

RECLAMATION

Managing Water in the West

DRAFT Annual Operating Plan for Colorado River Reservoirs 2012

This draft document of the 2012 AOP is based upon the published 2011 AOP. Edits, in red, indicate changes from the 2011 AOP.

Hydrologic projections in this draft document of the 2012 AOP are based on the April 2011 24-Month Study. Subsequent drafts will be updated with contemporary projections of hydrology.

Text and values highlighted in blue are provisional and subject to change.



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Managing Water in the West

2012 Colorado River Annual Operating Plan

Colorado River Management Work Group
First Consultation
May 31, 2011



U.S. Department of the Interior
Bureau of Reclamation

2012 Colorado River AOP First Consultation Meeting

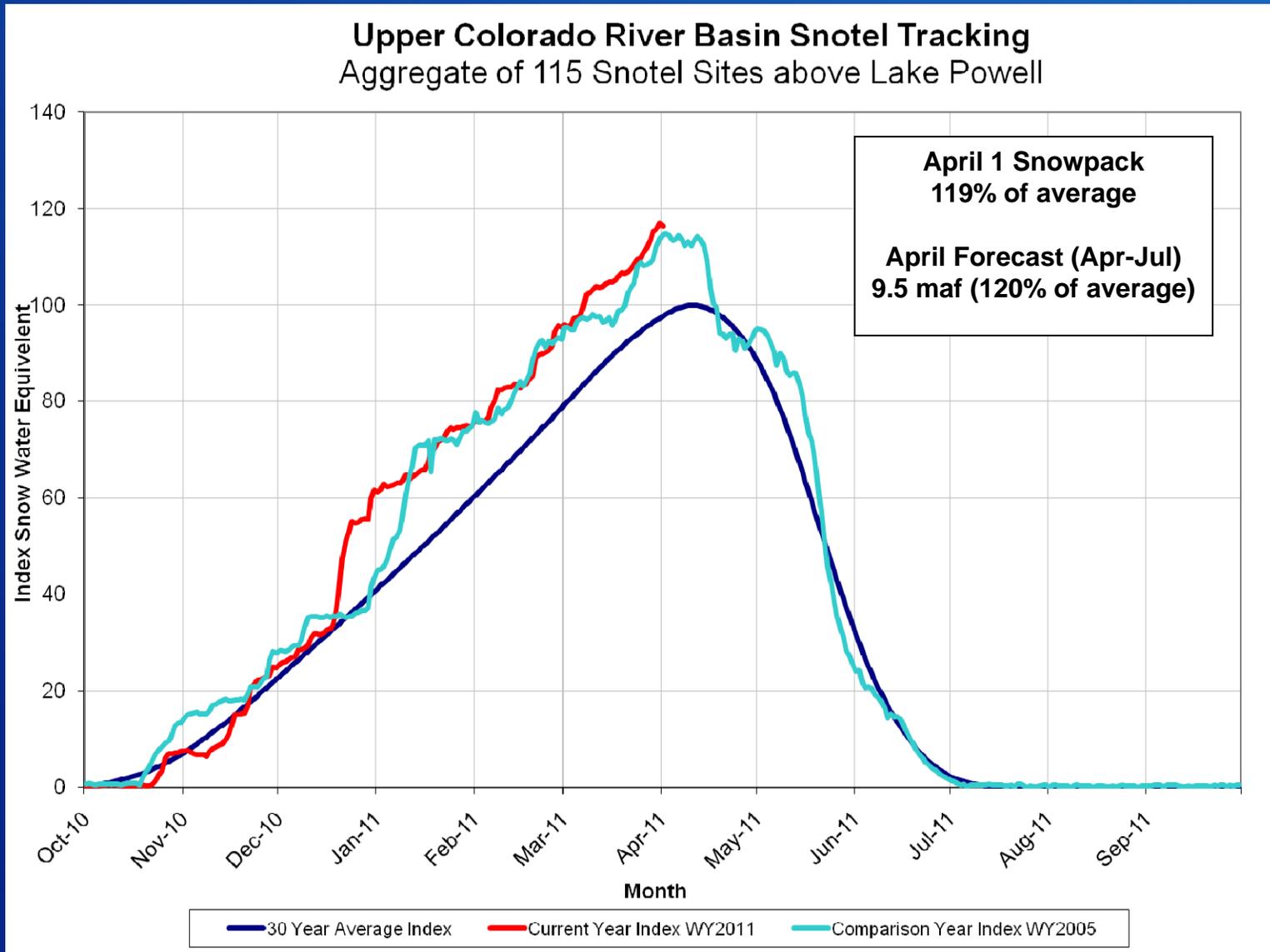
- Welcome and Introductions – *Steve Hvinden / Dave Trueman*
- Upper Basin Hydrology and Operations – *Rick Clayton*
- Lower Basin Hydrology and Operations – *Dan Bunk / Hong Nguyen-DeCorse*
- 2012 AOP Review Process – *Steve Hvinden / Dave Trueman*
- Review of Draft 2012 AOP - CRMWG
- Conclusion, Wrap-up, Future Meeting Dates

Upper Colorado River Basin

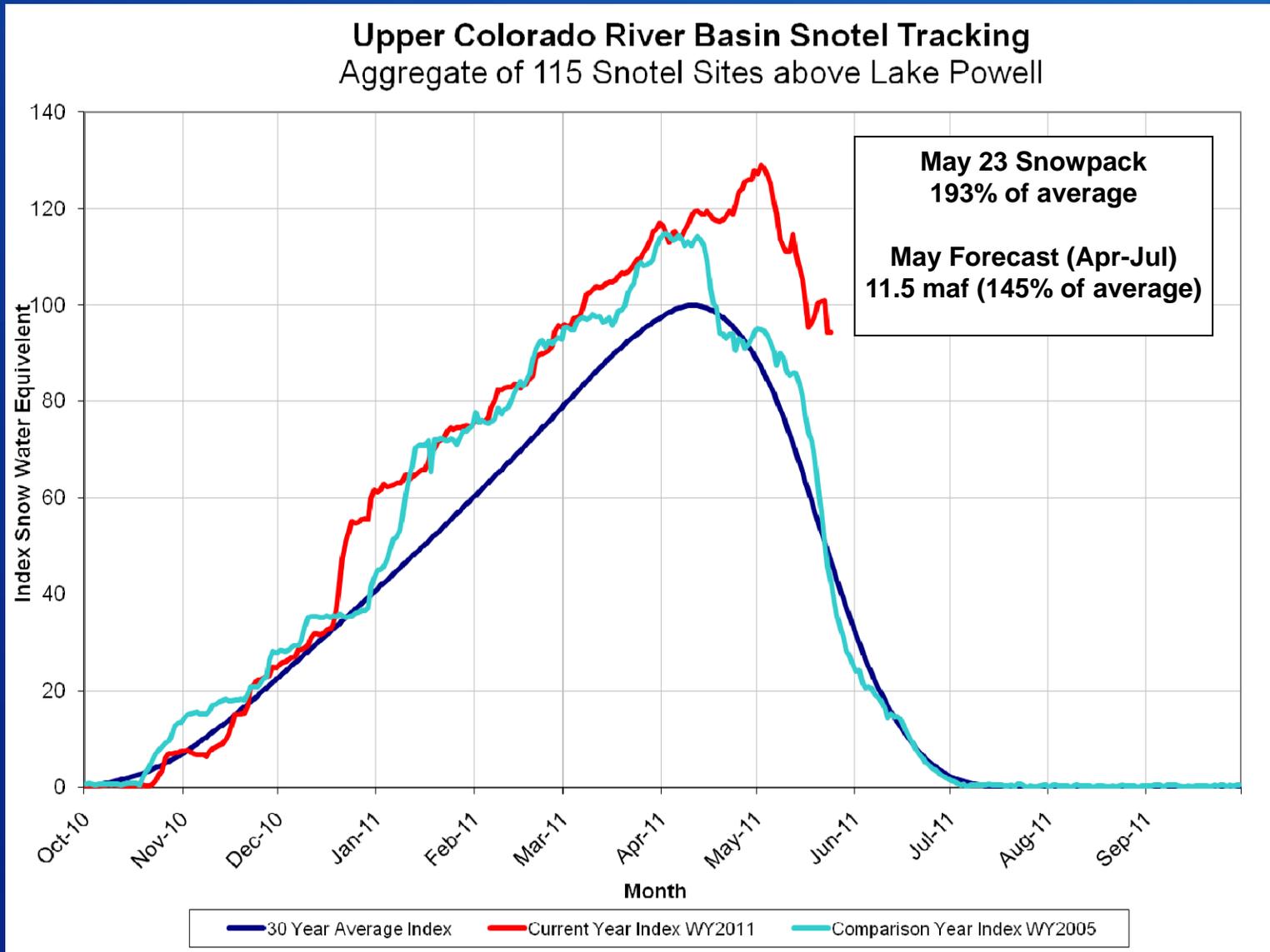
Hydrology and Operations

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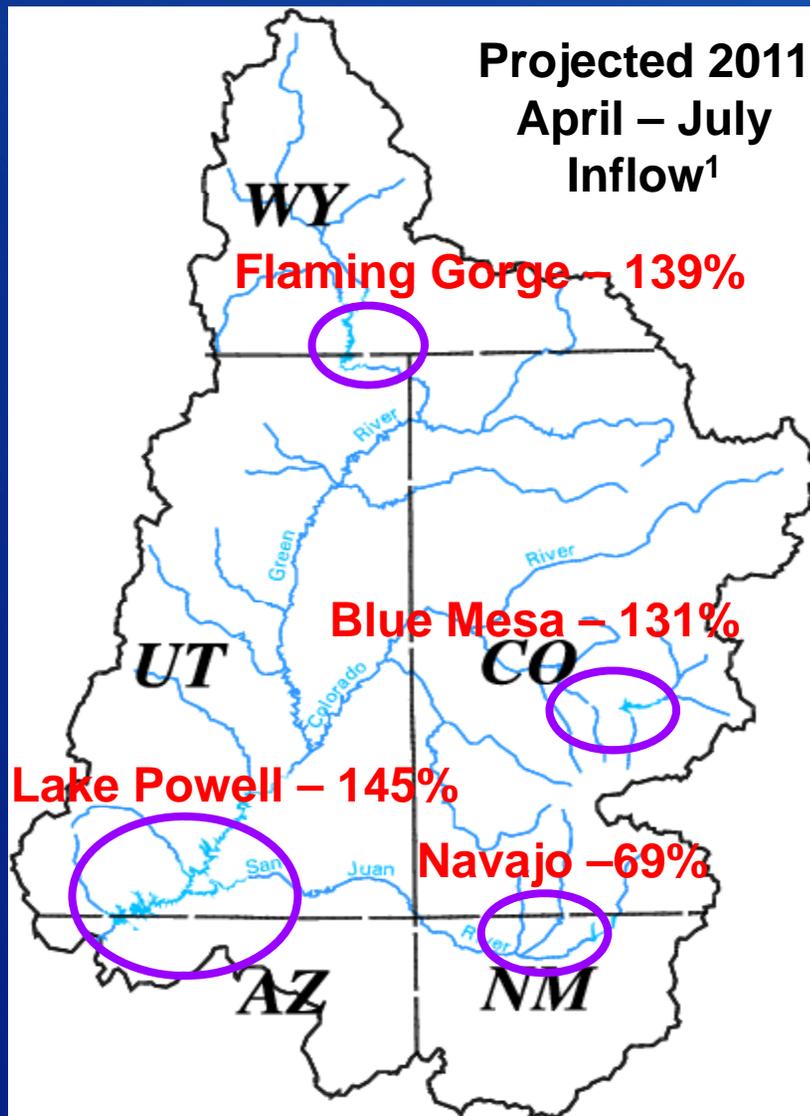
Upper Basin Hydrology Update



