

RECLAMATION

Managing Water in the West

WIND RIVER BASIN RESERVOIR OPERATIONS

Water Supply Forecasts and Reservoir Operations

Prepared April 2018

Present Storage: Bull Lake: 104,466 acre-feet

Pilot Butte: 27,911 acre-feet

Bull Lake Actual Inflows (1,000 acre-feet):

<u>Month</u>	<u>Inflow</u>	<u>Percent of Normal</u>
April 17	10.3	257
May 17	46.2	162
June 17	125.6	210
July 17	81.2	185
August 17	30.5	162
September 17	18.0	190
October 17	8.3	135
November 17	6.5	201
December 17	4.1	168
January 18	2.9	136
February 18	2.3	138
March 18	2.7	135

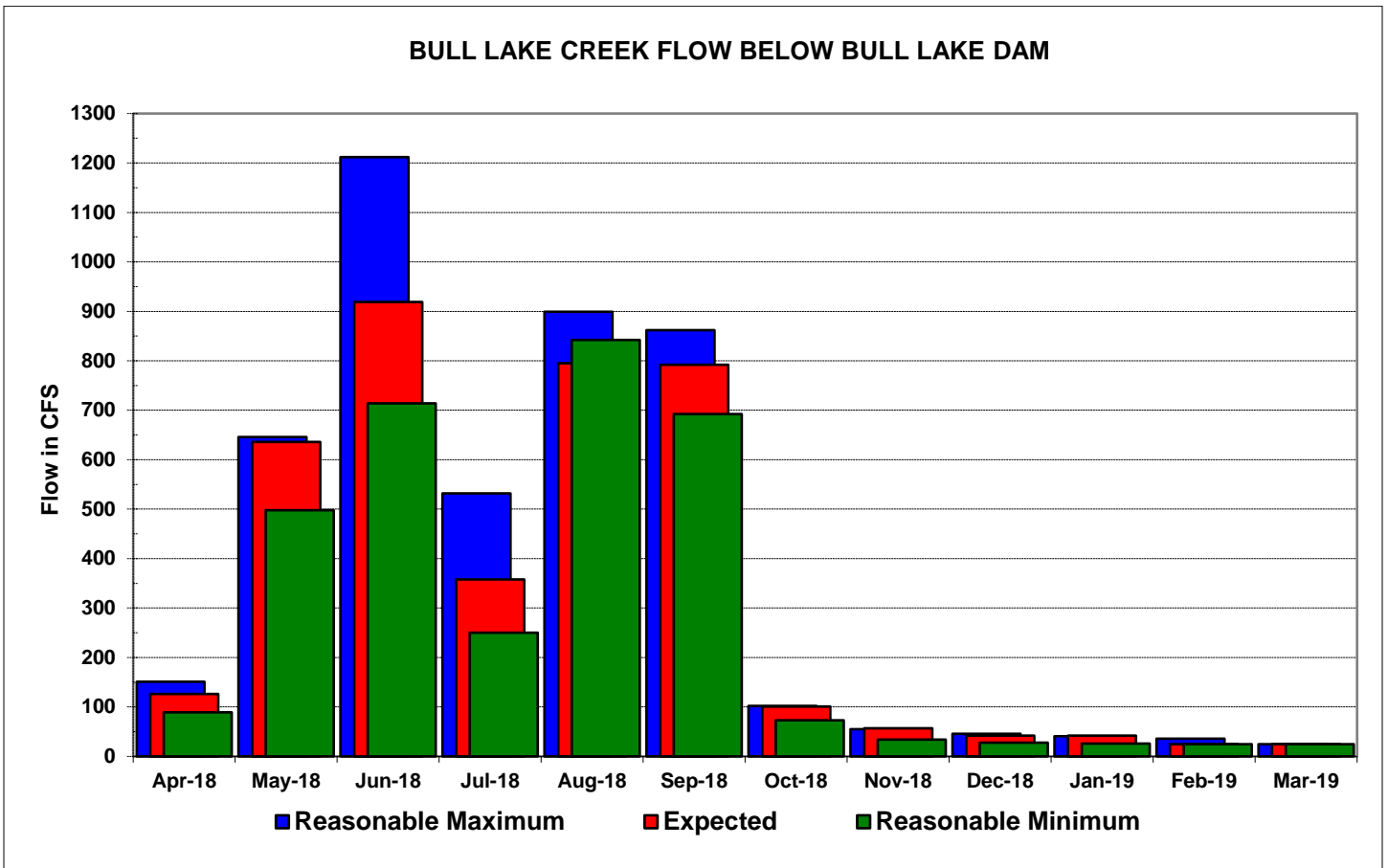
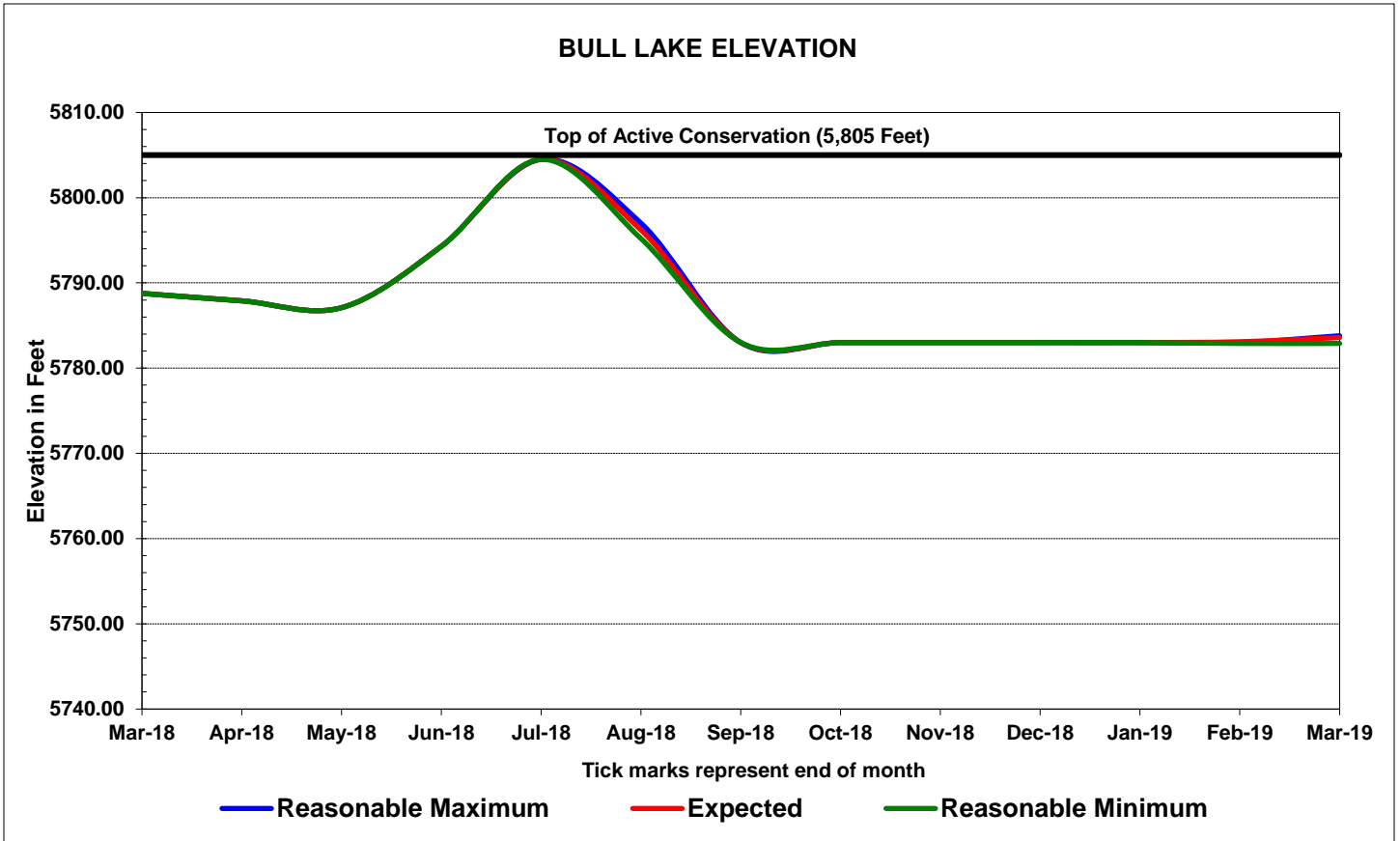
Wind River above Bull Lake Creek Actual Flows (1,000 acre-feet):

<u>Month</u>	<u>Inflow</u>	<u>Percent of Normal</u>
April 17	34.6	137
May 17	143.8	160
June 17	320.1	186
July 17	135.6	122
August 17	28.5	57
September 17	13.8	41
October 17	49.5	154
November 17	36.0	157
December 17	n/a	n/a
January 18	n/a	n/a
February 18	n/a	n/a
March 18	n/a	n/a



