

RECLAMATION

Managing Water in the West

BUFFALO BILL RESERVOIR OPERATIONS

Water Supply Forecasts and Reservoir Operations

Prepared June 2018

End of Month Elevation and Storage: 5,379.19 FT & 535,278 Acre-Feet

Actual Inflows (1,000 Acre-Feet):

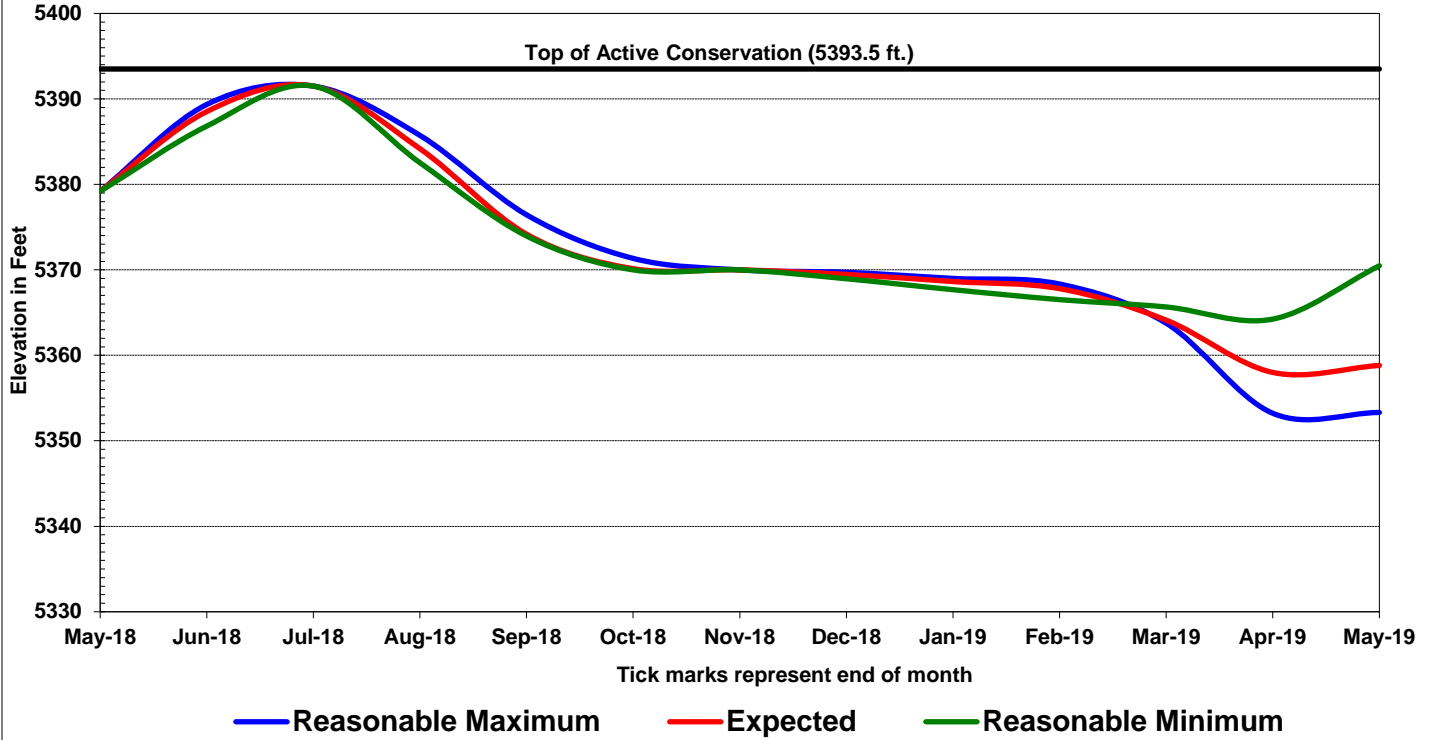
<u>Month</u>	<u>Inflow</u>	<u>Percent of Normal</u>
June 17	576.4	191
July 17	283.6	177
August 17	61.2	146
September 17	55.0	233
October 17	55.0	214
November 17	49.6	227
December 18	33.3	212
January 18	25.4	172
February 18	17.9	137
March 18	23.8	112
April 18	76.5	167
May 18	451.3	258



