

RECLAMATION

Managing Water in the West

November 1, 2011

Dear Customer:

Attached are the monthly water supply outlook and projected reservoir and river operating plans prepared for Yellowtail. Streamflows into Bighorn Lake during October were 123% of average. Based on current hydrologic and climatic conditions and the planned releases out of Boysen and Buffalo Bill Reservoirs, the forecasted November runoff into Bighorn Lake is estimated to be about 149,900 acre-feet (103% 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
 November 1, 2011

Present Elevations & Storages:

<u>Reservoir</u>	<u>Elevation</u>	<u>Storage</u>	<u>Percent of Average</u>	<u>Percent Full</u>
Boysen	4722.54	694,529	117	94
Buffalo Bill	5367.81	452,607	108	70
Bighorn Lake	3639.30	1,011,836	106	99

Actual Inflows (1,000 Acre-Feet):

<u>Month</u>	<u>Inflow</u>	<u>Percent of Average</u>
October	122.2	70
November	122.6	84
December	122.7	96
January	121.8	96
February	111.9	86
March	167.4	101
April	245.8	153
May	529.4	201
June	1,004.2	235
July	792.9	275
August	279.2	177
September	196.8	115
<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

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

<u>Month</u>	<u>Gains</u>	<u>Percent of Average</u>
October	28.7	40
November	54.2	89
December	52.1	121
January	50.9	110
February	47.9	90
March	95.6	128
April	47.7	137
May	168.3	280
June	391	369
July	88.4	---
August	-11.6	---
September	8.7	43
<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

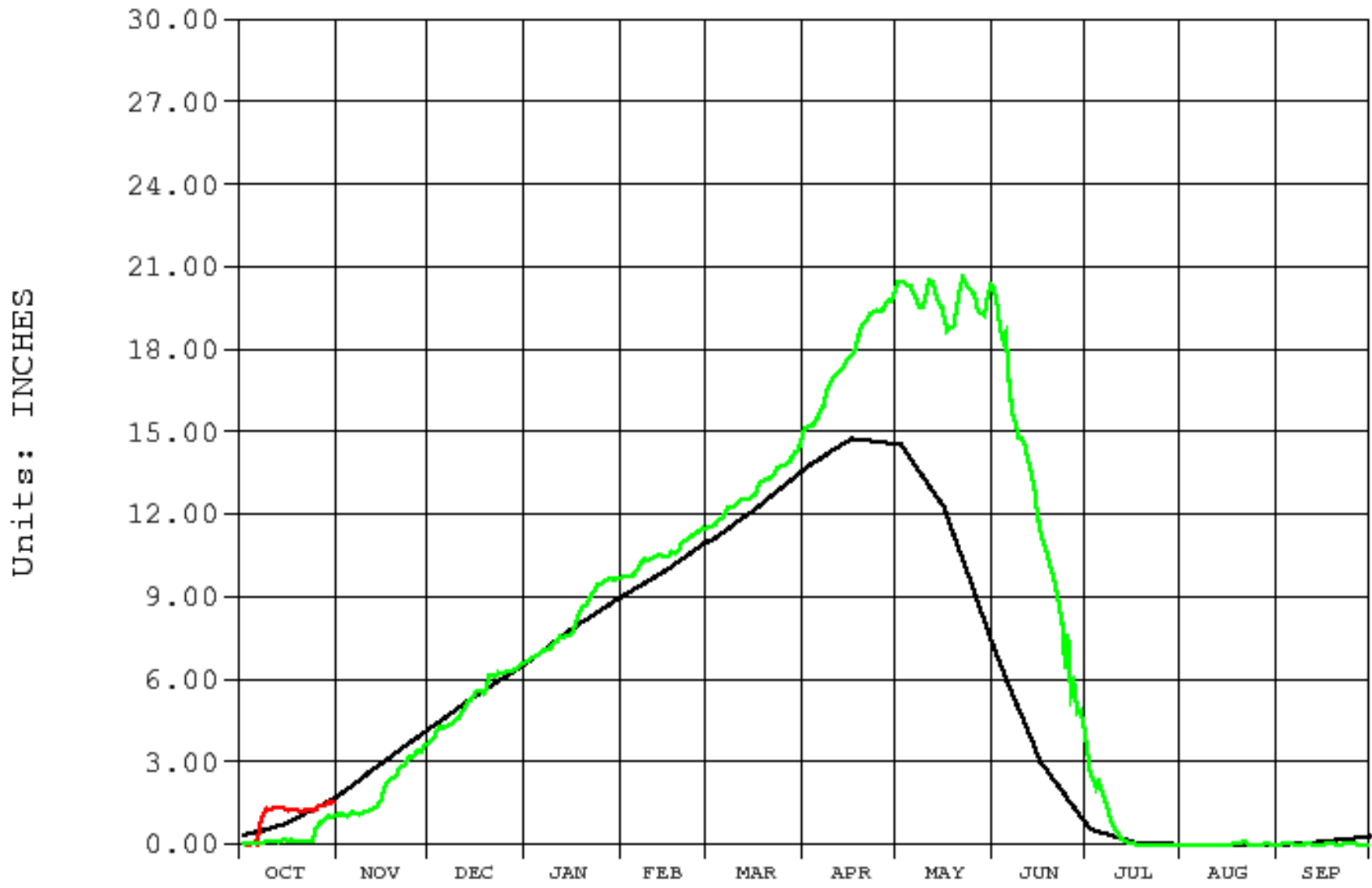
November 1 Runoff Forecast (November Inflows - 1,000 Acre-Feet):