Upper Basin Hydrology Update



CBRFC Unregulated Inflow Forecasts dated May 16, 2011



| Period in 2011 | Inflow (KAF) | Percent of Average ¹ |
|-----------------------|--------------|---------------------------------|
| April (observed) | 983 | 100 |
| May | 2,200 | 95 |
| June | 5,600 | 181 |
| July | 2,700 | 173 |
| April – July | 11,500 | 145 |
| Water Year Projection | 15,380 | 128 |

¹ Percentages and percent of average based on period of record from 1971-2000.

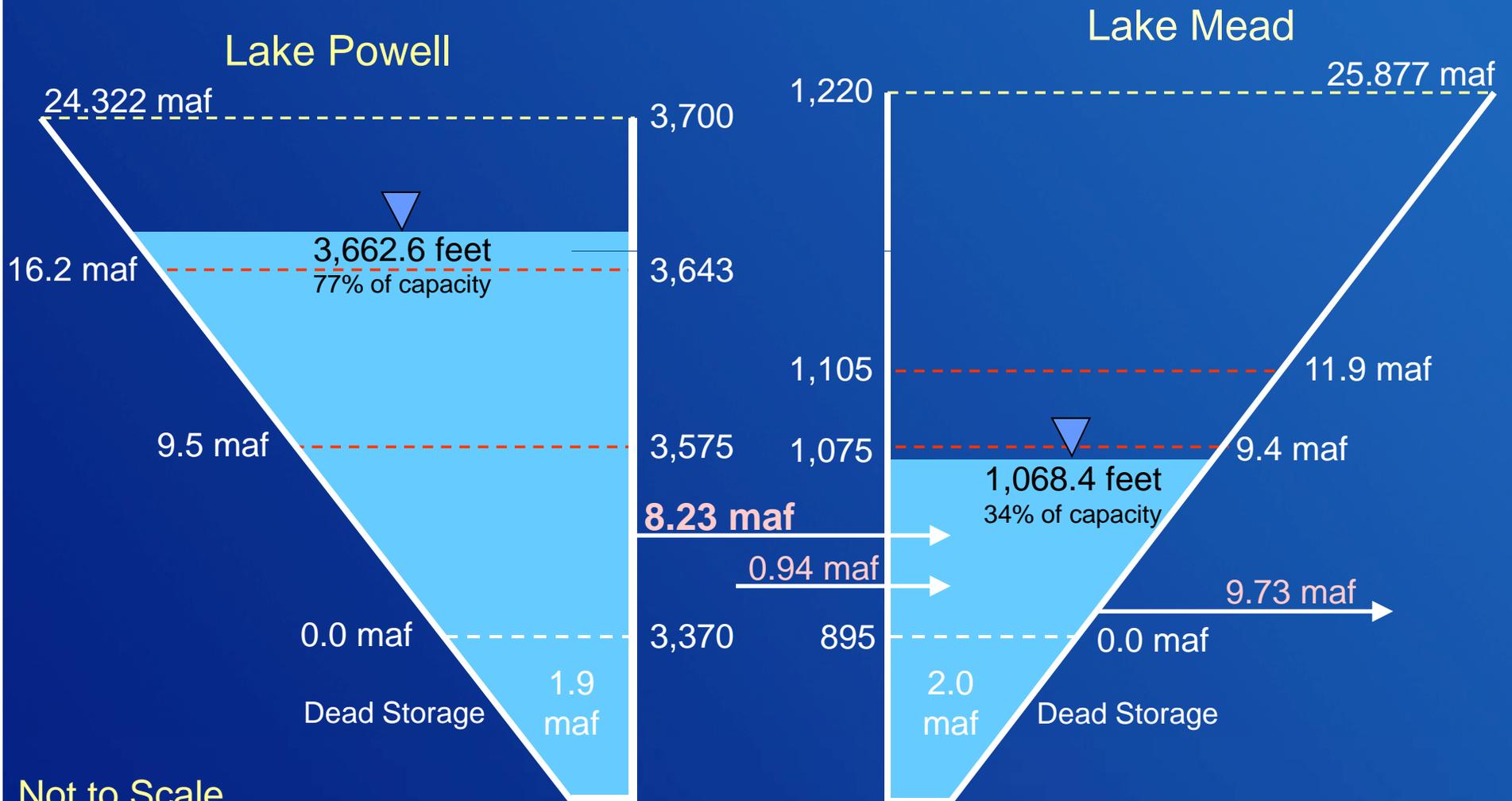
Projected Operations for the Remainder of WY 2011

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Water Year 2011 Projections

April 2011 Most Probable Inflow Scenario

Projected Unregulated Inflow into Powell¹ = 13.11 maf (109% of average)



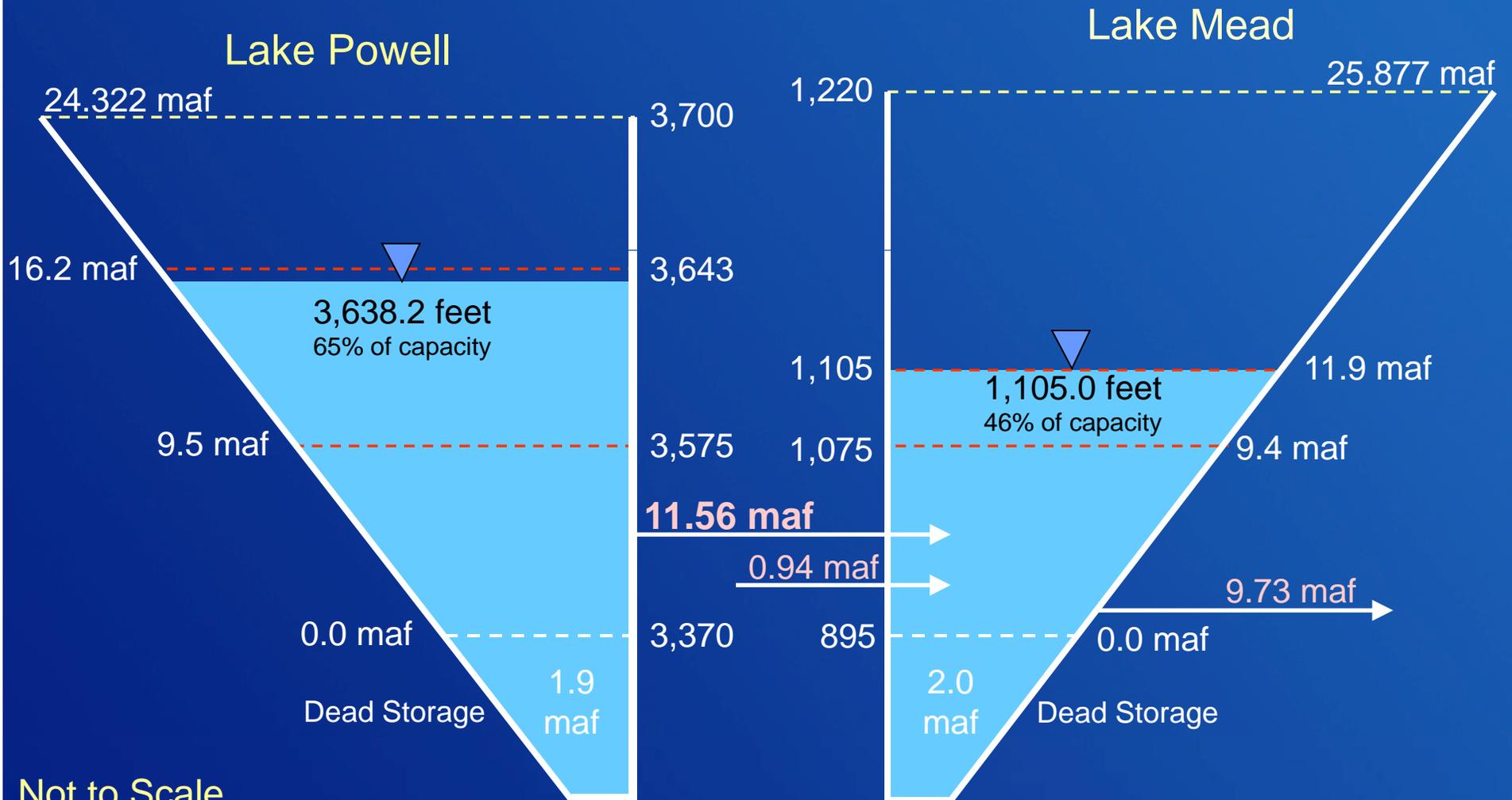
Not to Scale

¹ Projected elevations from the April 2011 24-Month Study which is based on the CBRFC inflow forecast dated April 4, 2011

