

RECLAMATION

Managing Water in the West

July 2, 2012

Dear Customer:

Attached is the monthly water supply outlook and projected operations for Yellowtail Dam and Powerplant. Mountain snowpack in the Bighorn Basin above Yellowtail Dam has essentially melted out. Due to the lack of normal spring precipitation, streamflows into Bighorn Lake during June declined to 54% of average. Based on the July 1 water supply forecast and the planned releases out of Boysen and Buffalo Bill Reservoirs, the July runoff into Bighorn Lake is expected to equal 103,200 acre-feet (36% of average). If you have any questions or concerns, please feel free to call me at (406) 247-7318.

Tim H. Felchle
Reservoir and River Operations



U. S. Department of the Interior
Bureau of Reclamation
Montana Area Office
River and Reservoir Operations

YELLOWTAIL RESERVOIR OPERATIONS
 Water Supply Forecasts and Reservoir Operations
 July 1, 2012

Present Elevations & Storages:

<u>Reservoir</u>	<u>Elevation</u>	<u>Storage</u>	<u>Percent of Average</u>	<u>Percent Full</u>
Boysen	4718.35	619,797	94	84
Buffalo Bill	5391.42	629,853	111	97
Bighorn Lake	3635.19	963,714	98	94

Actual Inflows (1,000 Acre-Feet):

<u>Month</u>	<u>Inflow</u>	<u>Percent of Average</u>
<i>April-July, 2011</i>	<i>2,572.3</i>	<i>226</i>
<i>WY-2011 Total</i>	<i>3,817.0</i>	<i>163</i>
October	213.6	123
November	142.3	98
December	132.4	103
January	136.2	108
February	137.5	106
March	177.2	107
April	149.7	93
May	204.7	78
June	238.5	54

Actual Gains Between Boysen and Buffalo Bill to Yellowtail (1,000 Acre-Feet):

<u>Month</u>	<u>Gains</u>	<u>Percent of Average</u>
<i>April-July, 2011</i>	<i>717.7</i>	<i>460</i>
<i>WY-2011 Total</i>	<i>996.7</i>	<i>207</i>
October	91.7	129
November	64.6	104
December	52.3	121
January	56.8	123
February	63.3	119
March	92.1	124
April	35.0	100
May	13.5	23
June	23.7	---

July 1 Runoff Forecast (July Inflows - 1,000 Acre-Feet):