<u>Agency</u>	<u>Inflows</u>	<u>Percent of Average</u>
USBR	149.9	103

Snowpack Conditions:

BASIN Data Site Name	ELEV. (Ft)	SNOW WATER EQUIVALENT %			TOTAL PRECIPITATION %		
		Current	Average	Avg	Current	Average	Avg
UPPER YELLOWSTONE RIVER BASIN							
BEARTOOTH LAKE	9360	2.9	2.7	107	3.5	2.2	159
BOX CANYON	6670	.0	.4	0*	1.8	1.7	106
BRACKETT CREEK	7320	.2	1.2	17*	3.5	2.9	121
BURNT MTN CANYON	5880 7870	.0 .7	.2 .7	0* 100*	2.2 2.3	3.2 1.9	69 121
COLE CREEK	7850	1.1	2.9	38	2.2	3.4	65
EAST BOULDER MINE	6335	.0	-M	*	4.0	-M	*
EVENING STAR	9200	2.3	2.8	82*	5.1	2.9	176
FISHER CREEK	9100	2.6	2.8	93*	5.1	3.4	150
MONUMENT PEAK	8850	.3	2.2	14*	2.4	2.6	92
NORTHEAST ENTRANCE	7350	.0	.3	0*	2.3	1.6	144
PARKER PEAK	9400	2.5	2.6	96	4.5	2.4	188
PLACER BASIN	8830	.9	2.5	36	3.2	3.1	103
PORCUPINE	6500	.0	.2	0*	1.8	2.0	90
SACAJAWEA	6550	.1	.4	25*	4.3	2.6	165
SHOWER FALLS	8100	1.3	2.7	48*	4.4	3.7	119
S FORK SHIELDS	8100	1.6	1.7	94*	5.5	2.9	190
SYLVAN LAKE	8420	.7	2.0	35*	4.4	2.7	163
SYLVAN ROAD	7120	.2	.5	40*	2.3	2.2	105
THUMB DIVIDE	7980	.4	.9	44*	3.2	2.1	152
TWO OCEAN PLATEAU	9240	4.4	3.2	138	4.1	3.2	128
WHITE MILL	8700	1.4	2.1	67*	3.9	2.8	139
WOLVERINE	7650	.7	.5	140*	3.4	1.9	179
YOUNTS PEAK	8350	.8	1.4	57*	2.7	1.9	142
Basin wide percent of average				68*			132
WIND RIVER BASIN (WYOMING)							
BURROUGHS CREEK	8750	.0	1.0	0*	1.6	1.7	94
CASTLE CREEK	8400	.0	-M	*	1.3	-M	*
COLD SPRINGS	9630	.6	1.1	55	2.0	2.0	100
DEER PARK	9700	.9	2.7	33	2.8	2.6	108
HOBBS PARK	10100	2.2	2.3	96	2.8	2.2	127
