

RECLAMATION

Managing Water in the West

June 1, 2009

Dear Customer:

Attached are the monthly water supply outlook and projected reservoir and river operating plans prepared in June. Storage in Bighorn Lake on June 1 was 105 percent of average and 2.6 feet higher than on May 1. Based on streamflow accretions accompanied by the planned releases out of Boysen and Buffalo Bill Reservoirs and the water supply forecast prepared on June 1, the June-July inflow to Bighorn Lake is expected to be 92 percent 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
 June 1, 2009

Present Elevations & Storages:

<u>Reservoir</u>	<u>Elevation</u>	<u>Storage</u>	<u>Percent of Normal</u>
Boysen	4718.23	617,767	112
Buffalo Bill	5379.30	536,030	122
Bighorn Lake	3626.10	923,681	105

Actual Inflows (1,000 Acre-Feet):

<u>Month</u>	<u>Inflow</u>	<u>Percent of Normal</u>
June	595.1	144
July	330.6	114
August	129.6	81
September	184.6	107
<i>April-July, 2008</i>	<i>1,298.3</i>	<i>117</i>
<i>WY-2008 Total</i>	<i>2,133.2</i>	<i>91</i>
October	151.2	83
November	118.9	78
December	98.0	71
January	112.0	84
February	113.0	84
March	138.6	82
April	142.6	87
May	268.3	109

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

<u>Month</u>	<u>Gains</u>	<u>Percent of Normal</u>
June	179.7	118
July	29.4	535
August	-19.1	---
September	63.4	138
<i>April-July, 2008</i>	<i>350.3</i>	<i>122</i>
<i>WY-2008 Total</i>	<i>702.8</i>	<i>100</i>
October	70.3	90
November	51.2	79
December	33.0	71
January	47.2	101
February	54.2	96
March	67.8	88
April	55.5	120
May	47.7	57

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

<u>Agency</u>	<u>Gains</u>	<u>Percent of Normal</u>
USBR	109.6	70
	<u>Inflows</u>	
USBR	645.1	92

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
 Based on Mountain Data from NRCS SNOTEL Sites
 As of MONDAY: JUNE 1 , 2009

BASIN	ELEV.	SNOW WATER EQUIVALENT			TOTAL PRECIPITATION		
Data Site Name	(Ft)	%			%		
		Current	Average	Avg	Current	Average	Avg

UPPER YELLOWSTONE RIVER BASIN

BEARTOOTH LAKE	9360	18.8	20.6	91	27.6	26.9	103
BOX CANYON	6670	.0	.0	100	21.0	18.1	116
BRACKETT CREEK	7320	5.3	5.5	96	38.1	36.7	104
BURNT MTN	5880	.0	.0	100	22.0	25.1	88
CANYON	7870	.0	1.7	0	20.5	20.4	100
COLE CREEK	7850	9.4	11.4	82	21.5	27.2	79
EAST BOULDER MINE	6335	.0	-M	*	19.6	-M	*
EVENING STAR	9200	19.7	27.1	73	40.3	34.3	117
FISHER CREEK	9100	25.6	30.4	84	45.5	46.5	98
MONUMENT PEAK	8850	15.2	16.4	93	34.1	28.9	118
NORTHEAST ENTRANCE	7350	.0	.5	0	18.3	17.5	105
PARKER PEAK	9400	11.9	18.9	63	24.8	23.1	107
PLACER BASIN	8830	13.3	15.1	88	31.7	28.9	110
PORCUPINE	6500	.0	.0	100	17.3	18.7	93
SACAJAWEA	6550	.0	.0	100	35.4	33.0	107
SHOWER FALLS	8100	24.5	20.9	117	38.4	36.6	105
S FORK SHIELDS	8100	8.1	12.7	64	29.4	31.0	95
SYLVAN LAKE	8420	4.8	12.1	40	30.4	28.9	105
SYLVAN ROAD	7120	.0	.1	0	25.4	23.2	109
THUMB DIVIDE	7980	.0	2.4	0	27.7	24.7	112
TWO OCEAN PLATEAU	9240	32.0	25.6	125	37.8	36.2	104
WHITE MILL	8700	15.2	18.6	82	31.7	35.1	90
WOLVERINE	7650	.0	.0	100	17.2	18.2	95
YOUNTS PEAK	8350	4.0	7.6	53	20.9	22.0	95

