Water District #34
P.O. Box 53
Mackay, ID 83251

RECEIVED
OCT 12 2012
DEPARTMENT OF
WATER RESOURCES

October 10, 2012

RE: Compliance with Water District #34 Water Distribution Rules / Water Master's description of calculating the natural flow, demand and delivery's of natural flow.

Attn: Nick Miller

Decree Call

1) Add total water in system, from river, creeks, wells & rising water. Calculate 4 day average for both 2B & Reservoir inflow to determine if total of water is increasing or decreasing.

2) Add all the headings, Total head delivered includes all water delivered past head gate.

3) Divide total water by total head, which equals shrink.

4) total water multiplied by shrink % determines deliverable decree water after accounting for storage water at 2B (storage water at 2B equals storage water delivered multiplied by shrink % and added to storage water delivered, subtract storage at 2B from 2B + Sharp which equals water used for decree at 2B) subtract water used for decree at 2B from Reservoir inflow which equals water used for decree that was storage water or the amount of decree water used for storage. Either one or the other will occur because of variable inflow from Reservoir or antelope Creek etc... Decree calls are changed if either case consistently occurs.

This water is used to fill all calls for water made by users to district 34 for their decree that is currently on by priority.

Decree calls are also affected by temperature, precipitation, wind, humidity, specific crops and their stage of development.

5) Natural flow water is not and can not be directly measured in the Big Lost River, Because a significant amount of "Natural Flow" water is from rising water between the Dam gates and the 2B gage, a small portion of which is seepage. Today there was 3.92 CFS from seepage. 127 CFS gain past Reservoirs gate leaving 110 CFS of rising water going past the 2b .

So natural flow is not directly measured anywhere in the system, but is inferred by subtracting the increase or decrease in reservoir contents from the amount of water flowing past the 2B. When the gates are closed on October 16, 2012 for the season I expect more than 110 CFS will still flow past the 2B.

Surface water stopped flowing at the Chilly Bridge August 4, 2012, Since that time the inflow has been between 190-230 CFS. This inflow varies even though no sprinkling has occurred since October 3, 2012 out of Warm Springs.

Demand

6) Water users tell District 34 they want deliveries of their decree water, that water is put in each respective canal head. When priority changes users are informed and canal heads are adjusted accordingly.

7) Included are examples of River shrink calculations and Reservoir charts that since July shows storage water delivered and amount of water estimated to be going thru the gates.

I think the process is more art than science therefore many questions will be asked. Feel free to do so.

Sincerely,

Water Master #34
Roger Totten

9-24-2012

9/24

9/30 Shrub

	Monday	Tuesday	Wednesda	Thur	Fri	Sat	Sunday	week total inches	Weekly CFS total
Sharp	9.6	9.6	9.6	7.1	4.68	4.68	3.96	49.22	0.9844
2B Gauge	309	301	292	243	227	231	235	1838	36.76
Outflow	318.6	310.6	301.6	250.1	231.68	235.68	238.96	1887.22	37.7444
Darlington'	20	16	16	16	12	12	11	103	2.06
Sharp	9.6	9.6	9.6	7.1	4.68	4.68	3.96	49.22	0.9844
Swauger	12.2	12.2	12.2	8.44	8.44	8.44	8.52	70.44	1.4088
Burnett	25	25	25	24	20	18	18	155	3.1
H&V								0	0
total burnett reach	66.8	62.8	62.8	55.54	45.12	43.12	41.48	377.66	7.5532
Beck	5.92	1.2	1.2	1.5	1.42	1.42	1.42	14.08	0.2816
Angelo	0	0	0	0	0	0	0	0	0
Pehrson	1.38	1.38	1.38	0	0	0	0	4.14	0.0828
Sutter	0	0	0					0	0
3in1	0	0	0					0	0
Lower Burnett	0	0	0					0	0
B&J	0	0	0					0	0
Total leslie reach	7.3	2.58	2.58	1.5	1.42	1.42	1.42	18.22	0.3644
Leslie gauge	206	204	190	157	148	148	150		
Moore	84	86	84	82	77	73	75		0
Eastside canal	35	35	35	16	9	11	9		0
	119	121	119	98	86	84	84	711	14.22
Eastside deliveries	11.34	12.34	11.34	5.38	4.74	5.18	4.74		
Arco to be used in reach	4	4	10.2	8.64	4.38	0	0	31.22	0.6244
Munsey	12.66	10.1	10.1	0	7.98	2.42	2.42	45.68	0.9136
	16.66	14.1	20.3	8.64	12.36	2.42	2.42	76.9	1.538
ARCO GAUGE									0
Total all headings	193.1	186.38	184.38	155.04	132.54	128.54	126.9	1106.88	
total deliveries/outflow=	0.606089	0.600064	0.61134	0.619912	0.572082	0.545401	0.531051	0.58651	
									913.78
Well Input	7.26	7.26	7.26	6.8	6.8	9.98	9.98		
	.5926	.5864	.597	.604	.556	.523	.51		
Shrub	40.7%	41.4%	40.3%	39.6%	44.4%	47.7%	49%		