KIRWIN	9550	1.9	1.9	100	3.1	1.9	163
LITTLE WARM	9370	.0	1.1	0*	1.8	1.8	100
OWL CREEK	8975	.0	.9	0	1.7	1.2	142
SOUTH PASS	9040	.6	1.6	38*	2.3	2.2	105
ST. LAWRENCE ALT	8620	.0	.9	0	1.4	1.8	78
TOGWOTEE PASS	9580	1.6	2.7	59*	3.4	2.9	117
TOWNSEND CREEK	8700	.0	1.1	0	2.8	2.2	127
YOUNTS PEAK	8350	.8	1.4	57*	2.7	1.9	142
Basin wide percent of average				46			116
SHOSHONE RIVER BASIN (WYOMING)							
BLACKWATER	9780	3.5	3.2	109	4.0	2.8	143
EVENING STAR	9200	2.3	2.8	82*	5.1	2.9	176
MARQUETTE	8760	.1	-M	*	3.7	2.4	154
SYLVAN LAKE	8420	.7	2.0	35*	4.4	2.7	163
SYLVAN ROAD	7120	.2	.5	40*	2.3	2.2	105
YOUNTS PEAK	8350	.8	1.4	57*	2.7	1.9	142
Basin wide percent of average				76*			149
BIGHORN RIVER BASIN (WYOMING)							
BALD MTN.	9380	3.6	2.8	129	3.8	2.5	152
BEAR TRAP MEADOW	8200	.0	.6	0	2.0	1.8	111
BLACKWATER	9780	3.5	3.2	109	4.0	2.8	143
BONE SPRINGS DIV	9350	3.8	2.7	141	4.5	2.6	173
EVENING STAR	9200	2.3	2.8	82*	5.1	2.9	176
GRAVE SPRINGS	8550	.0	1.2	0	2.2	2.2	100
KIRWIN	9550	1.9	1.9	100	3.1	1.9	163
MARQUETTE	8760	.1	-M	*	3.7	2.4	154
MIDDLE POWDER	7760	.3	1.3	23*	4.2	2.7	156
OWL CREEK	8975	.0	.9	0	1.7	1.2	142
POWDER RIVER PASS	9480	2.1	1.3	162	3.3	2.0	165
SHELL CREEK	9580	4.3	2.7	159	3.9	2.1	186
SYLVAN LAKE	8420	.7	2.0	35*	4.4	2.7	163
SYLVAN ROAD	7120	.2	.5	40*	2.3	2.2	105
TIMBER CREEK	7950	.0	1.1	0	3.8	1.7	224
YOUNTS PEAK	8350	.8	1.4	57*	2.7	1.9	142
Basin wide percent of average				89			154

Archive Data From 1-OCT Through 30-SEP
 Plotted 10/31/2011 13:09 (Provisional Data Subject to Revision)