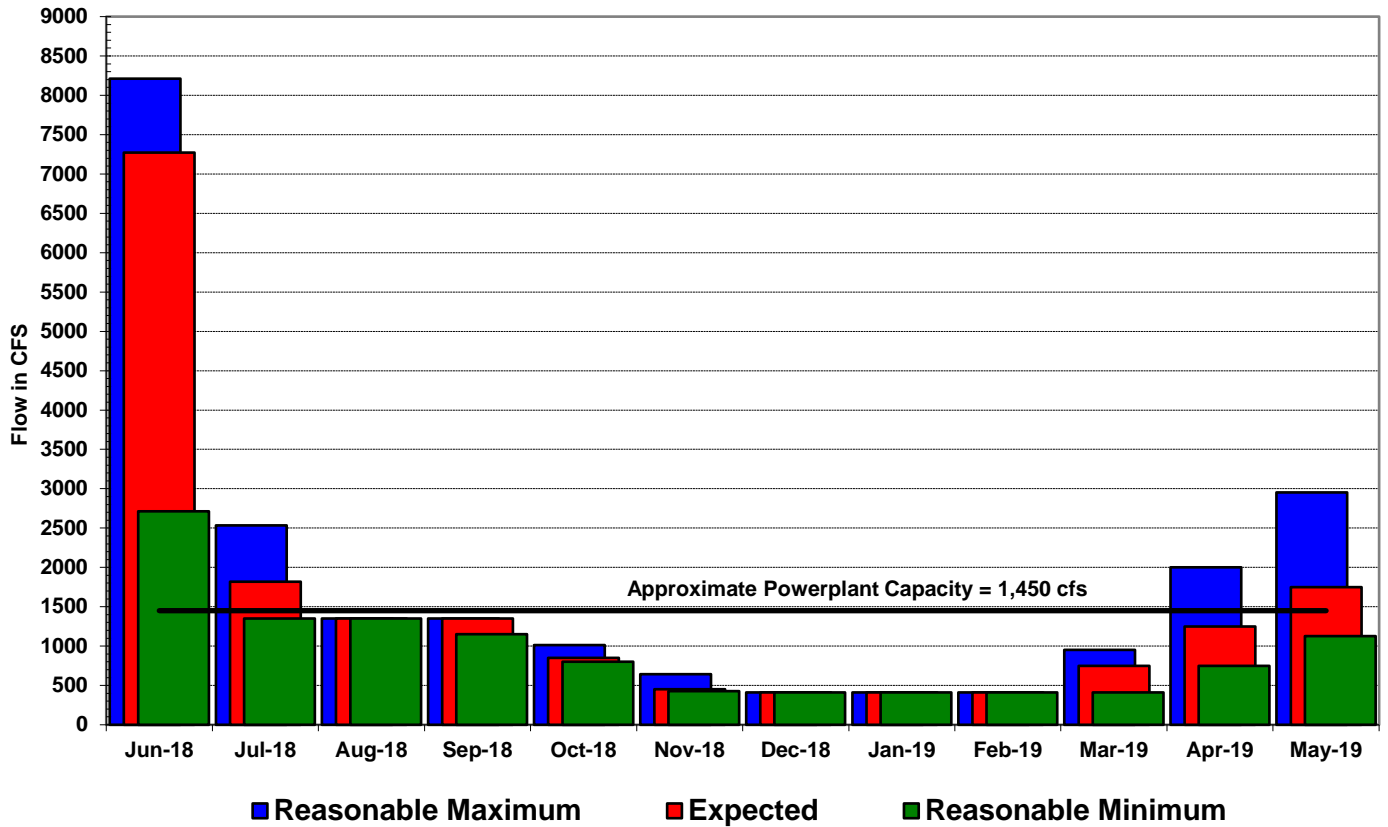
U.S Department of the Interior
Bureau of Reclamation
Great Plains Region
Wyoming Area Office
Mills, Wyoming

