

WESTERN DIVISION SYSTEM
RESOURCES DIVISION
LOVELAND, COLORADO

DECEMBER 1, 2011
WATER SUPPLY AND UTILIZATION REPORT
WESTERN DIVISION SYSTEM
PICK-SLOAN MISSOURI BASIN PROGRAM

PRECIPITATION VARIED
TEMPERATURES VARIED

Precipitation was varied over the Colorado-Big Thompson Project (Project) during November. The Willow Creek and Lake Granby watersheds were the lowest at 73 percent of average. The Poudre watershed was the highest at 149 percent of average.

Temperatures over the Project were varied for November.

PRECIPITATION

Watershed	November Precipitation			October-November Precipitation		
	2011 (Inches)	Avg <u>1</u> / (Inches)	% of Avg	WY2012 (Inches)	Avg <u>1</u> / (Inches)	% of Avg
Green Mtn.	1.02	1.34	76	2.71	2.50	108
Willow Crk.	.83	1.14	73	2.58	2.46	105
L. Granby	.83	1.14	73	2.58	2.46	105
L. Estes	1.12	1.14	98	3.42	2.24	153
St. Vrain	1.12	1.14	98	3.42	2.24	153
Poudre	1.16	0.78	149	2.89	1.72	168

1/ 30 year average, 1971-2000

INFLOWS VARIED

Inflows were varied over the Project during November. The inflow to Lake Estes was the lowest at 76 percent of average. The inflow to Lake Granby was the highest at 137 percent of average. Water year to date (October-November) inflows have been 134 percent of average.

RESERVOIR INFLOW

Reservoir	November Inflow			October-November Inflow		
	2011 (KAF)	Avg <u>1</u> / (KAF)	% of Avg	WY 2012 (KAF)	Avg <u>1</u> / (KAF)	% of Avg
Green Mtn.*	13.1	10.1	130	31.7	23.9	133
Willow Crk.	1.5	1.1	136	3.5	2.4	146
L. Granby	5.2	3.8	137	14.1	9.6	147
L. Estes <u>2</u> /	1.3	1.7	76	4.7	4.4	107

*Total runoff of the watershed above Green Mountain does not include depletions by Denver and Colorado Springs.

1/ 30 year average, 1971-2000

2/ Lake Estes Computed Inflow

TRANSMOUNTAIN DIVERSIONS BELOW AVERAGE

Transmountain diversions through Adams Tunnel during November were 64 percent of average. During November, 11,500 acre-feet of water was brought through the tunnel. Water year to date (October-November) diversions have been 127 percent of average.

TRANSMOUNTAIN DIVERSION

Adams Tun.	November			October-November		
	2011 (KAF)	Avg <u>1</u> / (KAF)	% of Avg.	WY 2012 (KAF)	Avg <u>1</u> / (KAF)	% of Avg
	11.5	17.9	64	42.6	33.5	127

1/ 30 year average, 1971-2000

RESERVOIR STORAGE VARIED

The Lake Granby storage of 464,600 acre-feet on November 30 was 51,600 acre-feet above average and 21,100 acre-feet lower than 1 year ago on this date. Terminal reservoir storage in Carter Lake and Horsetooth Reservoir was 93 and 135 percent of average, respectively.

Colorado-Big Thompson Project storage water in Lake Granby, Carter Lake, and Horsetooth was 642,500 acre-feet on November 30 which was 77,100 acre-feet above average and 79 percent of the total available storage capacity.

RESERVOIR STORAGE

Reservoir	Total Storage on November 30						Total Storage Cap.(KAF)
	2011 (KAF)	2011 (% of Avg)	2010 (KAF)	2009 (KAF)	2008 (KAF)	1971-00 Avg(KAF)	
Green Mtn	100.5	94	78.9	81.5	72.6	107.0	153.6
L. Granby	464.6	112	485.7	445.6	380.0	413.0	539.8
Horse-tooth	114.7	135	81.0	68.9	73.5	84.8	156.7
Carter L.	63.2	93	36.0	72.3	48.3	67.6	112.2
Dillon	239.2	104	217.8	242.3	238.7	230.2	254.0
Williams Fork	80.6	132	81.5	79.0	80.8	61.2 _{1/}	96.8
Project	Total Storage Water in Lake Granby, Carter Lake, and Horsetooth Reservoir on November 30						
CBT	642.5	114	602.7	586.8	501.8	565.4	808.7

_{1/} 20 year average, 1970-1989.

