

From: [Thompson, Aaron M](#)
To: [Scott, Craig D](#)
Subject: FW: Historic surface water CBCU
Date: Thursday, February 24, 2011 7:14:55 AM
Attachments: [image003.jpg](#)
[Reclamation Project Acres CBCU.pdf](#)
[Att No 7 with NRD split.pdf](#)

From: Brad Edgerton [<mailto:Brad.Edgerton@fcidwater.com>]
Sent: Wednesday, February 23, 2011 6:38 PM
To: 'Mike Delka'; Don Felker
Cc: Thompson, Aaron M
Subject: Historic surface water CBCU

Don and Mike

I assembled the historic diversion and ran them through the current compact accounting to come up with the Historic surface water computed beneficial consumptive use (CBCU)
If we can get the state to redo the NRD split and include the Historic CBCU from our projects in the appropriate NRD this would help our folks and put a heavy burden on the URNRD to reduce pumping.

Let me know what you think. Call if you have questions.

Brad

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Frenchman Valley Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|-------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|--------------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Frenchman Valley Historic CBCU |
| year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1958 | 26330 | | 13000 | 13,330 | 30% | 3,900 | 17,230 | 82% | 14,129 | 54% | 12,201 |
| 1959 | 22076 | | 13000 | 9,076 | 30% | 3,900 | 12,976 | 82% | 10,640 | 48% | 11,436 |
| 1960 | 22094 | | 13000 | 9,094 | 30% | 3,900 | 12,994 | 82% | 10,655 | 48% | 11,439 |
| 1961 | 39613 | | 13000 | 26,613 | 30% | 3,900 | 30,513 | 82% | 25,021 | 63% | 14,592 |
| 1962 | 36402 | | 13000 | 23,402 | 30% | 3,900 | 27,302 | 82% | 22,388 | 62% | 14,014 |
| 1963 | 26633 | | 13000 | 13,633 | 30% | 3,900 | 17,533 | 82% | 14,377 | 54% | 12,256 |
| 1964 | 21958 | | 13000 | 8,958 | 30% | 3,900 | 12,858 | 82% | 10,544 | 48% | 11,414 |
| 1965 | 19857 | | 13000 | 6,857 | 30% | 3,900 | 10,757 | 82% | 8,821 | 44% | 11,036 |
| 1966 | 21469 | | 15690 | 5,779 | 30% | 4,707 | 10,486 | 82% | 8,599 | 40% | 12,870 |
| 1967 | 21715 | | 13786 | 7,929 | 30% | 4,136 | 12,065 | 82% | 9,893 | 46% | 11,822 |
| 1968 | 20263 | | 14099 | 6,164 | 30% | 4,230 | 10,394 | 82% | 8,523 | 42% | 11,740 |
| 1969 | 21469 | | 13817 | 7,652 | 30% | 4,145 | 11,797 | 82% | 9,674 | 45% | 11,795 |
| 1970 | 20384 | | 12416 | 7,968 | 30% | 3,725 | 11,693 | 82% | 9,588 | 47% | 10,796 |
| 1971 | 22333 | | 13179 | 9,154 | 30% | 3,954 | 13,108 | 82% | 10,748 | 48% | 11,585 |
| 1972 | 21084 | | 12862 | 8,222 | 30% | 3,859 | 12,081 | 82% | 9,906 | 47% | 11,178 |
| 1973 | 22071 | | 14016 | 8,055 | 30% | 4,205 | 12,260 | 82% | 10,053 | 46% | 12,018 |
| 1974 | 17119 | | 11103 | 6,016 | 30% | 3,331 | 9,347 | 82% | 7,664 | 45% | 9,455 |
| 1975 | 19457 | | 12220 | 7,237 | 30% | 3,666 | 10,903 | 82% | 8,940 | 46% | 10,517 |
| 1976 | 17435 | | 11024 | 6,411 | 30% | 3,307 | 9,718 | 82% | 7,969 | 46% | 9,466 |
| 1977 | 16265 | | 9454 | 6,811 | 30% | 2,836 | 9,647 | 82% | 7,911 | 49% | 8,354 |
| 1978 | 15687 | | 8070 | 7,617 | 30% | 2,421 | 10,038 | 82% | 8,231 | 52% | 7,456 |
| 1979 | 12887 | | 6879 | 6,008 | 30% | 2,064 | 8,072 | 82% | 6,619 | 51% | 6,268 |
| 1980 | 12885 | | 7207 | 5,678 | 30% | 2,162 | 7,840 | 82% | 6,429 | 50% | 6,456 |
| 1981 | 12579 | | 6464 | 6,115 | 30% | 1,939 | 8,054 | 82% | 6,604 | 53% | 5,975 |
| 1982 | 11298 | | 6325 | 4,973 | 30% | 1,898 | 6,871 | 82% | 5,634 | 50% | 5,664 |
| 1983 | 11142 | | 6080 | 5,062 | 30% | 1,824 | 6,886 | 82% | 5,647 | 51% | 5,495 |
| 1984 | 13367 | | 7514 | 5,853 | 30% | 2,254 | 8,107 | 82% | 6,648 | 50% | 6,719 |
| 1985 | 12088 | | 5840 | 6,248 | 30% | 1,752 | 8,000 | 82% | 6,560 | 54% | 5,528 |
| 1986 | 12855 | | 5652 | 7,203 | 30% | 1,696 | 8,899 | 82% | 7,297 | 57% | 5,558 |
| 1987 | 11389 | | 6029 | 5,360 | 30% | 1,809 | 7,169 | 82% | 5,878 | 52% | 5,511 |
| 1988 | 12093 | | 5655 | 6,438 | 30% | 1,697 | 8,135 | 82% | 6,670 | 55% | 5,423 |
| 1989 | 10527 | | 5747 | 4,780 | 30% | 1,724 | 6,504 | 82% | 5,333 | 51% | 5,194 |
| 1990 | 11069 | | 5102 | 5,967 | 30% | 1,531 | 7,498 | 82% | 6,148 | 56% | 4,921 |
| 1991 | 10972 | | 4711 | 6,261 | 30% | 1,413 | 7,674 | 82% | 6,293 | 57% | 4,679 |
| 1992 | 8920 | | 2563 | 6,357 | 30% | 769 | 7,126 | 82% | 5,843 | 66% | 3,077 |
| 1993 | 9299 | | 3887 | 5,412 | 30% | 1,166 | 6,578 | 82% | 5,394 | 58% | 3,905 |
| 1994 | 10851 | | 4489 | 6,362 | 30% | 1,347 | 7,709 | 82% | 6,321 | 58% | 4,530 |
| 1995 | 9527 | | 4324 | 5,203 | 30% | 1,297 | 6,500 | 82% | 5,330 | 56% | 4,197 |
| 1996 | 10179 | | 4383 | 5,796 | 30% | 1,315 | 7,111 | 82% | 5,831 | 57% | 4,348 |
| 1997 | 10082 | | 5004 | 5,078 | 30% | 1,501 | 6,579 | 82% | 5,395 | 54% | 4,687 |
| 1998 | 9786 | | 4435 | 5,351 | 30% | 1,331 | 6,682 | 82% | 5,479 | 56% | 4,307 |

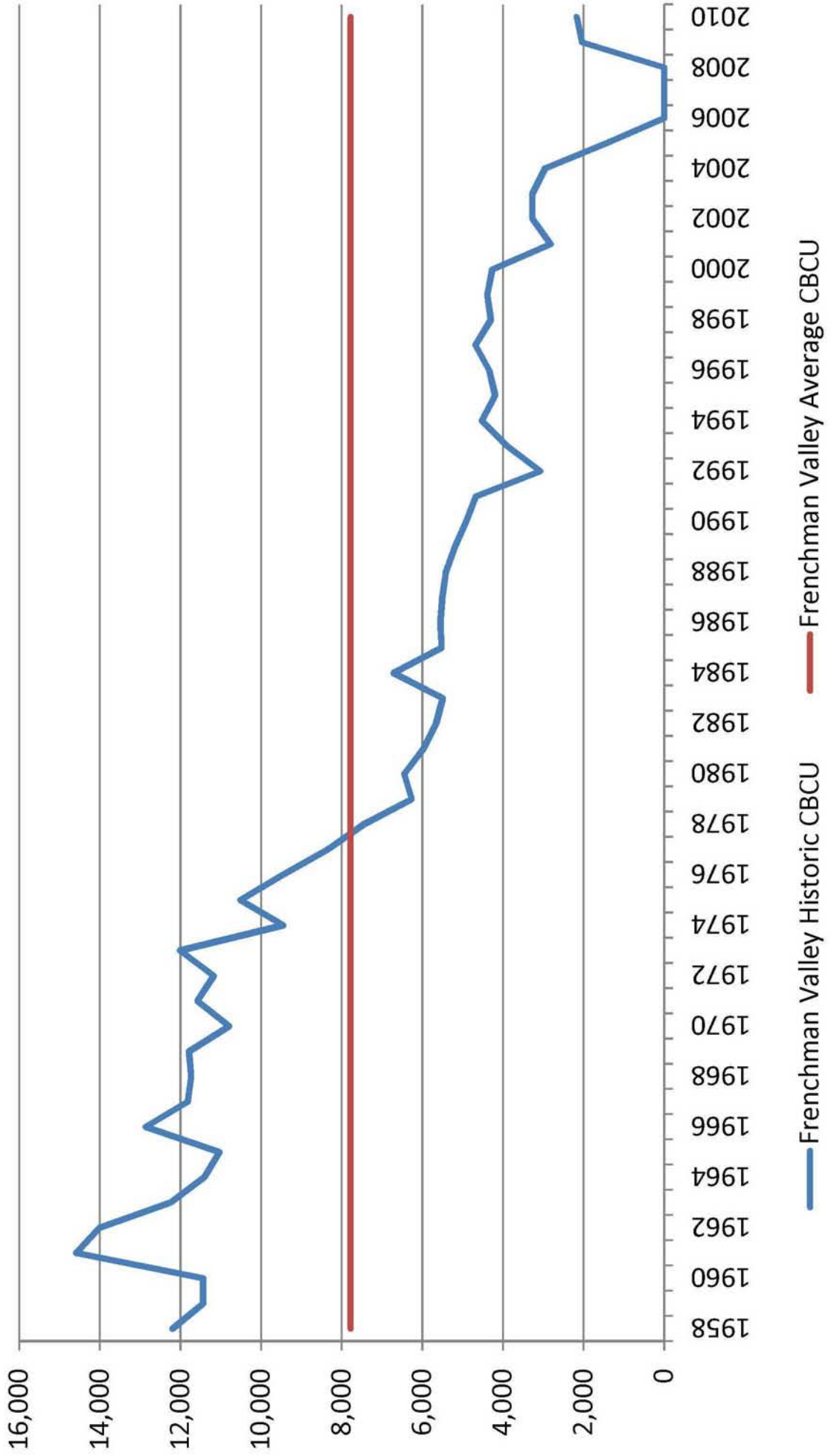
Frenchman Valley Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|----------------|--------------------|--------------------------------|--------------------------------|----------------|---|---------------|--------------------------|---|---|--------------------------------------|--------------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Frenchman Valley Historic CBCU |
| year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1999 | 8089 | | 5117 | 2,972 | 30% | 1,535 | 4,507 | 82% | 3,696 | 46% | 4,393 |
| 2000 | 9340 | | 4499 | 4,841 | 30% | 1,350 | 6,191 | 82% | 5,076 | 54% | 4,264 |
| 2001 | 6964 | | 2733 | 4,231 | 30% | 820 | 5,051 | 82% | 4,142 | 59% | 2,822 |
| 2002 | 8964 | | 2892 | 6,072 | 30% | 868 | 6,940 | 82% | 5,690 | 63% | 3,274 |
| 2003 | 8002 | | 3188 | 4,814 | 30% | 956 | 5,770 | 82% | 4,732 | 59% | 3,270 |
| 2004 | 8674 | | 2441 | 6,233 | 30% | 732 | 6,965 | 82% | 5,712 | 66% | 2,962 |
| 2005 | 6562 | | 447 | 6,115 | 30% | 134 | 6,249 | 82% | 5,124 | 78% | 1,438 |
| 2006 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2007 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2008 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2009 | 9624 | | 537 | 9,087 | 30% | 161 | 9,248 | 82% | 7,583 | 79% | 2,041 |
| 2010 | 9609 | | 771 | 8,838 | 30% | 231 | 9,069 | 82% | 7,437 | 77% | 2,172 |
| Average | 16,019 | | 8,532 | 7,487 | | 2,559 | 10,047 | | 8,238 | 51% | 7,781 |
| Totals | 771,337 | | 331,651 | 293,171 | | 99,495 | 392,666 | | 321,986 | | 302,836 |

*Note: No Storage water used 2004 through 2010! 1958 to 1965 Field Deliveries were estimated!
Average computed 1958 to 2003*

Frenchman Valley Historic CBCU



H & RW Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|-------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|----------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | H & RW Historic CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1961 | 12955 | | 6500 | 6,455 | 30% | 1,950 | 8,405 | 82% | 6,892 | 53% | 6,063 |
| 1962 | 16638 | | 8671 | 7,967 | 30% | 2,601 | 10,568 | 82% | 8,666 | 52% | 7,972 |
| 1963 | 28052 | | 16275 | 11,777 | 30% | 4,883 | 16,660 | 82% | 13,661 | 49% | 14,391 |
| 1964 | 26549 | | 15515 | 11,034 | 30% | 4,655 | 15,689 | 82% | 12,865 | 48% | 13,684 |
| 1965 | 25124 | | 14765 | 10,359 | 30% | 4,430 | 14,789 | 82% | 12,127 | 48% | 12,997 |
| 1966 | 30486 | | 16366 | 14,120 | 30% | 4,910 | 19,030 | 82% | 15,604 | 51% | 14,882 |
| 1967 | 26560 | | 13294 | 13,266 | 30% | 3,988 | 17,254 | 82% | 14,148 | 53% | 12,412 |
| 1968 | 32163 | | 17370 | 14,793 | 30% | 5,211 | 20,004 | 82% | 16,403 | 51% | 15,760 |
| 1969 | 31804 | | 17893 | 13,911 | 30% | 5,368 | 19,279 | 82% | 15,809 | 50% | 15,995 |
| 1970 | 28425 | | 13493 | 14,932 | 30% | 4,048 | 18,980 | 82% | 15,564 | 55% | 12,861 |
| 1971 | 29907 | | 13482 | 16,425 | 30% | 4,045 | 20,470 | 82% | 16,785 | 56% | 13,122 |
| 1972 | 29088 | | 13957 | 15,131 | 30% | 4,187 | 19,318 | 82% | 15,841 | 54% | 13,247 |
| 1973 | 26599 | | 14497 | 12,102 | 30% | 4,349 | 16,451 | 82% | 13,490 | 51% | 13,109 |
| 1974 | 24406 | | 12010 | 12,396 | 30% | 3,603 | 15,999 | 82% | 13,119 | 54% | 11,287 |
| 1975 | 25023 | | 12125 | 12,898 | 30% | 3,638 | 16,536 | 82% | 13,559 | 54% | 11,464 |
| 1976 | 23677 | | 11394 | 12,283 | 30% | 3,418 | 15,701 | 82% | 12,875 | 54% | 10,802 |
| 1977 | 23293 | | 10746 | 12,547 | 30% | 3,224 | 15,771 | 82% | 12,932 | 56% | 10,361 |
| 1978 | 20953 | | 8887 | 12,066 | 30% | 2,666 | 14,732 | 82% | 12,080 | 58% | 8,873 |
| 1979 | 17229 | | 5984 | 11,245 | 30% | 1,795 | 13,040 | 82% | 10,693 | 62% | 6,536 |
| 1980 | 18574 | | 6520 | 12,054 | 30% | 1,956 | 14,010 | 82% | 11,488 | 62% | 7,086 |
| 1981 | 18983 | | 5441 | 13,542 | 30% | 1,632 | 15,174 | 82% | 12,443 | 66% | 6,540 |
| 1982 | 21159 | | 7164 | 13,995 | 30% | 2,149 | 16,144 | 82% | 13,238 | 63% | 7,921 |
| 1983 | 20009 | | 8533 | 11,476 | 30% | 2,560 | 14,036 | 82% | 11,509 | 58% | 8,500 |
| 1984 | 19296 | | 7740 | 11,556 | 30% | 2,322 | 13,878 | 82% | 11,380 | 59% | 7,916 |
| 1985 | 16912 | | 6329 | 10,583 | 30% | 1,899 | 12,482 | 82% | 10,235 | 61% | 6,677 |
| 1986 | 13852 | | 5507 | 8,345 | 30% | 1,652 | 9,997 | 82% | 8,198 | 59% | 5,654 |
| 1987 | 14284 | | 5572 | 8,712 | 30% | 1,672 | 10,384 | 82% | 8,515 | 60% | 5,769 |
| 1988 | 14686 | | 5952 | 8,734 | 30% | 1,786 | 10,520 | 82% | 8,626 | 59% | 6,060 |
| 1989 | 14145 | | 5435 | 8,710 | 30% | 1,631 | 10,341 | 82% | 8,479 | 60% | 5,666 |
| 1990 | 12499 | | 4911 | 7,588 | 30% | 1,473 | 9,061 | 82% | 7,430 | 59% | 5,069 |
| 1991 | 11178 | | 3890 | 7,288 | 30% | 1,167 | 8,455 | 82% | 6,933 | 62% | 4,245 |
| 1992 | 9645 | | 3613 | 6,032 | 30% | 1,084 | 7,116 | 82% | 5,835 | 60% | 3,810 |
| 1993 | 13521 | | 4312 | 9,209 | 30% | 1,294 | 10,503 | 82% | 8,612 | 64% | 4,909 |
| 1994 | 13160 | | 5842 | 7,318 | 30% | 1,753 | 9,071 | 82% | 7,438 | 57% | 5,722 |
| 1995 | 12024 | | 5343 | 6,681 | 30% | 1,603 | 8,284 | 82% | 6,793 | 56% | 5,231 |
| 1996 | 12016 | | 4700 | 7,316 | 30% | 1,410 | 8,726 | 82% | 7,155 | 60% | 4,861 |
| 1997 | 13722 | | 5903 | 7,819 | 30% | 1,771 | 9,590 | 82% | 7,864 | 57% | 5,858 |
| 1998 | 11504 | | 4715 | 6,789 | 30% | 1,415 | 8,204 | 82% | 6,727 | 58% | 4,777 |
| 1999 | 13056 | | 4322 | 8,734 | 30% | 1,297 | 10,031 | 82% | 8,225 | 63% | 4,831 |