Buffalo Bill Reservoir

BUFFALO BILL RESERVOIR ELEVATION



SHOSHONE RIVER FLOW BELOW BUFFALO BILL DAM



BBRAOP V1.04 Run: 11-Jun-2018 11:09
 Based on a expected April - July inflow of 1,250 kaf

BUFFALO BILL RESERVOIR MONTHLY OPERATIONS

Buffalo Bill Reservoir		Initial Cont Elev 531.9 kaf 5379.29 ft				Maximum Cont Elev 643.1 kaf 5393.59 ft				Minimum Cont Elev 41.8 kaf 5259.64 ft			
2018		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Monthly Inflow	kaf	542.2	180.0	63.4	34.2	27.8	22.5	18.0	15.9	13.9	17.4	38.1	145.6
Shoshone Release	kaf	11.3	11.3	9.6	8.4	6.1	6.0	6.1	6.1	5.6	6.1	10.7	12.8
Non-Power Release	kaf	348.7	26.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.4
Total Flow Below Dam	kaf	360.0	37.9	9.6	8.4	6.1	6.0	6.1	6.1	5.6	6.1	10.7	28.2
Buffalo Bill Release	kaf	51.2	51.6	51.2	50.4	23.9	17.2	15.4	15.4	13.9	36.3	51.1	57.2
Municipal Delivery	kaf	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Heart Mtn Release	kaf	18.0	18.6	18.6	18.0	18.6	0.0	0.0	0.0	0.0	0.0	9.0	18.6
Heart Mtn Delivery	kaf	42.0	48.0	41.0	32.0	8.0	0.0	0.0	0.0	0.0	0.0	7.0	36.0
Total Outflow	kaf	471.5	156.4	120.7	109.1	56.9	23.5	21.8	21.8	19.8	42.7	78.1	140.3
Bypass/Spill	kaf	348.7	26.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	15.4
End-Month Targets	kaf	602.6	626.2	568.9	494.0	464.9	463.9	460.1	454.2	467.4	423.0	383.0	388.3
End-Month Content	kaf	602.6	626.2	568.9	494.0	464.9	463.9	460.1	454.2	448.3	423.0	383.0	388.3
Est Total Storage	kaf	606.0	629.6	572.3	497.4	468.3	467.3	463.5	457.6	451.7	426.4	386.4	391.7
End-Month Elevation	ft	5388.52	5391.50	5384.17	5374.17	5370.14	5370.00	5369.47	5368.63	5367.80	5364.12	5358.00	5358.82
Net Change Content	kaf	70.7	23.6	-57.3	-74.9	-29.1	-1.0	-3.8	-5.9	-5.9	-25.3	-40.0	5.3
Flow Below BB Pwr	kaf	411.2	89.5	60.8	58.8	30.0	23.2	21.5	21.5	19.5	42.4	61.8	85.4
Flow Below BB Pwr	cfs	6910	1456	989	988	488	390	350	350	351	690	1039	1389
Spring Inflow	kaf	3.6	3.7	3.7	3.6	3.7	3.6	3.7	3.7	3.3	3.7	3.6	3.6
Passing Cody Gage	kaf	432.8	111.8	83.1	80.4	52.3	26.8	25.2	25.2	22.8	46.1	74.4	107.6
Passing Cody Gage	cfs	7273	1818	1351	1351	851	450	410	410	411	750	1250	1750