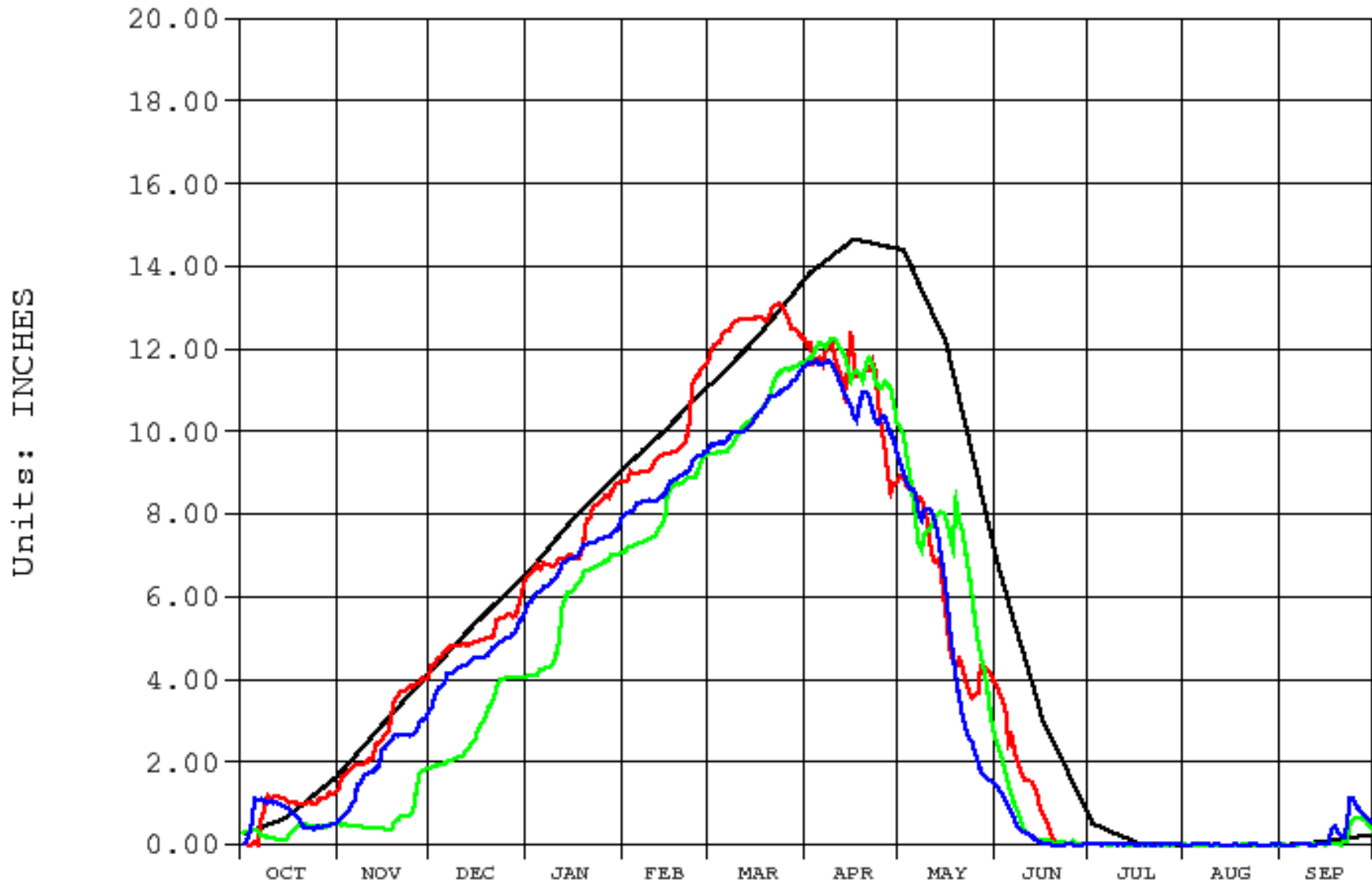
<u>Agency</u>	<u>Inflows</u>	<u>Percent of Average</u>
USBR	103.2.0	36

Snowpack Conditions:

S N O W - P R E C I P I T A T I O N U P D A T E
 NRCS SNOTEL DATA UNAVAILABLE DURING JUNE-OCTOBER

Archive Data From 1-OCT Through 30-SEP

Plotted 06/29/2012 16:17 (Provisional Data Subject to Revision)



BHR Bighorn Lake (Yellowtail), Bighorn River near Fort Smith, MT

SE_AVG Snow Water Equivalent Average (inches)

