April 24-Month Study
Date: April 7, 2009

From: Water Resources Group, Salt Lake City
To: All Colorado River Annual Operating Plan (AOP) Recipients

Current Reservoir Status

Reservoir	March Inflow (unregulated) (acre-feet)	Percent of Average (%)	Apr 6 Midnight Elevation (feet)	Reservoir Storage (acre-feet)
Fontenelle	46,000	88	6467.53	109,000
Flaming Gorge	60,000	56	6020.33	2,991,000
Blue Mesa	40,000	112	7484.44	539,000
Powell	468,000	71	3610.16	12,746,000
Navajo	76,000	85	6055.35	1,290,000

Expected Operations

The operation of Lake Powell and Lake Mead in this April 2009 24-Month Study is pursuant to the December 2007 Record of Decision on Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations of Lake Powell and Lake Mead (Interim Guidelines), and reflects the 2009 Annual Operating Plan (AOP). Pursuant to the Interim Guidelines, the Upper Elevation Balancing Tier is the operational tier for water year 2009 for Glen Canyon Dam. The Intentionally Created Surplus (ICS) Surplus condition is the criterion governing the operation of Lake Mead for calendar year 2009.

The Interim Guidelines are available for download at
http://www.usbr.gov/lc/region/programs/strategies/RecordofDecision.pdf.
The 2009 AOP is available for download at
http://www.usbr.gov/uc/water/rsvrs/ops/aop/AOP09_final.pdf.

The April 24-Month study projects the end of water year elevation at Lake Powell to be 3637.13 feet and Lake Mead to be 1092.04 feet. Since the projected end of water year elevation at Lake Powell is below the 2009 Equalization Elevation of 3639 feet and the projected end of water year elevation at Lake Mead is above elevation 1075 feet, Sections 6.B.1. and 6.B.4. of the Interim Guidelines provide for an annual release volume of 8.23 million acre-feet from Glen Canyon Dam during water year 2009.

Fontenelle Reservoir – Inflows for the month of March were 46,000 acre-feet, or 88% of average. The reservoir elevation is 6468 feet above sea level, about 38 feet from top of pool, or 32% of capacity. The April forecast for the April to July runoff season is 715,000 acre-feet (83% of average).

Releases from Fontenelle are currently 950 cfs while inflows are averaging 800 cfs. Releases will likely be increased to approximately 1,200 cfs in late April and then again to approximately 1,700 cfs in early May when the reservoir elevation rises above 6476 ft. Current modeling projects the reservoir will fill this runoff season and it is possible that bypasses will be required to safely route the inflow to the reservoir.

The next Fontenelle Working Group meeting is scheduled for April 21, 2009 at 10:00 am at the visitor's center of the Seedskadee National Wildlife Refuge below Fontenelle dam. The Fontenelle Working Group is an open public forum for information exchange between Reclamation and other parties associated with the operation of Fontenelle Reservoir. For more information about the Fontenelle Working Group, contact Ed Vidmar at 801-379-1182.

Flaming Gorge Reservoir – March observed unregulated inflow into Flaming Gorge reservoir was 62,100 acre-feet (AF), or 59 percent of average inflow. The March end of month elevation was 6020.2 feet, which equates to 2.99 million acre-feet or 79 percent of live storage capacity. The April forecast for April through July unregulated inflow volume into Flaming Gorge Reservoir decreased 35,000 AF to 810,000 AF (68 percent of average).

Flaming Gorge will release a steady flow of 800 cubic feet per second (cfs) until spring operations begin sometime in May 2009. Hydrologic conditions are similar to those reported last year at this time. Flaming Gorge Reservoir will most likely be in either the average or moderately dry hydrologic classification outlined in the Flaming Gorge Record of Decision. The Yampa River Basin is also following a similar pattern to that reported last year, with conditions currently in the average hydrologic condition but trending toward moderately wet. There is still one month of potential snow accumulation or depletion that could change conditions dramatically before spring operations occur.

