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MAR 25 1999

Department of Water Resources
Eastern Region

Memorandum

To: Water District 29 File

From: Tim Luke *TL*

Date: March 22, 1999

Re: Review & Comparison of Data from Mechanical Ditch Recorder with Watermaster Daily Readings

Earlier this year I received copies of the charts from the Stevens mechanical recorder that was installed on the McCammon Ditch last summer. The charts were sent to by Byron Allen of McCammon Ditch Co. During a river tour in October of 1998 I had agreed to compare the average daily diversion values from the recorder with the daily watermaster ditch readings.

Attached are the tabular data reduced from the charts along with computation of average daily gage height and discharge. Also listed, for comparison, are the daily readings by watermaster Arlin Olson. A graphical comparison of the data is also provided. I gave copies of this chart and table to Howard Hall of McCammon Ditch Co. on 2/23/99 while on my way to a meeting in Downey that evening. I also gave copies of the graph and table to Harold Jones of IDWR, who passed the information out during the annual water district meeting, held on March 1, 1999. Harold also distributed copies of a spreadsheet summarizing 1998 diversions and distribution of water on the main stem of the river between Chesterfield Reservoir and McCammon. A copy of this spreadsheet has been placed in the annual water district file.

In general, the watermaster's 1998 daily readings of the McCammon ditch are very close to the average daily discharge values determined from the recorder. There appears to be a wider discrepancy during the first three weeks of July. I can offer no immediate reason for this discrepancy. I feel Arlin's measurements during this time should have been a little closer, unless there was some calibration problem with the recorder. This discrepancy is not particularly critical since there was no regulation of the ditch occurring during this period. Although I believe there are benefits for a canal company to continuously monitor canal discharge, I am still of the opinion that requiring installation of recorders on the larger canals within District 29 will not provide significant improvements in the overall delivery or distribution of water within the system.

McCammon Ditch Co. Main Canal
10 Foot Parshall Flume

1998 Daily Averages as Read from Stevens F Recorder Chart

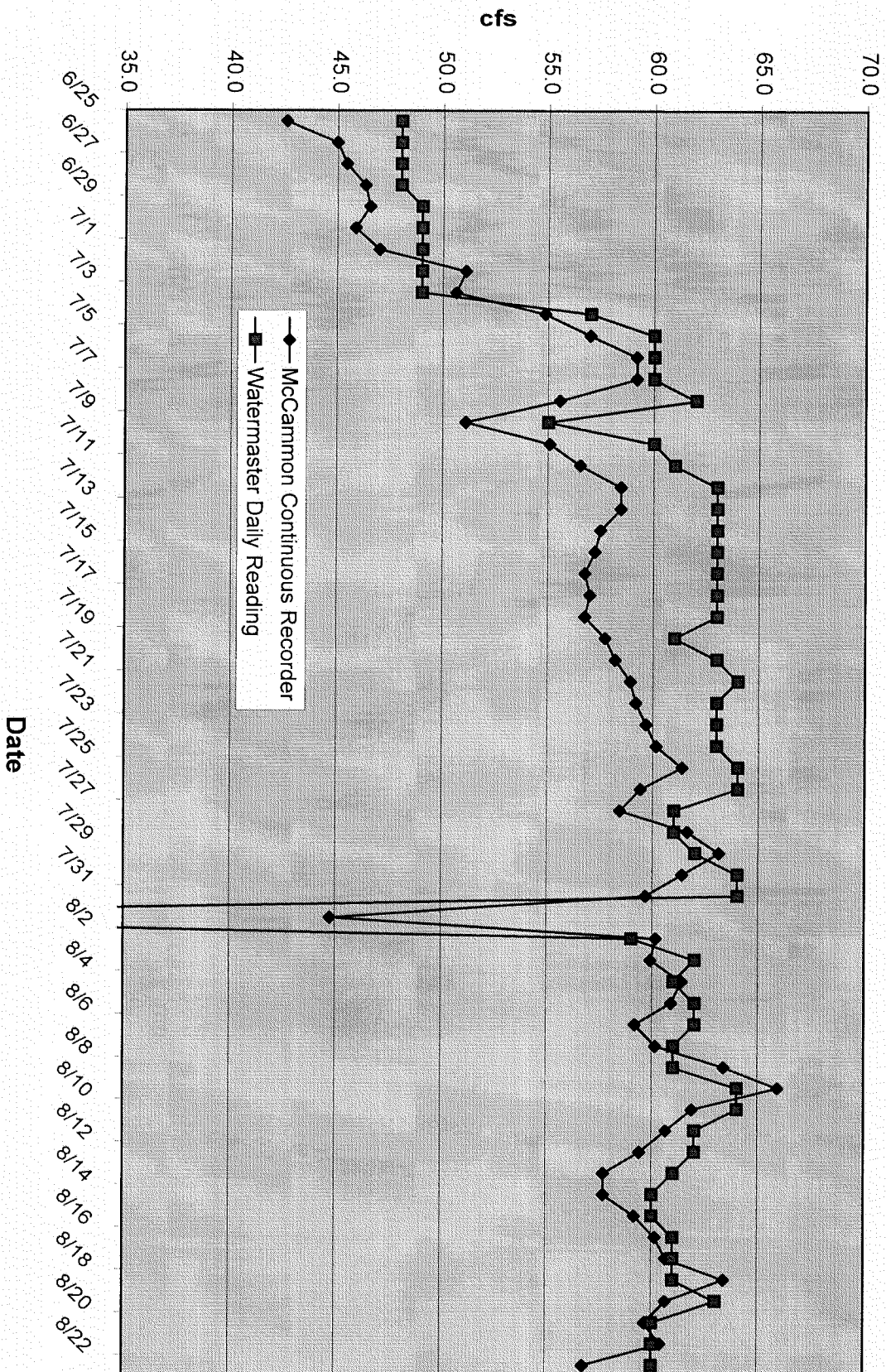
Date	12-8am	8am-4pm	4pm-12	AVG	Q (cfs)
6/25	1.02	1.06	1.07	1.05	42.6
6/26	1.08	1.09	1.09	1.09	45.0
6/27	1.09	1.09	1.10	1.09	45.4
6/28	1.10	1.11	1.11	1.11	46.3
6/29	1.11	1.11	1.11	1.11	46.5
6/30	1.10	1.10	1.10	1.10	45.9
7/1	1.10	1.12	1.13	1.12	47.0
7/2	1.13	1.20	1.20	1.18	51.1
7/3	1.14	1.16	1.21	1.17	50.6
7/4	1.21	1.23	1.25	1.23	54.8
7/5	1.25	1.27	1.26	1.26	57.0
7/6	1.26	1.29	1.32	1.29	59.2
7/7	1.32	1.28	1.27	1.29	59.2
7/8	1.26	1.24	1.22	1.24	55.6
7/9	1.18	1.14	1.21	1.18	51.1
7/10	1.23	1.23	1.24	1.23	55.1
7/11	1.25	1.25	1.26	1.25	56.5
7/12	1.27	1.29	1.28	1.28	58.5
7/13	1.28	1.28	1.28	1.28	58.5
7/14	1.27	1.27	1.26	1.27	57.5
7/15	1.26	1.27	1.26	1.26	57.2
7/16	1.26	1.26	1.25	1.26	56.8
7/17	1.26	1.26	1.26	1.26	57.0
7/18	1.26	1.25	1.26	1.26	56.8
7/19	1.26	1.28	1.27	1.27	57.7
7/20	1.27	1.28	1.28	1.28	58.2
7/21	1.29	1.29	1.28	1.29	58.9
7/22	1.29	1.29	1.29	1.29	59.2
7/23	1.30	1.29	1.30	1.30	59.7
7/24	1.30	1.30	1.31	1.30	60.2
7/25	1.32	1.32	1.32	1.32	61.4
7/26	1.31	1.29	1.28	1.29	59.4
7/27	1.28	1.28	1.28	1.28	58.5
7/28	1.29	1.33	1.35	1.32	61.7
7/29	1.35	1.34	1.34	1.34	63.1
7/30	1.33	1.32	1.31	1.32	61.4
7/31	1.31	1.29	1.29	1.30	59.7
8/1	0.70	1.28	1.27	1.08	44.8
8/2	1.30	1.30	1.31	1.30	60.2
8/3	1.31	1.30	1.29	1.30	59.9
8/4	1.33	1.32	1.31	1.32	61.4
8/5	1.32	1.31	1.31	1.31	60.9
8/6	1.29	1.29	1.29	1.29	59.2
8/7	1.31	1.30	1.30	1.30	60.2
8/8	1.32	1.35	1.37	1.35	63.4