Water Year 2011 Projections

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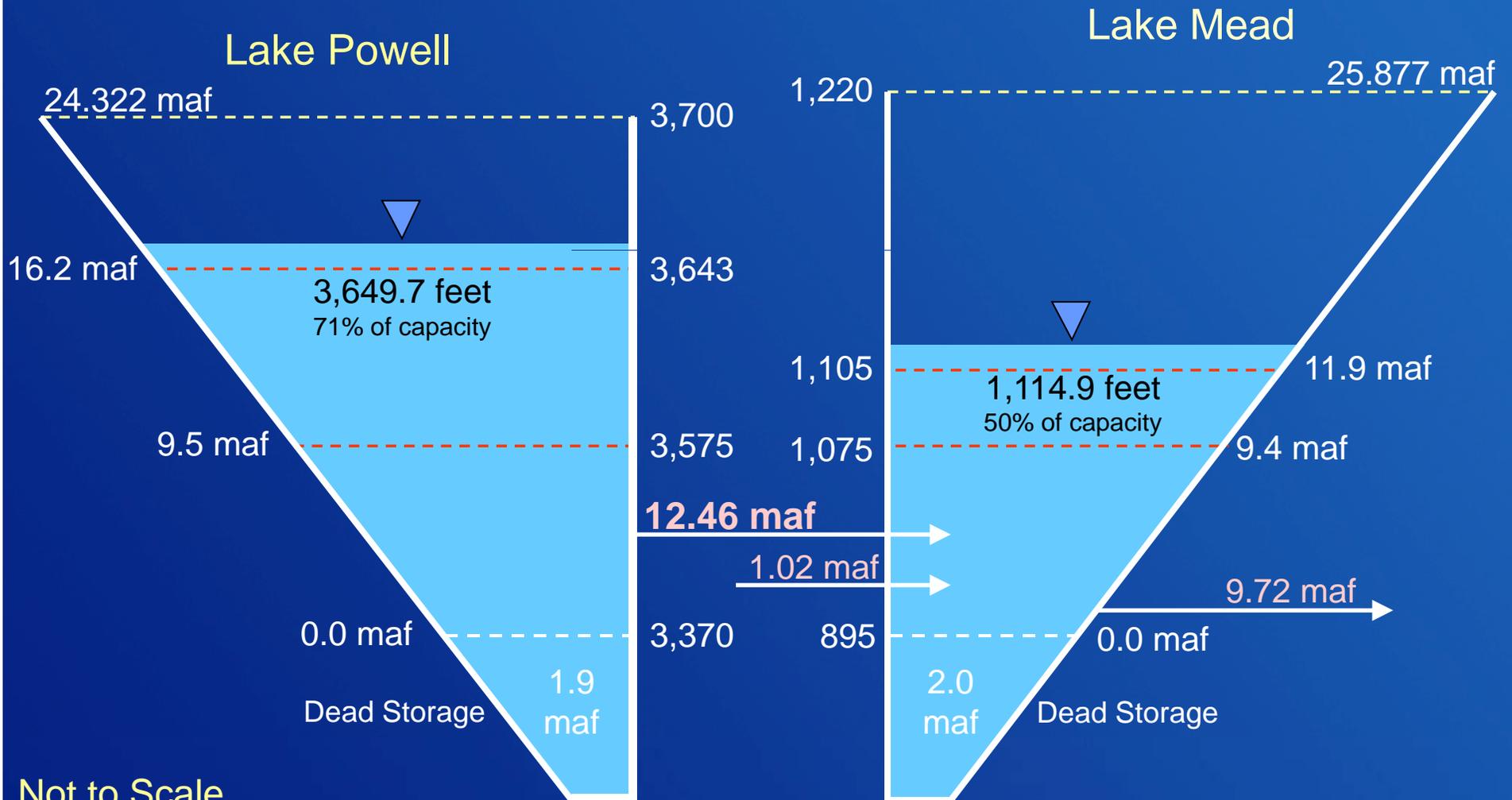
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Water Year 2011 Projections

May 2011 Most Probable Inflow Scenario

Projected Unregulated Inflow into Powell¹ = 15.38 maf (128% of average)

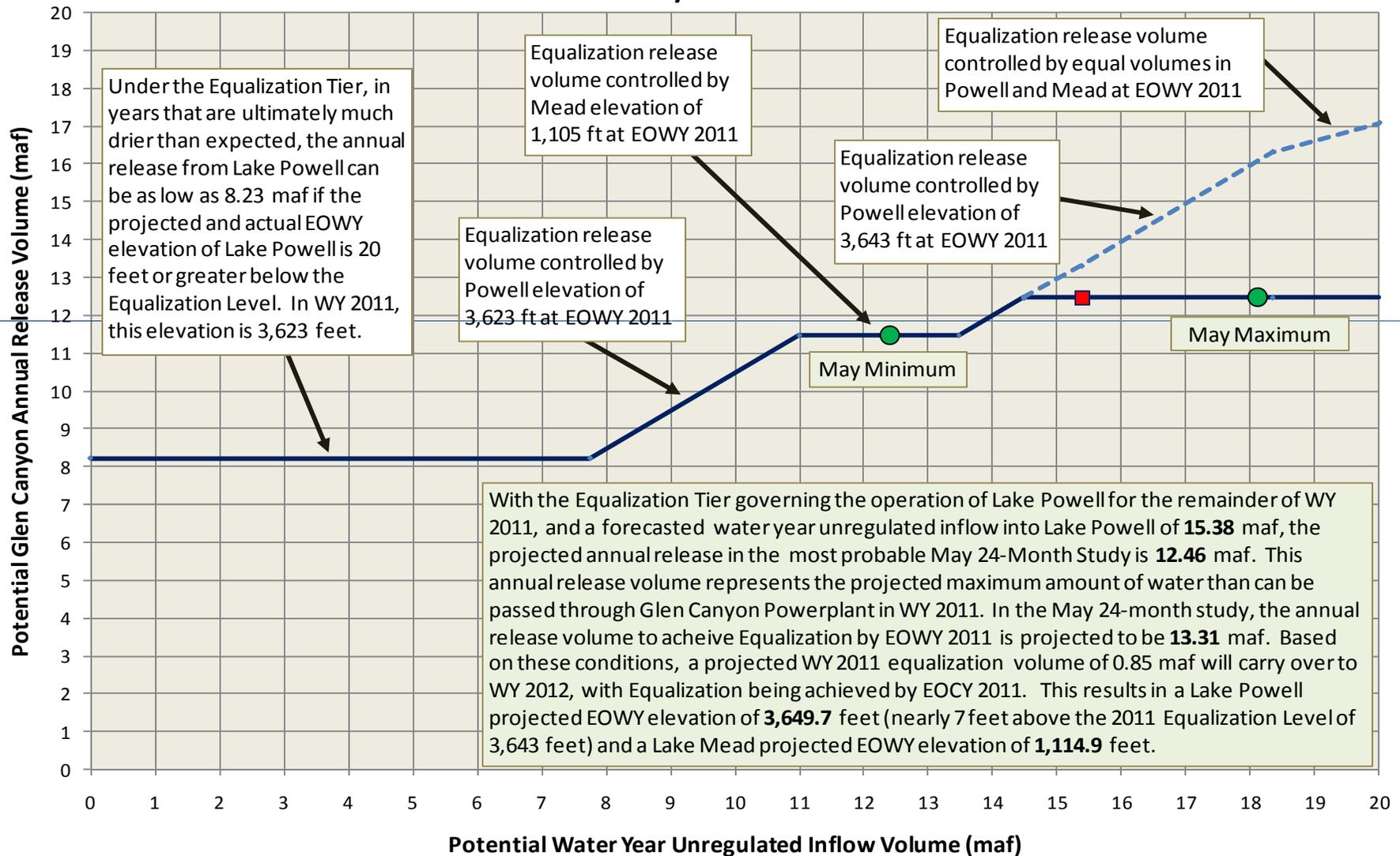


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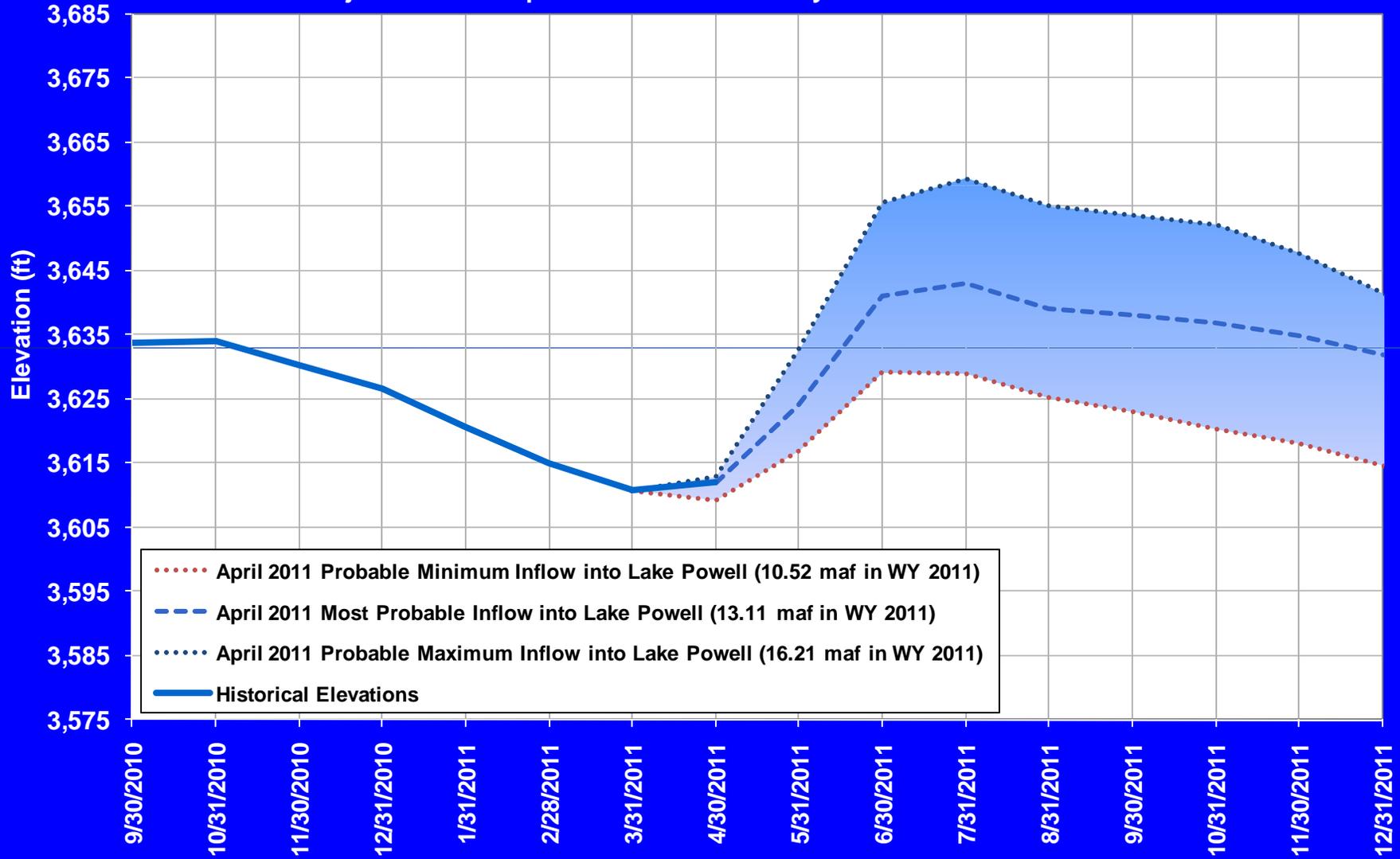
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Coordinated Operations of Lake Powell and Lake Mead Annual Release Volume as a Function of Unregulated Inflow Volume based on May 2011 Conditions