Shoshone Power	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Shoshone Release	kaf	11.3	11.3	9.6	8.4	6.1	6.0	6.1	6.1	5.6	6.1	10.7	12.8
Generation	gwh	2.154	2.242	1.899	1.606	1.134	1.106	1.123	1.120	1.024	1.105	1.895	2.231
Max Generation	gwh	2.160	2.232	2.232	2.160	2.232	2.160	2.232	2.232	1.369	1.152	2.160	2.232
% Max Generation		100	100	85	74	51	51	50	50	75	96	88	100
Ave kwh/af		191	198	198	191	186	184	184	184	183	181	177	174
End-Month Power Cap	mw	3	3	3	3	3	3	3	3	2	2	3	3
Buffalo Bill Power	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Buffalo Bill Release	kaf	51.2	51.6	51.2	50.4	23.9	17.2	15.4	15.4	13.9	36.3	51.1	57.2
Generation	gwh	12.959	13.382	13.390	12.956	6.468	4.712	4.219	4.210	3.790	9.689	12.962	13.400
Max Generation	gwh	12.960	13.392	13.392	12.960	13.392	12.960	13.392	13.392	10.947	13.392	12.960	13.392
% Max Generation		100	100	100	100	48	36	32	31	35	72	100	100
Ave kwh/af		253	259	262	257	271	274	274	273	273	267	254	234
End-Month Power Cap	mw	18	18	18	18	18	18	18	18	16	18	18	18
Spirit Mtn Power	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Spirit Mtn Release	kaf	33.3	34.4	34.4	33.3	26.6	0.0	0.0	0.0	0.0	0.0	16.0	34.4
Generation	gwh	2.980	3.212	3.274	3.016	2.723	0.000	0.000	0.000	0.000	0.000	1.394	2.322
Max Generation	gwh	3.240	3.348	3.348	3.240	3.348	3.240	3.348	3.348	0.000	0.000	2.699	3.348
% Max Generation		92	96	98	93	81	0	0	0	0	0	52	69
Ave kwh/af		89	93	95	91	102						87	68
End-Month Power Cap	mw	5	5	5	4	4	0	0	0	0	0	2	4
Heart Mtn Power	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Heart Mtn Release	kaf	18.0	18.6	18.6	18.0	18.6	0.0	0.0	0.0	0.0	0.0	9.0	18.6
Generation	gwh	4.309	4.453	4.453	4.309	4.453	0.000	0.000	0.000	0.000	0.000	2.154	4.453
Max Generation	gwh	4.320	4.464	4.464	4.320	4.464	0.000	0.000	0.000	0.000	0.000	2.160	4.464
% Max Generation		100	100	100	100	100	0	0	0	0	0	100	100
Ave kwh/af		239	239	239	239	239						239	239
End-Month Power Cap	mw	6	6	6	6	6	0	0	0	0	0	3	6
Total Generation	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Total Generation	gwh	22.402	23.289	23.016	21.887	14.778	5.818	5.342	5.330	4.814	10.794	18.405	22.406
End-month Power Cap	mw	32	32	32	31	31	21	21	21	18	20	26	31

