



# State Engineer's Office

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STATE ENGINEER

October 27, 2005

## MEMORANDUM

TO: Members of the State Water Forum

FROM: Patrick Tyrrell, Chairman

SUBJECT: Attached for your review and information is a copy of the October 4, 2005 Water Forum meeting minutes. Please take a few moments and pencil into your calendar the Water Forum dates for this year. The next meeting will be November 1<sup>st</sup> in the State Engineer's Conference Room at 10:00 a.m.

### WATER FORUM SCHEDULE 2005-2006 1<sup>ST</sup> TUESDAY OF EACH MONTH

DATE	INVITED GUEST	DISCUSSION ITEM
November 1 <sup>st</sup>	Todd Parfitt	Watershed Based Permitting
December 6 <sup>th</sup>	Mike Jennings and Pepper Herman	WARWS Happenings
January 3 <sup>rd</sup>	Phil Ogle	Kirby Area Water Supply Project
February 7 <sup>th</sup>	Laurie Goodman and Jeff Fassett	Instream Flow
March 7 <sup>th</sup>	Paul Caffrey	NHD and FEMA Map Mod projects
April 4 <sup>th</sup>	John Lawson	Water Forecast
May 2 <sup>nd</sup>		

### SPECIAL REPORT

The next meeting of the Water Forum will be November 1<sup>st</sup>, 2005 at 10:00 a.m. in the State Engineer's Office conference room. Todd Parfitt, who is with the Department of Environmental Quality (DEQ) – Water Quality Division (WQD), will be giving us a presentation on the watershed based permitting that DEQ-WQD has recently implemented.

## WYOMING STATE WATER FORUM MEETING MINUTES

October 4, 2005

Sue Lowry called the two hundred and fiftieth meeting of the State Water Forum to order at 10:00 a.m. The following were in attendance:

<u>Name</u>	<u>Agency</u>	<u>E-mail</u>
Chris Arneson	Trihydro Corp.	carneson@trihydro.com
Matt Bilodeau	Army Corps of Engineers	matthew.a.bilodeau@usace.army.mil
Kevin Boyce	WWDC	kboyce@state.wy.us
Jane Caton	AG	jcaton@state.wy.us
Paul Caffrey	WYGISC	caffrey@uwyo.edu
Lee Hackleman	NRCS	lee.hackleman@wy.usda.gov
Rick Huber	WY G&F	rick.huber@wgf.state.wy.us
Barry Lawrence	WWDC	blawre@state.wy.us
Sue Lowry	SEO	slowry@seo.wyo.gov
Jeremy Lyon	WDEQ-WQD	jlyon@state.wy.us
Becky Mathisen	SEO	bmathi@seo.wyo.gov
Hugh McFadden	AG	hmcfad@state.wy.us
Kathy Mueller-Ogle	WDEQ-LQD	kmogle@state.wy.us
Suzy Noecker	WY Farm Bureau	snoecker@wyfb.org
Erika Olson	AG	eolson@state.wy.us
Jodee Pring	SEO	jpring@seo.wyo.gov
Mike Sweat	USGS	mjsweat@usgs.gov
Jason Thomas	DEQ-WQD	<a href="mailto:jthoma4@state.wy.us">jthoma4@state.wy.us</a>

### AGENCY REPORTS

In order to assure accurate reporting in the minutes, forms are passed out to be completed by the representative of each agency at the meeting. These minutes consist of a compilation of the written reports received. Please complete a form either at the Forum meeting or return within a couple of days to Jodee Pring, State Engineer's Office. This will increase the efficiency and accuracy of completing the minutes for the Water Forum. Reports can also be sent via e-mail to: [jpring@seo.wyo.gov](mailto:jpring@seo.wyo.gov). For more information on the following reports, please contact the agency representative listed above.