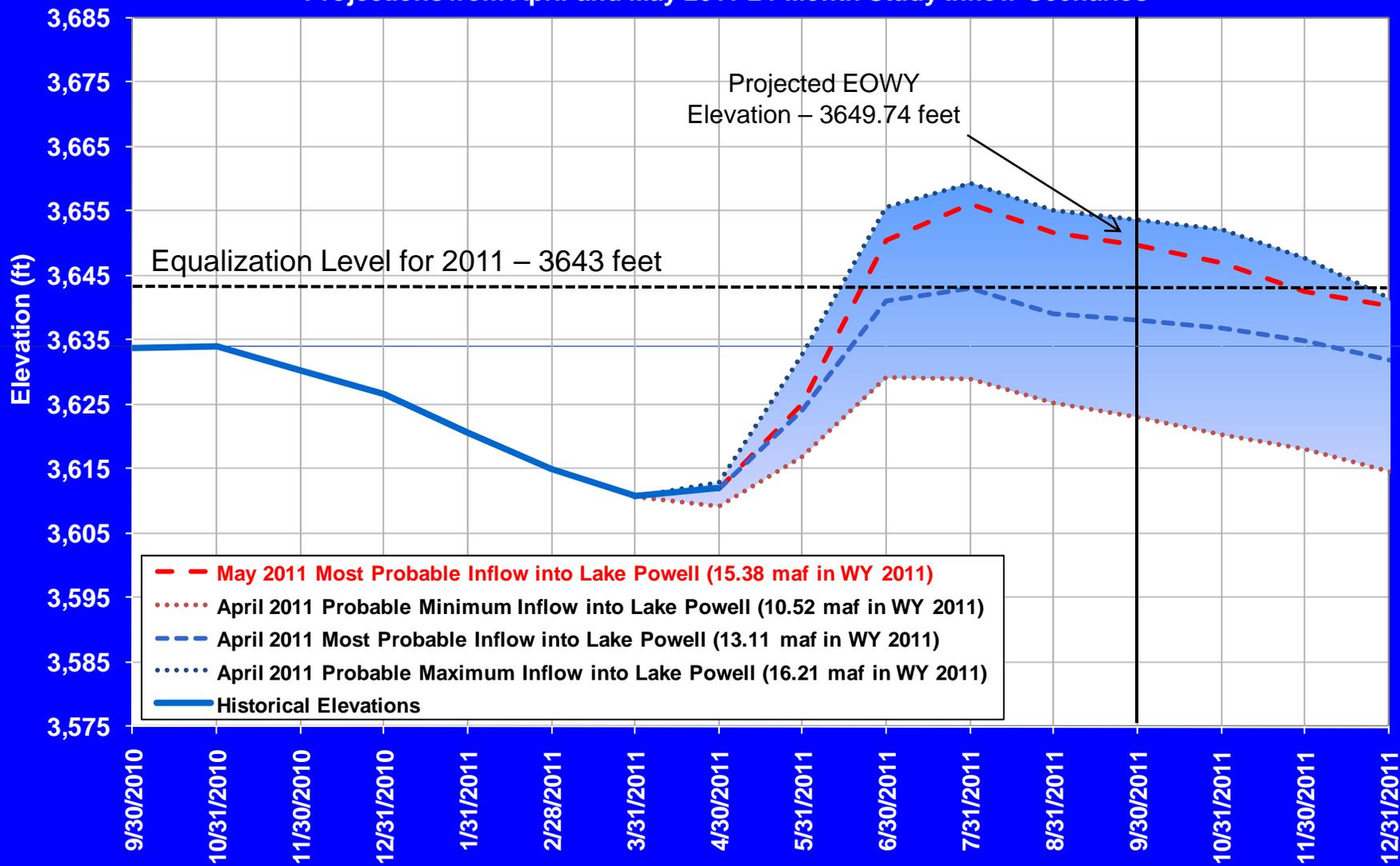
Lake Powell End of Month Elevation

Projections from April 2011 24-Month Study Inflow Scenarios



Lake Powell End of Month Elevation

Projections from April and May 2011 24-Month Study Inflow Scenarios

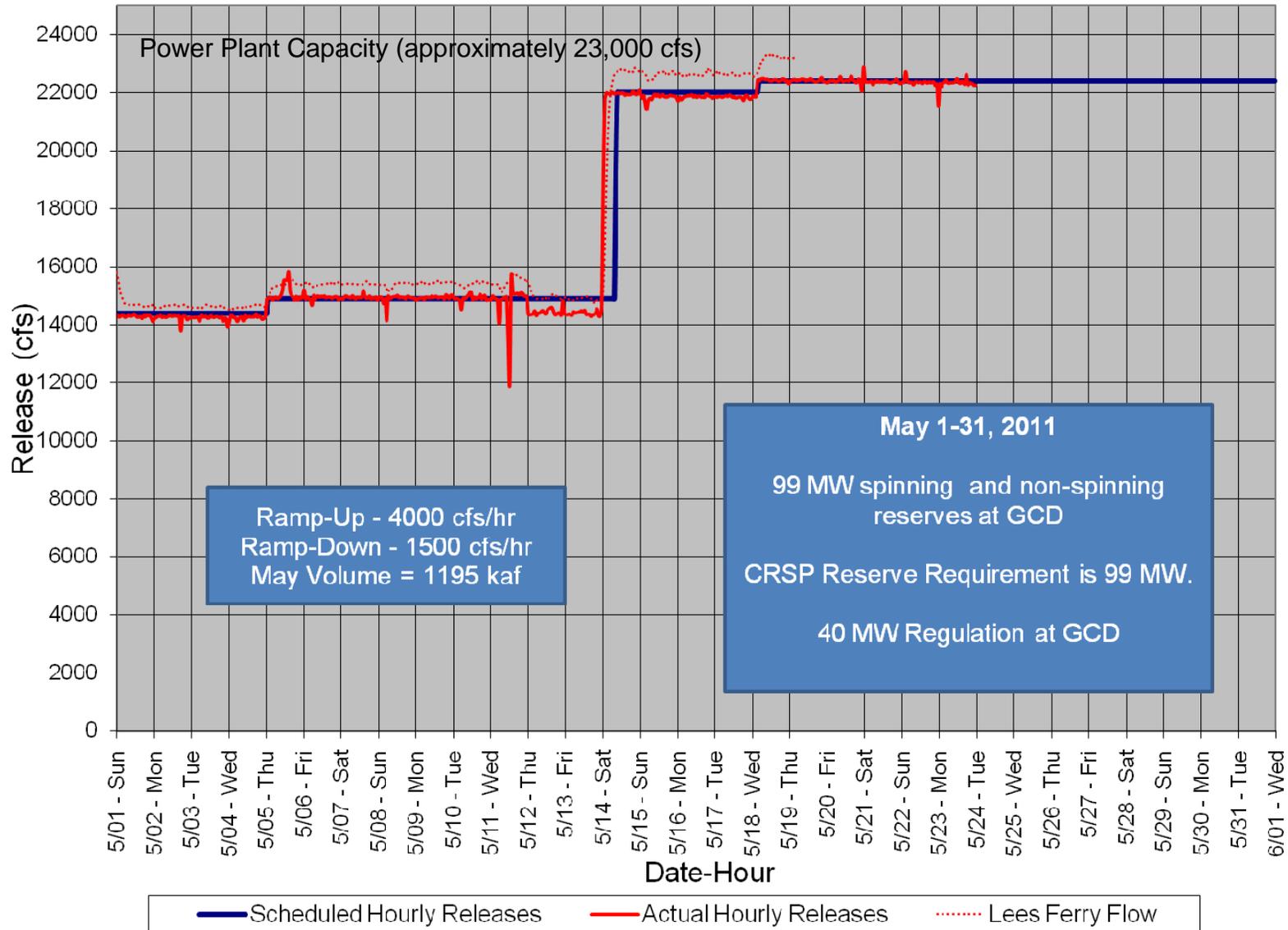


Glen Canyon Power Plant Planned Unit Outage Schedule for Water Year 2011

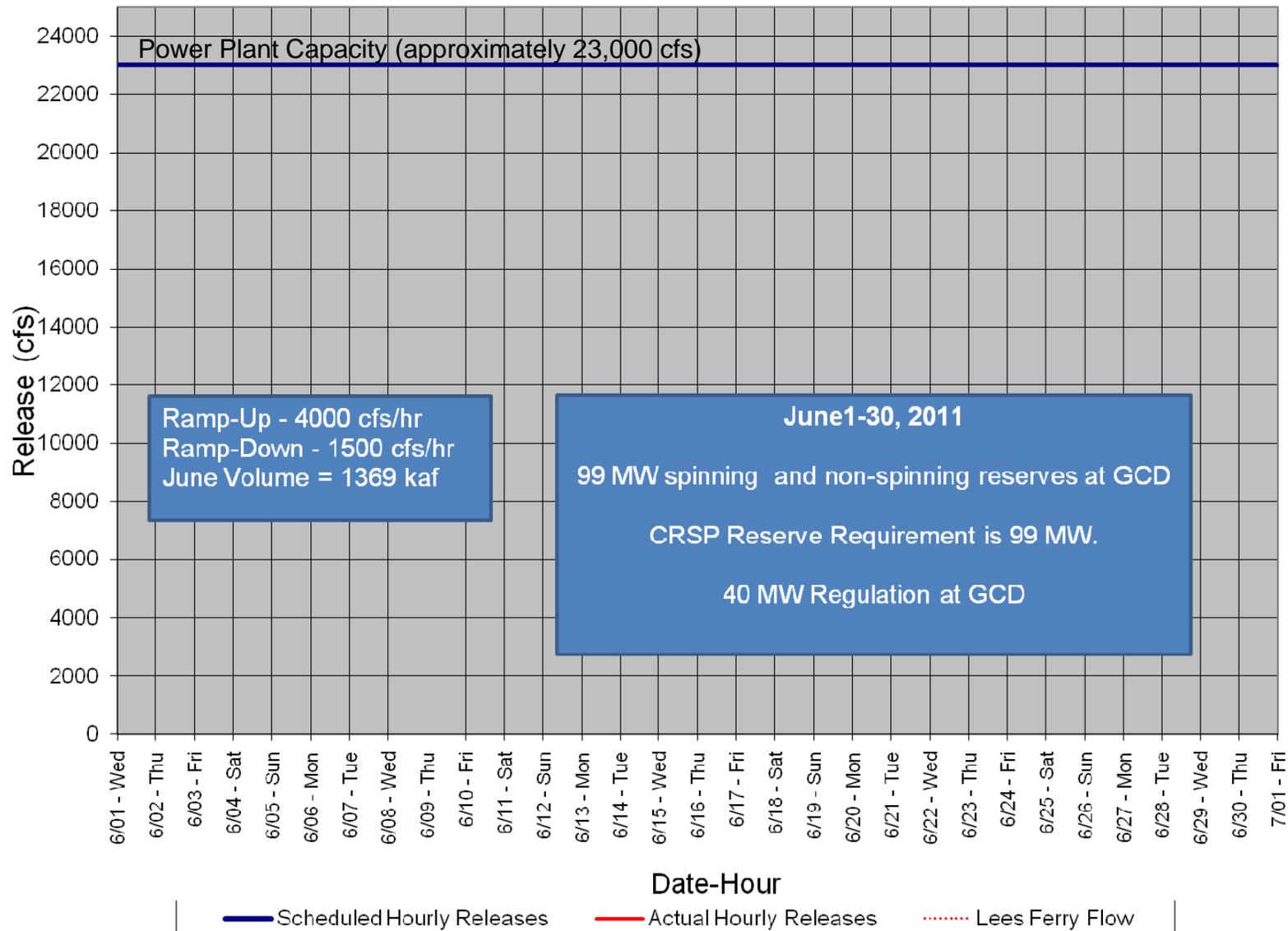
(updated 5-9-2011)

| Unit Number | Oct 2010 | Nov 2010 | Dec 2010 | Jan 2011 | Feb 2011 | Mar 2011 | Apr 2011 | May 2011 | Jun 2011 | Jul 2011 | Aug 2011 | Sep 2011 |
|----------------------|----------|----------|----------|----------|----------|----------|----------|------------------|----------|----------|----------|----------|
| 1 | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | |