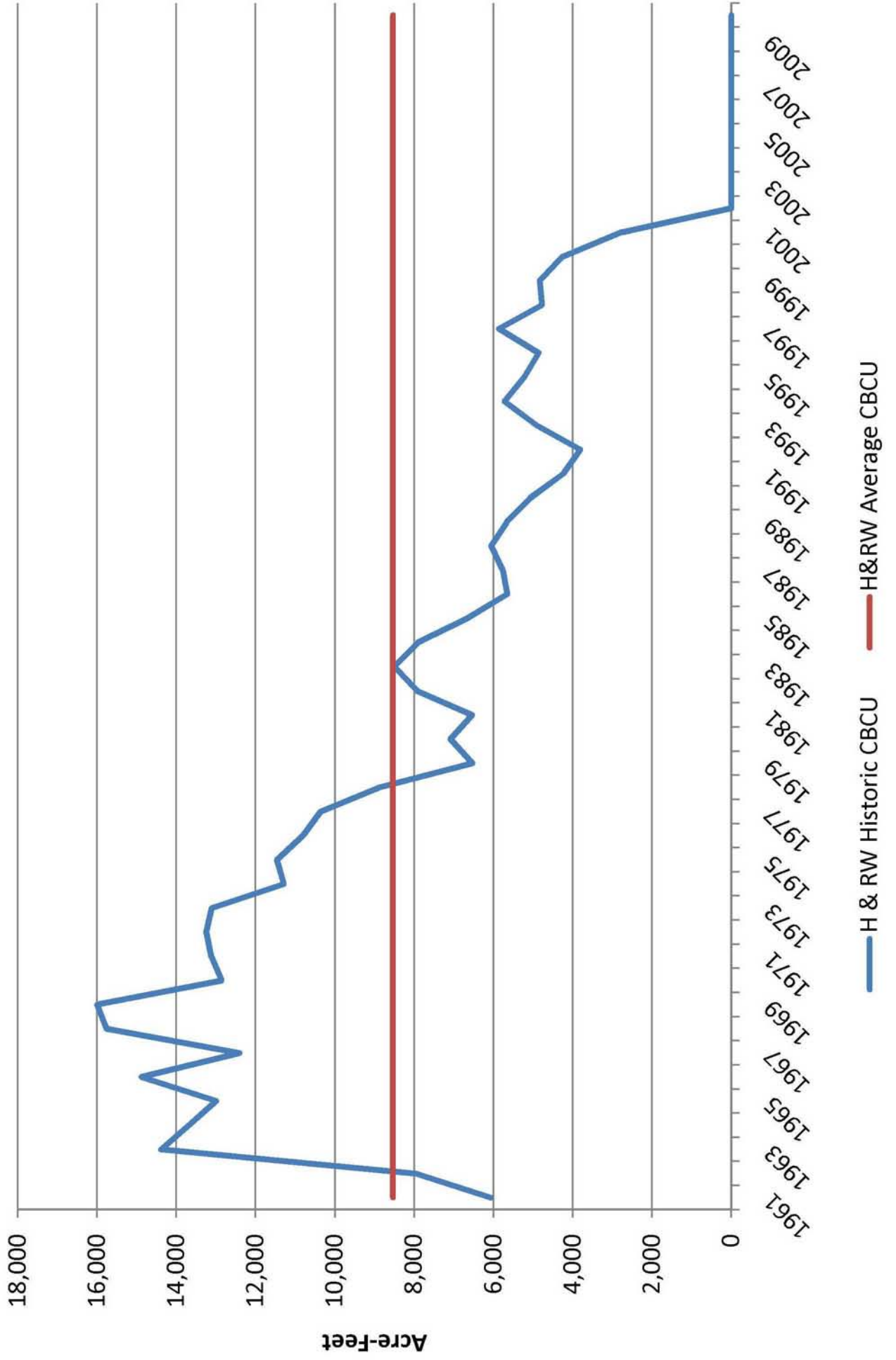
H & RW Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|----------------|--------------------|--------------------------------|--------------------------------|----------------|---|----------------|--------------------------|---|---|--------------------------------------|----------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | H & RW Historic CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 2000 | 10002 | | 4266 | 5,736 | 30% | 1,280 | 7,016 | 82% | 5,753 | 58% | 4,249 |
| 2001 | 7098 | | 2615 | 4,483 | 30% | 785 | 5,268 | 82% | 4,319 | 61% | 2,779 |
| 2002 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2003 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2004 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2005 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2006 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2007 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2008 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2009 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2010 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| Average | 19,275 | | 8,826 | 10,449 | | 2,648 | 13,097 | | 10,739 | 56% | 8,535 |
| Totals | 790,256 | | 346,678 | 413,985 | | 104,003 | 517,988 | | 424,750 | | 335,913 |

*Note: No Storage water used 2002 - 2010
Average computed from 1961 -2001*

H&RW Historic CBCU



Meeker-Driftwood Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|-------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|--------------------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Meeker-Driftwood Canal Historic CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1952 | 10,373 | | 6,692 | 3,681 | 30% | 2,008 | 5,689 | 82% | 4,665 | 45% | 5,708 |
| 1953 | 10,306 | | 8,261 | 2,045 | 30% | 2,478 | 4,523 | 82% | 3,709 | 36% | 6,597 |
| 1954 | 11,375 | | 8,029 | 3,346 | 30% | 2,409 | 5,755 | 82% | 4,719 | 41% | 6,656 |
| 1955 | 11,626 | | 8,296 | 3,330 | 30% | 2,489 | 5,819 | 82% | 4,771 | 41% | 6,855 |
| 1956 | 13,830 | | 10,889 | 2,941 | 30% | 3,267 | 6,208 | 82% | 5,090 | 37% | 8,740 |
| 1957 | 12,383 | | 733 | 11,650 | 30% | 220 | 11,870 | 82% | 9,733 | 79% | 2,650 |
| 1958 | 18,271 | | 2,160 | 16,111 | 30% | 648 | 16,759 | 82% | 13,742 | 75% | 4,529 |
| 1959 | 30,141 | | 13,217 | 16,924 | 30% | 3,965 | 20,889 | 82% | 17,129 | 57% | 13,012 |
| 1960 | 33,960 | | 21,384 | 12,576 | 30% | 6,415 | 18,991 | 82% | 15,573 | 46% | 18,387 |
| 1961 | 31,535 | | 21,330 | 10,205 | 30% | 6,399 | 16,604 | 82% | 13,615 | 43% | 17,920 |
| 1962 | 25,849 | | 15,942 | 9,907 | 30% | 4,783 | 14,690 | 82% | 12,045 | 47% | 13,804 |
| 1963 | 40,663 | | 28,073 | 12,590 | 30% | 8,422 | 21,012 | 82% | 17,230 | 42% | 23,433 |
| 1964 | 34,254 | | 20,648 | 13,606 | 30% | 6,194 | 19,800 | 82% | 16,236 | 47% | 18,018 |
| 1965 | 29,448 | | 15,231 | 14,217 | 30% | 4,569 | 18,786 | 82% | 15,405 | 52% | 14,043 |
| 1966 | 34,772 | | 18,991 | 15,781 | 30% | 5,697 | 21,478 | 82% | 17,612 | 51% | 17,160 |
| 1967 | 32,522 | | 19,609 | 12,913 | 30% | 5,883 | 18,796 | 82% | 15,412 | 47% | 17,110 |
| 1968 | 35,552 | | 21,964 | 13,588 | 30% | 6,589 | 20,177 | 82% | 16,545 | 47% | 19,007 |
| 1969 | 34,001 | | 21,862 | 12,139 | 30% | 6,559 | 18,698 | 82% | 15,332 | 45% | 18,669 |
| 1970 | 42,960 | | 27,489 | 15,471 | 30% | 8,247 | 23,718 | 82% | 19,449 | 45% | 23,511 |
| 1971 | 41,710 | | 26,493 | 15,217 | 30% | 7,948 | 23,165 | 82% | 18,995 | 46% | 22,715 |
| 1972 | 37,527 | | 20,685 | 16,842 | 30% | 6,206 | 23,048 | 82% | 18,899 | 50% | 18,628 |
| 1973 | 37,385 | | 24,242 | 13,143 | 30% | 7,273 | 20,416 | 82% | 16,741 | 45% | 20,644 |
| 1974 | 39,716 | | 25,807 | 13,909 | 30% | 7,742 | 21,651 | 82% | 17,754 | 45% | 21,962 |
| 1975 | 41,634 | | 29,482 | 12,152 | 30% | 8,845 | 20,997 | 82% | 17,217 | 41% | 24,417 |
| 1976 | 42,177 | | 30,325 | 11,852 | 30% | 9,098 | 20,950 | 82% | 17,179 | 41% | 24,998 |
| 1977 | 28,425 | | 17,245 | 11,180 | 30% | 5,174 | 16,354 | 82% | 13,410 | 47% | 15,015 |
| 1978 | 34,824 | | 24,066 | 10,758 | 30% | 7,220 | 17,978 | 82% | 14,742 | 42% | 20,082 |
| 1979 | 24,334 | | 13,612 | 10,722 | 30% | 4,084 | 14,806 | 82% | 12,141 | 50% | 12,193 |
| 1980 | 30,854 | | 18,866 | 11,988 | 30% | 5,660 | 17,648 | 82% | 14,471 | 47% | 16,383 |
| 1981 | 29,951 | | 15,440 | 14,511 | 30% | 4,632 | 19,143 | 82% | 15,697 | 52% | 14,254 |
| 1982 | 27,325 | | 15,282 | 12,043 | 30% | 4,585 | 16,628 | 82% | 13,635 | 50% | 13,690 |
| 1983 | 30,304 | | 17,174 | 13,130 | 30% | 5,152 | 18,282 | 82% | 14,991 | 49% | 15,313 |
| 1984 | 31,925 | | 18,665 | 13,260 | 30% | 5,600 | 18,860 | 82% | 15,465 | 48% | 16,460 |
| 1985 | 31,212 | | 18,780 | 12,432 | 30% | 5,634 | 18,066 | 82% | 14,814 | 47% | 16,398 |
| 1986 | 32,916 | | 19,767 | 13,149 | 30% | 5,930 | 19,079 | 82% | 15,645 | 48% | 17,271 |
| 1987 | 30,344 | | 18,952 | 11,392 | 30% | 5,686 | 17,078 | 82% | 14,004 | 46% | 16,340 |
| 1988 | 28,324 | | 16,907 | 11,417 | 30% | 5,072 | 16,489 | 82% | 13,521 | 48% | 14,803 |
| 1989 | 29,722 | | 18,961 | 10,761 | 30% | 5,688 | 16,449 | 82% | 13,488 | 45% | 16,234 |
| 1990 | 32,301 | | 21,566 | 10,735 | 30% | 6,470 | 17,205 | 82% | 14,108 | 44% | 18,193 |
| 1991 | 25,903 | | 16,098 | 9,805 | 30% | 4,829 | 14,634 | 82% | 12,000 | 46% | 13,903 |
| 1992 | 20,194 | | 10,623 | 9,571 | 30% | 3,187 | 12,758 | 82% | 10,461 | 52% | 9,733 |