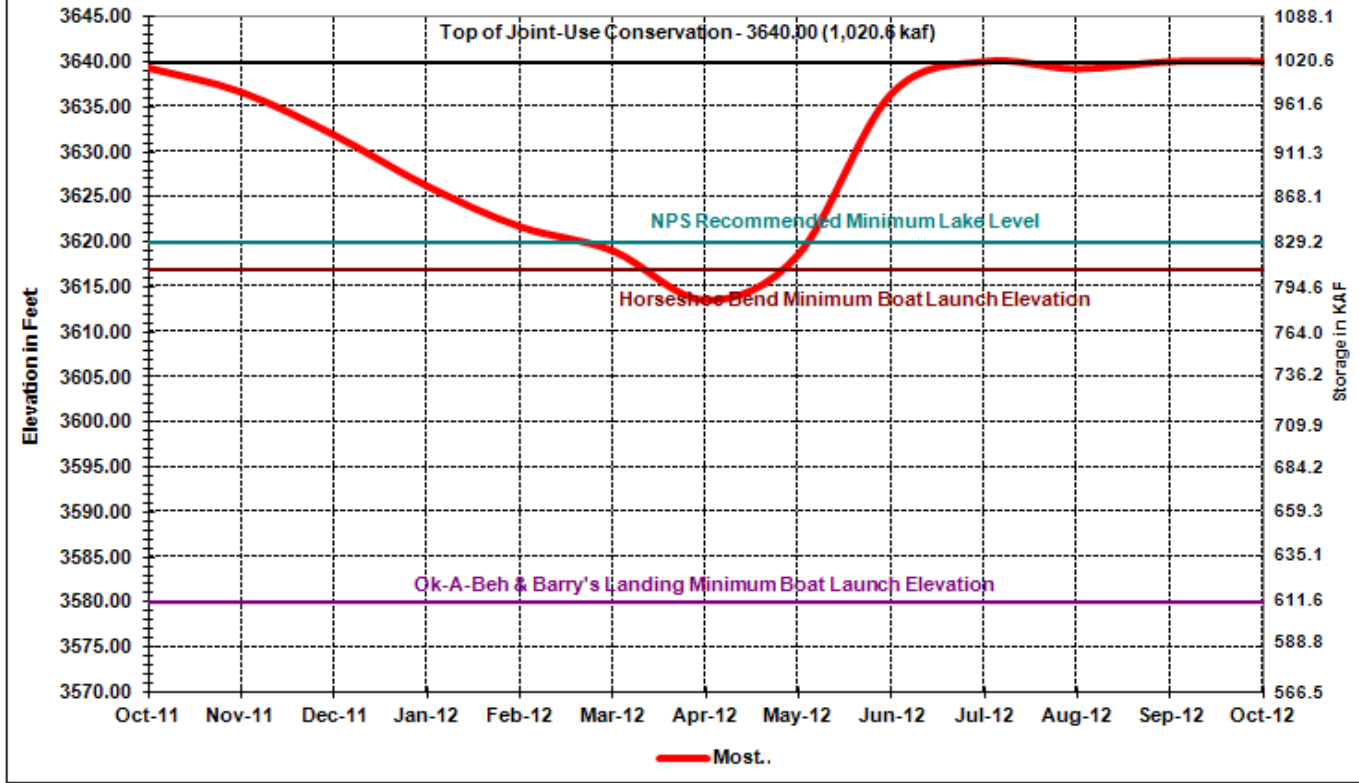
BHR Bighorn Lake (Yellowtail), Bighorn River near Fort Smith, MT
 — SE_AVG Snow Water Equivalent Average (inches) 2012
 — SE Snow Water Equivalent (inches) 2012 2011