9/10 9/16

	Monday	Tuesday	Wednesda	Thur	Fri	Sat	Sunday	week total inches	Weekly CFS total
Sharp	5.04	8.54	8.54	8.54	8.54	8.54	8.54	56.28	1.1256
2B Gauge	309	309	296	305	301	305	305	2130	42.6
Outflow	314.04	317.54	304.54	313.54	309.54	313.54	313.54	2186.28	43.7256
Darlington'	22	18	18	18	17	21	21	135	2.7
Sharp	5.04	8.54	8.54	8.54	8.54	8.54	8.54	56.28	1.1256
Swauger	1.8	1.8	1.8	1.8	10.84	10.84	10.84	39.72	0.7944
Burnett	30	30	30	30	30	30	30	210	4.2
H&V								0	0
total burnett reach	58.84	58.34	58.34	58.34	66.38	70.38	70.38	441	8.82
Beck	7.82	7.82	7.82	7.82	7.82	7.82	7.82	54.74	1.0948
Angelo	0	0	0	0	0	0	0	0	0
Pehrson	1.94	1.94	1.94	1.94	1.94	1.94	1.94	13.58	0.2716
Sutter	0	0	0	0	0	0	0	0	0
3in1	0	0	0	0	0	0	0	0	0
Lower Burnett	0	0	0	0	0	0	0	0	0
B&J	0	0	0	0	0	0	0	0	0
Total leslie reach	9.76	9.76	9.76	9.76	9.76	9.76	9.76	68.32	1.3664
Leslie gauge	212	213	216	213	205	196	196		
Moore	69	69	73	70	70	68	70		0
Eastside canal	44	44	44	44	44	40	34		0
	113	113	117	114	114	108	104	783	15.66
Eastside deliveries	22.48	22.48	24.08	23.48	23.48	23.48	8.1		
Arco to be used in reach	4.5	10	10	10.3	10.3	10.3	10.3	65.7	1.314
Munsey	30	34.1	32	22	22	22	26	188.1	3.762
	34.5	44.1	42	32.3	32.3	32.3	36.3	253.8	5.076
ARCO GAUGE									0
Total all headings	181.6	181.1	185.1	182.1	190.14	188.14	184.14	1292.32	
total deliveries/outflow=	0.57827	0.570322	0.607802	0.580787	0.614266	0.600051	0.587293	0.5911	
Well Input	36.84	36.84	36.84	19.64	19.64	14.72	14.72		1110.72
9-10-2012 Shrink	.518	.511	.542	.547	.578	.573	.561		
	48.2%	48.9%	45.8%	45.3%	42.2%	42.7%	43.9%		

Date: 7/30/2012 Decree Call 10-12-1884

RESERVIOR
Last 4 Days

AF	33580
AF	33130
AF	32700
AF	32230

INFLOW

2-B	470	CFS
SHARP	4	CFS
ANTELOPE		CFS
ALDER CREEK		CFS
WELLS	20.4	CFS

581.4 IN

2-B

489
479
470
470

#DIV/0! 477 = 4 Day Average
1908/4=

HEADINGS	CFS
EASTSIDE	44
MOORE	94
ARCO	
DARLINGTON	42
BECK	12.6
SHARP	4
SWAUGER	18
ANGELO	.92
PEHRSON	3.18
MCLAUHLIN	
SUTTER	0
MUNSEY	
BURNETT	49
3IN1	0
B&J	0
LAMBERT	
MILLER	
LOWER BURNETT	2.94

0
320.64 out

HEADINGS	CFS
Harris & Vaught	
Stub	
UC	
3IN1	
B&J	
MILLER	
SPRING CREEK	
SUTTER	
LESLIE PIT	

0

Inflow Reservior

263
253
254
237

#DIV/0! = 4 Day Average
1007/4 = 251.75

Available from Recharge

320.64	Out
501.4	IN

#DIV/0! 36 % SHRINK
.6394=

124 CFS Storage used 7/29
x.36
44.64
+124
168.64 Storage at 2B

ARCO GAGE
- OUT

NOTES:

10-2-1885 = 215.529 CFS
10-12 1884 = 141.753

2B = 470
− 168.64 Storage at 2B
301.34 CFS at 2B used for decree water
− 237 Inflow available for decree
64.36 CFS Storage water used for decree

10-2-1885 = 215.529
− 74
10/12/1884 - 141.529

on Farmers turning water because grain ripe, weather will start to cool ~ 8°F Ave demand should decrease

Date: 8-6-2012 Decree Call 7-15-1884

RESERVIOR		
Last 4 Days	AF	30570
	AF	30110
	AF	29680
	AF	29260

INFLOW		
2-B	409	CFS
SHARP	9	CFS
ANTELOPE		CFS
ALDER CREEK		CFS
WELLS	33.4	CFS
	451.4	IN

2-B	
423	
409	
409	
409	
412.5	= 4 Day Average

HEADINGS	CFS
EASTSIDE	66
MOORE	86
ARCO	
DARLINGTON	35
BECK	9.04
SHARP	9.04
SWAUGER	26.2
ANGELO	
PEHRSON	2.88
MCLAUHLIN	
SUTTER	
MUNSEY	
BURNETT	46
3IN1	
B&J	
LAMBERT	
MILLER	
LOWER BURNETT	2.06
	282.22

HEADINGS	CFS
Harris & Vaught	
Stub	
UC	
3IN1	
B&J	
MILLER	
SPRING CREEK	
SUTTER	
LESLIE PIT	
	0

Available from Recharge

Inflow Reservior	
231	
202	
207	
197	
209.25	= 4 Day Average

418 2B + Sharp
173 Storage at 2B
245 decree release at 2B
197 inflow for decree
48 cfs Storage used for decree

282.22	Out	
451.4	IN	
0.62521	37.5 %	SHRINK

10-14-1884 = 141.75

ARCO GAGE		
	282.22	OUT

48
93.75
7-15-1884 = 101

NOTES:

Both 2B Gage + Leslie gage are wrong Weather in the high 80's next few days

Date: 9/13/2012 Decree Call 10-12-1884

RESERVIOR		
Last 4 Days	AF	19530
	AF	19320
	AF	19100
	AF	18840

Loss of 690 AF/4 = 167.5 AF/day = 83.75 CFS/day

INFLOW		
2-B	296	CFS
SHARP	8.54	CFS
ANTELOPE		CFS
ALDER CREEK		CFS
WELLS	44.38	CFS
	348.92	IN

2-B
305
309
309
296
#DIV/0!

