

# RECLAMATION

## *Managing Water in the West*

October 1, 2008

Dear Customer:

Attached is the monthly water supply outlook and projected reservoir and river operating plans as prepared in October 2008. Due to a gate failure at Hebgen Dam resulting in unusually large releases out of Hebgen Dam, streamflows into Canyon Ferry increased considerably from only 65 percent of average in August to 115 percent of average during September. At this time, it is anticipated, the fall and winter releases from Canyon Ferry to the Missouri River downstream of Holter Dam will be maintained at or above 4,100 cfs. If you have any questions or concerns or need further information, please call me during the day 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

**CANYON FERRY RESERVOIR OPERATIONS**  
**Water Supply Forecasts and Reservoir Operations**  
**October 1, 2008**

**Present Elevation & Storage:** 3792.88 & 1,756,385 acre-feet (103 percent of normal)

**Actual Inflows (1,000 Acre-Feet):**

<u>Month</u>	<u>Inflow</u>	<u>Percent of Normal</u>
<i>April-July, 2007</i>	<i>1,091.1</i>	<i>54</i>
<i>WY-2007 Total</i>	<i>2577.2</i>	<i>65</i>
October	188.8	66
November	179.7	61
December	172.9	71
January	152.4	69
February	182.0	82
March	197.2	73
April	220.5	63
May	581.0	101
June	967.1	126
July	430.6	127
<i>April-July, 2008</i>	<i>2,199.2</i>	<i>108</i>
August	111.2	65
September	244.7	115

**October 1 Runoff Forecast - (1,000 Acre-Feet):**

<u>Agency</u>	<u>Inflow</u>	<u>Percent of Normal</u>
USBR	181.6	65
NRCS	N.A.	----
<u>CORPS</u>	<u>N.A.</u>	<u>----</u>
<b>Average</b>	<b>181.6</b>	<b>65</b>

