canal, for use by Lower KBID, certain assumptions were made. Actual Lovewell Reservoir operations are influenced by several entities, including the BOR, the U.S. Army Corps of Engineers, the Kansas Water Office (KWO), and KBID. Lake Level Management Plans prepared by KWO outline certain operations objectives and target lake levels for different times of the year[1]. Instead of attempting to mimic these complex operational objectives, the routing spreadsheet developed here used a simplified rule for estimating new releases from Lovewell Reservoir into the lower section of the Courtland Canal:

New Lovewell Releases to Courtland Canal = (Additional Courtland Canal Flow into Lovewell Reservoir Over Water Year – Additional Lovewell Reservoir Evaporation Over Water Year) × Monthly Distribution Factor

For the purposes of this report, the "water year" involved in this equation extended from January to September for 2005, and from October 2005 to September 2006 for the 2006 water year. For each of the irrigation season months of May to September, the monthly release from Lovewell Reservoir to the Courtland Canal was a fraction of the difference between new inflows into the reservoir over the water year and new evaporation in the reservoir over the water year. The "Monthly Distribution Factor" used in the equation was obtained from the average monthly fraction of historical diversions that occurred in that particular month for the years 1994 to 2007, as shown in Table 4-2. This method allowed for the transfer of new supplies through the reservoir to Lower KBID, minus the new evaporative losses, while preserving the monthly distribution pattern normally seen in Lower KBID deliveries. Historical releases to Lower KBID were preserved in this analysis, and the total diversion for Lower KBID was simply the sum of the historical diversion for each month plus the new release to Courtland Canal for that month.

The "Additional Lovewell Reservoir Evaporation Over Water Year" component in the equation above was determined by subtracting the historical reservoir evaporation for that month from the new total reservoir evaporation. New reservoir evaporation volumes of 465 acre-feet and 418 acre-feet were determined for the 2005 and 2006 calendar years, respectively.

For the 2005 and 2006 "water years" defined above, these new evaporation levels were 475 acre-feet and 438 acre-feet, respectively (modeled evaporation from October to December, 2006, was 30 acre-feet less than historical levels, due to correspondingly lower reservoir elevations and surface areas during those months). Historical reservoir evaporation numbers were obtained by

[1] "Lake Level Management Plans, Water Year 2009", Kansas Water Office, 2008, http://www.kwo.org/Reports%20%26%20Publications/Rpt_LLMP_WY2009_100108_new.pdf

multiplying the historical BOR Pan evaporation factors by the average historical monthly surface area of the reservoir (derived from BOR historical reservoir capacity tables and area-capacity relationships), adjusted by the 0.7 factor used by BOR for Pan evaporation at Lovewell.

Historical reservoir releases to White Rock Creek were maintained in the routing spreadsheet. Initially, an additional variable for White Rock Creek spill releases from Lovewell Reservoir was incorporated to allow for supplemental releases to prevent reservoir elevations from exceeding certain levels. The top of the conservation pool for Lovewell Reservoir is at 1582.6 feet (35,666 ac-ft), as shown in Figure 4-6, but waivers have been granted by the U.S. Army Corps of Engineers during some past years to allow for additional storage up to 10% into the flood pool (1584.2 feet, or about 40,639 ac-ft total storage).

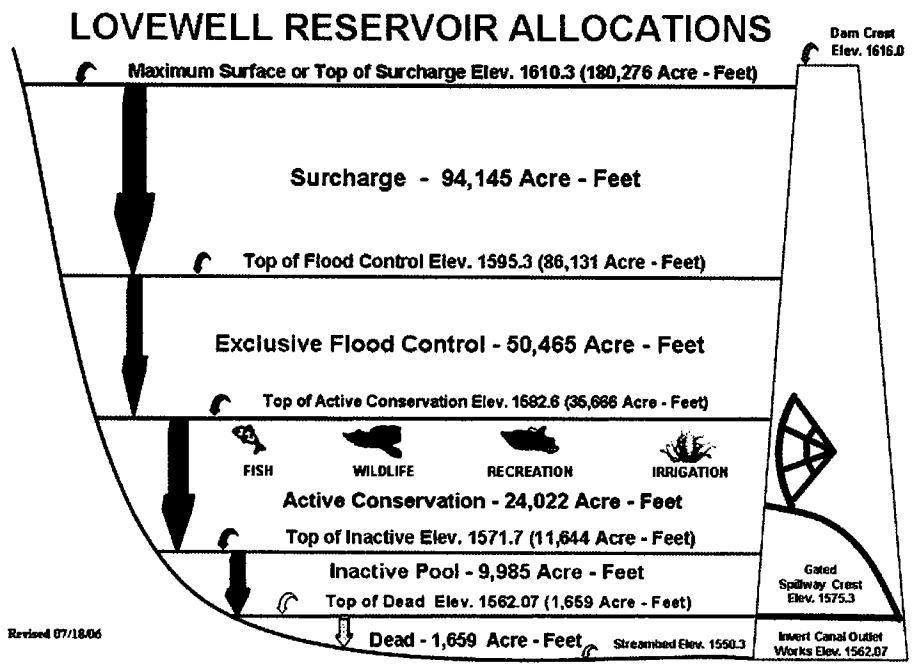


Figure 4- 6: Lovewell Reservoir Storage Components (source: BOR)

While there is some uncertainty as to whether these waivers will continue to be granted in the future, the routing spreadsheet was initially fashioned to require reservoir spills only when elevations would otherwise exceed the 10% waiver level (1584.2 feet). However, even this requirement resulted in spills during several of the months within the modeling time horizon. As a practical matter, Kansas could not have used additional water during periods when Lovewell Reservoir was spilling to maintain flood control capacity. The numbers developed in this section could be reduced further to account for this limitation.

For the purposes of this evaluation, the spill requirement was removed, allowing Lovewell Reservoir elevations to exceed the 10% waiver level, and enabling a greater portion of the flood pool to be utilized for the benefit of Lower KBID water users. As shown in Figure 4-7, reservoir elevations rose well into the flood pool as a result. These findings identify an important issue with respect to Lovewell Reservoir, in that it serves as a constraint in moving additional supplies

through the KBID system. The timing of new flows is critical in determining the reservoir's ability to manage them without exceeding certain capacity levels – incidents which can cause harm to certain facilities and wildlife habitat[2]. Future routing studies could more closely examine this issue, and better determine its overall impact. Because this analysis allowed for reservoir elevations significantly higher than those currently granted by waivers through the U.S. Army Corps of Engineers, it overestimates the available new supplies that would be obtainable by Lower KBID by an as yet undetermined amount.

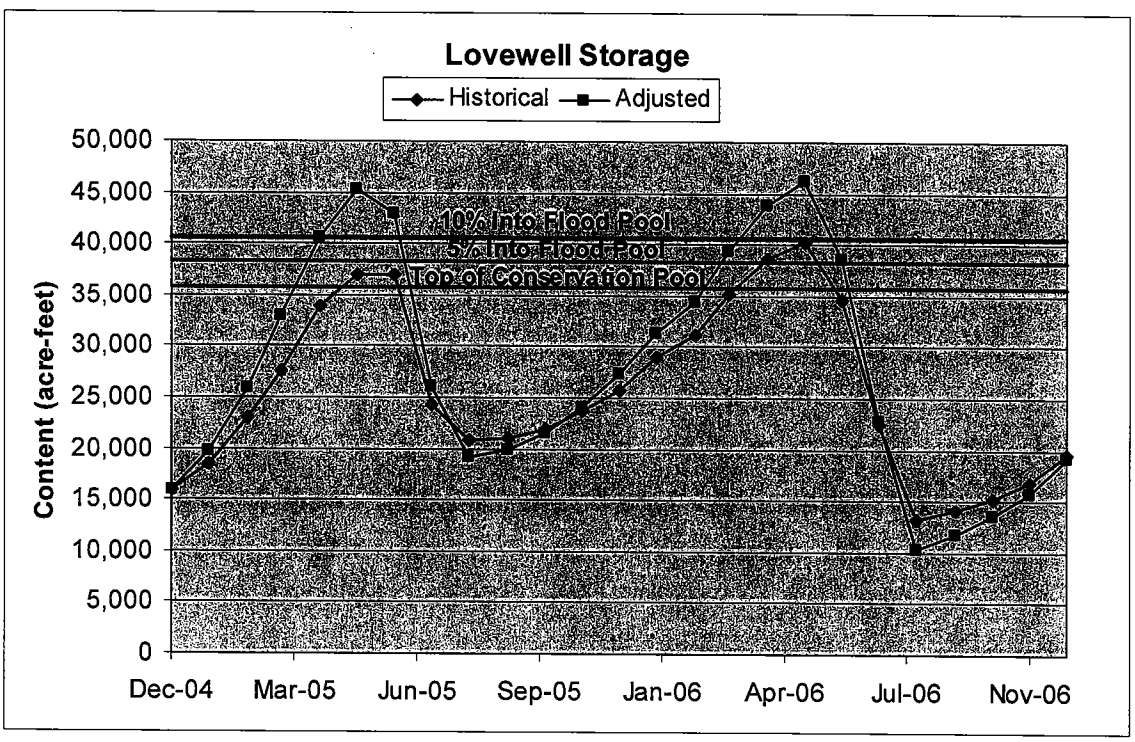


Figure 4- 7: Lovewell Reservoir Storage Levels, Historical and Model Results (Adjusted)

Using this methodology for handling Lovewell Reservoir operations, new Lower KBID diversions (equivalent to additional Lovewell releases to the Courtland Canal, defined as the difference between historical and modeled total releases/diversions for Lower KBID) were estimated at 9,515 acre-feet and 9,185 acre-feet for 2005 and 2006, respectively, as shown in Figure 4-8.

[2] Ibid.

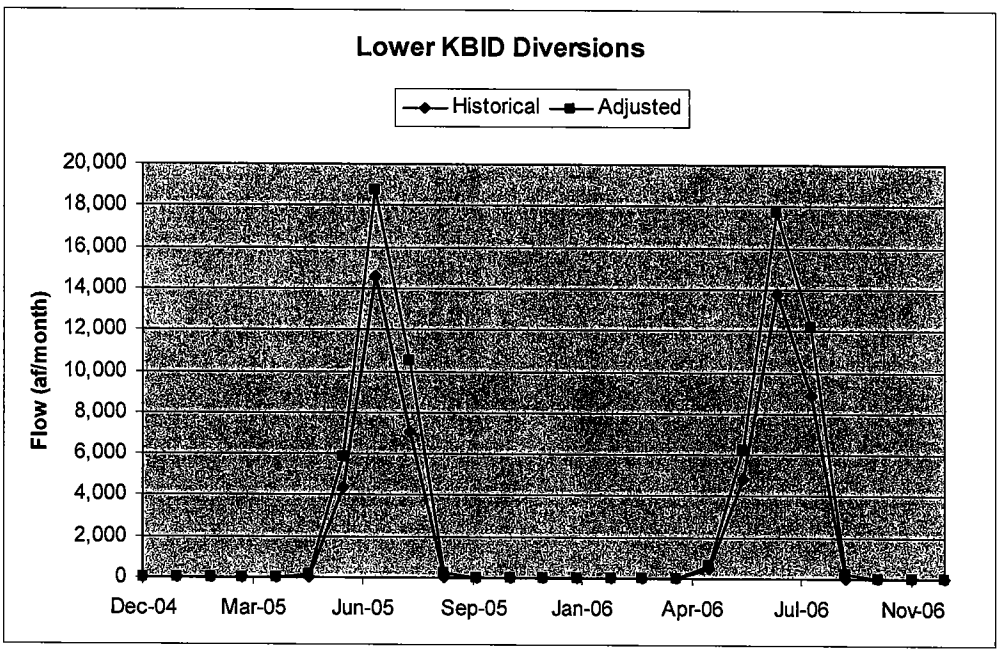


Figure 4- 8: Lower KBID Diversions

4.5 Lower KBID Deliveries

Similar to the process in determining Upper KBID deliveries, additional Lower KBID deliveries were estimated by applying loss factors on the new diversions to determine actual deliveries within the service area. Historical loss percentages for each month were developed based on 1994 to 2007 historical diversion and delivery data for Lower KBID (see Appendix A). These loss rates (see Table 4-2) were applied to the new diversion data for each month to determine new monthly system losses for Lower KBID. These losses were then subtracted from the new monthly diversions to determine additional Lower KBID deliveries:

Additional Lower KBID Deliveries = Additional Lower KBID Diversions - (Additional Lower KBID Diversions × Monthly Loss Percent)

Using these methods, additional system (lateral) losses of 4,342 acre-feet and 4,192 acre-feet result for Lower KBID. Subtracting these new losses from the new Lovewell releases, additional deliveries of 5,173 acre-feet and 4,993 acre-feet were available for Lower KBID for 2005 and 2006, respectively. These results are shown graphically in Figure 4-9.

Total additional system (lateral) losses for KBID (both Lower and Upper) would be 13,546 ac-ft (9,204 + 4,342) and 9,988 ac-ft (5,797 + 4,192) for 2005 and 2006, respectively.

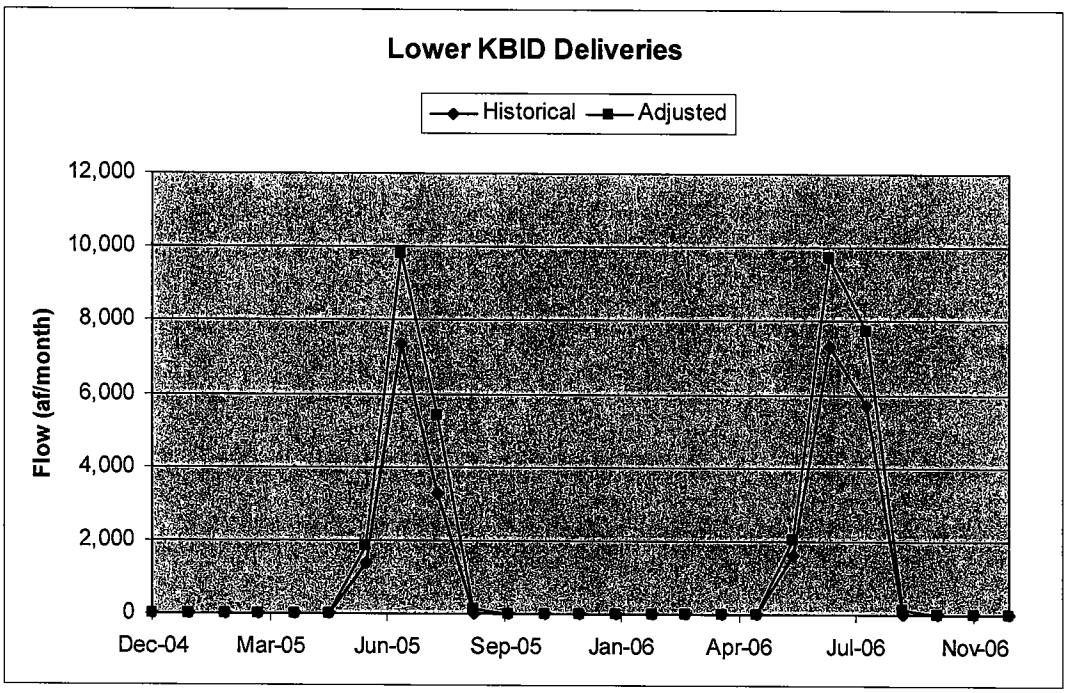


Figure 4- 9: Lower KBID Diversions, Historical and Adjusted

TABLE 4- 1: Monthly Distribution Factors, Based on 1994 to 2007 Averages and BOR Data

Month	Upper KBID Diversions as % of State Line Courtland Flow[3]	Upper KBID System Losses	Courtland Canal Losses from State Line to Lovewell[4]	Lower KBID Diversions as % of Annual Diversions	Lower KBID System Losses
January	0.00%	NA	22.64%	0.00%	NA
February	0.00%	NA	19.52%	0.00%	NA
March	0.00%	NA	20.54%	0.00%	NA
April	0.00%	NA	24.99%	0.00%	NA
May	1.72%	87.25%	42.82%	1.61%	98.73%
June	53.17%	73.69%	14.17%	15.87%	71.19%
July	64.69%	54.68%	-1.12%	43.55%	39.96%
August	54.45%	50.88%	-2.71%	36.27%	39.09%
September	7.88%	45.43%	21.51%	2.69%	43.18%
October	0.00%	NA	48.17%	0.00%	NA
November	1.77%	71.25%	33.13%	0.00%	NA
December	0.00%	NA	27.48%	0.00%	NA

[3] Entries for May 1994 and August 2004 (435.2% and 531.4%, respectively) appeared to be outliers in these data sets, and were not included in the percentage calculations.
[4] Entries for May 1994 and August 2004 (-335.2% and -431.4%, respectively) appeared to be outliers in these data sets, and were not included in the percentage calculations.

TABLE 4- 2: Monthly Distribution Factors for Lovewell Reservoir and Below, Based on 1994 to 2007 Averages and BOR Data

Month	Lower KBID Diversions as % of Historical Annual Diversions	Lower KBID System Losses
January	0.00%	NA
February	0.00%	NA
March	0.00%	NA
April	0.00%	NA
May	1.61%	98.73%
June	15.87%	71.19%
July	43.55%	39.96%
August	36.27%	39.09%
September	2.69%	43.18%
October	0.00%	NA
November	0.00%	NA
December	0.00%	NA

4.6 Summary

Table 4-3 summarizes the loss and delivery estimates computed in this section.

TABLE 4- 3: Summary of Estimated KBID Losses and Deliveries

Description	2005	2006	Total
KBID Losses			
Canal	6,478	4,079	10,557
Lateral	13,546	9,988	23,535
Lovewell Reservoir	465	418	883
KBID Deliveries			
Above Lovewell	6,386	4,022	10,408
Below Lovewell	5,173	4,993	10,166
Total	11,559	9,015	20,574

When these additional canal and lateral (system) losses are added to the observed historical losses, the composite losses compare well with historical loss percentages derived from 1958 to 2008 BOR records, as shown in Figures 4-10 and 4-11. This indicates that the methods used to estimate additional losses track well with actual historical observations.

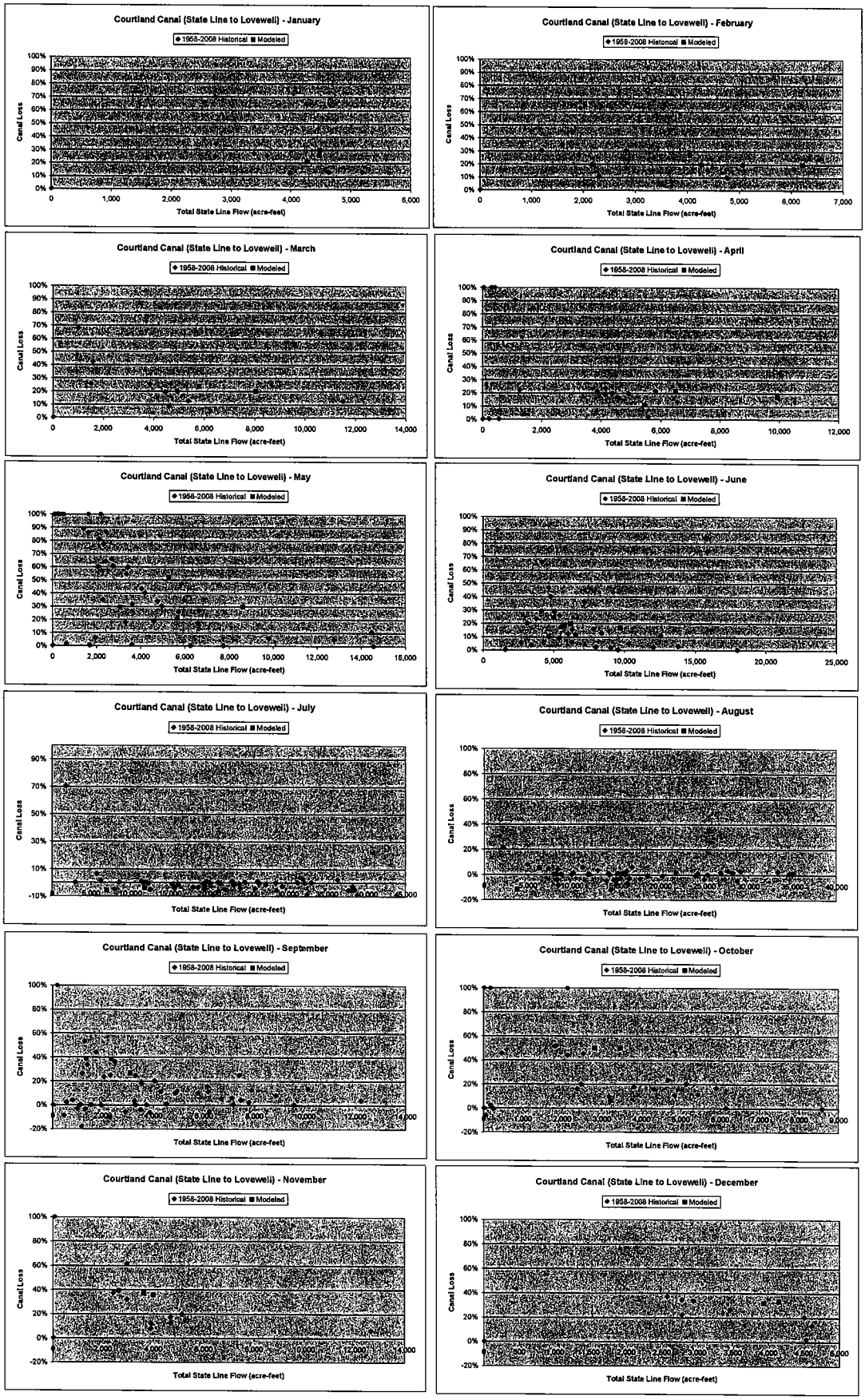


Figure 4-10: Total Courtland Canal Losses From State Line to Lovewell as a Percentage of State Line Courtland Canal Flow

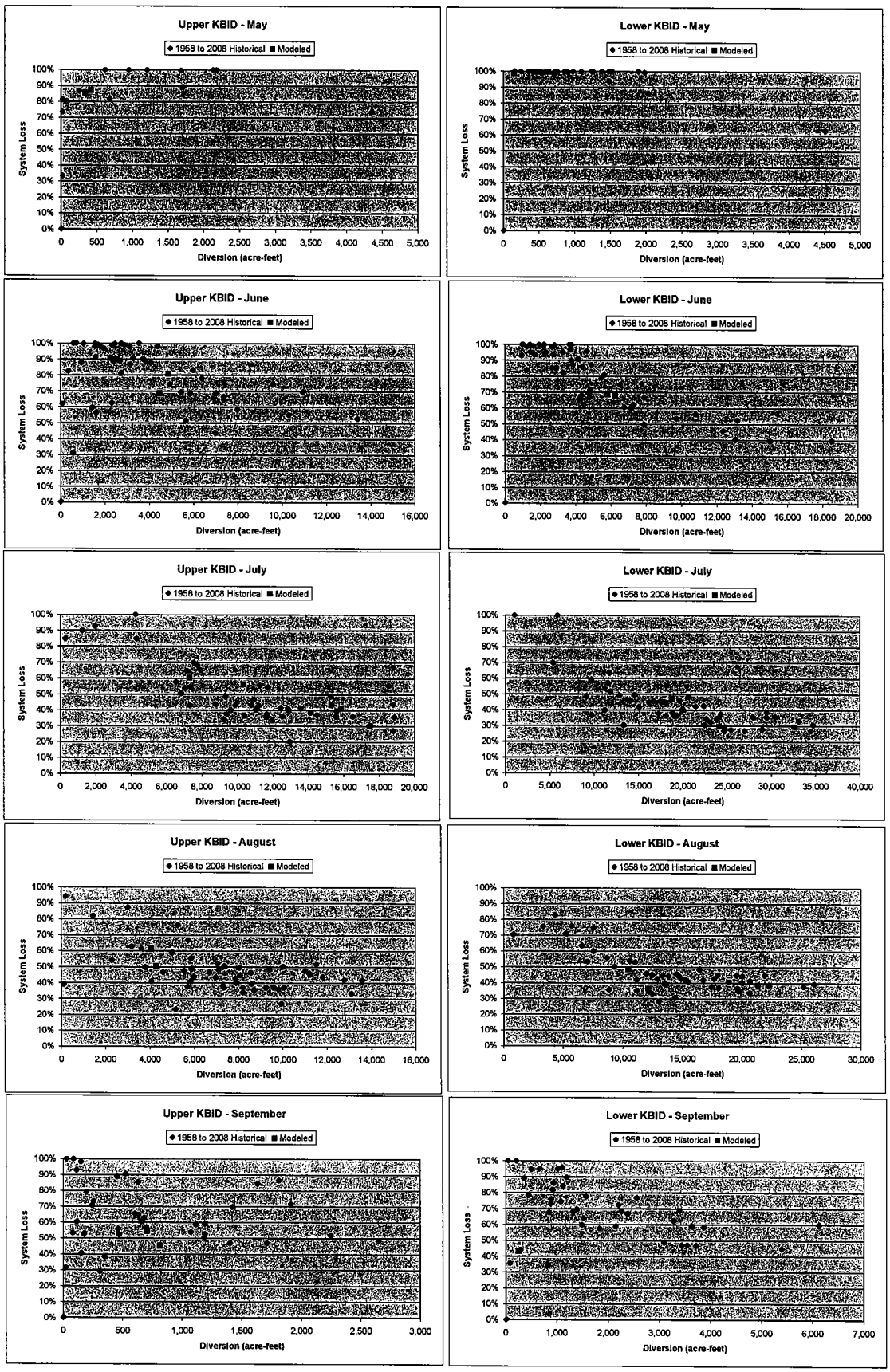


Figure 4-11: Upper and Lower KBID Total System (Lateral) Losses as a Percentage of Upper and Lower KBID Total Diversions

5. KBID Return Flow Estimation Methodology and Results

While a number of different approaches could be used in developing estimates of return flows, for the purpose of comparison, this report uses the same methodology as used in the Spronk report, but uses values we believe more accurately reflect likely loss and delivery volumes. The return flow calculation methodology described in the Spronk report makes use of the term "wasteway flows" to represent gaged surface return flows. The routing methodology described in this report does not distinguish between returns which may be gaged and those that would not be. In order to apply the method used by Spronk to calculate return flows, an estimate of wasteway flows was made by multiplying the value of total lateral losses computed in this report by a ratio of total lateral losses to wasteway flows as computed in the Spronk report.

As was done in the Spronk report, the return flow estimates presented in this report are computed from four terms: estimated on-farm return flows; canal losses; lateral losses; and wasteway flows. The Spronk report did not specify the estimated irrigation efficiency used in their calculations of return flow. For this report, an efficiency of 77%, which is consistent with the value currently used in the RRCA Accounting Procedures, was used. As was done in the Spronk report, the computed canal and lateral losses (excluding wasteway flows) were reduced by 10% to account for evaporation and the total computed return flow (including wasteway flows) was reduced another 5% to account for transmission losses prior to reaching the Republican River and/or its tributaries. No supporting information regarding the appropriateness of these percentage values was presented in the Spronk report.

This report uses these values simply to compare with the methods used in the Spronk report. The Spronk report concluded that total return flows would be 20,202 ac-ft in 2005 and 15,005 in 2006 and assumed that 100% of these return flows would be available in the year they occurred. It is unlikely that 100% of flows resulting from irrigation in mid- to late-summer returning via seepage or deep percolation to the ground water table would be available to down stream irrigators within the same growing season. In addition, interception of subsurface return flows by ground water irrigation wells within KBID would likely reduce the return flow percentage to below 100% regardless of temporal considerations. These assumptions likely lead to an over-prediction of available return flows to downstream users, however, for the purposes of comparison, this report used the assumptions related to the availability of return flows described in the Spronk report. Total net return flows attributable to the additional supply using corrected supply values were computed to be 20,044 ac-ft in 2005 and 14,295 ac-ft in 2006 as presented in Table 5-1.

The Spronk report estimates additional diversions that could have been made from these return flows by irrigators downstream from KBID and holding senior water rights to the State of Kansas Minimum Desirable Streamflow (MDS) water right 9,124 ac-ft for the two-year period 2005 – 2006. That estimate was developed based on the maximum water use of these irrigators between the years 1994 – 2004 (refer to Appendix D in the Spronk report). This approach over-estimates the likely demand. Using the average water use of these irrigators for the years 1994 – 2006 (as presented in Appendix D of the Spronk report) better represents likely producer behavior. As reflected in Appendix D of the Spronk report, there are occasions where water is available to a producer, but it is not used. There are many possible reasons for this, including

timely precipitation events. By using the average water use value and the methods outlined in the Spronk report, this report estimates that, at most, 1,054 ac-ft in 2005 and 1,315 ac-ft of water in 2006 (for a two-year total of 2,369 ac-ft) could have been used by the senior irrigators described above.

5.1 Summary

Table 5-1 summarizes the above values for this report.

TABLE 5- 1: Summary of Return Flow Calculations

	Description	2005	2006	Total
(1)	KBID Return Flows	22,682	16,141	38,824
	Estimated on-farm field scale return flows	2,658	2,074	4,732
	Canal Losses	6,478	4,079	10,557
	Lateral Losses	8,563	6,314	14,877
(2)	Waste Way Losses	4,983	3,675	8,658
(3)	Return Flow Losses	2,638	1,846	4,485
(4)	Net Return Flows To Stream	20,044	14,295	34,339
(5)	Downstream Diversions	1,054	1,315	2,369
(6)	Additional Flow Available at Concordia	18,990	12,980	31,970
	Notes:			
(1)	Sum of all Lateral, Canal, and Waste Way losses plus on-farm return flows computed using RRCA specified efficiency of 77%			
(2)	Waste Way losses estimated using ratio of Total Lateral Losses to Total Lateral Waste presented in Spronk report			
	Ratio = (Lateral Losses Only [12,823] per Table 1, State of KS Report)/(Lateral Losses + Lateral Waste [20,286] per Table 2, State of KS Report)			
	Ratio = 0.632			
(3)	As per State of KS report, used 5% transmission loss on all return flows and a 10% evaporation loss on canal and lateral losses			
(4)	Net Return Flows to Stream = (1) - (3)			
(5)	Based on 1994-2006 average surface water used [6,241 ac-ft] less actual use in specified year [2005 - 1,809 ac-ft; 2006 - 1,548 ac-ft] for irrigators between Spring Creek and Concordia, KS senior to MDS - Data taken from Appendix D, State of KS report			
(6)	Additional Flow Available at Concordia = (4) - (5)			

6. Conclusions

Using an approach that affords significant (if unwarranted) deference to certain assumptions made by Spronk, we conclude that total impacts to Kansas from the alleged Nebraska overuse in 2005 and 2006 were, at most, 22,943 ac-ft. Again, additional review would likely reveal that this volume should be further reduced. In addition, we have not evaluated the possible effects to the water budget related to overuse of Republican River water by the State of Colorado, which would, of course, alter the volume of consumption attributable to Nebraska. In addition, impact related to the CBCU and accounting point locations have also not been included, which could further reduce the predicted impact to Kansas.