Basin wide percent of average

84

102

WIND RIVER BASIN (WYOMING)

BURROUGHS CREEK	8750	1.9	3.8	50	22.5	22.5	100
COLD SPRINGS	9630	.0	1.1	0	16.5	17.0	97
DEER PARK	9700	3.6	8.5	42	24.7	30.8	80
HOBBS PARK	10100	5.6	10.5	53	22.1	20.9	106
KIRWIN	9550	.0	5.8	0	20.1	17.4	116
LITTLE WARM	9370	.0	2.2	0	20.0	19.9	101
OWL CREEK	8975	.0	.6	0	11.3	11.0	103
SOUTH PASS	9040	.0	6.8	0	21.3	25.9	82
ST. LAWRENCE ALT	8620	.0	.7	0	15.2	15.1	101
TOGWOTEE PASS	9580	20.1	22.4	90	36.8	32.6	113
TOWNSEND CREEK	8700	.0	1.9	0	18.5	18.7	99
YOUNTS PEAK	8350	4.0	7.6	53	20.9	22.0	95

Basin wide percent of average

49

98

SHOSHONE RIVER BASIN (WYOMING)

BLACKWATER	9780	20.3	25.1	81	31.1	28.8	108
EVENING STAR	9200	19.7	27.1	73	40.3	34.3	117
MARQUETTE	8760	.0	4.5	0	14.1	17.9	79
SYLVAN LAKE	8420	4.8	12.1	40	30.4	28.9	105
SYLVAN ROAD	7120	.0	.1	0	25.4	23.2	109
YOUNTS PEAK	8350	4.0	7.6	53	20.9	22.0	95

Basin wide percent of average

64

105

BIGHORN RIVER BASIN (WYOMING)

BALD MTN.	9380	11.3	17.0	66	20.2	25.2	80
BEAR TRAP MEADOW	8200	.0	.0	100	13.1	14.1	93
BLACKWATER	9780	20.3	25.1	81	31.1	28.8	108
BONE SPRINGS DIV	9350	1.4	8.8	16	19.3	22.2	87
EVENING STAR	9200	19.7	27.1	73	40.3	34.3	117
GRAVE SPRINGS	8550	.0	2.0	0	13.1	16.0	82
KIRWIN	9550	.0	5.8	0	20.1	17.4	116
MARQUETTE	8760	.0	4.5	0	14.1	17.9	79
MIDDLE POWDER	7760	.0	3.0	0	14.5	19.0	76
OWL CREEK	8975	.0	.6	0	11.3	11.0	103
POWDER RIVER PASS	9480	.0	2.6	0	19.8	19.5	102
SHELL CREEK	9580	6.7	10.9	61	20.5	20.4	100
SYLVAN LAKE	8420	4.8	12.1	40	30.4	28.9	105
SYLVAN ROAD	7120	.0	.1	0	25.4	23.2	109
TIMBER CREEK	7950	.0	.6	0	13.2	14.3	92
YOUNTS PEAK	8350	4.0	7.6	53	20.9	22.0	95