2012

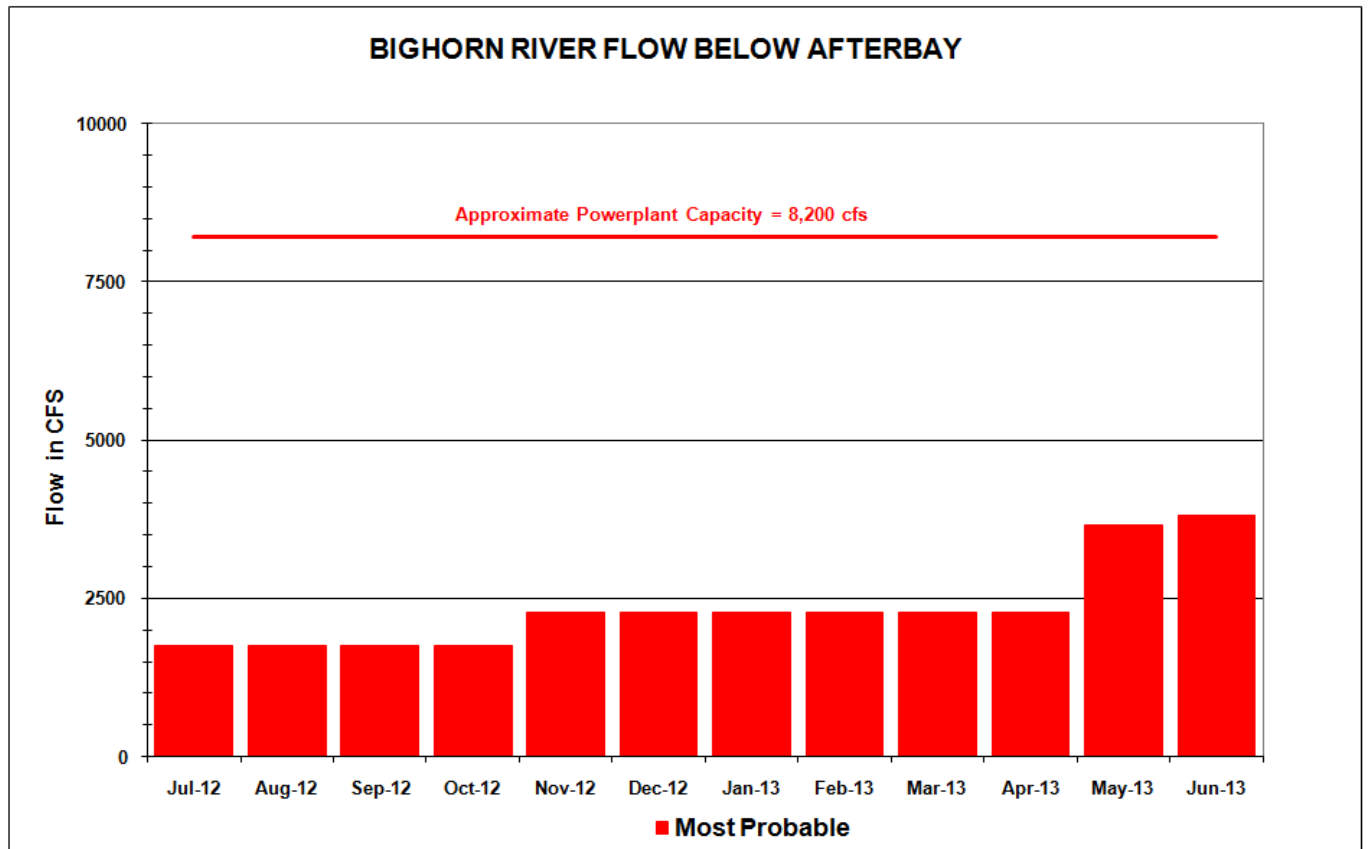