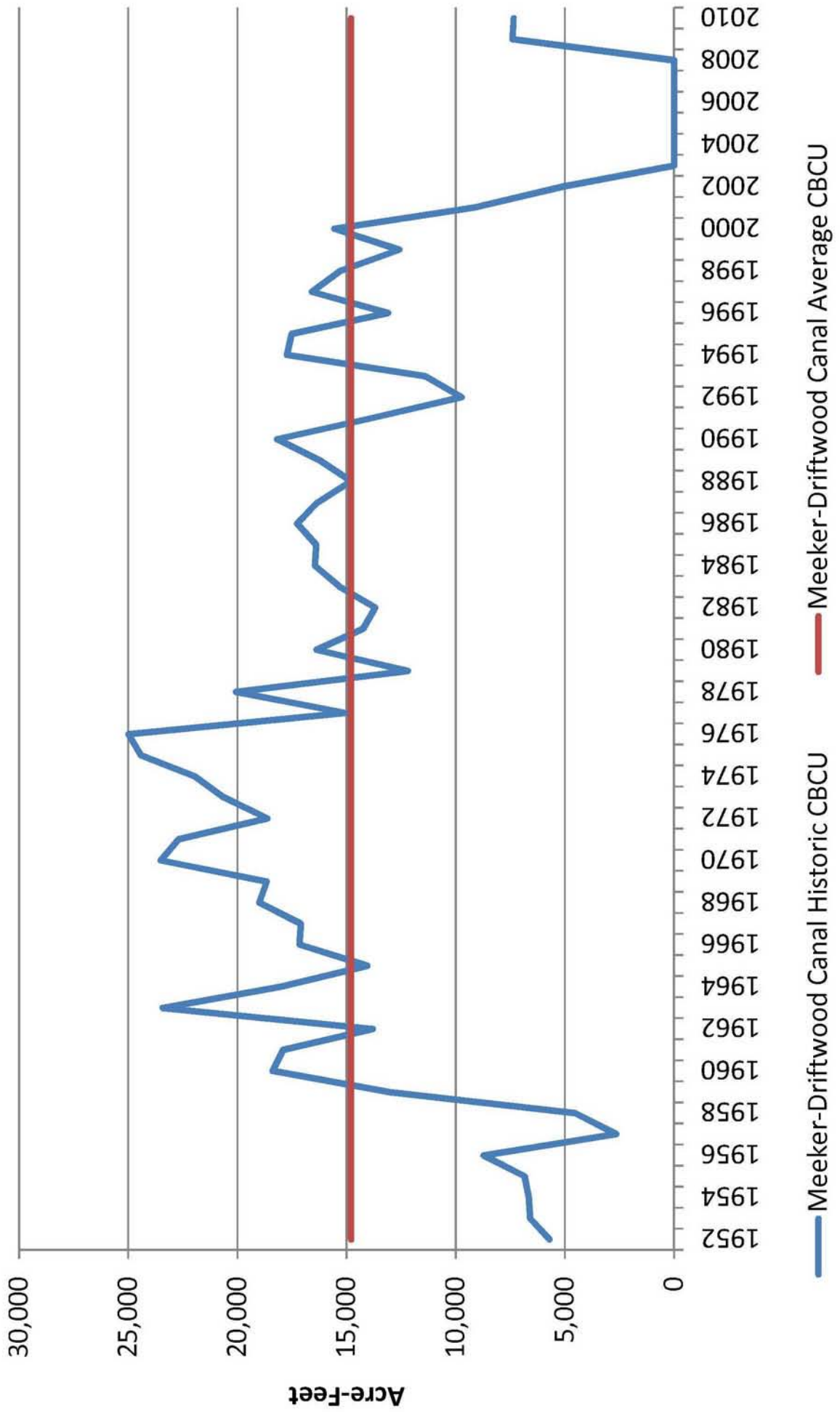
Meeker-Driftwood Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|----------------|--------------------|--------------------------------|--------------------------------|----------------|---|----------------|--------------------------|---|---|--------------------------------------|--------------------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Meeker-Driftwood Canal Historic CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1993 | 24,668 | | 12,108 | 12,560 | 30% | 3,632 | 16,192 | 82% | 13,278 | 54% | 11,390 |
| 1994 | 35,856 | | 19,660 | 16,196 | 30% | 5,898 | 22,094 | 82% | 18,117 | 51% | 17,739 |
| 1995 | 35,371 | | 19,449 | 15,922 | 30% | 5,835 | 21,757 | 82% | 17,840 | 50% | 17,531 |
| 1996 | 26,998 | | 14,362 | 12,636 | 30% | 4,309 | 16,945 | 82% | 13,895 | 51% | 13,103 |
| 1997 | 32,218 | | 18,807 | 13,411 | 30% | 5,642 | 19,053 | 82% | 15,624 | 48% | 16,594 |
| 1998 | 30,144 | | 17,197 | 12,947 | 30% | 5,159 | 18,106 | 82% | 14,847 | 49% | 15,297 |
| 1999 | 23,202 | | 14,657 | 8,545 | 30% | 4,397 | 12,942 | 82% | 10,613 | 46% | 12,589 |
| 2000 | 27,529 | | 18,500 | 9,029 | 30% | 5,550 | 14,579 | 82% | 11,955 | 43% | 15,574 |
| 2001 | 17,816 | | 10,336 | 7,480 | 30% | 3,101 | 10,581 | 82% | 8,676 | 49% | 9,140 |
| 2002 | 9,894 | | 5,755 | 4,139 | 30% | 1,727 | 5,866 | 82% | 4,810 | 49% | 5,084 |
| 2003 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2004 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2005 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2006 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2007 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2008 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2009 | 23,274 | | 5,602 | 17,672 | 30% | 1,681 | 19,353 | 82% | 15,869 | 68% | 7,405 |
| 2010 | 19,469 | | 6,705 | 12,764 | 30% | 2,012 | 14,776 | 82% | 12,116 | 62% | 7,353 |
| Average | 28,477 | | 16,849 | 11,628 | | 5,055 | 16,683 | | 13,680 | 48% | 14,797 |
| Totals | 1,509,267 | | 892,976 | 616,291 | | 267,893 | 884,184 | | 725,031 | | 784,236 |

Note: No Water Delivered in 2003 - 2008!

Meeker-Driftwood Canal Historic CBCU



Red Willow Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|-------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|--------------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Red Willow Canal Historic CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1963 | 2531 | | 1001 | 1,530 | 30% | 300 | 1,830 | 82% | 1,501 | 59% | 1,030 |
| 1964 | 5675 | | 2731 | 2,944 | 30% | 819 | 3,763 | 82% | 3,086 | 54% | 2,589 |
| 1965 | 6153 | | 3608 | 2,545 | 30% | 1,082 | 3,627 | 82% | 2,974 | 48% | 3,179 |
| 1966 | 5833 | | 2407 | 3,426 | 30% | 722 | 4,148 | 82% | 3,401 | 58% | 2,432 |
| 1967 | 6687 | | 3638 | 3,049 | 30% | 1,091 | 4,140 | 82% | 3,395 | 51% | 3,292 |
| 1968 | 9080 | | 5273 | 3,807 | 30% | 1,582 | 5,389 | 82% | 4,419 | 49% | 4,661 |
| 1969 | 7683 | | 4321 | 3,362 | 30% | 1,296 | 4,658 | 82% | 3,820 | 50% | 3,863 |
| 1970 | 9098 | | 5060 | 4,038 | 30% | 1,518 | 5,556 | 82% | 4,556 | 50% | 4,542 |
| 1971 | 9376 | | 6035 | 3,341 | 30% | 1,811 | 5,152 | 82% | 4,224 | 45% | 5,152 |
| 1972 | 10218 | | 6207 | 4,011 | 30% | 1,862 | 5,873 | 82% | 4,816 | 47% | 5,402 |
| 1973 | 10683 | | 6765 | 3,918 | 30% | 2,030 | 5,948 | 82% | 4,877 | 46% | 5,806 |
| 1974 | 11459 | | 8146 | 3,313 | 30% | 2,444 | 5,757 | 82% | 4,721 | 41% | 6,738 |
| 1975 | 10011 | | 6721 | 3,290 | 30% | 2,016 | 5,306 | 82% | 4,351 | 43% | 5,660 |
| 1976 | 12037 | | 8337 | 3,700 | 30% | 2,501 | 6,201 | 82% | 5,085 | 42% | 6,952 |
| 1977 | 7549 | | 4631 | 2,918 | 30% | 1,389 | 4,307 | 82% | 3,532 | 47% | 4,017 |
| 1978 | 9475 | | 6863 | 2,612 | 30% | 2,059 | 4,671 | 82% | 3,830 | 40% | 5,645 |
| 1979 | 5778 | | 2804 | 2,974 | 30% | 841 | 3,815 | 82% | 3,128 | 54% | 2,650 |
| 1980 | 7473 | | 5402 | 2,071 | 30% | 1,621 | 3,692 | 82% | 3,027 | 41% | 4,446 |
| 1981 | 5133 | | 2748 | 2,385 | 30% | 824 | 3,209 | 82% | 2,632 | 51% | 2,501 |
| 1982 | 7196 | | 4324 | 2,872 | 30% | 1,297 | 4,169 | 82% | 3,419 | 48% | 3,777 |
| 1983 | 7832 | | 5046 | 2,786 | 30% | 1,514 | 4,300 | 82% | 3,526 | 45% | 4,306 |
| 1984 | 8649 | | 5793 | 2,856 | 30% | 1,738 | 4,594 | 82% | 3,767 | 44% | 4,882 |
| 1985 | 8108 | | 4979 | 3,129 | 30% | 1,494 | 4,623 | 82% | 3,791 | 47% | 4,317 |
| 1986 | 8770 | | 5866 | 2,904 | 30% | 1,760 | 4,664 | 82% | 3,824 | 44% | 4,946 |
| 1987 | 8740 | | 5318 | 3,422 | 30% | 1,595 | 5,017 | 82% | 4,114 | 47% | 4,626 |
| 1988 | 7845 | | 4929 | 2,916 | 30% | 1,479 | 4,395 | 82% | 3,604 | 46% | 4,241 |
| 1989 | 7662 | | 5271 | 2,391 | 30% | 1,581 | 3,972 | 82% | 3,257 | 43% | 4,405 |
| 1990 | 8803 | | 6668 | 2,135 | 30% | 2,000 | 4,135 | 82% | 3,391 | 39% | 5,412 |
| 1991 | 7019 | | 5226 | 1,793 | 30% | 1,568 | 3,361 | 82% | 2,756 | 39% | 4,263 |
| 1992 | 5509 | | 3286 | 2,223 | 30% | 986 | 3,209 | 82% | 2,631 | 48% | 2,878 |
| 1993 | 4232 | | 2228 | 2,004 | 30% | 668 | 2,672 | 82% | 2,191 | 52% | 2,041 |
| 1994 | 8427 | | 5257 | 3,170 | 30% | 1,577 | 4,747 | 82% | 3,893 | 46% | 4,534 |
| 1995 | 8974 | | 5984 | 2,990 | 30% | 1,795 | 4,785 | 82% | 3,924 | 44% | 5,050 |
| 1996 | 5217 | | 3525 | 1,692 | 30% | 1,058 | 2,750 | 82% | 2,255 | 43% | 2,962 |
| 1997 | 8628 | | 6139 | 2,489 | 30% | 1,842 | 4,331 | 82% | 3,551 | 41% | 5,077 |
| 1998 | 8247 | | 5458 | 2,789 | 30% | 1,637 | 4,426 | 82% | 3,630 | 44% | 4,617 |
| 1999 | 6121 | | 3700 | 2,421 | 30% | 1,110 | 3,531 | 82% | 2,895 | 47% | 3,226 |
| 2000 | 7785 | | 4814 | 2,971 | 30% | 1,444 | 4,415 | 82% | 3,620 | 47% | 4,165 |
| 2001 | 5355 | | 2977 | 2,378 | 30% | 893 | 3,271 | 82% | 2,682 | 50% | 2,673 |
| 2002 | 3429 | | 1960 | 1,469 | 30% | 588 | 2,057 | 82% | 1,687 | 49% | 1,742 |

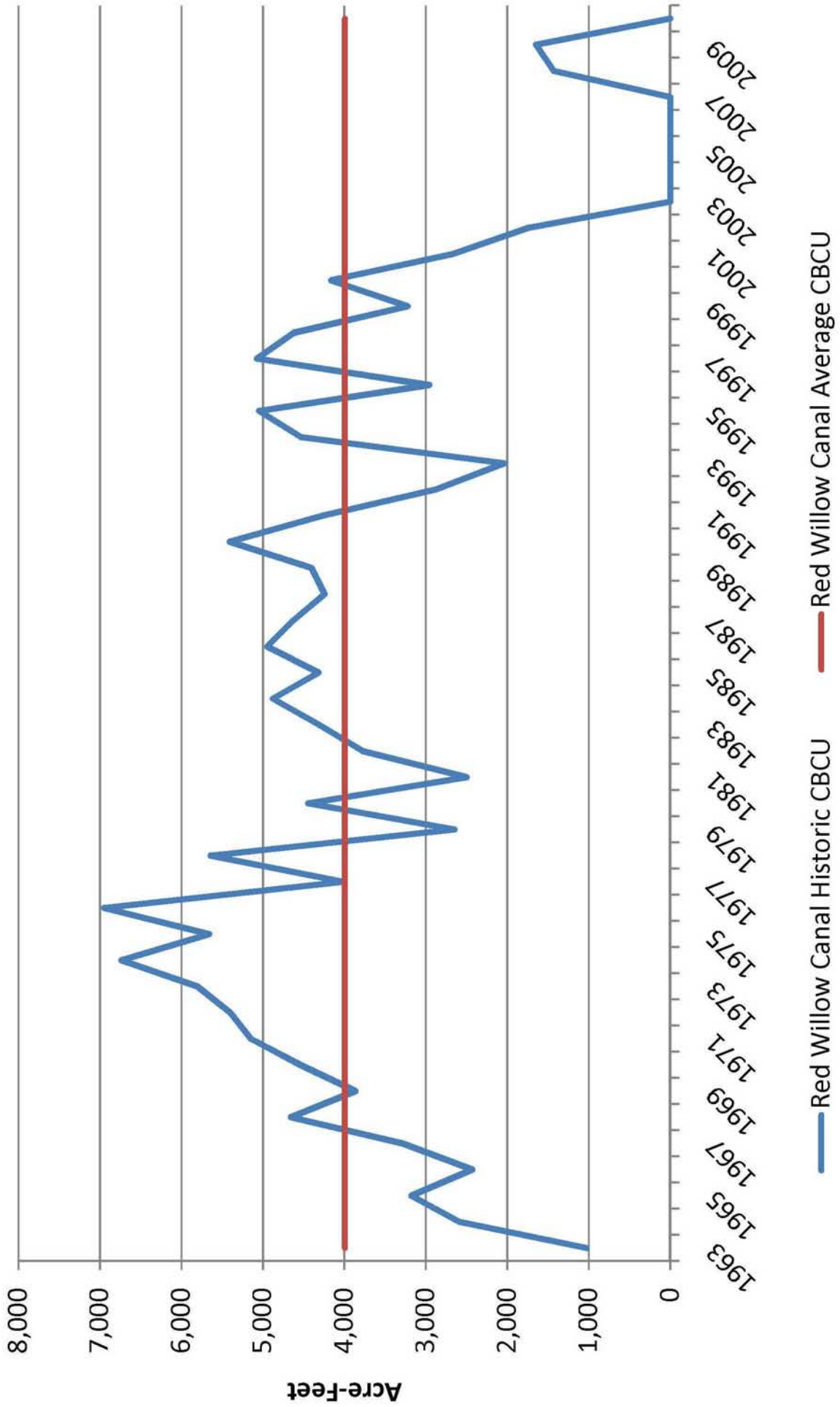
Red Willow Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|----------------|--------------------|--------------------------------|--------------------------------|----------------|---|---------------|--------------------------|---|---|--------------------------------------|--------------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Red Willow Canal Historic CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 2003 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2004 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2005 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2006 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2007 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2008 | 4089 | | 1215 | 2,874 | 30% | 365 | 3,239 | 82% | 2,656 | 65% | 1,433 |
| 2009 | 5166 | | 1255 | 3,911 | 30% | 377 | 4,288 | 82% | 3,516 | 68% | 1,650 |
| 2010 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| Average | 7,470 | | 4,617 | 2,853 | | 1,385 | 4,238 | | 3,475 | 47% | 3,995 |
| Totals | 313,735 | | 193,916 | 119,819 | | 58,175 | 177,994 | | 145,955 | | 167,780 |

Note: No Water Delivered in 2003 - 2007 and 2010!