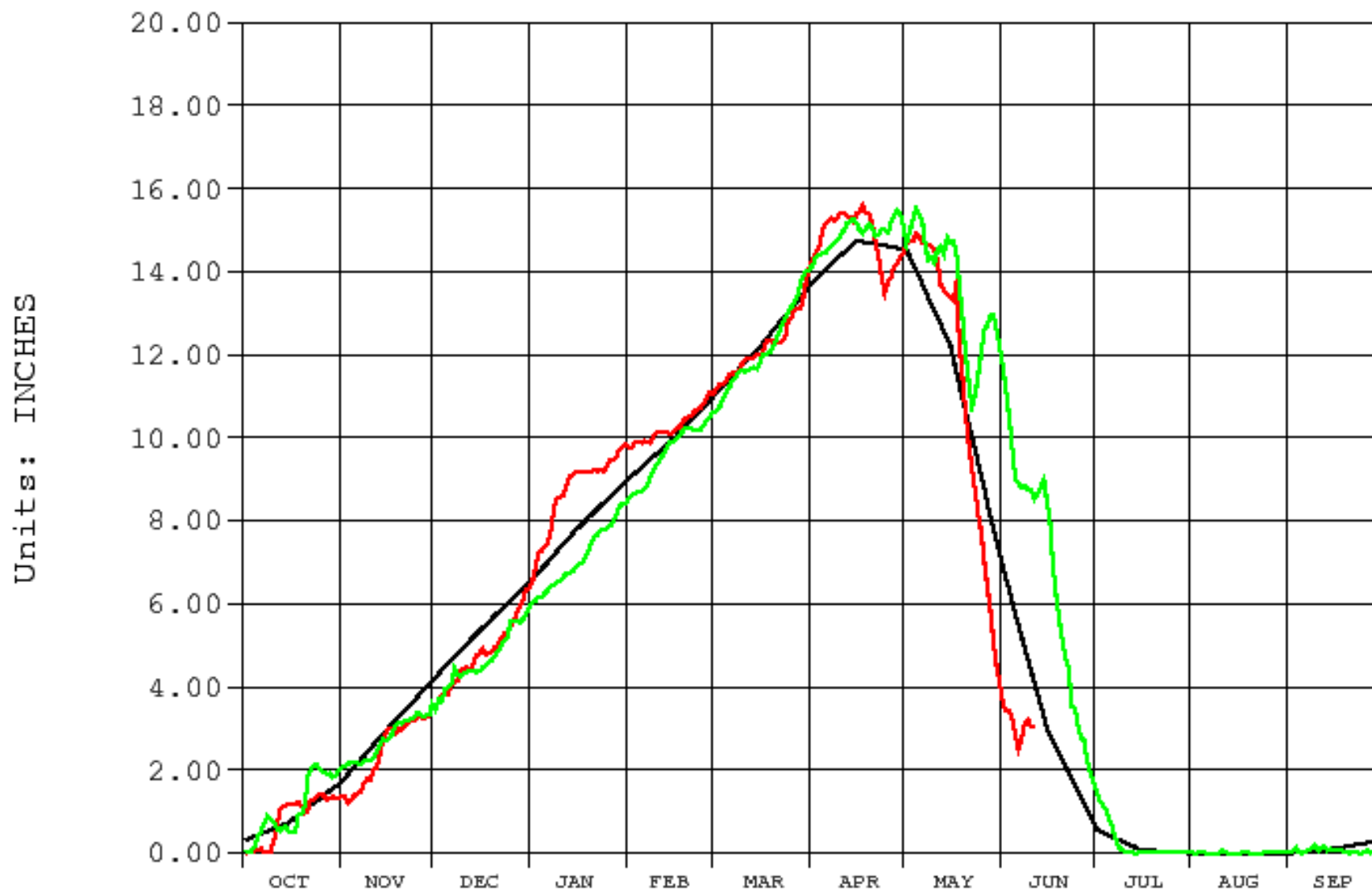
Basin wide percent of average

53

98

Archive Data From 1-OCT Through 30-SEP

Plotted 06/11/2009 13:18



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

SE_AVG Snow Water Equivalent Average (inches)

SE Snow Water Equivalent (inches)