**Snowpack Conditions:**

**No Snow Data Information Available Until November 1**

CANYON FERRY LAKE MONTHLY OPERATIONS

Canyon Ferry Reservoir		Initial Cont Elev 1756.4 kaf 3792.88 ft				Maximum Cont Elev 1993.0 kaf 3800.00 ft				Minimum Cont Elev 445.5 kaf 3732.31 ft				Total
	2008	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
Reservoir Inflow	kaf	181.6	201.2	174.2	168.1	175.0	225.5	321.6	514.0	618.9	258.4	118.0	155.7	3112.2
Evaporation Loss	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
HV Canal Diversions	kaf	0.0	0.0	0.0	0.0	0.0	4.0	11.0	22.0	17.0	21.0	21.0	12.0	108.0
HV Pump Turbines	kaf	0.0	0.0	0.0	0.0	0.0	5.3	14.6	27.0	18.2	21.0	22.2	13.7	122.0
Turbine Release	kaf	240.9	234.2	252.3	252.3	227.9	247.1	266.4	286.6	317.8	241.5	245.6	222.6	3035.2
Turbine Release	cfs	3918	3936	4103	4103	4104	4019	4477	4661	5341	3928	3994	3741	
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
River Release	kaf	240.9	234.2	252.3	252.3	227.9	252.4	281.0	313.6	336.0	262.5	267.8	236.3	3157.2
River Release	cfs	3918	3936	4103	4103	4104	4105	4722	5100	5647	4269	4355	3971	
Min Release	cfs	3918	3936	3939	3928	3893	3880	3911	3959	3707	3981	3975	3944	
Total Dam Release	kaf	240.9	234.2	252.3	252.3	227.9	256.4	292.0	335.6	353.0	283.5	288.8	248.3	3265.2
Total Dam Release	cfs	3918	3936	4103	4103	4104	4170	4907	5458	5932	4611	4697	4173	
End-Month Content	kaf	1697.1	1664.1	1586.0	1501.8	1448.9	1418.0	1447.6	1626.0	1891.9	1866.8	1696.0	1603.4	
End-Month Elevation	ft	3791.0	3790.0	3787.6	3784.8	3783.1	3782.0	3783.0	3788.8	3797.0	3796.3	3791.0	3788.1	
Net Change	kaf	-59.3	-33.0	-78.1	-84.2	-52.9	-30.9	29.6	178.4	265.9	-25.1	-170.8	-92.6	-153.0
Canyon Ferry Power	2008	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	cfs	3918	3936	4103	4103	4104	4019	4477	4661	5341	3928	3994	3741	
Tailwater Elev	ft	3650.8	3650.8	3650.9	3650.9	3650.9	3650.9	3650.9	3651.0	3651.0	3650.9	3650.9	3650.8	
Average Head	ft	141.2	139.7	137.9	135.3	133.1	131.7	131.6	135.0	142.0	145.7	142.8	138.8	
Average Power	mw	43.0	42.9	44.4	43.7	43.1	41.7	46.8	50.0	59.6	44.2	44.4	40.2	
Average Kwh/Af		133	132	131	129	127	126	127	130	135	136	134	130	131
Generation	gwh	31.992	30.859	33.063	32.520	28.956	31.025	33.725	37.170	42.898	32.907	33.004	28.922	397.041
End-Month Power Cap	mw	60	60	60	60	60	60	60	60	60	60	60	60	
Hauser	2008	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Missouri Gain	kaf	9.1	8.4	8.8	9.0	9.3	10.2	9.0	5.4	13.1	1.3	3.3	5.2	92.1
End-Month Content	kaf	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	
Release	kaf	250.0	242.6	261.1	261.3	237.2	262.6	290.0	319.0	349.1	263.8	271.1	241.5	3249.3
Release	cfs	4066	4077	4246	4250	4271	4271	4874	5188	5867	4290	4409	4059	
Turbine Release	cfs	4066	4077	4246	4250	4271	4271	4740	4740	4740	4290	4409	4059	
Turbine Bypass	cfs	0	0	0	0	0	0	134	448	1127	0	0	0	
Generation	gwh	10.527	10.215	10.993	11.004	9.988	11.058	11.877	12.272	11.877	11.107	11.415	10.170	132.503
Holter	2008	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Missouri Gain	kaf	2.1	1.4	1.1	1.6	2.2	3.3	2.3	3.3	10.3	6.0	4.4	4.1	42.1
End-Month Content	kaf	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	
Release	kaf	252.1	244.0	262.2	262.9	239.4	265.9	292.3	322.3	359.4	269.8	275.5	245.6	3291.4
Release	cfs	4100	4101	4264	4276	4311	4324	4912	5242	6040	4388	4481	4127	
Min Release	cfs	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	
Turbine Release	cfs	4100	4101	4264	4276	4311	4324	4912	5242	6040	4388	4481	4127	
Turbine Bypass	cfs	0	0	0	0	0	0	0	0	0	0	0	0	
Generation	gwh	21.475	20.787	22.334	22.397	20.395	22.648	24.898	27.456	30.616	22.983	23.470	20.919	280.378