= 4 Day Average 1218/4 304.75

HEADINGS	CFS
EASTSIDE	44
MOORE	73
ARCO	10
DARLINGTON	18
BECK	2.82
SHARP	8.54
SWAUGER	1.8
ANGELO	
PEHRSON	1.94
MCLAUHLIN	
SUTTER	
MUNSEY	32
BURNETT	30
3IN1	
B&J	
LAMBERT	
MILLER	
LOWER BURNETT	
	0

HEADINGS	CFS
Harris & Vaught	
Stub	
UC	
3IN1	
B&J	
MILLER	
SPRING CREEK	
SUTTER	
LESLIE PIT	
	0

Inflow Reservior

205
209
204
184
#DIV/0!

= 4 Day Average 804/4 = 200.5

Estimated Deliveries 24.08
Arco 10
Munsey 32
Kyle 66.08
Stem 68.1
Dean 73
207.18

Available from Recharge

207.18	Out
348.92	IN
#DIV/0!	

= .594 = 40.6 % SHRINK

ARCO GAGE

-207.18 OUT

NOTES: Deliveries 9/6 = 231.32
Deliveries 9/13 = 207.18
24.14 less deliveries so increase decree.

Storage 71.74 delivered
× 40.6% shrink
29.1
+71
100.1 storage at 2B
& Evaporation
106.1 what reservoir lost

* 3.5 CFS Rotated
* w/ other average temps.
9-14-1884 = 115.461
+ 24.14 decrease in demand
139.6 = 10-12-1884

Date: 9/16/2012 Decree Call 9-14-1884

RESERVIOR
Last 4 Days

AF	21010
AF	20770
AF	20540
AF	20340

INFLOW

2-B	305	CFS
SHARP	4	CFS
ANTELOPE		CFS
ALDER CREEK		CFS
WELLS	54	CFS
	0.	IN

365 in

2-B

327
327
322
305

#DIV/0! = 4 Day Average
1284/4 = 320.25

HEADINGS

HEADINGS	CFS
EASTSIDE	40
MOORE	75
ARCO	3.58
DARLINGTON	20
BECK	8.22
SHARP	4.04
SWAUGER	2.5
ANGELO	
PEHRSON	1.6
MCLAUHLIN	1.8
SUTTER	0
MUNSEY	53.08
BURNETT	30
3IN1	0
B&J	0
LAMBERT	0
MILLER	0
LOWER BURNETT	0
	0

Steve 70.46
Kylie 85.86
Dean 75
231.32

HEADINGS

HEADINGS	CFS
Harris & Vaught	
Stub	
UC	
3IN1	
B&J	
MILLER	
SPRING CREEK	
SUTTER	
LESLIE PIT	
	0

Inflow Reservior

212
212
210
210

#DIV/0! = 4 Day Average
844/4 = 211

Available from Recharge

231.52	Out
365	IN

#DIV/0! 36.6 % SHRINK
= .634
= 36.6%

80 CFS Storage Delivery
x .366 shrink
29.28
+80
109.28 storage at 2B gage
6 Evap. Loss in Res
115 CFS what Res should have lost
-101 CFS " " Actually lost
14 CFS Decree water used for Storage deliveries.

ARCO GAGE

OUT -

NOTES:

E side Deliveries 12.9
Island 16.3
Arco 3.58
Munsey 53.08
Kylie

7-15-1884 Decree = 101.221 CFS
\+ 14 CFS
9-14-1884 = 115.221 Decree water available for Delivery

* 2 CFS being Rotated
* Inflow has remained between 197 CFS + 218 CFS for past 3 days
* weather continues the highs + lows (90's 80's to 20's [illegible])

Date: 10/1/2012 Decree Call 5-31-1885

RESERVIOR Last 4 Days

AF	15980
AF	15960
AF	15940
AF	15910

INFLOW

2-B	233	CFS
SHARP	4	CFS
ANTELOPE		CFS
ALDER CREEK		CFS
WELLS	9.98	CFS
0		IN

246.98

2-B

243
227
227
233

#DIV/0! = 4 Day Average

930/4 = 232.5

HEADINGS	CFS
EASTSIDE	12
MOORE	22
ARCO	
DARLINGTON	11
BECK	1.42
SHARP	4
SWAUGER	8.52
ANGELO	
PEHRSON	
MCLAUHLIN	
SUTTER	
MUNSEY	
BURNETT	18
3IN1	
B&J	
LAMBERT	
MILLER	
LOWER BURNETT	
0	

126.94

HEADINGS	CFS
Harris & Vaught	
Stub	
UC	
3IN1	
B&J	
MILLER	
SPRING CREEK	
SUTTER	
LESLIE PIT	
0	

Inflow Reservior

212
224
224
225

#DIV/0! = 4 Day Average

885/4 = 221.25

ARCO GAGE

Available from Recharge

126.94	Out
246.98	IN
#DIV/0!	
7.51	49 % SHRINK

126.94 Total delivery OUT

NOTES:

36 CFS delivered STORAGE

90.94 delivered decree water

237 CFS inflow

X .49% shrink

116.237 = inflow for decree

121 inflow after shrink (decree)

90.94 decree delivered

30.06 decree used for storage deliveries

10-12-84 decree 141.75

+ 30.06

171.81 = 5-31-1885 decree

Weather - warmer than normal followed by cooler than normal.