U.S. Department of the Interior
 Bureau of Reclamation
 Great Plains Region
 Wyoming Area Office
 Mills, Wyoming

BULL LAKE RESERVOIR



Based on a Median Probable April-July runoff of: Bull Lake - 170 kaf / Wind River ab Bull Lake Creek - 650 kaf / Riverton - 488 kaf
 This plan assumes an annual demand of 165 KAF for the North Canal and 186 KAF for the Pilot Canal

RIVERTON PROJECT OPERATING PLAN
 Year Beginning Apr 2018

Bull Lake Reservoir Operations		Initial Content 104.3 Kaf						Operating Limits: Max 151.7 Kaf, 5804.76 Ft. Min 20.0 Kaf, 5750.93 Ft.						Total
-----		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	-----
Reservoir Inflow	kaf	5.2	37.1	74.7	53.0	23.5	10.5	6.2	3.4	2.6	2.6	1.7	2.8	223.3
Total Dam Release	kaf	7.5	39.1	54.7	22.0	48.9	47.1	6.2	3.4	2.6	2.6	1.4	1.5	237.0
Total Dam Release	cfs	126.	636.	919.	358.	795.	792.	101.	57.	42.	42.	25.	25.	
Excess Release	kaf	6.0	37.6	53.2	20.5	45.6	11.3	4.7	1.9	1.1	1.1	0.0	0.0	182.9
End-month Content	kaf	102.0	100.0	120.0	151.0	125.6	89.0	89.0	89.0	89.0	89.0	89.3	90.6	
End-month Elevation	ft	5787.9	5787.1	5794.3	5804.5	5796.2	5783.0	5783.0	5783.0	5783.0	5783.0	5783.1	5783.6	
BLR Net Change	kaf	-2.3	-2.0	20.0	31.0	-25.4	-36.6	0.0	0.0	0.0	0.0	0.3	1.3	-13.7
Wind River		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Flow abv BL Creek	kaf	44.3	160.5	266.9	178.3	78.6	36.1	34.8	25.0	18.9	16.4	15.3	17.7	892.8
Crowheart Gage Flow	kaf	51.8	199.6	321.6	200.3	127.5	83.2	41.0	28.4	21.5	19.0	16.7	19.2	1129.8
Flow Below Div Dam	kaf	33.5	144.9	256.9	119.4	66.4	26.6	24.0	28.4	21.5	19.0	16.7	19.2	776.5
Gain/Return Flow	kaf	4.8	7.4	7.1	7.4	6.1	5.4	0.0	0.0	0.0	0.0	0.0	0.0	38.2
Indian Irrigation	kaf	1.8	6.1	6.0	6.1	5.5	4.5	1.2	0.0	0.0	0.0	0.0	0.0	31.3
LeClair/Riverton	kaf	3.5	18.8	24.2	27.2	21.1	15.0	0.0	0.0	0.0	0.0	0.0	0.0	109.8
LeC/Riv Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Riverton Gage Flow	cfs	554.2	2070.8	3930.7	1519.5	746.7	209.9	370.3	477.3	349.7	309.0	300.7	312.9	
Wyoming Canal		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
-----		-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----
Total Diversion	kaf	18.3	54.7	64.7	80.9	61.1	56.6	17.0	0.0	0.0	0.0	0.0	0.0	353.3
North Canal Flow	kaf	9.8	26.4	31.2	36.5	30.9	27.0	3.4	0.0	0.0	0.0	0.0	0.0	165.2
North Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pilot Butte Reservoir Operations		Initial Content 28.0 Kaf						Operating Limits: Max 29.9 Kaf, 5459.98 Ft. Min 10.0 Kaf, 5433.49 Ft.						Total
-----		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	-----
Reservoir Inflow	kaf	8.5	28.3	33.5	44.4	30.2	29.6	13.6	0.0	0.0	0.0	0.0	0.0	188.1
Power Generated	mwh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pilot Canal Release	kaf	6.7	28.0	33.1	43.9	37.4	33.3	3.4	0.0	0.0	0.0	0.0	0.0	185.8
Pilot Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
End-month Content	kaf	29.6	29.6	29.6	29.6	22.0	18.0	28.0	27.8	27.7	27.6	27.5	27.3	
PBR Net Change	kaf	1.6	0.0	0.0	0.0	-7.6	-4.0	10.0	-0.2	-0.1	-0.1	-0.1	-0.2	-0.7
End-month Elevation	ft	5459.6	5459.6	5459.6	5459.6	5450.7	5445.5	5457.8	5457.6	5457.5	5457.4	5457.3	5457.0	