Table 6-1 summarizes the key values discussed in this report and can be compared to Table 2 in the Spronk report to highlight the differences in our conclusions.

Table 6-1
Allocation of Additional Kansas Supply
(ac-ft)

	Description		2005		2006	Total
	Additional Supply to be regulated through HCR		42,860		28,615	71,475
	HCR Evaporation and Transportation Losses to Stateline		7,922		6,612	14,534
	Net Available Stateline Supply		34,938		22,003	56,941
	KBID Losses					
	Canal		6,478		4,079	10,557
	Lateral		13,546		9,988	23,535
	Lovewell Reservoir		465		418	883
	KBID Deliveries					
	Above Lovewell		6,386		4,022	10,408
	Below Lovewell		5,173		4,993	10,166
	Total		11,559		9,015	20,574
(1)	KBID Return Flows		22,682		16,141	38,824
	Estimated on-farm field scale return flows	2,658		2,074	4,732	
	Canal Losses	6,478		4,079	10,557	
	Lateral Losses	8,563		6,314	14,877	
(2)	Waste Way Losses	4,983		3,675	8,658	
(3)	Return Flow Losses		2,638		1,846	4,485
(4)	Net Return Flows To Stream		20,044		14,295	34,339
(5)	Downstream Diversions		1,054		1,315	2,369
(6)	Additional Flow Available at Concordia		18,990		12,980	31,970

Calculation Notes:

(1) Sum of all Lateral, Canal, and Waste Way losses plus on-farm return flows computed using RRCA specified efficiency of 77%

(2) Waste Way losses estimated using ratio of Total Lateral Losses to Total Lateral Waste presented in State of Kansas report

Ratio = (Lateral Losses Only [12,823] per Table 1, State of KS Report)/(Lateral Losses + Lateral Waste [20,286] per Table 2, State of KS Report)

Ratio = 0.632

(3) As per State of KS report, used 5% transmission loss on all return flows and a 10% evaporation loss on canal and lateral losses

(4) Net Return Flows to Stream = (1) - (3)

(5) Based on 1994-2006 average surface water used [6,241 ac-ft] less actual use in specified year [2005 - 1,809 ac-ft; 2006 - 1,548 ac-ft] for irrigators between Spring Creek and Concordia, KS senior to MDS - Data taken from Appendix D, State of KS report

(6) Additional Flow Available at Concordia = (4) - (5)

General Note:
Changes in Lovewell Reservoir storage volumes are not presented on Table 6.1

REFERENCES

"Lake Level Management Plans, Water Year 2009", Kansas Water Office, 2008, http://www.kwo.org/Reports%20%26%20Publications/Rpt_LLMP_WY2009_100108_new.pdf

Spronk, 2009. Engineering Analysis of Losses to Kansas Water Users Resulting from Overuse of Republican River Supply in Nebraska 2005 and 2006. Spronk Water Engineers, Inc. 20 January 2009.

U.S. Bureau of Reclamation. Annual Operating Plans. Multiple years.

APPENDIX A
United States Bureau of Reclamation Background Datasets

LOV-PAN.XLS

LOVEWELL DAM
PAN EVAPORATION

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1960	0.00	0.00	0.00	8.26	8.66	7.13	8.92	10.61	8.05	4.72	0.00	0.00	56.35
1961	0.00	0.00	0.00	7.55	7.50	8.37	10.06	8.93	6.53	4.80	0.00	0.00	53.74
1962	0.00	0.00	0.00	7.22	9.92	7.53	8.35	9.65	5.11	3.88	0.00	0.00	51.66
1963	0.00	0.00	0.00	7.24	6.48	9.37	9.81	8.87	5.01	5.32	2.64	0.00	54.74
1964	0.00	0.00	0.00	6.32	9.56	9.30	12.26	9.43	5.67	5.28	0.00	0.00	57.82
1965	0.00	0.00	0.00	5.97	8.57	8.14	10.11	8.92	4.45	4.62	0.00	0.00	50.78
1966	0.00	0.00	0.00	4.98	9.92	10.02	10.90	7.74	5.75	5.62	0.00	0.00	54.93
1967	0.00	0.00	0.00	6.14	7.18	7.60	8.27	9.14	5.51	4.25	0.00	0.00	48.09
1968	0.00	0.00	0.00	6.78	6.56	9.70	9.96	8.93	6.33	5.17	0.00	0.00	53.43
1969	0.00	0.00	0.00	5.84	6.07	7.89	9.26	7.81	5.73	3.44	0.00	0.00	46.04
1970	0.00	0.00	0.00	7.04	7.92	8.79	11.51	10.68	5.88	2.69	0.00	0.00	54.51
1971	0.00	0.00	0.00	6.39	6.22	9.33	9.51	9.18	7.04	4.60	0.00	0.00	52.27
1972	0.00	0.00	0.00	4.99	5.93	7.71	8.69	7.83	5.27	2.79	0.00	0.00	43.21
1973	0.00	0.00	0.00	5.41	7.08	9.50	10.04	9.17	4.13	3.57	0.00	0.00	48.90
1974	0.00	0.00	0.00	5.87	7.40	9.34	13.75	7.12	5.87	4.63	0.00	0.00	53.98
1975	0.00	0.00	0.00	4.83	7.82	7.41	10.94	10.42	6.36	5.84	0.00	0.00	53.62
1976	0.00	0.00	0.00	5.11	7.05	10.29	10.14	11.58	7.20	3.65	0.00	0.00	55.02
1977	0.00	0.00	0.00	5.83	7.18	9.41	12.42	8.15	5.19	3.27	0.00	0.00	51.45
1978	0.00	0.00	0.00	5.58	5.75	9.54	9.61	9.03	7.15	4.71	0.00	0.00	51.37
1979	0.96	1.15	2.13	4.90	6.81	9.50	6.95	7.88	6.81	4.79	2.60	1.23	55.71
1980	0.99	1.15	2.12	5.76	7.07	8.54	11.87	9.77	6.70	4.82	2.60	1.23	62.62
1981	0.99	1.20	2.21	6.70	6.43	9.33	8.34	7.02	6.07	3.37	2.60	1.14	55.40
1982	0.97	1.19	2.18	5.69	5.90	6.32	9.34	6.89	4.81	3.80	2.60	1.25	50.94
1983	0.97	1.21	2.21	4.10	6.36	7.29	12.08	10.33	7.81	3.18	2.60	1.14	59.28
1984	0.96	1.23	2.21	4.43	6.30	7.79	10.44	9.43	6.64	2.97	2.60	1.25	56.25
1985	0.96	1.15	2.20	4.66	7.04	7.04	8.07	5.17	3.58	2.87	2.60	1.14	46.48
1986	1.02	1.21	2.21	5.20	5.50	7.73	9.05	5.16	4.07	1.72	2.60	1.21	46.68
1987	1.02	1.31	2.21	5.50	5.51	6.69	9.19	6.33	4.40	3.03	2.60	1.29	49.08
1988	0.96	1.19	2.21	5.04	8.11	10.45	8.19	7.54	4.95	2.67	2.60	1.29	55.20
1989	1.00	1.16	2.13	6.31	6.59	6.18	7.45	5.65	3.83	3.22	2.60	1.20	47.32
1990	0.98	1.28	2.21	3.90	4.01	6.97	8.27	6.04	4.76	3.45	2.60	1.24	45.71
1991	0.96	1.21	2.21	3.85	4.77	8.10	9.81	6.90	5.63	4.42	2.60	1.25	51.71
1992	1.08	1.31	2.21	4.37	6.52	5.10	5.79	5.82	4.51	2.65	2.60	1.21	43.17
1993	0.96	1.15	2.07	2.77	4.53	6.51	5.19	5.33	3.58	2.65	2.60	1.26	38.60
1994	0.96	1.16	2.18	4.62	6.28	7.33	6.96	5.99	4.81	2.53	2.60	1.23	46.65
1995	0.97	1.28	2.19	3.42	3.42	6.48	7.42	7.18	3.60	3.33	2.60	1.19	43.08
1996	0.96	1.23	2.19	4.89	3.94	6.58	7.17	3.49	3.61	5.25	2.60	1.22	43.13
1997	0.96	1.22	2.21	3.04	5.54	6.49	7.99	5.15	4.20	3.11	2.60	1.23	43.74
1998	1.00	1.25	2.14	3.87	4.97	6.49	4.48	4.87	4.38	2.49	2.60	1.25	39.79
1999	0.97	1.30	2.21	2.89	5.24	4.42	8.04	5.53	4.51	4.35	2.60	1.27	43.33
2000	1.07	1.23	2.21	4.15	5.48	7.61	7.71	7.83	6.70	3.24	2.60	1.19	51.02
2001	0.96	1.15	2.08	4.67	5.29	7.19	8.01	6.61	4.39	2.88	2.60	1.27	47.10
2002	1.02	1.20	2.14	4.38	5.12	7.27	9.25	7.30	5.64	2.09	2.60	1.29	49.30
2003	1.02	1.20	2.15	3.72	4.92	6.88	11.25	8.09	5.68	4.57	2.60	1.19	53.27
2004	0.96	1.16	2.21	5.38	6.84	7.32	7.84	6.93	7.96	3.72	2.60	1.22	54.14
2005	0.97	1.23	2.21	1.62	7.76	8.49	9.66	6.83	7.41	4.37	2.60	1.13	54.28
2006	1.13	2.21	5.90	7.62	9.47	9.31	7.30	5.24	3.30	1.25	2.60	1.25	56.58
AVG*	0.99	1.25	2.31	5.21	6.56	7.91	9.10	7.65	5.46	3.74	2.60	1.22	50.67
TOTAL	27.73	34.92	64.74	244.80	308.49	371.77	427.62	359.49	256.57	175.64	75.44	34.26	

*Average for Jan, Feb, Mar, Nov, Dec beginning in 1979.

LOV-INFL.XLS

LOVEWELL RESERVOIR - HISTORICAL INFLOW
Discharge in 1,000 acre-feet

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1929	0.1	0.1	0.7	0.4	1.2	6.2	1.7	0.6	0.4	0.6	0.5	0.3	12.8
1930	0.2	0.3	0.3	0.3	1.7	1.7	0.2	0.7	1.1	1.4	1.0	0.5	9.4
1931	0.4	0.4	0.4	0.8	2.4	0.5	3.0	1.9	0.1	0.3	0.3	0.3	10.8
1932	0.2	0.9	0.3	0.2	0.2	1.1	0.3	0.8	1.5	0.3	0.1	0.1	6.0
1933	0.1	0.1	0.1	1.3	0.6	0.1	0.5	0.2	0.5	0.0	0.1	0.1	3.7
1934	0.1	0.1	0.0	0.0	0.7	0.0	0.2	0.0	0.0	0.0	0.0	0.0	1.1
1935	0.0	0.0	0.0	0.0	1.2	3.8	2.0	0.2	8.5	1.8	1.1	0.9	19.5
1936	0.3	0.1	0.8	0.0	1.1	0.3	0.3	0.0	0.0	0.1	0.0	0.0	3.0
1937	0.1	0.6	1.1	0.3	0.1	1.4	1.4	0.2	0.0	0.0	0.0	0.0	5.2
1938	0.0	0.0	0.0	0.1	0.0	4.3	8.5	0.8	1.2	0.1	0.1	0.0	15.1
1939	0.3	0.0	0.5	0.8	0.2	1.8	0.6	0.4	0.1	0.0	0.0	0.0	4.7
1940	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.7	0.3	0.1	0.0	0.0	1.5
1941	0.0	0.0	0.1	0.2	0.2	13.4	1.4	2.5	2.4	13.3	2.0	1.3	36.8
1942	0.8	0.5	1.0	0.0	1.2	6.8	1.9	1.3	5.4	0.5	0.2	0.1	19.7
1943	0.1	0.7	0.2	1.0	2.2	24.3	1.2	0.5	0.0	0.1	0.0	0.0	30.3
1944	0.0	0.0	0.2	2.1	5.9	2.7	1.3	9.3	3.2	0.4	0.2	0.2	25.5
1945	0.1	0.5	1.4	6.2	38.3	5.5	13.7	1.1	0.4	0.3	0.2	0.0	67.7
1946	0.0	0.0	0.4	0.3	0.0	2.5	5.3	0.0	12.0	2.4	4.5	0.4	27.8
1947	0.3	0.5	1.0	10.1	1.7	26.4	1.5	0.4	0.1	0.2	0.2	0.2	42.6
1948	0.2	4.1	7.0	0.3	0.4	1.5	4.1	0.9	0.0	0.0	0.1	0.1	18.7
1949	0.9	15.7	5.1	0.4	11.9	21.9	1.1	0.3	2.2	7.8	0.2	0.3	67.8
1950	0.2	0.2	0.3	0.2	7.7	0.4	56.8	12.2	9.0	11.2	0.8	0.6	99.6
1951	0.5	1.3	3.2	4.7	8.6	50.9	37.5	9.5	9.8	3.1	1.6	1.5	132.2
1952	1.4	1.3	3.5	6.4	5.9	3.9	1.4	0.4	0.3	0.3	0.5	0.5	25.8
1953	0.6	0.6	0.5	0.5	1.8	4.4	0.0	0.1	4.4	0.8	0.5	1.5	15.7
1954	0.1	0.2	0.2	0.2	11.9	4.9	0.1	1.4	0.5	1.6	0.0	0.1	21.2
1955	0.1	4.4	0.2	0.1	0.1	18.3	0.7	0.0	2.7	0.0	0.0	0.0	26.6
1956	0.0	0.5	0.0	0.1	0.1	19.4	13.5	0.3	0.1	0.0	0.0	0.0	34.0
1957	0.0	0.0	0.2	1.4	8.8	31.2	0.0	1.2	0.6	0.0	0.0	0.0	43.4
1958	0.0	0.1	0.2	0.6	0.3	0.2	5.2	2.3	1.8	0.0	0.0	0.0	10.7
1959	0.0	0.9	0.3	0.1	6.2	0.7	0.9	0.0	1.0	4.1	0.0	0.0	14.2
1960	0.1	0.3	7.6	4.2	3.2	10.5	0.4	2.3	0.1	0.1	0.1	0.2	29.1
1961	0.1	0.5	1.2	1.1	11.3	21.1	1.2	4.3	8.3	2.8	1.8	1.4	55.1
1962	7.3	2.5	3.4	2.2	4.0	17.0	8.7	5.7	3.1	5.2	1.8	1.4	62.3
1963	1.0	1.8	3.2	3.1	2.6	2.5	3.4	0.7	15.3	1.0	0.5	0.3	35.4
1964	0.4	0.8	1.7	1.8	2.8	0.1	0.0	5.9	0.8	0.0	0.1	0.1	14.5
1965	0.4	6.3	3.5	3.7	2.2	11.0	12.3	2.2	8.2	4.3	0.5	0.8	55.4
1966	0.3	1.3	0.9	0.8	0.6	1.8	2.1	1.2	0.3	0.1	0.0	0.1	9.5
1967	0.0	0.1	0.2	0.9	0.8	16.6	3.4	0.0	0.4	0.0	0.0	0.6	23.0
1968	0.1	0.1	0.5	1.6	0.6	2.6	3.9	3.3	2.7	2.4	0.5	1.0	19.3
1969	0.0	3.7	10.6	3.6	7.7	1.4	7.7	1.3	2.8	1.6	0.6	0.6	41.6
1970	0.4	0.4	0.6	3.0	13.6	7.3	21.2	33.2	5.9	0.7	0.3	0.0	86.6
1971	0.3	3.1	1.6	0.9	2.1	6.3	14.6	16.4	6.6	3.5	0.6	0.0	56.0
1972	0.0	0.1	0.1	0.7	5.8	1.5	2.3	4.8	0.4	0.2	2.2	1.2	19.3
1973	2.8	1.2	8.0	12.0	11.5	8.3	21.1	5.8	58.4	45.7	12.3	5.9	193.0
1974	8.8	4.8	3.8	5.1	4.3	3.5	20.6	15.7	3.1	0.0	0.4	0.6	70.7
1975	0.8	1.5	6.4	2.4	3.4	21.3	20.6	16.4	5.9	0.3	0.8	0.3	80.1
1976	0.2	0.7	1.2	5.3	1.5	6.7	22.8	21.5	8.7	4.3	3.3	0.5	76.7
1977	0.1	0.1	1.5	5.8	4.9	5.6	20.2	19.2	0.7	0.3	0.2	0.0	58.6
1978	0.1	0.9	10.2	3.2	3.4	6.1	19.3	7.9	10.5	0.8	0.7	0.5	63.6
1979	0.4	3.9	22.6	4.2	3.4	8.2	9.2	5.2	5.4	5.1	2.4	0.8	70.8
1980	1.3	2.0	4.6	8.1	3.9	6.0	13.4	23.2	3.2	1.1	0.0	0.4	67.2
1981	0.2	0.4	1.0	4.5	19.5	3.8	13.5	6.6	0.6	0.0	0.9	1.2	52.2
1982	0.5	3.3	3.7	1.8	12.7	4.2	9.4	3.4	1.6	0.9	0.6	2.4	44.5
1983	1.3	2.5	1.3	5.2	18.8	7.8	13.9	16.9	6.1	5.9	1.2	0.9	81.8
1984	3.2	3.5	3.1	9.5	11.7	11.1	12.2	17.0	5.1	6.6	1.0	1.8	85.8
1985	1.3	3.6	2.0	3.5	21.7	6.5	17.1	19.2	3.8	2.4	2.1	2.5	85.7
1986	1.6	2.1	2.5	6.7	8.4	5.3	14.4	15.6	6.9	13.2	2.3	3.6	82.6
1987	2.0	2.3	31.2	34.6	20.4	12.0	9.9	10.1	1.7	0.8	1.8	1.9	128.7
1988	2.8	3.9	1.3	2.3	1.8	7.8	32.2	8.2	5.1	2.4	0.5	0.3	68.6
1989	0.6	0.5	1.0	1.3	2.0	7.4	20.5	9.5	6.4	0.2	0.0	0.4	49.8
1990	0.5	1.2	6.2	1.0	6.6	7.7	12.9	11.0	6.6	4.4	4.8	3.3	66.2
1991	0.4	0.4	4.8	4.9	6.1	1.0	4.7	5.3	1.9	2.5	4.2	4.7	40.9
1992	5.6	4.5	5.3	5.4	3.0	3.6	15.9	5.6	2.4	1.7	1.3	2.0	56.4
1993	1.7	7.7	25.3	4.9	8.4	8.2	72.8	17.9	15.5	5.7	4.8	4.8	177.6
1994	4.1	4.8	8.0	5.7	5.7	7.0	9.6	6.7	1.1	0.5	1.2	1.5	55.8
1995	5.1	3.9	1.7	1.9	15.5	4.5	6.1	13.9	10.1	2.6	1.0	1.3	67.6
1996	1.2	1.2	1.4	2.1	10.5	3.1	18.5	14.1	4.3	0.0	17.3	2.1	75.8
1997	1.5	2.0	2.0	2.6	4.2	17.8	8.0	10.2	4.3	4.7	1.6	3.0	61.9
1998	2.1	2.9	5.0	17.2	3.3	7.1	19.3	10.6	4.9	0.8	2.8	1.3	77.3
1999	1.8	1.8	1.7	4.0	8.2	4.3	8.0	7.3	6.6	0.0	0.3	0.6	44.6
2000	0.6	1.9	10.8	7.3	3.2	7.4	17.9	16.8	3.5	3.4	5.1	3.8	81.7

LOVEWELL RESERVOIR - HISTORICAL INFLOW
Discharge in 1,000 acre-feet

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
2001	4.1	0.8	5.1	1.2	13.9	6.2	15.7	5.9	7.7	5.3	0.6	0.5	67.0
2002	0.5	1.1	1.3	4.3	8.0	2.5	12.6	11.8	2.6	4.3	4.6	3.7	57.3
2003	3.7	3.0	0.6	4.3	5.8	10.7	3.2	4.9	4.0	1.4	2.9	3.1	47.6
2004	3.0	2.3	3.0	5.1	3.1	1.0	7.1	2.3	0.3	0.0	1.0	2.6	30.8
2005	2.6	4.7	5.0	7.3	4.4	5.2	3.5	4.4	1.2	1.5	2.0	2.3	44.1
2006	3.2	2.5	4.4	4.4	3.7	0.3	3.0	0.9	1.6	1.4	1.8	2.9	30.1
2007	2.6	5.6	5.7	4.6	6.9	9.2	5.9	8.9	4.6	2.0	0.0	1.0	57.0
2008	0.9	1.3	1.2	3.1	14.0	14.9	13.3	8.9	5.2	16.1	8.3	3.6	90.8
TOTAL	90.7	145.9	268.3	273.6	467.7	613.6	795.7	520.3	346.1	221.0	119.4	88.8	3,951.2
AVG	1.1	1.8	3.4	3.4	5.8	7.7	9.9	6.5	4.3	2.8	1.5	1.1	49.4
JUN 1957-Present*													
TOTAL	83.6	112.8	239.5	235.1	351.5	385.1	635.5	473.6	279.9	174.3	105.2	79.8	3,156.0
JUN 1957-Present*													
AVG	1.6	2.2	4.7	4.6	6.9	7.4	12.2	9.1	5.4	3.4	2.0	1.5	61.1

October 1928 thru April 1929 & February 1934 thru May 1946 based on correlation with pickup on Republican River between Hardy and Clay Center. May 1929 thru January 1934 based on correlation with Solomon River at Beloit. \ June 1946 thru May 1957 are records at station near Lovewell. June 1957 thru September 1957 are estimated from reservoir gain plus outflow. \ October 1947 thru December 1960 are from records at Burr Oak. January 1961 thru December 1978 are USCE computed inflows for White Rock Creek only. / January 1979 to date are USBR computed inflows. Closure Date 5-29-57.
/ *Using data from the beginning of reservoir first filling to present year.

LOV-CONT.XLS

LOVEWELL DAM IN KANSAS
END OF MONTH CONTENTS - FROM JUNE 1957
UNIT IN 1,000 A.F.

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1957						12.5	6.2	6.4	6.4	29.0	28.1	28.1
1958	27.9	28.1	28.4	29.6	41.9	41.3	47.2	45.9	41.5	40.7	40.3	40.0
1959	39.8	39.9	40.6	41.1	44.5	40.6	33.3	20.5	21.7	28.1	27.6	27.7
1960	28.1	27.5	40.4	41.4	43.2	50.8	33.7	30.5	28.2	28.3	28.0	28.2
1961	28.3	28.8	29.5	29.6	46.7	42.7	39.5	39.3	43.6	42.0	42.4	42.6
1962	48.6	41.7	41.8	41.7	42.1	43.5	39.2	31.0	31.4	29.5	30.0	29.5
1963	29.0	29.4	30.0	31.7	36.2	41.7	37.6	41.1	50.0	47.8	47.6	47.6
1964	48.0	48.2	47.8	48.3	43.2	39.4	34.3	49.9	48.4	47.1	46.4	46.3
1965	46.5	52.8	48.6	47.9	48.4	48.4	44.1	40.8	46.2	43.4	41.6	42.0
1966	42.2	41.7	41.6	41.4	40.4	43.6	40.0	26.1	25.9	29.5	41.6	41.5
1967	41.4	41.1	40.9	40.7	39.7	42.7	39.5	30.6	32.1	39.6	39.2	39.4
1968	39.4	39.5	39.0	39.5	39.7	41.8	35.0	40.7	24.9	25.1	22.8	23.6
1969	23.4	27.1	37.7	40.3	42.6	41.8	42.6	34.8	30.3	23.8	23.7	24.1
1970	24.5	24.9	25.3	25.8	38.3	41.3	27.9	33.1	37.5	37.7	37.6	37.4
1971	37.6	40.7	42.2	41.5	42.5	39.5	32.6	28.3	31.0	33.7	34.1	34.0
1972	34.0	33.8	33.4	33.3	39.9	41.4	42.3	38.8	39.2	38.9	41.0	42.1
1973	44.8	41.9	44.9	42.4	42.4	40.4	41.9	37.9	70.7	56.9	44.2	44.2
1974	48.1	41.9	42.0	42.8	42.7	38.6	24.1	30.4	31.6	30.8	31.0	31.5
1975	32.2	33.6	40.0	41.4	41.8	51.2	36.2	32.9	36.6	35.5	36.1	36.3
1976	36.5	37.1	38.1	42.5	41.5	38.2	27.5	22.8	27.0	30.6	33.5	33.6
1977	33.7	33.7	34.9	39.7	42.2	42.2	29.5	42.1	41.8	41.2	41.0	40.7
1978	40.5	41.3	43.6	42.3	42.6	43.2	40.9	30.8	36.3	34.5	34.4	33.4
1979	33.6	37.4	50.2	42.0	43.6	48.5	46.6	28.2	30.3	35.8	36.8	36.1
1980	35.9	37.7	41.9	42.1	43.6	44.4	22.0	30.4	31.6	32.1	31.7	31.9
1981	31.9	32.1	32.8	36.3	51.9	42.9	39.9	39.5	37.8	37.1	37.5	36.6
1982	37.0	40.1	43.4	44.2	52.2	49.1	40.4	20.3	20.2	19.6	19.9	22.1
1983	23.3	25.7	26.7	31.3	49.3	48.5	31.2	27.7	29.7	35.2	36.0	36.6
1984	39.6	42.9	43.5	45.9	49.1	47.9	29.8	26.9	28.1	34.4	34.9	36.5
1985	37.6	41.0	42.7	45.3	50.4	46.6	38.2	42.3	36.9	38.5	40.2	42.5
1986	40.3	42.2	41.5	47.2	48.0	38.6	30.3	37.5	43.4	38.5	38.3	41.8
1987	37.4	39.5	67.0	50.4	48.2	51.3	36.1	34.1	34.2	34.5	35.9	37.6
1988	40.2	37.2	37.0	38.4	38.4	26.3	39.0	28.4	30.3	32.3	32.5	32.6
1989	33.0	33.3	33.9	34.2	35.2	36.5	32.7	26.8	32.5	32.2	31.7	31.9
1990	32.3	33.3	39.2	39.5	44.7	46.8	34.1	25.4	26.0	30.0	34.4	37.4
1991	37.6	37.9	42.3	46.5	50.7	40.5	21.7	16.2	17.5	19.5	23.5	28.0
1992	33.5	37.8	42.7	47.2	49.0	48.8	52.6	43.6	38.9	40.2	41.0	42.9
1993	44.4	45.2	48.3	49.2	53.8	55.3	74.5	41.6	39.2	37.4	39.4	37.9
1994	38.9	40.7	45.3	48.8	47.8	45.8	42.5	28.6	28.7	28.8	29.7	31.0
1995	35.9	39.6	40.9	42.1	56.3	51.1	37.4	30.0	33.6	35.7	36.2	37.3
1996	38.4	39.3	40.4	41.6	50.9	40.1	39.5	37.2	39.2	38.3	43.9	41.2
1997	36.5	38.3	39.9	39.2	40.3	47.8	28.8	23.0	24.6	28.9	30.1	32.8
1998	34.7	37.4	40.8	38.9	38.4	32.2	30.5	25.3	26.9	27.3	29.8	30.9
1999	32.5	34.1	35.4	38.9	45.7	44.0	23.3	15.4	17.8	17.3	17.3	17.8
2000	18.3	20.0	30.5	37.1	37.1	28.0	19.6	14.0	16.1	19.1	23.9	27.6
2001	31.6	32.2	36.9	37.2	45.6	40.4	37.9	21.8	24.8	29.6	29.8	30.1
2002	30.5	31.3	32.2	35.8	42.8	35.6	19.2	14.8	16.7	20.7	25.0	28.5
2003	32.0	34.7	35.0	38.6	42.8	48.0	28.3	18.8	22.1	22.9	25.4	28.4
2004	31.2	33.4	36.0	40.1	40.9	39.1	31.1	13.5	13.0	12.7	13.5	15.9
2005	18.4	23.0	27.6	33.9	37.0	37.0	24.3	20.8	21.1	22.0	23.7	25.8
2006	28.9	31.2	35.2	38.6	40.3	34.6	22.5	13.2	14.2	15.3	16.8	19.6
2007	22.1	27.5	32.8	36.6	40.5	43.4	31.7	25.9	29.5	30.9	30.5	31.3
2008	32.0	33.2	34.0	36.2	47.5	38.3	35.6	24.6	20.4	35.0	32.0	31.4
*AVG	34.8	36.0	38.9	40.2	44.0	42.6	35.1	29.9	31.4	32.3	33.0	33.9

*Figured from 1958 to Present. Latest revision to the reservoir area-capacity table - January 1997.