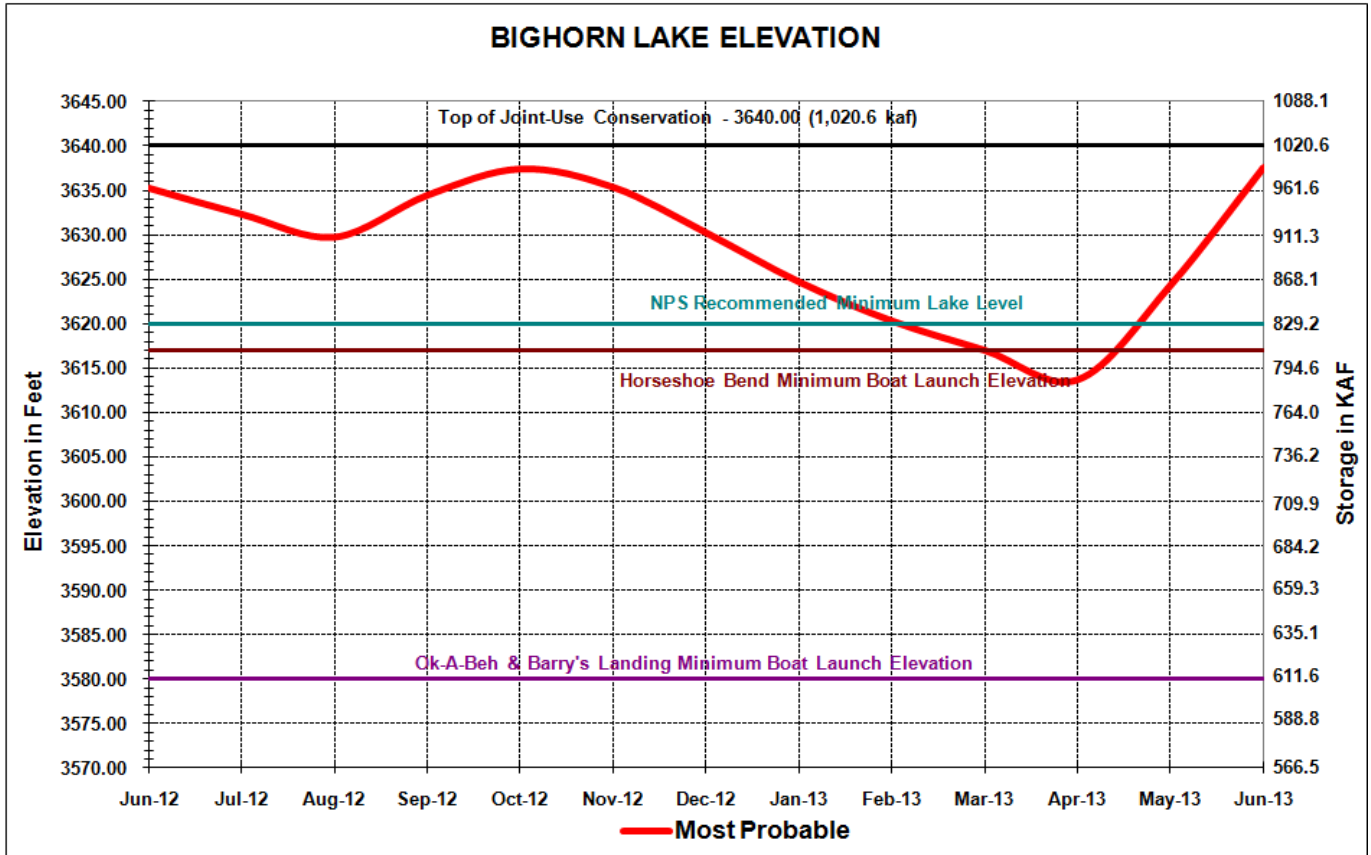
SE Snow Water Equivalent (inches)