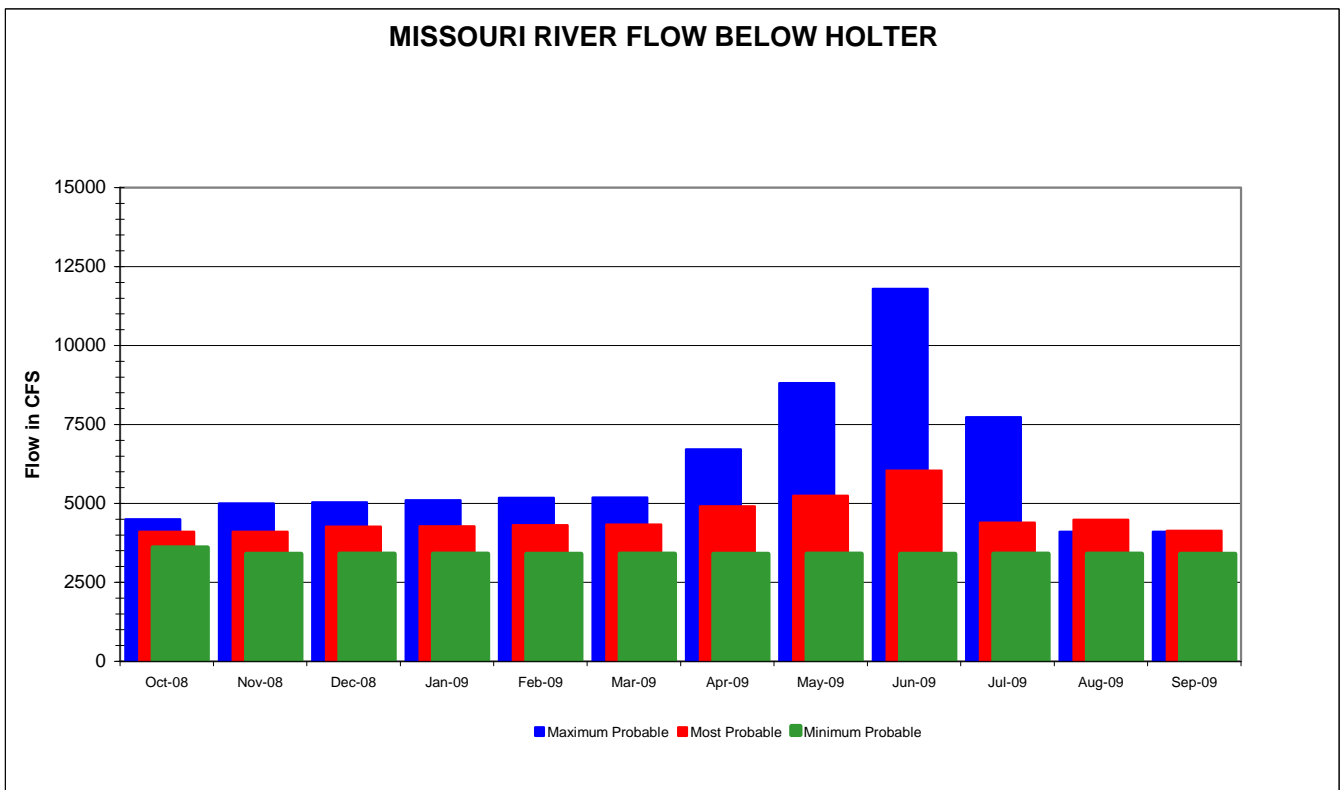