LOVEWELL RESERVOIR
CAPACITY IN ACRE-FEET

Effective 1-1-97

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
1550.5	0	0	0	0	0	0	0	0	0	0
1550.6	0	0	0	0	0	0	0	0	0	0
1550.7	0	0	0	0	0	0	0	0	0	0
1550.8	0	0	0	0	0	0	0	0	0	0
1550.9	1	0	0	0	0	0	0	0	0	0
1551.0	1	1	1	1	1	1	1	1	1	1
1551.1	1	1	1	1	1	1	1	1	1	1
1551.2	1	1	1	1	1	2	2	2	2	2
1551.3	2	2	2	2	2	2	2	2	2	2
1551.4	2	2	2	2	2	3	3	3	3	3
1551.5	3	3	3	3	3	3	3	3	3	3
1551.6	3	3	3	3	3	3	3	3	3	3
1551.7	3	3	3	3	3	4	4	4	4	4
1551.8	4	4	4	4	4	5	5	5	5	5
1551.9	5	5	5	5	5	5	5	5	5	5
1552.0	5	5	5	5	5	6	6	6	6	6
1552.1	6	6	6	6	6	6	6	6	6	6
1552.2	6	6	6	6	6	7	7	7	7	7
1552.3	7	7	7	7	7	8	8	8	8	8
1552.4	8	8	8	8	8	8	8	8	8	8
1552.5	8	8	8	8	8	9	9	9	9	9
1552.6	9	9	9	9	9	10	10	10	10	10
1552.7	10	10	10	10	10	11	11	11	11	11
1552.8	11	11	11	11	11	12	12	12	12	12
1552.9	12	12	12	12	12	13	13	13	13	13
1553.0	13	13	13	13	13	14	14	14	14	14
1553.1	14	14	14	14	14	15	15	15	15	15
1553.2	15	15	15	15	15	16	16	16	16	16
1553.3	16	16	16	16	16	17	17	17	17	17
1553.4	17	17	17	17	17	18	18	18	18	18
1553.5	18	18	18	18	18	19	19	19	19	19
1553.6	19	19	19	19	19	20	20	20	20	20
1553.7	20	20	20	20	20	21	21	21	21	21
1553.8	21	21	21	21	21	22	22	22	22	22
1553.9	22	22	22	22	22	23	23	23	23	23
1554.0	23	23	23	24	24	24	24	24	25	25
1554.1	25	25	25	25	25	26	26	26	26	26
1554.2	26	26	26	27	27	27	27	27	28	28
1554.3	28	28	28	29	29	29	29	29	30	30
1554.4	30	30	30	31	31	31	31	31	32	32
1554.5	32	32	32	33	33	33	33	33	34	34
1554.6	34	34	35	35	35	36	36	36	36	37
1554.7	37	37	38	38	38	39	39	39	39	40
1554.8	40	40	41	41	41	42	42	42	42	43
1554.9	43	43	44	44	44	45	45	45	45	46
1555.0	46	46	47	47	48	48	48	49	49	50
1555.1	50	50	51	51	52	52	52	53	53	54
1555.2	54	55	55	56	56	57	57	58	58	59
1555.3	59	60	60	61	61	62	62	63	63	64
1555.4	64	65	65	66	66	67	68	68	69	69
1555.5	70	71	71	72	73	74	74	75	76	76
1555.6	77	78	78	79	80	81	81	82	83	83
1555.7	84	85	85	86	87	88	88	89	90	90
1555.8	91	92	93	93	94	95	96	97	97	98
1555.9	99	100	101	102	103	104	104	105	106	107
1556.0	108	109	110	111	112	113	113	114	115	116
1556.1	117	118	119	120	121	122	123	124	125	126
1556.2	127	128	129	130	131	132	133	134	135	136
1556.3	137	138	139	140	141	142	143	144	145	146
1556.4	147	148	149	150	151	153	154	155	156	157

LOVEWELL RESERVOIR
CAPACITY IN ACRE-FEET

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	.08	Effective 1-1-97 .09
1556.5	158	159	160	162	163	164	165	166	168	169
1556.6	170	171	172	174	175	176	177	178	180	181
1556.7	182	183	184	186	187	188	189	190	192	193
1556.8	194	195	197	198	199	201	202	203	204	206
1556.9	207	208	210	211	212	214	215	216	217	219
1557.0	220	221	223	224	225	227	228	229	230	232
1557.1	233	234	236	237	239	240	241	243	244	246
1557.2	247	249	250	252	253	255	256	258	259	261
1557.3	262	264	265	267	268	270	271	273	274	276
1557.4	277	279	280	282	283	285	286	288	289	291
1557.5	292	294	295	297	298	300	302	303	305	306
1557.6	308	310	311	313	314	316	318	319	321	322
1557.7	324	326	327	329	331	333	334	336	338	339
1557.8	341	343	344	346	348	350	351	353	355	356
1557.9	358	360	361	363	365	367	368	370	372	373
1558.0	375	377	379	380	382	384	386	388	389	391
1558.1	393	395	397	399	401	403	404	406	408	410
1558.2	412	414	416	418	420	422	423	425	427	429
1558.3	431	433	435	437	439	441	443	445	447	449
1558.4	451	453	455	457	459	461	463	465	467	469
1558.5	471	473	475	477	479	482	484	486	488	490
1558.6	492	494	496	499	501	503	505	507	510	512
1558.7	514	516	518	521	523	525	527	529	532	534
1558.8	536	538	540	543	545	547	549	551	554	556
1558.9	558	560	563	565	568	570	572	575	577	580
1559.0	582	584	587	589	591	594	596	598	600	603
1559.1	605	608	610	613	615	618	620	623	625	628
1559.2	630	633	635	638	640	643	645	648	650	653
1559.3	655	658	660	663	665	668	670	673	675	678
1559.4	680	683	685	688	690	693	696	698	701	703
1559.5	706	709	711	714	717	720	722	725	728	730
1559.6	733	736	738	741	744	747	749	752	755	757
1559.7	760	763	766	768	771	774	777	780	782	785
1559.8	788	791	794	797	800	803	805	808	811	814
1559.9	817	820	823	826	829	832	834	837	840	843
1560.0	846	849	852	855	858	861	863	866	869	872
1560.1	875	878	881	884	887	891	894	897	900	903
1560.2	906	909	912	916	919	922	925	928	932	935
1560.3	938	941	944	948	951	954	957	960	964	967
1560.4	970	973	977	980	984	987	990	994	997	1001
1560.5	1004	1008	1011	1015	1018	1022	1025	1029	1032	1036
1560.6	1039	1043	1046	1050	1053	1057	1060	1064	1067	1071
1560.7	1074	1078	1081	1085	1089	1093	1096	1100	1104	1107
1560.8	1111	1115	1118	1122	1126	1130	1133	1137	1141	1144
1560.9	1148	1152	1156	1160	1164	1168	1171	1175	1179	1183
1561.0	1187	1191	1195	1199	1203	1207	1210	1214	1218	1222
1561.1	1226	1230	1234	1238	1242	1247	1251	1255	1259	1263
1561.2	1267	1271	1275	1279	1283	1288	1292	1296	1300	1304
1561.3	1308	1312	1316	1321	1325	1329	1333	1337	1342	1346
1561.4	1350	1354	1359	1363	1368	1372	1376	1381	1385	1390
1561.5	1394	1398	1403	1407	1412	1416	1420	1425	1429	1434
1561.6	1438	1443	1447	1452	1456	1461	1465	1470	1474	1479
1561.7	1483	1488	1492	1497	1501	1506	1511	1515	1520	1524
1561.8	1529	1534	1538	1543	1548	1553	1557	1562	1567	1571
1561.9	1576	1581	1586	1591	1596	1601	1605	1610	1615	1620
1562.0	1625	1630	1635	1640	1645	1650	1654	1659	1664	1669
1562.1	1674	1679	1684	1689	1694	1699	1704	1709	1714	1719
1562.2	1724	1729	1734	1740	1745	1750	1755	1760	1766	1771
1562.3	1776	1781	1787	1792	1797	1803	1808	1813	1818	1824

LOVEWELL RESERVOIR
CAPACITY IN ACRE-FEET

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	.08	Effective 1-1-97 .09
1562.4	1829	1834	1840	1845	1851	1856	1861	1867	1872	1878
1562.5	1883	1889	1894	1900	1905	1911	1916	1922	1927	1933
1562.6	1938	1944	1949	1955	1961	1967	1972	1978	1984	1989
1562.7	1995	2001	2007	2012	2018	2024	2030	2036	2041	2047
1562.8	2053	2059	2065	2071	2077	2083	2088	2094	2100	2106
1562.9	2112	2118	2124	2130	2136	2142	2148	2154	2160	2166
1563.0	2172	2178	2184	2191	2197	2203	2209	2215	2222	2228
1563.1	2234	2240	2247	2253	2259	2266	2272	2278	2284	2291
1563.2	2297	2303	2310	2316	2323	2329	2335	2342	2348	2355
1563.3	2361	2368	2374	2381	2387	2394	2400	2407	2413	2420
1563.4	2426	2433	2439	2446	2453	2460	2466	2473	2480	2486
1563.5	2493	2500	2506	2513	2520	2527	2533	2540	2547	2553
1563.6	2560	2567	2574	2581	2588	2595	2601	2608	2615	2622
1563.7	2629	2636	2643	2650	2657	2665	2672	2679	2686	2693
1563.8	2700	2707	2714	2721	2728	2736	2743	2750	2757	2764
1563.9	2771	2778	2786	2793	2800	2808	2815	2822	2829	2837
1564.0	2844	2851	2859	2866	2874	2881	2888	2896	2903	2911
1564.1	2918	2926	2933	2941	2948	2956	2963	2971	2978	2986
1564.2	2993	3001	3008	3016	3024	3032	3039	3047	3055	3062
1564.3	3070	3078	3085	3093	3101	3109	3116	3124	3132	3139
1564.4	3147	3155	3163	3171	3179	3187	3195	3203	3211	3219
1564.5	3227	3235	3243	3251	3259	3267	3275	3283	3291	3299
1564.6	3307	3315	3323	3332	3340	3348	3356	3364	3373	3381
1564.7	3389	3397	3406	3414	3422	3431	3439	3447	3455	3464
1564.8	3472	3480	3489	3497	3506	3514	3522	3531	3539	3548
1564.9	3556	3565	3573	3582	3590	3599	3608	3616	3625	3633
1565.0	3642	3651	3659	3668	3677	3686	3694	3703	3712	3720
1565.1	3729	3738	3747	3755	3764	3773	3782	3791	3799	3808
1565.2	3817	3826	3835	3844	3853	3862	3870	3879	3888	3897
1565.3	3906	3915	3924	3933	3942	3952	3961	3970	3979	3988
1565.4	3997	4006	4015	4024	4033	4043	4052	4061	4070	4079
1565.5	4088	4097	4107	4116	4125	4135	4144	4153	4162	4172
1565.6	4181	4190	4200	4209	4219	4228	4237	4247	4256	4266
1565.7	4275	4285	4294	4304	4313	4323	4332	4342	4351	4361
1565.8	4370	4380	4389	4399	4408	4418	4428	4437	4447	4456
1565.9	4466	4476	4485	4495	4505	4515	4524	4534	4544	4553
1566.0	4563	4573	4583	4592	4602	4612	4622	4632	4641	4651
1566.1	4661	4671	4681	4691	4701	4711	4720	4730	4740	4750
1566.2	4760	4770	4780	4790	4800	4811	4821	4831	4841	4851
1566.3	4861	4871	4881	4891	4901	4912	4922	4932	4942	4952
1566.4	4962	4972	4982	4993	5003	5013	5023	5033	5044	5054
1566.5	5064	5074	5085	5095	5105	5116	5126	5136	5146	5157
1566.6	5167	5178	5188	5199	5209	5220	5230	5241	5251	5262
1566.7	5272	5283	5293	5304	5314	5325	5335	5346	5356	5367
1566.8	5377	5388	5398	5409	5419	5430	5441	5451	5462	5472
1566.9	5483	5494	5504	5515	5526	5537	5547	5558	5569	5579
1567.0	5590	5601	5612	5622	5633	5644	5655	5666	5676	5687
1567.1	5698	5709	5720	5731	5742	5753	5763	5774	5785	5796
1567.2	5807	5818	5829	5840	5851	5863	5874	5885	5896	5907
1567.3	5918	5929	5940	5951	5962	5974	5985	5996	6007	6018
1567.4	6029	6040	6051	6063	6074	6085	6096	6107	6119	6130
1567.5	6141	6152	6164	6175	6186	6198	6209	6220	6231	6243
1567.6	6254	6265	6277	6288	6300	6311	6322	6334	6345	6357
1567.7	6368	6380	6391	6403	6414	6426	6437	6449	6460	6472
1567.8	6483	6495	6506	6518	6529	6541	6553	6564	6576	6587
1567.9	6599	6611	6622	6634	6646	6658	6669	6681	6693	6704
1568.0	6716	6728	6740	6751	6763	6775	6787	6799	6810	6822
1568.1	6834	6846	6858	6870	6882	6894	6905	6917	6929	6941
1568.2	6953	6965	6977	6989	7001	7013	7024	7036	7048	7060

LOVEWELL RESERVOIR

CAPACITY IN ACRE-FEET

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	.08	Effective 1-1-97 .09
1568.3	7072	7084	7096	7108	7120	7133	7145	7157	7169	7181
1568.4	7193	7205	7217	7229	7241	7254	7266	7278	7290	7302
1568.5	7314	7326	7338	7351	7363	7375	7387	7399	7412	7424
1568.6	7436	7448	7461	7473	7485	7498	7510	7522	7534	7547
1568.7	7559	7571	7584	7596	7609	7621	7633	7646	7658	7671
1568.8	7683	7695	7708	7720	7733	7745	7757	7770	7782	7795
1568.9	7807	7820	7832	7845	7857	7870	7883	7895	7908	7920
1569.0	7933	7946	7958	7971	7983	7996	8009	8021	8034	8046
1569.1	8059	8072	8084	8097	8110	8123	8135	8148	8161	8173
1569.2	8186	8199	8212	8224	8237	8250	8263	8276	8288	8301
1569.3	8314	8327	8340	8353	8366	8379	8391	8404	8417	8430
1569.4	8443	8456	8469	8482	8495	8508	8520	8533	8546	8559
1569.5	8572	8585	8598	8611	8624	8638	8651	8664	8677	8690
1569.6	8703	8716	8729	8742	8755	8769	8782	8795	8808	8821
1569.7	8834	8847	8860	8874	8887	8900	8913	8926	8940	8953
1569.8	8966	8979	8993	9006	9019	9033	9046	9059	9072	9086
1569.9	9099	9112	9126	9139	9153	9166	9179	9193	9206	9220
1570.0	9233	9246	9260	9273	9287	9300	9313	9327	9340	9354
1570.1	9367	9381	9394	9408	9421	9435	9449	9462	9476	9489
1570.2	9503	9517	9530	9544	9557	9571	9585	9598	9612	9625
1570.3	9639	9653	9666	9680	9694	9708	9721	9735	9749	9762
1570.4	9776	9790	9804	9818	9832	9846	9859	9873	9887	9901
1570.5	9915	9929	9943	9957	9971	9985	9998	10012	10026	10040
1570.6	10054	10068	10082	10096	10110	10124	10138	10152	10166	10180
1570.7	10194	10208	10222	10236	10250	10265	10279	10293	10307	10321
1570.8	10335	10349	10363	10378	10392	10406	10420	10434	10449	10463
1570.9	10477	10491	10505	10520	10534	10548	10562	10576	10591	10605
1571.0	10619	10633	10648	10662	10677	10691	10705	10720	10734	10749
1571.1	10763	10777	10792	10806	10821	10835	10849	10864	10878	10893
1571.2	10907	10922	10936	10951	10965	10980	10995	11009	11024	11038
1571.3	11053	11068	11082	11097	11111	11126	11141	11155	11170	11184
1571.4	11199	11214	11229	11243	11258	11273	11288	11303	11317	11332
1571.5	11347	11362	11377	11391	11406	11421	11436	11451	11465	11480
1571.6	11495	11510	11525	11540	11555	11570	11584	11599	11614	11629
1571.7	11644	11659	11674	11689	11704	11719	11734	11749	11764	11779
1571.8	11794	11809	11824	11839	11854	11870	11885	11900	11915	11930
1571.9	11945	11960	11975	11990	12005	12021	12036	12051	12066	12081
1572.0	12096	12111	12127	12142	12157	12173	12188	12203	12218	12234
1572.1	12249	12264	12280	12295	12311	12326	12341	12357	12372	12388
1572.2	12403	12419	12434	12450	12465	12481	12496	12512	12527	12543
1572.3	12558	12574	12589	12605	12621	12637	12652	12668	12684	12699
1572.4	12715	12731	12746	12762	12778	12794	12809	12825	12841	12856
1572.5	12872	12888	12904	12920	12936	12952	12967	12983	12999	13015
1572.6	13031	13047	13063	13079	13095	13111	13126	13142	13158	13174
1572.7	13190	13206	13222	13238	13254	13271	13287	13303	13319	13335
1572.8	13351	13367	13383	13400	13416	13432	13448	13464	13481	13497
1572.9	13513	13529	13546	13562	13578	13595	13611	13627	13643	13660
1573.0	13676	13693	13709	13726	13742	13759	13775	13792	13808	13825
1573.1	13841	13858	13874	13891	13907	13924	13940	13957	13973	13990
1573.2	14006	14023	14039	14056	14073	14090	14106	14123	14140	14156
1573.3	14173	14190	14207	14223	14240	14257	14274	14291	14307	14324
1573.4	14341	14358	14375	14392	14409	14426	14442	14459	14476	14493
1573.5	14510	14527	14544	14561	14578	14595	14612	14629	14646	14663
1573.6	14680	14697	14714	14731	14748	14766	14783	14800	14817	14834
1573.7	14851	14868	14885	14903	14920	14937	14954	14971	14989	15006
1573.8	15023	15040	15058	15075	15093	15110	15127	15145	15162	15180
1573.9	15197	15215	15232	15250	15267	15285	15302	15320	15337	15355
1574.0	15372	15390	15407	15425	15442	15460	15478	15495	15513	15530
1574.1	15548	15566	15583	15601	15619	15637	15654	15672	15690	15707

LOVEWELL RESERVOIR
CAPACITY IN ACRE-FEET

Effective 1-1-97

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
1574.2	15725	15743	15761	15779	15797	15815	15832	15850	15868	15886
1574.3	15904	15922	15940	15958	15976	15994	16012	16030	16048	16066
1574.4	16084	16102	16120	16139	16157	16175	16193	16211	16230	16248
1574.5	16266	16284	16303	16321	16339	16358	16376	16394	16412	16431
1574.6	16449	16467	16486	16504	16523	16541	16559	16578	16596	16615
1574.7	16633	16652	16670	16689	16707	16726	16745	16763	16782	16800
1574.8	16819	16838	16856	16875	16894	16913	16931	16950	16969	16987
1574.9	17006	17025	17044	17062	17081	17100	17119	17138	17156	17175
1575.0	17194	17213	17232	17251	17270	17289	17308	17327	17346	17365
1575.1	17384	17403	17422	17442	17461	17480	17499	17518	17538	17557
1575.2	17576	17595	17614	17634	17653	17672	17691	17710	17730	17749
1575.3	17768	17787	17807	17826	17846	17865	17884	17904	17923	17943
1575.4	17962	17982	18001	18021	18040	18060	18080	18099	18119	18138
1575.5	18158	18178	18197	18217	18236	18256	18276	18295	18315	18334
1575.6	18354	18374	18394	18413	18433	18453	18473	18493	18512	18532
1575.7	18552	18572	18592	18612	18632	18652	18672	18692	18712	18732
1575.8	18752	18772	18792	18812	18832	18853	18873	18893	18913	18933
1575.9	18953	18973	18993	19014	19034	19054	19074	19094	19115	19135
1576.0	19155	19175	19196	19216	19237	19257	19277	19298	19318	19339
1576.1	19359	19380	19400	19421	19441	19462	19482	19503	19523	19544
1576.2	19564	19585	19605	19626	19646	19667	19688	19708	19729	19749
1576.3	19770	19791	19812	19832	19853	19874	19895	19916	19936	19957
1576.4	19978	19999	20020	20041	20062	20083	20103	20124	20145	20166
1576.5	20187	20208	20229	20250	20271	20293	20314	20335	20356	20377
1576.6	20398	20419	20440	20462	20483	20504	20525	20546	20568	20589
1576.7	20610	20631	20653	20674	20696	20717	20738	20760	20781	20803
1576.8	20824	20846	20867	20889	20910	20932	20953	20975	20996	21018
1576.9	21039	21061	21082	21104	21126	21148	21169	21191	21213	21234
1577.0	21256	21278	21299	21321	21343	21365	21386	21408	21430	21451
1577.1	21473	21495	21517	21539	21561	21583	21605	21627	21649	21671
1577.2	21693	21715	21737	21759	21781	21804	21826	21848	21870	21892
1577.3	21914	21936	21958	21981	22003	22025	22047	22069	22092	22114
1577.4	22136	22158	22181	22203	22226	22248	22270	22293	22315	22338
1577.5	22360	22383	22405	22428	22450	22473	22495	22518	22540	22563
1577.6	22585	22608	22630	22653	22675	22698	22721	22743	22766	22788
1577.7	22811	22834	22857	22879	22902	22925	22948	22971	22993	23016
1577.8	23039	23062	23085	23108	23131	23154	23177	23200	23223	23246
1577.9	23269	23292	23315	23338	23361	23385	23408	23431	23454	23477
1578.0	23500	23523	23546	23570	23593	23616	23639	23662	23686	23709
1578.1	23732	23755	23779	23802	23825	23849	23872	23895	23918	23942
1578.2	23965	23989	24012	24036	24059	24083	24107	24130	24154	24177
1578.3	24201	24225	24248	24272	24295	24319	24343	24366	24390	24413
1578.4	24437	24461	24485	24508	24532	24556	24580	24604	24627	24651
1578.5	24675	24699	24723	24747	24771	24795	24818	24842	24866	24890
1578.6	24914	24938	24962	24986	25010	25035	25059	25083	25107	25131
1578.7	25155	25179	25203	25228	25252	25276	25300	25324	25349	25373
1578.8	25397	25421	25446	25470	25494	25519	25543	25567	25591	25616
1578.9	25640	25665	25689	25714	25738	25763	25787	25812	25836	25861
1579.0	25885	25910	25934	25959	25983	26008	26033	26057	26082	26106
1579.1	26131	26156	26181	26205	26230	26255	26280	26305	26329	26354
1579.2	26379	26404	26429	26454	26479	26504	26528	26553	26578	26603
1579.3	26628	26653	26678	26703	26728	26753	26778	26803	26828	26853
1579.4	26878	26903	26928	26954	26979	27004	27029	27054	27080	27105
1579.5	27130	27155	27181	27206	27231	27257	27282	27307	27332	27358
1579.6	27383	27409	27434	27460	27485	27511	27536	27562	27587	27613
1579.7	27638	27664	27689	27715	27740	27766	27792	27817	27843	27868
1579.8	27894	27920	27945	27971	27997	28023	28048	28074	28100	28125
1579.9	28151	28177	28203	28229	28255	28281	28306	28332	28358	28384
1580.0	28410	28436	28462	28488	28514	28540	28566	28592	28618	28644

LOVEWELL RESERVOIR

CAPACITY IN ACRE-FEET

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	.08	Effective 1-1-97 .09
1580.1	28670	28696	28722	28749	28775	28801	28827	28853	28880	28906
1580.2	28932	28958	28985	29011	29037	29064	29090	29116	29142	29169
1580.3	29195	29222	29248	29275	29301	29328	29354	29381	29407	29434
1580.4	29460	29487	29513	29540	29566	29593	29620	29646	29673	29699
1580.5	29726	29753	29779	29806	29833	29860	29886	29913	29940	29966
1580.6	29993	30020	30047	30074	30101	30128	30155	30182	30209	30236
1580.7	30263	30290	30317	30344	30371	30399	30426	30453	30480	30507
1580.8	30534	30561	30588	30616	30643	30670	30697	30724	30752	30779
1580.9	30806	30833	30861	30888	30916	30943	30970	30998	31025	31053
1581.0	31080	31108	31135	31163	31190	31218	31245	31273	31300	31328
1581.1	31355	31383	31410	31438	31466	31494	31521	31549	31577	31604
1581.2	31632	31660	31688	31715	31743	31771	31799	31827	31854	31882
1581.3	31910	31938	31966	31994	32022	32050	32078	32106	32134	32162
1581.4	32190	32218	32246	32274	32302	32331	32359	32387	32415	32443
1581.5	32471	32499	32528	32556	32584	32613	32641	32669	32697	32726
1581.6	32754	32783	32811	32840	32868	32897	32925	32954	32982	33011
1581.7	33039	33068	33096	33125	33153	33182	33210	33239	33267	33296
1581.8	33324	33353	33382	33410	33439	33468	33497	33526	33554	33583
1581.9	33612	33641	33670	33699	33728	33757	33785	33814	33843	33872
1582.0	33901	33930	33959	33988	34017	34046	34075	34104	34133	34162
1582.1	34191	34220	34249	34279	34308	34337	34366	34395	34425	34454
1582.2	34483	34512	34542	34571	34600	34630	34659	34688	34717	34747
1582.3	34776	34806	34835	34865	34894	34924	34953	34983	35012	35042
1582.4	35071	35101	35130	35160	35190	35220	35249	35279	35309	35338
1582.5	35368	35398	35428	35457	35487	35517	35547	35577	35606	35636
1582.6	35666	35696	35726	35756	35786	35816	35845	35875	35905	35935
1582.7	35965	35995	36025	36055	36085	36116	36146	36176	36206	36236
1582.8	36266	36296	36327	36357	36387	36418	36448	36478	36508	36539
1582.9	36569	36599	36630	36660	36691	36721	36751	36782	36812	36843
1583.0	36873	36904	36934	36965	36995	37026	37056	37087	37117	37148
1583.1	37178	37209	37239	37270	37301	37332	37362	37393	37424	37454
1583.2	37485	37516	37547	37578	37609	37640	37670	37701	37732	37763
1583.3	37794	37825	37856	37887	37918	37949	37980	38011	38042	38073
1583.4	38104	38135	38166	38198	38229	38260	38291	38322	38354	38385
1583.5	38416	38447	38479	38510	38541	38573	38604	38635	38666	38698
1583.6	38729	38760	38792	38823	38855	38886	38917	38949	38980	39012
1583.7	39043	39075	39106	39138	39169	39201	39233	39264	39296	39327
1583.8	39359	39391	39423	39454	39486	39518	39550	39582	39613	39645
1583.9	39677	39709	39741	39773	39805	39837	39868	39900	39932	39964
1584.0	39996	40028	40060	40092	40124	40157	40189	40221	40253	40285
1584.1	40317	40349	40381	40414	40446	40478	40510	40542	40575	40607
1584.2	40639	40671	40704	40736	40769	40801	40833	40866	40898	40931
1584.3	40963	40996	41028	41061	41093	41126	41158	41191	41223	41256
1584.4	41288	41321	41353	41386	41419	41452	41484	41517	41550	41582
1584.5	41615	41648	41681	41713	41746	41779	41812	41845	41877	41910
1584.6	41943	41976	42009	42042	42075	42108	42140	42173	42206	42239
1584.7	42272	42305	42338	42372	42405	42438	42471	42504	42538	42571
1584.8	42604	42637	42670	42704	42737	42770	42803	42836	42870	42903
1584.9	42936	42970	43003	43037	43070	43104	43137	43171	43204	43238
1585.0	43271	43305	43338	43372	43405	43439	43472	43506	43539	43573
1585.1	43606	43640	43674	43707	43741	43775	43809	43843	43876	43910
1585.2	43944	43978	44012	44045	44079	44113	44147	44181	44214	44248
1585.3	44282	44316	44350	44384	44418	44453	44487	44521	44555	44589
1585.4	44623	44657	44691	44726	44760	44794	44828	44862	44897	44931
1585.5	44965	44999	45034	45068	45102	45137	45171	45205	45239	45274
1585.6	45308	45343	45377	45412	45446	45481	45515	45550	45584	45619
1585.7	45653	45688	45722	45757	45791	45826	45861	45895	45930	45964
1585.8	45999	46034	46069	46103	46138	46173	46208	46243	46277	46312
1585.9	46347	46382	46417	46452	46487	46522	46557	46592	46627	46662

