



# State Engineer's Office

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PATRICK T. TYRRELL  
STATE ENGINEER

January 23, 2008

## MEMORANDUM

TO: Members of the State Water Forum

FROM: Patrick Tyrrell, Chairman

SUBJECT: Attached for your review and information is a copy of the January 8, 2008 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 February 5th in the State Engineer's Conference Room at 10:00 a.m.

### WATER FORUM SCHEDULE 2007-2008 1<sup>ST</sup> TUESDAY OF EACH MONTH

	<b>INVITED GUEST</b>	<b>DISCUSSION ITEM</b>
February 5 <sup>th</sup>	Jim Cannia - USGS Nebraska Water Science Center	Determination of Canal Leakage Potential Using Continuous Resistivity Profiling Techniques, Interstate Canal
March 4 <sup>th</sup>	Cody Moser & Ty Soukup - Graduate Students - Civil & Architectural Engineering - UW Office of Water Programs	Improved Streamflow Forecasting of the North Platte River
April 1 <sup>st</sup>	John Lawson, Bureau of Reclamation	Water Forecast
May 6 <sup>th</sup>	Bruce Brinkman - WY Water Development Office/Paul Ivancie - JR Engineering	Laramie County Aquifer Study

### SPECIAL REPORT

The next meeting of the Water Forum will be February 5, 2008 at 10:00 a.m. in the State Engineer's Office conference room. We will be hearing from Jim Cannia, who is with the USGS Nebraska Water Science Center in Mitchell. Mr. Cannia will be speaking to us on "Determination of Canal Leakage Potential Using Continuous Resistivity Profiling Techniques, Interstate Canal".

# WYOMING STATE WATER FORUM MEETING MINUTES

January 8, 2008

Sue Lowry called the two hundred and seventy-first 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>
Brian Anderson	USBR	bjanderson@gp.usbr.gov
John Barnes	SEO	jbarne@seo.wyo.gov
Clint Bassett	BOPU	cbassett@cheyennebopu.org
John Bellamy	UW-Dept. of Civil Engineering	bellamyj@uwyo.edu
Liberty Blain	LCCD	liberty@lccdnet.org
Mark Conrad	WDEQ-WQD	mconra@state.wy.us
Mark Donner	Trihydro	mdonner@trihydro.com
Joel Farber	Trihydro	jfarber@trihydro.com
Lee Hackleman	NRCS	lee.hackleman@wy.usda.gov
Eric Hargett	WDEQ-WQD	eharge@state.wy.us
Rick Huber	WY G&F	rick.huber@wgf.state.wy.us
Sue Lowry	SEO	slowry@seo.wyo.gov
Pete Michael	AG	pmicha@state.wy.us
Kathy Muller Ogle	WDEQ-LQD	kmogle@state.wy.us
Chris Nicholson	WRDS	cnichol5@uwyo.edu
Jodee Pring	SEO	jpring@seo.wyo.gov
Mike Sweat	USGS	mjsweat@usgs.gov
Glenn Tootle	UW-Dept. of Civil Engineering	tootleg@uwtyo.edu
David Waterstreet	WDEQ-WQD	dwater@state.wy.us
Justin Williams	Dept. of Agriculture	jwilli7@state.wy.us

## 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.

### STATE ENGINEER'S OFFICE (SEO)

Jodee Pring reported the following:

A Green River Basin Advisory Group meeting will be held in Kemmerer on January 29<sup>th</sup> at 6:00 p.m. at the Kemmerer town hall. Items on the agenda include presentations by the Kemmerer/Diamondville Joint Powers Board, the Wyoming Water Development Office (WWDO) dam and reservoirs division and the State Engineer's Office. Copies of meeting records and agendas can be found on the WWDO Water Planning website at:

<http://waterplan.state.wy.us/basins/green/green.html>

The next State and Federal Coordinating Committee (SFCC) meeting will be held January 22 at the Herschler building in Cheyenne. One of the items on the agenda is a presentation on carbon sequestration by Ron Surdam, State Geologist.

Sue Lowry reported the following:

A Yellowstone River Compact Commission meeting was held Dec. 5 and 6 in Billings, MT. The technical committee met on the 5<sup>th</sup> from 1:30 - 5:30 p.m. and the full commission meeting met the 6<sup>th</sup> from 8:30 am - 12:30 pm. Both meetings were held at the Lewis and Clark room at MSU - Billings. Please visit <http://cr.water.usgs.gov/YRCC/index.html> for more information.

A meeting of the Missouri River Association of State and Tribes (MoRAST) was held Dec. 11 and 12 in Pierre, SD. The agenda included presentations on invasive species on the Missouri River and climate change and its effects on the Missouri. The next meeting will be held in conjunction with the Missouri River Natural Resources Committee (MRNRC) conference. That conference entitled "From a Healthy Ecosystem to a Healthy Economy: A River in Transition" will be held Feb. 26 - 28 at the Lied Conference Center in Nebraska City, NE.