Farmers shutting down irrigation for season.

2012	Res.	Res.	Percent	Res.Gain	Res. Gain	2B	Sharp	Release	Inflow	Howell	Leslie	Dam	Seep	Spill way adjust	decree Arco	Thru	gate
April	gauge	A. F.	full	or lose A.F	or loss CFS	Gauge	CFS	CFS	CFS	CFS	CFS	CFS	Inchs			Gates	setting
1	65.11	42480	96.88	100	50	118	2	120	170	792	104				72		
2	65.35	42810	97.63	330	166	118	2	120	286	237	98.6		775		70		
3	65.51	43020	98.11	210	106	118	4	122	228	175	98.1				64		
4	65.64	43200	98.52	180	91	118	4	122	213	196	99.2				60		
5	65.73	43320	98.79	120	60	118	4	122	182	178	98.4				56		
6	65.8	43420	99.02	100	50	135	4	139	189	160	104				55		
7	65.83	43460	99.11	40	20	121	4	125	145	125	99.8				65		
8	65.88	43520	99.25	60	30	124	4	128	158	125	97				56		
9	65.91	43560	99.34	40	20	129	4	133	153	154	101		825	spil 0.15	50		
10	65.94	43610	99.45	50	25	129	4	133	158	187	105			spil 0..22	45		
11	65.99	43680	99.61	70	35	132	4	136	171	275	109				45		
12	66.03	43730	99.73	50	25	146	4	150	175	259	117				55		
13	66.08	43790	99.86	60	30	151	4	155	185	237	124			spil 0.35	58		
14	66.14	43880	100.07	90	45	160	4	164	209	234	132				62		
15	66.16	43900	100.11	20	10	167	4	171	181	215	139				64		
16	66.17	43920	100.16	20	10	167	4	171	181	213	141				73		
17	66.2	43960	100.25	40	20	170	4	174	194	216	145		880	spil-0.42	70		
18	66.22	43990	100.32	30	15	180	4	184	199	248	152				69		
19	66.21	43970	100.27	-20	-10	173	4	177	167	255	156			spil-0.45	73		
20	66.24	44020	100.39	50	25	180	4	184	209	263	159				73		
21	66.26	44040	100.43	20	10	180	4	184	194	382	163				75		
22	66.32	44130	100.64	90	45	191	4	195	240	511	172			spil-0.54	73		
23	66.41	44240	100.89	110	55	227	4	231	286	650	207	-87	880	sw-0.6 OP#2-8clk	70		
24	66.48	44340	101.12	100	50	318	8	326	327	904	327	-105		sw-0.65 OP#2-10c	84		
25	66.49	44360	101.16	20	10	423	8	431	441	1070	436	0		sw-0.65	86		
26	66.6	44500	101.48	140	71	413	8	421	492	1500	571	-300		sw-0.76 OP#2-52cl	90		
27	66.58	44470	101.41	-30	-15	799	8	807	792	2680	1050	-223		sw-0.70 OP#2,4,5	32 clk 96		
28	66.51	44380	101.21	-90	-45	1020	9	1029	984	1400	1380			sw-0.65	211		
29	66.03	43730	99.73	-650	-328	885	9	894	566	959	1040	536		sw-0.35 cls#4,2	87clk 292		
30	66.38	44200	100.80	470	237	349	9	358	595	821	449	-126	855	sw-.7 op#2 14clk	204		
2012	Res.	Res.	Percent	Res.Gain	Res. Gain	2B	Sharp	Release	Inflow	Howell	Leslie	Dam	Seep	Spill way adjust	decree Arco	Thru	gate