| 6 (3/4 Unit) | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | |
| Units Available | 4.75 | 5.75 | 6.75 | 6.75 | 4.75 | 4.75 | 4.75 | 4.75 6.75 | 6.75 | 6.75 | 6.75 | 5 |
| Capacity (cfs) | | | | | | | | 14,400 23,000 | 23,000 | 23,825 | 23,825 | 14,840 |
| Capacity (kaf/month) | 990 | 1180 | 1350 | 1350 | 1080 | 1036 | 944 | 1195 | 1369 | 1465 | 1465 | 883 |
| Max (kaf) | 495 | 810 | 847 | 997 | 964 | 1033 | 940 | 1195 | 1369 | 1465 | 1465 | 883 |
| Most (kaf) | 495 | 810 | 847 | 997 | 964 | 1033 | 940 | 1195 | 1369 | 1465 | 1465 | 883 |
| Min (kaf) | 495 | 810 | 847 | 997 | 964 | 1033 | 940 | 1195 | 1179 | 1226 | 1037 | 714 |

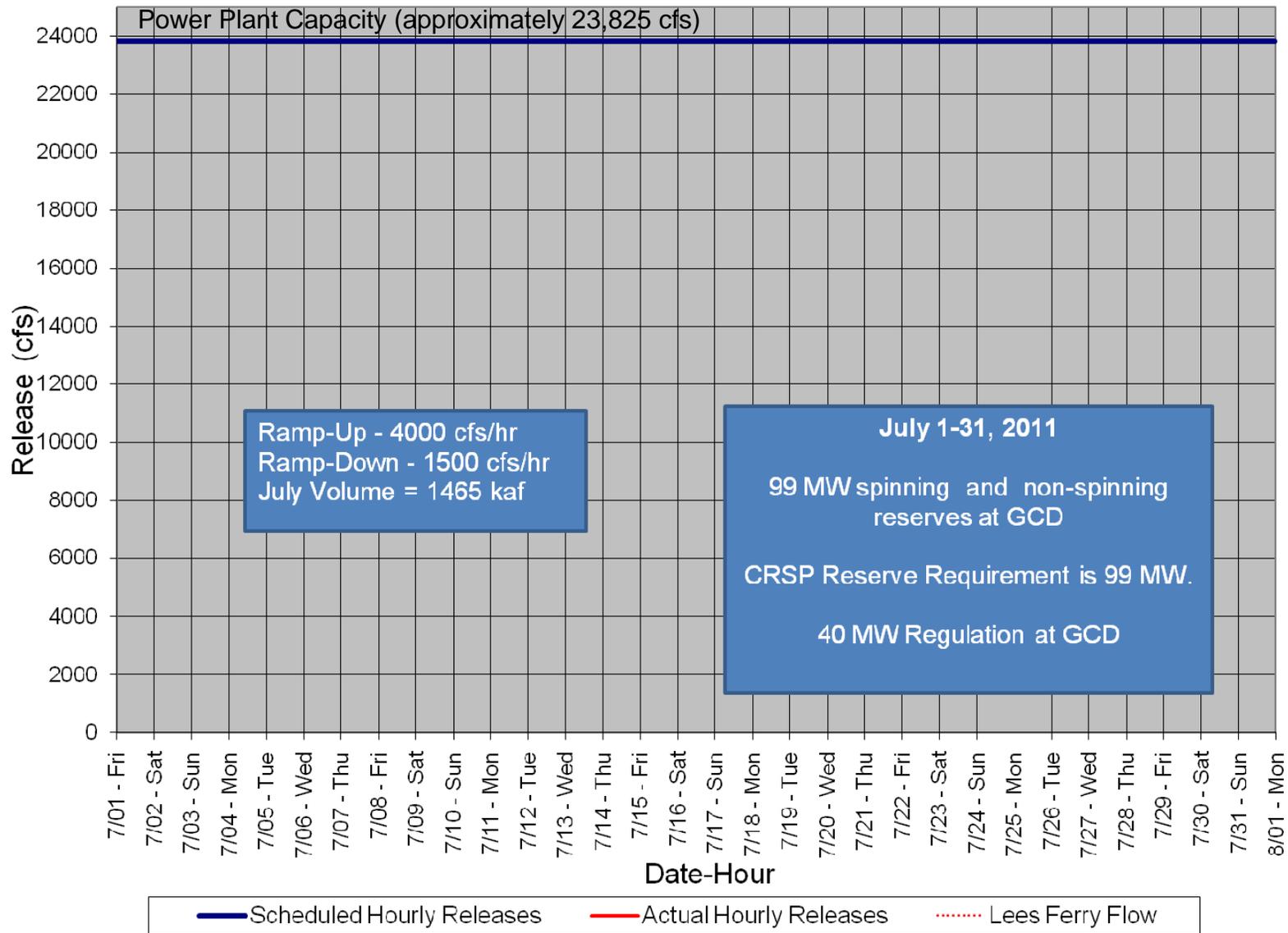
Glen Canyon Dam Hourly Release Pattern MAY 2011



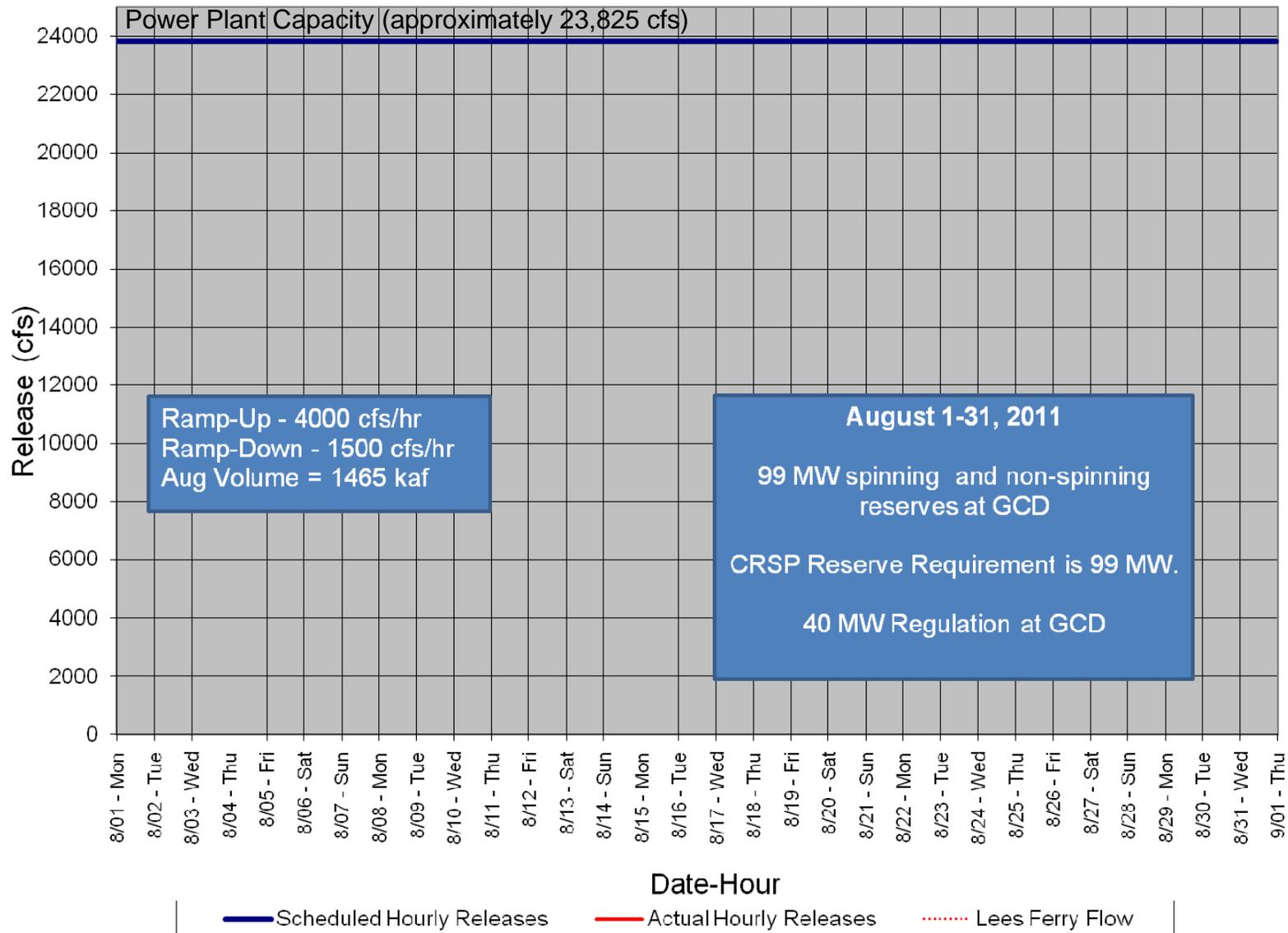
Glen Canyon Dam Hourly Release Pattern JUN 2011