Watermaster Readings (cfs)	Date
48.0	6/25
48.0	6/26
48.0	6/27
48.0	6/28
49.0	6/29
49.0	6/30
49.0	7/1
49.0	7/2
49.0	7/3
57.0	7/4
60.0	7/5
60.0	7/6
60.0	7/7
62.0	7/8
55.0	7/9
60.0	7/10
61.0	7/11
63.0	7/12
63.0	7/13
63.0	7/14
63.0	7/15
63.0	7/16
63.0	7/17
63.0	7/18
61.0	7/19
63.0	7/20
64.0	7/21
63.0	7/22
63.0	7/23
63.0	7/24
64.0	7/25
64.0	7/26
61.0	7/27
61.0	7/28
62.0	7/29
64.0	7/30
64.0	7/31
10.0	8/1
59.0	8/2
62.0	8/3
61.0	8/4
62.0	8/5
62.0	8/6
61.0	8/7
61.0	8/8

8/9	1.40	1.37	1.37	1.38	65.9
8/10	1.35	1.32	1.31	1.33	61.9
8/11	1.31	1.31	1.31	1.31	60.7
8/12	1.30	1.29	1.29	1.29	59.4
8/13	1.27	1.27	1.27	1.27	57.7
8/14	1.27	1.27	1.27	1.27	57.7
8/15	1.28	1.29	1.30	1.29	59.2
8/16	1.30	1.30	1.31	1.30	60.2
8/17	1.31	1.31	1.31	1.31	60.7
8/18	1.34	1.35	1.35	1.35	63.4
8/19	1.33	1.30	1.30	1.31	60.7
8/20	1.29	1.30	1.30	1.30	59.7
8/21	1.31	1.31	1.30	1.31	60.4
8/22	1.29	1.25	1.23	1.26	56.8

64.0	8/9
64.0	8/10
62.0	8/11
62.0	8/12
61.0	8/13
60.0	8/14
60.0	8/15
61.0	8/16
61.0	8/17
61.0	8/18
63.0	8/19
60.0	8/20
60.0	8/21
60.0	8/22

McCammon Ditch 1998 Daily Flows



Note: McCammon recorder is a daily average based on interpolation of values recorded on drum chart