LOVEWELL RESERVOIR

CAPACITY IN ACRE-FEET

Effective 1-1-97

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
1586.0	46697	46732	46767	46802	46837	46872	46907	46942	46977	47012
1586.1	47047	47082	47118	47153	47188	47224	47259	47294	47329	47365
1586.2	47400	47435	47471	47506	47542	47577	47612	47648	47683	47719
1586.3	47754	47790	47825	47861	47896	47932	47967	48003	48038	48074
1586.4	48109	48145	48180	48216	48252	48288	48323	48359	48395	48430
1586.5	48466	48502	48538	48574	48610	48646	48681	48717	48753	48789
1586.6	48825	48861	48897	48933	48969	49005	49041	49077	49113	49149
1586.7	49185	49221	49257	49294	49330	49366	49402	49438	49475	49511
1586.8	49547	49583	49620	49656	49692	49729	49765	49801	49837	49874
1586.9	49910	49946	49983	50019	50056	50092	50128	50165	50201	50238
1587.0	50274	50311	50347	50384	50420	50457	50494	50530	50567	50603
1587.1	50640	50677	50714	50750	50787	50824	50861	50898	50934	50971
1587.2	51008	51045	51082	51119	51156	51193	51229	51266	51303	51340
1587.3	51377	51414	51451	51488	51525	51563	51600	51637	51674	51711
1587.4	51748	51785	51822	51860	51897	51934	51971	52008	52046	52083
1587.5	52120	52157	52195	52232	52270	52307	52344	52382	52419	52457
1587.6	52494	52532	52569	52607	52644	52682	52719	52757	52794	52832
1587.7	52869	52907	52944	52982	53020	53058	53095	53133	53171	53208
1587.8	53246	53284	53322	53359	53397	53435	53473	53511	53548	53586
1587.9	53624	53662	53700	53738	53776	53814	53852	53890	53928	53966
1588.0	54004	54042	54080	54118	54156	54195	54233	54271	54309	54347
1588.1	54385	54423	54462	54500	54538	54577	54615	54653	54691	54730
1588.2	54768	54806	54845	54883	54922	54960	54998	55037	55075	55114
1588.3	55152	55191	55229	55268	55306	55345	55384	55422	55461	55499
1588.4	55538	55577	55615	55654	55693	55732	55770	55809	55848	55886
1588.5	55925	55964	56003	56042	56081	56120	56158	56197	56236	56275
1588.6	56314	56353	56392	56431	56470	56510	56549	56588	56627	56666
1588.7	56705	56744	56783	56823	56862	56901	56940	56979	57019	57058
1588.8	57097	57136	57176	57215	57254	57294	57333	57372	57411	57451
1588.9	57490	57530	57569	57609	57648	57688	57727	57767	57806	57846
1589.0	57885	57925	57964	58004	58044	58084	58123	58163	58203	58242
1589.1	58282	58322	58362	58401	58441	58481	58521	58561	58600	58640
1589.2	58680	58720	58760	58800	58840	58880	58919	58959	58999	59039
1589.3	59079	59119	59159	59199	59239	59280	59320	59360	59400	59440
1589.4	59480	59520	59561	59601	59641	59682	59722	59762	59802	59843
1589.5	59883	59923	59964	60004	60045	60085	60125	60166	60206	60247
1589.6	60287	60328	60368	60409	60449	60490	60530	60571	60611	60652
1589.7	60692	60733	60773	60814	60855	60896	60936	60977	61018	61058
1589.8	61099	61140	61181	61222	61263	61304	61344	61385	61426	61467
1589.9	61508	61549	61590	61631	61672	61713	61754	61795	61836	61877
1590.0	61918	61959	62000	62042	62083	62124	62165	62206	62248	62289
1590.1	62330	62371	62413	62454	62495	62537	62578	62619	62660	62702
1590.2	62743	62785	62826	62868	62909	62951	62993	63034	63076	63117
1590.3	63159	63201	63242	63284	63326	63368	63409	63451	63493	63534
1590.4	63576	63618	63660	63701	63743	63785	63827	63869	63910	63952
1590.5	63994	64036	64078	64120	64162	64205	64247	64289	64331	64373
1590.6	64415	64457	64499	64542	64584	64626	64668	64710	64753	64795
1590.7	64837	64879	64922	64964	65007	65049	65091	65134	65176	65219
1590.8	65261	65304	65346	65389	65431	65474	65516	65559	65601	65644
1590.9	65686	65729	65772	65814	65857	65900	65943	65986	66028	66071
1591.0	66114	66157	66200	66243	66286	66329	66371	66414	66457	66500
1591.1	66543	66586	66629	66672	66715	66759	66802	66845	66888	66931
1591.2	66974	67017	67060	67104	67147	67190	67233	67276	67320	67363
1591.3	67406	67450	67493	67537	67580	67624	67667	67711	67754	67798
1591.4	67841	67885	67928	67972	68015	68059	68103	68146	68190	68233
1591.5	68277	68321	68365	68408	68452	68496	68540	68584	68627	68671
1591.6	68715	68759	68803	68847	68891	68935	68978	69022	69066	69110
1591.7	69154	69198	69242	69286	69330	69375	69419	69463	69507	69551
1591.8	69595	69639	69684	69728	69772	69817	69861	69905	69949	69994
1591.9	70038	70083	70127	70172	70216	70261	70305	70350	70394	70439

LOVEWELL RESERVOIR
CAPACITY IN ACRE-FEET

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	.08	Effective 1-1-97 .09
1592.0	70483	70528	70572	70617	70661	70706	70751	70795	70840	70884
1592.1	70929	70974	71019	71064	71109	71154	71198	71243	71288	71333
1592.2	71378	71423	71468	71513	71558	71603	71647	71692	71737	71782
1592.3	71827	71872	71917	71963	72008	72053	72098	72143	72189	72234
1592.4	72279	72324	72370	72415	72461	72506	72551	72597	72642	72688
1592.5	72733	72779	72824	72870	72915	72961	73006	73052	73097	73143
1592.6	73188	73234	73279	73325	73370	73416	73462	73507	73553	73598
1592.7	73644	73690	73736	73782	73828	73874	73919	73965	74011	74057
1592.8	74103	74149	74195	74241	74287	74333	74379	74425	74471	74517
1592.9	74563	74609	74655	74702	74748	74794	74840	74886	74933	74979
1593.0	75025	75071	75118	75164	75211	75257	75303	75350	75396	75443
1593.1	75489	75536	75582	75629	75675	75722	75769	75815	75862	75908
1593.2	75955	76002	76048	76095	76142	76189	76235	76282	76329	76375
1593.3	76422	76469	76516	76563	76610	76657	76703	76750	76797	76844
1593.4	76891	76938	76985	77032	77079	77127	77174	77221	77268	77315
1593.5	77362	77409	77456	77504	77551	77598	77645	77692	77740	77787
1593.6	77834	77881	77929	77976	78024	78071	78118	78166	78213	78261
1593.7	78308	78356	78403	78451	78498	78546	78594	78641	78689	78736
1593.8	78784	78832	78880	78927	78975	79023	79071	79119	79166	79214
1593.9	79262	79310	79358	79406	79454	79502	79549	79597	79645	79693
1594.0	79741	79789	79837	79885	79933	79982	80030	80078	80126	80174
1594.1	80222	80270	80319	80367	80415	80464	80512	80560	80608	80657
1594.2	80705	80754	80802	80851	80899	80948	80996	81045	81093	81142
1594.3	81190	81239	81287	81336	81384	81433	81482	81530	81579	81627
1594.4	81676	81725	81774	81822	81871	81920	81969	82018	82066	82115
1594.5	82164	82213	82262	82311	82360	82409	82458	82507	82556	82605
1594.6	82654	82703	82752	82802	82851	82900	82949	82998	83048	83097
1594.7	83146	83195	83245	83294	83343	83393	83442	83491	83540	83590
1594.8	83639	83689	83738	83788	83837	83887	83936	83986	84035	84085
1594.9	84134	84184	84233	84283	84333	84383	84432	84482	84532	84581
1595.0	84631	84681	84731	84780	84830	84880	84930	84980	85029	85079
1595.1	85129	85179	85229	85279	85329	85379	85429	85479	85529	85579
1595.2	85629	85679	85729	85780	85830	85880	85930	85980	86031	86081
1595.3	86131	86181	86232	86282	86332	86383	86433	86483	86533	86584
1595.4	86634	86685	86735	86786	86836	86887	86937	86988	87038	87089
1595.5	87139	87190	87240	87291	87341	87392	87443	87493	87544	87594
1595.6	87645	87696	87747	87797	87848	87899	87950	88001	88051	88102
1595.7	88153	88204	88255	88306	88357	88408	88459	88510	88561	88612
1595.8	88663	88714	88765	88816	88867	88919	88970	89021	89072	89123
1595.9	89174	89225	89277	89328	89379	89431	89482	89533	89584	89636
1596.0	89687	89739	89790	89842	89893	89945	89996	90048	90099	90151
1596.1	90202	90254	90305	90357	90408	90460	90512	90563	90615	90666
1596.2	90718	90770	90821	90873	90925	90977	91028	91080	91132	91183
1596.3	91235	91287	91339	91391	91443	91495	91547	91599	91651	91703
1596.4	91755	91807	91859	91911	91963	92016	92068	92120	92172	92224
1596.5	92276	92328	92380	92433	92485	92537	92589	92641	92694	92746
1596.6	92798	92850	92903	92955	93008	93060	93112	93165	93217	93270
1596.7	93322	93375	93427	93480	93532	93585	93638	93690	93743	93795
1596.8	93848	93901	93953	94006	94059	94112	94164	94217	94270	94322
1596.9	94375	94428	94481	94534	94587	94640	94692	94745	94798	94851
1597.0	94904	94957	95010	95063	95116	95170	95223	95276	95329	95382
1597.1	95435	95488	95541	95595	95648	95701	95754	95807	95861	95914
1597.2	95967	96020	96074	96127	96181	96234	96287	96341	96394	96448
1597.3	96501	96555	96608	96662	96715	96769	96822	96876	96929	96983
1597.4	97036	97090	97143	97197	97251	97305	97358	97412	97466	97519
1597.5	97573	97627	97681	97735	97789	97843	97896	97950	98004	98058
1597.6	98112	98166	98220	98274	98328	98382	98436	98490	98544	98598
1597.7	98652	98706	98760	98815	98869	98923	98977	99031	99086	99140
1597.8	99194	99248	99303	99357	99411	99466	99520	99574	99628	99683

LOVEWELL RESERVOIR
CAPACITY IN ACRE-FEET

Effective 1-1-97

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
1597.9	99737	99792	99846	99901	99955	100010	100064	100119	100173	100228
1598.0	100282	100337	100391	100446	100501	100556	100610	100665	100720	100774
1598.1	100829	100884	100939	100993	101048	101103	101158	101213	101267	101322
1598.2	101377	101432	101487	101542	101597	101652	101707	101762	101817	101872
1598.3	101927	101982	102037	102092	102147	102203	102258	102313	102368	102423
1598.4	102478	102533	102589	102644	102700	102755	102810	102866	102921	102977
1598.5	103032	103087	103143	103198	103254	103309	103364	103420	103475	103531
1598.6	103586	103642	103697	103753	103809	103865	103920	103976	104032	104087
1598.7	104143	104199	104254	104310	104366	104422	104477	104533	104589	104644
1598.8	104700	104756	104812	104868	104924	104980	105036	105092	105148	105204
1598.9	105260	105316	105372	105428	105484	105541	105597	105653	105709	105765
1599.0	105821	105877	105934	105990	106046	106103	106159	106215	106271	106328
1599.1	106384	106440	106497	106553	106610	106666	106722	106779	106835	106892
1599.2	106948	107005	107061	107118	107174	107231	107288	107344	107401	107457
1599.3	107514	107571	107628	107684	107741	107798	107855	107912	107968	108025
1599.4	108082	108139	108196	108253	108310	108367	108423	108480	108537	108594
1599.5	108651	108708	108765	108822	108879	108937	108994	109051	109108	109165
1599.6	109222	109279	109336	109394	109451	109508	109565	109622	109680	109737
1599.7	109794	109851	109909	109966	110024	110081	110138	110196	110253	110311
1599.8	110368	110426	110483	110541	110598	110656	110713	110771	110828	110886
1599.9	110943	111001	111059	111116	111174	111232	111290	111348	111405	111463
1600.0	111521	111579	111637	111694	111752	111810	111868	111926	111983	112041
1600.1	112099	112157	112215	112273	112331	112390	112448	112506	112564	112622
1600.2	112680	112738	112796	112855	112913	112971	113029	113087	113146	113204
1600.3	113262	113320	113379	113437	113496	113554	113612	113671	113729	113788
1600.4	113846	113905	113963	114022	114080	114139	114198	114256	114315	114373
1600.5	114432	114491	114549	114608	114667	114726	114784	114843	114902	114960
1600.6	115019	115078	115137	115196	115255	115314	115372	115431	115490	115549
1600.7	115608	115667	115726	115785	115844	115903	115962	116021	116080	116139
1600.8	116198	116257	116317	116376	116435	116495	116554	116613	116672	116732
1600.9	116791	116850	116910	116969	117029	117088	117147	117207	117266	117326
1601.0	117385	117445	117504	117564	117623	117683	117742	117802	117861	117921
1601.1	117980	118040	118100	118159	118219	118279	118339	118399	118458	118518
1601.2	118578	118638	118698	118758	118818	118878	118937	118997	119057	119117
1601.3	119177	119237	119297	119357	119417	119477	119537	119597	119657	119717
1601.4	119777	119837	119898	119958	120018	120079	120139	120199	120259	120320
1601.5	120380	120440	120501	120561	120622	120682	120742	120803	120863	120924
1601.6	120984	121045	121105	121166	121226	121287	121347	121408	121468	121529
1601.7	121589	121650	121711	121771	121832	121893	121954	122015	122075	122136
1601.8	122197	122258	122319	122380	122441	122502	122562	122623	122684	122745
1601.9	122806	122867	122928	122989	123050	123112	123173	123234	123295	123356
1602.0	123417	123478	123539	123601	123662	123723	123784	123845	123907	123968
1602.1	124029	124090	124152	124213	124275	124336	124397	124459	124520	124582
1602.2	124643	124705	124766	124828	124889	124951	125013	125074	125136	125197
1602.3	125259	125321	125382	125444	125506	125568	125629	125691	125753	125814
1602.4	125876	125938	126000	126062	126124	126186	126248	126310	126372	126434
1602.5	126496	126558	126620	126682	126744	126806	126868	126930	126992	127054
1602.6	127116	127178	127241	127303	127365	127428	127490	127552	127614	127677
1602.7	127739	127801	127864	127926	127989	128051	128113	128176	128238	128301
1602.8	128363	128426	128488	128551	128613	128676	128739	128801	128864	128926
1602.9	128989	129052	129115	129177	129240	129303	129366	129429	129491	129554
1603.0	129617	129680	129743	129806	129869	129932	129994	130057	130120	130183
1603.1	130246	130309	130372	130435	130498	130562	130625	130688	130751	130814
1603.2	130877	130940	131003	131067	131130	131193	131256	131319	131383	131446
1603.3	131509	131573	131636	131700	131763	131827	131890	131954	132017	132081
1603.4	132144	132208	132271	132335	132398	132462	132526	132589	132653	132716
1603.5	132780	132844	132907	132971	133035	133099	133162	133226	133290	133353
1603.6	133417	133481	133545	133609	133673	133737	133801	133865	133929	133993
1603.7	134057	134121	134185	134249	134313	134378	134442	134506	134570	134634

LOVEWELL RESERVOIR

CAPACITY IN ACRE-FEET

Effective 1-1-97

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
1603.8	134698	134762	134826	134891	134955	135019	135083	135147	135212	135276
1603.9	135340	135405	135469	135534	135598	135663	135727	135792	135856	135921
1604.0	135985	136050	136114	136179	136243	136308	136373	136437	136502	136566
1604.1	136631	136696	136760	136825	136890	136955	137019	137084	137149	137213
1604.2	137278	137343	137408	137473	137538	137603	137668	137733	137798	137863
1604.3	137928	137993	138058	138123	138188	138254	138319	138384	138449	138514
1604.4	138579	138644	138710	138775	138840	138906	138971	139036	139101	139167
1604.5	139232	139297	139363	139428	139494	139559	139624	139690	139755	139821
1604.6	139886	139952	140017	140083	140148	140214	140280	140345	140411	140476
1604.7	140542	140608	140674	140739	140805	140871	140937	141003	141068	141134
1604.8	141200	141266	141332	141398	141464	141530	141595	141661	141727	141793
1604.9	141859	141925	141991	142058	142124	142190	142256	142322	142389	142455
1605.0	142521	142587	142654	142720	142786	142853	142919	142985	143051	143118
1605.1	143184	143250	143317	143383	143450	143516	143582	143649	143715	143782
1605.2	143848	143915	143981	144048	144115	144182	144248	144315	144382	144448
1605.3	144515	144582	144649	144716	144783	144850	144916	144983	145050	145117
1605.4	145184	145251	145318	145385	145452	145519	145586	145653	145720	145787
1605.5	145854	145921	145989	146056	146123	146191	146258	146325	146392	146460
1605.6	146527	146594	146662	146729	146797	146864	146931	146999	147066	147134
1605.7	147201	147269	147336	147404	147471	147539	147607	147674	147742	147809
1605.8	147877	147945	148013	148081	148149	148217	148284	148352	148420	148488
1605.9	148556	148624	148692	148760	148828	148896	148964	149032	149100	149168
1606.0	149236	149304	149372	149441	149509	149577	149645	149713	149782	149850
1606.1	149918	149986	150055	150123	150191	150260	150328	150396	150464	150533
1606.2	150601	150670	150738	150807	150875	150944	151013	151081	151150	151218
1606.3	151287	151356	151425	151493	151562	151631	151700	151769	151837	151906
1606.4	151975	152044	152113	152182	152251	152320	152388	152457	152526	152595
1606.5	152664	152733	152802	152872	152941	153010	153079	153148	153218	153287
1606.6	153356	153425	153495	153564	153633	153703	153772	153841	153910	153980
1606.7	154049	154119	154188	154258	154327	154397	154466	154536	154605	154675
1606.8	154744	154814	154884	154953	155023	155093	155163	155233	155302	155372
1606.9	155442	155512	155582	155652	155722	155792	155861	155931	156001	156071
1607.0	156141	156211	156281	156351	156421	156492	156562	156632	156702	156772
1607.1	156842	156912	156982	157053	157123	157193	157263	157333	157404	157474
1607.2	157544	157615	157685	157756	157826	157897	157967	158038	158108	158179
1607.3	158249	158320	158390	158461	158532	158603	158673	158744	158815	158885
1607.4	158956	159027	159098	159168	159239	159310	159381	159452	159522	159593
1607.5	159664	159735	159806	159877	159948	160020	160091	160162	160233	160304
1607.6	160375	160446	160517	160589	160660	160731	160802	160873	160945	161016
1607.7	161087	161158	161230	161301	161373	161444	161515	161587	161658	161730
1607.8	161801	161873	161944	162016	162088	162160	162231	162303	162375	162446
1607.9	162518	162590	162662	162733	162805	162877	162949	163021	163092	163164
1608.0	163236	163308	163380	163452	163524	163596	163668	163740	163812	163884
1608.1	163956	164028	164100	164172	164244	164317	164389	164461	164533	164605
1608.2	164677	164749	164822	164894	164967	165039	165111	165184	165256	165329
1608.3	165401	165474	165546	165619	165691	165764	165837	165909	165982	166054
1608.4	166127	166200	166272	166345	166418	166491	166563	166636	166709	166781
1608.5	166854	166927	167000	167073	167146	167219	167292	167365	167438	167511
1608.6	167584	167657	167730	167803	167876	167950	168023	168096	168169	168242
1608.7	168315	168388	168462	168535	168608	168682	168755	168828	168901	168975
1608.8	169048	169122	169195	169269	169342	169416	169490	169563	169637	169710
1608.9	169784	169858	169931	170005	170079	170153	170226	170300	170374	170447
1609.0	170521	170595	170669	170743	170817	170891	170964	171038	171112	171186
1609.1	171260	171334	171408	171482	171556	171630	171704	171778	171852	171926
1609.2	172000	172074	172149	172223	172297	172372	172446	172520	172594	172669
1609.3	172743	172818	172892	172967	173041	173116	173190	173265	173339	173414
1609.4	173488	173563	173637	173712	173786	173861	173936	174010	174085	174159
1609.5	174234	174309	174384	174459	174534	174609	174683	174758	174833	174908
1609.6	174983	175058	175133	175208	175283	175358	175433	175508	175583	175658

LOVEWELL RESERVOIR

CAPACITY IN ACRE-FEET

Effective 1-1-97

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	.08	.09
1609.7	175733	175808	175883	175959	176034	176109	176184	176259	176335	176410
1609.8	176485	176561	176636	176712	176787	176863	176938	177014	177089	177165
1609.9	177240	177316	177391	177467	177542	177618	177694	177769	177845	177920
1610.0	177996	178072	178148	178223	178299	178375	178451	178527	178602	178678
1610.1	178754	178830	178906	178982	179058	179134	179210	179286	179362	179438
1610.2	179514	179590	179666	179743	179819	179895	179971	180047	180124	180200
1610.3	180276									

LOVEWELL RESERVOIR
AREA IN ACRES

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	Effective: .08	1-1-97 .09
1550.0	0	0	0	0	0	0	0	0	0	0
1550.1	0	0	0	0	0	0	0	0	0	0
1550.2	0	0	0	0	0	0	0	0	0	0
1550.3	0	0	0	0	0	0	0	0	0	0
1550.4	0	0	0	0	0	1	1	1	1	1
1550.5	1	1	1	1	1	1	1	1	1	1
1550.6	1	1	1	1	1	1	1	1	1	1
1550.7	1	1	1	1	1	2	2	2	2	2
1550.8	2	2	2	2	2	2	2	2	2	2
1550.9	2	2	2	2	2	2	2	2	2	2
1551.0	2	2	2	2	2	3	3	3	3	3
1551.1	3	3	3	3	3	3	3	3	3	3
1551.2	3	3	3	3	3	4	4	4	4	4
1551.3	4	4	4	4	4	4	4	4	4	4
1551.4	4	4	4	4	4	4	4	4	4	4
1551.5	4	4	4	4	4	5	5	5	5	5
1551.6	5	5	5	5	5	5	5	5	5	5
1551.7	5	5	5	5	5	5	5	5	5	5
1551.8	5	5	5	5	5	6	6	6	6	6
1551.9	6	6	6	6	6	6	6	6	6	6
1552.0	6	6	6	6	6	6	6	6	6	6
1552.1	6	6	6	6	6	7	7	7	7	7
1552.2	7	7	7	7	7	7	7	7	7	7
1552.3	7	7	7	7	7	7	7	7	7	7
1552.4	7	7	7	7	7	8	8	8	8	8
1552.5	8	8	8	8	8	8	8	8	8	8
1552.6	8	8	8	8	8	8	8	8	8	8
1552.7	8	8	8	8	8	8	8	8	8	8
1552.8	8	8	8	8	8	9	9	9	9	9
1552.9	9	9	9	9	9	9	9	9	9	9
1553.0	9	9	9	9	9	9	9	9	9	9
1553.1	9	9	9	9	9	10	10	10	10	10
1553.2	10	10	10	10	10	10	10	10	10	10
1553.3	10	10	10	10	10	10	10	10	10	10
1553.4	10	10	10	10	10	11	11	11	11	11
1553.5	11	11	11	11	11	11	11	11	11	11
1553.6	11	11	11	11	11	11	11	11	11	11
1553.7	11	11	11	11	11	12	12	12	12	12
1553.8	12	12	12	12	12	12	12	12	12	12
1553.9	12	12	12	12	12	12	12	12	12	12
1554.0	12	12	12	13	13	13	13	13	14	14
1554.1	14	14	14	15	15	15	15	15	16	16
1554.2	16	16	17	17	17	18	18	18	18	19
1554.3	19	19	19	20	20	20	20	20	21	21
1554.4	21	21	21	22	22	22	22	22	23	23
1554.5	23	23	23	24	24	24	24	24	25	25
1554.6	25	25	25	26	26	26	26	26	27	27
1554.7	27	27	27	28	28	28	28	28	29	29
1554.8	29	29	29	30	30	30	30	30	31	31
1554.9	31	31	32	32	32	33	33	33	33	34
1555.0	34	35	35	36	36	37	37	38	38	39
1555.1	39	40	40	41	41	42	43	43	44	44
1555.2	45	46	46	47	47	48	49	49	50	50
1555.3	51	52	52	53	53	54	54	55	55	56
1555.4	56	57	57	58	58	59	60	60	61	61
1555.5	62	63	63	64	64	65	65	66	66	67
1555.6	67	68	68	69	69	70	71	71	72	72
1555.7	73	74	74	75	75	76	77	77	78	78
1555.8	79	80	80	81	81	82	82	83	83	84
1555.9	84	85	85	86	86	87	88	88	89	89
1556.0	90	90	91	91	92	92	92	93	93	94
1556.1	94	95	95	96	96	97	97	98	98	99
1556.2	99	99	100	100	101	101	101	102	102	103
1556.3	103	103	104	104	105	105	105	106	106	107
1556.4	107	108	108	109	109	110	110	111	111	112
1556.5	112	112	113	113	114	114	114	115	115	116
1556.6	116	117	117	118	118	119	119	120	120	121
1556.7	121	121	122	122	123	123	123	124	124	125
1556.8	125	125	126	126	127	127	127	128	128	129
1556.9	129	130	130	131	131	132	132	133	133	134
1557.0	134	134	135	135	136	136	136	137	137	138
1557.1	138	138	139	139	140	140	140	141	141	142
1557.2	142	143	143	144	144	145	145	146	146	147
1557.3	147	147	148	148	149	149	149	150	150	151
1557.4	151	152	152	153	153	154	154	155	155	156
1557.5	156	156	157	157	158	158	158	159	159	160

LOVEWELL RESERVOIR
AREA IN ACRES

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	Effective: .08	1-1-97 .09
1557.6	160	160	161	161	162	162	162	163	163	164
1557.7	164	165	165	166	166	167	167	168	168	169
1557.8	169	169	170	170	171	171	171	172	172	173
1557.9	173	173	174	174	175	175	175	176	176	177
1558.0	177	178	178	179	179	180	181	181	182	182
1558.1	183	184	184	185	185	186	187	187	188	188
1558.2	189	190	190	191	191	192	193	193	194	194
1558.3	195	196	196	197	197	198	198	199	199	200
1558.4	200	201	201	202	202	203	204	204	205	205
1558.5	206	207	207	208	208	209	210	210	211	211
1558.6	212	213	213	214	214	215	216	216	217	217
1558.7	218	219	219	220	220	221	222	222	223	223
1558.8	224	225	225	226	226	227	227	228	228	229
1558.9	229	230	230	231	231	232	233	233	234	234
1559.0	235	236	236	237	237	238	239	239	240	240
1559.1	241	242	242	243	243	244	245	245	246	246
1559.2	247	248	248	249	249	250	250	251	251	252
1559.3	252	253	253	254	254	255	256	256	257	257
1559.4	258	259	259	260	260	261	262	262	263	263
1559.5	264	265	265	266	266	267	268	268	269	269
1559.6	270	271	271	272	272	273	273	274	274	275
1559.7	275	276	276	277	277	278	279	279	280	280
1559.8	281	282	282	283	283	284	285	285	286	286
1559.9	287	288	288	289	289	290	291	291	292	292
1560.0	293	294	295	296	297	298	298	299	300	301
1560.1	302	303	304	305	306	307	308	309	310	311
1560.2	312	313	314	315	316	317	318	319	320	321
1560.3	322	323	324	325	326	327	327	328	329	330
1560.4	331	332	333	334	335	336	337	338	339	340
1560.5	341	342	343	344	345	346	347	348	349	350
1560.6	351	352	353	354	355	356	356	357	358	359
1560.7	360	361	362	363	364	365	366	367	368	369
1560.8	370	371	372	373	374	375	376	377	378	379
1560.9	380	381	382	383	384	385	385	386	387	388
1561.0	389	390	391	392	393	394	395	396	397	398
1561.1	399	400	401	402	403	404	405	406	407	408
1561.2	409	410	411	412	413	414	414	415	416	417
1561.3	418	419	420	421	422	423	424	425	426	427
1561.4	428	429	430	431	432	433	434	435	436	437
1561.5	438	439	440	441	442	443	443	444	445	446
1561.6	447	448	449	450	451	452	453	454	455	456
1561.7	457	458	459	460	461	462	463	464	465	466
1561.8	467	468	469	470	471	472	472	473	474	475
1561.9	476	477	478	479	480	481	482	483	484	485
1562.0	486	487	488	490	491	492	493	494	496	497
1562.1	498	499	501	502	503	505	506	507	508	510
1562.2	511	512	513	515	516	517	518	519	521	522
1562.3	523	524	526	527	528	530	531	532	533	535
1562.4	536	537	538	540	541	542	543	544	546	547
1562.5	548	549	550	552	553	554	555	556	558	559
1562.6	560	561	563	564	565	567	568	569	570	572
1562.7	573	574	575	577	578	579	580	581	583	584
1562.8	585	586	587	589	590	591	592	593	595	596
1562.9	597	598	600	601	602	604	605	606	607	609
1563.0	610	611	612	614	615	616	617	618	620	621
1563.1	622	623	624	626	627	628	629	630	632	633
1563.2	634	635	637	638	639	641	642	643	644	646
1563.3	647	648	649	651	652	653	654	655	657	658
1563.4	659	660	661	663	664	665	666	667	669	670
1563.5	671	672	674	675	676	678	679	680	681	683
1563.6	684	685	686	688	689	690	691	692	694	695
1563.7	696	697	698	700	701	702	703	704	706	707
1563.8	708	709	711	712	713	715	716	717	718	720
1563.9	721	722	723	725	726	727	728	729	731	732
1564.0	733	734	736	737	738	740	741	742	743	745
1564.1	746	747	749	750	751	753	754	755	756	758
1564.2	759	760	762	763	764	766	767	768	769	771
1564.3	772	773	775	776	777	779	780	781	782	784
1564.4	785	786	788	789	790	792	793	794	795	797
1564.5	798	799	801	802	803	805	806	807	808	810
1564.6	811	812	814	815	816	818	819	820	821	823
1564.7	824	825	827	828	830	831	832	834	835	837
1564.8	838	839	841	842	843	845	846	847	848	850
1564.9	851	852	854	855	856	858	859	860	861	863
1565.0	864	865	866	867	868	870	871	872	873	874
1565.1	875	876	877	878	879	881	882	883	884	885