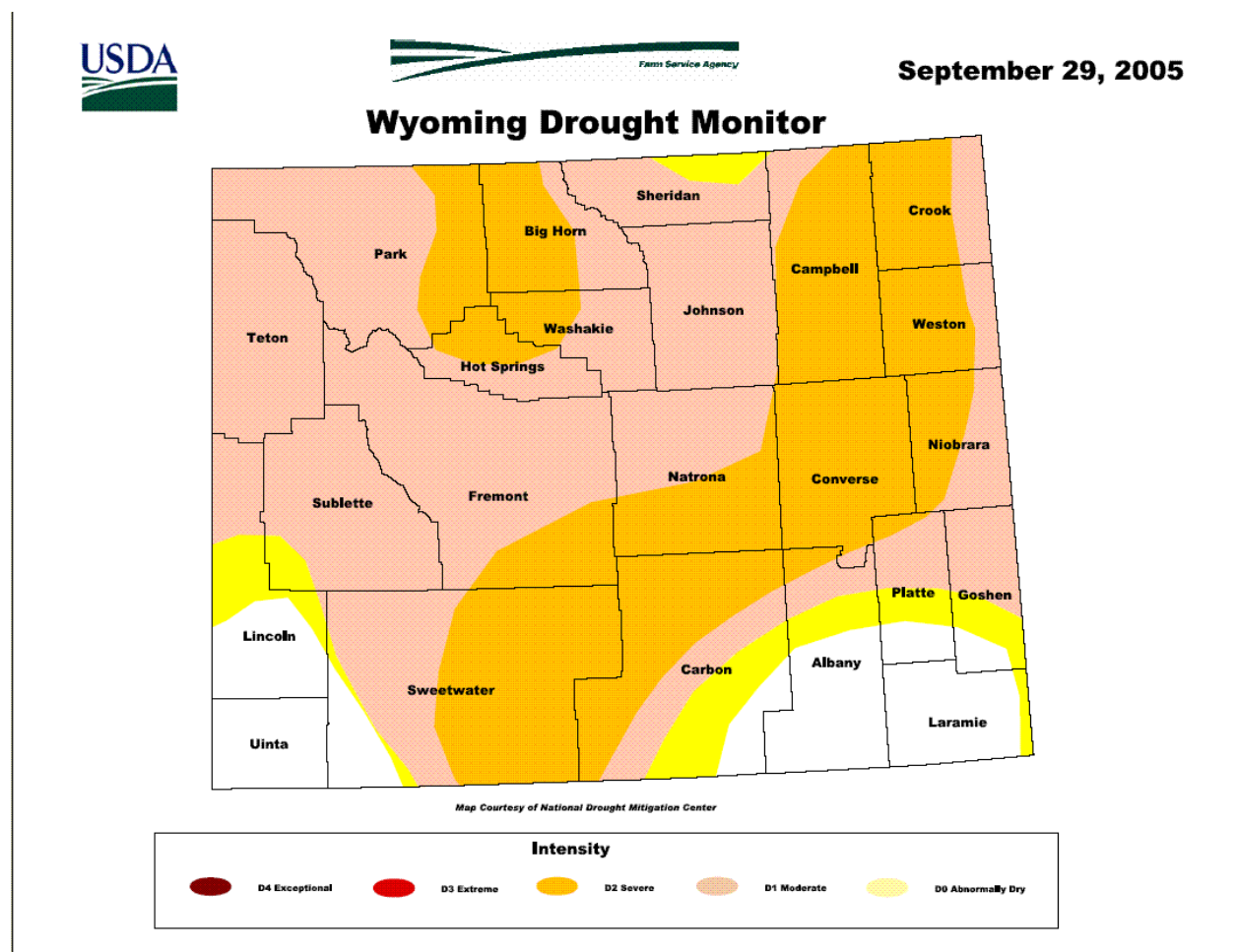
### WATER RESOURCES DATA SYSTEMS

Jan Curtis submitted the following:

Below is the latest weekly Drought Monitor map for Wyoming. Continued slow improvement is noted over the northwestern and extreme northeastern regions of the state. With additional precipitation during the next 48 hours (some in the form of snow), this is good news especially for the farmers who are developing Winter Wheat.

However, the 6 to 14 day weather forecast is calling for a gradual warmer and drier than normal trend across most of the state (higher than average forecast confidence). While this is not necessarily unusual for this time of year, continued drying of the surface and subsurface soil is problematic for our continued recovery from drought in the lower elevations. This is because we need to store and lock in adequate soil moisture now (before the ground freezes) in order to have more effective runoff later during the spring melt season.