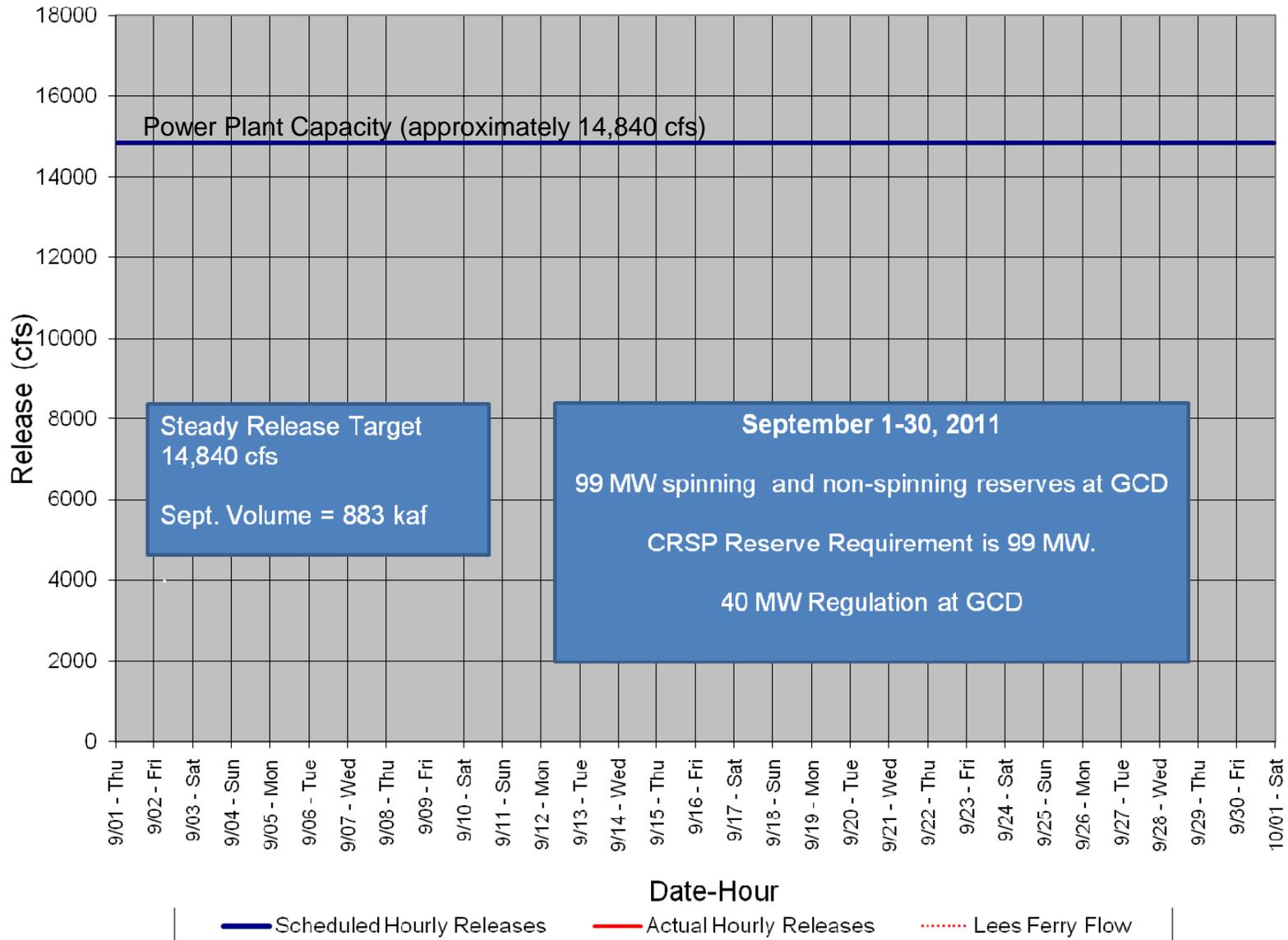
Glen Canyon Dam Hourly Release Pattern JUL 2011



Glen Canyon Dam Hourly Release Pattern AUG 2011



Glen Canyon Dam Hourly Release Pattern SEP 2011



Glen Canyon Power Plant Planned Unit Outage Schedule for Water Year 2012 (updated 5-13-2011)

| Unit Number | Oct 2011 | Nov 2011 | Dec 2011 | Jan 2012 | Feb 2012 | Mar 2012 | Apr 2012 | May 2012 | Jun 2012 | Jul 2012 | Aug 2012 | Sep 2012 |
|----------------------|-----------|----------|-----------|----------|-----------|-----------------|----------|----------|----------|----------|----------|-----------|
| 1 | [Red Bar] | | | | | | | | | | | [Red Bar] |
| 2 | | | [Red Bar] | | | | | | | | | |
| 3 | | | | | | [Red Bar] | | | | | | |
| 4 | | | | | | [Red Bar] | | | | | | |
| 5 | [Red Bar] | | | | | | | | | | | [Red Bar] |
| 6 (3/4 Unit) | [Red Bar] | | | | | | | | | | | |
| 7 | | | | | [Red Bar] | | | | | | | |
| 8 | | | | | [Red Bar] | | | | | | | |
| Units Available | 5 | 6.75 | 6.75 | 6.75 | 4.75 | 4.75 / 6.75 | 6.75 | 6.75 | 6.75 | 6.75 | 6.75 | 4.75 |
| Capacity (cfs) | 14,800 | 23,800 | 23,800 | 23,000 | 14,400 | 14,400 / 23,800 | 23,000 | 23,000 | 23,000 | 23,800 | 23,800 | 14,800 |
| Capacity (kaf/month) | 1000 | 1160 | 1370 | 1370 | 940 | 1110 | 1300 | 1370 | 1370 | 1460 | 1460 | 880 |
| Max (kaf) | 912 | 1138 | 800 | 800 | 900 | 1110 | 1300 | 1370 | 1370 | 1460 | 1460 | 880 |
| Most (kaf) | 912 | 1138 | 800 | 800 | 800 | 800 | 800 | 950 | 1100 | 1165 | 1109 | 714 |
| Min (kaf) | 912 | 1138 | 800 | 800 | 700 | 600 | 600 | 600 | 600 | 860 | 834 | 476 |

Lower Colorado River Basin

Hydrology and Operations

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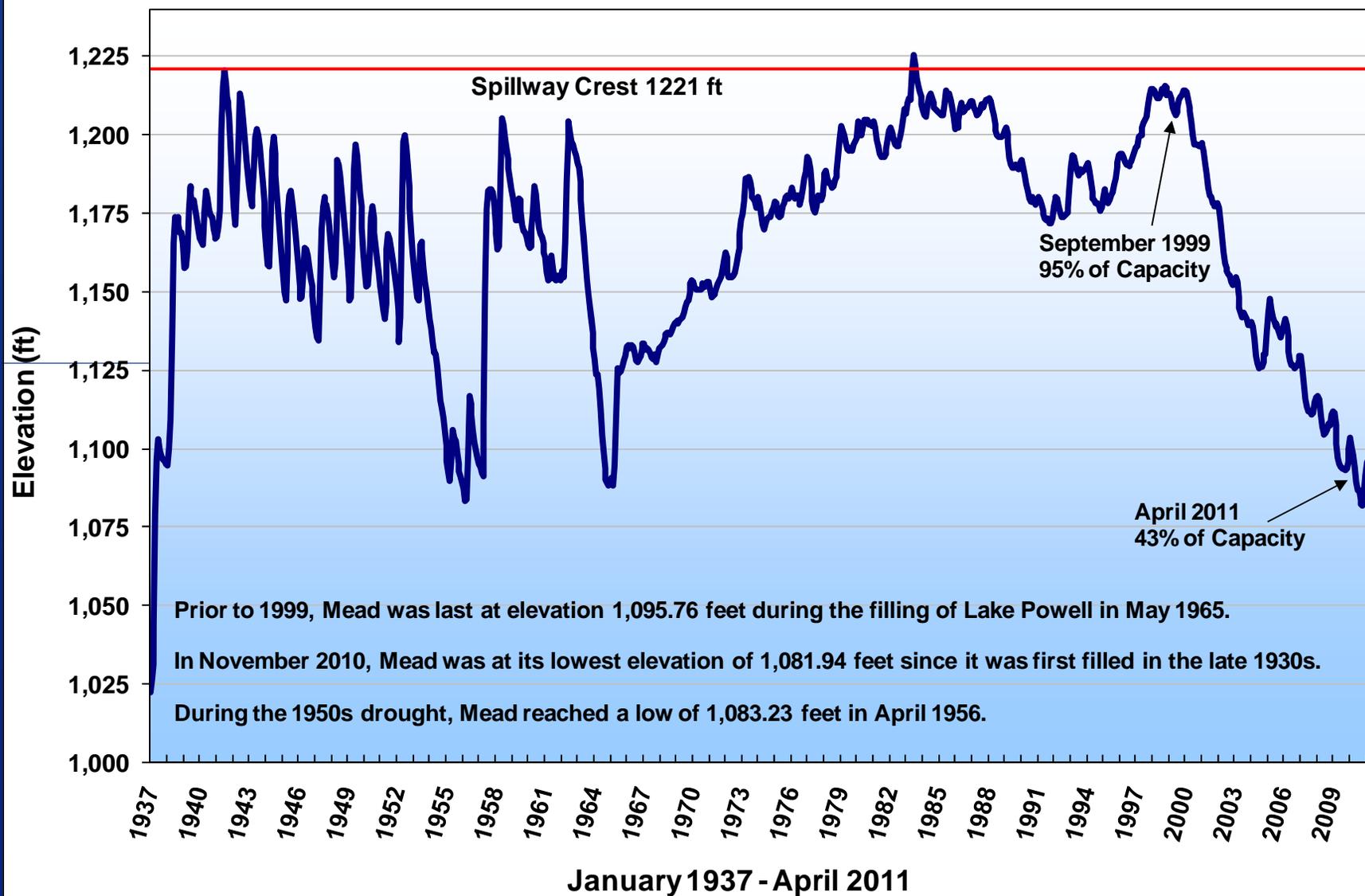
Colorado River Basin Storage (as of May 30, 2011)

| Current Storage | Percent Full | MAF | Elevation (Feet) |
|-----------------------|--------------|-------|------------------|
| Lake Powell | 58% | 14.02 | 3,622 |
| Lake Mead | 44% | 11.29 | 1,098 |
| Total System Storage* | 55% | 32.94 | NA |