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Elevation	.00	.01	.02	.03	.04	.05	.06	.07	Effective: .08	1-1-97 .09
1565.2	886	887	888	890	891	892	893	894	896	897
1565.3	898	899	900	901	902	904	905	906	907	908
1565.4	909	910	911	913	914	915	916	917	919	920
1565.5	921	922	923	924	925	927	928	929	930	931
1565.6	932	933	934	936	937	938	939	940	942	943
1565.7	944	945	946	947	948	950	951	952	953	954
1565.8	955	956	957	959	960	961	962	963	965	966
1565.9	967	968	969	970	971	973	974	975	976	977
1566.0	978	979	980	981	982	983	984	985	986	987
1566.1	988	989	990	991	992	993	994	995	996	997
1566.2	998	999	1000	1001	1002	1003	1004	1005	1006	1007
1566.3	1008	1009	1010	1011	1012	1013	1013	1014	1015	1016
1566.4	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026
1566.5	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036
1566.6	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046
1566.7	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056
1566.8	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066
1566.9	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076
1567.0	1077	1078	1079	1080	1081	1082	1082	1083	1084	1085
1567.1	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095
1567.2	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105
1567.3	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115
1567.4	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125
1567.5	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135
1567.6	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145
1567.7	1146	1147	1148	1149	1150	1151	1151	1152	1153	1154
1567.8	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164
1567.9	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174
1568.0	1175	1176	1177	1177	1178	1179	1180	1181	1181	1182
1568.1	1183	1184	1185	1186	1187	1188	1188	1189	1190	1191
1568.2	1192	1193	1194	1194	1195	1196	1197	1198	1198	1199
1568.3	1200	1201	1202	1202	1203	1204	1205	1206	1206	1207
1568.4	1208	1209	1210	1211	1212	1213	1213	1214	1215	1216
1568.5	1217	1218	1219	1219	1220	1221	1222	1223	1223	1224
1568.6	1225	1226	1227	1227	1228	1229	1230	1231	1231	1232
1568.7	1233	1234	1235	1236	1237	1238	1238	1239	1240	1241
1568.8	1242	1243	1244	1244	1245	1246	1247	1248	1248	1249
1568.9	1250	1251	1252	1252	1253	1254	1255	1256	1256	1257
1569.0	1258	1259	1260	1261	1262	1263	1263	1264	1265	1266
1569.1	1267	1268	1269	1269	1270	1271	1272	1273	1273	1274
1569.2	1275	1276	1277	1277	1278	1279	1280	1281	1281	1282
1569.3	1283	1284	1285	1286	1287	1288	1288	1289	1290	1291
1569.4	1292	1293	1294	1294	1295	1296	1297	1298	1298	1299
1569.5	1300	1301	1302	1302	1303	1304	1305	1306	1306	1307
1569.6	1308	1309	1310	1311	1312	1313	1313	1314	1315	1316
1569.7	1317	1318	1319	1319	1320	1321	1322	1323	1323	1324
1569.8	1325	1326	1327	1327	1328	1329	1330	1331	1331	1332
1569.9	1333	1334	1335	1336	1337	1338	1338	1339	1340	1341
1570.0	1342	1343	1344	1345	1346	1347	1347	1348	1349	1350
1570.1	1351	1352	1353	1354	1355	1356	1356	1357	1358	1359
1570.2	1360	1361	1362	1363	1364	1365	1365	1366	1367	1368
1570.3	1369	1370	1371	1372	1373	1374	1374	1375	1376	1377
1570.4	1378	1379	1380	1381	1382	1383	1383	1384	1385	1386
1570.5	1387	1388	1389	1390	1391	1392	1392	1393	1394	1395
1570.6	1396	1397	1398	1399	1400	1401	1401	1402	1403	1404
1570.7	1405	1406	1407	1408	1409	1410	1410	1411	1412	1413
1570.8	1414	1415	1416	1417	1418	1419	1419	1420	1421	1422
1570.9	1423	1424	1425	1426	1427	1428	1428	1429	1430	1431
1571.0	1432	1433	1434	1435	1436	1437	1437	1438	1439	1440
1571.1	1441	1442	1443	1444	1445	1446	1446	1447	1448	1449
1571.2	1450	1451	1452	1453	1454	1455	1455	1456	1457	1458
1571.3	1459	1460	1461	1462	1463	1464	1464	1465	1466	1467
1571.4	1468	1469	1470	1471	1472	1473	1473	1474	1475	1476
1571.5	1477	1478	1479	1480	1481	1482	1482	1483	1484	1485
1571.6	1486	1487	1488	1489	1490	1491	1491	1492	1493	1494
1571.7	1495	1496	1497	1498	1499	1500	1500	1501	1502	1503
1571.8	1504	1505	1506	1507	1508	1509	1509	1510	1511	1512
1571.9	1513	1514	1515	1516	1517	1518	1518	1519	1520	1521
1572.0	1522	1523	1524	1526	1527	1528	1529	1530	1532	1533
1572.1	1534	1535	1536	1537	1538	1540	1541	1542	1543	1544
1572.2	1545	1546	1547	1549	1550	1551	1552	1553	1555	1556
1572.3	1557	1558	1559	1560	1561	1563	1564	1565	1566	1567
1572.4	1568	1569	1570	1572	1573	1574	1575	1576	1578	1579
1572.5	1580	1581	1582	1584	1585	1586	1587	1588	1590	1591
1572.6	1592	1593	1594	1595	1596	1598	1599	1600	1601	1602
1572.7	1603	1604	1605	1607	1608	1609	1610	1611	1613	1614

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Elevation	.00	.01	.02	.03	.04	.05	.06	.07	Effective: .08	1-1-97 .09
1572.8	1615	1616	1617	1618	1619	1621	1622	1623	1624	1625
1572.9	1626	1627	1628	1630	1631	1632	1633	1634	1636	1637
1573.0	1638	1639	1640	1641	1642	1644	1645	1646	1647	1648
1573.1	1649	1650	1651	1653	1654	1655	1656	1657	1659	1660
1573.2	1661	1662	1663	1664	1665	1667	1668	1669	1670	1671
1573.3	1672	1673	1674	1676	1677	1678	1679	1680	1682	1683
1573.4	1684	1685	1686	1687	1688	1690	1691	1692	1693	1694
1573.5	1695	1696	1697	1699	1700	1701	1702	1703	1705	1706
1573.6	1707	1708	1709	1710	1711	1713	1714	1715	1716	1717
1573.7	1718	1719	1720	1722	1723	1724	1725	1726	1728	1729
1573.8	1730	1731	1732	1733	1734	1736	1737	1738	1739	1740
1573.9	1741	1742	1743	1745	1746	1747	1748	1749	1751	1752
1574.0	1753	1754	1756	1757	1759	1760	1761	1763	1764	1766
1574.1	1767	1768	1770	1771	1773	1774	1775	1777	1778	1780
1574.2	1781	1782	1784	1785	1787	1788	1789	1791	1792	1794
1574.3	1795	1796	1798	1799	1801	1802	1803	1805	1806	1808
1574.4	1809	1810	1812	1813	1815	1816	1817	1819	1820	1822
1574.5	1823	1824	1826	1827	1829	1830	1831	1833	1834	1836
1574.6	1837	1838	1840	1841	1842	1844	1845	1846	1847	1849
1574.7	1850	1851	1853	1854	1856	1857	1858	1860	1861	1863
1574.8	1864	1865	1867	1868	1870	1871	1872	1874	1875	1877
1574.9	1878	1879	1881	1882	1884	1885	1886	1888	1889	1891
1575.0	1892	1893	1895	1896	1898	1899	1900	1902	1903	1905
1575.1	1906	1907	1909	1910	1912	1913	1914	1916	1917	1919
1575.2	1920	1921	1923	1924	1925	1927	1928	1929	1930	1932
1575.3	1933	1934	1936	1937	1939	1940	1941	1943	1944	1946
1575.4	1947	1948	1950	1951	1953	1954	1955	1957	1958	1960
1575.5	1961	1962	1964	1965	1966	1968	1969	1970	1971	1973
1575.6	1974	1975	1977	1978	1980	1981	1982	1984	1985	1987
1575.7	1988	1989	1991	1992	1994	1995	1996	1998	1999	2001
1575.8	2002	2003	2005	2006	2007	2009	2010	2011	2012	2014
1575.9	2015	2016	2018	2019	2021	2022	2023	2025	2026	2028
1576.0	2029	2030	2032	2033	2035	2036	2037	2039	2040	2042
1576.1	2043	2045	2046	2048	2049	2051	2052	2054	2055	2057
1576.2	2058	2059	2061	2062	2064	2065	2066	2068	2069	2071
1576.3	2072	2073	2075	2076	2078	2079	2080	2082	2083	2085
1576.4	2086	2088	2089	2091	2092	2094	2095	2097	2098	2100
1576.5	2101	2102	2104	2105	2107	2108	2109	2111	2112	2114
1576.6	2115	2116	2118	2119	2121	2122	2123	2125	2126	2128
1576.7	2129	2131	2132	2134	2135	2137	2138	2140	2141	2143
1576.8	2144	2145	2147	2148	2150	2151	2152	2154	2155	2157
1576.9	2158	2159	2161	2162	2164	2165	2166	2168	2169	2171
1577.0	2172	2174	2175	2177	2178	2180	2181	2183	2184	2186
1577.1	2187	2188	2190	2191	2193	2194	2195	2197	2198	2200
1577.2	2201	2202	2204	2205	2207	2208	2209	2211	2212	2214
1577.3	2215	2217	2218	2220	2221	2223	2224	2226	2227	2229
1577.4	2230	2231	2233	2234	2236	2237	2238	2240	2241	2243
1577.5	2244	2245	2247	2248	2250	2251	2252	2254	2255	2257
1577.6	2258	2260	2261	2263	2264	2266	2267	2269	2270	2272
1577.7	2273	2274	2276	2277	2279	2280	2281	2283	2284	2286
1577.8	2287	2288	2290	2291	2293	2294	2295	2297	2298	2300
1577.9	2301	2303	2304	2306	2307	2309	2310	2312	2313	2315
1578.0	2316	2317	2319	2320	2322	2323	2324	2326	2327	2329
1578.1	2330	2331	2333	2334	2336	2337	2338	2340	2341	2343
1578.2	2344	2345	2347	2348	2350	2351	2352	2354	2355	2357
1578.3	2358	2359	2361	2362	2363	2365	2366	2367	2368	2370
1578.4	2371	2372	2374	2375	2377	2378	2379	2381	2382	2384
1578.5	2385	2386	2388	2389	2391	2392	2393	2395	2396	2398
1578.6	2399	2400	2402	2403	2405	2406	2407	2409	2410	2412
1578.7	2413	2414	2416	2417	2419	2420	2421	2423	2424	2426
1578.8	2427	2428	2430	2431	2433	2434	2435	2437	2438	2440
1578.9	2441	2442	2444	2445	2447	2448	2449	2451	2452	2454
1579.0	2455	2456	2458	2459	2461	2462	2463	2465	2466	2468
1579.1	2469	2470	2472	2473	2475	2476	2477	2479	2480	2482
1579.2	2483	2484	2486	2487	2489	2490	2491	2493	2494	2496
1579.3	2497	2498	2500	2501	2503	2504	2505	2507	2508	2510
1579.4	2511	2512	2514	2515	2517	2518	2519	2521	2522	2524
1579.5	2525	2526	2528	2529	2531	2532	2533	2535	2536	2538
1579.6	2539	2540	2542	2543	2545	2546	2547	2549	2550	2552
1579.7	2553	2554	2556	2557	2559	2560	2561	2563	2564	2566
1579.8	2567	2568	2570	2571	2572	2574	2575	2576	2577	2579
1579.9	2580	2581	2583	2584	2586	2587	2588	2590	2591	2593
1580.0	2594	2596	2597	2599	2600	2602	2604	2605	2607	2608
1580.1	2610	2612	2613	2615	2616	2618	2619	2621	2622	2624
1580.2	2625	2627	2628	2630	2631	2633	2634	2636	2637	2639
1580.3	2640	2642	2643	2645	2646	2648	2649	2651	2652	2654

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Elevation	.00	.01	.02	.03	.04	.05	.06	.07	Effective: .08	1-1-97 .09
1580.4	2655	2657	2658	2660	2661	2663	2664	2666	2667	2669
1580.5	2670	2672	2673	2675	2676	2678	2679	2681	2682	2684
1580.6	2685	2687	2688	2690	2691	2693	2694	2696	2697	2699
1580.7	2700	2702	2703	2705	2706	2708	2709	2711	2712	2714
1580.8	2715	2717	2718	2720	2721	2723	2724	2726	2727	2729
1580.9	2730	2732	2733	2735	2736	2738	2740	2741	2743	2744
1581.0	2746	2748	2749	2751	2752	2754	2755	2757	2758	2760
1581.1	2761	2763	2764	2766	2767	2769	2770	2772	2773	2775
1581.2	2776	2778	2779	2781	2782	2784	2785	2787	2788	2790
1581.3	2791	2793	2794	2796	2797	2799	2800	2802	2803	2805
1581.4	2806	2808	2809	2811	2812	2814	2815	2817	2818	2820
1581.5	2821	2823	2824	2826	2827	2829	2830	2832	2833	2835
1581.6	2836	2838	2839	2841	2842	2844	2845	2847	2848	2850
1581.7	2851	2853	2854	2856	2857	2859	2860	2862	2863	2865
1581.8	2866	2868	2869	2871	2872	2874	2876	2877	2879	2880
1581.9	2882	2884	2885	2887	2888	2890	2891	2893	2894	2896
1582.0	2897	2899	2900	2902	2903	2905	2906	2908	2909	2911
1582.1	2912	2914	2915	2917	2918	2920	2921	2923	2924	2926
1582.2	2927	2929	2930	2932	2933	2935	2936	2938	2939	2941
1582.3	2942	2944	2945	2947	2948	2950	2951	2953	2954	2956
1582.4	2957	2959	2960	2962	2963	2965	2966	2968	2969	2971
1582.5	2972	2974	2975	2977	2978	2980	2981	2983	2984	2986
1582.6	2987	2989	2990	2992	2993	2995	2996	2998	2999	3001
1582.7	3002	3004	3005	3007	3008	3010	3012	3013	3015	3016
1582.8	3018	3020	3021	3023	3024	3026	3027	3029	3030	3032
1582.9	3033	3035	3036	3038	3039	3041	3042	3044	3045	3047
1583.0	3048	3050	3051	3053	3054	3056	3057	3059	3060	3062
1583.1	3063	3065	3066	3068	3069	3071	3072	3074	3075	3077
1583.2	3078	3080	3081	3083	3084	3086	3087	3089	3090	3092
1583.3	3093	3095	3096	3098	3099	3101	3102	3104	3105	3107
1583.4	3108	3110	3111	3113	3114	3116	3117	3119	3120	3122
1583.5	3123	3125	3126	3128	3129	3131	3132	3134	3135	3137
1583.6	3138	3140	3141	3143	3144	3146	3148	3149	3151	3152
1583.7	3154	3156	3157	3159	3160	3162	3163	3165	3166	3168
1583.8	3169	3171	3172	3174	3175	3177	3178	3180	3181	3183
1583.9	3184	3186	3187	3189	3190	3192	3193	3195	3196	3198
1584.0	3199	3201	3202	3204	3205	3207	3208	3210	3211	3213
1584.1	3214	3216	3217	3219	3220	3222	3223	3225	3226	3228
1584.2	3229	3231	3232	3234	3235	3237	3238	3240	3241	3243
1584.3	3244	3246	3247	3249	3250	3252	3253	3255	3256	3258
1584.4	3259	3261	3262	3264	3265	3267	3268	3270	3271	3273
1584.5	3274	3276	3277	3279	3280	3282	3284	3285	3287	3288
1584.6	3290	3292	3293	3295	3296	3298	3299	3301	3302	3304
1584.7	3305	3307	3308	3310	3311	3313	3314	3316	3317	3319
1584.8	3320	3322	3323	3325	3326	3328	3329	3331	3332	3334
1584.9	3335	3337	3338	3340	3341	3343	3344	3346	3347	3349
1585.0	3350	3352	3353	3355	3356	3358	3359	3361	3362	3364
1585.1	3365	3367	3368	3370	3371	3373	3374	3376	3377	3379
1585.2	3380	3382	3383	3385	3386	3388	3390	3391	3393	3394
1585.3	3396	3398	3399	3401	3402	3404	3405	3407	3408	3410
1585.4	3411	3413	3414	3416	3417	3419	3420	3422	3423	3425
1585.5	3426	3428	3429	3431	3432	3434	3435	3437	3438	3440
1585.6	3441	3443	3444	3446	3447	3449	3450	3452	3453	3455
1585.7	3456	3458	3459	3461	3462	3464	3465	3467	3468	3470
1585.8	3471	3473	3474	3476	3477	3479	3481	3482	3484	3485
1585.9	3487	3489	3490	3492	3493	3495	3496	3498	3499	3501
1586.0	3502	3504	3505	3507	3508	3510	3511	3513	3514	3516
1586.1	3517	3519	3520	3522	3523	3525	3526	3528	3529	3531
1586.2	3532	3534	3535	3537	3538	3540	3541	3543	3544	3546
1586.3	3547	3549	3550	3552	3553	3555	3557	3558	3560	3561
1586.4	3563	3565	3566	3568	3569	3571	3572	3574	3575	3577
1586.5	3578	3580	3581	3583	3584	3586	3587	3589	3590	3592
1586.6	3593	3595	3596	3598	3599	3601	3602	3604	3605	3607
1586.7	3608	3610	3611	3613	3614	3616	3617	3619	3620	3622
1586.8	3623	3625	3626	3628	3629	3631	3632	3634	3635	3637
1586.9	3638	3640	3641	3643	3644	3646	3648	3649	3651	3652
1587.0	3654	3656	3657	3659	3660	3662	3663	3665	3666	3668
1587.1	3669	3671	3672	3674	3675	3677	3678	3680	3681	3683
1587.2	3684	3686	3687	3689	3690	3692	3693	3695	3696	3698
1587.3	3699	3701	3702	3704	3705	3707	3708	3710	3711	3713
1587.4	3714	3716	3717	3719	3720	3722	3724	3725	3727	3728
1587.5	3730	3732	3733	3735	3736	3738	3739	3741	3742	3744
1587.6	3745	3747	3748	3750	3751	3753	3754	3756	3757	3759
1587.7	3760	3762	3763	3765	3766	3768	3769	3771	3772	3774
1587.8	3775	3777	3778	3780	3781	3783	3784	3786	3787	3789
1587.9	3790	3792	3793	3795	3796	3798	3799	3801	3802	3804

LOVEWELL RESERVOIR
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Elevation	.00	.01	.02	.03	.04	.05	.06	.07	Effective: .08	1-1-97 .09
1588.0	3805	3807	3808	3810	3811	3813	3815	3816	3818	3819
1588.1	3821	3823	3824	3826	3827	3829	3830	3832	3833	3835
1588.2	3836	3838	3839	3841	3842	3844	3845	3847	3848	3850
1588.3	3851	3853	3854	3856	3857	3859	3860	3862	3863	3865
1588.4	3866	3868	3869	3871	3872	3874	3875	3877	3878	3880
1588.5	3881	3883	3884	3886	3887	3889	3890	3892	3893	3895
1588.6	3896	3898	3899	3901	3902	3904	3906	3907	3909	3910
1588.7	3912	3914	3915	3917	3918	3920	3921	3923	3924	3926
1588.8	3927	3929	3930	3932	3933	3935	3936	3938	3939	3941
1588.9	3942	3944	3945	3947	3948	3950	3951	3953	3954	3956
1589.0	3957	3959	3960	3962	3963	3965	3966	3968	3969	3971
1589.1	3972	3974	3975	3977	3978	3980	3982	3983	3985	3986
1589.2	3988	3990	3991	3993	3994	3996	3997	3999	4000	4002
1589.3	4003	4005	4006	4008	4009	4011	4012	4014	4015	4017
1589.4	4018	4020	4021	4023	4024	4026	4027	4029	4030	4032
1589.5	4033	4035	4036	4038	4039	4041	4042	4044	4045	4047
1589.6	4048	4050	4051	4053	4054	4056	4057	4059	4060	4062
1589.7	4063	4065	4066	4068	4069	4071	4073	4074	4076	4077
1589.8	4079	4081	4082	4084	4085	4087	4088	4090	4091	4093
1589.9	4094	4096	4097	4099	4100	4102	4103	4105	4106	4108
1590.0	4109	4111	4112	4114	4116	4118	4119	4121	4123	4124
1590.1	4126	4128	4130	4131	4133	4135	4137	4139	4140	4142
1590.2	4144	4146	4147	4149	4151	4153	4154	4156	4158	4159
1590.3	4161	4163	4164	4166	4168	4170	4171	4173	4175	4176
1590.4	4178	4180	4182	4183	4185	4187	4189	4191	4192	4194
1590.5	4196	4198	4199	4201	4203	4205	4206	4208	4210	4211
1590.6	4213	4215	4216	4218	4220	4222	4223	4225	4227	4228
1590.7	4230	4232	4234	4235	4237	4239	4241	4243	4244	4246
1590.8	4248	4250	4251	4253	4255	4257	4258	4260	4262	4263
1590.9	4265	4267	4268	4270	4272	4274	4275	4277	4279	4280
1591.0	4282	4284	4286	4287	4289	4291	4293	4295	4296	4298
1591.1	4300	4302	4303	4305	4307	4309	4310	4312	4314	4315
1591.2	4317	4319	4320	4322	4324	4326	4327	4329	4331	4332
1591.3	4334	4336	4338	4339	4341	4343	4345	4347	4348	4350
1591.4	4352	4354	4355	4357	4359	4361	4362	4364	4366	4367
1591.5	4369	4371	4372	4374	4376	4378	4379	4381	4383	4384
1591.6	4386	4388	4390	4391	4393	4395	4397	4399	4400	4402
1591.7	4404	4406	4407	4409	4411	4413	4414	4416	4418	4419
1591.8	4421	4423	4424	4426	4428	4430	4431	4433	4435	4436
1591.9	4438	4440	4442	4443	4445	4447	4449	4451	4452	4454
1592.0	4456	4458	4459	4461	4463	4465	4466	4468	4470	4471
1592.1	4473	4475	4476	4478	4480	4482	4483	4485	4487	4488
1592.2	4490	4492	4494	4495	4497	4499	4501	4503	4504	4506
1592.3	4508	4510	4511	4513	4515	4517	4518	4520	4522	4523
1592.4	4525	4527	4529	4530	4532	4534	4536	4538	4539	4541
1592.5	4543	4545	4546	4548	4550	4552	4553	4555	4557	4558
1592.6	4560	4562	4563	4565	4567	4569	4570	4572	4574	4575
1592.7	4577	4579	4581	4582	4584	4586	4588	4590	4591	4593
1592.8	4595	4597	4598	4600	4602	4604	4605	4607	4609	4610
1592.9	4612	4614	4615	4617	4619	4621	4622	4624	4626	4627
1593.0	4629	4631	4633	4634	4636	4638	4640	4642	4643	4645
1593.1	4647	4649	4650	4652	4654	4656	4657	4659	4661	4662
1593.2	4664	4666	4667	4669	4671	4673	4674	4676	4678	4679
1593.3	4681	4683	4685	4686	4688	4690	4692	4694	4695	4697
1593.4	4699	4701	4702	4704	4706	4708	4709	4711	4713	4714
1593.5	4716	4718	4719	4721	4723	4725	4726	4728	4730	4731
1593.6	4733	4735	4737	4738	4740	4742	4744	4746	4747	4749
1593.7	4751	4753	4754	4756	4758	4760	4761	4763	4765	4766
1593.8	4768	4770	4771	4773	4775	4777	4778	4780	4782	4783
1593.9	4785	4787	4789	4790	4792	4794	4796	4798	4799	4801
1594.0	4803	4805	4806	4808	4810	4812	4813	4815	4817	4818
1594.1	4820	4822	4823	4825	4827	4829	4830	4832	4834	4835
1594.2	4837	4839	4841	4842	4844	4846	4848	4850	4851	4853
1594.3	4855	4857	4858	4860	4862	4864	4865	4867	4869	4870
1594.4	4872	4874	4875	4877	4879	4881	4882	4884	4886	4887
1594.5	4889	4891	4893	4894	4896	4898	4900	4902	4903	4905
1594.6	4907	4909	4910	4912	4914	4916	4917	4919	4921	4922
1594.7	4924	4926	4927	4929	4931	4933	4934	4936	4938	4939
1594.8	4941	4943	4945	4946	4948	4950	4952	4954	4955	4957
1594.9	4959	4961	4962	4964	4966	4968	4969	4971	4973	4974
1595.0	4976	4978	4979	4981	4982	4984	4986	4987	4989	4990
1595.1	4992	4994	4995	4997	4998	5000	5002	5003	5005	5006
1595.2	5008	5010	5011	5013	5014	5016	5018	5019	5021	5022
1595.3	5024	5026	5027	5029	5030	5032	5034	5035	5037	5038
1595.4	5040	5042	5043	5045	5046	5048	5050	5051	5053	5054

LOVEWELL RESERVOIR
AREA IN ACRES

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	Effective: .08	1-1-97 .09
1595.5	5056	5058	5059	5061	5062	5064	5066	5067	5069	5070
1595.6	5072	5074	5075	5077	5079	5081	5082	5084	5086	5087
1595.7	5089	5091	5092	5094	5095	5097	5099	5100	5102	5103
1595.8	5105	5107	5108	5110	5111	5113	5115	5116	5118	5119
1595.9	5121	5123	5124	5126	5127	5129	5131	5132	5134	5135
1596.0	5137	5139	5140	5142	5143	5145	5147	5148	5150	5151
1596.1	5153	5155	5156	5158	5159	5161	5163	5164	5166	5167
1596.2	5169	5171	5172	5174	5175	5177	5179	5180	5182	5183
1596.3	5185	5187	5188	5190	5191	5193	5195	5196	5198	5199
1596.4	5201	5203	5204	5206	5207	5209	5211	5212	5214	5215
1596.5	5217	5219	5220	5222	5223	5225	5227	5228	5230	5231
1596.6	5233	5235	5236	5238	5239	5241	5243	5244	5246	5247
1596.7	5249	5251	5252	5254	5255	5257	5259	5260	5262	5263
1596.8	5265	5267	5268	5270	5272	5274	5275	5277	5279	5280
1596.9	5282	5284	5285	5287	5288	5290	5292	5293	5295	5296
1597.0	5298	5300	5301	5303	5304	5306	5308	5309	5311	5312
1597.1	5314	5316	5317	5319	5320	5322	5324	5325	5327	5328
1597.2	5330	5332	5333	5335	5336	5338	5340	5341	5343	5344
1597.3	5346	5348	5349	5351	5352	5354	5356	5357	5359	5360
1597.4	5362	5364	5365	5367	5368	5370	5372	5373	5375	5376
1597.5	5378	5380	5381	5383	5384	5386	5388	5389	5391	5392
1597.6	5394	5396	5397	5399	5400	5402	5404	5405	5407	5408
1597.7	5410	5412	5413	5415	5416	5418	5420	5421	5423	5424
1597.8	5426	5428	5429	5431	5432	5434	5436	5437	5439	5440
1597.9	5442	5444	5445	5447	5448	5450	5452	5453	5455	5456
1598.0	5458	5460	5461	5463	5464	5466	5468	5469	5471	5472
1598.1	5474	5476	5477	5479	5481	5483	5484	5486	5488	5489
1598.2	5491	5493	5494	5496	5497	5499	5501	5502	5504	5505
1598.3	5507	5509	5510	5512	5513	5515	5517	5518	5520	5521
1598.4	5523	5525	5526	5528	5529	5531	5533	5534	5536	5537
1598.5	5539	5541	5542	5544	5545	5547	5549	5550	5552	5553
1598.6	5555	5557	5558	5560	5561	5563	5565	5566	5568	5569
1598.7	5571	5573	5574	5576	5577	5579	5581	5582	5584	5585
1598.8	5587	5589	5590	5592	5593	5595	5597	5598	5600	5601
1598.9	5603	5605	5606	5608	5609	5611	5613	5614	5616	5617
1599.0	5619	5621	5622	5624	5625	5627	5629	5630	5632	5633
1599.1	5635	5634	5632	5631	5629	5628	5627	5625	5624	5622
1599.2	5621	5626	5630	5635	5639	5644	5649	5653	5658	5662
1599.3	5667	5669	5670	5672	5674	5676	5677	5679	5681	5682
1599.4	5684	5686	5687	5689	5690	5692	5694	5695	5697	5698
1599.5	5700	5702	5703	5705	5706	5708	5710	5711	5713	5714
1599.6	5716	5718	5719	5721	5722	5724	5726	5727	5729	5730
1599.7	5732	5734	5735	5737	5738	5740	5742	5743	5745	5746
1599.8	5748	5750	5751	5753	5754	5756	5758	5759	5761	5762
1599.9	5764	5766	5767	5769	5770	5772	5774	5775	5777	5778
1600.0	5780	5782	5783	5785	5787	5789	5790	5792	5794	5795
1600.1	5797	5799	5800	5802	5804	5806	5807	5809	5811	5812
1600.2	5814	5816	5817	5819	5820	5822	5824	5825	5827	5828
1600.3	5830	5832	5833	5835	5837	5839	5840	5842	5844	5845
1600.4	5847	5849	5850	5852	5854	5856	5857	5859	5861	5862
1600.5	5864	5866	5867	5869	5871	5873	5874	5876	5878	5879
1600.6	5881	5883	5884	5886	5888	5890	5891	5893	5895	5896
1600.7	5898	5900	5901	5903	5904	5906	5908	5909	5911	5912
1600.8	5914	5916	5917	5919	5921	5923	5924	5926	5928	5929
1600.9	5931	5933	5934	5936	5938	5940	5941	5943	5945	5946
1601.0	5948	5950	5951	5953	5955	5957	5958	5960	5962	5963
1601.1	5965	5967	5968	5970	5972	5974	5975	5977	5979	5980
1601.2	5982	5984	5985	5987	5988	5990	5992	5993	5995	5996
1601.3	5998	6000	6001	6003	6005	6007	6008	6010	6012	6013
1601.4	6015	6017	6018	6020	6022	6024	6025	6027	6029	6030
1601.5	6032	6034	6035	6037	6039	6041	6042	6044	6046	6047
1601.6	6049	6051	6052	6054	6056	6058	6059	6061	6063	6064
1601.7	6066	6068	6069	6071	6072	6074	6076	6077	6079	6080
1601.8	6082	6084	6085	6087	6089	6091	6092	6094	6096	6097
1601.9	6099	6101	6102	6104	6106	6108	6109	6111	6113	6114
1602.0	6116	6118	6119	6121	6123	6125	6126	6128	6130	6131
1602.1	6133	6135	6136	6138	6140	6142	6143	6145	6147	6148
1602.2	6150	6152	6153	6155	6156	6158	6160	6161	6163	6164
1602.3	6166	6168	6169	6171	6173	6175	6176	6178	6180	6181
1602.4	6183	6185	6186	6188	6190	6192	6193	6195	6197	6198
1602.5	6200	6202	6203	6205	6207	6209	6210	6212	6214	6215
1602.6	6217	6219	6220	6222	6224	6226	6227	6229	6231	6232
1602.7	6234	6236	6237	6239	6240	6242	6244	6245	6247	6248
1602.8	6250	6252	6253	6255	6257	6259	6260	6262	6264	6265
1602.9	6267	6269	6270	6272	6274	6276	6277	6279	6281	6282
1603.0	6284	6286	6287	6289	6291	6293	6294	6296	6298	6299