Water supplies (reservoirs) will not be affected in the near term despite unseasonably warm weather. We have to see wait and see what the winter and spring brings to our mountains (i.e. snowpack).



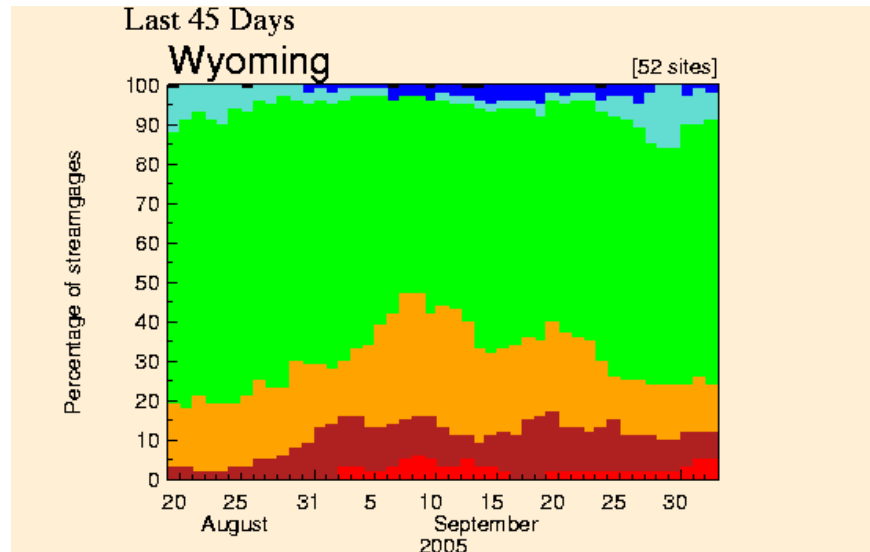
## U.S. GEOLOGICAL SURVEY

Kirk Miller submitted the following:

### Current Streamflows

<http://waterdata.usgs.gov/wy/nwis/rt>

Preliminary 7-day average streamflow data over the last 45 days at about 50 to 65 percent of reporting gaging stations in Wyoming with 30 or more years of record indicated near normal (25<sup>th</sup> to 74<sup>th</sup> percentile) conditions. As of October 4, streamflow conditions at about 25 percent of these stations are below normal (24<sup>th</sup> percentile or less).

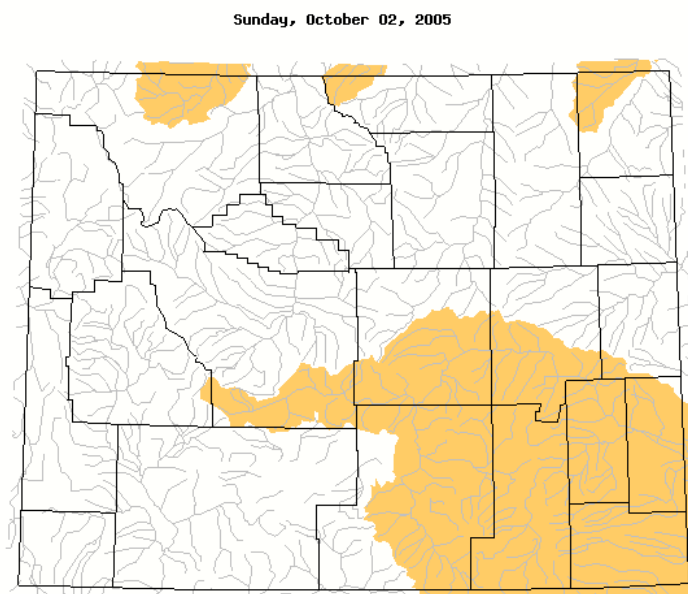


Explanation - Percentile classes						
New low	< 10	10-24	25-74	75 - 89	≥ 90	New high

### Hydrologic Drought

<http://wy.water.usgs.gov/projects/drought/>

Streamflow conditions over the last 7 days in the Clarks Fork Yellowstone, Little Bighorn, Little Missouri, North Platte River basins were below normal.