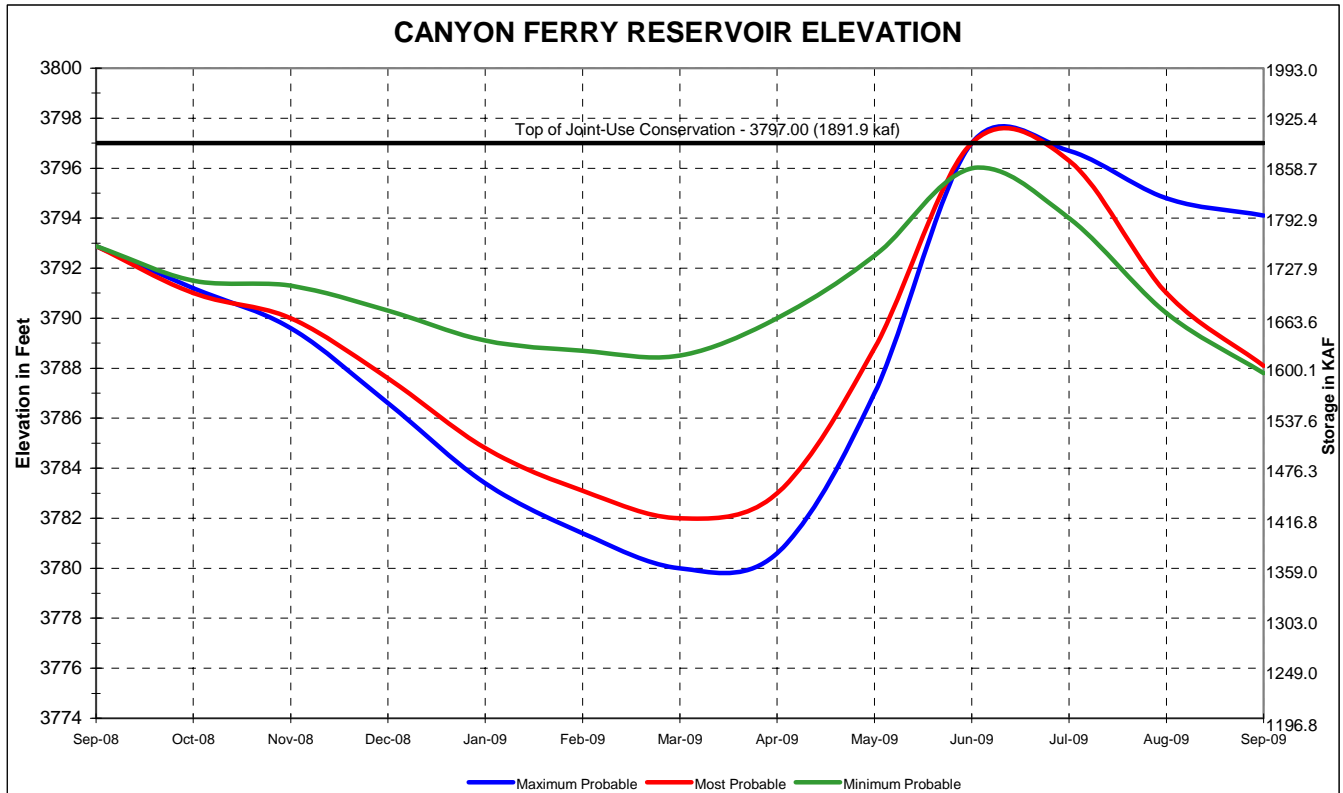
CANYON FERRY LAKE MONTHLY OPERATIONS