WESTERN DIVISION SYSTEM
GENERATION WELL BELOW AVERAGE

System generation of 117,800,000 kilowatt-hours of energy produced during November was 65 percent of average. Total system generation for the water year (October-November) was 315,900,000 kilowatt-hours which was 91 percent of average.

WESTERN DIVISION SYSTEM
GROSS GENERATION

Powerplant	November Gross Generation			Accum. Gross Generation <u>1/</u>		
	2011 (GWH)	Avg <u>2/</u> (GWH)	% of Avg.	WY 2012 (GWH)	Avg <u>2/</u> (GWH)	% of Avg
Green Mtn.	2.5	2.9	86	12.0	7.6	158
Marys Lake	0.6	3.0	20	6.0	5.1	118
Estes	4.8	7.9	61	19.1	13.8	138
Pole Hill	0.0	12.4	-	21.2	21.3	100
Flatiron 1&2	1.2	15.7	8	27.5	27.7	100
Big Thompson	0.0	0.2	-	1.2	.6	200
Seminole	4.0	8.8	45	8.1	16.9	48
Kortes	4.7	9.4	50	9.7	18.0	54
Fremont C.	6.7	12.2	55	7.1	20.7	34
Alcova	2.9	5.6	52	6.0	12.6	48
Glendo	0.0	0.1	-	0.0	.3	-
Guernsey	0.0	0.1	-	0.0	.6	-
Boysen	0.0	4.9	-	0.0	10.2	-
Heart Mtn.	0.0	0.0 <u>3/</u>	-	1.7	.8 <u>3/</u>	212
Buffalo Bill	0.0	1.9 <u>3/</u>	-	4.9	4.4 <u>3/</u>	111
Shoshone	1.5	1.4 <u>3/</u>	107	3.1	3.0 <u>3/</u>	103
Spirit Mtn.	0.0	0.0 <u>3/</u>	-	1.7	.9 <u>3/</u>	189
Mt. Elbert	22.7	13.0 <u>4/</u>	175	30.6	24.8 <u>4/</u>	123
Yellowtail	66.2	82.5 <u>5/</u>	80	156.0	157.1 <u>5/</u>	99
Total	117.8	182.0	65	315.9	346.4	91

1/ Oct-Nov

2/ 1976-2005 average

3/ 1995-2005 average

4/ 1990-1999 average

5/ 1971-1990 average; In general 1/2 of Yellowtail energy is dedicated to the Western Division System through marketing arrangement. The other 1/2 is marketed in Eastern Division System.

WESTERN DIVISION SYSTEM
PUMP ENERGY VARIED

The pump energy required for the Western Division System was varied for November. Colorado-Big Thompson Project pumping was 27 percent of average for November. Mt. Elbert pumping was 155 percent of average. Water year to date (October-November) pumping for the Western Division System was 111 percent of average.

PUMP ENERGY

Pumping Plant	November Pump Energy			Oct-November Pump Energy		
	2011 (GWH)	Avg <u>1</u> / (GWH)	% of Avg	WY2012 (GWH)	Avg <u>1</u> / (GWH)	% of Avg
Willow Crk	0.0	0.3	-	0.0	0.4	-
Farr	1.6	3.0	53	5.7	5.1	112
Flatiron 3	0.1	3.1	3	3.6	4.9	73
Mt. Elbert	23.9	15.4 <u>2</u> /	155	36.1	30.4 <u>2</u> /	119
Total	25.6	21.8	117	45.4	40.8	111

1/ 1976-2005 average

2/ 1990-1999 average

DECEMBER 1, 2011
WATER SUPPLY AND UTILIZATION REPORT
FRYINGPAN-ARKANSAS PROJECT

PRECIPITATION BELOW AVERAGE

Precipitation was below average over the Fryingpan-Arkansas Project (Project) during November. Precipitation at Twin Lakes Reservoir was the lowest at 17 percent of average. Precipitation at Ruedi Reservoir (Nast Snotel) was the highest at 76 percent of average.

