

RECLAMATION

Managing Water in the West

WIND RIVER BASIN RESERVOIR OPERATIONS

Water Supply Forecasts and Reservoir Operations

Prepared June 2018

Present Storage: Bull Lake: 100,265 acre-feet

Pilot Butte: 28,845 acre-feet

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

<u>Month</u>	<u>Inflow</u>	<u>Percent of Normal</u>
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
April 18	5.6	138
May 18	48.4	169

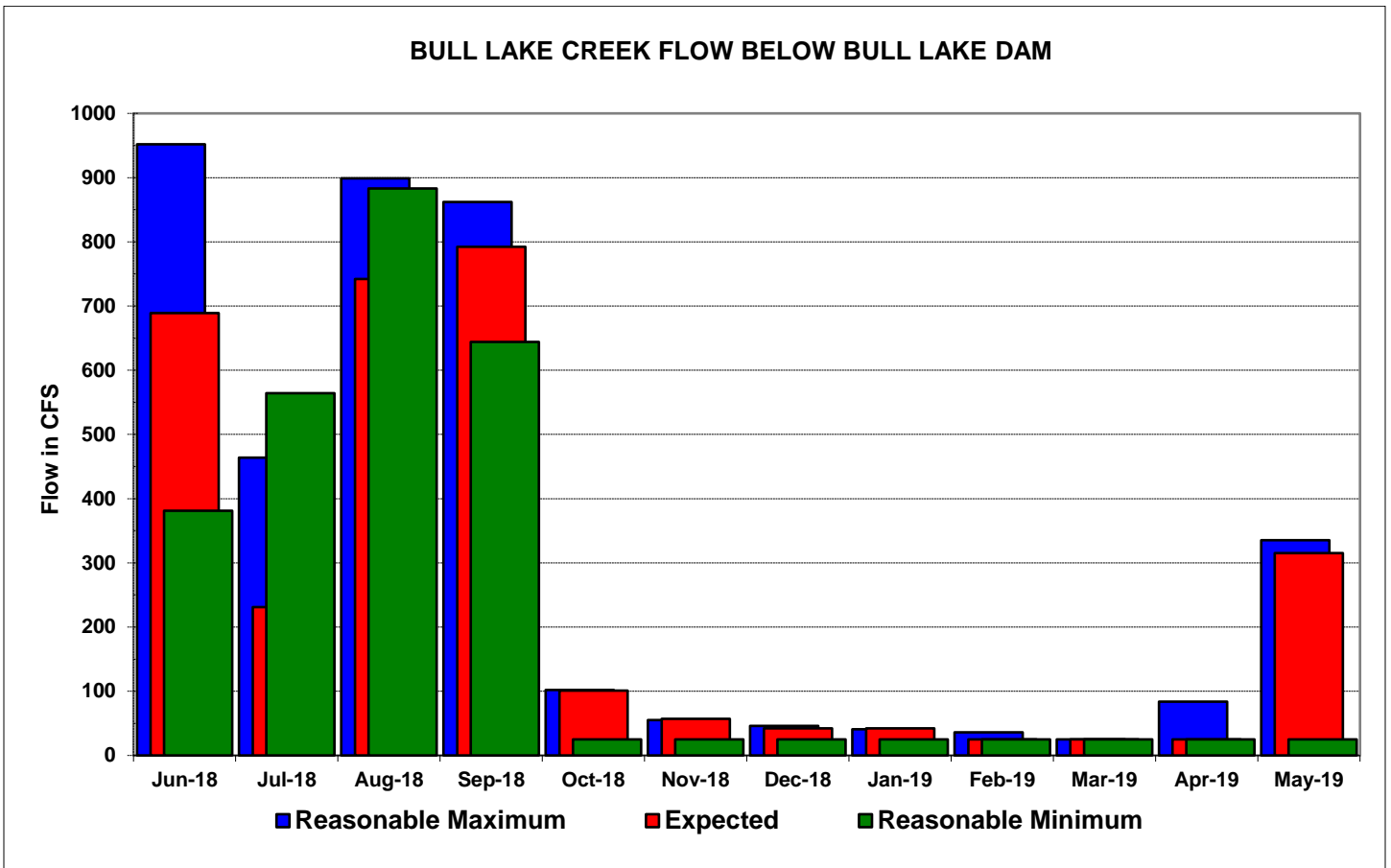
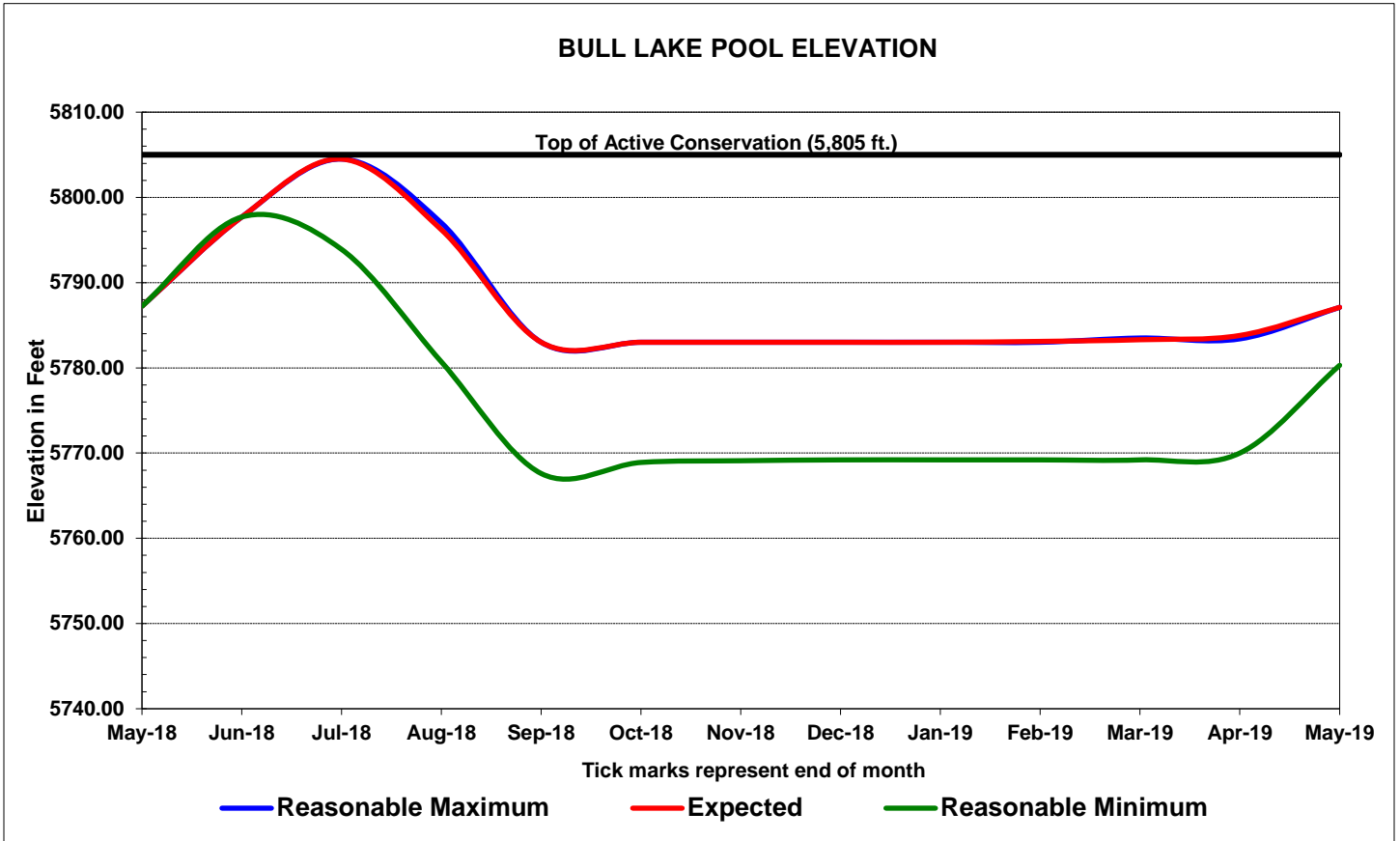
Wind River above Bull Lake Creek Actual Flows (1,000 acre-feet):