Red Willow Canal Historic CBCU



Bartley Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|-------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|-----------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Bartley Canal Historic CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1954 | 1525 | | 365 | 1,160 | 30% | 110 | 1,270 | 82% | 1,041 | 68% | 484 |
| 1955 | 11433 | | 6736 | 4,697 | 30% | 2,021 | 6,718 | 82% | 5,509 | 48% | 5,924 |
| 1956 | 9489 | | 6694 | 2,795 | 30% | 2,008 | 4,803 | 82% | 3,939 | 42% | 5,550 |
| 1957 | 8557 | | 3741 | 4,816 | 30% | 1,122 | 5,938 | 82% | 4,869 | 57% | 3,688 |
| 1958 | 8553 | | 5839 | 2,714 | 30% | 1,752 | 4,466 | 82% | 3,662 | 43% | 4,891 |
| 1959 | 10457 | | 7428 | 3,029 | 30% | 2,228 | 5,257 | 82% | 4,311 | 41% | 6,146 |
| 1960 | 11760 | | 8063 | 3,697 | 30% | 2,419 | 6,116 | 82% | 5,015 | 43% | 6,745 |
| 1961 | 10857 | | 8143 | 2,714 | 30% | 2,443 | 5,157 | 82% | 4,229 | 39% | 6,628 |
| 1962 | 8592 | | 5212 | 3,380 | 30% | 1,564 | 4,944 | 82% | 4,054 | 47% | 4,538 |
| 1963 | 11179 | | 8378 | 2,801 | 30% | 2,513 | 5,314 | 82% | 4,358 | 39% | 6,821 |
| 1964 | 11296 | | 7449 | 3,847 | 30% | 2,235 | 6,082 | 82% | 4,987 | 44% | 6,309 |
| 1965 | 9112 | | 6413 | 2,699 | 30% | 1,924 | 4,623 | 82% | 3,791 | 42% | 5,321 |
| 1966 | 7710 | | 4541 | 3,169 | 30% | 1,362 | 4,531 | 82% | 3,716 | 48% | 3,994 |
| 1967 | 9042 | | 6199 | 2,843 | 30% | 1,860 | 4,703 | 82% | 3,856 | 43% | 5,186 |
| 1968 | 12990 | | 10125 | 2,865 | 30% | 3,038 | 5,903 | 82% | 4,840 | 37% | 8,150 |
| 1969 | 9828 | | 6776 | 3,052 | 30% | 2,033 | 5,085 | 82% | 4,170 | 42% | 5,658 |
| 1970 | 12354 | | 8692 | 3,662 | 30% | 2,608 | 6,270 | 82% | 5,141 | 42% | 7,213 |
| 1971 | 12229 | | 9095 | 3,134 | 30% | 2,729 | 5,863 | 82% | 4,807 | 39% | 7,422 |
| 1972 | 12796 | | 9413 | 3,383 | 30% | 2,824 | 6,207 | 82% | 5,090 | 40% | 7,706 |
| 1973 | 12828 | | 9866 | 2,962 | 30% | 2,960 | 5,922 | 82% | 4,856 | 38% | 7,972 |
| 1974 | 14708 | | 11187 | 3,521 | 30% | 3,356 | 6,877 | 82% | 5,639 | 38% | 9,069 |
| 1975 | 11551 | | 8196 | 3,355 | 30% | 2,459 | 5,814 | 82% | 4,767 | 41% | 6,784 |
| 1976 | 14935 | | 11602 | 3,333 | 30% | 3,481 | 6,814 | 82% | 5,587 | 37% | 9,348 |
| 1977 | 10382 | | 6733 | 3,649 | 30% | 2,020 | 5,669 | 82% | 4,648 | 45% | 5,734 |
| 1978 | 12335 | | 9588 | 2,747 | 30% | 2,876 | 5,623 | 82% | 4,611 | 37% | 7,724 |
| 1979 | 6553 | | 3868 | 2,685 | 30% | 1,160 | 3,845 | 82% | 3,153 | 48% | 3,400 |
| 1980 | 9840 | | 7136 | 2,704 | 30% | 2,141 | 4,845 | 82% | 3,973 | 40% | 5,867 |
| 1981 | 7858 | | 5062 | 2,796 | 30% | 1,519 | 4,315 | 82% | 3,538 | 45% | 4,320 |
| 1982 | 10075 | | 7011 | 3,064 | 30% | 2,103 | 5,167 | 82% | 4,237 | 42% | 5,838 |
| 1983 | 9796 | | 7032 | 2,764 | 30% | 2,110 | 4,874 | 82% | 3,996 | 41% | 5,800 |
| 1984 | 10733 | | 8376 | 2,357 | 30% | 2,513 | 4,870 | 82% | 3,993 | 37% | 6,740 |
| 1985 | 8879 | | 5831 | 3,048 | 30% | 1,749 | 4,797 | 82% | 3,934 | 44% | 4,945 |
| 1986 | 9985 | | 7055 | 2,930 | 30% | 2,117 | 5,047 | 82% | 4,138 | 41% | 5,847 |
| 1987 | 9018 | | 5915 | 3,103 | 30% | 1,775 | 4,878 | 82% | 4,000 | 44% | 5,018 |
| 1988 | 8564 | | 5320 | 3,244 | 30% | 1,596 | 4,840 | 82% | 3,969 | 46% | 4,595 |
| 1989 | 8995 | | 6270 | 2,725 | 30% | 1,881 | 4,606 | 82% | 3,777 | 42% | 5,218 |
| 1990 | 9478 | | 6993 | 2,485 | 30% | 2,098 | 4,583 | 82% | 3,758 | 40% | 5,720 |
| 1991 | 8134 | | 5916 | 2,218 | 30% | 1,775 | 3,993 | 82% | 3,274 | 40% | 4,860 |
| 1992 | 7325 | | 3928 | 3,397 | 30% | 1,178 | 4,575 | 82% | 3,752 | 51% | 3,573 |

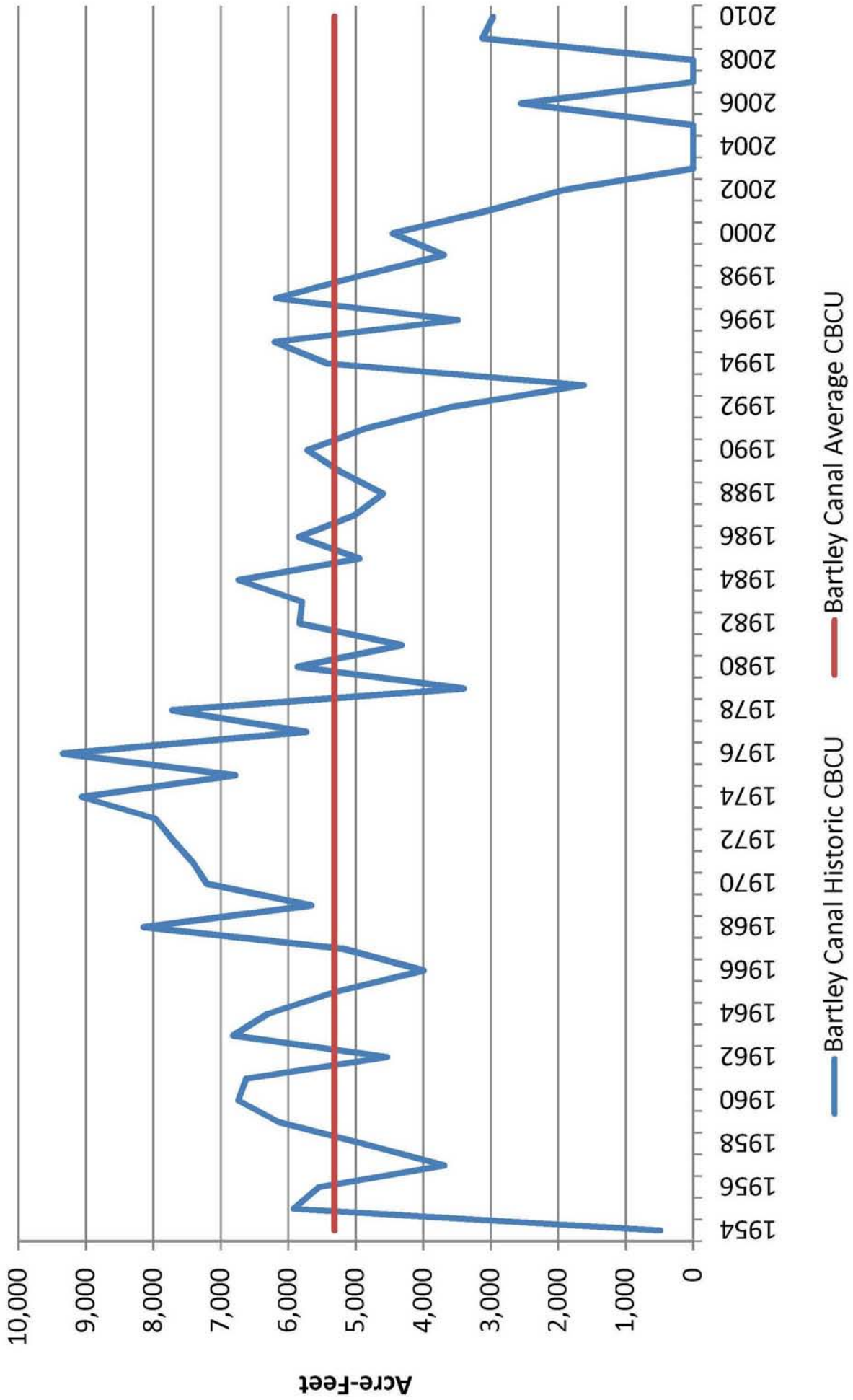
Bartley Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|----------------|--------------------|--------------------------------|--------------------------------|----------------|---|---------------|--------------------------|---|---|--------------------------------------|-----------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Bartley Canal Historic CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1993 | 4118 | | 1532 | 2,586 | 30% | 460 | 3,046 | 82% | 2,497 | 61% | 1,621 |
| 1994 | 10144 | | 6276 | 3,868 | 30% | 1,883 | 5,751 | 82% | 4,716 | 46% | 5,428 |
| 1995 | 10677 | | 7462 | 3,215 | 30% | 2,239 | 5,454 | 82% | 4,472 | 42% | 6,205 |
| 1996 | 6250 | | 4119 | 2,131 | 30% | 1,236 | 3,367 | 82% | 2,761 | 44% | 3,489 |
| 1997 | 10245 | | 7571 | 2,674 | 30% | 2,271 | 4,945 | 82% | 4,055 | 40% | 6,190 |
| 1998 | 9181 | | 5820 | 3,361 | 30% | 1,746 | 5,107 | 82% | 4,188 | 46% | 4,993 |
| 1999 | 7258 | | 4165 | 3,093 | 30% | 1,250 | 4,343 | 82% | 3,561 | 49% | 3,697 |
| 2000 | 8608 | | 5067 | 3,541 | 30% | 1,520 | 5,061 | 82% | 4,150 | 48% | 4,458 |
| 2001 | 5872 | | 3574 | 2,298 | 30% | 1,072 | 3,370 | 82% | 2,764 | 47% | 3,108 |
| 2002 | 3584 | | 2216 | 1,368 | 30% | 665 | 2,033 | 82% | 1,667 | 47% | 1,917 |
| 2003 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2004 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2005 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2006 | 5830 | | 2620 | 3,210 | 30% | 786 | 3,996 | 82% | 3,277 | 56% | 2,553 |
| 2007 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2008 | 0 | | 0 | 0 | 30% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2009 | 10711 | | 2088 | 8,623 | 30% | 626 | 9,249 | 82% | 7,585 | 71% | 3,126 |
| 2010 | 8589 | | 2475 | 6,114 | 30% | 743 | 6,857 | 82% | 5,622 | 65% | 2,967 |
| Average | 9,477 | | 6,292 | 3,185 | | 1,888 | 5,073 | | 4,160 | 44% | 5,317 |
| Totals | 492,798 | | 327,172 | 165,626 | | 98,152 | 263,778 | | 216,298 | | 276,500 |

Note: No Water Delivered in 2003 - 2005 and 2007 and 2008!

Bartley Canal Historic CBCU



Cambridge Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|-------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|----------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Cambridge Canal CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1 - Col 11) |
| 1951 | 9346 | | 446 | 8,900 | 30% | 134 | 9,034 | 82% | 7,408 | 79% | 1,938 |
| 1952 | 6643 | | 1337 | 5,306 | 30% | 401 | 5,707 | 82% | 4,680 | 70% | 1,963 |
| 1953 | 16338 | | 4795 | 11,543 | 30% | 1,439 | 12,982 | 82% | 10,645 | 65% | 5,693 |
| 1954 | 22860 | | 9143 | 13,717 | 30% | 2,743 | 16,460 | 82% | 13,497 | 59% | 9,363 |
| 1955 | 32545 | | 19336 | 13,209 | 30% | 5,801 | 19,010 | 82% | 15,588 | 48% | 16,957 |
| 1956 | 33892 | | 17635 | 16,257 | 30% | 5,291 | 21,548 | 82% | 17,669 | 52% | 16,223 |
| 1957 | 21431 | | 4681 | 16,750 | 30% | 1,404 | 18,154 | 82% | 14,887 | 69% | 6,544 |
| 1958 | 20380 | | 12937 | 7,443 | 30% | 3,881 | 11,324 | 82% | 9,286 | 46% | 11,094 |
| 1959 | 30807 | | 23399 | 7,408 | 30% | 7,020 | 14,428 | 82% | 11,831 | 38% | 18,976 |
| 1960 | 27170 | | 19723 | 7,447 | 30% | 5,917 | 13,364 | 82% | 10,958 | 40% | 16,212 |
| 1961 | 27187 | | 17692 | 9,495 | 30% | 5,308 | 14,803 | 82% | 12,138 | 45% | 15,049 |
| 1962 | 18428 | | 9405 | 9,023 | 30% | 2,822 | 11,845 | 82% | 9,712 | 53% | 8,716 |
| 1963 | 31726 | | 21022 | 10,704 | 30% | 6,307 | 17,011 | 82% | 13,949 | 44% | 17,777 |
| 1964 | 30454 | | 19546 | 10,908 | 30% | 5,864 | 16,772 | 82% | 13,753 | 45% | 16,701 |
| 1965 | 21142 | | 11611 | 9,531 | 30% | 3,483 | 13,014 | 82% | 10,672 | 50% | 10,470 |
| 1966 | 22740 | | 10459 | 12,281 | 30% | 3,138 | 15,419 | 82% | 12,643 | 56% | 10,097 |
| 1967 | 21694 | | 10901 | 10,793 | 30% | 3,270 | 14,063 | 82% | 11,532 | 53% | 10,162 |
| 1968 | 28187 | | 16511 | 11,676 | 30% | 4,953 | 16,629 | 82% | 13,636 | 48% | 14,551 |
| 1969 | 26293 | | 16755 | 9,538 | 30% | 5,027 | 14,565 | 82% | 11,943 | 45% | 14,350 |
| 1970 | 36873 | | 24272 | 12,601 | 30% | 7,282 | 19,883 | 82% | 16,304 | 44% | 20,569 |
| 1971 | 34667 | | 21947 | 12,720 | 30% | 6,584 | 19,304 | 82% | 15,829 | 46% | 18,838 |
| 1972 | 33666 | | 20511 | 13,155 | 30% | 6,153 | 19,308 | 82% | 15,833 | 47% | 17,833 |
| 1973 | 32371 | | 21612 | 10,759 | 30% | 6,484 | 17,243 | 82% | 14,139 | 44% | 18,232 |
| 1974 | 38995 | | 26930 | 12,065 | 30% | 8,079 | 20,144 | 82% | 16,518 | 42% | 22,477 |
| 1975 | 33205 | | 23585 | 9,620 | 30% | 7,076 | 16,696 | 82% | 13,690 | 41% | 19,515 |
| 1976 | 45900 | | 32089 | 13,811 | 30% | 9,627 | 23,438 | 82% | 19,219 | 42% | 26,681 |
| 1977 | 31185 | | 19378 | 11,807 | 30% | 5,813 | 17,620 | 82% | 14,449 | 46% | 16,736 |
| 1978 | 34714 | | 22512 | 12,202 | 30% | 6,754 | 18,956 | 82% | 15,544 | 45% | 19,170 |
| 1979 | 22768 | | 11713 | 11,055 | 30% | 3,514 | 14,569 | 82% | 11,946 | 52% | 10,822 |
| 1980 | 32577 | | 21552 | 11,025 | 30% | 6,466 | 17,491 | 82% | 14,342 | 44% | 18,235 |
| 1981 | 20511 | | 9945 | 10,566 | 30% | 2,984 | 13,550 | 82% | 11,111 | 54% | 9,400 |
| 1982 | 27074 | | 16674 | 10,400 | 30% | 5,002 | 15,402 | 82% | 12,630 | 47% | 14,444 |
| 1983 | 27530 | | 17152 | 10,378 | 30% | 5,146 | 15,524 | 82% | 12,729 | 46% | 14,801 |
| 1984 | 29925 | | 22218 | 7,707 | 30% | 6,665 | 14,372 | 82% | 11,785 | 39% | 18,140 |
| 1985 | 24657 | | 13668 | 10,989 | 30% | 4,100 | 15,089 | 82% | 12,373 | 50% | 12,284 |
| 1986 | 29083 | | 18958 | 10,125 | 30% | 5,687 | 15,812 | 82% | 12,966 | 45% | 16,117 |
| 1987 | 25230 | | 14551 | 10,679 | 30% | 4,365 | 15,044 | 82% | 12,336 | 49% | 12,894 |
| 1988 | 31728 | | 20449 | 11,279 | 30% | 6,135 | 17,414 | 82% | 14,279 | 45% | 17,449 |
| 1989 | 30192 | | 20352 | 9,840 | 30% | 6,106 | 15,946 | 82% | 13,075 | 43% | 17,117 |
| 1990 | 28378 | | 19245 | 9,133 | 30% | 5,774 | 14,907 | 82% | 12,223 | 43% | 16,155 |
| 1991 | 25803 | | 18202 | 7,601 | 30% | 5,461 | 13,062 | 82% | 10,711 | 42% | 15,092 |