*Total system storage was 33.17 maf or 56% this time last year

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Lake Mead End of Month Elevation

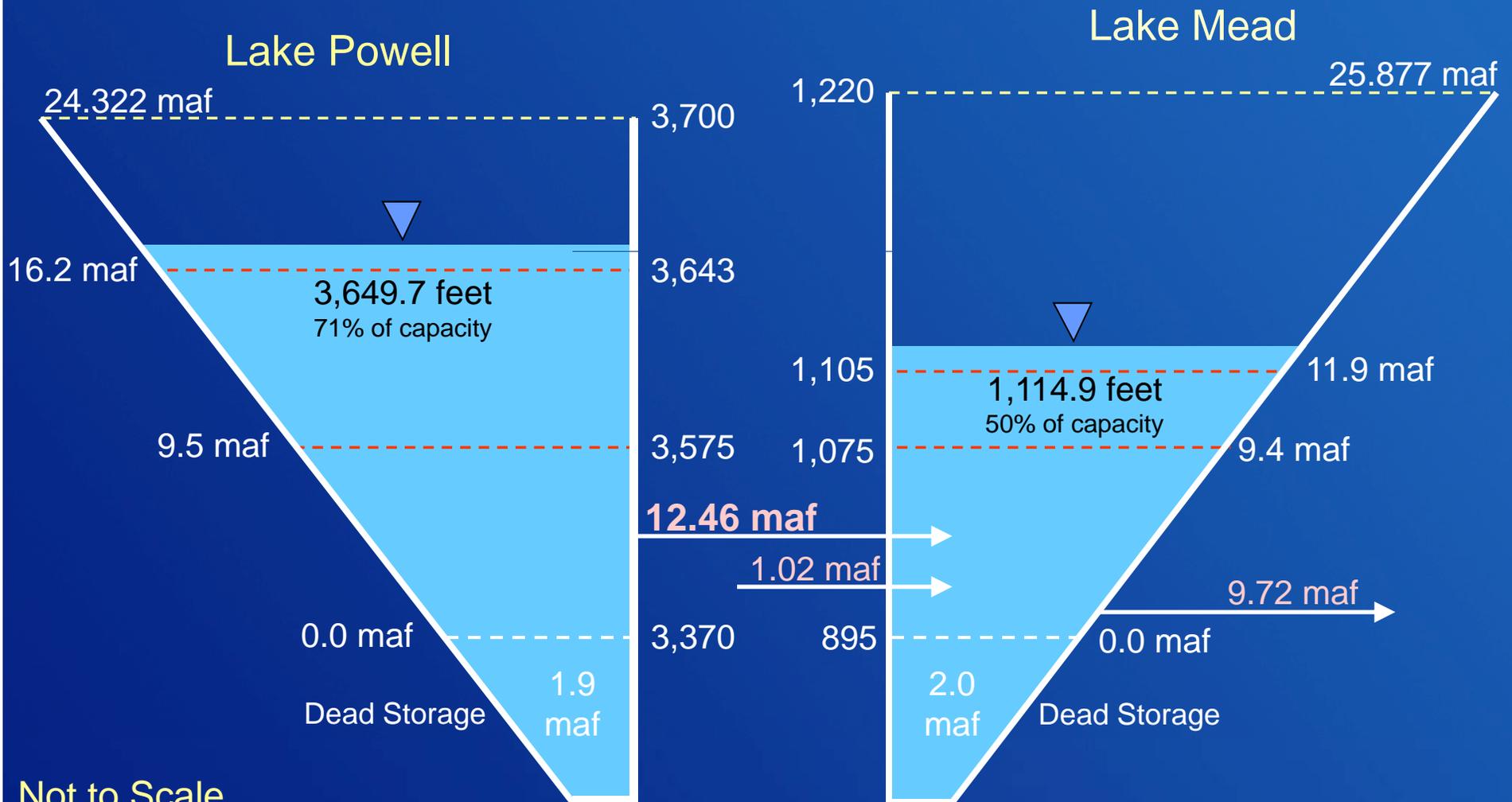


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Water Year 2011 Projections

Published May 2011 Most Probable Inflow Scenario

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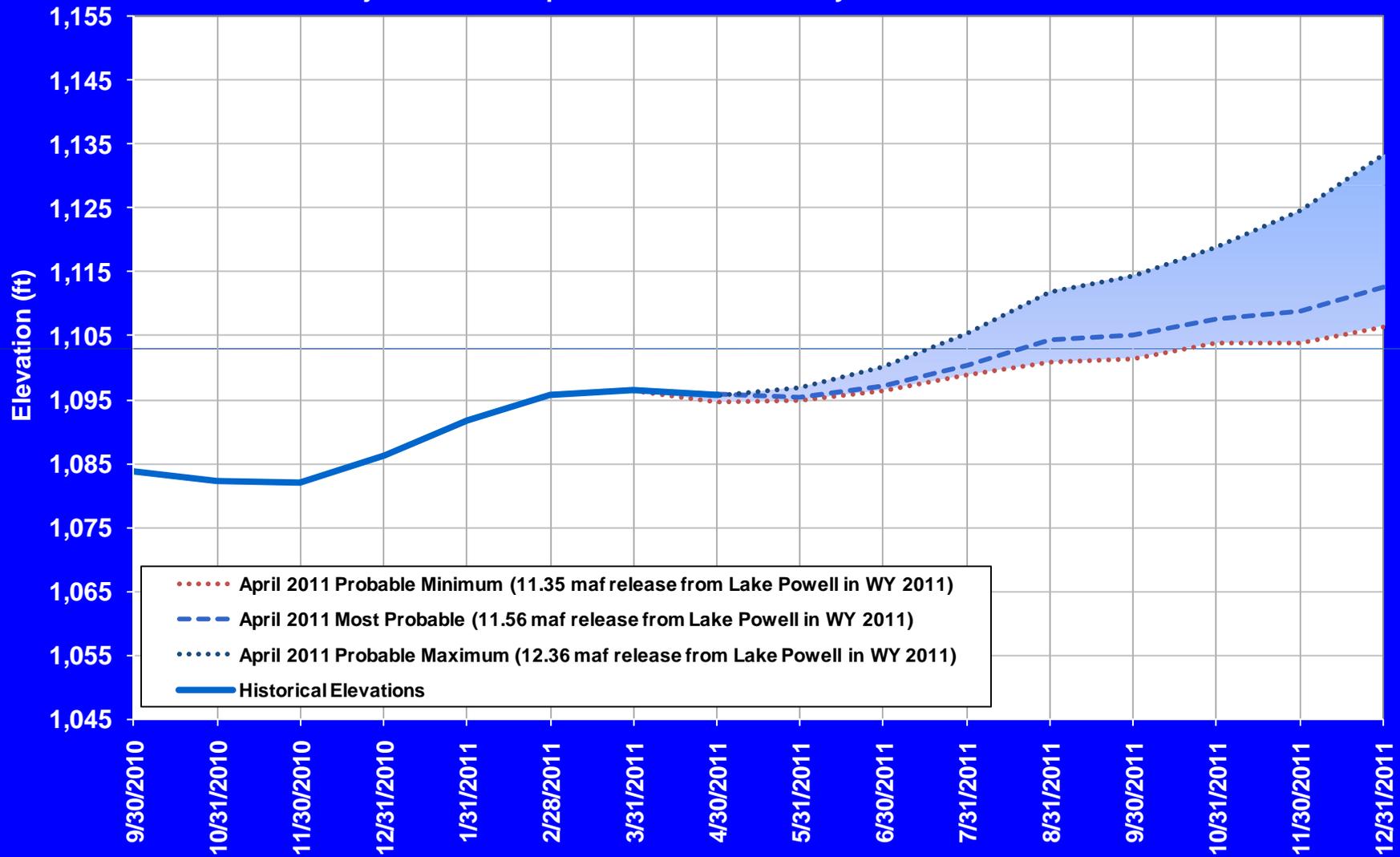
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RECLAMATION