The next Flaming Gorge Working Group meeting is scheduled for April 15, 2009, in Vernal, Utah. The meeting will be held at 10:00 a.m. at the Western Park Convention Center located at 302 East 200 South in Vernal, Utah. For directions, please call 435-789-7396. The Flaming Gorge Working Group is an open public forum for information exchange between Reclamation and the stake holders of Flaming Gorge Dam. The public is encouraged to attend and comment on the operations and plans presented by Reclamation at these meetings. For more information on this group and these meetings please contact Ed Vidmar at 801-379-1182.

Aspinall Units – March unregulated inflow into Blue Mesa Reservoir was 40,000 acre-feet or 112 percent of average. On April 7, 2009 the basin snowpack was 108 percent of

average. Precipitation during March was 70 percent of average. The current inflow rate into Blue Mesa Reservoir is about 650 cfs while reservoir releases are averaging about 1,000 cfs. Currently the weather pattern has been wetter and colder than average, however spring like conditions are returning which will most likely start the annual spring snowmelt and we expect the elevation at Blue Mesa Reservoir to start increasing Blue Mesa's present elevation is 7484.44 feet, which corresponds to a storage content of about 539,000 acre-feet.

The latest Water Supply Forecast for Water Year 2009 has been issued and the April through July unregulated inflow is forecasted to be at 690,000 acre-feet (96% of average). This is a reduction of 40,000 acre-feet from just last month's forecast. The decrease is attributed to the dry start we had in the early part of March. Based on this forecast, Blue Mesa Reservoir is projected to fill this season.

Releases from Crystal are currently set at 1200 cfs. The Gunnison Diversion Tunnel started taking water for the new season on March 19, 2009. The current diversion rate in the tunnel is 500 cfs, which results in a river flow below the diversion tunnel of approximately 700 cfs. These rates will most likely change as conditions warrant, primarily as we respond to changes in the forecasted spring inflows.

The next meeting of the "Aspinall Unit Working Group" will be held on Thursday, April 23, 2009 at 9:30 PM at Reclamation's Grand Junction Office. At this meeting, review of this winter's reservoir operations, and plans for this spring and summer operations will be discussed. These meetings are open forum discussions on the Aspinall Unit reservoir operations with many interested groups participating. Anyone needing further information about these meetings should contact Dan Crabtree in the Grand Junction Area Office at (970) 248-0652.

Navajo Reservoir – As a result of a drier than average March, and based on the April 1st inflow forecast, the Colorado Basin River Forecast Center is now predicting an inflow of 690,000 acre-feet into Navajo Reservoir, which is a decrease of 125,000 acre-feet from the previous March 1st forecast. Based on this lower inflow forecast, the annual Spring Peak hydrograph has been modified, it is now projected to be a 2-week, 5000 cfs release with one-week ramps on each end would occur beginning at the end of May. A release of 500 cfs is anticipated before and after the spring peak release. This base release may need to be increased later in the summer in order to meet the target base flows in the critical habitat area for the endangered fish in accordance with the Flow Recommendations. A reservoir elevation of 6065 is targeted for the end of the water year.

Releases are made for the authorized purposes of the Navajo Unit, and to attempt to meet flow recommendations for the endangered fish in the San Juan River.

The snowpack as of April 7th for the upper San Juan River basin is averaging 94 percent, while the Animas River basin snowpack currently stands at 84 percent of average.

Precipitation during March was only 45 percent of average. Unregulated inflow into Navajo Reservoir during the month of March was 76,000 acre-feet, or 85 percent of average. Currently, the daily reservoir inflow is averaging about 900 cfs while reservoir releases are set at 500 cfs. NIIP started diversions on March 4th, which are currently set at 400 cfs. The reservoir water surface elevation is currently 6055.35 feet, which corresponds to a storage content of about 1,290,000 acre-feet

A public meeting on Navajo Reservoir operations will be held on Tuesday, April 28, 2009 at 1:00 p.m. in Farmington, New Mexico. Reservoir operations over last fall and winter will be reviewed, and plans for next spring and summer operations will be discussed. These are open forum discussions on the operation of Navajo Reservoir with many interested groups participating. Anyone interested in the general operation of the reservoir is encouraged to attend. Please contact Pat Page in Reclamation's Durango, Colorado Office at (970) 385-6560 for information about these meetings or the daily operation of Navajo Reservoir.