BBRAOP V1.04 Run: 11-Jun-2018 11:09
 Based on a reasonable minimum April-July inflow of 950 kaf

BUFFALO BILL RESERVOIR MONTHLY OPERATIONS

Buffalo Bill Reservoir		Initial Cont Elev 531.9 kaf 5379.29 ft				Maximum Cont Elev 643.1 kaf 5393.59 ft				Minimum Cont Elev 41.8 kaf 5259.64 ft			
2018		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Monthly Inflow	kaf	257.6	164.6	50.9	29.2	25.3	22.2	14.4	12.8	11.7	15.8	38.7	145.3
Shoshone Release	kaf	11.2	9.1	9.4	6.0	6.1	6.0	6.1	6.1	5.6	6.1	6.0	6.1
Non-Power Release	kaf	77.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Flow Below Dam	kaf	88.9	9.1	9.4	6.0	6.1	6.0	6.1	6.1	5.6	6.1	6.0	6.1
Buffalo Bill Release	kaf	51.0	51.7	51.4	49.1	20.9	15.9	15.4	15.4	13.9	15.4	26.0	53.0
Municipal Delivery	kaf	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Heart Mtn Release	kaf	18.0	18.6	18.6	9.7	18.6	0.0	0.0	0.0	0.0	0.0	9.0	6.4
Heart Mtn Delivery	kaf	42.0	48.0	41.0	28.0	8.0	0.0	0.0	0.0	0.0	0.0	7.0	36.0
Total Outflow	kaf	200.2	127.7	120.7	93.1	53.9	22.2	21.8	21.8	19.8	21.8	48.3	101.8
Bypass/Spill	kaf	77.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
End-Month Targets	kaf	589.3	626.2	556.4	492.5	463.9	463.9	456.5	447.5	439.4	433.4	423.8	467.3
End-Month Content	kaf	589.3	626.2	556.4	492.5	463.9	463.9	456.5	447.5	439.4	433.4	423.8	467.3
Est Total Storage	kaf	592.7	629.6	559.8	495.9	467.3	467.3	459.9	450.9	442.8	436.8	427.2	470.7
End-Month Elevation	ft	5386.82	5391.50	5382.53	5373.96	5370.00	5370.00	5368.96	5367.68	5366.52	5365.66	5364.24	5370.48
Net Change Content	kaf	57.4	36.9	-69.8	-63.9	-28.6	0.0	-7.4	-9.0	-8.1	-6.0	-9.6	43.5
Flow Below BB Pwr	kaf	139.9	60.8	60.8	55.1	27.0	21.9	21.5	21.5	19.5	21.5	32.0	59.1
Flow Below BB Pwr	cfs	2351	989	989	926	439	368	350	350	351	350	538	961
Spring Inflow	kaf	3.6	3.7	3.7	3.6	3.7	3.6	3.7	3.7	3.3	3.7	3.6	3.7
Passing Cody Gage	kaf	161.5	83.1	83.1	68.4	49.3	25.5	25.2	25.2	22.8	25.2	44.6	69.2
Passing Cody Gage	cfs	2714	1351	1351	1150	802	429	410	410	411	410	750	1125

Shoshone Power	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Shoshone Release	kaf	11.2	9.1	9.4	6.0	6.1	6.0	6.1	6.1	5.6	6.1	6.0	6.1
Generation	gwh	2.152	1.809	1.853	1.144	1.133	1.106	1.122	1.116	1.019	1.106	1.082	1.112
Max Generation	gwh	2.160	2.232	2.232	2.160	2.232	2.160	2.232	2.232	1.369	1.152	2.160	2.232
% Max Generation		100	81	83	53	51	51	50	50	74	96	50	50
Ave kwh/af		192	199	197	191	186	184	184	183	182	181	180	182
End-Month Power Cap	mw	3	3	3	3	3	3	3	3	2	2	3	3

Buffalo Bill Power	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Buffalo Bill Release	kaf	51.0	51.7	51.4	49.1	20.9	15.9	15.4	15.4	13.9	15.4	26.0	53.0
Generation	gwh	12.966	13.390	13.401	12.873	5.670	4.358	4.216	4.200	3.776	4.170	6.904	13.258
Max Generation	gwh	12.960	13.392	13.392	12.960	13.392	6.713	9.776	10.312	10.947	13.392	12.960	13.392
% Max Generation		100	100	100	99	42	65	43	41	34	31	53	99
Ave kwh/af		254	259	261	262	271	274	274	273	272	271	266	250
End-Month Power Cap	mw	18	18	18	18	18	9	13	14	16	18	18	18