MAY	gauge	A. F.	full	or lose A.F.	or loss CFS	Gauge	CFS	CFS	CFS	CFS	CFS	CFS	Inchs			Gates	setting
1	66.54	44420	101.30	220	111	475	9	484	595	729	597			sw-.075	all 80		
2	66.49	44360	101.16	-60	-30	460	9	469	439	649	546	70		sw-.075 cl#210clk	80		
3	66.44	44290	101.00	-70	-35	395	9	404	369	587	430	60		sw-0.62 cl#2,5 9clk	44		
4	66.55	44430	101.32	140	71	349	5	354	425	545	390			sw-0.7	15		
5	66.54	44420	101.30	-10	-5	358	5	363	358	500	418			sw-0.7	8		
6	66.49	44360	101.16	-60	-30	345	5	350	320	457	376	49		sw-0.65 cl#5 5clk	7.8	50	5#5
7	66.5	44370	101.19	10	5	296	5	301	306	431	307		880	sw-0.65	all 5.1		
8	66.49	44360	101.16	-10	-5	292	5	297	292	452	272			sw-0.65	1905 1.7		
9	66.47	44330	101.09	-30	-15	288	5	293	278	557	223			sw-0.62	6/1/1888 0.29		
10	66.49	44360	101.16	30	15	301	5	306	321	799	244	-25		sw-.062 op#2 3clk	1/1/1892 0.07	75	5#5/3#2
11	66.56	44450	101.37	90	45	345	5	350	395	866	347	-106		sw-0.7 op#2 21clk	30% 6/1/1896	131	5#5/24#2
12	66.47	44330	101.09	-120	-60	451	5	456	396	843	439	42		sw-0.7 cl#2 10clk		92	5#5/14#2
13	66.5	44370	101.19	40	20	409	10	419	439	888	412	-46		sw-7 op#2 11clk	all 4	138	5#5/26#2
14	66.48	44340	101.12	-30	-15	455	10	465	450	1030	460		880	sw-0.65	all 4		
15	66.41	44240	100.89	-100	-50	591	10	601	551	1250	462			sw-0.65	recalibrate 2B,res,Howell		
16	66.54	44420	101.30	180	91	634	10	644	735	1300	571	-136		sw-.075 op#2 25cl	all	274	5#5/51#2
17	66.46	44310	101.05	-110	-55	770	10	780	725	1390	666			sw-0.7	all 6		
18	66.51	44380	101.21	70	35	787	10	797	832	1180	682			sw-0.75	all 14		
19	66.41	44240	100.89	-140	-71	758	10	768	697	1020	573	168		sw-0.65 cl#2 35clk	all 16	71	5#5/16#2
20	66.6	44500	101.48	260	131	591	9	600	731	959	481	-116		sw-0.8 op#2 20clk	pb-66.59 12	187	5#5/36#2
21	66.51	44380	101.21	-120	-60	678	10	688	628	992	551	22	940	sw-0.75 cl#2 6clk	all 6.2	165	5#5/30#2
22	66.51	44380	101.21	0	0	656	10	666	666	1320	534	79		sw-0.75 op#2 12cl	all 1.9	244	5#5/42#2
23	66.54	44420	101.30	40	20	735	10	745	765	1080	639			sw-0.75	all 2.2		
24	66.49	44360	101.16	-60	-30	723	10	733	703	888	623			sw-0.7	all 11		
25	66.39	44220	100.84	-140	-71	695	10	705	634	763	587	39		sw-0.6 cls#2 6clk	all 11	205	5#5/36#2
26	66.36	44180	100.75	-40	-20	656	10	666	646	668	553			sw-0.55	all 14		
27	66.35	44160	100.71	-20	-10	667	10	677	667	617	563			sw-0,5	all 62		
28	66.22	43970	100.27	-190	-96	623	10	633	537	540	422	191	880	sw-0.45 cls#2 36cl	all 67	50	5#5/0#2
29	66.46	44310	101.05	340	171	432	10	442	613	545	270	-87		sw-0.7 op#2 10clk	all 38	137	5#5/10#2
30	66.47	44330	101.09	20	10	519	10	529	539	569	333			sw-0.7	all 16		
31	66.42	44260	100.94	-70	-35	504	10	514	479	649	323			sw-0.65	8/21/1954 9.8		
2012	Res.	Res.	Percent	Res.Gain	Res. Gain	2B	Sharp	Release	Inflow	Howell	Leslie	Dam	Seep	Spill way adjust	decree Arco	Thru	gate