<u>Month</u>	<u>Inflow</u>	<u>Percent of Normal</u>
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
April 18	n/a	n/a
May 18	267.7	293



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

BULL LAKE RESERVOIR



Based on a expected April-July runoff of: Bull Lake - 160 kaf / Wind River ab Bull Lake Creek - 650 kaf / Riverton - 429 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 June 2018

Bull Lake Reservoir Operations		Initial Content					Operating Limits:					Max 151.7 Kaf, 5804.76 Ft.			Total
-----		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Min 20.0 Kaf, 5750.93 Ft.	Mar	Apr	May	
Reservoir Inflow	kaf	70.7	35.2	20.2	10.5	6.2	3.4	2.6	2.6	1.7	2.0	2.9	29.4	187.4	
Total Dam Release	kaf	41.0	14.2	45.6	47.1	6.2	3.4	2.6	2.6	1.4	1.5	1.5	20.6	187.7	
Total Dam Release	cfs	689.	231.	742.	792.	101.	57.	42.	42.	25.	25.	25.	335.		
Excess Release	kaf	39.5	12.7	15.9	11.3	4.7	1.9	1.1	1.1	0.0	0.0	0.0	19.0	107.2	
End-month Content	kaf	130.0	151.0	125.6	89.0	89.0	89.0	89.0	89.0	89.3	89.8	91.2	100.0		
End-month Elevation	ft	5797.7	5804.5	5796.2	5783.0	5783.0	5783.0	5783.0	5783.0	5783.1	5783.3	5783.8	5787.1		
BLR Net Change	kaf	29.7	21.0	-25.4	-36.6	0.0	0.0	0.0	0.0	0.3	0.5	1.4	8.8	-0.3	
Wind River		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total	
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Flow abv BL Creek	kaf	232.7	111.3	52.2	36.1	34.8	25.0	18.9	16.4	15.3	17.7	29.1	105.4	694.9	
Crowheart Gage Flow	kaf	273.7	125.5	97.8	83.2	41.0	28.4	21.5	19.0	16.7	19.2	30.6	126.0	882.6	
Flow Below Div Dam	kaf	208.2	44.6	36.7	26.6	24.0	28.4	21.5	19.0	16.7	19.2	11.6	71.3	527.8	
Gain/Return Flow	kaf	7.1	7.4	6.1	5.4	0.0	0.0	0.0	0.0	0.0	0.0	4.8	7.4	38.2	
Indian Irrigation	kaf	6.0	6.1	5.5	4.5	1.2	0.0	0.0	0.0	0.0	0.0	1.8	6.1	31.3	
LeClair/Riverton	kaf	24.2	27.2	21.1	15.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	18.8	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	3112.2	303.0	263.7	209.9	370.3	477.3	349.7	309.0	300.7	312.9	185.9	873.4		
Wyoming Canal		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total	
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Total Diversion	kaf	65.5	80.9	61.1	56.6	17.0	0.0	0.0	0.0	0.0	0.0	19.0	54.7	354.8	
North Canal Flow	kaf	31.2	36.5	30.9	27.0	3.4	0.0	0.0	0.0	0.0	0.0	9.8	26.4	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					Operating Limits:					Max 29.9 Kaf, 5459.98 Ft.			Total
-----		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Min 10.0 Kaf, 5433.49 Ft.	Mar	Apr	May	
Reservoir Inflow	kaf	34.3	44.4	30.2	29.6	13.6	0.0	0.0	0.0	0.0	0.0	9.2	28.3	189.6	
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	33.1	43.9	37.4	33.3	3.4	0.0	0.0	0.0	0.0	0.0	6.7	28.0	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	22.0	18.0	28.0	27.8	27.7	27.6	27.5	27.3	29.6	29.6		
PBR Net Change	kaf	0.8	0.0	-7.6	-4.0	10.0	-0.2	-0.1	-0.1	-0.1	-0.2	2.3	0.0	0.8	
End-month Elevation	ft	5459.6	5459.6	5450.7	5445.5	5457.8	5457.6	5457.5	5457.4	5457.3	5457.0	5459.6	5459.6		