BIGHORN LAKE MONTHLY OPERATIONS

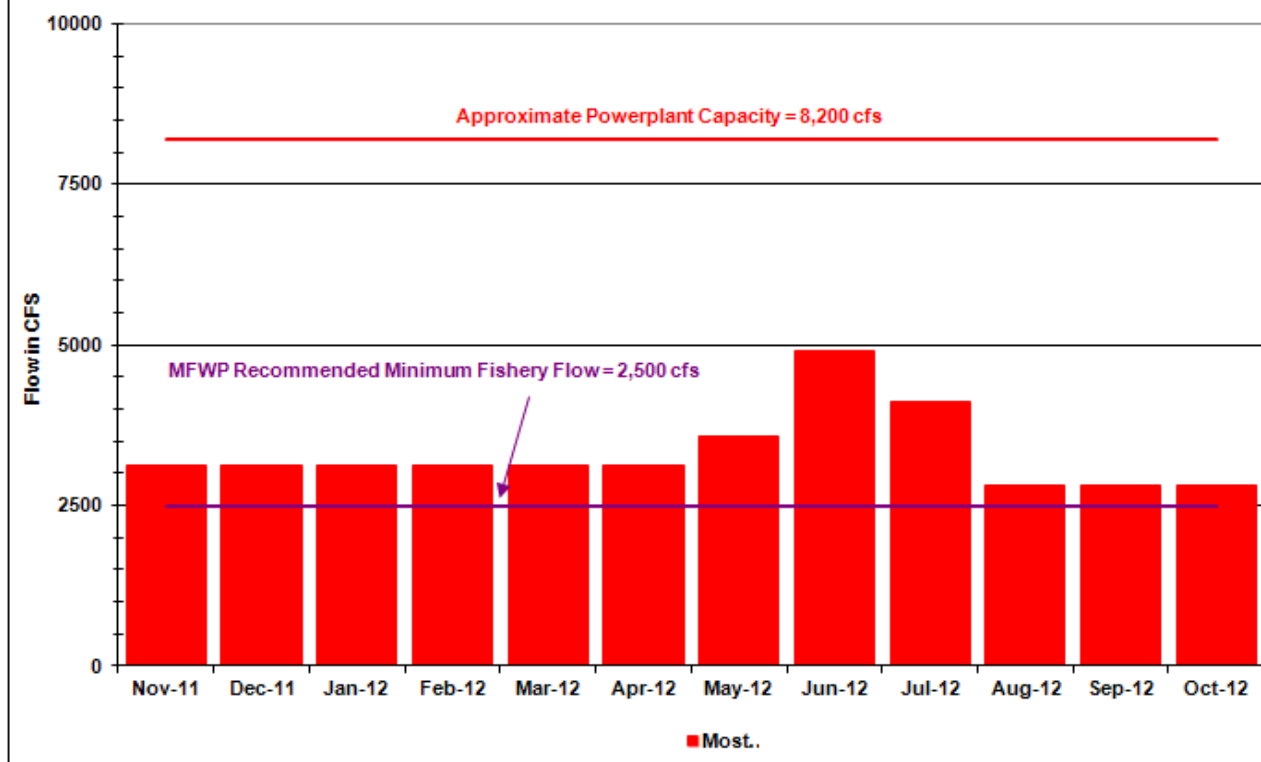
Bighorn Reservoir		Initial Cont		1011.9 kaf		Maximum Cont		1278.9 kaf		Minimum Cont		469.9 kaf		Total
2011	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct		
			Elev	3639.30 ft		Elev	3657.00 ft		Elev	3547.00 ft				
Boysen Release	kaf	56.5	58.4	58.4	54.7	58.4	67.1	140.7	174.4	132.5	100.3	66.0	58.5	1025.9
Boysen Release	cfs	950	950	950	951	950	1128	2288	2931	2155	1631	1109	951	
Buffalo Bill Release	kaf	21.1	21.8	21.8	20.4	21.8	31.7	110.8	164.5	170.2	121.9	102.8	40.2	849.0
Buffalo Bill Release	cfs	355	355	355	355	355	533	1802	2765	2768	1983	1728	654	
Station Gain	kaf	72.3	57.2	56.9	64.8	88.1	47.4	10.0	130.9	17.3	-36.2	23.6	69.6	601.9
Monthly Inflow	kaf	149.9	137.4	137.1	139.9	168.3	146.2	261.5	469.8	320.0	186.0	192.4	168.3	2476.8
Monthly Inflow	cfs	2519	2235	2230	2432	2737	2457	4253	7895	5204	3025	3233	2737	
Turbine Release	kaf	182.0	188.2	188.1	176.0	188.2	183.0	227.6	311.4	276.9	196.1	182.3	168.3	2468.1
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	0.0	0.0
Total Release	kaf	182.0	188.2	188.1	176.0	188.2	183.0	227.6	311.4	276.9	196.1	182.3	168.3	2468.1
Total Release	cfs	3059	3061	3059	3060	3061	3075	3702	5233	4503	3189	3064	2737	
Spring Flow	kaf	4.2	4.3	4.3	4.0	4.3	4.2	4.3	4.2	4.3	4.3	4.2	4.3	50.9
Irrigation Reqmnt	kaf	0.0	0.0	0.0	0.0	0.0	0.9	11.6	23.2	28.2	27.4	18.8	0.0	110.1
Afterbay Rels	kaf	186.2	192.5	192.4	180.0	192.5	187.2	231.9	315.6	281.2	200.4	186.5	172.6	2519.0