Canyon Ferry Reservoir		Initial Cont Elev 1756.4 kaf 3792.88 ft				Maximum Cont Elev 1993.0 kaf 3800.00 ft				Minimum Cont Elev 445.5 kaf 3732.31 ft				Total
	2008	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
Reservoir Inflow	kaf	175.5	189.5	170.6	165.8	168.0	194.0	253.5	308.4	326.9	158.0	100.7	135.5	2346.4
Evaporation Loss	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
HV Canal Diversions	kaf	4.0	0.0	0.0	0.0	0.0	4.0	11.0	22.0	17.0	21.0	21.0	12.0	112.0
HV Pump Turbines	kaf	4.3	0.0	0.0	0.0	0.0	4.7	12.6	24.3	17.7	21.6	22.8	13.9	121.9
Turbine Release	kaf	211.6	196.2	201.4	204.5	180.5	193.9	180.8	183.2	174.9	181.4	182.3	184.2	2274.9
Turbine Release	cfs	3441	3297	3275	3326	3250	3153	3038	2979	2939	2950	2965	3096	
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
River Release	kaf	215.9	196.2	201.4	204.5	180.5	198.6	193.4	207.5	192.6	203.0	205.1	198.1	2396.8
River Release	cfs	3511	3297	3275	3326	3250	3230	3250	3375	3237	3301	3336	3329	
Min Release	cfs	3511	3297	3275	3326	3250	3230	3250	3375	3237	3293	3336	3329	
Total Dam Release	kaf	219.9	196.2	201.4	204.5	180.5	202.6	204.4	229.5	209.6	224.0	226.1	210.1	2508.8
Total Dam Release	cfs	3576	3297	3275	3326	3250	3295	3435	3732	3522	3643	3677	3531	
End-Month Content	kaf	1712.0	1705.3	1674.5	1635.8	1623.3	1614.7	1663.8	1742.7	1860.0	1794.0	1668.6	1594.0	
End-Month Elevation	ft	3791.5	3791.3	3790.3	3789.1	3788.7	3788.5	3790.0	3792.5	3796.0	3794.0	3790.2	3787.8	
Net Change	kaf	-44.4	-6.7	-30.8	-38.7	-12.5	-8.6	49.1	78.9	117.3	-66.0	-125.4	-74.6	-162.4
Canyon Ferry Power	2008	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	cfs	3441	3297	3275	3326	3250	3153	3038	2979	2939	2950	2965	3096	
Tailwater Elev	ft	3650.8	3650.8	3650.8	3650.8	3650.8	3650.8	3650.8	3650.8	3650.8	3650.8	3650.8	3650.8	
Average Head	ft	141.4	140.6	140.0	138.9	138.1	137.8	138.4	140.4	143.5	144.2	141.3	138.2	
Average Power	mw	36.9	34.9	34.5	34.9	33.8	32.5	31.1	30.7	30.7	30.9	30.7	31.8	
Average Kwh/Af		130	128	127	127	126	125	124	125	126	127	125	124	126
Generation	gwh	27.446	25.092	25.631	25.966	22.687	24.150	22.392	22.826	22.068	23.004	22.804	22.896	286.962
End-Month Power Cap	mw	60	60	60	60	60	60	60	60	60	60	60	60	
Hauser	2008	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Missouri Gain	kaf	4.0	4.8	7.1	4.5	7.2	8.6	7.8	0.4	1.9	1.9	0.9	1.8	50.9
End-Month Content	kaf	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	
Release	kaf	219.9	201.0	208.5	209.0	187.7	207.2	201.2	207.9	194.5	204.9	206.0	199.9	2447.7
Release	cfs	3576	3378	3391	3399	3380	3370	3381	3381	3269	3332	3350	3359	
Turbine Release	cfs	3576	3378	3391	3399	3380	3370	3381	3381	3269	3332	3350	3359	
Turbine Bypass	cfs	0	0	0	0	0	0	0	0	0	0	0	0	
Generation	gwh	9.259	8.464	8.780	8.800	7.904	8.725	8.471	8.754	8.191	8.627	8.674	8.416	103.065
Holter	2008	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Missouri Gain	kaf	1.5	1.3	0.6	0.1	1.1	1.9	1.1	1.2	7.8	4.7	3.1	2.4	26.8
End-Month Content	kaf	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	
Release	kaf	221.4	202.3	209.1	209.1	188.8	209.1	202.3	209.1	202.3	209.6	209.1	202.3	2474.5
Release	cfs	3601	3400	3401	3401	3400	3401	3400	3401	3400	3400	3400	3400	
Min Release	cfs	3600	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	3400	
Turbine Release	cfs	3601	3400	3401	3401	3400	3401	3400	3401	3400	3400	3401	3400	
Turbine Bypass	cfs	0	0	0	0	0	0	0	0	0	0	0	0	
Generation	gwh	18.861	17.234	17.814	17.814	16.085	17.814	17.234	17.814	17.234	17.856	17.814	17.234	210.808