Explanation - Percentile classes				
New low	≤ 5	6 - 9	10 - 24	Insufficient data for a hydrologic region
Extreme Hydrologic Drought	Severe Hydrologic Drought	Moderate Hydrologic Drought	Below Normal	

## Hurricane Katrina

The focus of the USGS continues to be assisting employees and their families in the Gulf Coast region cope with the disaster as well as interpreting and distributing data collected before, during, and after the disaster. Science features related to Hurricane Katrina can be found at <http://www.usgs.gov/katrina/>

Twelve of the 45 employees at the USGS Hydrologic Instrumentation Facility (HIF) in Stennis Space Center, MS suffered moderate to extensive damage to their homes and personal property. Some lost everything except for the clothes they were wearing and the car they were driving. The USGS is helping these families rebuild their lives through the donations and volunteer efforts of fellow employees. HIF is functioning with limited communications. For questions concerning HIF instrumentation, please contact Kirk Miller at (307) 775-9168 ([kmiller@usgs.gov](mailto:kmiller@usgs.gov)).

USGS continues to provide satellite imagery, critical infrastructure data, elevation products, and various forms of mapping information and scientific assessments of the damaged areas. USGS scientists are assessing the microbiological impacts of Hurricane Katrina and the potential effects upon the Gulf of Mexico. Field teams are sampling 22 sites on Lake Ponchartrain weekly to monitor bacterial contamination.

Crews are also repairing and replacing damaged stream gages to restore flood warning capacities and installing temporary gages throughout New Orleans to provide water-level information to FEMA, the Army Corps of Engineers, and others to begin the recovery process. The USGS lost operation of 23 streamgages in Louisiana and 12 streamgages in Mississippi.

Working in cooperation with NASA and NOAA, USGS scientists are also using airborne laser mapping systems (LIDAR) to quantify coastal changes, measure the changing water levels in the city of New Orleans, and survey and assess the levee system.

## BUREAU OF RECLAMATION / WYOMING AREA OFFICE

John Lawson submitted the following:

1. Water Supply Conditions of the North Platte River Basin.

September 30, 2005 Reservoir Conditions

<u>Reservoir</u>	<u>Elev. (Ft)</u>	<u>Content (AF)</u>	<u>% Full Conservation Storage</u>	<u>% Avg.</u>
Seminole	6318.19	438,576	43	64
Pathfinder	5792.21	238,911	24	47
Alcova	5498.31	180,254	98	101
Glendo	4588.84	138,417	27	134
Guernsey	4393.10	4,185	9	44

September 30, 2004 Reservoir Conditions

<u>Reservoir</u>	<u>Elev. (Ft)</u>	<u>Content (AF)</u>	<u>30 Year Average (AF)</u>
Seminole	6299.12	270,477	680,100
Pathfinder	5785.33	194,164	513,000
Alcova	5498.35	180,352	179,100
Glendo	4586.53	127,242	103,200
Guernsey	4399.58	9,251	9,500

October through September Inflows

<u>Reservoir</u>	<u>Inflows</u>	<u>% Of Average</u>
Seminole	968.4	102
Pathfinder	98.4	67
Alcova to Glendo	86.3	41
Glendo to Guernsey	6.3	17

Seminole Reservoir storage was the fifth lowest October storage in the last 30 years. Pathfinder Reservoir storage was the fifth lowest October storage in the last 30 years.

Kendrick ownership was 542,546 acre-feet (AF) on September 30, 2005 and approximately 57% of average (947,400 AF), which compares to the 643,796 AF of Kendrick ownership on this date last year. The Kendrick ownership was the third lowest October ownership in the last 30 years. The Kendrick ownership has not come into priority to accrue water since water year 2000. The September 30, 2005, North Platte ownership was 402,054 AF, which was approximately 101% of average (396,400 AF), which compares to the 67,479 AF of North Platte ownership on this date last year. The Glendo ownership was 53,982 AF on September 30, 2005, which was approximately 40% of average (136,100 AF), which compares to the 64,301 AF of Glendo ownership on this date last year. The Glendo ownership was the second lowest October ownership in the last 30 years.