Spirit Mtn Power	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Spirit Mtn Release	kaf	33.3	34.4	34.4	33.3	26.6	0.0	0.0	0.0	0.0	0.0	16.0	34.4
Generation	gwh	2.957	3.184	3.245	3.188	2.736	0.000	0.000	0.000	0.000	0.000	1.555	2.867
Max Generation	gwh	3.240	3.348	3.348	3.240	3.348	3.240	3.348	3.348	0.000	0.000	2.699	3.348
% Max Generation		91	95	97	98	82	0	0	0	0	0	58	86
Ave kwh/af		89	93	94	96	103						97	83
End-Month Power Cap	mw	5	5	5	4	4	0	0	0	0	0	2	4

Heart Mtn Power	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Heart Mtn Release	kaf	18.0	18.6	18.6	9.7	18.6	0.0	0.0	0.0	0.0	0.0	9.0	6.4
Generation	gwh	4.309	4.453	4.453	2.322	4.453	0.000	0.000	0.000	0.000	0.000	2.154	1.532
Max Generation	gwh	4.320	4.464	4.464	4.320	4.464	0.000	0.000	0.000	0.000	0.000	2.160	4.464
% Max Generation		100	100	100	54	100	0	0	0	0	0	100	34
Ave kwh/af		239	239	239	239	239						239	239
End-Month Power Cap	mw	6	6	6	6	6	0	0	0	0	0	3	6

Total Generation	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Total Generation	gwh	22.384	22.836	22.952	19.527	13.992	5.464	5.338	5.316	4.795	5.276	11.695	18.769
End-month Power Cap	mw	32	32	32	31	31	12	16	17	18	20	26	31

BBRAOP V1.04 Run: 11-Jun-2018 11:10
 Based on a reasonable maximum April-July inflow of 1,350 kaf

BUFFALO BILL RESERVOIR MONTHLY OPERATIONS

Buffalo Bill Reservoir		Initial Cont Elev 531.9 kaf 5379.29 ft				Maximum Cont Elev 643.1 kaf 5393.59 ft				Minimum Cont Elev 41.8 kaf 5259.64 ft			
2018		Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Monthly Inflow	kaf	604.4	217.5	75.3	39.8	29.6	25.3	19.7	16.8	15.1	23.5	55.0	214.7
Shoshone Release	kaf	11.3	11.3	9.6	8.6	6.2	6.0	6.2	6.2	5.6	6.2	12.4	13.2
Non-Power Release	kaf	404.5	70.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.3	88.8
Total Flow Below Dam	kaf	415.8	81.8	9.6	8.6	6.2	6.0	6.2	6.2	5.6	6.2	54.7	102.0
Buffalo Bill Release	kaf	51.1	51.7	51.1	50.1	33.7	28.6	15.3	15.3	13.9	48.5	51.7	57.2
Municipal Delivery	kaf	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Heart Mtn Release	kaf	18.0	18.6	18.6	18.0	18.6	0.0	0.0	0.0	0.0	0.0	9.0	18.6
Heart Mtn Delivery	kaf	42.0	48.0	41.0	33.0	8.0	0.0	0.0	0.0	0.0	0.0	7.0	36.0
Total Outflow	kaf	527.2	200.4	120.6	110.0	66.8	34.9	21.8	21.8	19.8	55.0	122.7	214.1
Bypass/Spill	kaf	404.5	70.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.3	88.8
End-Month Targets	kaf	609.1	626.2	580.9	510.7	473.5	463.9	461.8	456.8	452.1	420.6	352.9	353.5
End-Month Content	kaf	609.1	626.2	580.9	510.7	473.5	463.9	461.8	456.8	452.1	420.6	352.9	353.5
Est Total Storage	kaf	612.5	629.6	584.3	514.1	476.9	467.3	465.2	460.2	455.5	424.0	356.3	356.9
End-Month Elevation	ft	5389.35	5391.50	5385.73	5376.44	5371.34	5370.00	5369.71	5369.00	5368.34	5363.76	5353.22	5353.32
Net Change Content	kaf	77.2	17.1	-45.3	-70.2	-37.2	-9.6	-2.1	-5.0	-4.7	-31.5	-67.7	0.6
Flow Below BB Pwr	kaf	466.9	133.5	60.7	58.7	39.9	34.6	21.5	21.5	19.5	54.7	106.4	159.2
Flow Below BB Pwr	cfs	7847	2171	987	986	649	581	350	350	351	890	1788	2589
Spring Inflow	kaf	3.6	3.7	3.7	3.6	3.7	3.6	3.7	3.7	3.3	3.7	3.6	3.7
Passing Cody Gage	kaf	488.5	155.8	83.0	80.3	62.2	38.2	25.2	25.2	22.8	58.4	119.0	181.5
Passing Cody Gage	cfs	8210	2534	1350	1349	1012	642	410	410	411	950	2000	2952