LOVEWELL RESERVOIR
AREA IN ACRES

Elevation	.00	.01	.02	.03	.04	.05	.06	.07	Effective: .08	1-1-97 .09
1603.1	6301	6303	6304	6306	6308	6310	6311	6313	6315	6316
1603.2	6318	6320	6321	6323	6324	6326	6328	6329	6331	6332
1603.3	6334	6336	6337	6339	6341	6343	6344	6346	6348	6349
1603.4	6351	6353	6354	6356	6358	6360	6361	6363	6365	6366
1603.5	6368	6370	6371	6373	6375	6377	6378	6380	6382	6383
1603.6	6385	6387	6388	6390	6392	6394	6395	6397	6399	6400
1603.7	6402	6404	6405	6407	6408	6410	6412	6413	6415	6416
1603.8	6418	6420	6421	6423	6425	6427	6428	6430	6432	6433
1603.9	6435	6437	6438	6440	6442	6444	6445	6447	6449	6450
1604.0	6452	6454	6455	6457	6459	6461	6462	6464	6466	6467
1604.1	6469	6471	6472	6474	6476	6478	6479	6481	6483	6484
1604.2	6486	6488	6489	6491	6492	6494	6496	6497	6499	6500
1604.3	6502	6504	6505	6507	6509	6511	6512	6514	6516	6517
1604.4	6519	6521	6522	6524	6526	6528	6529	6531	6533	6534
1604.5	6536	6538	6539	6541	6543	6545	6546	6548	6550	6551
1604.6	6553	6555	6556	6558	6560	6562	6563	6565	6567	6568
1604.7	6570	6572	6573	6575	6576	6578	6580	6581	6583	6584
1604.8	6586	6588	6589	6591	6593	6595	6596	6598	6600	6601
1604.9	6603	6605	6606	6608	6610	6612	6613	6615	6617	6618
1605.0	6620	6622	6624	6626	6628	6630	6631	6633	6635	6637
1605.1	6639	6641	6643	6645	6647	6649	6650	6652	6654	6656
1605.2	6658	6660	6662	6664	6666	6668	6669	6671	6673	6675
1605.3	6677	6679	6681	6683	6685	6687	6688	6690	6692	6694
1605.4	6696	6698	6700	6702	6704	6706	6707	6709	6711	6713
1605.5	6715	6717	6719	6721	6723	6725	6726	6728	6730	6732
1605.6	6734	6736	6738	6740	6742	6744	6745	6747	6749	6751
1605.7	6753	6755	6757	6759	6761	6763	6764	6766	6768	6770
1605.8	6772	6774	6776	6778	6780	6782	6783	6785	6787	6789
1605.9	6791	6793	6795	6797	6799	6801	6802	6804	6806	6808
1606.0	6810	6812	6814	6816	6818	6820	6821	6823	6825	6827
1606.1	6829	6831	6833	6835	6837	6839	6840	6842	6844	6846
1606.2	6848	6850	6852	6854	6856	6858	6859	6861	6863	6865
1606.3	6867	6869	6871	6873	6875	6877	6878	6880	6882	6884
1606.4	6886	6888	6890	6892	6894	6896	6897	6899	6901	6903
1606.5	6905	6907	6909	6911	6913	6915	6916	6918	6920	6922
1606.6	6924	6926	6928	6930	6932	6934	6935	6937	6939	6941
1606.7	6943	6945	6947	6949	6951	6953	6954	6956	6958	6960
1606.8	6962	6964	6966	6968	6970	6972	6973	6975	6977	6979
1606.9	6981	6983	6985	6987	6989	6991	6992	6994	6996	6998
1607.0	7000	7002	7004	7006	7008	7010	7011	7013	7015	7017
1607.1	7019	7021	7023	7025	7027	7029	7030	7032	7034	7036
1607.2	7038	7040	7042	7044	7046	7048	7049	7051	7053	7055
1607.3	7057	7059	7061	7063	7065	7067	7068	7070	7072	7074
1607.4	7076	7078	7080	7082	7084	7086	7087	7089	7091	7093
1607.5	7095	7097	7099	7101	7103	7105	7106	7108	7110	7112
1607.6	7114	7116	7118	7120	7122	7124	7125	7127	7129	7131
1607.7	7133	7135	7137	7139	7141	7143	7144	7146	7148	7150
1607.8	7152	7154	7156	7158	7160	7162	7163	7165	7167	7169
1607.9	7171	7173	7175	7177	7179	7181	7182	7184	7186	7188
1608.0	7190	7192	7194	7196	7198	7200	7201	7203	7205	7207
1608.1	7209	7211	7213	7215	7217	7219	7220	7222	7224	7226
1608.2	7228	7230	7232	7234	7236	7238	7239	7241	7243	7245
1608.3	7247	7249	7251	7253	7255	7257	7258	7260	7262	7264
1608.4	7266	7268	7270	7272	7274	7276	7277	7279	7281	7283
1608.5	7285	7287	7289	7291	7293	7295	7296	7298	7300	7302
1608.6	7304	7306	7308	7310	7312	7314	7315	7317	7319	7321
1608.7	7323	7325	7327	7329	7331	7333	7334	7336	7338	7340
1608.8	7342	7344	7346	7348	7350	7352	7353	7355	7357	7359
1608.9	7361	7363	7365	7367	7369	7371	7372	7374	7376	7378
1609.0	7380	7382	7384	7386	7388	7390	7391	7393	7395	7397
1609.1	7399	7401	7403	7405	7407	7409	7410	7412	7414	7416
1609.2	7418	7420	7422	7424	7426	7428	7429	7431	7433	7435
1609.3	7437	7439	7441	7443	7445	7447	7448	7450	7452	7454
1609.4	7456	7458	7460	7462	7464	7466	7467	7469	7471	7473
1609.5	7475	7477	7479	7481	7483	7485	7486	7488	7490	7492
1609.6	7494	7496	7498	7500	7502	7504	7505	7507	7509	7511
1609.7	7513	7515	7517	7519	7521	7523	7524	7526	7528	7530
1609.8	7532	7534	7536	7538	7540	7542	7543	7545	7547	7549
1609.9	7551	7553	7555	7557	7559	7561	7562	7564	7566	7568
1610.0	7570	7572	7574	7577	7579	7581	7583	7585	7588	7590
1610.1	7592	7594	7596	7598	7600	7603	7605	7607	7609	7611
1610.2	7613	7615	7617	7620	7622	7624	7626	7628	7631	7633
1610.3	7635									

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COURTLAND CANAL - NEBRASKA
Monthly Diversions
(acre-feet)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1952	0	0	0	0	184	2,162	1,519	2,832	649	0	0	0	7,346
1953	0	0	0	0	0	0	799	669	0	0	0	0	1,468
1954	0	0	0	0	1,073	2,133	2,726	2,260	1,396	99	0	0	9,687
1955	0	0	0	0	1,821	740	1,635	1,963	446	0	0	0	6,605
1956	0	0	0	181	1,242	990	1,333	1,682	505	208	0	0	6,141
1957	0	0	0	0	0	312	1,139	1,004	289	-556	-6	0	2,182
1958	0	0	0	617	-130	791	293	192	26	-175	0	0	1,614
1959	0	0	0	0	1,079	591	1,158	2,384	-26	-53	0	0	5,133
1960	0	0	0	0	0	947	2,072	2,168	43	0	0	0	5,230
1961	0	0	0	113	583	455	3,041	1,576	393	0	0	0	6,161
1962	0	0	0	0	1,089	650	527	1,021	-90	0	0	0	3,197
1963	0	0	0	87	36	0	1,197	608	0	0	0	0	1,928
1964	0	0	0	0	158	41	1,434	533	0	0	0	0	2,166
1965	0	0	0	0	0	0	532	856	22	0	0	0	1,410
1966	0	0	0	0	172	17	1,016	92	294	0	0	0	1,591
1967	0	0	0	0	14	0	295	1,232	145	0	0	0	1,686
1968	0	0	0	0	0	139	1,757	782	0	0	0	0	2,678
1969	0	0	0	0	0	11	323	681	0	0	0	0	1,015
1970	0	0	0	0	0	188	1,925	932	18	0	0	0	3,063
1971	0	0	0	0	0	50	1,224	831	22	0	0	0	2,127
1972	0	0	0	0	0	8	1,000	516	0	0	0	0	1,524
1973	0	0	0	0	0	193	789	590	32	0	0	0	1,604
1974	0	0	0	0	0	347	2,012	318	13	0	0	0	2,690
1975	0	0	0	0	7	0	1,226	526	25	0	0	0	1,784
1976	0	0	0	0	0	501	1,535	1,174	51	0	0	0	3,261
1977	0	0	0	0	0	4	1,237	125	0	0	0	0	1,366
1978	0	0	0	0	0	172	1,241	620	94	0	0	0	2,127
1979	0	0	0	0	0	8	277	1,038	0	0	0	0	1,323
1980	0	0	0	0	0	71	1,682	771	0	0	0	0	2,524
1981	0	0	0	0	0	99	454	76	0	0	0	0	629
1982	0	0	0	0	0	0	391	458	0	0	0	0	849
1983	0	0	0	0	0	0	1,164	887	85	0	0	0	2,136
1984	0	0	0	0	0	6	1,005	1,034	242	0	0	0	2,287
1985	0	0	0	0	0	4	810	352	63	0	0	0	1,229
1986	0	0	0	0	0	263	1,381	308	0	0	0	0	1,952
1987	0	0	0	0	0	343	705	362	26	0	0	0	1,436
1988	0	0	0	0	0	1,026	636	625	58	0	0	0	2,345
1989	0	0	0	0	0	160	923	750	0	0	0	0	1,833
1990	0	0	0	0	0	39	1,169	650	240	0	0	0	2,098
1991	0	0	0	0	0	372	1,059	641	0	0	0	0	2,072
1992	0	0	0	0	0	77	323	385	42	0	0	0	827
1993	0	0	0	0	0	0	0	12	0	0	0	0	12
1994	0	0	0	0	0	555	653	861	0	0	0	0	2,069
1995	0	0	0	0	0	1	1,198	703	257	0	0	0	2,159
1996	0	0	0	0	0	252	591	561	0	0	0	0	1,404
1997	0	0	0	0	0	0	939	583	34	0	0	0	1,556
1998	0	0	0	0	0	680	939	715	47	0	0	0	2,381
1999	0	0	0	0	0	236	1,302	749	68	0	0	0	2,355
2000	0	0	0	0	0	735	1,341	1,387	0	0	0	0	3,463
2001	0	0	0	0	0	180	693	1,109	0	0	0	0	1,982
2002	0	0	0	0	0	434	1,388	441	0	0	0	0	2,263
2003	0	0	0	0	0	0	1,054	437	0	0	0	0	1,491
2004	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL	0	0	0	998	7,328	16,983	57,062	44,062	5,509	-477	-6	0	131,459
AVG.	0	0	0	18	133	309	1,037	801	100	-9	0	0	2,390

NOTE: This table includes the deliveries to Bostwick Irrigation District lands in Nebraska plus a share of the losses. Table uses the amounts originally calculated -- 1957-1963 was adjusted later to change the loss distribution.

COURTLAND CANAL - NEBRASKA
Delivery to Farms
(acre-feet)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Percentage
1952	0	0	0	0	0	16	43	234	34	0	0	0	327	4.45%
1953	0	0	0	0	0	0	42	78	0	0	0	0	120	8.17%
1954	0	0	0	0	0	7	927	280	47	0	0	0	1,261	13.02%
1955	0	0	0	0	255	9	681	1,508	185	0	0	0	2,638	39.94%
1956	0	0	0	0	22	145	522	1,069	205	25	0	0	1,988	32.37%
1957	0	0	0	0	0	0	584	708	46	0	0	0	1,338	61.32%
1958	0	0	0	0	0	54	0	230	30	0	0	0	314	19.45%
1959	0	0	0	0	0	0	692	1,362	36	0	0	0	2,090	40.72%
1960	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
1961	0	0	0	0	0	4	490	605	99	0	0	0	1,198	19.44%
1962	0	0	0	0	3	0	0	603	0	0	0	0	606	18.96%
1963	0	0	0	0	26	0	1,145	587	0	0	0	0	1,758	91.18%
1964	0	0	0	0	81	21	1,326	479	0	0	0	0	1,907	88.04%
1965	0	0	0	0	0	0	452	748	25	0	0	0	1,225	86.88%
1966	0	0	0	0	113	12	928	80	213	0	0	0	1,346	84.60%
1967	0	0	0	0	12	0	247	1,042	122	0	0	0	1,423	84.40%
1968	0	0	0	0	0	119	1,441	644	0	0	0	0	2,204	82.30%
1969	0	0	0	0	0	9	269	598	0	0	0	0	876	86.31%
1970	0	0	0	0	0	153	1,677	798	15	0	0	0	2,643	86.29%
1971	0	0	0	0	0	57	1,079	732	19	0	0	0	1,887	88.72%
1972	0	0	0	0	0	7	852	435	0	0	0	0	1,294	84.91%
1973	0	0	0	0	0	157	653	475	26	0	0	0	1,311	81.73%
1974	0	0	0	0	0	301	1,839	290	12	0	0	0	2,442	90.78%
1975	0	0	0	0	6	0	1,096	438	16	0	0	0	1,556	87.22%
1976	0	0	0	0	0	437	1,356	1,046	47	0	0	0	2,886	88.50%
1977	0	0	0	0	0	0	1,179	114	0	0	0	0	1,293	94.66%
1978	0	0	0	0	0	143	1,121	545	80	0	0	0	1,889	88.81%
1979	0	0	0	0	0	6	247	958	0	0	0	0	1,211	91.53%
1980	0	0	0	0	0	62	1,586	734	0	0	0	0	2,382	94.37%
1981	0	0	0	0	0	84	370	72	0	0	0	0	526	83.62%
1982	0	0	0	0	0	0	362	423	0	0	0	0	785	92.46%
1983	0	0	0	0	0	0	1,030	756	65	0	0	0	1,851	86.66%
1984	0	0	0	0	0	5	949	799	208	0	0	0	1,961	85.75%
1985	0	0	0	0	0	3	570	219	48	0	0	0	840	68.35%
1986	0	0	0	0	0	168	1,027	232	0	0	0	0	1,427	73.10%
1987	0	0	0	0	0	295	602	314	22	0	0	0	1,233	85.86%
1988	0	0	0	0	0	761	465	404	42	0	0	0	1,672	71.30%
1989	0	0	0	0	0	108	662	528	0	0	0	0	1,298	70.81%
1990	0	0	0	0	0	23	875	448	183	0	0	0	1,529	72.88%
1991	0	0	0	0	0	235	720	459	0	0	0	0	1,414	68.24%
1992	0	0	0	0	0	41	249	282	37	0	0	0	609	73.64%
1993	0	0	0	0	0	0	0	10	0	0	0	0	10	83.33%
1994	0	0	0	0	0	381	461	598	0	0	0	0	1,440	69.60%
1995	0	0	0	0	0	1	879	547	139	0	0	0	1,566	72.53%
1996	0	0	0	0	0	201	480	435	0	0	0	0	1,116	79.49%
1997	0	0	0	0	0	0	711	421	25	0	0	0	1,157	74.36%
1998	0	0	0	0	0	497	696	506	41	0	0	0	1,740	73.08%
1999	0	0	0	0	0	145	957	669	73	0	0	0	1,844	78.30%
2000	0	0	0	0	0	489	997	1,070	0	0	0	0	2,556	73.81%
2001	0	0	0	0	0	122	424	795	0	0	0	0	1,341	67.66%
2002	0	0	0	0	0	341	1,234	379	0	0	0	0	1,954	86.35%
2003	0	0	0	0	0	0	879	366	0	0	0	0	1,245	83.50%
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
TOTAL	0	0	0	0	518	5,619	38,073	28,152	2,140	25	0	0	74,527	56.69%
AVG.	0	0	0	0	9	102	692	512	39	0	0	0	1,355	65.70%

COURTLAND CANAL - NEBRASKA
System Loss
(acre-feet)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Loss	Percentage
1952	0	0	0	0	184	2,146	1,476	2,598	615	0	0	0	7,019	95.55%
1953	0	0	0	0	0	0	757	591	0	0	0	0	1,348	91.83%
1954	0	0	0	0	1,073	2,126	1,799	1,980	1,349	99	0	0	8,426	86.98%
1955	0	0	0	0	1,566	731	954	455	261	0	0	0	3,967	60.06%
1956	0	0	0	181	1,220	845	811	613	300	183	0	0	4,153	67.63%
1957	0	0	0	0	0	312	555	296	243	-556	-6	0	844	38.68%
1958	0	0	0	617	-130	737	293	-38	-4	-175	0	0	1,300	80.55%
1959	0	0	0	0	1,079	591	466	1,022	-62	-53	0	0	3,043	59.28%
1960	0	0	0	0	0	947	2,072	2,168	43	0	0	0	5,230	100.00%
1961	0	0	0	113	583	451	2,551	971	294	0	0	0	4,963	80.56%
1962	0	0	0	0	1,086	650	527	418	-90	0	0	0	2,591	81.04%
1963	0	0	0	87	10	0	52	21	0	0	0	0	170	8.82%
1964	0	0	0	0	77	20	108	54	0	0	0	0	259	11.96%
1965	0	0	0	0	0	0	80	108	-3	0	0	0	185	13.12%
1966	0	0	0	0	59	5	88	12	81	0	0	0	245	15.40%
1967	0	0	0	0	2	0	48	190	23	0	0	0	263	15.60%
1968	0	0	0	0	0	20	316	138	0	0	0	0	474	17.70%
1969	0	0	0	0	0	2	54	83	0	0	0	0	139	13.69%
1970	0	0	0	0	0	35	248	134	3	0	0	0	420	13.71%
1971	0	0	0	0	0	-7	145	99	3	0	0	0	240	11.28%
1972	0	0	0	0	0	1	148	81	0	0	0	0	230	15.09%
1973	0	0	0	0	0	36	136	115	6	0	0	0	293	18.27%
1974	0	0	0	0	0	46	173	28	1	0	0	0	248	9.22%
1975	0	0	0	0	1	0	130	88	9	0	0	0	228	12.78%
1976	0	0	0	0	0	64	179	128	4	0	0	0	375	11.50%
1977	0	0	0	0	0	4	58	11	0	0	0	0	73	5.34%
1978	0	0	0	0	0	29	120	75	14	0	0	0	238	11.19%
1979	0	0	0	0	0	2	30	80	0	0	0	0	112	8.47%
1980	0	0	0	0	0	9	96	37	0	0	0	0	142	5.63%
1981	0	0	0	0	0	15	84	4	0	0	0	0	103	16.38%
1982	0	0	0	0	0	0	29	35	0	0	0	0	64	7.54%
1983	0	0	0	0	0	0	134	131	20	0	0	0	285	13.34%
1984	0	0	0	0	0	1	56	235	34	0	0	0	326	14.25%
1985	0	0	0	0	0	1	240	133	15	0	0	0	389	31.65%
1986	0	0	0	0	0	95	354	76	0	0	0	0	525	26.90%
1987	0	0	0	0	0	48	103	48	4	0	0	0	203	14.14%
1988	0	0	0	0	0	265	171	221	16	0	0	0	673	28.70%
1989	0	0	0	0	0	52	261	222	0	0	0	0	535	29.19%
1990	0	0	0	0	0	16	294	202	57	0	0	0	569	27.12%
1991	0	0	0	0	0	137	339	182	0	0	0	0	658	31.76%
1992	0	0	0	0	0	36	74	103	5	0	0	0	218	26.36%
1993	0	0	0	0	0	0	0	2	0	0	0	0	2	16.67%
1994	0	0	0	0	0	174	192	263	0	0	0	0	629	30.40%
1995	0	0	0	0	0	0	319	156	118	0	0	0	593	27.47%
1996	0	0	0	0	0	51	111	126	0	0	0	0	288	20.51%
1997	0	0	0	0	0	0	228	162	9	0	0	0	399	25.64%
1998	0	0	0	0	0	183	243	209	6	0	0	0	641	26.92%
1999	0	0	0	0	0	91	345	80	-5	0	0	0	511	21.70%
2000	0	0	0	0	0	246	344	317	0	0	0	0	907	26.19%
2001	0	0	0	0	0	58	269	314	0	0	0	0	641	32.34%
2002	0	0	0	0	0	93	154	62	0	0	0	0	309	13.65%
2003	0	0	0	0	0	0	175	71	0	0	0	0	246	16.50%
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0.00%
TOTAL	0	0	0	998	6,810	11,364	18,989	15,910	3,369	-502	-6	0	56,932	43.31%
AVG.	0	0	0	18	124	207	345	289	61	-9	0	0	1,035	28.84%

BOST-MISC3MWD.XLS
Sheet C-LOV

TOTAL COURTLAND CANAL FLOW
INTO LOVEWELL RESERVOIR (MILE 34.8)
Monthly Diversions
(acre-feet)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1957	0	0	0	0	0	0	214	399	172	27,925	163	0	28,873
1958	0	0	0	0	13,601	1,373	932	938	290	488	0	0	17,622
1959	0	0	0	0	0	186	2,287	2,083	2,648	500	0	0	7,704
1960	0	0	0	0	0	0	3,084	6,837	2,608	169	0	0	12,698
1961	0	0	0	399	6,526	256	9,596	10,316	629	139	0	0	27,861
1962	0	0	0	0	16	177	1,745	3,094	456	0	0	0	5,488
1963	0	0	0	0	4,122	7,166	18,526	17,351	1,410	0	0	0	48,575
1964	0	0	0	0	119	1,507	22,608	27,324	7,018	0	0	0	58,576
1965	0	0	0	0	0	2,507	8,477	18,659	1,343	0	0	0	30,986
1966	0	0	0	0	4,869	8,420	19,115	1,567	1,194	4,897	11,851	0	51,913
1967	0	0	0	0	0	3,054	10,318	16,463	6,403	8,576	0	0	44,814
1968	0	0	0	0	831	3,679	21,478	9,155	528	0	0	0	35,671
1969	0	0	0	0	0	1,686	11,722	19,964	664	0	0	0	34,036
1970	0	0	0	0	12,914	3,905	20,436	25,672	5,157	561	0	0	68,645
1971	0	0	0	0	0	1,266	14,508	16,177	6,491	3,007	0	0	41,449
1972	0	0	0	0	2,287	3,731	16,201	3,970	746	0	0	0	26,935
1973	0	0	0	0	526	2,305	11,049	6,048	714	486	0	0	21,128
1974	0	0	0	0	858	2,143	20,956	14,656	2,737	97	0	0	41,447
1975	0	0	0	0	1,289	1,792	18,757	16,090	5,612	138	0	0	43,678
1976	0	0	0	0	400	6,419	23,057	21,447	7,622	4,301	3,587	590	67,423
1977	0	0	912	5,455	2,703	3,982	16,690	13,472	67	0	0	0	43,281
1978	0	0	0	0	159	4,077	15,411	4,317	1,940	0	0	0	25,904
1979	0	0	0	0	1,365	2,405	1,779	2,833	4,823	2,876	0	0	16,081
1980	0	0	0	0	916	2,265	12,649	22,487	3,501	0	0	0	41,818
1981	0	0	319	3,849	3,461	2,764	12,149	4,431	690	0	0	0	27,663
1982	0	0	0	0	0	548	4,967	4,648	1,145	0	0	0	11,308
1983	0	0	0	3,356	12,112	4,023	13,476	18,230	6,387	520	0	0	58,104
1984	0	0	0	0	0	1,332	10,500	17,795	5,916	6,113	542	0	42,198
1985	0	0	0	0	231	1,926	11,537	3,714	1,815	0	0	0	19,223
1986	0	0	0	0	0	2,056	11,521	12,607	903	0	0	0	27,087
1987	0	0	0	0	0	3,118	6,162	8,694	1,160	0	0	0	19,134
1988	0	0	0	0	0	8,507	21,548	7,573	4,570	1,383	0	0	43,581
1989	0	0	0	978	1,486	5,923	7,603	9,063	6,526	244	0	0	31,823
1990	0	1,039	4,207	0	3,141	1,985	10,676	9,439	7,785	4,094	4,122	2,166	48,654
1991	0	0	3,475	4,562	3,878	994	3,280	4,465	1,553	1,982	3,457	4,435	32,081
1992	4,508	4,308	4,669	4,858	3,577	1,998	1,799	1,549	610	0	0	0	27,876
1993	0	0	0	0	328	676	1,113	1,713	404	0	0	0	4,234
1994	0	0	0	0	0	3,536	7,657	6,369	607	0	0	0	18,169
1995	3,490	2,060	0	0	0	837	3,813	10,199	9,450	1,990	0	0	31,839
1996	0	0	0	105	4,875	2,207	14,724	13,192	3,746	0	0	0	38,849
1997	0	0	0	0	2,476	4,180	7,180	8,609	3,731	3,626	0	0	29,802
1998	0	0	0	0	0	4,742	12,075	7,876	3,877	0	0	0	28,570
1999	0	0	0	0	0	2,888	7,234	6,614	4,115	0	0	0	20,851
2000	0	835	10,025	6,825	1,838	7,668	16,875	14,631	3,563	3,130	4,092	3,997	73,479
2001	4,027	764	0	0	0	1,324	8,933	4,356	6,713	4,792	0	0	30,909
2002	0	0	0	3,043	5,470	1,686	11,412	9,023	2,488	3,572	3,878	3,581	44,153
2003	3,355	1,740	0	3,167	4,232	1,426	2,061	3,288	1,582	1,189	2,006	2,550	26,596
2004	2,685	1,398	1,128	3,776	2,150	104	230	0	0	0	831	1,828	14,130
2005	1,804	3,430	3,950	5,677	3,749	4,164	0	1,562	913	884	1,512	1,620	29,265
2006	2,473	1,968	2,862	3,509	1,004	478	1,863	91	399	873	1,611	1,964	19,093
2007	2,047	4,076	3,602	3,941	4,447	1,806	5,318	5,975	3,227	248	0	0	34,688
2008	0	0	0	0	0	1,000	3,799	2,453	405	0	0	0	7,657
TOTAL	24,389	21,618	35,149	53,500	111,956	138,197	521,100	479,479	149,053	88,800	37,652	22,731	1,683,622
AVG.	469	416	676	1,029	2,153	2,658	10,021	9,221	2,866	1,708	724	437	32,377

M:\USR\JCATT\MWD\KS-BOST3MWD.XLS

COURTLAND CANAL - KANSAS (Below)
Monthly Diversions
(acre-feet)

Courtland Canal, Mile 38.0

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1958	0	0	0	0	0	0	1,035	819	3,432	401	0	0	5,687
1959	0	0	0	0	865	1,228	9,721	13,005	1,569	0	0	0	26,388
1960	0	0	0	0	0	966	13,313	11,171	1,079	0	0	0	26,529
1961	0	0	0	0	0	938	11,169	12,454	3,542	0	0	0	28,103
1962	0	0	0	0	538	1,252	9,124	14,366	936	0	0	0	26,216
1963	0	0	0	258	908	2,902	22,413	12,908	933	0	0	0	40,322
1964	0	0	0	0	1,482	3,761	25,398	13,591	1,018	0	0	0	45,250
1965	0	0	0	0	0	2,321	19,999	16,724	502	0	0	0	39,546
1966	0	0	0	0	4,506	4,748	22,637	10,574	1,099	0	0	0	43,564
1967	0	0	0	0	714	1,029	14,067	25,160	1,484	0	0	0	42,454
1968	0	0	0	0	0	1,440	27,884	5,732	0	0	0	0	35,056
1969	0	0	0	0	0	1,686	11,722	19,964	664	0	0	0	34,036
1970	0	0	0	0	0	2,682	32,543	18,859	357	0	0	0	54,441
1971	0	0	0	0	0	4,832	20,624	19,543	2,202	0	0	0	47,201
1972	0	0	0	0	442	2,662	18,039	11,171	44	0	0	0	32,358
1973	0	0	0	0	365	4,197	12,843	11,960	841	0	0	0	30,206
1974	0	0	0	0	357	7,135	34,429	8,672	879	0	0	0	51,472
1975	0	0	0	184	1,978	2,227	28,948	17,433	885	0	0	0	51,655
1976	0	0	0	0	1,482	7,870	33,092	26,075	3,273	0	0	0	71,792
1977	0	0	0	0	1,095	3,786	29,457	5,230	0	0	0	0	39,568
1978	0	0	0	415	1,238	3,717	19,632	16,431	3,864	0	0	0	45,297
1979	0	0	0	0	534	1,458	9,679	22,245	2,374	0	0	0	36,290
1980	0	0	0	0	1,384	4,138	34,707	14,479	1,315	0	0	0	56,023
1981	0	0	0	0	1,523	7,884	16,697	6,573	1,387	0	0	0	34,064
1982	0	0	0	0	599	1,932	17,437	17,958	1,117	0	0	0	39,043
1983	0	0	0	0	0	2,731	30,434	21,899	3,626	0	0	0	58,690
1984	0	0	0	0	0	1,616	29,445	20,646	3,390	0	0	0	55,097
1985	0	0	0	0	760	5,613	24,264	4,310	2,255	0	0	0	37,202
1986	0	0	0	0	0	13,163	21,426	7,541	79	0	0	0	42,209
1987	0	0	0	428	161	7,272	23,798	11,044	914	0	0	0	43,617
1988	0	0	0	0	480	18,492	18,068	17,651	2,555	0	0	0	57,246
1989	0	0	0	0	0	4,908	23,098	15,491	208	0	0	0	43,705
1990	0	0	0	0	611	4,388	24,044	20,004	6,117	0	0	0	55,164
1991	0	0	0	0	867	10,772	22,348	9,273	0	0	0	0	43,260
1992	0	0	0	0	0	3,297	5,401	3,332	44	0	0	0	12,074
1993	0	0	0	0	726	2,823	5,881	7,541	446	0	0	0	17,417
1994	0	0	0	0	1,254	7,744	11,560	19,706	97	0	0	0	40,361
1995	0	0	0	0	484	2,176	18,839	19,603	5,391	0	0	0	46,493
1996	0	0	0	0	424	13,049	17,219	14,737	1,517	0	0	0	46,946
1997	0	0	0	0	607	6,514	24,679	15,204	1,827	0	0	0	48,831
1998	0	0	0	0	369	12,347	19,286	14,912	2,144	0	0	0	49,058
1999	0	0	0	0	246	5,461	26,946	13,831	3,086	0	0	0	49,570
2000	0	0	0	0	2,033	15,007	24,088	21,327	290	0	0	0	62,745
2001	0	0	0	0	0	6,748	16,166	20,619	3,711	0	0	0	47,244
2002	0	0	0	0	0	9,697	24,676	12,184	0	0	0	0	46,557
2003	0	0	0	0	472	3,647	19,015	12,472	0	0	0	0	35,606
2004	0	0	0	0	982	1,417	9,713	18,022	0	0	0	0	30,134
2005	0	0	0	0	0	4,310	14,572	7,034	0	0	0	0	25,916
2006	0	0	0	0	492	4,796	13,730	8,833	0	0	0	0	27,851
2007	0	0	0	0	1,895	4,637	15,064	13,505	0	0	0	0	35,101
2008	0	0	0	0	415	3,280	11,816	13,319	1,186	0	0	0	30,016
TOTAL	0	0	0	1,285	33,288	252,696	992,185	717,137	73,679	401	0	0	2,070,671
AVG.	0	0	0	25	653	4,955	19,455	14,062	1,445	8	0	0	40,601