A Belle Fourche River Compact meeting was held in Belle Fourche, SD on Dec. 18<sup>th</sup>. The agenda included irrigation district reports along with an update on summer 2007 irrigation season operations.

The Interstate Council on Water Policy (ICWP) Western States Water Council Joint meeting will be held March 3-7 in Washington, DC.

#### WATER RESOURCES DATA SYSTEM (WRDS)

Chris Nicholson reported the following:

The drought index will be published soon with new information on it, so be looking for that.

#### DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER QUALITY DIVISION (WDEQ-WQD)

David Waterstreet reported the following:

Chapter 1 has been approved by the Environmental Quality Council. The Advisory group is reviewing comments on that and working on some revisions.

A TMDL work group meeting will be held Jan. 15<sup>th</sup> at Little America starting at 8:00 a.m. Mr. Waterstreet mentioned that watershed plans will continue as TMDLs are developed.

The WQD has received 17 applications for re-classification of streams.

DEPARTMENT OF ENVIRONMENTAL QUALITY - LAND QUALITY DIVISION (WDEQ-LQD)

Kathy Muller-Ogle reported the following:

Don McKenzie is the new administrator of the land quality division.

Black Butte mine is expanding and adding a railroad loop and Pit 14. Stansbury Mine and Carbon Basin mine have both submitted expansion requests.

TRIHYDRO CORPORATION (TRIHYDRO)

Joel Farber reported the following:

Trihydro has opened a Cheyenne office. The office has 8 new employees and is located in the Trilegent building.

LARAMIE COUNTY CONSERVATION DISTRICT (LCCD)

Liberty Blain reported the following:

LCCD is reviewing water quality data collected in 2007 and is making plans for water quality sampling in 2008. We are interested in the direction the WY Dept. of Environmental Quality will take on TMDL development, but will continue implementing the Crow Creek Watershed Plan and the Amendment to the Crow Creek Watershed Plan (developed by local stakeholders). LCCD is working the Water Development Office and the selected consultants in acquiring data for the Laramie County Aquifer Study and is cooperating with the WY Game and Fish Department on aquatic habitat projects for Crow Creek.

UNITED STATE GEOLOGICAL SURVEY (USGS)

Mike Sweat reported the following:

The USGS budget had a 21% increase in it for the National Stream Information Program (NSIP).

The money in the budget under the Omnibus bill for USGS is now 2 year money instead of one year money.

The Wyoming Landscape Conservation Initiative (WLCI) received 1.5 million in funding (USGS portion only). A map of wells and well locations will be produced as one of the first projects under WLCI. This map should be available in 2-3 months.

NATURAL RESOURCES CONSERVATION SERVICE (NRCS)

Lee Hackleman reported the following:

**Wyoming - NRCS  
Monday Morning Snow Report      Jan. 1<sup>st</sup>, 2008**

**REPORT #7**

We are still gaining ground; overall the state seems to be equalizing. The overall snow pack for the State of Wyoming increased 1% to 86% of average this past week. Six basins gained and 5 lost ground this past week. Last year at this time the state average was 82% with a low of 44% and a high of 93% of average. This year the state average is 86% with a low of 49% and a high of 110% of average. See the table & map below for more information.

For those of you with INTERNET capability, this report and map showing SWE percentages for the state can be found at "<http://www.wrds.uwyo.edu/wrds/nrcs/nrcs.html>"

Figure 1 -- SNOW WATER EQUIVALENT AS PERCENT OF AVERAGE. The following table shows the current, last year and preceding weeks' % of average snow water equivalent (SWE) amounts for Wyoming basins. Average is based on all reporting SNOTEL sites in the basin, not the snow courses. The reference period for average comparison is 1971-2000.

DRAINAGE BASIN	1/7/2008	12/31/2007	12/24/2007	1/7/2007	12/31/2006
SNAKE RIVER	90	90	85	86	82
UPPER YELLOWSTONE	110	112	112	86	84
WIND RIVER	90	83	78	74	70
BIGHORN BASIN	91	92	88	82	78
SHOSHONE	92	94	95	78	71
POWDER - TONGUE	93	93	82	77	76
BELLE FOURCHE	49	65	60	44	47
UPPER NORTH PLATTE	100	98	90	93	92
LOWER N PLATTE,SWT	86	83	74	89	88
LITTLE SNAKE RIVER	105	109	102	84	83
UPPER GREEN RIVER	71	68	61	82	76
LOWER GREEN RIVER	72	62	52	90	88
UPPER BEAR RIVER	81	67	57	81	80
Weighted State Average	86	85	78	82	79