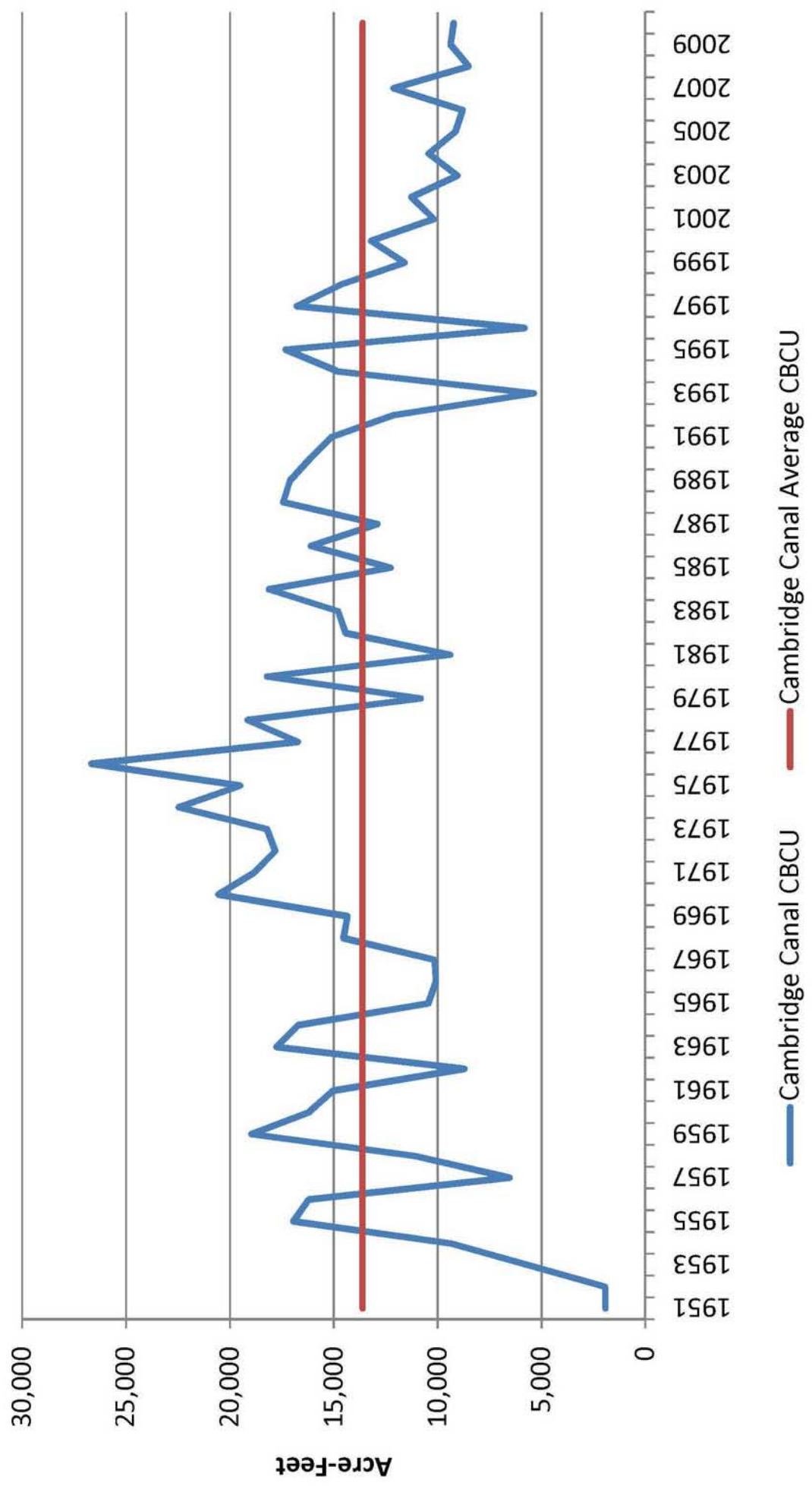
Cambridge Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|----------------|--------------------|--------------------------------|--------------------------------|----------------|---|----------------|--------------------------|---|---|--------------------------------------|----------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Cambridge Canal CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1992 | 22404 | | 14122 | 8,282 | 30% | 4,237 | 12,519 | 82% | 10,265 | 46% | 12,139 |
| 1993 | 14105 | | 4962 | 9,143 | 30% | 1,489 | 10,632 | 82% | 8,718 | 62% | 5,387 |
| 1994 | 29533 | | 16535 | 12,998 | 30% | 4,961 | 17,959 | 82% | 14,726 | 50% | 14,807 |
| 1995 | 31748 | | 20240 | 11,508 | 30% | 6,072 | 17,580 | 82% | 14,416 | 45% | 17,332 |
| 1996 | 14542 | | 5577 | 8,965 | 30% | 1,673 | 10,638 | 82% | 8,723 | 60% | 5,819 |
| 1997 | 29527 | | 20001 | 9,526 | 30% | 6,000 | 15,526 | 82% | 12,732 | 43% | 16,795 |
| 1998 | 27464 | | 16865 | 10,599 | 30% | 5,060 | 15,659 | 82% | 12,840 | 47% | 14,624 |
| 1999 | 21536 | | 13467 | 8,069 | 30% | 4,040 | 12,109 | 82% | 9,929 | 46% | 11,607 |
| 2000 | 26292 | | 14783 | 11,509 | 30% | 4,435 | 15,944 | 82% | 13,074 | 50% | 13,218 |
| 2001 | 19629 | | 11584 | 8,045 | 30% | 3,475 | 11,520 | 82% | 9,447 | 48% | 10,182 |
| 2002 | 21152 | | 13009 | 8,143 | 30% | 3,903 | 12,046 | 82% | 9,877 | 47% | 11,275 |
| 2003 | 18332 | | 10023 | 8,309 | 30% | 3,007 | 11,316 | 82% | 9,279 | 51% | 9,053 |
| 2004 | 21964 | | 11304 | 10,660 | 30% | 3,391 | 14,051 | 82% | 11,522 | 52% | 10,442 |
| 2005 | 19732 | | 9758 | 9,974 | 30% | 2,927 | 12,901 | 82% | 10,579 | 54% | 9,153 |
| 2006 | 19692 | | 9178 | 10,514 | 30% | 2,753 | 13,267 | 82% | 10,879 | 55% | 8,813 |
| 2007 | 26000 | | 13000 | 13,000 | 30% | 3,900 | 16,900 | 82% | 13,858 | 53% | 12,142 |
| 2008 | 19387 | | 8759 | 10,628 | 30% | 2,628 | 13,256 | 82% | 10,870 | 56% | 8,517 |
| 2009 | 23961 | | 8847 | 15,114 | 30% | 2,654 | 17,768 | 82% | 14,570 | 61% | 9,391 |
| 2010 | 24280 | | 8487 | 15,793 | 30% | 2,546 | 18,339 | 82% | 15,038 | 62% | 9,242 |
| Average | 26,241 | | 15,507 | 10,734 | | 4,652 | 15,386 | | 12,617 | 49% | 13,624 |
| Totals | 1,548,229 | | 914,904 | 633,325 | | 274,471 | 907,796 | | 744,393 | | 803,836 |

Note: 2007 estimated based on surface water sold to the NRDs

Cambridge Canal Historic CBCU



Franklin Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|-------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|------------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Franklin Canal Historic CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1954 | 7930 | | 1,428 | 6,502 | 35% | 500 | 7,002 | 82% | 5,741 | 72% | 2,189 |
| 1955 | 11490 | | 4,486 | 7,004 | 35% | 1,570 | 8,574 | 82% | 7,031 | 61% | 4,459 |
| 1956 | 21251 | | 10,215 | 11,036 | 35% | 3,575 | 14,611 | 82% | 11,981 | 56% | 9,270 |
| 1957 | 13149 | | 7,340 | 5,809 | 35% | 2,569 | 8,378 | 82% | 6,870 | 52% | 6,279 |
| 1958 | 13807 | | 3,842 | 9,965 | 35% | 1,345 | 11,310 | 82% | 9,274 | 67% | 4,533 |
| 1959 | 25847 | | 13,375 | 12,472 | 35% | 4,681 | 17,153 | 82% | 14,066 | 54% | 11,781 |
| 1960 | 22596 | | 10,872 | 11,724 | 35% | 3,805 | 15,529 | 82% | 12,734 | 56% | 9,862 |
| 1961 | 24805 | | 9,970 | 14,835 | 35% | 3,490 | 18,325 | 82% | 15,026 | 61% | 9,779 |
| 1962 | 19761 | | 6,117 | 13,644 | 35% | 2,141 | 15,785 | 82% | 12,944 | 66% | 6,817 |
| 1963 | 28486 | | 14,138 | 14,348 | 35% | 4,948 | 19,296 | 82% | 15,823 | 56% | 12,663 |
| 1964 | 28463 | | 13,638 | 14,825 | 35% | 4,773 | 19,598 | 82% | 16,071 | 56% | 12,392 |
| 1965 | 20719 | | 7,465 | 13,254 | 35% | 2,613 | 15,867 | 82% | 13,011 | 63% | 7,708 |
| 1966 | 28090 | | 11,024 | 17,066 | 35% | 3,858 | 20,924 | 82% | 17,158 | 61% | 10,932 |
| 1967 | 24410 | | 11,332 | 13,078 | 35% | 3,966 | 17,044 | 82% | 13,976 | 57% | 10,434 |
| 1968 | 24164 | | 12,054 | 12,110 | 35% | 4,219 | 16,329 | 82% | 13,390 | 55% | 10,774 |
| 1969 | 21554 | | 8,317 | 13,237 | 35% | 2,911 | 16,148 | 82% | 13,241 | 61% | 8,313 |
| 1970 | 32781 | | 16,155 | 16,626 | 35% | 5,654 | 22,280 | 82% | 18,270 | 56% | 14,511 |
| 1971 | 34399 | | 15,522 | 18,877 | 35% | 5,433 | 24,310 | 82% | 19,934 | 58% | 14,465 |
| 1972 | 28236 | | 11,006 | 17,230 | 35% | 3,852 | 21,082 | 82% | 17,287 | 61% | 10,949 |
| 1973 | 31279 | | 13,189 | 18,090 | 35% | 4,616 | 22,706 | 82% | 18,619 | 60% | 12,660 |
| 1974 | 30750 | | 15,216 | 15,534 | 35% | 5,326 | 20,860 | 82% | 17,105 | 56% | 13,645 |
| 1975 | 29613 | | 12,958 | 16,655 | 35% | 4,535 | 21,190 | 82% | 17,376 | 59% | 12,237 |
| 1976 | 34665 | | 18,178 | 16,487 | 35% | 6,362 | 22,849 | 82% | 18,736 | 54% | 15,929 |
| 1977 | 21660 | | 9,060 | 12,600 | 35% | 3,171 | 15,771 | 82% | 12,932 | 60% | 8,728 |
| 1978 | 27355 | | 10,789 | 16,566 | 35% | 3,776 | 20,342 | 82% | 16,681 | 61% | 10,674 |
| 1979 | 17202 | | 6,725 | 10,477 | 35% | 2,354 | 12,831 | 82% | 10,521 | 61% | 6,681 |
| 1980 | 29730 | | 15,617 | 14,113 | 35% | 5,466 | 19,579 | 82% | 16,055 | 54% | 13,675 |
| 1981 | 15956 | | 5,238 | 10,718 | 35% | 1,833 | 12,551 | 82% | 10,292 | 65% | 5,664 |
| 1982 | 22813 | | 8,645 | 14,168 | 35% | 3,026 | 17,194 | 82% | 14,099 | 62% | 8,714 |
| 1983 | 27890 | | 12,380 | 15,510 | 35% | 4,333 | 19,843 | 82% | 16,271 | 58% | 11,619 |
| 1984 | 32459 | | 14,518 | 17,941 | 35% | 5,081 | 23,022 | 82% | 18,878 | 58% | 13,581 |
| 1985 | 30208 | | 11,979 | 18,229 | 35% | 4,193 | 22,422 | 82% | 18,386 | 61% | 11,822 |
| 1986 | 33205 | | 14,581 | 18,624 | 35% | 5,103 | 23,727 | 82% | 19,456 | 59% | 13,749 |
| 1987 | 26281 | | 9,677 | 16,604 | 35% | 3,387 | 19,991 | 82% | 16,393 | 62% | 9,888 |
| 1988 | 33253 | | 15,278 | 17,975 | 35% | 5,347 | 23,322 | 82% | 19,124 | 58% | 14,129 |
| 1989 | 26481 | | 10,007 | 16,474 | 35% | 3,502 | 19,976 | 82% | 16,381 | 62% | 10,100 |
| 1990 | 21386 | | 8,012 | 13,374 | 35% | 2,804 | 16,178 | 82% | 13,266 | 62% | 8,120 |
| 1991 | 20808 | | 7,548 | 13,260 | 35% | 2,642 | 15,902 | 82% | 13,039 | 63% | 7,769 |
| 1992 | 14608 | | 4,516 | 10,092 | 35% | 1,581 | 11,673 | 82% | 9,572 | 66% | 5,036 |
| 1993 | 7452 | | 684 | 6,768 | 35% | 239 | 7,007 | 82% | 5,746 | 77% | 1,706 |