2012	Res.	Res.	Percent	Res.Gain	Res. Gain	2B	Sharp	Release	Inflow	Howell	Leslie	Dam	Seep	Spill way adjust	decree	Arco	Thru	gate	
JUNE	gauge	A. F.	full	or lose A.F	or loss CFS	Gauge	CFS	CFS	CFS	CFS	CFS	CFS	Inchs				Gates	setting	
1	66.42	44260	100.94	0	0	504	10	514	514	919	339	-71		sw-0.7 op#2 10clk	pb-66.46	5.1	208	5#5-20#2	
2	66.45	44300	101.03	40	20	575	10	585	605	1280	438	-92		sw-0.7 op#2 15clk		4.6	295	5#5/35#2	
3	66.55	44470	101.41	170	86	689	10	699	785	1680	719	-361		sw-0.8 op#2,4 50cl	all	12	645	5#5/75#2/10#4	
4	66.36	44180	100.75	-290	-146	1020	10	1030	884	1860	974	92	880	sw-0.6 cl#2 20clk	all	6.5	505	5#5/55#2/10#4	
5	66.61	44510	101.51	330	166	928	10	938	1104	2060	1040	-392		sw-0.85 op#2,4,5 45	all	66	815	21#5/75#2/20#4	
6	66.49	44360	101.16	-150	-76	1320	10	1330	1254	1260	1380			sw-0.75	all	86			
5:15	66.32	44130	100.64	-230	-116	1280	10	1290	1174			352		cl#2-45clk			500	21#5/30#2/20#4	
7	66.3	44100	100.57	-30	-15	928	10	938	923	888	805	260		sw-0.6 cl#4,2 40cl	all	158	240	21#5/10#2	
8	66.48	44340	101.12	240	121	667	11	678	799	735	553			sw-.07	all	55			
9	66.48	44340	101.12	0	0	667	11	678	678	682	557			sw-0.7	all	22			
10	66.46	44310	101.05	-30	-15	667	11	678	663	624	546			sw-0.7	all	18			
11	66.36	44180	100.75	-130	-66	634	9	643	577	563	469	93	910	sw-0.6 cl#2,5-14cl	10/28/1942	14	170	17#5	
12	66.39	44220	100.84	40	20	541	9	550	570	569	384	-26		sw-0.7 op#2 3clk		7.8	196	17#5, 3#2	charge storag
13	66.35	44160	100.71	-60	-30	565	9	574	544	599	395			sw-0.6		8.7			
14	66.31	44110	100.59	-50	-25	524	9	533	508	742	419	-22		sw-0.55 op#2 2clk	10/28/1942	6.2	218	17#5,5#2	
15	66.34	44150	100.68	40	20	544	11	555	575	806	440	-16		sw-0.6 op#2-3clk		6.5	234	17#5,8#2	
16	66.33	44140	100.66	-10	-5	560	11	571	566	792	454			sw-0.6		6.5			
17	66.32	44130	100.64	-10	-5	560	11	571	566	873	459			sw-0.6		3.6			
18	66.36	44180	100.75	50	25	565	11	576	601	1020	507	-63	940	sw-0.6 op#2-11clk	all	2.5	297	17#5,19#2	
19	66.32	44130	100.64	-50	-25	628	11	639	614	799	567	26		sw-0.6 cl#2-3clk		4.6	271	17#5,16#2	
20	66.29	44090	100.55	-40	-20	602	11	613	593	695	520			sw-0.55		2.2			
21	66.19	43950	100.23	-140	-71	580	11	591	520	662	468	41		sw.0.5 cl#2-6clk	10/28/1942	5.8	230	17#5,10#2	
22	66.14	43880	100.07	-70	-35	539	11	550	515	722	419			sw-0.5		5.1			
23	66.14	43880	100.07	0	0	539	11	550	550	828	422	-15		sw-0.5 op#2-2clk		2.2	245	17#5,12#2	
24	66.14	43880	100.07	0	0	554	11	565	565	799	438			sw-0.5	pb 66.16	0.05			
25	66.13	43860	100.02	-20	-10	554	11	565	555	836	440		940	sw-0.5	5/1/1904	2.8			
26	66.14	43880	100.07	20	10	554	11	565	575	792	452	-16		sw-0.5 op#2-4clk	pb 66.17	1.2	261	17#5,16#2	
27	66.06	43770	99.82	-110	-55	570	11	581	526	636	439	23		sw-0.3 cl#2-1clk		0.05		17#5,15#2	
28	65.95	43620	99.48	-150	-76	544	14	558	482	605	421	-10		sw-0.15	1/1/1899	0.59		17#5,19#2	
29	65.77	43380	98.93	-240	-121	554	14	568	447	636	440	-16		sw-0 wind op#2-3cl		0.02		17#5,22#2	
30	65.58	43120	98.34	-260	-131	570	14	584	453	624	454			sw-0	6/1/1895	0.04			
2012	Res.	Res.	Percent	Res.Gain	Res. Gain	2B	Sharp	Release	Inflow	Howell	Leslie	Dam	Seep	Storage adjust	decree	Arco	Thru	gate	

2012	Res.	Res.	Percent	Res.Gain	Res. Gain	2B	Sharp	Release	Inflow	Howell	Leslie	Dam	Seep	Storage adjust	decree Arco	Thru	gate
JULY	gauge	A. F.	full	or lose A.F.	or loss CFS	Gauge	CFS	CFS	CFS	CFS	CFS	CFS	Inchs	headings		Gates	setting
1	65.39	42870	97.77	-250	-126	565	14	579	453	624	440	38	910	cl#2-6clk	0 0	223	17#5,16#2
2	65.28	42710	97.40	-160	-81	529	12	541	460	617	435	-10		72 op#2 2clk		213	17#5,18#2
3	64.14	42530	96.99	-180	-91	539	12	551	460	611	461	-10		78 op#2-2clk		223	17#5,20#2
4	64.96	42280	96.42	-250	-126	549	12	561	435	611	479	-26		109 op#2-4clk		249	17#5,24#2
5	64.74	41990	95.76	-290	-146	575	12	587	441	551	507			109-	3/23/1893		
6	64.51	41680	95.05	-310	-156	575	12	587	431	551	504	21		cl#2-2clk			17#5,22#2
7	64.29	41390	94.39	-290	-146	554	12	566	420	517	491	29		139 cl#2-3clk			17#5,19#2
8	64.06	41080	93.68	-310	-156	539	8	547	391	517	483						
9	63.82	40770	92.98	-310	-156	539	8	547	391	517	497	-36	825	102 op#2-7clk	5/10/1889		17#5,26#2
10	62.5	40350	92.02	-420	-212	575	8	583	371	506	520			157-			
11	63.16	39900	90.99	-450	-227	575	8	583	356	478	519						
12	62.82	39460	89.99	-440	-222	575	9	584	362	457	513			156-	6/1/1887		
13	62.45	38980	88.89	-480	-242	560	9	569	327	441	520	-15		167 op#2-2clk			17#5,28#2
14	62.08	38500	87.80	-480	-242	575	9	584	342	468	536						
15	61.75	38110	86.91	-390	-197	575	9	584	387	617	532						
16	61.45	37700	85.97	-410	-207	575	9	584	377	468	532	21	775	163 cl#2-3clk	6/1/1887		17#5,25#2
17	61.17	37350	85.18	-350	-176	554	9	563	387	431	389	15		cl#2-2clk			17#5,23#2
18	60.85	36950	84.26	-400	-202	539	9	548	346	397	357	57		148- cl#2-9clk			17#5,14#2
19	60.59	36630	83.53	-320	-161	489	2	491	330	364	293	19		98 cl#2-3clk	3/2/1887	236	17#5,11#2
20	60.33	36310	82.81	-320	-161	470	2	472	311	271	273	-14		op#2-2clk	5/1/1886		17#5,13#2
21	60.04	35950	81.98	-360	-181	484	2	486	305	271	273	-12		op#2-2clk			17#5,15#2
22	59.68	35510	80.98	-440	-222	489	4	493	271	255	275	-10		op#2-2.5clk			17#5,17.5#
23	59.29	35040	79.91	-470	-237	499	4	503	266	255	282	-5	710	147 op#2-.5clk	10/2/1885		17#5,18#2
24	58.89	34550	78.79	-490	-247	504	4	508	261	244	285						
25	58.46	34030	77.61	-520	-262	504	4	508	246	230	283	20		cl#2-3clk	0.2		17#5,15#2
26	58.08	33580	76.58	-450	-227	489	1	490	263	223	272	10		165 cl#2-1.5clk	8.7	251	17#5,13.5#
27	57.7	33130	75.55	-450	-227	479	1	480	253	209	258	9		cl#21clk	5.1		17#5,12.5#
28	57.33	32700	74.57	-430	-217	470	1	471	254	209	246	-3		op#2-0.5	0.59		17#5,13#2
29	56.93	32230	73.50	-470	-237	470	4	474	237	196	242				0.2		
30	56.53	31760	72.43	-470	-237	465	4	469	232	190	235		670	124-	10/12/1884 0.1	248	
31	56.11	31280	71.33	-480	-242	465	4	469	227	178	223	36		cl#2-6clk		212	17#5,7#2