Based on Reasonable Minimum April-July runoff of: Bull Lake - 140 kaf / Wind River ab Bull Lake Creek - 500 kaf / Riverton - 308 kaf
 This plan assumes an annual demand of 165 KAF for the North Canal and 185 KAF for the Pilot Canal

RIVERTON PROJECT OPERATING PLAN
 Year Beginning Apr 2018

Bull Lake Reservoir Operations		Initial Content 104.5 Kaf						Operating Limits: Max 151.9 Kaf, 5804.82 Ft. Min 20.0 Kaf, 5750.93 Ft.						Total
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Reservoir Inflow	kaf	2.8	28.6	62.5	46.4	23.5	7.5	4.5	2.0	1.7	1.6	1.2	1.6	183.9
Total Dam Release	kaf	5.3	30.6	42.5	15.4	51.8	41.2	4.5	2.0	1.7	1.6	1.4	1.5	199.5
Total Dam Release	cfs	89.	498.	714.	250.	842.	692.	73.	34.	28.	26.	25.	25.	
Excess Release	kaf	3.8	29.1	41.0	13.9	25.2	14.5	3.0	0.5	0.2	0.1	0.0	0.0	131.1
End-month Content	kaf	102.0	100.0	120.0	151.0	122.7	89.0	89.0	89.0	89.0	89.0	88.8	88.9	
End-month Elevation	ft	5787.9	5787.1	5794.3	5804.5	5795.2	5783.0	5783.0	5783.0	5783.0	5783.0	5782.9	5782.9	
BLR Net Change	kaf	-2.5	-2.0	20.0	31.0	-28.3	-33.7	0.0	0.0	0.0	0.0	-0.2	0.1	-15.6
Wind River		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Flow abv BL Creek	kaf	29.9	109.8	221.5	138.8	52.2	29.2	29.0	21.4	17.2	15.0	13.7	16.5	694.2
Crowheart Gage Flow	kaf	35.2	140.4	264.0	154.2	104.0	70.4	33.5	23.4	18.9	16.6	15.1	18.0	893.7
Flow Below Div Dam	kaf	16.8	85.7	199.3	73.3	35.3	22.1	14.9	23.4	18.9	16.6	15.1	18.0	539.4
Gain/Return Flow	kaf	4.8	7.4	7.1	7.4	6.1	5.4	0.0	0.0	0.0	0.0	0.0	0.0	38.2
Indian Irrigation	kaf	1.8	6.1	6.0	6.1	2.5	1.8	0.9	0.0	0.0	0.0	0.0	0.0	25.2
LeClair/Riverton	kaf	3.5	18.8	24.2	27.2	21.1	15.0	0.0	0.0	0.0	0.0	0.0	0.0	109.8
LeC/Riv Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Riverton Gage Flow	cfs	273.5	1108.0	2962.7	769.7	290.9	179.3	227.3	393.2	307.4	270.0	271.7	293.3	
Wyoming Canal		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Total Diversion	kaf	18.4	54.7	64.7	80.9	68.7	48.3	18.6	0.0	0.0	0.0	0.0	0.0	354.3
North Canal Flow	kaf	9.8	26.4	31.2	36.5	30.9	27.0	3.4	0.0	0.0	0.0	0.0	0.0	165.2
North Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pilot Butte Reservoir Operations		Initial Content 27.9 Kaf						Operating Limits: Max 29.9 Kaf, 5459.98 Ft. Min 10.0 Kaf, 5433.49 Ft.						Total
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Reservoir Inflow	kaf	8.6	28.3	33.5	44.4	37.8	21.3	15.2	0.0	0.0	0.0	0.0	0.0	189.1
Power Generated	mwh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pilot Canal Release	kaf	6.7	28.0	33.1	43.9	37.4	32.6	3.4	0.0	0.0	0.0	0.0	0.0	185.1
Pilot Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
End-month Content	kaf	29.6	29.6	29.6	29.6	29.6	18.0	29.6	29.4	29.3	29.2	29.1	28.9	
PBR Net Change	kaf	1.7	0.0	0.0	0.0	0.0	-11.6	11.6	-0.2	-0.1	-0.1	-0.1	-0.2	1.0
End-month Elevation	ft	5459.6	5459.6	5459.6	5459.6	5459.6	5445.5	5459.6	5459.4	5459.3	5459.2	5459.1	5458.9	