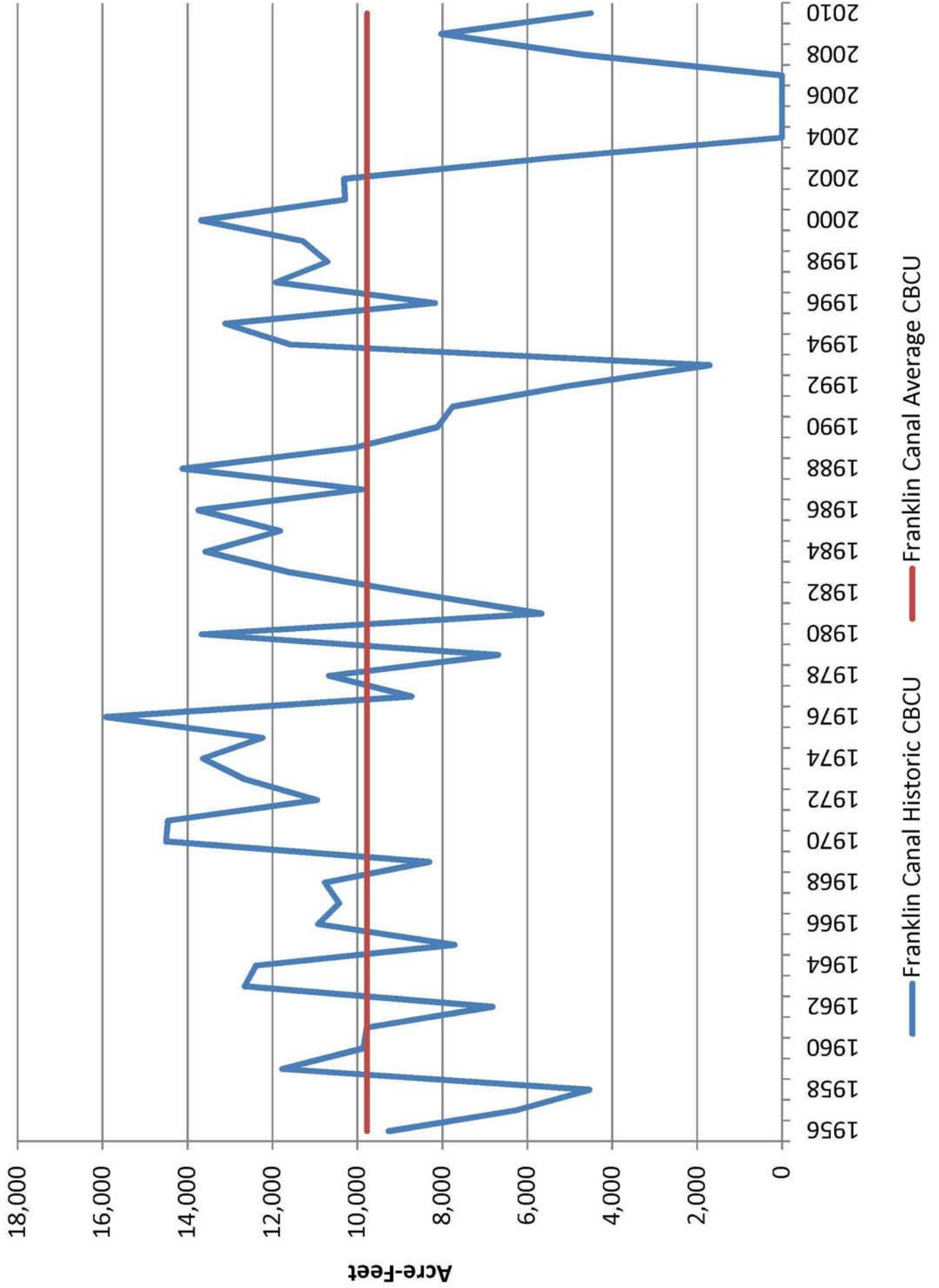
Franklin Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|---------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|------------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Franklin Canal Historic CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1994 | 32992 | | 10,594 | 22,398 | 35% | 3,708 | 26,106 | 82% | 21,407 | 65% | 11,585 |
| 1995 | 35712 | | 12,553 | 23,159 | 35% | 4,394 | 27,553 | 82% | 22,593 | 63% | 13,119 |
| 1996 | 27440 | | 6,070 | 21,370 | 35% | 2,125 | 23,495 | 82% | 19,265 | 70% | 8,175 |
| 1997 | 33031 | | 11,220 | 21,811 | 35% | 3,927 | 25,738 | 82% | 21,105 | 64% | 11,926 |
| 1998 | 31605 | | 9,414 | 22,191 | 35% | 3,295 | 25,486 | 82% | 20,898 | 66% | 10,707 |
| 1999 | 32368 | | 10,250 | 22,118 | 35% | 3,588 | 25,706 | 82% | 21,079 | 65% | 11,289 |
| 2000 | 38479 | | 12,689 | 25,790 | 35% | 4,441 | 30,231 | 82% | 24,790 | 64% | 13,689 |
| 2001 | 28544 | | 9,671 | 18,873 | 35% | 3,385 | 22,258 | 82% | 18,251 | 64% | 10,293 |
| 2002 | 24631 | | 11,049 | 13,582 | 35% | 3,867 | 17,449 | 82% | 14,308 | 58% | 10,323 |
| 2003 | 15262 | | 5,144 | 10,118 | 35% | 1,800 | 11,918 | 82% | 9,773 | 64% | 5,489 |
| 2004 | 0 | | 0 | 0 | 35% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2005 | 0 | | 0 | 0 | 35% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2006 | 0 | | 0 | 0 | 35% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2007 | 0 | | 0 | 0 | 35% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2008 | 16085 | | 3,349 | 12,736 | 35% | 1,172 | 13,908 | 82% | 11,405 | 71% | 4,680 |
| 2009 | 23246 | | 7,227 | 16,019 | 35% | 2,529 | 18,549 | 82% | 15,210 | 65% | 8,036 |
| 2010 | 13879 | | 3,775 | 10,104 | 35% | 1,321 | 11,425 | 82% | 9,369 | 68% | 4,510 |
| Average | 24,911 | | 9,926 | 14,984 | | 3,474 | 18,459 | | 15,136 | 61% | 9,775 |
| Totals | 1,320,266 | | 526,096 | 794,170 | | 184,133 | 978,304 | | 802,209 | | 518,057 |

Note: No water delivered 2004 - 2007

Franklin Canal Historic CBCU



Naponee Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|-------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|-----------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Naponee Canal Historic CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1955 | 1699 | | 1022 | 677 | 35% | 358 | 1,035 | 82% | 848 | 50% | 851 |
| 1956 | 2043 | | 1259 | 784 | 35% | 441 | 1,225 | 82% | 1,004 | 49% | 1,039 |
| 1957 | 1938 | | 1588 | 350 | 35% | 556 | 906 | 82% | 743 | 38% | 1,195 |
| 1958 | 407 | | 251 | 156 | 35% | 88 | 244 | 82% | 200 | 49% | 207 |
| 1959 | 3223 | | 2424 | 799 | 35% | 848 | 1,647 | 82% | 1,351 | 42% | 1,872 |
| 1960 | 2293 | | 1486 | 807 | 35% | 520 | 1,327 | 82% | 1,088 | 47% | 1,205 |
| 1961 | 3239 | | 1994 | 1,245 | 35% | 698 | 1,943 | 82% | 1,593 | 49% | 1,646 |
| 1962 | 2152 | | 747 | 1,405 | 35% | 261 | 1,666 | 82% | 1,366 | 63% | 786 |
| 1963 | 3159 | | 2117 | 1,042 | 35% | 741 | 1,783 | 82% | 1,462 | 46% | 1,697 |
| 1964 | 3760 | | 2462 | 1,298 | 35% | 862 | 2,160 | 82% | 1,771 | 47% | 1,989 |
| 1965 | 2414 | | 1311 | 1,103 | 35% | 459 | 1,562 | 82% | 1,281 | 53% | 1,133 |
| 1966 | 2604 | | 1618 | 986 | 35% | 566 | 1,552 | 82% | 1,273 | 49% | 1,331 |
| 1967 | 2606 | | 1501 | 1,105 | 35% | 525 | 1,630 | 82% | 1,337 | 51% | 1,269 |
| 1968 | 2833 | | 1949 | 884 | 35% | 682 | 1,566 | 82% | 1,284 | 45% | 1,549 |
| 1969 | 2222 | | 1571 | 651 | 35% | 550 | 1,201 | 82% | 985 | 44% | 1,237 |
| 1970 | 4313 | | 2946 | 1,367 | 35% | 1,031 | 2,398 | 82% | 1,966 | 46% | 2,347 |
| 1971 | 4153 | | 2761 | 1,392 | 35% | 966 | 2,358 | 82% | 1,934 | 47% | 2,219 |
| 1972 | 3354 | | 2172 | 1,182 | 35% | 760 | 1,942 | 82% | 1,593 | 47% | 1,761 |
| 1973 | 3483 | | 2393 | 1,090 | 35% | 838 | 1,928 | 82% | 1,581 | 45% | 1,902 |
| 1974 | 3820 | | 2558 | 1,262 | 35% | 895 | 2,157 | 82% | 1,769 | 46% | 2,051 |
| 1975 | 3387 | | 2242 | 1,145 | 35% | 785 | 1,930 | 82% | 1,582 | 47% | 1,805 |
| 1976 | 4661 | | 3035 | 1,626 | 35% | 1,062 | 2,688 | 82% | 2,204 | 47% | 2,457 |
| 1977 | 2915 | | 1627 | 1,288 | 35% | 569 | 1,857 | 82% | 1,523 | 52% | 1,392 |
| 1978 | 2987 | | 1503 | 1,484 | 35% | 526 | 2,010 | 82% | 1,648 | 55% | 1,339 |
| 1979 | 2216 | | 1193 | 1,023 | 35% | 418 | 1,441 | 82% | 1,181 | 53% | 1,035 |
| 1980 | 3999 | | 2588 | 1,411 | 35% | 906 | 2,317 | 82% | 1,900 | 48% | 2,099 |
| 1981 | 1676 | | 913 | 763 | 35% | 320 | 1,083 | 82% | 888 | 53% | 788 |
| 1982 | 2256 | | 1214 | 1,042 | 35% | 425 | 1,467 | 82% | 1,203 | 53% | 1,053 |
| 1983 | 3272 | | 1985 | 1,287 | 35% | 695 | 1,982 | 82% | 1,625 | 50% | 1,647 |
| 1984 | 3744 | | 2279 | 1,465 | 35% | 798 | 2,263 | 82% | 1,855 | 50% | 1,889 |
| 1985 | 3470 | | 1866 | 1,604 | 35% | 653 | 2,257 | 82% | 1,851 | 53% | 1,619 |
| 1986 | 3831 | | 2004 | 1,827 | 35% | 701 | 2,528 | 82% | 2,073 | 54% | 1,758 |
| 1987 | 2599 | | 1526 | 1,073 | 35% | 534 | 1,607 | 82% | 1,318 | 51% | 1,281 |
| 1988 | 3322 | | 2123 | 1,199 | 35% | 743 | 1,942 | 82% | 1,592 | 48% | 1,730 |
| 1989 | 2565 | | 1450 | 1,115 | 35% | 508 | 1,623 | 82% | 1,330 | 52% | 1,235 |
| 1990 | 2585 | | 1426 | 1,159 | 35% | 499 | 1,658 | 82% | 1,360 | 53% | 1,225 |
| 1991 | 2094 | | 1161 | 933 | 35% | 406 | 1,339 | 82% | 1,098 | 52% | 996 |
| 1992 | 1139 | | 601 | 538 | 35% | 210 | 748 | 82% | 614 | 54% | 525 |
| 1993 | 561 | | 209 | 352 | 35% | 73 | 425 | 82% | 349 | 62% | 212 |
| 1994 | 2810 | | 1273 | 1,537 | 35% | 446 | 1,983 | 82% | 1,626 | 58% | 1,184 |
| 1995 | 3185 | | 1619 | 1,566 | 35% | 567 | 2,133 | 82% | 1,749 | 55% | 1,436 |
| 1996 | 1462 | | 524 | 938 | 35% | 183 | 1,121 | 82% | 920 | 63% | 542 |

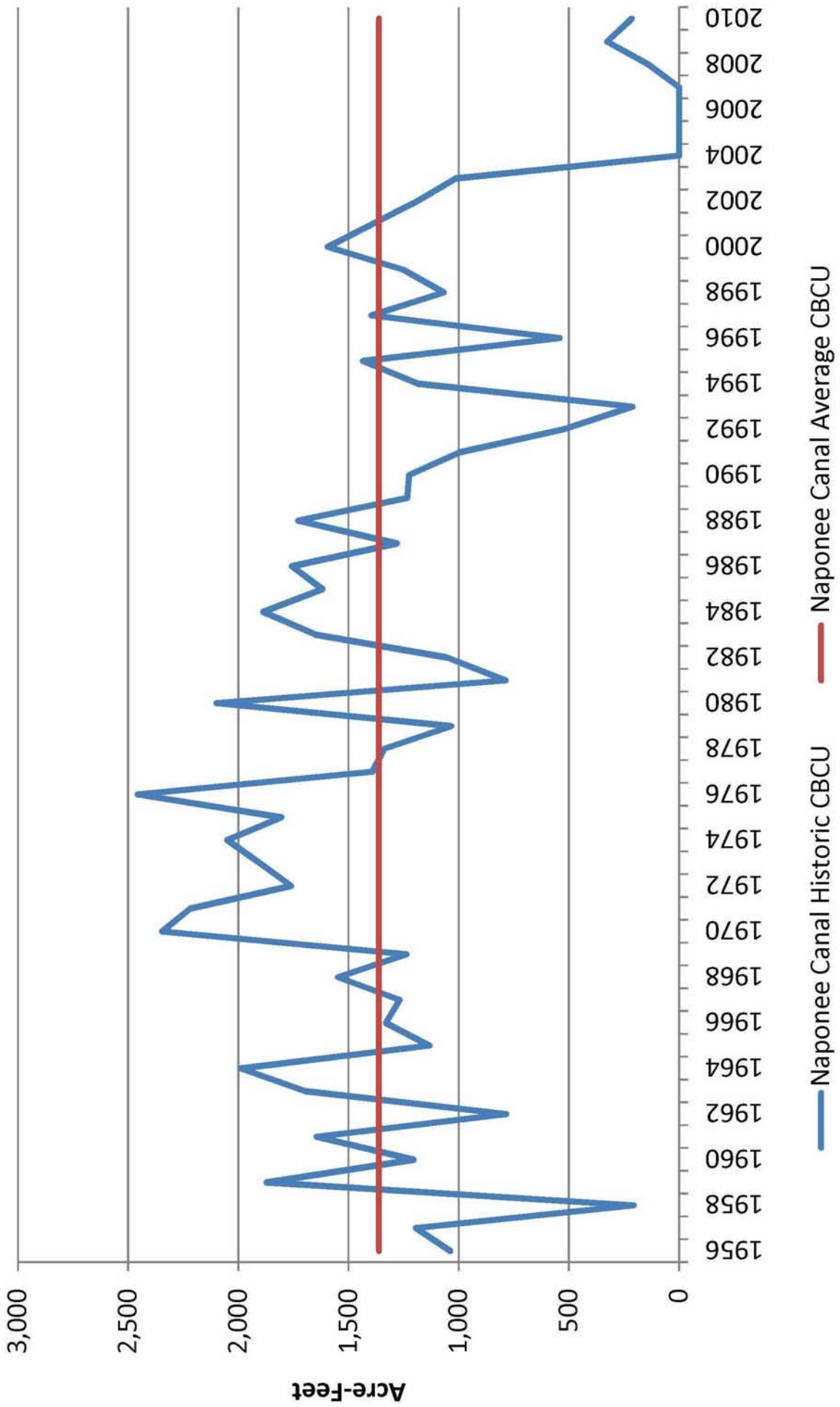
Naponee Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|----------------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|-----------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Naponee Canal Historic CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1997 | 3202 | | 1540 | 1,662 | 35% | 539 | 2,201 | 82% | 1,805 | 56% | 1,397 |
| 1998 | 2319 | | 1220 | 1,099 | 35% | 427 | 1,526 | 82% | 1,251 | 54% | 1,068 |
| 1999 | 2829 | | 1393 | 1,436 | 35% | 488 | 1,924 | 82% | 1,577 | 56% | 1,252 |
| 2000 | 3638 | | 1765 | 1,873 | 35% | 618 | 2,491 | 82% | 2,042 | 56% | 1,596 |
| 2001 | 2988 | | 1608 | 1,380 | 35% | 563 | 1,943 | 82% | 1,593 | 53% | 1,395 |
| 2002 | 2444 | | 1405 | 1,039 | 35% | 492 | 1,531 | 82% | 1,255 | 51% | 1,189 |
| 2003 | 2162 | | 1173 | 989 | 35% | 411 | 1,400 | 82% | 1,148 | 53% | 1,014 |
| 2004 | 0 | | 0 | 0 | 35% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2005 | 0 | | 0 | 0 | 35% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2006 | 0 | | 0 | 0 | 35% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2007 | 0 | | 0 | 0 | 35% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2008 | 316 | | 159 | 157 | 35% | 56 | 213 | 82% | 174 | 55% | 142 |
| 2009 | 1095 | | 246 | 849 | 35% | 86 | 935 | 82% | 767 | 70% | 328 |
| 2010 | 690 | | 171 | 519 | 35% | 60 | 579 | 82% | 475 | 69% | 215 |
| Average | 2,763 | | 1,623 | 1,139 | | 568 | 1,707 | | 1,400 | 51% | 1,363 |
| Totals | 138,134 | | 81,171 | 56,963 | | 28,410 | 85,373 | | 70,006 | | 68,128 |