COURTLAND CANAL - KANSAS (Below Lovewell)
Delivery to Farms
(acre-feet)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Percentage
1958	0	0	0	0	0	0	0	243	1,817	135	0	0	2,195	38.60%
1959	0	0	0	0	0	198	6,170	9,369	353	0	0	0	16,090	60.97%
1960	0	0	0	0	0	0	9,272	7,254	277	0	0	0	16,803	63.34%
1961	0	0	0	0	0	67	6,711	6,873	1,878	0	0	0	15,529	55.26%
1962	0	0	0	0	6	20	4,719	9,985	129	0	0	0	14,859	56.68%
1963	0	0	0	10	5	435	15,523	7,436	131	0	0	0	23,540	58.38%
1964	0	0	0	0	95	381	18,393	8,274	51	0	0	0	27,194	60.10%
1965	0	0	0	0	0	118	11,903	9,736	27	0	0	0	21,784	55.09%
1966	0	0	0	0	1,665	1,462	14,855	4,887	46	0	0	0	22,915	52.60%
1967	0	0	0	0	11	0	7,617	15,657	599	0	0	0	23,884	56.26%
1968	0	0	0	0	0	69	17,892	1,388	0	0	0	0	19,349	55.19%
1969	0	0	0	0	0	110	4,285	11,941	33	0	0	0	16,369	48.09%
1970	0	0	0	0	0	396	22,943	11,234	40	0	0	0	34,613	63.58%
1971	0	0	0	0	0	1,383	10,634	10,778	611	0	0	0	23,406	49.59%
1972	0	0	0	0	0	44	9,959	6,508	0	0	0	0	16,511	51.03%
1973	0	0	0	0	0	1,454	6,537	6,500	274	0	0	0	14,765	48.88%
1974	0	0	0	0	0	2,856	25,124	3,849	238	0	0	0	32,067	62.30%
1975	0	0	0	0	14	0	20,860	10,911	214	0	0	0	31,999	61.95%
1976	0	0	0	0	0	3,977	22,171	15,866	1,235	0	0	0	43,249	60.24%
1977	0	0	0	0	0	6	18,109	1,510	0	0	0	0	19,625	49.60%
1978	0	0	0	0	0	125	10,595	8,515	1,615	0	0	0	20,850	46.03%
1979	0	0	0	0	0	16	3,977	13,747	789	0	0	0	18,529	51.06%
1980	0	0	0	0	0	375	24,014	7,885	423	0	0	0	32,697	58.36%
1981	0	0	0	0	0	2,642	9,056	2,411	423	0	0	0	14,532	42.66%
1982	0	0	0	0	0	2	9,505	9,899	177	0	0	0	19,583	50.16%
1983	0	0	0	0	0	177	19,573	12,072	1,487	0	0	0	33,309	56.75%
1984	0	0	0	0	0	16	19,006	12,125	1,057	0	0	0	32,204	58.45%
1985	0	0	0	0	0	1,074	15,160	747	718	0	0	0	17,699	47.58%
1986	0	0	0	0	0	6,268	12,337	3,038	51	0	0	0	21,694	51.40%
1987	0	0	0	0	0	2,775	15,690	5,197	166	0	0	0	23,828	54.63%
1988	0	0	0	0	0	11,186	11,509	10,148	594	0	0	0	33,437	58.41%
1989	0	0	0	0	0	630	15,621	9,230	0	0	0	0	25,481	58.30%
1990	0	0	0	0	0	618	15,521	11,153	2,454	0	0	0	29,746	53.92%
1991	0	0	0	0	0	4,726	12,803	4,639	0	0	0	0	22,168	51.24%
1992	0	0	0	0	0	586	1,632	821	45	0	0	0	3,084	25.54%
1993	0	0	0	0	0	10	0	1,903	97	0	0	0	2,010	11.54%
1994	0	0	0	0	0	1,928	4,978	12,842	115	0	0	0	19,863	49.21%
1995	0	0	0	0	0	11	11,613	12,454	2,975	0	0	0	27,053	58.19%
1996	0	0	0	0	0	7,793	10,725	8,252	547	0	0	0	27,317	58.19%
1997	0	0	0	0	0	1,659	17,580	8,802	777	0	0	0	28,818	59.02%
1998	0	0	0	0	0	6,715	12,267	8,609	884	0	0	0	28,475	58.04%
1999	0	0	0	0	0	1,162	19,708	7,757	1,586	0	0	0	30,213	60.95%
2000	0	0	0	0	285	9,122	16,891	13,212	163	0	0	0	39,673	63.23%
2001	0	0	0	0	0	2,676	8,920	13,661	1,983	0	0	0	27,240	57.66%
2002	0	0	0	0	0	4,529	18,064	7,973	0	0	0	0	30,566	65.65%
2003	0	0	0	0	0	0	12,118	8,372	0	0	0	0	20,490	57.55%
2004	0	0	0	0	0	0	4,043	11,413	0	0	0	0	15,456	51.29%
2005	0	0	0	0	0	1,394	7,353	3,293	0	0	0	0	12,040	46.46%
2006	0	0	0	0	0	1,601	7,310	5,699	0	0	0	0	14,610	52.46%
2007	0	0	0	0	0	196	8,735	8,233	0	0	0	0	17,164	48.90%
2008	0	0	0	0	0	163	5,715	7,388	125	0	0	0	13,391	44.61%
TOTAL	0	0	0	10	2,081	83,151	615,696	411,689	27,204	135	0	0	1,139,966	55.05%
AVG.	0	0	0	0	41	1,630	12,072	8,072	533	3	0	0	22,352	53.24%

COURTLAND CANAL - KANSAS (Below Lovewell)
System Loss
(acre-feet)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total Loss	Percentage
1958	0	0	0	0	0	0	1,035	576	1,615	266	0	0	3,492	61.40%
1959	0	0	0	0	865	1,030	3,551	3,636	1,216	0	0	0	10,298	39.03%
1960	0	0	0	0	0	966	4,041	3,917	802	0	0	0	9,726	36.66%
1961	0	0	0	0	0	871	4,458	5,581	1,664	0	0	0	12,574	44.74%
1962	0	0	0	0	532	1,232	4,405	4,381	807	0	0	0	11,357	43.32%
1963	0	0	0	248	903	2,467	6,890	5,472	802	0	0	0	16,782	41.62%
1964	0	0	0	0	1,387	3,380	7,005	5,317	967	0	0	0	18,056	39.90%
1965	0	0	0	0	0	2,203	8,096	6,988	475	0	0	0	17,762	44.91%
1966	0	0	0	0	2,841	3,286	7,782	5,687	1,053	0	0	0	20,649	47.40%
1967	0	0	0	0	703	1,029	6,450	9,503	885	0	0	0	18,570	43.74%
1968	0	0	0	0	0	1,371	9,992	4,344	0	0	0	0	15,707	44.81%
1969	0	0	0	0	0	1,576	7,437	8,023	631	0	0	0	17,667	51.91%
1970	0	0	0	0	0	2,286	9,600	7,625	317	0	0	0	19,828	36.42%
1971	0	0	0	0	0	3,449	9,990	8,765	1,591	0	0	0	23,795	50.41%
1972	0	0	0	0	442	2,618	8,080	4,663	44	0	0	0	15,847	48.97%
1973	0	0	0	0	365	2,743	6,306	5,460	567	0	0	0	15,441	51.12%
1974	0	0	0	0	357	4,279	9,305	4,823	641	0	0	0	19,405	37.70%
1975	0	0	0	184	1,964	2,227	8,088	6,522	671	0	0	0	19,656	38.05%
1976	0	0	0	0	1,482	3,893	10,921	10,209	2,038	0	0	0	28,543	39.76%
1977	0	0	0	0	1,095	3,780	11,348	3,720	0	0	0	0	19,943	50.40%
1978	0	0	0	415	1,238	3,592	9,037	7,916	2,249	0	0	0	24,447	53.97%
1979	0	0	0	0	534	1,442	5,702	8,498	1,585	0	0	0	17,761	48.94%
1980	0	0	0	0	1,384	3,763	10,693	6,594	892	0	0	0	23,326	41.64%
1981	0	0	0	0	1,523	5,242	7,641	4,162	964	0	0	0	19,532	57.34%
1982	0	0	0	0	599	1,930	7,932	8,059	940	0	0	0	19,460	49.84%
1983	0	0	0	0	0	2,554	10,861	9,827	2,139	0	0	0	25,381	43.25%
1984	0	0	0	0	0	1,600	10,439	8,521	2,333	0	0	0	22,893	41.55%
1985	0	0	0	0	760	4,539	9,104	3,563	1,537	0	0	0	19,503	52.42%
1986	0	0	0	0	0	6,895	9,089	4,503	28	0	0	0	20,515	48.60%
1987	0	0	0	428	161	4,497	8,108	5,847	748	0	0	0	19,789	45.37%
1988	0	0	0	0	480	7,306	6,559	7,503	1,961	0	0	0	23,809	41.59%
1989	0	0	0	0	0	4,278	7,477	6,261	208	0	0	0	18,224	41.70%
1990	0	0	0	0	611	3,770	8,523	8,851	3,663	0	0	0	25,418	46.08%
1991	0	0	0	0	867	6,046	9,545	4,634	0	0	0	0	21,092	48.76%
1992	0	0	0	0	0	2,711	3,769	2,511	-1	0	0	0	8,990	74.46%
1993	0	0	0	0	726	2,813	5,881	5,638	349	0	0	0	15,407	88.46%
1994	0	0	0	0	1,254	5,816	6,582	6,864	-18	0	0	0	20,498	50.79%
1995	0	0	0	0	484	2,165	7,226	7,149	2,416	0	0	0	19,440	41.81%
1996	0	0	0	0	424	5,256	6,494	6,485	970	0	0	0	19,629	41.81%
1997	0	0	0	0	607	4,855	7,099	6,402	1,050	0	0	0	20,013	40.98%
1998	0	0	0	0	369	5,632	7,019	6,303	1,260	0	0	0	20,583	41.96%
1999	0	0	0	0	246	4,299	7,238	6,074	1,500	0	0	0	19,357	39.05%
2000	0	0	0	0	1,748	5,885	7,197	8,115	127	0	0	0	23,072	36.77%
2001	0	0	0	0	0	4,072	7,246	6,958	1,728	0	0	0	20,004	42.34%
2002	0	0	0	0	0	5,168	6,612	4,211	0	0	0	0	15,991	34.35%
2003	0	0	0	0	472	3,647	6,897	4,100	0	0	0	0	15,116	42.45%
2004	0	0	0	0	982	1,417	5,670	6,609	0	0	0	0	14,678	48.71%
2005	0	0	0	0	0	2,916	7,219	3,741	0	0	0	0	13,876	53.54%
2006	0	0	0	0	492	3,195	6,420	3,134	0	0	0	0	13,241	47.54%
2007	0	0	0	0	1,895	4,441	6,329	5,272	0	0	0	0	17,937	51.10%
2008	0	0	0	0	415	3,117	6,101	5,931	1,061	0	0	0	16,625	55.39%
TOTAL	0	0	0	1,275	31,207	169,545	376,489	305,448	46,475	266	0	0	930,705	44.95%
AVG.	0	0	0	25	612	3,324	7,382	5,989	911	5	0	0	18,249	46.76%

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COURTLAND CANAL, KANSAS (Above Lovewell)
Monthly Diversions
(acre-feet)

Courtland Canal, Mile 34.8

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1954	0	0	0	0	0	186	1,356	1,515	857	0	0	0	3,914
1955	0	0	0	0	908	1,636	2,788	6,394	2,648	0	0	0	14,374
1956	0	0	0	0	2,420	3,140	4,670	7,180	2,730	720	0	0	20,860
1957	0	0	0	0	0	787	9,011	7,862	782	-47	-157	0	18,238
1958	0	0	0	220	949	2,339	1,962	6,956	1,631	-313	0	0	13,744
1959	0	0	0	0	613	2,240	9,217	9,911	1,809	-447	0	0	23,343
1960	0	0	0	0	0	1,560	8,756	7,333	1,112	-169	0	0	18,592
1961	0	0	0	156	1,204	1,025	10,393	5,697	2,647	-139	0	0	20,983
1962	0	0	0	0	1,682	1,555	6,812	8,698	630	0	0	0	19,377
1963	0	0	0	0	2,128	2,374	14,474	8,029	110	0	0	0	27,115
1964	0	0	0	0	1,709	2,682	12,924	5,157	84	0	0	0	22,556
1965	0	0	0	0	0	4,377	12,521	8,203	0	0	0	0	25,101
1966	0	0	0	0	4,354	2,726	11,931	7,086	525	0	0	0	26,622
1967	0	0	0	0	0	562	11,195	13,574	470	0	0	0	25,801
1968	0	0	0	0	0	347	18,769	5,852	0	0	0	0	24,968
1969	0	0	0	0	0	2,885	7,737	9,993	147	0	0	0	20,762
1970	0	0	0	0	0	1,419	18,819	8,598	27	0	0	0	28,863
1971	0	0	0	0	0	1,600	15,584	7,858	174	0	0	0	25,216
1972	0	0	0	0	0	1,574	10,790	5,979	0	0	0	0	18,343
1973	0	0	0	0	0	2,304	9,317	8,554	254	0	0	0	20,429
1974	0	0	0	0	16	5,648	18,778	4,064	148	0	0	0	28,654
1975	0	0	0	0	248	708	16,493	9,791	679	0	0	0	27,919
1976	0	0	0	0	0	6,964	17,490	13,088	1,072	0	0	0	38,614
1977	0	0	0	0	18	1,936	15,544	2,287	0	0	0	0	19,785
1978	0	0	0	0	0	2,485	11,047	10,996	1,184	0	0	0	25,712
1979	0	0	0	0	15	73	7,124	12,772	653	0	0	0	20,637
1980	0	0	0	0	0	4,081	17,428	5,847	111	0	0	0	27,467
1981	0	0	0	23	0	7,350	7,306	3,612	306	0	0	0	18,597
1982	0	0	0	0	0	2,739	11,241	11,504	1,909	0	0	0	27,393
1983	0	0	0	0	0	1,783	14,117	8,184	1,190	0	0	0	25,274
1984	0	0	0	0	0	2,453	15,326	10,027	1,189	0	0	0	28,995
1985	0	0	0	0	0	6,374	11,066	4,993	696	0	0	0	23,129
1986	0	0	0	0	0	10,918	12,834	3,172	0	0	0	0	26,924
1987	0	0	0	0	0	7,360	12,403	3,779	175	0	0	0	23,717
1988	0	0	0	0	0	13,388	9,595	9,376	602	0	0	0	32,961
1989	0	0	0	0	0	3,850	11,640	9,219	0	0	0	0	24,709
1990	0	0	0	0	0	3,271	12,874	7,890	1,710	0	0	0	25,745
1991	0	0	0	0	0	5,441	9,878	5,531	0	0	0	0	20,850
1992	0	0	0	0	0	926	4,300	3,004	19	0	0	0	8,249
1993	0	0	0	0	0	3,541	4,252	5,255	77	0	0	0	13,125
1994	0	0	0	0	2,176	9,584	7,908	11,226	22	0	0	0	30,916
1995	0	0	0	0	0	1,687	18,510	11,193	2,246	0	0	0	33,636
1996	0	0	0	0	0	7,976	9,385	7,288	347	0	0	0	24,996
1997	0	0	0	0	0	3,141	15,260	7,053	631	0	0	0	26,085
1998	0	0	0	0	0	7,020	10,892	8,070	462	0	0	0	26,444
1999	0	0	0	0	0	5,978	15,834	7,360	1,421	0	0	0	30,593
2000	0	0	0	0	680	10,288	11,626	9,583	239	0	0	0	32,416
2001	0	0	0	0	0	4,931	7,337	11,789	1,399	0	0	0	25,456
2002	0	0	0	0	0	5,850	13,543	6,684	0	0	0	0	26,077
2003	0	0	0	0	0	0	11,715	5,870	0	0	0	0	17,585
2004	0	0	0	0	0	0	280	186	0	0	313	0	779
2005	0	0	0	0	0	540	1,221	103	0	0	0	0	1,864
2006	0	0	0	0	75	2,389	6,514	1,423	194	0	0	0	10,595
2007	0	0	0	0	0	3,114	7,041	4,593	0	0	0	0	14,748
2008	0	0	0	0	0	3,738	7,511	5,731	453	0	0	0	17,433
TOTAL	0	0	0	399	19,195	194,843	584,339	392,972	35,771	-395	156	0	1,227,280
AVG.	0	0	0	7	349	3,543	10,624	7,145	650	-7	3	0	22,314

Includes Nebraska canal loss as shared by KS Bostwick.

Net supply does not include losses incurred by Kansas Bostwick or USBR (to Lovewell).

COURTLAND CANAL, KANSAS (Above Lovewell)
Delivery to Farms
(acre-feet)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Percentage
1954	0	0	0	0	0	0	0	22	8	0	0	0	30	0.77%
1955	0	0	0	0	34	0	486	2,802	881	0	0	0	4,203	29.24%
1956	0	0	0	0	34	113	2,155	3,862	733	168	0	0	7,065	33.87%
1957	0	0	0	0	0	7	5,105	4,764	54	72	0	0	10,002	54.84%
1958	0	0	0	0	0	33	146	3,950	254	0	0	0	4,383	31.89%
1959	0	0	0	0	0	205	6,058	7,263	245	0	0	0	13,771	58.99%
1960	0	0	0	0	0	0	4,946	4,629	460	0	0	0	10,035	53.97%
1961	0	0	0	0	0	4	6,590	3,564	1,364	0	0	0	11,522	54.91%
1962	0	0	0	0	6	34	3,371	5,614	93	0	0	0	9,118	47.06%
1963	0	0	0	0	0	238	9,117	4,070	8	0	0	0	13,433	49.54%
1964	0	0	0	0	186	301	10,306	3,961	0	0	0	0	14,754	65.41%
1965	0	0	0	0	0	82	8,016	5,431	0	0	0	0	13,529	53.90%
1966	0	0	0	0	1,137	511	7,934	3,669	50	0	0	0	13,301	49.96%
1967	0	0	0	0	0	0	6,395	7,915	224	0	0	0	14,534	56.33%
1968	0	0	0	0	0	61	10,540	2,620	0	0	0	0	13,221	52.95%
1969	0	0	0	0	0	31	2,469	4,988	3	0	0	0	7,491	36.08%
1970	0	0	0	0	0	576	12,115	5,218	0	0	0	0	17,909	62.05%
1971	0	0	0	0	0	700	9,420	4,506	83	0	0	0	14,709	58.33%
1972	0	0	0	0	0	136	6,126	3,368	0	0	0	0	9,630	52.50%
1973	0	0	0	0	0	868	4,804	4,611	68	0	0	0	10,351	50.67%
1974	0	0	0	0	3	2,751	13,668	2,404	88	0	0	0	18,914	66.01%
1975	0	0	0	0	33	0	10,557	6,278	252	0	0	0	17,120	61.32%
1976	0	0	0	0	0	3,943	12,230	8,720	494	0	0	0	25,387	65.75%
1977	0	0	0	0	12	63	9,933	1,055	0	0	0	0	11,063	55.92%
1978	0	0	0	0	0	236	6,580	5,800	584	0	0	0	13,200	51.34%
1979	0	0	0	0	4	28	2,523	7,434	258	0	0	0	10,247	49.65%
1980	0	0	0	0	0	506	12,153	3,457	44	0	0	0	16,160	58.83%
1981	0	0	0	16	0	2,471	4,172	1,396	217	0	0	0	8,272	44.48%
1982	0	0	0	0	0	0	5,003	5,578	546	0	0	0	11,127	40.62%
1983	0	0	0	0	0	35	8,674	5,168	565	0	0	0	14,442	57.14%
1984	0	0	0	0	0	9	8,703	6,322	487	0	0	0	15,521	53.53%
1985	0	0	0	0	0	1,417	6,504	2,069	302	0	0	0	10,292	44.50%
1986	0	0	0	0	0	3,343	7,578	1,187	0	0	0	0	12,108	44.97%
1987	0	0	0	0	0	2,619	7,289	1,900	82	0	0	0	11,890	50.13%
1988	0	0	0	0	0	6,339	5,768	4,844	208	0	0	0	17,159	52.06%
1989	0	0	0	0	0	447	7,269	5,815	0	0	0	0	13,531	54.76%
1990	0	0	0	0	0	313	7,810	4,739	906	0	0	0	13,768	53.48%
1991	0	0	0	0	0	1,677	5,605	2,902	0	0	0	0	10,184	48.84%
1992	0	0	0	0	0	113	656	382	13	0	0	0	1,164	14.11%
1993	0	0	0	0	0	0	0	1,253	36	0	0	0	1,289	9.82%
1994	0	0	0	0	0	2,490	2,768	6,172	37	0	0	0	11,467	37.09%
1995	0	0	0	0	0	13	8,250	6,073	1,085	0	0	0	15,421	45.85%
1996	0	0	0	0	0	3,331	5,870	4,517	214	0	0	0	13,932	55.74%
1997	0	0	0	0	0	422	7,841	3,402	222	0	0	0	11,887	45.57%
1998	0	0	0	0	0	2,211	5,827	4,475	204	0	0	0	12,717	48.09%
1999	0	0	0	0	0	1,017	9,301	3,653	429	0	0	0	14,400	47.07%
2000	0	0	0	0	124	4,626	7,475	6,048	70	0	0	0	18,343	56.59%
2001	0	0	0	0	0	1,277	3,340	6,635	742	0	0	0	11,994	47.12%
2002	0	0	0	0	0	1,854	7,944	3,588	0	0	0	0	13,386	51.33%
2003	0	0	0	0	0	0	5,363	3,012	0	0	0	0	8,375	47.63%
2004	0	0	0	0	0	0	43	11	0	0	90	0	144	18.49%
2005	0	0	0	0	0	373	125	63	0	0	0	0	561	30.10%
2006	0	0	0	0	15	274	2,765	258	41	0	0	0	3,353	31.65%
2007	0	0	0	0	0	66	3,266	2,457	0	0	0	0	5,789	39.25%
2008	0	0	0	0	0	373	2,275	1,910	51	0	0	0	4,609	26.44%
TOTAL	0	0	0	16	1,588	48,537	331,227	217,804	12,705	240	90	0	612,207	49.88%
AVG.	0	0	0	0	29	882	6,022	3,960	231	4	2	0	11,131	46.52%

COURTLAND CANAL, KANSAS (Above Lovewell)
System Loss
(acre-feet)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total	Percentage
1954	0	0	0	0	0	186	1,356	1,493	849	0	0	0	3,884	99.23%
1955	0	0	0	0	874	1,636	2,302	3,592	1,767	0	0	0	10,171	70.76%
1956	0	0	0	0	2,386	3,027	2,515	3,318	1,997	552	0	0	13,795	66.13%
1957	0	0	0	0	0	780	3,906	3,098	728	-119	-157	0	8,236	45.16%
1958	0	0	0	220	949	2,306	1,816	3,006	1,377	-313	0	0	9,361	68.11%
1959	0	0	0	0	613	2,035	3,159	2,648	1,564	-447	0	0	9,572	41.01%
1960	0	0	0	0	0	1,560	3,810	2,704	652	-169	0	0	8,557	46.03%
1961	0	0	0	156	1,204	1,021	3,803	2,133	1,283	-139	0	0	9,461	45.09%
1962	0	0	0	0	1,676	1,521	3,441	3,084	537	0	0	0	10,259	52.94%
1963	0	0	0	0	2,128	2,136	5,357	3,959	102	0	0	0	13,682	50.46%
1964	0	0	0	0	1,523	2,381	2,618	1,196	84	0	0	0	7,802	34.59%
1965	0	0	0	0	0	4,295	4,505	2,772	0	0	0	0	11,572	46.10%
1966	0	0	0	0	3,217	2,215	3,997	3,417	475	0	0	0	13,321	50.04%
1967	0	0	0	0	0	562	4,800	5,659	246	0	0	0	11,267	43.67%
1968	0	0	0	0	0	286	8,229	3,232	0	0	0	0	11,747	47.05%
1969	0	0	0	0	0	2,854	5,268	5,005	144	0	0	0	13,271	63.92%
1970	0	0	0	0	0	843	6,704	3,380	27	0	0	0	10,954	37.95%
1971	0	0	0	0	0	900	6,164	3,352	91	0	0	0	10,507	41.67%
1972	0	0	0	0	0	1,438	4,664	2,611	0	0	0	0	8,713	47.50%
1973	0	0	0	0	0	1,436	4,513	3,943	186	0	0	0	10,078	49.33%
1974	0	0	0	0	13	2,897	5,110	1,660	60	0	0	0	9,740	33.99%
1975	0	0	0	0	215	708	5,936	3,513	427	0	0	0	10,799	38.68%
1976	0	0	0	0	0	3,021	5,260	4,368	578	0	0	0	13,227	34.25%
1977	0	0	0	0	6	1,873	5,611	1,232	0	0	0	0	8,722	44.08%
1978	0	0	0	0	0	2,249	4,467	5,196	600	0	0	0	12,512	48.66%
1979	0	0	0	0	11	45	4,601	5,338	395	0	0	0	10,390	50.35%
1980	0	0	0	0	0	3,575	5,275	2,390	67	0	0	0	11,307	41.17%
1981	0	0	0	7	0	4,879	3,134	2,216	89	0	0	0	10,325	55.52%
1982	0	0	0	0	0	2,739	6,238	5,926	1,363	0	0	0	16,266	59.38%
1983	0	0	0	0	0	1,748	5,443	3,016	625	0	0	0	10,832	42.86%
1984	0	0	0	0	0	2,444	6,623	3,705	702	0	0	0	13,474	46.47%
1985	0	0	0	0	0	4,957	4,562	2,924	394	0	0	0	12,837	55.50%
1986	0	0	0	0	0	7,575	5,256	1,985	0	0	0	0	14,816	55.03%
1987	0	0	0	0	0	4,741	5,114	1,879	93	0	0	0	11,827	49.87%
1988	0	0	0	0	0	7,049	3,827	4,532	394	0	0	0	15,802	47.94%
1989	0	0	0	0	0	3,403	4,371	3,404	0	0	0	0	11,178	45.24%
1990	0	0	0	0	0	2,958	5,064	3,151	804	0	0	0	11,977	46.52%
1991	0	0	0	0	0	3,764	4,273	2,629	0	0	0	0	10,666	51.16%
1992	0	0	0	0	0	813	3,644	2,622	6	0	0	0	7,085	85.89%
1993	0	0	0	0	0	3,541	4,252	4,002	41	0	0	0	11,836	90.18%
1994	0	0	0	0	2,176	7,094	5,140	5,054	-15	0	0	0	19,449	62.91%
1995	0	0	0	0	0	1,674	10,260	5,120	1,161	0	0	0	18,215	54.15%
1996	0	0	0	0	0	4,645	3,515	2,771	133	0	0	0	11,064	44.26%
1997	0	0	0	0	0	2,719	7,419	3,651	409	0	0	0	14,198	54.43%
1998	0	0	0	0	0	4,809	5,065	3,595	258	0	0	0	13,727	51.91%
1999	0	0	0	0	0	4,961	6,533	3,707	992	0	0	0	16,193	52.93%
2000	0	0	0	0	556	5,662	4,151	3,535	169	0	0	0	14,073	43.41%
2001	0	0	0	0	0	3,654	3,997	5,154	657	0	0	0	13,462	52.88%
2002	0	0	0	0	0	3,996	5,599	3,096	0	0	0	0	12,691	48.67%
2003	0	0	0	0	0	0	6,352	2,858	0	0	0	0	9,210	52.37%
2004	0	0	0	0	0	0	237	175	0	0	223	0	635	81.51%
2005	0	0	0	0	0	167	1,096	40	0	0	0	0	1,303	69.90%
2006	0	0	0	0	60	2,115	3,749	1,165	153	0	0	0	7,242	68.35%
2007	0	0	0	0	0	3,048	3,775	2,136	0	0	0	0	8,959	60.75%
2008	0	0	0	0	0	3,365	5,236	3,821	402	0	0	0	12,824	73.56%
TOTAL	0	0	0	383	17,607	146,306	253,112	175,168	23,066	-635	66	0	615,073	50.12%
AVG.	0	0	0	7	320	2,660	4,602	3,185	419	-12	1	0	11,183	53.48%

BOST-MISC3MWD.XLS
Sheet C07

COURTLAND CANAL, MILE 0.7 (Guide Rock)
Monthly Diversions
(acre-feet)