PRECIPITATION

Stations	November Precipitation			October-November Precipitation		
	2011 (Inches)	Avg (Inches)	% of Avg	WY2012 (Inches)	Avg (Inches)	% of Avg
Ruedi *	1.40	1.83 <u>1/</u>	76	3.10	3.27 <u>1/</u>	95
Turquoise	.99	1.38 <u>2/</u>	72	3.18	2.43 <u>2/</u>	131
Twin Lakes	.09	.53 <u>3/</u>	17	1.32	1.20 <u>3/</u>	110
Pueblo	.13	.66 <u>4/</u>	20	1.66	1.28 <u>4/</u>	130

* Used Nast Snotel site

1/ 1971-2000 average for Nast

2/ 1973-1999 average

3/ 1966-1999 average

4/ 1976-1999 average

INFLOWS VARIED

Native inflows were varied over the Project during November. The inflow to Pueblo Reservoir was the lowest at 81 percent of average. The inflow to Ruedi Reservoir was the highest at 116 percent of average. Water year to date (October-November) inflows over the Fryingpan-Arkansas Project were 77 percent of average.

RESERVOIR INFLOW*

Reservoir	November Inflow			October-November Inflow		
	2011 (KAF)	Avg (KAF)	% of Avg	WY2012 (KAF)	Avg (KAF)	% of Avg
Ruedi	3.6	3.1 <u>1/</u>	116	8.8	7.4 <u>1/</u>	119
Turquoise	.3	0.3 <u>2/</u>	100	.7	0.7 <u>2/</u>	100
Twin Lakes	1.5	1.5 <u>2/</u>	100	3.8	4.1 <u>2/</u>	93
Pueblo	20.8	25.6 <u>2/</u>	81	36.9	52.8 <u>2/</u>	70

* Computed Native Inflow

1/ 1970-1989 average

2/ 1966-1986 average

RESERVOIR STORAGE IS VARIED

Reservoir storage is varied on the Fryingpan-Arkansas Project. Twin Lakes Reservoir is the lowest at 96 percent of average. Pueblo Reservoir is the highest at 115 percent of average. The total water in storage in the four reservoirs of 474,800 acre-feet at the end of November was 4,600 acre-feet lower than 1 year ago on this date.

RESERVOIR STORAGE

Reservoir	Total Storage on November 30						Total Storage Capacity (AF)
	2011 (KAF)	2011(% of Avg)	2010 (KAF)	2009 (KAF)	2008 (KAF)	Avg (KAF)	
Ruedi	82.0	101	75.6	74.8	76.0	80.9 <u>1/</u>	102,373
Turquoise	104.3	102	100.4	106.1	103.1	102.6 <u>2/</u>	129,398
Twin Lakes	109.9	96	109.7	106.0	100.9	114.9 <u>3/</u>	141,000
Pueblo	178.6	115	193.7	208.0	182.4	155.7 <u>1/</u>	256,949 <u>4/</u>
Project	Total Storage Water in Turquoise, Twin Lakes, and Pueblo Reservoirs on November 30						
Fry-Ark	392.8	105	403.8	420.1	386.4	373.2	527,347

1/ 1982-2007 average

2/ 1989-2007 average

3/ 1987-2007 average

4/ Top of active conservation capacity

COOPERATORS

Many organizations and individuals furnish information for the Water Supply and Utilization Report. Their cooperation is gratefully appreciated, especially:

Natural Resource Conservation Service
<http://www.wcc.nrcs.usda.gov/>
Snow Survey Units
Denver, Colorado
<http://www.co.nrcs.usda.gov/snosurvfs.htm>
Casper, Wyoming
and
Portland, Oregon

Department of Commerce
NOAA, National Weather Service
Boulder, Colorado
<http://www.crh.noaa.gov/den/>
Cheyenne, Wyoming
Salt Lake City, Utah

Department of Energy
Western Area Power Administration
Rocky Mountain Region
Loveland, Colorado
<http://www.wapa.gov/RM/RM.HTM>

Colorado Climate Center
Colorado State University
Fort Collins, Colorado
<http://ccc.atmos.colostate.edu/Access.html>