Based on Reasonable Maximum April-July runoff of: Bull Lake - 200 kaf / Wind River ab Bull Lake Creek - 800 kaf / Riverton - 670 kaf
 This plan assumes an annual demand of 165 KAF for the North Canal and 186 KAF for the Pilot Canal

RIVERTON PROJECT OPERATING PLAN
 Year Beginning Apr 2018

Bull Lake Reservoir Operations		Initial Content 104.5 Kaf						Operating Limits: Max 151.9 Kaf, 5804.82 Ft. Min 20.0 Kaf, 5750.93 Ft.						Total
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Reservoir Inflow	kaf	6.5	37.7	92.1	63.7	32.2	12.4	6.3	3.3	2.8	2.5	2.0	3.6	265.1
Total Dam Release	kaf	9.0	39.7	72.1	32.7	55.3	51.3	6.3	3.3	2.8	2.5	2.0	1.5	278.5
Total Dam Release	cfs	151.	646.	1212.	532.	899.	862.	102.	55.	46.	41.	36.	25.	
Excess Release	kaf	4.0	34.5	67.1	31.2	40.9	23.8	4.8	1.8	1.3	1.0	0.6	0.0	210.9
End-month Content	kaf	102.0	100.0	120.0	151.0	127.9	89.0	89.0	89.0	89.0	89.0	89.0	91.1	
End-month Elevation	ft	5787.9	5787.1	5794.3	5804.5	5797.0	5783.0	5783.0	5783.0	5783.0	5783.0	5783.0	5783.8	
BLR Net Change	kaf	-2.5	-2.0	20.0	31.0	-23.1	-38.9	0.0	0.0	0.0	0.0	0.0	2.1	-13.4
Wind River		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Flow abv BL Creek	kaf	47.9	175.7	354.4	222.0	78.6	44.5	36.1	25.2	20.4	18.9	16.1	20.2	1060.0
Crowheart Gage Flow	kaf	56.9	215.4	426.5	254.7	133.9	95.8	42.4	28.5	23.2	21.4	18.1	21.7	1338.5
Flow Below Div Dam	kaf	40.5	160.7	361.8	173.8	65.2	46.8	25.4	28.5	23.2	21.4	18.1	21.7	987.1
Gain/Return Flow	kaf	4.8	7.4	7.1	7.4	6.1	5.4	0.0	0.0	0.0	0.0	0.0	0.0	38.2
Indian Irrigation	kaf	1.8	6.1	6.0	6.1	5.5	4.5	1.2	0.0	0.0	0.0	0.0	0.0	31.3
LeClair/Riverton	kaf	3.5	18.8	24.2	27.2	21.1	15.0	0.0	0.0	0.0	0.0	0.0	0.0	109.8
LeC/Riv Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Riverton Gage Flow	cfs	671.8	2327.8	5693.6	2404.2	727.2	549.4	393.1	479.0	377.3	348.0	325.9	353.5	
Wyoming Canal		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Total
Total Diversion	kaf	16.4	54.7	64.7	80.9	68.7	49.0	17.0	0.0	0.0	0.0	0.0	0.0	351.4
North Canal Flow	kaf	9.8	26.4	31.2	36.5	30.9	27.0	3.4	0.0	0.0	0.0	0.0	0.0	165.2
North Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pilot Butte Reservoir Operations		Initial Content 29.9 Kaf						Operating Limits: Max 29.9 Kaf, 5459.98 Ft. Min 1.0 Kaf, 5413.39 Ft.						Total
		Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Reservoir Inflow	kaf	6.6	28.3	33.5	44.4	37.8	22.0	13.6	0.0	0.0	0.0	0.0	0.0	186.2
Power Generated	mwh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Pilot Canal Release	kaf	6.7	28.0	33.1	43.9	37.4	33.3	3.4	0.0	0.0	0.0	0.0	0.0	185.8
Pilot Canal Shortage	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
End-month Content	kaf	29.6	29.6	29.6	29.6	29.6	18.0	28.0	27.8	27.7	27.6	27.5	27.3	
PBR Net Change	kaf	-0.3	0.0	0.0	0.0	0.0	-11.6	10.0	-0.2	-0.1	-0.1	-0.1	-0.2	-2.6
End-month Elevation	ft	5459.6	5459.6	5459.6	5459.6	5459.6	5445.5	5457.8	5457.6	5457.5	5457.4	5457.3	5457.0	