2009

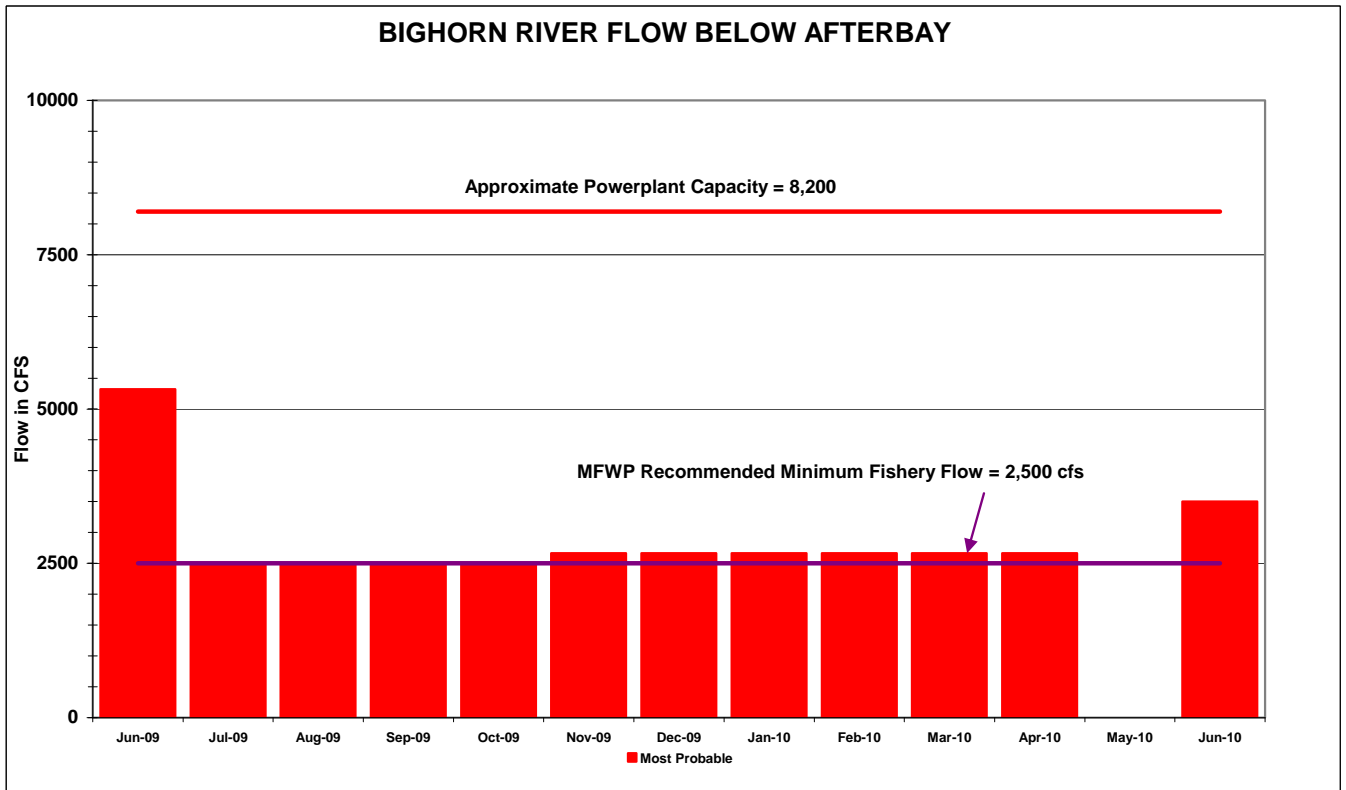