Δ Storage wtrs

Wtrs Thru Gates

2012	Res.	Res.	Percent	Res.Gain	Res. Gain	2B	Sharp	Release	Inflow	Howell	Leslie	Dam	Seep	Storage adjust	decree Arco	Thru	gate
AUG	gauge	A. F.	full	or lose A.F.	or loss CFS	Gauge	CFS	CFS	CFS	CFS	CFS	CFS	Inchs	headings-		Gates	setting
1	55.78	30910	70.49	-370	-187	423	10	433	246	175	187				0.14		
2	55.44	30510	69.58	-400	-202	420	10	430	228	166	182	-3		op#2-1clk	10/12/1884 2.5		17#5,8#2
3	55.08	30110	68.67	-400	-202	423	10	433	231	157	192	-14		op#2-2clk	0.42		17#5,10#2
4	54.7	29680	67.69	-430	-217	409		419	202	157	195				0.29	2B off	
5	54.32	29260	66.73	-420	-212	409	10	419	207	149	192	0		op#2-.5clk	0.05	229	17#5,10.5#
6	53.92	28820	65.72	-440	-222	409	10	419	197	143	219			126-	7/15/1884 0.07		
7	53.54	28400	64.77	-420	-212	409	10	419	207	146	207	28	570	cl#2-4.5clk	0.59	201	17#5,6#2
8	53.22	28050	63.97	-350	-176	381	10	391	215	141	188	9		cl#2-1clk	0.04	192	17#5,5#2
9	52.94	27750	63.28	-300	-151	372	10	382	231	146	179	14		116 cl#2-2clk	0.29	178	17#5,3#2
10	52.67	27470	62.65	-280	-141	358	10	368	227	138	170				0		
11	52.41	27180	61.98	-290	-146	349	10	359	213	143	166						
12	52.14	26900	61.35	-280	-141	349	10	359	218	135	168	-4		op#2-1clk		174	17#5,4#2
13	51.86	26600	60.66	-300	-151	354	9	363	212	130	166	9	570	100 cl#2-1.5clk			17#5,2.5#2
14	51.58	26310	60.00	-290	-146	345	9	354	208	120	153				2B fixed	2B fixed	
15	51.3	26020	59.34	-290	-146	345	9	354	208	120	148						
16	51.03	25740	58.70	-280	-141	340	12	352	211	115	153	-11		96- op#2-2clk		185	17#5,4.5#2
17	50.72	25420	57.97	-320	-161	351	12	363	202	111	160						
18	50.41	25100	57.24	-320	-161	349	9	358	197	111	**213**						
19	50.11	24800	56.56	-300	-151	349	9	358	207	111	**215**	9		cl#2-1clk		176	17#5,3.5#2
20	49.82	24500	55.87	-300	-151	340	9	349	198	115	**217**		525	93-			
21	49.54	24220	55.23	-280	-141	340	6	346	205	115	**219**	4		cl#2-1clk		172	17#5,2.5#2
22	49.28	23960	54.64	-260	-131	336	6	342	211	113	**221**	9		cl#2-2clk		163	17#5,0.5#2
23	49.03	23720	54.09	-240	-121	327	6	333	212	108	**211**	18		83 cl#5-1clk		145	16#5,0.5#2
24	48.81	23500	53.59	-220	-111	309	6	315	204	106	**208**	-16		op#2-2.5clk	7/15/1884	161	16#5,3#2
25	48.54	23240	53.00	-260	-131	325	6	331	200	102	217	-11		op#2-2clk		172	16#5,5#2
26	48.26	22960	52.36	-280	-141	336	6	342	201	102	226	-13	411	op#2-3clk		185	16#5,8#2
27	47.95	22660	51.68	-300	-151	349	6	355	204	102	241	3		89-		182	
28	47.64	22370	51.01	-290	-146	349	3	352	206	97	244						
29	47.32	22070	50.33	-300	-151	349	3	352	201	95	247						
30	47	21760	49.62	-310	-156	345	6	351	195	93	243	14		97 cl#2-2clk		168	16#5,6#2
31	46.72	21500	49.03	-260	-131	331	6	337	206	93	238						
2012	Res	Res.	Percent	Res.Gain	Res. Gain	2B	Sharp	Release	Inflow	Howell	Leslie	Dam	Seep	Storage adjust	decree Arco	Thru	gate
SEPT	gauge	A. F.	full	or lose A.F.	or loss CFS	Gauge	CFS	CFS	CFS	CFS	CFS	CFS	Inchs			Gates	setting