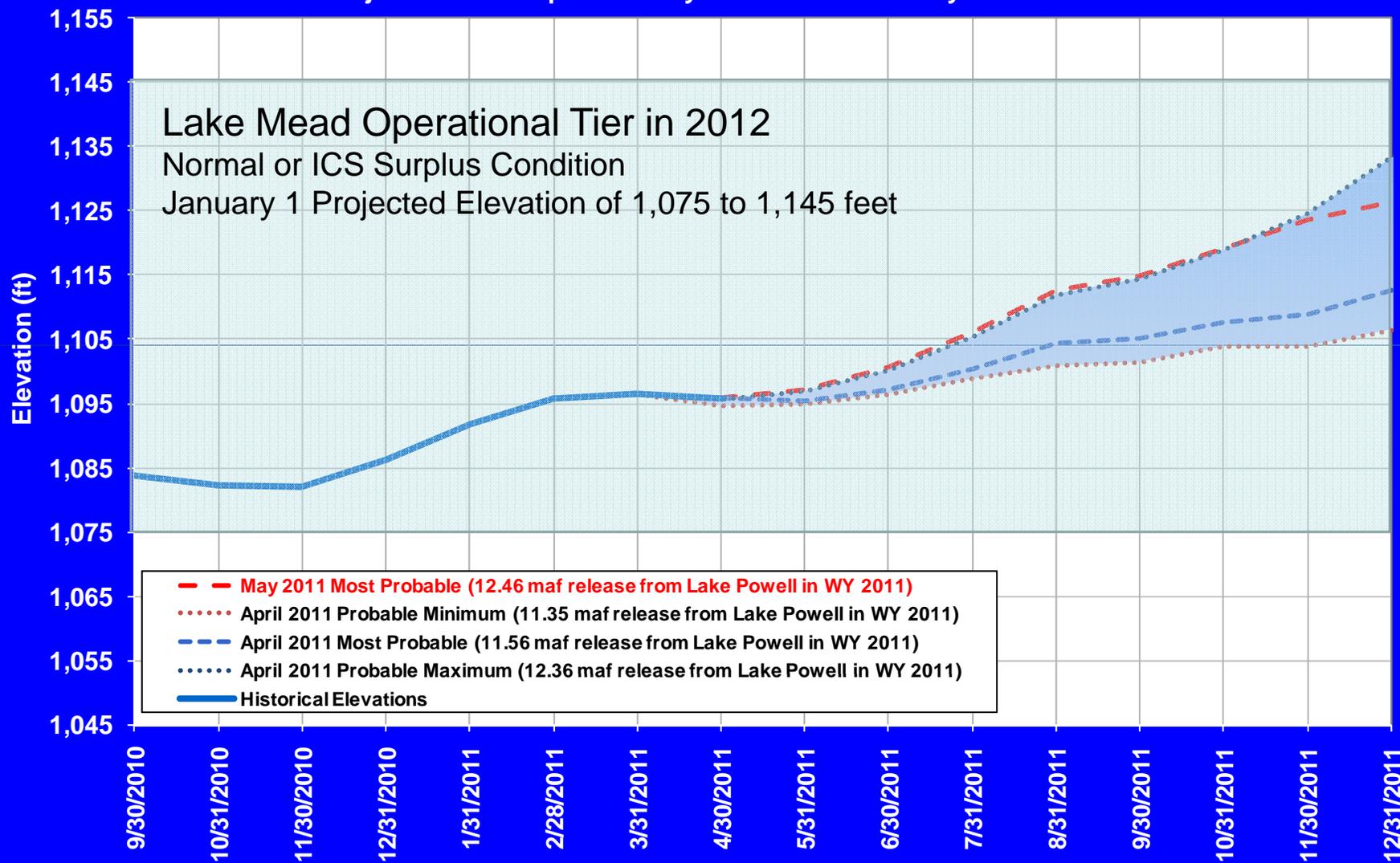
Lake Mead End of Month Elevation

Projections from April 2011 24-Month Study Inflow Scenarios



Lake Mead End of Month Elevation

Projections from April and May 2011 24-Month Study Inflow Scenarios



Lower Basin Side Inflows Glen Canyon to Hoover in WY/CY 2011^{1,2}

| Month in WY/CY 2011 | | Intervening Flow Glen Canyon to Hoover (KAF) | Intervening Flow Glen Canyon to Hoover (% of Average) | Difference From 5-Year Average (KAF) |
|---|----------------|--|---|--|
| H I S T O R Y | October 2010 | 80 | 136% | +21 |
| | November 2010 | 13 | 27% | -35 |
| | December 2010 | 248 | 251% | +149 |
| | January 2011 | 75 | 99% | -1 |
| | February 2011 | 84 | 91% | -8 |
| | March 2011 | 77 | 96% | -3 |
| | April 2011 | 141 | 235% | +81 |
| P R O J E C T E D | May 2011 | 49 | | |
| | June 2011 | 23 | | |
| | July 2011 | 50 | | |
| | August 2011 | 109 | | |
| | September 2011 | 70 | | |
| | October 2011 | 59 | | |
| | November 2011 | 48 | | |
| | December 2011 | 99 | | |
| WY11 Totals | | 1,019 | 125% | +204 |
| CY11 Totals | | 884 | 108% | +69 |

¹ Values were computed with the LC's gain-loss model for the March 2011 24-month study.

² Percent of average are based on the 5-year mean from 2006-2010 in CY 2011.

YAO Operations Update

- Excess Flows to Mexico
 - Total excess flows to Mexico from January through May 19, 2011, was 47,131 AF
- Pumped drainage return flows from the Wellton-Mohawk Irrigation and Drainage District
 - Flow at station 0+00 on the Main Outlet Drain from January through March 2011 was 25,038 AF at 2,816 ppm

YAO Operations Update

- Drainage Flows to the Colorado River
 - From the South Gila Drainage Wells January through April 2011 was 13,629 AF at 1,695 ppm
 - From the Yuma Mesa Conduit January through April 2011 was 6,727 AF at 1,521 ppm



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YAO Operations Update

- YDP Pilot Run operation started on May 3, 2010 and operated for 328 days (March 23, 2011) at 1/3 capacity
 - Approximately 30,000 AF of product water blended with drainage flows was delivered to Mexico at NIB
- Brock reservoir has conserved 43,500 AF as of May 22, 2011



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An aerial photograph of a large concrete dam and reservoir. The reservoir is filled with clear, blue-green water and is surrounded by rugged, brown mountains. The dam is a curved concrete structure with several spillways. A road with a few cars is visible on the dam's crest. The sky is clear and blue.

**2012 Colorado River Annual
Operating Plan
Colorado River Management Work Group
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May 31, 2011**

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Feds stop work on Flaming Gorge pipeline study

Associated Press | Posted: Thursday, May 26, 2011



CAT URBIGKIT Star-Tribune correspondent Fort Collins, Colo., water developer Aaron Million speaks about his then-water pipeline proposal at a 2007 meeting in Rock Springs.

CHEYENNE — The U.S. Army Corps of Engineers has suspended its evaluation of a proposed pipeline to carry water from southwestern Wyoming to the Front Range of Colorado while the developer apparently considers whether to ask a different federal agency to carry on the work.

Aaron Million of Fort Collins has applied to pipe up to 250,000 acre feet of water a year several hundred miles from the Green River at Flaming Gorge Reservoir to as far south as Pueblo, Colo.

The pipeline proposal has met with strong opposition from Wyoming state government and several communities and groups in Wyoming and Utah that rely on the Green River. Yet some Colorado irrigators and municipalities have expressed interest in the pipeline concept in the face of increasing population projections on the Front Range and heavy water demand there.

The Corps of Engineers has been overseeing a detailed environmental study of Million's proposal for the past couple of years while he's been footing the bills for a consultant who's been working with the federal agency. The Corps of Engineers had been scheduled to release a draft study in 2016.

Rena Brand, project manager for the Corps of Engineers in Littleton, Colo., said Wednesday that Million wrote to her agency last month asking it to suspend its environmental review of his pipeline proposal. She says Million wants to consider whether his project could generate electricity and, if so, whether the Federal Energy Regulatory Commission should be leading the review.

"The alternative energy produced from the project may become a major focus and benefit," Million wrote in an email to the Corps of Engineers last month. "Discussions with other federal agencies indicate that there may need to be a realignment of the lead federal agency."

The Corps of Engineers responded to Million early this month and agreed to stop work on the study for 60 days. Brand said that if her agency doesn't hear back from Million in that time, it will have to decide whether to drop the study entirely.

The proposed pipeline would have to lift water over the Continental Divide. Brand said Million hasn't given her agency any details about how the project could possibly produce a net energy gain.

The Corps of Engineers has been conducting interviews with Colorado irrigators and others who expressed interest in using water from the pipeline to assess the need for the project, Brand said. She said that work has now stopped.

Attempts to reach Million for comment on Wednesday were unsuccessful. The Coloradoan newspaper reported this week that Million was arrested Saturday on a Texas warrant accusing him of stalking an ex-girlfriend.

John Schulz, public information officer with the Larimer County Sheriff's Office, said Wednesday that Million was being held without bail in jail in Fort Collins until Texas authorities come to pick him up. Schulz said his agency's policies prohibited Million from talking with a reporter.

Mike Purcell, director of the Wyoming Water Development Commission, is the state of Wyoming's contact for the Corps of Engineers on the pipeline project.

Purcell said Wednesday he hasn't received any notice from the Corps of Engineers in 18 months about meetings concerning the project. "I can only conclude that things are being slowed down by Mr. Million himself, and for what reasons I can't really tell you," he said.

Purcell said that the long-standing conceptual design of the pipeline project has called for installing small turbines to generate electricity in locations where the water would flow downhill to help defray pumping costs.

"That has been a concept for I believe quite a while," Purcell said. "But if he's now saying it would generate power over and above the demands of the project, I would find that unlikely."



U.S. DEPARTMENT OF
ENERGY

For Immediate Release
June 3, 2011

**Moab Mill Tailings Pile 25 Percent Disposed
DOE Moab Project Reaches Significant Milestone**

(Grand Junction, CO) — One quarter of the uranium mill tailings pile located in Moab, Utah, has been relocated to the Crescent Junction, Utah, site for permanent disposal. Four million tons of the 16 million tons total has been relocated under the Uranium Mill Tailings Remedial Action Project managed by the U.S. Department of Energy (DOE).

A little over 2 years ago, Remedial Action Contractor *EnergySolutions* began shipping the tailings by rail away from their current location next to the Colorado River, to Crescent Junction 30 miles north. The project received a boost in funding from the American Recovery and Reinvestment Act that increased the weekly train shipments from four to 10.

“To be a quarter of the way done in about 2 years was unthinkable when we first started shipping in April 2009,” recalls Federal Project Director Donald Metzler. “We have surpassed every goal for tailings disposal we have set,” added a proud Metzler.

With the remaining Recovery Act funding being expended by early summer, the shipping schedule will revert to the original schedule of one daily train, 4 days a week.

At Crescent Junction, the tailings are placed in a DOE-constructed disposal cell that is excavated 25 feet below grade. The tailings material in the cell is a total of 50 feet thick, reaching 25 feet aboveground. The tailings are then capped with a 10-foot-thick, multi-layered cover composed of native soils and rock. Last summer, the project began placing final cover material on the portion of the compacted tailings that had met the final grade.

Through use of extraction and freshwater injection, the project continues to protect the Colorado River by minimizing the discharge of elevated concentrations of ammonia and uranium. These ground water contaminants, which resulted from the processing of uranium ore, can be harmful to young-of-year fish that use the backwater channels as habitat during late summer.

– DOE –

Contacts:

| | | |
|----------------|--------------------------------------|----------------|
| Donald Metzler | Moab Federal Project Director | (970) 257-2115 |
| Wendee Ryan | S&K Aerospace Public Affairs Manager | (970) 257-2145 |