Glen Canyon Dam / Lake Powell **-** Snowpack conditions in the Upper Colorado River Basin rebounded late in March due to a persistent wet pattern in the region. As of April 1, 2009 the snowpack conditions above Lake Powell were 96% of average. Typically, the snowpack conditions reach their peak by about April 10th and runoff from the snowpack begins to increase during the second half of April.

The Colorado Basin River Forecast Center‘s April water supply forecast for Lake Powell for the April to July runoff season is 7.2 million acre-feet (91% of average). This represents a decrease of 0.6 million acre-feet from the March forecast which was 7.8 million acre-feet (98% of average). Based on this forecast, with the projected operations of the upstream reservoirs and an 8.23 million acre-foot release from Lake Powell, the April 24-month study projects the end of water year elevation of Lake Powell to be 3637.13 feet above sea level. This projected elevation is 1.87 feet below the Equalization Level for 2009 (3639 feet above sea level). For this reason the operation of Glen Canyon Dam will continue to be consistent with Section 6.B.1 of the Interim Guidelines (Upper Elevation Balancing Tier) and the April 24-Month study projects the water year 2009 release volume from Lake Powell to be 8.23 million acre-feet.

The monthly release volume for April 2009 is now scheduled to be 600,000 acre-feet. Daily average releases during April will be about 10,100 cfs. Monday through Friday releases will peak each afternoon to about 12,000 cfs with early morning releases of approximately 6,000 cfs. Weekend afternoon peak releases will also be about 12,000 cfs with morning low releases near 6,000 cfs. The release volume for May 2009 is 600,000 acre-feet which will result in an average daily release of 10,000 cfs. Afternoon peaks will likely be about 12,000 cfs and early morning releases will likely be about 6,000 cfs.

Beginning on May 21, 2009 at approximately 6:00 pm, releases from Glen Canyon Dam are scheduled to be steady at 8,000 cfs for a 5 day period so that the Grand Canyon Monitoring and Research Center (GCMRC) can conduct over-flight data gathering of the

channel of the Colorado River thought Grand Canyon National Park. Releases are scheduled to continue to remain steady at 8,000 cfs until approximately 4:00 am on May 27, 2009. However, if GCMRC is able complete the planned over flight work before this date and time, operations at Glen Canyon Dam would resume normal daily fluctuations.

Upper Colorado River Basin Hydrology

The overall precipitation rates during October and November 2008 were well below average at approximately 55% and 80% respectively. In December, however, conditions improved significantly with precipitation measuring approximately 185% of average. Unfortunately this wetter trend did not continue with precipitation in January and February measuring below average at 95% and 75% of average respectively. In early March conditions appeared to become even drier, however, by the end of March precipitation rebounded somewhat and the overall March precipitation was approximately 70% of average. The overall water year precipitation rate through April 5, 2009 is 103% of average.

The Climate Prediction Center outlook for temperature and precipitation over the next 3 months indicates that temperatures in the southwest have an increased probability of being above average while precipitation has an increased probability of being below average in the Upper Colorado River Basin.

Upper Colorado River Basin Drought

The Upper Colorado River Basin continues to experience a protracted multi-year drought. Since 1999, inflow to Lake Powell has been below average in every year except water year 2005 and 2008.

In the summer of 1999, Lake Powell was close to full with reservoir storage at 23.5 million acre-feet, or 97 percent of capacity. During the next 5 years (2000 through 2004) unregulated inflow to Lake Powell was well below average. This resulted in Lake Powell storage decreasing during this period to 8.0 million acre-feet (33 percent of capacity) which occurred on April 8, 2005. During 2005 and 2008 drought conditions eased somewhat with net gains in storage to Lake Powell. On September 30, 2008 the storage in Lake Powell was 14.5 million acre-feet (60 percent of capacity) which is still well below desired levels. Reservoir storage in the Colorado River Basin continues to be below desired levels with the overall Colorado River system storage as of April 1, 2009 of 32.2 million acre-feet which is 54 percent of capacity.