Shoshone Power	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Shoshone Release	kaf	11.3	11.3	9.6	8.6	6.2	6.0	6.2	6.2	5.6	6.2	12.4	13.2
Generation	gwh	2.158	2.237	1.904	1.657	1.161	1.109	1.142	1.139	1.026	1.124	2.155	2.233
Max Generation	gwh	2.160	2.232	2.232	2.160	2.232	2.160	2.232	2.232	1.369	1.152	2.160	2.232
% Max Generation		100	100	85	77	52	51	51	51	75	98	100	100
Ave kwh/af		191	198	198	193	187	185	184	184	183	181	174	169
End-Month Power Cap	mw	3	3	3	3	3	3	3	3	2	2	3	3

Buffalo Bill Power	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Buffalo Bill Release	kaf	51.1	51.7	51.1	50.1	33.7	28.6	15.3	15.3	13.9	48.5	51.7	57.2
Generation	gwh	12.955	13.396	13.402	12.949	9.071	7.794	4.193	4.187	3.795	12.791	12.954	13.092
Max Generation	gwh	12.960	13.392	13.392	12.960	13.392	12.960	13.392	13.392	10.947	13.392	12.960	13.392
% Max Generation		100	100	100	100	68	60	31	31	35	96	100	98
Ave kwh/af		254	259	262	258	269	273	274	274	273	264	251	229
End-Month Power Cap	mw	18	18	18	18	18	18	18	18	16	18	18	18

Spirit Mtn Power	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Spirit Mtn Release	kaf	33.3	34.4	34.4	33.3	26.6	0.0	0.0	0.0	0.0	0.0	16.0	34.4
Generation	gwh	2.995	3.223	3.300	3.063	2.701	0.000	0.000	0.000	0.000	0.000	1.353	2.159
Max Generation	gwh	3.240	3.348	3.348	3.240	3.348	3.240	3.348	3.348	0.000	0.000	2.699	3.348
% Max Generation		92	96	99	95	81	0	0	0	0	0	50	64
Ave kwh/af		90	94	96	92	102						85	63
End-Month Power Cap	mw	5	5	5	4	4	0	0	0	0	0	2	3

Heart Mtn Power	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Heart Mtn Release	kaf	18.0	18.6	18.6	18.0	18.6	0.0	0.0	0.0	0.0	0.0	9.0	18.6
Generation	gwh	4.309	4.453	4.453	4.309	4.453	0.000	0.000	0.000	0.000	0.000	2.154	4.453
Max Generation	gwh	4.320	4.464	4.464	4.320	4.464	0.000	0.000	0.000	0.000	0.000	2.160	4.464
% Max Generation		100	100	100	100	100	0	0	0	0	0	100	100
Ave kwh/af		239	239	239	239	239						239	239
End-Month Power Cap	mw	6	6	6	6	6	0	0	0	0	0	3	6

Total Generation	2018	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Total Generation	gwh	22.417	23.309	23.059	21.978	17.386	8.903	5.335	5.326	4.821	13.915	18.616	21.937
End-month Power Cap	mw	32	32	32	31	31	21	21	21	18	20	26	30