Note: No Water delivered 2004 - 2007

Naponee Canal Historic CBCU



Franklin Pump Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|-------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|-----------------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Franklin Pump Canal Historic CBCU |
| year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1953 | 2293 | | 1516 | 777 | 35% | 531 | 1,308 | 82% | 1,072 | 47% | 1,221 |
| 1954 | 2540 | | 1798 | 742 | 35% | 629 | 1,371 | 82% | 1,124 | 44% | 1,416 |
| 1955 | 3826 | | 2865 | 961 | 35% | 1,003 | 1,964 | 82% | 1,610 | 42% | 2,216 |
| 1956 | 3707 | | 2783 | 924 | 35% | 974 | 1,898 | 82% | 1,556 | 42% | 2,151 |
| 1957 | 1803 | | 1439 | 364 | 35% | 504 | 868 | 82% | 711 | 39% | 1,092 |
| 1958 | 858 | | 571 | 287 | 35% | 200 | 487 | 82% | 399 | 47% | 459 |
| 1959 | 3110 | | 2486 | 624 | 35% | 870 | 1,494 | 82% | 1,225 | 39% | 1,885 |
| 1960 | 2676 | | 1780 | 896 | 35% | 623 | 1,519 | 82% | 1,246 | 47% | 1,430 |
| 1961 | 2322 | | 1558 | 764 | 35% | 545 | 1,309 | 82% | 1,074 | 46% | 1,248 |
| 1962 | 403 | | 136 | 267 | 35% | 48 | 315 | 82% | 258 | 64% | 145 |
| 1963 | 3229 | | 2406 | 823 | 35% | 842 | 1,665 | 82% | 1,365 | 42% | 1,864 |
| 1964 | 3430 | | 2650 | 780 | 35% | 928 | 1,708 | 82% | 1,400 | 41% | 2,030 |
| 1965 | 1753 | | 1012 | 741 | 35% | 354 | 1,095 | 82% | 898 | 51% | 855 |
| 1966 | 2717 | | 1817 | 900 | 35% | 636 | 1,536 | 82% | 1,259 | 46% | 1,458 |
| 1967 | 2601 | | 1700 | 901 | 35% | 595 | 1,496 | 82% | 1,227 | 47% | 1,374 |
| 1968 | 2225 | | 1615 | 610 | 35% | 565 | 1,175 | 82% | 964 | 43% | 1,261 |
| 1969 | 1806 | | 1235 | 571 | 35% | 432 | 1,003 | 82% | 823 | 46% | 983 |
| 1970 | 4251 | | 2890 | 1,361 | 35% | 1,012 | 2,373 | 82% | 1,945 | 46% | 2,306 |
| 1971 | 4312 | | 2471 | 1,841 | 35% | 865 | 2,706 | 82% | 2,219 | 51% | 2,093 |
| 1972 | 2825 | | 1942 | 883 | 35% | 680 | 1,563 | 82% | 1,281 | 45% | 1,544 |
| 1973 | 3488 | | 2367 | 1,121 | 35% | 828 | 1,949 | 82% | 1,599 | 46% | 1,889 |
| 1974 | 4050 | | 3123 | 927 | 35% | 1,093 | 2,020 | 82% | 1,656 | 41% | 2,394 |
| 1975 | 3449 | | 1646 | 1,803 | 35% | 576 | 2,379 | 82% | 1,951 | 57% | 1,498 |
| 1976 | 4099 | | 2877 | 1,222 | 35% | 1,007 | 2,229 | 82% | 1,828 | 45% | 2,271 |
| 1977 | 3092 | | 2070 | 1,022 | 35% | 725 | 1,747 | 82% | 1,432 | 46% | 1,660 |
| 1978 | 2709 | | 1791 | 918 | 35% | 627 | 1,545 | 82% | 1,267 | 47% | 1,442 |
| 1979 | 2143 | | 1516 | 627 | 35% | 531 | 1,158 | 82% | 949 | 44% | 1,194 |
| 1980 | 3667 | | 2637 | 1,030 | 35% | 923 | 1,953 | 82% | 1,601 | 44% | 2,066 |
| 1981 | 1075 | | 658 | 417 | 35% | 230 | 647 | 82% | 531 | 49% | 544 |
| 1982 | 2104 | | 1416 | 688 | 35% | 496 | 1,184 | 82% | 971 | 46% | 1,133 |
| 1983 | 3362 | | 2425 | 937 | 35% | 849 | 1,786 | 82% | 1,464 | 44% | 1,898 |
| 1984 | 3832 | | 2401 | 1,431 | 35% | 840 | 2,271 | 82% | 1,863 | 49% | 1,969 |
| 1985 | 2805 | | 1860 | 945 | 35% | 651 | 1,596 | 82% | 1,309 | 47% | 1,496 |
| 1986 | 4411 | | 2785 | 1,626 | 35% | 975 | 2,601 | 82% | 2,133 | 48% | 2,278 |
| 1987 | 2875 | | 1636 | 1,239 | 35% | 573 | 1,812 | 82% | 1,486 | 52% | 1,389 |
| 1988 | 4555 | | 2859 | 1,696 | 35% | 1,001 | 2,697 | 82% | 2,211 | 49% | 2,344 |
| 1989 | 2802 | | 1808 | 994 | 35% | 633 | 1,627 | 82% | 1,334 | 48% | 1,468 |
| 1990 | 2140 | | 1274 | 866 | 35% | 446 | 1,312 | 82% | 1,076 | 50% | 1,064 |
| 1991 | 2784 | | 1618 | 1,166 | 35% | 566 | 1,732 | 82% | 1,420 | 51% | 1,364 |
| 1992 | 1787 | | 1094 | 693 | 35% | 383 | 1,076 | 82% | 882 | 49% | 905 |
| 1993 | 519 | | 16 | 503 | 35% | 6 | 509 | 82% | 417 | 80% | 102 |

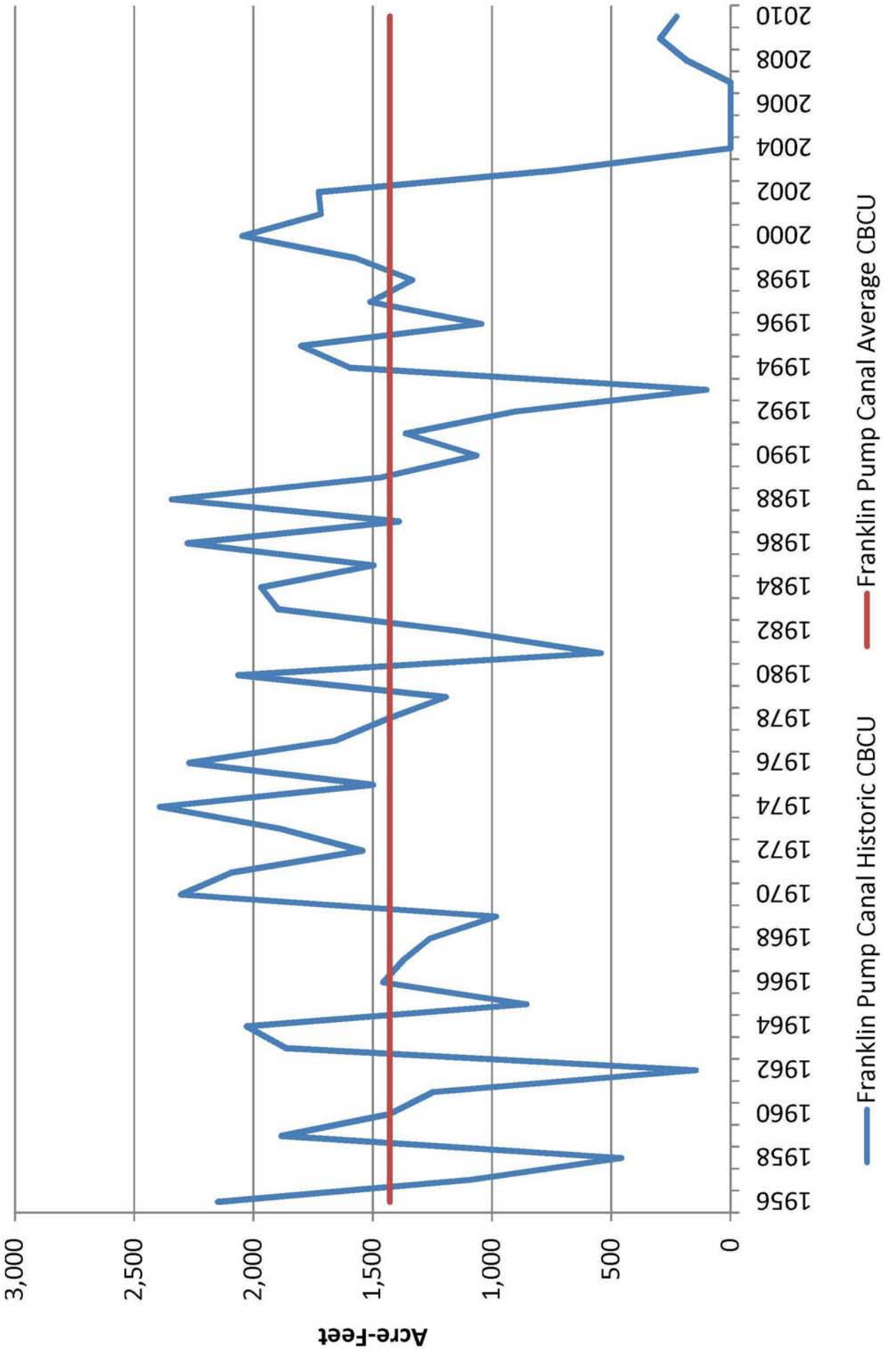
Franklin Pump Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|----------------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|-----------------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Franklin Pump Canal Historic CBCU |
| year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1994 | 3554 | | 1796 | 1,758 | 35% | 629 | 2,387 | 82% | 1,957 | 55% | 1,597 |
| 1995 | 3963 | | 2043 | 1,920 | 35% | 715 | 2,635 | 82% | 2,161 | 55% | 1,802 |
| 1996 | 2224 | | 1210 | 1,014 | 35% | 424 | 1,438 | 82% | 1,179 | 53% | 1,045 |
| 1997 | 3025 | | 1815 | 1,210 | 35% | 635 | 1,845 | 82% | 1,513 | 50% | 1,512 |
| 1998 | 2630 | | 1615 | 1,015 | 35% | 565 | 1,580 | 82% | 1,296 | 49% | 1,334 |
| 1999 | 2962 | | 1953 | 1,009 | 35% | 684 | 1,693 | 82% | 1,388 | 47% | 1,574 |
| 2000 | 3946 | | 2509 | 1,437 | 35% | 878 | 2,315 | 82% | 1,898 | 48% | 2,048 |
| 2001 | 3409 | | 2073 | 1,336 | 35% | 726 | 2,062 | 82% | 1,690 | 50% | 1,719 |
| 2002 | 3273 | | 2136 | 1,137 | 35% | 748 | 1,885 | 82% | 1,545 | 47% | 1,728 |
| 2003 | 1687 | | 793 | 894 | 35% | 278 | 1,172 | 82% | 961 | 57% | 726 |
| 2004 | 0 | | 0 | 0 | 35% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2005 | 0 | | 0 | 0 | 35% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2006 | 0 | | 0 | 0 | 35% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2007 | 0 | | 0 | 0 | 35% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2008 | 576 | | 152 | 424 | 35% | 53 | 477 | 82% | 391 | 68% | 185 |
| 2009 | 909 | | 250 | 659 | 35% | 88 | 747 | 82% | 612 | 67% | 297 |
| 2010 | 751 | | 172 | 579 | 35% | 60 | 639 | 82% | 524 | 70% | 227 |
| Average | 2,729 | | 1,760 | 968 | | 616 | 1,584 | | 1,299 | 48% | 1,429 |
| Totals | 147,344 | | 95,064 | 52,280 | | 33,272 | 85,552 | | 70,153 | | 77,191 |

Note: No Water Delivered 2004 - 2007

Franklin Pump Canal Historic CBCU



Superior Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|-------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|------------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Superior Canal Historic CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1952 | 6964 | | 1630 | 5,334 | 31% | 505 | 5,839 | 82% | 4,788 | 69% | 2,176 |
| 1953 | 10169 | | 4008 | 6,161 | 31% | 1,242 | 7,403 | 82% | 6,071 | 60% | 4,098 |
| 1954 | 9612 | | 3774 | 5,838 | 31% | 1,170 | 7,008 | 82% | 5,747 | 60% | 3,865 |
| 1955 | 15100 | | 8974 | 6,126 | 31% | 2,782 | 8,908 | 82% | 7,305 | 48% | 7,795 |
| 1956 | 13192 | | 7134 | 6,058 | 31% | 2,212 | 8,270 | 82% | 6,781 | 51% | 6,411 |
| 1957 | 10493 | | 5972 | 4,521 | 31% | 1,851 | 6,372 | 82% | 5,225 | 50% | 5,268 |
| 1958 | 8416 | | 1994 | 6,422 | 31% | 618 | 7,040 | 82% | 5,773 | 69% | 2,643 |
| 1959 | 17449 | | 9070 | 8,379 | 31% | 2,812 | 11,191 | 82% | 9,176 | 53% | 8,273 |
| 1960 | 13124 | | 5729 | 7,395 | 31% | 1,776 | 9,171 | 82% | 7,520 | 57% | 5,604 |
| 1961 | 13436 | | 5501 | 7,935 | 31% | 1,705 | 9,640 | 82% | 7,905 | 59% | 5,531 |
| 1962 | 11122 | | 3652 | 7,470 | 31% | 1,132 | 8,602 | 82% | 7,054 | 63% | 4,068 |
| 1963 | 15161 | | 6106 | 9,055 | 31% | 1,893 | 10,948 | 82% | 8,977 | 59% | 6,184 |
| 1964 | 14706 | | 6901 | 7,805 | 31% | 2,139 | 9,944 | 82% | 8,154 | 55% | 6,552 |
| 1965 | 12537 | | 5675 | 6,862 | 31% | 1,759 | 8,621 | 82% | 7,069 | 56% | 5,468 |
| 1966 | 14394 | | 6430 | 7,964 | 31% | 1,993 | 9,957 | 82% | 8,165 | 57% | 6,229 |
| 1967 | 12808 | | 7157 | 5,651 | 31% | 2,219 | 7,870 | 82% | 6,453 | 50% | 6,355 |
| 1968 | 13997 | | 8293 | 5,704 | 31% | 2,571 | 8,275 | 82% | 6,785 | 48% | 7,212 |
| 1969 | 10262 | | 3945 | 6,317 | 31% | 1,223 | 7,540 | 82% | 6,183 | 60% | 4,079 |
| 1970 | 16602 | | 9746 | 6,856 | 31% | 3,021 | 9,877 | 82% | 8,099 | 49% | 8,503 |
| 1971 | 16498 | | 8846 | 7,652 | 31% | 2,742 | 10,394 | 82% | 8,523 | 52% | 7,975 |
| 1972 | 12774 | | 5409 | 7,365 | 31% | 1,677 | 9,042 | 82% | 7,414 | 58% | 5,360 |
| 1973 | 13715 | | 5896 | 7,819 | 31% | 1,828 | 9,647 | 82% | 7,910 | 58% | 5,805 |
| 1974 | 14894 | | 8993 | 5,901 | 31% | 2,788 | 8,689 | 82% | 7,125 | 48% | 7,769 |
| 1975 | 14577 | | 7578 | 6,999 | 31% | 2,349 | 9,348 | 82% | 7,666 | 53% | 6,911 |
| 1976 | 20199 | | 12125 | 8,074 | 31% | 3,759 | 11,833 | 82% | 9,703 | 48% | 10,496 |
| 1977 | 11193 | | 5882 | 5,311 | 31% | 1,823 | 7,134 | 82% | 5,850 | 52% | 5,343 |
| 1978 | 15178 | | 7072 | 8,106 | 31% | 2,192 | 10,298 | 82% | 8,445 | 56% | 6,733 |
| 1979 | 10534 | | 4317 | 6,217 | 31% | 1,338 | 7,555 | 82% | 6,195 | 59% | 4,339 |
| 1980 | 15440 | | 7909 | 7,531 | 31% | 2,452 | 9,983 | 82% | 8,186 | 53% | 7,254 |
| 1981 | 8580 | | 2824 | 5,756 | 31% | 875 | 6,631 | 82% | 5,438 | 63% | 3,142 |
| 1982 | 11754 | | 4954 | 6,800 | 31% | 1,536 | 8,336 | 82% | 6,835 | 58% | 4,919 |
| 1983 | 15578 | | 7204 | 8,374 | 31% | 2,233 | 10,607 | 82% | 8,698 | 56% | 6,880 |
| 1984 | 16553 | | 7287 | 9,266 | 31% | 2,259 | 11,525 | 82% | 9,450 | 57% | 7,103 |
| 1985 | 13841 | | 4582 | 9,259 | 31% | 1,420 | 10,679 | 82% | 8,757 | 63% | 5,084 |
| 1986 | 15266 | | 5234 | 10,032 | 31% | 1,623 | 11,655 | 82% | 9,557 | 63% | 5,709 |
| 1987 | 13990 | | 5887 | 8,103 | 31% | 1,825 | 9,928 | 82% | 8,141 | 58% | 5,849 |
| 1988 | 18813 | | 8108 | 10,705 | 31% | 2,513 | 13,218 | 82% | 10,839 | 58% | 7,974 |
| 1989 | 15059 | | 5960 | 9,099 | 31% | 1,848 | 10,947 | 82% | 8,976 | 60% | 6,083 |
| 1990 | 13628 | | 5847 | 7,781 | 31% | 1,813 | 9,594 | 82% | 7,867 | 58% | 5,761 |
| 1991 | 12235 | | 4629 | 7,606 | 31% | 1,435 | 9,041 | 82% | 7,414 | 61% | 4,821 |