Based on a reasonable minimum April-July runoff of: Bull Lake - 130 kaf / Wind River ab Bull Lake Creek - 550 kaf / Riverton - 343 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 Jun 2018

Bull Lake Reservoir Operations		Initial Content 100.3 Kaf					Operating Limits: Max 151.9 Kaf, 5804.82 Ft. Min 20.0 Kaf, 5750.93 Ft.							Total
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Reservoir Inflow	kaf	52.4	23.5	18.5	7.5	4.5	2.0	1.7	1.6	1.2	1.6	3.2	26.1	143.8
Total Dam Release	kaf	22.7	34.7	54.3	38.3	1.5	1.5	1.5	1.5	1.4	1.5	1.5	1.5	162.0
Total Dam Release	cfs	381.	564.	883.	644.	25.	25.	25.	25.	25.	25.	25.	25.	
Excess Release	kaf	21.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.2
End-month Content	kaf	130.0	118.8	83.0	52.2	55.2	55.7	55.9	55.9	55.7	55.8	57.5	82.1	
End-month Elevation	ft	5797.7	5793.9	5780.7	5767.6	5768.9	5769.1	5769.2	5769.2	5769.2	5769.2	5770.0	5780.3	
BLR Net Change	kaf	29.7	-11.2	-35.8	-30.8	3.0	0.5	0.2	0.1	-0.2	0.1	1.7	24.6	-18.2
Wind River		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Flow abv BL Creek	kaf	179.1	64.9	36.1	29.2	29.0	21.4	17.2	15.0	13.7	16.5	24.0	74.8	520.9
Crowheart Gage Flow	kaf	201.8	99.6	90.4	67.5	30.5	22.9	18.7	16.5	15.1	18.0	25.5	76.3	682.9
Flow Below Div Dam	kaf	136.3	30.3	21.7	15.6	5.2	22.9	18.7	16.5	15.1	18.0	6.8	21.9	329.1
Gain/Return Flow	kaf	7.1	7.4	6.1	5.4	0.0	0.0	0.0	0.0	0.0	0.0	4.8	7.4	38.2
Indian Irrigation	kaf	6.0	6.1	2.5	1.8	0.9	0.0	0.0	0.0	0.0	0.0	1.8	6.1	25.2
LeClair/Riverton	kaf	24.2	27.2	21.1	15.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	18.8	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	1904.1	70.0	70.0	70.0	70.0	384.6	304.7	269.0	271.7	293.3	105.4	70.0	
Wyoming Canal		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Total Diversion	kaf	65.5	69.3	68.7	51.9	25.3	0.0	0.0	0.0	0.0	0.0	18.7	54.5	353.8
North Canal Flow	kaf	31.2	36.5	30.9	27.0	3.4	0.0	0.0	0.0	0.0	0.0	9.8	26.4	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 28.8 Kaf					Operating Limits: Max 29.9 Kaf, 5459.98 Ft. Min 10.0 Kaf, 5433.49 Ft.							Total
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Reservoir Inflow	kaf	34.3	32.8	37.8	24.9	21.9	0.0	0.0	0.0	0.0	0.0	8.9	28.1	188.6
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	33.1	43.9	37.4	32.6	3.4	0.0	0.0	0.0	0.0	0.0	6.7	28.0	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	18.0	18.0	10.0	28.3	28.1	28.0	27.9	27.8	27.6	29.6	29.4	
PBR Net Change	kaf	0.8	-11.6	0.0	-8.0	18.3	-0.2	-0.1	-0.1	-0.1	-0.2	2.0	-0.2	0.5
End-month Elevation	ft	5459.6	5445.5	5445.5	5433.5	5458.2	5458.0	5457.9	5457.7	5457.6	5457.4	5459.6	5459.4	