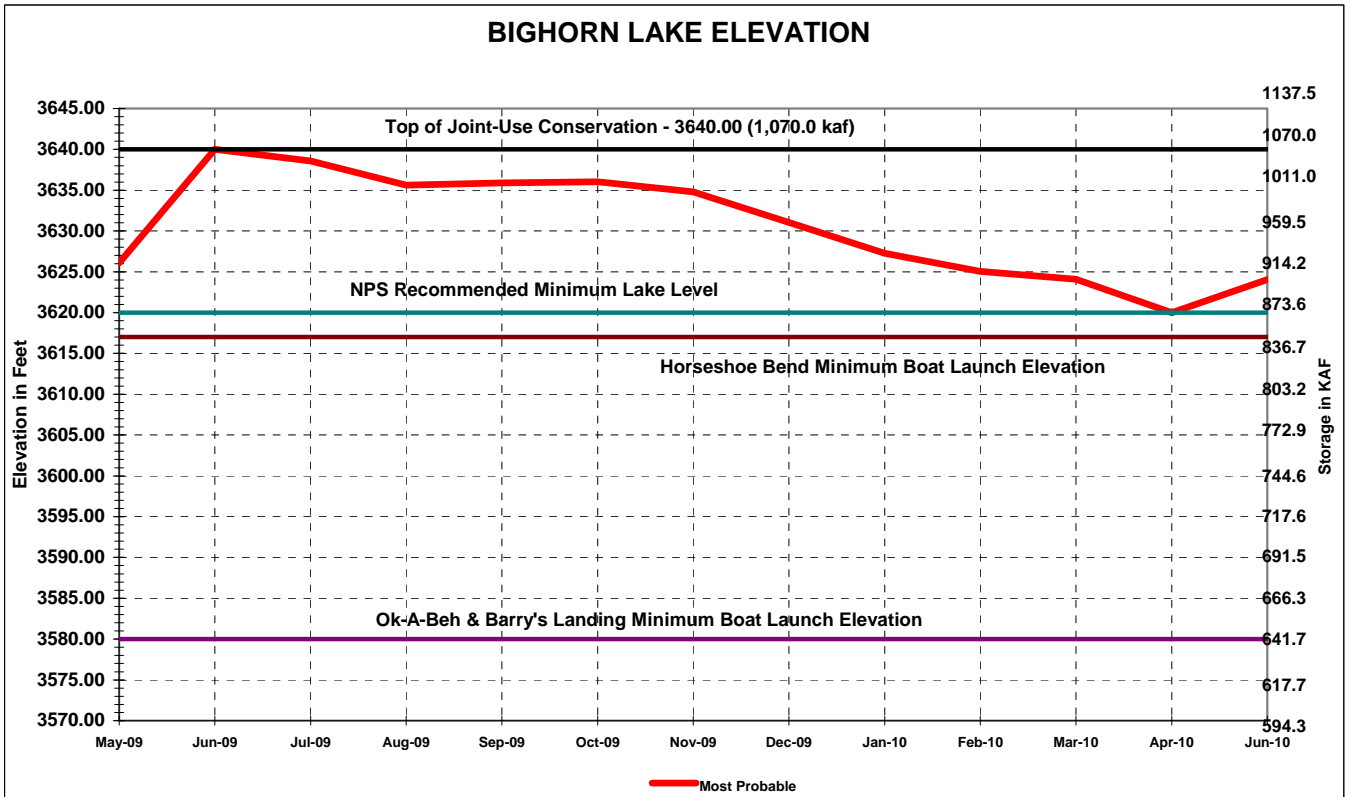
2009 2008