Data from AOP Table 2 Sheet 4 (Superior-Courtland Unit, Total Diversion)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1952	0	0	0	0	184	2,162	1,519	2,832	649	0	0	0	7,346
1953	0	0	0	0	0	0	799	668	0	0	0	0	1,467
1954	0	0	0	0	1,073	2,319	4,082	3,775	2,253	99	0	0	13,601
1955	0	0	0	0	2,729	2,376	4,423	8,357	3,094	0	0	0	20,979
1956	0	0	0	181	3,662	4,130	6,003	8,862	3,235	928	0	0	27,001
1957	0	0	0	0	0	1,099	10,364	9,265	1,243	27,322	0	0	49,293
1958	0	0	0	837	14,420	4,491	3,183	8,092	1,946	0	0	0	32,969
1959	0	0	0	0	1,692	3,017	12,662	14,378	4,431	0	0	0	36,180
1960	0	0	0	0	0	2,507	13,912	16,338	3,763	0	0	0	36,520
1961	0	0	0	668	8,313	1,736	23,030	17,589	3,669	0	0	0	55,005
1962	0	0	0	0	2,787	2,382	9,084	12,813	996	0	0	0	28,062
1963	0	0	0	260	7,938	10,722	34,054	25,682	1,474	0	0	0	80,130
1964	0	0	0	0	3,031	5,583	38,281	34,499	7,464	0	0	0	88,858
1965	0	0	0	0	0	7,303	23,024	30,288	896	0	0	0	61,511
1966	0	0	0	0	12,047	13,944	34,132	9,140	2,927	6,040	12,734	0	90,964
1967	0	0	0	0	795	5,914	23,176	33,686	8,736	9,349	0	0	81,656
1968	0	0	0	0	3,548	7,455	42,693	18,998	455	0	0	0	73,149
1969	0	0	0	0	1,377	8,605	20,388	21,961	1,331	0	0	0	53,662
1970	0	0	0	0	16,415	7,881	42,303	38,733	7,528	0	0	0	112,860
1971	0	0	0	0	920	6,832	32,010	26,824	8,360	3,861	0	0	78,807
1972	0	0	0	0	6,151	7,732	29,393	11,989	626	0	0	0	55,891
1973	0	0	0	0	3,721	7,035	21,968	16,368	950	0	0	0	50,042
1974	0	0	0	0	3,578	9,512	42,106	20,535	4,014	0	0	0	79,745
1975	0	0	0	900	4,905	3,542	36,293	28,017	7,442	0	0	0	81,099
1976	0	0	0	933	3,045	15,692	42,086	38,939	11,460	6,320	6,227	289	124,991
1977	0	0	2,302	6,992	4,087	7,731	34,870	17,541	0	0	0	0	73,523
1978	0	0	0	0	2,694	9,522	30,346	17,359	3,587	0	0	0	63,508
1979	0	0	0	0	5,010	6,363	9,903	17,486	6,572	3,646	0	0	48,980
1980	0	0	0	0	3,756	8,023	33,696	33,039	4,219	0	0	0	82,733
1981	0	0	1,450	5,489	6,168	11,118	22,230	9,997	983	0	0	0	57,435
1982	0	0	0	0	0	4,600	18,152	16,887	3,413	0	0	0	43,052
1983	0	0	0	4,999	14,171	8,220	31,021	29,456	8,316	307	0	0	96,490
1984	0	0	0	0	0	6,351	28,706	30,880	8,424	6,545	166	0	81,072
1985	0	0	0	0	2,787	9,869	25,409	10,195	2,482	0	0	0	50,742
1986	0	0	0	0	0	14,607	28,024	18,512	292	0	0	0	61,435
1987	0	0	0	0	0	2,610	12,419	20,501	15,029	1,449	0	0	52,008
1988	0	0	0	0	3,140	25,496	35,325	20,302	7,289	3,015	0	0	94,567
1989	0	0	0	1,545	3,784	12,255	21,773	21,115	6,843	296	0	0	67,611
1990	0	1,835	4,961	66	6,295	6,753	26,881	19,818	11,056	6,062	6,026	3,338	93,091
1991	0	0	5,229	6,467	7,557	7,529	15,027	12,288	2,922	3,396	4,826	5,849	71,090
1992	5,677	5,401	5,533	5,832	4,077	6,273	7,837	6,148	463	0	0	0	47,241
1993	0	0	0	1,629	3,433	5,324	6,374	8,152	263	0	0	0	25,175
1994	0	0	0	0	2,176	15,984	19,339	20,677	262	0	0	0	58,438
1995	4,420	2,630	0	0	0	3,629	25,096	24,418	13,800	2,700	0	0	76,693
1996	0	0	0	1,248	6,901	11,540	26,531	22,966	3,763	0	0	0	72,949
1997	0	0	0	0	3,893	9,677	25,592	18,653	5,659	4,994	0	0	68,468
1998	0	0	0	0	658	14,729	26,952	18,492	4,954	0	0	0	65,785
1999	0	0	0	0	643	11,507	25,992	16,549	8,243	210	0	0	63,144
2000	0	1,652	12,964	6,024	6,371	20,571	32,164	27,573	4,568	4,481	5,244	5,227	126,839
2001	5,238	722	0	0	0	7,544	19,525	18,462	9,726	6,000	0	0	67,217
2002	0	0	0	4,693	7,355	8,974	28,299	17,999	3,749	5,714	5,526	5,433	87,742
2003	5,203	2,548	0	5,313	7,233	5,453	15,543	10,511	3,365	3,064	3,880	4,387	66,500
2004	4,530	2,350	1,950	5,439	3,910	1,302	1,779	186	525	2,557	3,204	3,769	31,501
2005	3,685	5,087	5,911	7,430	5,479	6,559	1,221	2,663	1,941	2,488	3,017	3,256	48,737
2006	4,270	3,664	4,808	5,232	5,094	4,809	9,293	1,925	2,083	2,585	3,223	3,644	50,629
2007	998	6,026	5,351	5,814	6,446	7,268	14,337	11,873	4,716	400	0	0	63,230
2008	0	0	0	0	0	6,216	14,329	10,425	1,255	0	0	0	32,225
TOTAL	34,021	31,914	50,459	77,991	225,449	432,376	1,224,953	991,676	239,704	113,828	54,073	35,192	3,511,637
AVG.	597	560	885	1,368	3,955	7,586	21,490	17,398	4,205	1,997	949	617	61,608

COURTLAND CANAL, MILE 15.1
AT NEBRASKA-KANSAS STATE LINE
Monthly Diversions
(acre-feet)
Data from USGS - Lincoln NE

BOST-MISC3MWD.XLS
Sheet ST-LINE

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1954										0	0	0	0
1955	0	0	0	0	793	1,590	2,730	6,420	2,590	0	0	0	14,123
1956	0	0	0	0	2,420	3,140	4,670	7,180	2,730	789	0	0	20,929
1957	0	0	0	0	0	1,260	8,870	7,560	958	28,520	13	0	47,181
1958	0	0	0	220	14,550	3,700	2,890	7,900	1,920	179	0	0	31,359
1959	0	0	0	0	622	2,420	11,510	11,990	4,500	50	0	0	31,092
1960	0	0	0	0	0	1,560	11,840	14,170	3,720	0	0	0	31,290
1961	0	0	0	555	7,730	1,280	19,990	16,010	3,280	0	0	0	48,845
1962	0	0	0	0	1,700	1,730	8,560	11,790	1,090	0	0	0	24,870
1963	0	0	0	0	6,250	9,540	33,000	25,380	1,520	0	0	0	75,690
1964	0	0	0	0	1,940	4,640	36,340	33,340	7,150	0	0	0	83,410
1965	0	0	0	0	0	6,240	21,090	27,710	1,140	0	0	0	56,180
1966	0	0	0	0	9,800	12,530	31,920	8,310	2,290	5,890	12,640	0	83,380
1967	0	0	0	0	99	5,050	21,330	28,710	7,880	8,570	0	0	71,639
1968	0	0	0	0	2,070	5,420	38,110	15,150	540	0	0	0	61,290
1969	0	0	0	0	509	7,150	19,270	20,580	1,320	0	0	0	48,829
1970	0	0	0	0	14,460	6,290	38,260	34,660	5,760	136	0	0	99,566
1971	0	0	0	0	222	4,770	28,530	24,250	7,100	3,210	0	0	68,082
1972	0	0	0	0	4,040	6,020	25,810	9,950	776	0	0	0	46,596
1973	0	0	0	0	2,320	5,560	19,430	13,890	1,730	183	0	0	43,113
1974	0	0	0	0	2,420	7,970	37,700	18,540	3,520	0	0	0	70,150
1975	0	0	0	304	3,360	3,120	32,480	24,990	6,670	0	0	0	70,924
1976	0	0	0	417	2,110	13,790	38,530	35,080	10,120	4,830	3,890	131	108,898
1977	0	0	1,580	5,580	3,310	6,280	32,120	16,180	0	0	0	0	65,050
1978	0	0	0	0	1,400	7,800	26,300	14,690	3,240	0	0	0	53,430
1979	0	0	0	0	3,410	4,640	7,900	14,870	6,170	3,180	0	0	40,170
1980	0	0	0	0	2,680	6,320	29,290	29,100	3,480	0	0	0	70,870
1981	0	0	984	4,610	4,950	9,340	19,630	8,390	965	0	0	0	48,869
1982	0	0	0	0	0	3,410	15,560	14,390	2,890	0	0	0	36,250
1983	0	0	0	4,130	12,770	6,550	27,200	26,850	7,770	380	0	0	85,650
1984	0	0	0	0	0	4,990	26,150	28,230	7,450	6,140	212	0	73,172
1985	0	0	0	0	1,640	8,050	22,860	8,720	2,280	0	0	0	43,550
1986	0	0	0	0	0	11,600	24,490	16,790	559	0	0	0	53,439
1987	0	0	0	42	2,194	10,443	17,937	12,893	1,293	0	0	0	44,802
1988	0	0	0	0	1,640	21,540	31,210	16,460	6,130	2,530	63	0	79,573
1989	0	0	0	1,260	2,280	10,280	18,540	17,690	6,210	242	0	0	56,502
1990	0	1,600	4,600	0	4,750	5,220	23,090	16,240	9,560	5,140	5,130	2,780	78,110
1991	0	0	4,660	5,820	5,960	6,030	12,500	10,120	2,030	2,470	3,920	4,530	58,040
1992	5,190	4,770	5,350	5,480	3,610	4,120	6,190	4,930	411	0	0	0	40,051
1993	0	0	0	294	2,440	4,210	5,710	7,320	442	0	0	0	20,416
1994	0	0	0	0	500	12,620	15,310	16,310	483	9	0	0	45,232
1995	3,980	2,300	0	0	0	2,670	20,470	21,760	12,210	2,370	0	0	65,760
1996	0	0	0	1,110	6,640	10,090	23,790	20,250	3,850	0	0	0	65,730
1997	0	0	0	0	3,620	8,380	21,130	15,790	4,840	4,310	***0***	0	58,070
1998	0	0	***0***	***0***	284	12,020	22,960	15,480	4,930	0	0	0	55,674
1999	0	0	0	0	378	9,019	21,973	14,097	7,391	168	0	0	53,026
2000	0	1,198	11,502	6,462	4,195	17,971	28,459	23,965	4,282	3,800	4,670	4,610	111,114
2001	4,633	762	0	0	0	5,576	15,999	14,946	8,836	5,425	0	0	56,177
2002	0	0	0	3,872	6,595	6,704	23,922	15,084	3,291	4,671	4,674	4,502	73,315
2003	4,271	2,163	0	4,144	5,699	4,169	12,073	8,423	2,472	2,129	2,950	3,459	51,952
2004	3,601	1,914	1,514	4,551	3,043	1,005	1,730	35	184	2,129	2,950	2,784	25,440
2005	2,747	4,265	4,926	6,557	4,608	5,764	893	2,118	1,375	1,843	2,416	2,574	40,086
2006	3,384	2,819	3,838	4,378	2,748	3,742	7,970	1,148	1,263	1,800	2,630	2,950	38,670
2007	2,727	5,058	4,455	4,909	5,649	5,379	12,254	11,217	4,036	456	0	0	56,141
2008	0	0	0	0	0	4,505	11,408	8,220	1,164	0	0	0	25,297
TOTAL	30,534	26,848	43,409	64,695	174,408	355,207	1,079,878	856,266	199,792	101,549	46,158	28,320	3,007,063
AVG.	565	497	804	1,198	3,230	6,578	19,998	15,857	3,700	1,846	839	515	54,674

APPENDIX B
Historical BOR and USGS Gaging Data

MONTHLY GAGE ANALYSIS FOR COURTLAND CANAL
From the point of diversion to the stateline

DATE	Gage 1[1] BOR CRTLD 0.7 AC FT	Gage 2[2] BOR CRTLD NE AC FT	Gage 3[3] USGS CRTLD SL AC FT	Gage 2+Gage 3 BOR/USGS NE + SL AC FT	(Gage 2+Gage 3)/(Gage 1) BOR/USGS (SL+NE)/0.7 %
			Average from 1994 - 2006		
JAN	2,104	0	1,711	1,711	81%
FEB	1,435	0	1,211	1,211	84%
MAR	1,972	0	1,651	1,651	84%
APR	2,721	0	2,348	2,348	86%
MAY	3,824	0	3,026	3,026	79%
JUN	9,406	236	7,621	7,857	84%
JUL	19,794	777	16,677	17,454	88%
AUG	15,467	580	12,979	13,560	88%
SEP	4,818	31	4,220	4,252	88%
OCT	2,676	0	2,103	2,103	79%
NOV	1,853	0	1,518	1,518	82%
DEC	1,978	0	1,565	1,565	79%
ANNUAL	68,049	1,625	56,631	58,256	86%
Jan-94	0	0	0	0	
Feb-94	0	0	0	0	
Mar-94	0	0	0	0	
Apr-94	0	0	0	0	
May-94	2,176	0	500	500	23%
Jun-94	15,984	555	12,621	13,176	82%
Jul-94	19,339	653	15,311	15,964	83%
Aug-94	20,677	861	16,313	17,174	83%
Sep-94	262	0	483	483	184%
Oct-94	0	0	9	9	
Nov-94	0	0	0	0	
Dec-94	0	0	0	0	
1994	58,438	2,069	45,237	47,306	81%
Jan-95	4,420	0	3,978	3,978	90%
Feb-95	2,630	0	2,299	2,299	87%
Mar-95	0	0	0	0	
Apr-95	0	0	0	0	
May-95	0	0	0	0	
Jun-95	3,629	1	2,666	2,667	73%
Jul-95	25,096	1,198	20,463	21,661	86%
Aug-95	24,418	703	21,761	22,464	92%
Sep-95	13,800	257	12,204	12,461	90%
Oct-95	2,700	0	2,373	2,373	88%
Nov-95	0	0	0	0	
Dec-95	0	0	0	0	
1995	76,693	2,159	65,745	67,904	89%

MONTHLY GAGE ANALYSIS FOR COURTLAND CANAL
From the point of diversion to the stateline

DATE	Gage 1[1] BOR CRTLD 0.7 AC FT	Gage 2[2] BOR CRTLD NE AC FT	Gage 3[3] USGS CRTLD SL AC FT	Gage 2+Gage 3 BOR/USGS NE + SL AC FT	(Gage 2+Gage 3)/(Gage 1) BOR/USGS (SL+NE)/0.7 %
Jan-96	0	0	0	0	
Feb-96	0	0	0	0	
Mar-96	0	0	0	0	
Apr-96	1,248	0	1,113	1,113	89%
May-96	6,901	0	8,098	8,098	117%
Jun-96	11,540	252	10,092	10,344	90%
Jul-96	26,531	591	23,790	24,381	92%
Aug-96	22,966	561	20,248	20,809	91%
Sep-96	3,763	0	3,856	3,856	102%
Oct-96	0	0	0	0	
Nov-96	0	0	0	0	
Dec-96	0	0	0	0	
1996	72,949	1,404	67,197	68,601	94%
Jan-97	0	0	0	0	
Feb-97	0	0	0	0	
Mar-97	0	0	0	0	
Apr-97	0	0	0	0	
May-97	3,893	0	3,634	3,634	93%
Jun-97	9,677	0	8,372	8,372	87%
Jul-97	25,592	939	21,127	22,066	86%
Aug-97	18,653	583	15,784	16,367	88%
Sep-97	5,659	34	4,838	4,872	86%
Oct-97	4,994	0	4,310	4,310	86%
Nov-97	0	0	17	17	
Dec-97	0	0	0	0	
1997	68,468	1,556	58,083	59,639	87%
Jan-98	0	0	0	0	
Feb-98	0	0	0	0	
Mar-98	0	0	15	15	
Apr-98	0	0	123	123	
May-98	658	0	285	285	43%
Jun-98	14,729	680	12,026	12,706	86%
Jul-98	26,952	939	22,960	23,899	89%
Aug-98	18,492	715	15,477	16,192	88%
Sep-98	4,954	47	4,933	4,980	101%
Oct-98	0	0	0	0	
Nov-98	0	0	0	0	
Dec-98	0	0	0	0	
1998	65,785	2,381	55,818	58,199	88%

MONTHLY GAGE ANALYSIS FOR COURTLAND CANAL
From the point of diversion to the stateline

DATE	Gage 1[1] BOR CRTLD 0.7 AC FT	Gage 2[2] BOR CRTLD NE AC FT	Gage 3[3] USGS CRTLD SL AC FT	Gage 2+Gage 3 BOR/USGS NE + SL AC FT	(Gage 2+Gage 3)/(Gage 1) BOR/USGS (SL+NE)/0.7 %
Jan-99	0	0	0	0	
Feb-99	0	0	0	0	
Mar-99	0	0	0	0	
Apr-99	0	0	0	0	
May-99	643	0	378	378	59%
Jun-99	11,507	236	9,021	9,257	80%
Jul-99	25,992	1,302	21,976	23,278	90%
Aug-99	16,549	749	14,099	14,848	90%
Sep-99	8,243	68	7,391	7,459	90%
Oct-99	210	0	168	168	80%
Nov-99	0	0	0	0	
Dec-99	0	0	0	0	
1999	63,144	2,355	53,033	55,388	88%
Jan-00	0	0	0	0	
Feb-00	1,652	0	1,196	1,196	72%
Mar-00	12,964	0	11,504	11,504	89%
Apr-00	6,024	0	6,462	6,462	107%
May-00	6,371	0	4,194	4,194	66%
Jun-00	20,571	735	17,971	18,706	91%
Jul-00	32,164	1,341	28,457	29,798	93%
Aug-00	27,573	1,387	23,962	25,349	92%
Sep-00	4,568	0	4,284	4,284	94%
Oct-00	4,481	0	3,800	3,800	85%
Nov-00	5,244	0	4,665	4,665	89%
Dec-00	5,227	0	4,612	4,612	88%
2000	126,839	3,463	111,107	114,570	90%
Jan-01	5,238	0	4,636	4,636	89%
Feb-01	722	0	761	761	105%
Mar-01	0	0	0	0	
Apr-01	0	0	0	0	
May-01	0	0	0	0	
Jun-01	7,544	180	5,576	5,756	76%
Jul-01	19,525	693	15,999	16,692	85%
Aug-01	18,462	1,109	14,948	16,057	87%
Sep-01	9,726	0	8,836	8,836	91%
Oct-01	6,000	0	5,626	5,626	94%
Nov-01	0	0	61	61	
Dec-01	0	0	0	0	
2001	67,217	1,982	56,444	58,426	87%

MONTHLY GAGE ANALYSIS FOR COURTLAND CANAL
From the point of diversion to the stateline

DATE	Gage 1[1] BOR CRTLD 0.7 AC FT	Gage 2[2] BOR CRTLD NE AC FT	Gage 3[3] USGS CRTLD SL AC FT	Gage 2+Gage 3 BOR/USGS NE + SL AC FT	(Gage 2+Gage 3)/(Gage 1) BOR/USGS (SL+NE)/0.7 %
Jan-02	0	0	0	0	
Feb-02	0	0	0	0	
Mar-02	0	0	0	0	
Apr-02	4,693	0	3,880	3,880	83%
May-02	7,355	0	6,512	6,512	89%
Jun-02	8,974	434	6,700	7,134	79%
Jul-02	28,299	1,388	23,968	25,356	90%
Aug-02	17,999	441	14,659	15,100	84%
Sep-02	3,749	0	2,803	2,803	75%
Oct-02	5,714	0	3,837	3,837	67%
Nov-02	5,526	0	4,790	4,790	87%
Dec-02	5,433	0	4,366	4,366	80%
2002	87,742	2,263	71,514	73,777	84%
Jan-03	5,203	0	3,898	3,898	75%
Feb-03	2,548	0	2,510	2,510	99%
Mar-03	0	0	0	0	
Apr-03	5,313	0	4,112	4,112	77%
May-03	7,233	0	5,645	5,645	78%
Jun-03	5,453	0	4,171	4,171	76%
Jul-03	15,543	1,054	12,076	13,130	84%
Aug-03	10,511	437	8,412	8,849	84%
Sep-03	3,365	0	2,481	2,481	74%
Oct-03	3,064	0	2,128	2,128	69%
Nov-03	3,880	0	2,928	2,928	75%
Dec-03	4,387	0	3,320	3,320	76%
2003	66,500	1,491	51,681	53,172	80%
Jan-04	4,530	0	3,640	3,640	80%
Feb-04	2,350	0	1,915	1,915	82%
Mar-04	1,950	0	1,513	1,513	78%
Apr-04	5,439	0	4,552	4,552	84%
May-04	3,910	0	3,081	3,081	79%
Jun-04	1,302	0	1,006	1,006	77%
Jul-04	1,779	0	1,728	1,728	97%
Aug-04	186	0	39	39	21%
Sep-04	525	0	186	186	35%
Oct-04	2,557	0	1,648	1,648	64%
Nov-04	3,204	0	2,428	2,428	76%
Dec-04	3,769	0	2,767	2,767	73%
2004	31,501	0	24,502	24,502	78%

MONTHLY GAGE ANALYSIS FOR COURTLAND CANAL
From the point of diversion to the stateline

DATE	Gage 1[1] BOR CRTLD 0.7 AC FT	Gage 2[2] BOR CRTLD NE AC FT	Gage 3[3] USGS CRTLD SL AC FT	Gage 2+Gage 3 BOR/USGS NE + SL AC FT	(Gage 2+Gage 3)/(Gage 1) BOR/USGS (SL+NE)/0.7 %
Jan-05	3,685	0	2,853	2,853	77%
Feb-05	5,087	0	4,365	4,365	86%
Mar-05	5,911	0	4,667	4,667	79%
Apr-05	7,430	0	5,867	5,867	79%
May-05	5,479	0	4,261	4,261	78%
Jun-05	6,559	0	5,361	5,361	82%
Jul-05	1,221	0	769	769	63%
Aug-05	2,663	0	1,900	1,900	71%
Sep-05	1,941	0	1,142	1,142	59%
Oct-05	2,488	0	1,642	1,642	66%
Nov-05	3,017	0	2,208	2,208	73%
Dec-05	3,256	0	2,367	2,367	73%
2005	48,737	0	37,403	37,403	77%
Jan-06	4,270	0	3,240	3,240	76%
Feb-06	3,664	0	2,694	2,694	74%
Mar-06	4,808	0	3,769	3,769	78%
Apr-06	5,232	0	4,415	4,415	84%
May-06	5,094	0	2,749	2,749	54%
Jun-06	4,809	0	3,487	3,487	73%
Jul-06	9,293	0	8,178	8,178	88%
Aug-06	1,925	0	1,131	1,131	59%
Sep-06	2,083	0	1,428	1,428	69%
Oct-06	2,585	0	1,795	1,795	69%
Nov-06	3,223	0	2,636	2,636	82%
Dec-06	3,644	0	2,915	2,915	80%
2006	50,629	0	38,438	38,438	76%

Notes:
[1]BOR Gage Code CCNE
[2]Data from BOR Annual Operating Plans
[3]USGS Gage 0682500

Kansas' Review of Nebraska's Request for Change in Accounting Procedure
September 18, 2007

This memo is intended to summarize Kansas' understanding of the Nebraska's proposal for changing the agreed upon method of computing pumping impacts using results from the Republican River Compact Administration Groundwater Model (Model) and to summarize our initial response to the proposal.

Nebraska believes that the calculation of pumping impacts using results from the groundwater model improperly includes the consumption of imported water. Nebraska argues that because some of the water pumped by wells is or could be water that originated from imported water, the consumption of that water should not be counted in determining the virgin water supply in the accounting process. This argument is difficult to understand since no one has ever determined the specific origin of groundwater that is pumped and consumed. In other words, whether the origin of the pumped water is from natural recharge within the Republican River basin, natural recharge outside the Republican River basin, stored groundwater, or imported water has never been determined and probably cannot be determined with any degree of reliability.

In terms of the use of the Model to determine compliance with the Compact, however, the specific origin of the water that is pumped and consumed is not the determining factor. The only question with respect to the Model's result s that affect compact compliance is the extent to which activities in a state, either pumping or importation of water, affect base flow in the Republican River. To the extent these activities affect base flows in the river, they must be counted. In other words, it is not the source of water that counts, but the depletion or accretion to base flow that is associated with the activity that determines the amount of impact that must be considered in the compact accounting process. This concept is precisely what is included in the Accounting Procedures adopted by the Settlement and what the special master based his rulings on in determining that those effects to stream flows in the Republican River are regulated by the compact. As it is stated in the Final Report of the Special Master's With Certification of Adoption of Republican River Compact Administration Groundwater Model, September 2003: "*... the RRCA Groundwater Model which would, for use in the accounting formulas for administering the Republican River Compact, determine both stream flow depletions caused by groundwater pumping and streamflow accretions resulting from recharge by imported water*" (Page 1). It is clear that only quantification that is relevant to the compact accounting is the depletion or accretion to Republican River stream flow.

The quantification of depletion or accretion to Republican River base flow is not limited to activities that are solely within the boundaries of the Republican River Basin. Recharge from imported water can cause accretion to Republican River base flow even if the recharge occurs outside the boundary of the basin. To the extent that such recharge provides accretions to Republican River base flow, it is counted in the accounting process. Similarly, pumping from locations outside the basin can cause depletions to Republican River base flow. To the extent that such pumping causes depletions to base flow, it is counted in the accounting process. Thus both positive effects (accretions) and negative effects (depletions) on Republican River base flows caused by activities outside the physical boundaries of the basin are treated equally.

In order to provide this quantification using the groundwater model, it was agreed in the settlement that the impact of each state's pumping or water importation would be determined by comparing the model-computed historical base flow condition to the model-computed base flow condition without that activity. The states recognized that the sum of the impacts of these individual activities would not necessarily exactly equal the model-computed impact of all of the activities considered simultaneously. If the groundwater model were mathematically linear, it would, in fact, be the case that the sum of the individual affects would equal the affect determined by considering all of the activities simultaneously. However, because the groundwater model is mildly non-linear, this mathematical equality does not occur.

It should be noted that if the impact of all activities considered simultaneously were used, it would be necessary to have a method for apportioning the impact among the various activities. Such a process was considered unnecessary and it was agreed that the impacts from each state's activity would be computed separately in spite of the fact that the sum of those impacts may not exactly equal the impact of all activities considered simultaneously.

Nebraska has proposed an alternative method of computing the impacts associated with each state's activity. This alternative has been proposed to correct what they see as an inappropriate accounting of consumed water. While the connection between Nebraska's proposed alternative accounting method and their concept of what water is actually consumed is far from apparent, we have evaluated the merits of this alternative method regardless of its basis.

The ultimate goal of the RRCA Groundwater Model is to provide a measure of what base flows would have been if the States had not pumped groundwater or recharged imported water. That overall measure could be determined by comparing the model-computed historical stream flows to the model-computed stream flows with all pumping and recharge of imported water removed from the analysis (herein referred to as the "virgin water supply metric"). This measure gives us the total impact on stream flows caused by the States' pumping and the recharge of imported water. As described above, however, this result does not apportion the impact among the States. Conceptually, the condition with no pumping and no imported water represents what the stream flows would have been if none of this activity had occurred. In that sense, it represents a "virgin water supply" condition with respect to the modeled elements of the groundwater model and their impact on Republican River stream flows.

This measure does provide a metric for comparing the accounting method agreed to in the settlement with Nebraska's alternative accounting proposal. It is a relatively straightforward process to add up the impacts using the accounting method agreed to in the settlement or to add up the impacts from Nebraska's alternative accounting proposal and compare those totals to the virgin water supply metric described above. If the Nebraska alternative accounting proposal provides a better approximation of this metric, it is worthy of further consideration.

Our calculations, as summarized in the table below, show that the accounting agreed to in the settlement provides a better approximation of the virgin water supply metric than the Nebraska proposed accounting method. The table shows that the accounting agreed to in the settlement results in both positive and negative annual differences from the virgin water supply metric. The resultant average for the years 1990 – 2000, the last ten years of the calibration of the model is -

150 acre-feet. For the last six years, 2001-2006, the average difference is 2,053 acre-feet. The Nebraska alternative accounting proposal departs significantly further from the virgin water supply metric than the accounting method agreed to in the settlement, has a negative bias, and for the period studied is increasing.

It remains our view, based on our understanding of the agreement of the States at the time of the settlement and these results, that the current accounting methods are appropriate.

Table: Comparison of total impacts under adopted procedures and as proposed by Nebraska versus the virgin water supply metric.

Year	Virgin Water Supply Metric	Compact Method Total	Nebraska Proposed Alternative	Difference [Compact Method – Metric]	Difference [Nebraska Proposal – Metric]
1990	180542	176749	170646	-3793	-9896
1991	200582	200424	191432	-158	-9150
1992	206037	204478	195938	-1559	-10099
1993	213153	210926	212593	-2227	-560
1994	188954	194203	186345	5249	-2609
1995	219075	220673	213807	1598	-5268
1996	229586	228517	228167	-1069	-1419
1997	208878	212730	202992	3852	-5886
1998	210089	208778	200587	-1311	-9502
1999	230055	231109	222053	1054	-8002
2000	203222	199934	192856	-3288	-10366
2001	236771	230905	221333	-5866	-15438
2002	196546	195685	183123	-861	-13423
2003	221307	228528	210485	7221	-10822
2004	231704	237594	219651	5890	-12053
2005	237802	240969	224287	3167	-13515
2006	219356	222122	204589	2766	-14767
Averages:					
1990-2000	208198	208047	201583	-150	-6614
1990-2006	213745	214372	204758	627	-8987
2001-2006	223914	225967	210578	2053	-13336