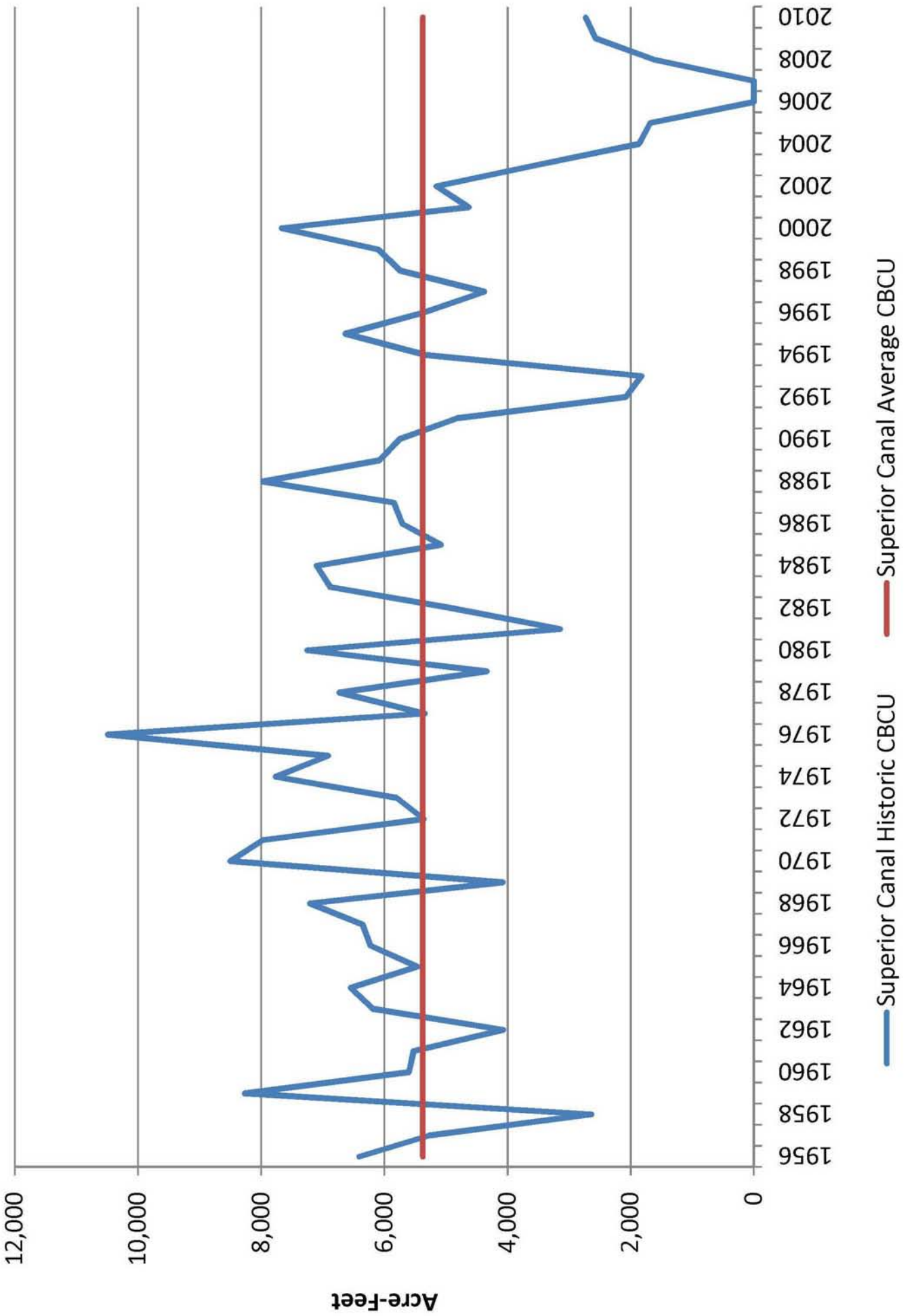
Superior Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|---------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|------------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Superior Canal Historic CBCU |
| Year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1992 | 7110 | | 1422 | 5,688 | 31% | 441 | 6,129 | 82% | 5,026 | 71% | 2,084 |
| 1993 | 9174 | | 309 | 8,865 | 31% | 96 | 8,961 | 82% | 7,348 | 80% | 1,826 |
| 1994 | 13782 | | 5040 | 8,742 | 31% | 1,562 | 10,304 | 82% | 8,450 | 61% | 5,332 |
| 1995 | 17272 | | 6229 | 11,043 | 31% | 1,931 | 12,974 | 82% | 10,639 | 62% | 6,633 |
| 1996 | 14234 | | 4963 | 9,271 | 31% | 1,539 | 10,810 | 82% | 8,864 | 62% | 5,370 |
| 1997 | 12307 | | 3826 | 8,481 | 31% | 1,186 | 9,667 | 82% | 7,927 | 64% | 4,380 |
| 1998 | 14200 | | 5641 | 8,559 | 31% | 1,749 | 10,308 | 82% | 8,452 | 60% | 5,748 |
| 1999 | 15283 | | 5921 | 9,362 | 31% | 1,836 | 11,198 | 82% | 9,182 | 60% | 6,101 |
| 2000 | 18466 | | 7685 | 10,781 | 31% | 2,382 | 13,163 | 82% | 10,794 | 58% | 7,672 |
| 2001 | 11303 | | 4590 | 6,713 | 31% | 1,423 | 8,136 | 82% | 6,671 | 59% | 4,632 |
| 2002 | 11252 | | 5535 | 5,717 | 31% | 1,716 | 7,433 | 82% | 6,095 | 54% | 5,157 |
| 2003 | 8174 | | 3622 | 4,552 | 31% | 1,123 | 5,675 | 82% | 4,653 | 57% | 3,521 |
| 2004 | 5800 | | 1457 | 4,343 | 31% | 452 | 4,795 | 82% | 3,932 | 68% | 1,868 |
| 2005 | 4712 | | 1483 | 3,229 | 31% | 460 | 3,689 | 82% | 3,025 | 64% | 1,687 |
| 2006 | 0 | | 0 | 0 | 31% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2007 | 0 | | 0 | 0 | 31% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2008 | 5666 | | 1060 | 4,606 | 31% | 329 | 4,935 | 82% | 4,046 | 71% | 1,620 |
| 2009 | 6336 | | 2523 | 3,813 | 31% | 782 | 4,595 | 82% | 3,768 | 59% | 2,568 |
| 2010 | 6489 | | 2769 | 3,720 | 31% | 858 | 4,578 | 82% | 3,754 | 58% | 2,735 |
| Average | 12,656 | | 5,479 | 7,177 | | 1,699 | 8,876 | | 7,278 | 58% | 5,378 |
| Totals | 721,403 | | 312,309 | 409,094 | | 96,816 | 505,910 | | 414,846 | | 306,557 |

Note: No Water Delivered in 2006 or 2007

Superior Canal Historic CBCU



Courtland Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|-------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|-------------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Courtland Canal Historic CBCU |
| year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1952 | 7346 | | 327 | 7,019 | 23% | 75 | 7,094 | 82% | 5,817 | 79% | 1,529 |
| 1953 | 1468 | | 120 | 1,348 | 23% | 28 | 1,376 | 82% | 1,128 | 77% | 340 |
| 1954 | 9687 | | 1261 | 8,426 | 23% | 290 | 8,716 | 82% | 7,147 | 74% | 2,540 |
| 1955 | 6605 | | 2638 | 3,967 | 23% | 607 | 4,574 | 82% | 3,750 | 57% | 2,855 |
| 1956 | 6141 | | 1988 | 4,153 | 23% | 457 | 4,610 | 82% | 3,780 | 62% | 2,361 |
| 1957 | 2182 | | 1338 | 844 | 23% | 308 | 1,152 | 82% | 944 | 43% | 1,238 |
| 1958 | 1614 | | 314 | 1,300 | 23% | 72 | 1,372 | 82% | 1,125 | 70% | 489 |
| 1959 | 5133 | | 2090 | 3,043 | 23% | 481 | 3,524 | 82% | 2,889 | 56% | 2,244 |
| 1960 | 5230 | | 0 | 5,230 | 23% | 0 | 5,230 | 82% | 4,289 | 82% | 941 |
| 1961 | 6161 | | 1198 | 4,963 | 23% | 276 | 5,239 | 82% | 4,296 | 70% | 1,865 |
| 1962 | 3197 | | 606 | 2,591 | 23% | 139 | 2,730 | 82% | 2,239 | 70% | 958 |
| 1963 | 1928 | | 1758 | 170 | 23% | 404 | 574 | 82% | 471 | 24% | 1,457 |
| 1964 | 2166 | | 1907 | 259 | 23% | 439 | 698 | 82% | 572 | 26% | 1,594 |
| 1965 | 1410 | | 1225 | 185 | 23% | 282 | 467 | 82% | 383 | 27% | 1,027 |
| 1966 | 1591 | | 1346 | 245 | 23% | 310 | 555 | 82% | 455 | 29% | 1,136 |
| 1967 | 1686 | | 1423 | 263 | 23% | 327 | 590 | 82% | 484 | 29% | 1,202 |
| 1968 | 2678 | | 2204 | 474 | 23% | 507 | 981 | 82% | 804 | 30% | 1,874 |
| 1969 | 1015 | | 876 | 139 | 23% | 201 | 340 | 82% | 279 | 28% | 736 |
| 1970 | 3063 | | 2643 | 420 | 23% | 608 | 1,028 | 82% | 843 | 28% | 2,220 |
| 1971 | 2127 | | 1887 | 240 | 23% | 434 | 674 | 82% | 553 | 26% | 1,574 |
| 1972 | 1524 | | 1294 | 230 | 23% | 298 | 528 | 82% | 433 | 28% | 1,091 |
| 1973 | 1604 | | 1311 | 293 | 23% | 302 | 595 | 82% | 488 | 30% | 1,116 |
| 1974 | 2690 | | 2442 | 248 | 23% | 562 | 810 | 82% | 664 | 25% | 2,026 |
| 1975 | 1784 | | 1556 | 228 | 23% | 358 | 586 | 82% | 480 | 27% | 1,304 |
| 1976 | 3261 | | 2886 | 375 | 23% | 664 | 1,039 | 82% | 852 | 26% | 2,409 |
| 1977 | 1366 | | 1293 | 73 | 23% | 297 | 370 | 82% | 304 | 22% | 1,062 |
| 1978 | 2127 | | 1889 | 238 | 23% | 434 | 672 | 82% | 551 | 26% | 1,576 |
| 1979 | 1323 | | 1211 | 112 | 23% | 279 | 391 | 82% | 320 | 24% | 1,003 |
| 1980 | 2524 | | 2382 | 142 | 23% | 548 | 690 | 82% | 566 | 22% | 1,958 |
| 1981 | 629 | | 526 | 103 | 23% | 121 | 224 | 82% | 184 | 29% | 445 |
| 1982 | 849 | | 785 | 64 | 23% | 181 | 245 | 82% | 201 | 24% | 648 |
| 1983 | 2136 | | 1851 | 285 | 23% | 426 | 711 | 82% | 583 | 27% | 1,553 |
| 1984 | 2287 | | 1961 | 326 | 23% | 451 | 777 | 82% | 637 | 28% | 1,650 |
| 1985 | 1229 | | 840 | 389 | 23% | 193 | 582 | 82% | 477 | 39% | 752 |
| 1986 | 1952 | | 1427 | 525 | 23% | 328 | 853 | 82% | 700 | 36% | 1,252 |
| 1987 | 1436 | | 1233 | 203 | 23% | 284 | 487 | 82% | 399 | 28% | 1,037 |
| 1988 | 2345 | | 1672 | 673 | 23% | 385 | 1,058 | 82% | 867 | 37% | 1,478 |
| 1989 | 1833 | | 1298 | 535 | 23% | 299 | 834 | 82% | 684 | 37% | 1,149 |
| 1990 | 2098 | | 1529 | 569 | 23% | 352 | 921 | 82% | 755 | 36% | 1,343 |
| 1991 | 2072 | | 1414 | 658 | 23% | 325 | 983 | 82% | 806 | 39% | 1,266 |
| 1992 | 827 | | 609 | 218 | 23% | 140 | 358 | 82% | 294 | 36% | 533 |
| 1993 | 12 | | 10 | 2 | 23% | 2 | 4 | 82% | 4 | 29% | 8 |
| 1994 | 2069 | | 1440 | 629 | 23% | 331 | 960 | 82% | 787 | 38% | 1,282 |

Courtland Canal Historic CBCU

Attachment 7: Calculations of Return Flows from Bureau of Reclamation Canals

| Col 1 | Col 2 | Col 3 | Col 4 | Col 5 | Col 6 | Col 7 | Col 8 | Col 9 | Col 10 | Col 11 | Col 12 |
|----------------|--------------------|--------------------------------|--------------------------------|---------------|---|---------------|--------------------------|---|---|--------------------------------------|-------------------------------|
| Year | Canal Diversions | Spill to Waste-Way | Field Deliveries | Canal Loss | Average Field Loss Factor | Field Loss | Total Loss from District | Percent Field and Canal loss that Returns to the Stream | Total return to Stream, from Canal and Field loss | Return as Percent of Canal Diversion | Courtland Canal Historic CBCU |
| year | Headgate Diversion | Sum of Measured spill to river | Sum of Deliveries to the Field | Col 2 - Col 4 | 1 -Weighted Average Efficiency of application System for the District | Col 4 x Col 6 | Col 5 + Col 7 | Estimated percent Loss | Col 8 x Col 9 | Col 10/Col 2 | Col 2 X (1- Col 11) |
| 1995 | 2159 | | 1566 | 593 | 23% | 360 | 953 | 82% | 782 | 36% | 1,377 |
| 1996 | 1404 | | 1116 | 288 | 23% | 257 | 545 | 82% | 447 | 32% | 957 |
| 1997 | 1556 | | 1157 | 399 | 23% | 266 | 665 | 82% | 545 | 35% | 1,011 |
| 1998 | 2381 | | 1740 | 641 | 23% | 400 | 1,041 | 82% | 854 | 36% | 1,527 |
| 1999 | 2355 | | 1844 | 511 | 23% | 424 | 935 | 82% | 767 | 33% | 1,588 |
| 2000 | 3463 | | 2556 | 907 | 23% | 588 | 1,495 | 82% | 1,226 | 35% | 2,237 |
| 2001 | 1982 | | 1341 | 641 | 23% | 308 | 949 | 82% | 779 | 39% | 1,203 |
| 2002 | 2263 | | 1954 | 309 | 23% | 449 | 758 | 82% | 622 | 27% | 1,641 |
| 2003 | 1491 | | 1245 | 246 | 23% | 286 | 532 | 82% | 437 | 29% | 1,054 |
| 2004 | 0 | | 0 | 0 | 23% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2005 | 0 | | 0 | 0 | 23% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2006 | 0 | | 0 | 0 | 23% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2007 | 0 | | 0 | 0 | 23% | 0 | 0 | 82% | 0 | 0% | 0 |
| 2008 | 311 | | 233 | 78 | 23% | 54 | 132 | 82% | 108 | 35% | 203 |
| 2009 | 718 | | 609 | 109 | 23% | 140 | 249 | 82% | 204 | 28% | 514 |
| 2010 | 202 | | 159 | 43 | 23% | 37 | 80 | 82% | 65 | 32% | 137 |
| Average | 2,328 | | 1,325 | 1,003 | | 305 | 1,308 | | 1,072 | 46% | 1,256 |
| Totals | 132,690 | | 75,528 | 57,162 | | 17,371 | 74,533 | | 61,117 | | 71,573 |

Note: No water delivered 2004 - 2007

Courtland Canal Historic CBCU