CANYON FERRY LAKE MONTHLY OPERATIONS

Canyon Ferry Reservoir		Initial Cont Elev 1756.4 kaf 3792.88 ft				Maximum Cont Elev 1993.0 kaf 3800.00 ft				Minimum Cont Elev 445.5 kaf 3732.31 ft				Total
	2008	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
Reservoir Inflow	kaf	209.0	235.9	203.7	202.5	216.1	264.6	412.0	734.5	992.1	462.6	192.8	219.4	4345.2
Evaporation Loss	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
HV Canal Diversions	kaf	4.0	0.0	0.0	0.0	0.0	4.0	11.0	22.0	17.0	21.0	21.0	12.0	112.0
HV Pump Turbines	kaf	4.4	0.0	0.0	0.0	0.0	5.5	15.4	28.3	18.5	20.9	21.4	12.5	126.9
Turbine Release	kaf	255.6	286.0	298.2	302.2	273.0	296.8	369.1	364.4	324.8	322.3	212.7	215.9	3521.0
Turbine Release	cfs	4157	4806	4850	4915	4916	4827	6203	5926	5458	5242	3459	3628	
Spill/Waste	kaf	0.0	0.0	0.0	0.0	0.0	0.0	0.0	124.9	309.8	109.6	0.0	0.0	544.3
River Release	kaf	260.0	286.0	298.2	302.2	273.0	302.3	384.5	517.6	653.1	452.8	234.1	228.4	4192.2
River Release	cfs	4228	4806	4850	4915	4916	4916	6462	8418	10976	7364	3807	3838	
Min Release	cfs	4228	3911	3915	3915	3833	3825	3850	3711	3284	3731	3807	3838	
Total Dam Release	kaf	264.0	286.0	298.2	302.2	273.0	306.3	395.5	539.6	670.1	473.8	255.1	240.4	4304.2
Total Dam Release	cfs	4294	4806	4850	4915	4916	4981	6647	8776	11261	7706	4149	4040	
End-Month Content	kaf	1701.4	1651.3	1556.8	1457.1	1400.2	1358.5	1375.0	1569.9	1891.9	1880.7	1818.4	1797.4	
End-Month Elevation	ft	3791.2	3789.6	3786.6	3783.4	3781.4	3780.0	3780.6	3787.0	3797.0	3796.7	3794.8	3794.1	
Net Change	kaf	-55.0	-50.1	-94.5	-99.7	-56.9	-41.7	16.5	194.9	322.0	-11.2	-62.3	-21.0	41.0
Canyon Ferry Power	2008	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Turbine Release	cfs	4157	4806	4850	4915	4916	4827	6203	5926	5458	5242	3459	3628	
Tailwater Elev	ft	3650.9	3650.9	3650.9	3650.9	3650.9	3650.9	3651.1	3651.4	3651.8	3651.2	3650.8	3650.8	
Average Head	ft	141.1	139.5	137.2	134.1	131.5	129.8	129.2	132.5	140.3	145.6	144.9	143.7	
Average Power	mw	46.0	53.1	52.8	52.3	51.3	49.8	59.7	60.0	60.0	60.0	37.8	39.8	
Average Kwh/Af		134	134	132	129	126	125	117	123	133	139	132	133	129
Generation	gwh	34.217	38.232	39.261	38.911	34.480	37.051	43.006	44.640	43.200	44.640	28.153	28.670	454.461
End-Month Power Cap	mw	60	60	60	60	60	60	60	60	60	60	60	60	
Hauser	2008	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Missouri Gain	kaf	13.0	9.3	9.4	8.9	11.9	13.3	11.8	17.2	34.1	13.3	10.8	10.0	163.0
End-Month Content	kaf	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	64.2	
Release	kaf	273.0	295.3	307.6	311.1	284.9	315.6	396.3	534.8	687.2	466.1	244.9	238.4	4355.2
Release	cfs	4440	4963	5003	5060	5130	5133	6660	8698	11549	7580	3983	4006	
Turbine Release	cfs	4440	4740	4740	4740	4740	4740	4740	4740	4740	4740	3983	4006	
Turbine Bypass	cfs	0	223	263	320	390	393	1920	3958	6809	2840	0	0	
Generation	gwh	11.496	11.877	12.272	12.272	11.085	12.272	11.877	12.272	11.877	12.272	10.312	10.037	139.921
Holter	2008	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Missouri Gain	kaf	3.7	2.0	2.0	2.5	2.9	3.6	3.1	6.7	14.5	9.4	7.2	5.6	63.2
End-Month Content	kaf	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	81.9	
Release	kaf	276.7	297.3	309.6	313.6	287.8	319.2	399.4	541.5	701.7	475.5	252.1	244.0	4418.4
Release	cfs	4500	4996	5035	5100	5182	5191	6712	8807	11792	7733	4100	4101	
Min Release	cfs	4500	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	4100	
Turbine Release	cfs	4500	4996	5035	5100	5182	5191	6712	7100	7100	7100	4100	4101	
Turbine Bypass	cfs	0	0	0	0	0	0	0	1707	4692	633	0	0	
Generation	gwh	23.570	25.324	26.372	26.713	24.515	27.189	34.022	37.188	35.988	37.188	21.475	20.787	340.331

# CANYON FERRY RESERVOIR



WATER YEAR 2009