Flows in the Miracle Mile below Kortes Dam was set at approximately 530 cubic feet per second (cfs) on October 1, 2005. Releases from Gray Reef Reservoir are approximately 500 cfs. Due to current water supply conditions, the Bureau of Reclamation will not be conducting flushing flows below Gray Reef this fall.

The annual drawdown of Alcova Reservoir will begin on October 3, 2005. The reservoir will be lowered approximately 2.5 feet per week until the reservoir reaches the normal winter operating range of 5488± one foot on October 30, 2005.

## 2. Water Supply Conditions of the Big Horn Basin

### September 30, 2005 Reservoir Conditions

<u>Reservoir</u>	<u>Elev. (Ft)</u>	<u>Content (AF)</u>	<u>% Full</u> <u>Conservation Storage</u>	<u>% Avg.</u>
Bull Lake	5774.02	66,804	44	86
Boysen	4719.06	631,932	85	112
Buffalo Bill	5367.60	450,274	70	104
Pilot Butte	5436.17	15,435	46	95

### September 30, 2004 Reservoir Conditions

<u>Reservoir</u>	<u>Elev. (Ft)</u>	<u>Content (AF)</u>	<u>30 Year Average (AF)</u>
Bull Lake	5783.24	89,664	77,600
Boysen	4711.60	515,208	563,400
Buffalo Bill	5365.87	438,829	434,000*
Pilot Butte	5441.24	18,764	16,200

\* The average used for Buffalo Bill Reservoir reflects data from 1993 through 2004. In 1992, the capacity of the reservoir was increased to approximately 646,565 AF as a result of raising the dam. A long term average cannot be calculated until several years of operation occur under the increased storage.

### October through September Inflows

<u>Reservoir</u>	<u>Inflows (KAF)</u>	<u>% Average</u>
Bull Lake	202.4	108
Boysen	945.3	98
Buffalo Bill	680.0	80

The total release from Buffalo Bill Reservoir to the river is approximately 585 cfs as measured at the Cody river gage without the springs. The release from Boysen Dam was set at approximately 950 cfs on October 1, 2005.

## WYOMING WATER DEVELOPMENT COMMISSION (WWDC)

Barry Lawrence reported the following:

Two individuals have been recently promoted into the two open manager slots in the Water Development Office. Phil Ogle has been named head of the River Basin planning section and Mike Hackett has been named head of the new Dam and Reservoir section. We congratulate these individuals.

Applications have been received for this year's round of new planning and construction projects (see list below). These projects will be considered for inclusion in the Omnibus Planning and Construction bills by the Commission and the Legislative Select Water Committee at its joint meeting on November 17-18 in Casper.

<u>Project:</u>	<u>Project Manager</u>	<u>Plan/Const</u>	<u>Description</u>
Casper Alcova Irrigation District	Chris Abernathy	Planning	GIS
Cheyenne/BOPU Storage	Bruce Brinkman	Planning	New dam
Douglas Box Elder Spring	Kevin Boyce	Planning	Spring/Well
City of Evanston		Const	River channel rehab
Town of Glendo		Const	Replacement well
Goshen Irrigation District	Bruce Brinkman	Planning	Master plan
Heart Mountain		Const	Lateral rehab
Hopkins Producers Irr. Dist.		Const	Irrigation system pipeline
Hot Springs Conservation Dist.	Ron Vore	Planning	Watershed plan
Jon's Drop Hydro *	Bruce Brinkman	Planning	Hydropower retrofit
Town of Labarge	Kevin Boyce	Planning	Well
Laramie Co. Fair Board	Bruce Brinkman	Planning	Archer Master plan
City of Laramie *		Const	Master meters
Little Snake Supplemental WS *	Phil Ogle	Planning	New dam geotech
Middle Piney Reservoir	Jodie Pavlica	Planning	Dam rehab
Mills-Wardwell		Const	Pipeline
NW Rural		Const	Tank/pipeline
Owl Creek	Chace Tavelli	Planning	Recon-new system
Pine Haven		Const	Pipeline
Powder River Preservation	Chris Abernathy	Planning	Master plan
Powder River Irr. Dist.	Chris Abernathy	Planning	Dam feasibility study
Shell Valley	Chris Abernathy	Planning	Watershed plan
Sheridan SAWS	Phil Ogle	Planning	Master plan
Shoshone ID Eagle Nest Creek		Const	Flume/lateral rehab
Shoshone ID Conveyance GIS	Chris Abernathy	Planning	GIS
South Thermopolis	Chris Abernathy	Planning	Master plan
Star Valley Ranch	Chris Abernathy	Planning	Master plan
Sundance Meadows		Const	Pipeline
Town of Wamsutter		Const	Tank/pipeline
Washakie Co./Upper Hanover	Vicki Beckman	Planning	Lateral rehab
City of Worland		Const	Pipeline