SEPT	gauge	A. F.	full	or lose A.F	or loss CFS	Gauge	CFS	CFS	CFS	CFS	CFS	CFS	Inchs			Gates	setting
1	46.44	21250	48.46	-250	-126	331	6	337	211	93	241	4		cl#2-1clk		164	16#5,5#2
2	46.19	21010	47.91	-240	-121	327	6	333	212	102	235						
3	46.92	20770	47.37	-240	-121	327	6	333	212	95	235	5	390	80 cl#2-1clk		159	16#5,4#2
4	45.67	20540	46.84	-230	-116	322	6	328	212	95	227	17		cl#2-2clk		142	16#5,2#2
5	45.44	20340	46.39	-200	-101	305	6	311	210	93	213						
6	45.22	20140	45.93	-200	-101	305	6	311	210	91	207			78-	9/14/1884		
7	45	19940	45.47	-200	-101	305	6	311	210	95	206						
8	44.78	19740	45.02	-200	-101	301	6	307	206	91	206	-4		op#2-1clk		146	16#5,3#2
9	44.54	19530	44.54	-210	-106	305	6	311	205	89	210	-4	307	op#2-1clk		150	16#5,4#2
10	44.3	19320	44.06	-210	-106	309	6	315	209	89	212			66-	9/14/1884		
11	44.04	19100	43.56	-220	-111	309	9	318	207	89	213			2B recalibrated			
12	43.77	18860	43.01	-240	-121	296	9	305	184	83	216						
13	43.52	18650	42.53	-210	-106	305	9	314	208	83	213	4		72 cl#2-1clk	10/12/1884	146	16#5,3#2
14	43.3	18460	42.10	-190	-96	301	9	310	214	83	205	-8		op#2-2clk		154	16#5,5#2
15	43.06	18250	41.62	-210	-106	309	9	318	212	83	196						
16	42.81	18040	41.14	-210	-106	305	9	314	208	83	196						
17	42.58	17840	40.68	-200	-101	305	9	314	213	83	194	9	250	64- cl#2-1clk		145	16#5,4#2
18	42.36	17660	40.27	-180	-91	296	9	305	214	83	188						
19	42.15	17490	39.89	-170	-86	296	9	305	219	81	190	-13		55 op#2-4clk		158	16#5,8#2
20	41.89	17270	39.38	-220	-111	309	9	318	207	81	200	-5		op#2-1clk		163	16#5,9#2
21	41.62	17050	38.88	-220	-111	314	9	323	212	81	204						
22	41.35	16840	38.40	-210	-106	309	9	318	212	79	204	0		op#2-1clk		168	16#5,10#2
23	41.07	16610	37.88	-230	-116	309	9	318	202	81	204						
24	40.89	16470	37.56	-140	-71	309	9	318	247	85	206	8	196	70 cl#2-2clk		160	16#5,8#2
25	40.6	16230	37.01	-240	-121	301	9	310	189	89	204	9		cl#2-2clk			16#5,6#2
26	40.39	16060	36.62	-170	-86	292	9	301	215	91	190	49		cl#5-6clk		111	10#5,6#2
27	40.29	15980	36.44	-80	-40	243	9	252	212	87	157	12		40 cl#5-2clk			8#5,6#2
28	40.26	15960	36.40	-20	-10	227	7	234	224	85	148						
29	40.24	15940	36.35	-20	-10	227	7	234	224	85	148	-6		op#5-2clk		117	10#5,6#2
30	40.2	15910	36.28	-30	-15	233	7	240	225	83	150						
2012	Res	Res.	Percent	Res.Gain	Res. Gain	2B	Sharp	Release	Inflow	Howell	Leslie	Dam	Seep	Storage adjust	decree Arco	Thru	gate
OCT	gauge	A. F.	full	or lose A.F	or loss CFS	Gauge	CFS	CFS	CFS	CFS	CFS	CFS	Inchs			Gates	setting
1	40.16	15880	36.21	-30	-15	233	7	240	225	83	150	-14	196	36 op#5-2clk	5/31/1885	131	12#5,6#2
2	40.06	15800	36.03	-80	-40	247	10	257	217	82	159						
3	39.97	15730	35.87	-70	-35	247	10	257	222	83	160						
4	39.84	15630	35.64	-100	-50	251	10	261	211	83	160			28-	5/31/1885		
5	39.73	15540	35.44	-90	-45	251	5	256	211	83	170						
6	39.64	15470	35.28	-70	-35	255	5	260	225	83	167	24		cl#5-3clk		107	9#5,6#2
7	39.61	15450	35.23	-20	-10	231	5	236	226	83	155						
8	39.59	15430	35.19	-20	-10	235	5	240	230	83	155		196				
9	39.57	15420	35.17	-10	-5	235	5	240	235	83	154						
10	39.54	15390	35.10	-30	-15	235	5	240	225	83							
11			0.00	-15390	-7759			0	-7759								