Based on a reasonable maximum April-July runoff of: Bull Lake - 190 kaf / Wind River ab Bull Lake Creek - 750 kaf / Riverton - 559 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 Jun 2018

Bull Lake Reservoir Operations		Initial Content 100.3 Kaf						Operating Limits: Max 151.9 Kaf, 5804.82 Ft. Min 20.0 Kaf, 5750.93 Ft.						Total
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	
Reservoir Inflow	kaf	86.4	49.5	32.2	12.4	6.3	3.3	2.8	2.5	2.0	2.8	4.9	29.2	234.3
Total Dam Release	kaf	56.7	28.5	55.3	51.3	6.3	3.3	2.8	2.5	2.0	1.5	5.0	19.4	234.6
Total Dam Release	cfs	952.	464.	899.	862.	102.	55.	46.	41.	36.	25.	84.	315.	
Excess Release	kaf	51.7	27.0	40.9	23.8	4.8	1.8	1.3	1.0	0.6	0.0	0.0	14.2	167.0
End-month Content	kaf	130.0	151.0	127.9	89.0	89.0	89.0	89.0	89.0	89.0	90.3	90.2	100.0	
End-month Elevation	ft	5797.7	5804.5	5797.0	5783.0	5783.0	5783.0	5783.0	5783.0	5783.0	5783.5	5783.4	5787.1	
BLR Net Change	kaf	29.7	21.0	-23.1	-38.9	0.0	0.0	0.0	0.0	0.0	1.3	-0.1	9.8	-0.3
Wind River		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Flow abv BL Creek	kaf	273.0	171.0	78.6	44.5	36.1	25.2	20.4	18.9	16.1	20.2	26.2	121.5	851.7
Crowheart Gage Flow	kaf	329.7	199.5	133.9	95.8	42.4	28.5	23.2	21.4	18.1	21.7	31.2	140.9	1086.3
Flow Below Div Dam	kaf	264.2	118.6	65.2	46.8	25.4	28.5	23.2	21.4	18.1	21.7	12.2	86.2	731.5
Gain/Return Flow	kaf	7.1	7.4	6.1	5.4	0.0	0.0	0.0	0.0	0.0	0.0	4.8	7.4	38.2
Indian Irrigation	kaf	6.0	6.1	5.5	4.5	1.2	0.0	0.0	0.0	0.0	0.0	1.8	6.1	31.3
LeClair/Riverton	kaf	24.2	27.2	21.1	15.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	18.8	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	4053.5	1506.5	727.2	549.4	393.1	479.0	377.3	348.0	325.9	353.5	196.2	1115.6	
Wyoming Canal		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Total Diversion	kaf	65.5	80.9	68.7	49.0	17.0	0.0	0.0	0.0	0.0	0.0	19.0	54.7	354.8
North Canal Flow	kaf	31.2	36.5	30.9	27.0	3.4	0.0	0.0	0.0	0.0	0.0	9.8	26.4	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 28.8 Kaf						Operating Limits: Max 29.9 Kaf, 5459.98 Ft. Min 1.0 Kaf, 5413.39 Ft.						Total
		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	
Reservoir Inflow	kaf	34.3	44.4	37.8	22.0	13.6	0.0	0.0	0.0	0.0	0.0	9.2	28.3	189.6
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	33.1	43.9	37.4	33.3	3.4	0.0	0.0	0.0	0.0	0.0	6.7	28.0	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	18.0	28.0	27.8	27.7	27.6	27.5	27.3	29.6	29.6	
PBR Net Change	kaf	0.8	0.0	0.0	-11.6	10.0	-0.2	-0.1	-0.1	-0.1	-0.2	2.3	0.0	0.8
End-month Elevation	ft	5459.6	5459.6	5459.6	5445.5	5457.8	5457.6	5457.5	5457.4	5457.3	5457.0	5459.6	5459.6	