Afterbay Rels	cfs	3129	3131	3129	3129	3131	3146	3771	5304	4573	3259	3134	2807	
River Release	kaf	186.2	192.5	192.4	180.0	192.5	186.3	220.3	292.4	253.0	173.0	167.7	172.6	2408.9
River Release	cfs	3129	3131	3129	3129	3131	3131	3583	4914	4115	2814	2818	2807	
Min Release	kaf	148.8	153.7	153.7	143.8	153.7	148.8	153.7	148.8	153.7	153.7	148.8	153.7	1814.9
End-Month Targets	kaf					822.0				1020.6			1020.6	
End-Month Content	kaf	979.8	929.0	878.0	841.9	822.0	785.2	819.1	977.5	1020.6	1010.5	1020.6	1020.6	
End-Month Elevation	ft	3636.61	3631.86	3626.20	3621.68	3619.01	3613.52	3618.60	3636.41	3640.00	3639.19	3640.00	3640.00	
Net Change Content	kaf	-32.1	-50.8	-51.0	-36.1	-19.9	-36.8	33.9	158.4	43.1	-10.1	10.1	0.0	8.7
Yellowtail Power	2011	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Turbine Release	kaf	182.0	188.2	188.1	176.0	188.2	183.0	227.6	311.4	276.9	196.1	182.3	168.3	2468.1
Generation	gwh	72.968	74.457	73.153	67.398	71.328	68.610	85.283	120.887	111.127	79.104	73.537	67.995	965.847
End-Month Power Cap	mw	279.6	274.5	268.7	264.3	261.6	256.4	261.2	279.4	283.4	282.5	283.4	283.4	
% Max Gen		35	35	34	34	33	33	40	58	52	37	35	32	
Ave kwh/af		401	396	389	383	379	375	375	388	401	403	403	404	391
Upstream Generation	gwh	2.161	3.915	5.716	5.320	5.679	13.139	33.241	33.823	35.242	32.362	27.191	13.600	211.389
Total Generation	gwh	75.129	78.372	78.869	72.718	77.007	81.749	118.524	154.710	146.369	111.466	100.728	81.595	1177.236