2012 2000 2006

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont 963.7 kaf Elev 3635.19 ft				Maximum Cont 1278.9 kaf Elev 3657.00 ft				Minimum Cont 469.9 kaf Elev 3547.00 ft				Total
	2012	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Boysen Release	kaf	79.9	69.2	59.5	46.1	29.8	30.7	30.7	27.8	30.7	50.6	135.0	132.7	722.7
Boysen Release	cfs	1299	1125	1000	750	501	499	499	501	499	850	2196	2230	
Buffalo Bill Release	kaf	118.7	113.8	102.4	37.8	28.8	21.8	21.8	19.7	21.8	31.7	119.5	163.2	801.0
Buffalo Bill Release	cfs	1930	1851	1721	615	484	355	355	355	355	533	1943	2743	
Station Gain	kaf	-95.4	-76.6	3.3	55.7	49.2	31.5	35.7	41.1	59.7	28.4	53.8	82.2	268.6
Monthly Inflow	kaf	103.2	106.4	165.2	139.6	107.8	84.0	88.2	88.6	112.2	110.7	308.3	378.1	1792.3
Monthly Inflow	cfs	1678	1730	2776	2270	1812	1366	1434	1595	1825	1860	5014	6354	
Turbine Release	kaf	134.0	130.7	118.5	106.5	131.4	135.8	135.8	122.6	135.7	132.2	232.0	250.6	1765.8
Bypass/Spill/Waste	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
Total Release	kaf	134.0	130.7	118.5	106.5	131.4	135.8	135.8	122.6	135.7	132.2	232.0	250.6	1765.8
Total Release	cfs	2179	2126	1991	1732	2208	2209	2209	2208	2207	2222	3773	4211	
Spring Flow	kaf	4.3	4.3	4.2	4.3	4.2	4.3	4.3	3.9	4.3	4.2	4.3	4.2	50.8
Irrigation Reqmnt	kaf	30.7	27.4	18.6	3.2	0.0	0.0	0.0	0.0	0.0	0.8	11.0	28.6	120.3
Afterbay Rels	kaf	138.3	135.0	122.7	110.8	135.6	140.1	140.1	126.5	140.0	136.4	236.3	254.8	1816.6
Afterbay Rels	cfs	2249	2196	2062	1802	2279	2279	2279	2278	2277	2292	3843	4282	
River Release	kaf	107.6	107.6	104.1	107.6	135.6	140.1	140.1	126.5	140.0	135.6	225.3	226.2	1696.3
River Release	cfs	1750	1750	1749	1750	2279	2279	2279	2278	2277	2279	3664	3801	
Min Release	kaf	107.6	107.6	104.1	107.6	119.0	123.0	123.0	111.1	123.0	135.6	172.2	178.5	1512.3
End-Month Targets	kaf	1020.6			1020.6					807.9			990.2	
End-Month Content	kaf	932.9	908.6	955.3	988.4	964.8	913.0	865.4	831.4	807.9	786.4	862.7	990.2	
End-Month Elevation	ft	3632.26	3629.70	3634.41	3637.35	3635.29	3630.18	3624.67	3620.29	3617.00	3613.71	3624.33	3637.51	
Net Change Content	kaf	-30.8	-24.3	46.7	33.1	-23.6	-51.8	-47.6	-34.0	-23.5	-21.5	76.3	127.5	26.5
Yellowtail Power	2012	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Turbine Release	kaf	134.0	130.7	118.5	106.5	131.4	135.8	135.8	122.6	135.7	132.2	232.0	250.6	1765.8
Generation	gwh	49.826	48.087	43.200	38.226	49.000	50.391	49.771	43.599	48.865	47.005	91.773	102.575	662.318
End-Month Power Cap	mw	280.2	277.7	282.2	285.0	283.1	278.2	273.0	268.8	265.7	262.5	272.6	285.2	
% Max Gen		23	22	21	18	24	24	23	23	23	23	43	49	
Ave kwh/af		372	368	365	359	373	371	367	356	360	356	396	409	375
Upstream Generation	gwh	28.773	28.115	26.012	13.078	10.202	8.287	8.284	7.475	8.290	11.674	33.947	33.829	217.966
Total Generation	gwh	78.599	76.202	69.212	51.304	59.202	58.678	58.055	51.074	57.155	58.679	125.720	136.404	880.284