BHXAOP V1.12 Run: 11-Jun-2009 18:42
 Based on Most Probable Inflow Forecast

BIGHORN LAKE MONTHLY OPERATIONS

Bighorn Reservoir		Initial Cont 923.7 kaf Elev 3626.10 ft				Maximum Cont 1328.4 kaf Elev 3657.00 ft				Minimum Cont 493.6 kaf Elev 3547.00 ft				Total
	2009	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	
Boysen Release	kaf	157.3	83.0	69.5	56.6	58.4	56.6	58.4	58.4	52.8	58.4	56.6	116.0	882.0
Boysen Release	cfs	2644	1350	1130	951	950	951	950	950	951	950	951	1887	
Buffalo Bill Riv Flo	kaf	218.7	88.3	73.5	71.2	26.2	25.4	21.5	21.5	19.4	21.5	24.4	87.1	698.7
Buffalo Bill Riv Flo	cfs	3675	1436	1195	1197	426	427	350	350	349	350	410	1417	
Station Gain	kaf	109.6	-11.8	-1.2	38.6	70.6	58.3	41.1	44.0	52.5	71.8	41.2	65.1	579.8
Monthly Inflow	kaf	485.6	159.5	141.8	166.4	155.2	140.3	121.0	123.9	124.7	151.7	122.2	268.2	2160.5
Monthly Inflow	cfs	8161	2594	2306	2796	2524	2358	1968	2015	2245	2467	2054	4362	
Turbine Release	kaf	339.3	177.1	176.2	163.4	153.5	154.5	159.7	159.7	144.2	159.7	155.1	235.5	2177.9
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	339.3	177.1	176.2	163.4	153.5	154.5	159.7	159.7	144.2	159.7	155.1	235.5	2177.9
Total Release	cfs	5702	2880	2866	2746	2496	2596	2597	2597	2596	2597	2607	3830	
Spring Flow	kaf	4.2	4.3	4.3	4.2	4.3	4.2	4.3	4.3	3.9	4.3	4.2	4.3	50.8
Irrigation Reqmnt	kaf	26.8	27.7	26.8	18.8	4.1	0.0	0.0	0.0	0.0	0.0	0.6	24.6	129.4
Afterbay Rels	kaf	343.5	181.4	180.5	167.6	157.8	158.7	164.0	164.0	148.1	164.0	159.3	239.8	2228.7
Afterbay Rels	cfs	5773	2950	2936	2817	2566	2667	2667	2667	2667	2667	2677	3900	
River Release	kaf	316.7	153.7	153.7	148.8	153.7	158.7	164.0	164.0	148.1	164.0	158.7	215.2	2099.3
River Release	cfs	5322	2500	2500	2501	2500	2667	2667	2667	2667	2667	2667	3500	
Min Release	kaf	148.8	153.7	153.7	148.8	153.7	148.8	153.7	153.7	138.8	153.7	148.8	215.2	1871.4
End-Month Targets	kaf	1070.0				1070.0						873.6		
End-Month Content	kaf	1070.0	1052.4	1018.0	1021.0	1022.7	1008.5	969.8	934.0	914.5	906.5	873.6	906.3	
End-Month Elevation	ft	3640.00	3638.57	3635.62	3635.89	3636.04	3634.77	3631.05	3627.26	3625.04	3624.09	3620.00	3624.07	
Net Change Content	kaf	146.3	-17.6	-34.4	3.0	1.7	-14.2	-38.7	-35.8	-19.5	-8.0	-32.9	32.7	-17.4
Yellowtail Power	2009	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Total
Turbine Release	kaf	339.3	177.1	176.2	163.4	153.5	154.5	159.7	159.7	144.2	159.7	155.1	235.5	2177.9
Generation	gwh	136.076	72.429	71.504	65.993	62.040	62.324	63.892	63.130	56.480	62.258	60.037	91.156	867.319
End-Month Power Cap	mw	287.5	286.1	283.1	283.4	283.5	282.3	278.6	275.0	272.9	272.0	268.2	272.0	
% Max Gen		66	34	33	32	29	30	30	29	29	29	29	43	
Ave kwh/af		401	409	406	404	404	403	400	395	392	390	387	387	398
Upstream Generation	gwh	33.207	30.814	28.710	26.396	13.397	11.870	10.862	10.791	9.682	10.678	12.238	32.616	231.261
Total Generation	gwh	169.283	103.243	100.214	92.389	75.437	74.194	74.754	73.921	66.162	72.936	72.275	123.772	1098.580

BIGHORN LAKE



WATER YEAR 2009