BIGHORN LAKE

BIGHORN LAKE ELEVATION



BIGHORN RIVER FLOW BELOW AFTERBAY



WATER YEAR 2012

Supplemental Information

BHXAOP V1.12 Run: 01-Nov-2011 16:20
 Based on Minimum Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont		1011.9 kaf		Maximum Cont		1278.9 kaf		Minimum Cont		469.9 kaf		Total
		Elev		3639.30 ft		Elev		3657.00 ft		Elev		3547.00 ft		
2011		Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
Boysen Release	kaf	56.5	58.4	58.5	54.7	58.4	44.6	67.6	69.9	76.9	69.2	59.5	46.1	720.3
Boysen Release	cfs	950	950	951	951	950	750	1099	1175	1251	1125	1000	750	
Buffalo Bill Release	kaf	21.1	21.8	21.8	20.4	21.8	31.7	101.2	105.0	118.7	104.3	82.3	33.7	683.8
Buffalo Bill Release	cfs	355	355	355	355	355	533	1646	1765	1930	1696	1383	548	
Station Gain	kaf	61.3	48.5	48.3	55.0	74.9	41.8	18.6	48.4	-55.1	-45.6	3.7	47.8	347.6
Monthly Inflow	kaf	138.9	128.7	128.6	130.1	155.1	118.1	187.4	223.3	140.5	127.9	145.5	127.6	1751.7
Monthly Inflow	cfs	2334	2093	2091	2262	2522	1985	3048	3753	2285	2080	2445	2075	
Turbine Release	kaf	182.0	188.2	188.2	157.1	155.8	115.7	130.3	138.0	146.9	146.1	133.6	118.7	1800.6
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	182.0	188.2	188.2	157.1	155.8	115.7	130.3	138.0	146.9	146.1	133.6	118.7	1800.6
Total Release	cfs	3059	3061	3061	2731	2534	1944	2119	2319	2389	2376	2245	1930	
Spring Flow	kaf	4.2	4.3	4.3	4.0	4.3	4.2	4.3	4.2	4.3	4.3	4.2	4.3	50.9
Irrigation Reqmnt	kaf	0.0	0.0	0.0	0.0	0.0	0.9	11.6	23.2	28.2	27.4	18.8	0.0	110.1
Afterbay Rels	kaf	186.2	192.5	192.5	161.1	160.1	119.9	134.6	142.2	151.2	150.4	137.8	123.0	1851.5
Afterbay Rels	cfs	3129	3131	3131	2801	2604	2015	2189	2390	2459	2446	2316	2000	
River Release	kaf	186.2	192.5	192.5	161.1	160.1	119.0	123.0	119.0	123.0	123.0	119.0	123.0	1741.4
River Release	cfs	3129	3131	3131	2801	2604	2000	2000	2000	2000	2000	2000	2000	
Min Release	kaf	186.2	192.5	192.5	161.1	123.0	119.0	123.0	119.0	123.0	123.0	119.0	123.0	1704.3
End-Month Targets	kaf					822.0				1020.6				1020.6
End-Month Content	kaf	968.8	909.3	849.7	822.7	822.0	824.4	881.5	966.8	960.4	942.2	954.1	963.0	
End-Month Elevation	ft	3635.64	3629.78	3622.70	3619.10	3619.01	3619.34	3626.61	3635.46	3634.89	3633.17	3634.30	3635.12	
Net Change Content	kaf	-43.1	-59.5	-59.6	-27.0	-0.7	2.4	57.1	85.3	-6.4	-18.2	11.9	8.9	-48.9
Yellowtail Power	2011	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Turbine Release	kaf	182.0	188.2	188.2	157.1	155.8	115.7	130.3	138.0	146.9	146.1	133.6	118.7	1800.6
Generation	gwh	72.842	74.081	72.579	59.636	58.835	43.706	49.770	54.050	58.292	57.743	52.747	47.025	701.306
End-Month Power Cap	mw	278.5	272.3	265.3	261.7	261.6	261.9	269.2	278.4	277.7	275.9	277.1	278.0	
% Max Gen		35	35	34	30	27	21	23	26	27	27	25	22	
Ave kwh/af		400	394	386	380	378	378	382	392	397	395	395	396	389
Upstream Generation	gwh	2.159	4.224	5.701	5.299	5.649	11.152	25.176	25.218	27.582	24.900	20.427	9.777	167.264
Total Generation	gwh	75.001	78.305	78.280	64.935	64.484	54.858	74.946	79.268	85.874	82.643	73.174	56.802	868.570