BIGHORN LAKE



WATER YEAR 2012

Supplemental Information

BHXAOP V1.14 Run: 02-Jul-2012 10:19
 Based on Minimum Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont Elev 3635.19 ft				Maximum Cont Elev 3657.00 ft				Minimum Cont Elev 3547.00 ft				Total	
		2012	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Boysen Release	kaf	79.9	69.2	59.5	46.1	29.8	30.7	30.7	27.8	30.7	44.6	74.4	74.4	597.8	
Boysen Release	cfs	1299	1125	1000	750	501	499	499	501	499	750	1210	1250		
Buffalo Bill Release	kaf	118.7	104.3	82.3	28.3	12.2	12.6	12.6	11.4	12.6	31.7	101.2	105.0	632.9	
Buffalo Bill Release	cfs	1930	1696	1383	460	205	205	205	205	205	533	1646	1765		
Station Gain	kaf	-109.9	-85.0	-11.6	41.7	42.4	25.6	29.1	33.0	52.1	23.5	29.6	1.3	71.8	
Monthly Inflow	kaf	88.7	88.5	130.2	116.1	84.4	68.9	72.4	72.2	95.4	99.8	205.2	180.7	1302.5	
Monthly Inflow	cfs	1443	1439	2188	1888	1418	1121	1177	1300	1552	1677	3337	3037		
Turbine Release	kaf	131.5	130.7	118.7	103.3	99.9	103.3	103.3	93.3	103.3	100.8	129.1	125.7	1342.9	
Bypass/Spill/Waste	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	
Total Release	kaf	131.5	130.7	118.7	103.3	99.9	103.3	103.3	93.3	103.3	100.8	129.1	125.7	1342.9	
Total Release	cfs	2139	2126	1995	1680	1679	1680	1680	1680	1680	1694	2100	2112		
Spring Flow	kaf	4.3	4.3	4.2	4.3	4.2	4.3	4.3	3.9	4.3	4.2	4.3	4.2	50.8	
Irrigation Reqmnt	kaf	28.2	27.4	18.8	0.0	0.0	0.0	0.0	0.0	0.0	0.9	25.8	25.8	126.9	
Afterbay Rels	kaf	135.8	135.0	122.9	107.6	104.1	107.6	107.6	97.2	107.6	105.0	133.4	129.9	1393.7	
Afterbay Rels	cfs	2209	2196	2065	1750	1749	1750	1750	1750	1750	1765	2170	2183		
River Release	kaf	107.6	107.6	104.1	107.6	104.1	107.6	107.6	97.2	107.6	104.1	107.6	104.1	1266.8	
River Release	cfs	1750	1750	1749	1750	1749	1750	1750	1750	1750	1749	1750	1749		
Min Release	kaf	107.6	107.6	104.1	107.6	104.1	107.6	107.6	97.2	107.6	104.1	107.6	104.1	1266.8	
End-Month Targets	kaf	1020.6			997.0					794.6					
End-Month Content	kaf	920.9	878.7	890.2	903.0	887.5	853.1	822.2	801.1	793.2	792.2	868.3	923.3		
End-Month Elevation	ft	3631.03	3626.28	3627.62	3629.08	3627.31	3623.13	3619.03	3615.99	3614.78	3614.62	3625.03	3631.27		
Net Change Content	kaf	-42.8	-42.2	11.5	12.8	-15.5	-34.4	-30.9	-21.1	-7.9	-1.0	76.1	55.0	-40.4	
Yellowtail Power	2012	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total	
Turbine Release	kaf	131.5	130.7	118.7	103.3	99.9	103.3	103.3	93.3	103.3	100.8	129.1	125.7	1342.9	
Generation	gwh	48.583	47.719	42.638	36.172	34.600	35.691	35.359	31.044	35.015	33.980	46.888	46.052	473.741	
End-Month Power Cap	mw	279.0	274.5	275.8	277.2	275.5	271.5	267.6	264.7	263.6	263.4	273.3	279.2		
% Max Gen		23	22	21	17	17	17	17	16	16	16	22	22		
Ave kwh/af		369	365	359	350	346	346	342	333	339	337	363	366	353	
Upstream Generation	gwh	28.608	25.496	20.826	10.249	5.411	5.614	5.621	5.079	5.643	11.167	25.918	25.700	175.332	
Total Generation	gwh	77.191	73.215	63.464	46.421	40.011	41.305	40.980	36.123	40.658	45.147	72.806	71.752	649.073	