\* red = down      \* blue = up      \* green = even

Six (6) new gage sites will be constructed this spring and summer. Four of the sites will replace existing snow courses and two will be new sites agreed to by the NRCS and the State Engineer's Office. The proposed four snow courses to be converted are (1) Castle Creek on the East Fork of the Wind River (2) Soldier Park above Buffalo on the North Clear Creek (3) Larsen Creek on the headwaters of the Sweetwater River (4) Pocket Creek site on the Pocket Creek of the New Fork River. The two proposed new sites will be (1) Little Goose site on the Little Goose drainage below Bighorn Reservoir and (2) Blackhall Mountain above Saratoga on the headwaters of Coon Creek.

BUREAU OF RECLAMATION / WYOMING AREA OFFICE (USBR)

John Lawson submitted the following:

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

December 31, 2007 Reservoir Conditions

<u>Reservoir</u>	<u>Elev. (Ft)</u>	<u>Content (AF)</u>	<u>% Full Conservation Storage</u>	<u>% Avg.</u>
Seminoe	6289.95	208,500	20	37
Pathfinder	5786.29	200,000	20	37
Alcova	5488.23	156,600	85	101
Glendo	4603.27	224,300	43	83
Guernsey	0400.90	10,700	23	122

December 31, 2006 Reservoir Conditions

<u>Reservoir</u>	<u>Elev. (Ft)</u>	<u>Content (AF)</u>	<u>30 Year Average (AF)</u>
Seminoe	6299.88	276,100	562,400
Pathfinder	5791.51	234,100	543,100
Alcova	5488.10	156,300	154,800
Glendo	4606.29	245,800	271,200
Guernsey	4401.07	10,900	8,800

December 2007 Inflows

<u>Reservoir</u>	<u>Inflows</u>	<u>% Of Average</u>
Seminoe	26.9	103
Pathfinder (Sweetwater)	3.8	90
Alcova to Glendo Gains	1.3	18
Glendo to Guernsey Gains	0.5	31

Kendrick ownership was 355,500 acre-feet (AF) on December 31, 2007 and approximately 40% of average (896,700 AF), which compares to the ownership of 439,500 AF last year at this date. The December 31, 2007, North Platte ownership was 380,500 AF, which was approximately 77% of average (491,400 AF), which compares to 442,800 AF of North Platte ownership on this date last year. The Glendo ownership was 52,400 AF on December 31, 2007, which was approximately 42% of average (126,200 AF), which compares to the 28,500 AF of Glendo ownership on this date last year.

Kendrick ownership was the lowest for the end of December in the last 30 years. Glendo ownership at the end of December was the third lowest in the last 30 years.

Flows in the Miracle Mile below Kortez Dam are approximately 530 cubic feet per second (cfs). Releases from Gray Reef Reservoir are approximately 500 cfs. The level of Alcova Reservoir is at the normal winter operating range of 5488± one foot.

2. Water Supply Conditions of the Big Horn Basin

December 31, 2007 Reservoir Conditions

<u>Reservoir</u>	<u>Elev. (Ft)</u>	<u>Content (AF)</u>	<u>% Full Conservation Storage</u>	<u>% Avg.</u>
Bull Lake	5769.49	56,500	37	73
Boysen	4704.37	419,500	57	73
Buffalo Bill	5366.56	443,400	69	107
Pilot Butte	5452.89	27,600	82	104

December 31, 2006 Reservoir Conditions

<u>Reservoir</u>	<u>Elev. (Ft)</u>	<u>Content (AF)</u>	<u>30 Year Average (AF)</u>
Bull Lake	5770.41	58,500	77,000
Boysen	4708.67	474,600	575,400
Buffalo Bill	5367.10	447,200	416,000*
Pilot Butte	5422.31	8,100	26,500

\* The average used for Buffalo Bill Reservoir reflects data from 1993 through 2007. 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.

December 2007 Inflows

<u>Reservoir</u>	<u>Inflows (KAF)</u>	<u>% Average</u>
Bull Lake	2.5	100
Boysen	31.7	83
Buffalo Bill	14.7	93

The total release from Buffalo Bill Reservoir to the river is approximately 150 cfs and with addition from the springs is approximately 200 cfs as measured at the Cody river gage. The release from Boysen Dam is approximately 400 cfs.

SPECIAL REPORT

Glenn Tootle, who is a faculty member in the College of Civil and Architectural Engineering with the University of Wyoming, was our special presenter today. Mr. Tootle gave a very interesting presentation entitled, "Upper Green River Basin Streamflow Reconstruction and Drought Analysis". A copy of Mr. Tootle's presentation can be found **here**.

The meeting adjourned at 12:00 pm.