BHXAOP V1.12 Run: 01-Nov-2011 16:21
 Based on Maximum Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont Elev 3639.30 ft		1011.9 kaf 3639.30 ft		Maximum Cont Elev 3657.00 ft		1278.9 kaf 3657.00 ft		Minimum Cont Elev 3547.00 ft		469.9 kaf 3547.00 ft		Total
	2011	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
Boysen Release	kaf	56.5	58.4	58.4	54.7	58.4	127.1	240.8	281.0	290.3	120.0	84.0	58.5	1488.1
Boysen Release	cfs	950	950	950	951	950	2136	3916	4722	4721	1952	1412	951	
Buffalo Bill Release	kaf	21.1	21.8	21.8	20.4	21.8	74.8	180.1	292.0	273.2	151.3	102.7	40.2	1221.2
Buffalo Bill Release	cfs	355	355	355	355	355	1257	2929	4907	4443	2461	1726	654	
Station Gain	kaf	76.2	60.3	60.1	68.4	93.1	27.5	-14.5	246.9	138.3	-23.6	40.5	84.4	857.6
Monthly Inflow	kaf	153.8	140.5	140.3	143.5	173.3	229.4	406.4	819.9	701.8	247.7	227.2	183.1	3566.9
Monthly Inflow	cfs	2585	2285	2282	2495	2818	3855	6609	13779	11414	4028	3818	2978	
Turbine Release	kaf	182.0	188.2	188.2	176.0	206.9	326.3	418.9	499.3	521.6	247.7	227.3	183.0	3365.4
Bypass/Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	89.7	103.1	0.0	0.0	0.0	192.8
Total Release	kaf	182.0	188.2	188.2	176.0	206.9	326.3	418.9	589.0	624.7	247.7	227.3	183.0	3558.2
Total Release	cfs	3059	3061	3061	3060	3365	5484	6813	9898	10160	4028	3820	2976	
Spring Flow	kaf	4.2	4.3	4.3	4.0	4.3	4.2	4.3	4.2	4.3	4.3	4.2	4.3	50.9
Irrigation Reqmnt	kaf	0.0	0.0	0.0	0.0	0.0	0.9	11.6	23.2	28.2	27.4	18.8	0.0	110.1
Afterbay Rels	kaf	186.2	192.5	192.5	180.0	211.2	330.5	423.2	593.2	629.0	252.0	231.5	187.3	3609.1
Afterbay Rels	cfs	3129	3131	3131	3129	3435	5554	6883	9969	10230	4098	3890	3046	
River Release	kaf	186.2	192.5	192.5	180.0	211.2	329.6	411.6	570.0	600.8	224.6	212.7	187.3	3499.0
River Release	cfs	3129	3131	3131	3129	3435	5539	6694	9579	9771	3653	3575	3046	
Min Release	kaf	186.2	192.5	192.5	180.0	192.5	148.8	153.7	148.8	153.7	153.7	148.8	153.7	2004.9
End-Month Targets	kaf					822.0				1020.6			1020.6	
End-Month Content	kaf	983.7	936.0	888.1	855.6	822.0	725.1	712.6	943.5	1020.6	1020.6	1020.5	1020.6	
End-Month Elevation	ft	3636.95	3632.56	3627.38	3623.45	3619.01	3602.90	3600.52	3633.30	3640.00	3640.00	3639.99	3640.00	
Net Change Content	kaf	-28.2	-47.7	-47.9	-32.5	-33.6	-96.9	-12.5	230.9	77.1	0.0	-0.1	0.1	8.7
Yellowtail Power	2011	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Total
Turbine Release	kaf	182.0	188.2	188.2	176.0	206.9	326.3	418.9	499.3	521.6	247.7	227.3	183.0	3365.4
Generation	gwh	73.013	74.590	73.408	67.689	78.617	120.886	151.674	188.957	208.191	100.074	91.830	73.933	1302.862
End-Month Power Cap	mw	280.0	275.2	269.9	266.0	261.6	246.7	244.5	276.0	283.4	283.4	283.3	283.4	
% Max Gen		35	35	34	34	37	58	71	91	97	47	44	35	
Ave kwh/af		401	396	390	385	380	370	362	378	399	404	404	404	387
Upstream Generation	gwh	2.162	3.923	5.734	5.340	5.710	29.441	33.718	33.629	35.222	34.104	28.719	13.610	231.312
Total Generation	gwh	75.175	78.513	79.142	73.029	84.327	150.327	185.392	222.586	243.413	134.178	120.549	87.543	1534.174