BHXAOP V1.14 Run: 02-Jul-2012 10:25
 Based on Maximum Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont Elev 3635.19 ft				Maximum Cont Elev 3657.00 ft				Minimum Cont Elev 3547.00 ft				Total	
		2012	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total
Boysen Release	kaf	79.9	69.2	59.5	46.1	29.8	30.8	30.7	27.8	98.5	133.2	162.2	278.7	1046.4	
Boysen Release	cfs	1299	1125	1000	750	501	501	499	501	1602	2239	2638	4684		
Buffalo Bill Release	kaf	158.5	130.8	110.6	49.9	21.1	21.8	21.8	19.7	21.8	57.5	216.9	263.6	1094.0	
Buffalo Bill Release	cfs	2578	2127	1859	812	355	355	355	355	355	966	3528	4430		
Station Gain	kaf	-45.5	-40.4	7.8	69.7	56.0	37.4	42.2	49.3	67.2	33.3	78.8	211.1	566.9	
Monthly Inflow	kaf	192.9	159.6	177.9	165.7	106.9	90.0	94.7	96.8	187.5	224.0	457.9	753.4	2707.3	
Monthly Inflow	cfs	3137	2596	2990	2695	1797	1464	1540	1743	3049	3764	7447	12661		
Turbine Release	kaf	136.0	181.4	167.8	154.0	153.8	159.0	159.0	143.6	159.1	280.4	460.0	476.0	2630.1	
Bypass/Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.8	66.8	
Total Release	kaf	136.0	181.4	167.8	154.0	153.8	159.0	159.0	143.6	159.1	280.4	460.0	542.8	2696.9	
Total Release	cfs	2212	2950	2820	2505	2585	2586	2586	2586	2588	4712	7481	9122		
Spring Flow	kaf	4.3	4.3	4.2	4.3	4.2	4.3	4.3	3.9	4.3	4.2	4.3	4.2	50.8	
Irrigation Reqmnt	kaf	28.2	27.4	18.8	0.0	0.0	0.0	0.0	0.0	0.0	0.9	25.8	25.8	126.9	
Afterbay Rels	kaf	140.3	185.7	172.0	158.3	158.0	163.3	163.3	147.5	163.4	284.6	464.3	547.0	2747.7	
Afterbay Rels	cfs	2282	3020	2891	2575	2655	2656	2656	2656	2657	4783	7551	9193		
River Release	kaf	112.1	158.3	153.2	158.3	158.0	163.3	163.3	147.5	163.4	283.7	438.5	521.2	2620.8	
River Release	cfs	1823	2575	2575	2575	2655	2656	2656	2656	2657	4768	7132	8759		
Min Release	kaf	107.6	153.7	148.8	153.7	148.8	153.7	153.7	138.8	153.7	148.8	153.7	148.8	1763.8	
End-Month Targets	kaf	1020.6			1020.6					822.0			974.1		
End-Month Content	kaf	1020.6	998.8	1008.9	1020.6	973.7	904.7	840.4	793.6	822.0	765.6	763.5	974.1		
End-Month Elevation	ft	3640.00	3638.23	3639.06	3640.00	3636.08	3629.27	3621.49	3614.84	3619.01	3610.28	3609.92	3636.12		
Net Change Content	kaf	56.9	-21.8	10.1	11.7	-46.9	-69.0	-64.3	-46.8	28.4	-56.4	-2.1	210.6	10.4	
Yellowtail Power	2012	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Total	
Turbine Release	kaf	136.0	181.4	167.8	154.0	153.8	159.0	159.0	143.6	159.1	280.4	460.0	476.0	2630.1	
Generation	gwh	51.587	72.012	65.944	59.773	59.170	60.601	59.545	52.007	59.252	108.237	175.504	194.400	1018.032	
End-Month Power Cap	mw	287.5	285.8	286.6	287.5	283.8	277.3	269.9	263.6	267.6	259.3	258.9	283.8		
% Max Gen		24	34	32	28	29	28	28	27	28	52	82	94		
Ave kwh/af		379	397	393	388	385	381	374	362	372	386	382	408	387	
Upstream Generation	gwh	30.176	29.178	27.377	16.555	8.103	8.402	8.406	7.593	14.053	25.563	33.529	33.774	242.709	
Total Generation	gwh	81.763	101.190	93.321	76.328	67.273	69.003	67.951	59.600	73.305	133.800	209.033	228.174	1260.741	