\* Continuing projects

The Weather Modification Pilot Program approved by last year's Legislature is actively engaged in acquiring the necessary permits to operate the program in each of the two target areas (Medicine Bow/Sierra Madre and Wind River Ranges). It is anticipated that the NEPA process will begin next month with the submittal of applications for special user permits. Finally, numerous Federal and State agencies have designated representatives to serve on the Weather Modification advisory team which will continue to meet and advise throughout the project.

### SPECIAL REPORT

Becky Mathisen of the State Engineer's Office (SEO) and Jason Thomas of the Department of Environmental Quality – Water Quality Division (DEQ-WQD) gave a presentation on the Coal Bed Natural Gas (CBNG) Water Planning map that SEO and DEQ-WQD developed as



a tool to assist CBNG producers. The following is the handout that was provided at the meeting:

### SEO/DEQ CBNG Water Planning Map

The SEO/DEQ Coal Bed Natural Gas Water Planning Map is a planning tool that was developed jointly by the Wyoming State Engineer's Office, Surface Water Division and the Wyoming Department of Environmental Quality, Water Quality Division for the purpose of providing information to the public and to coal bed natural gas producers in northeast Wyoming. Two different layers provide basin- and stream-specific information that summarizes some of the concerns of the two agencies, thus saving time in the application for and processing of water storage rights and water discharge permits. The primary users of the map are the producers of coal bed natural gas from the coal seams in northeast Wyoming.

The Basins layer of the map is the background color and is the SEO's categorization of basins by the presence or absence of downstream protectable irrigation. Protectable irrigation is defined by two conditions: the presence of a valid surface water right for irrigation purposes and the presence of active irrigation. Irrigation activity was verified by field inspections in 2003 or 2004. As new irrigation rights are filed at the SEO, the Basins layer is updated and all junior filings receive limitations to protect the new irrigation right. The level and method of protection are functions of water quality. The revision date is shown in the lower right hand corner of the map. In the Basins layer, streams that receive water from many tributaries are defined as Perennial Stream Corridors and their diversions for irrigation are considered unprotectable for the purpose of water storage management.

The Streams layer of the map assigns colors to the rivers and streams and is DEQ's product.

The map can be found on the web in three formats, each having advantages and disadvantages:

- PDF: Go the SEO's web site at [seo.state.wy.us](http://seo.state.wy.us), click on Coal Bed Natural Gas, click on [SEO/DEQ CBNG Water Planning Map \(Northeast Wyoming\)](#), click "I agree" at the bottom of the disclaimer, click on [Download the map in PDF format](#).
- JPG: Same as above, except click on [Download the map in JPG format](#).

The PDF and JPG versions are formatted to plot onto ANSI E sized paper (34" x 44") in landscape orientation. Neither of these versions shows the attribution behind the layers.

- ArcIMS: Go to [seo.state.wy.us/website/cbm](http://seo.state.wy.us/website/cbm). This version allows the user to select and deselect layers, zoom in, query, see attributes, etc. without having any software besides a browser. If set the DEQ Stream Classification layer as the active layer, you can see the attribution entered by the DEQ. Caution: the legends, titles and notes of the map do not appear in the ArcIMS version.

Paper copies of the map are available, free of charge, from Becky Mathisen of the State Engineers Office (contact information is below).

Questions about the map and suggestions on how to improve the map can be directed to Becky Mathisen at 307-777-6148 or [bmathi@seo.wyo.gov](mailto:bmathi@seo.wyo.gov).

The meeting adjourned at 11:45 a.m.