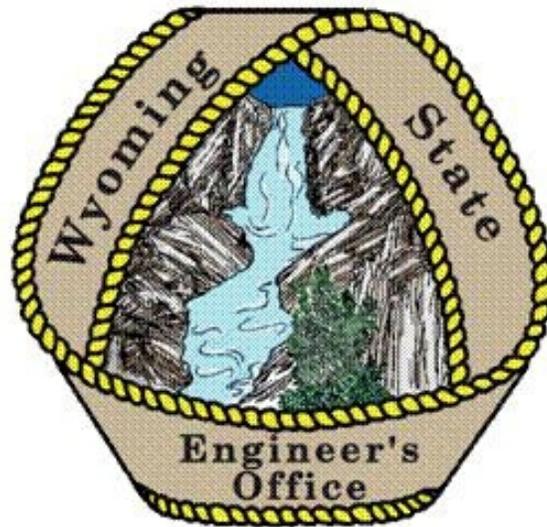


Wyoming State Engineer's Office



2017 Annual Report

Water Year 2017 (WY2017)

October 1, 2016 through September 30, 2017

STATE OF WYOMING

**WATER YEAR 2017
(WY2017)**

ANNUAL REPORT

OF THE

STATE ENGINEER

STATE BOARD OF CONTROL

BOARD OF PROFESSIONAL ENGINEERS AND
PROFESSIONAL LAND SURVEYORS

STATE BOARD OF EXAMINING WATER WELL DRILLING
CONTRACTORS AND WATER WELL PUMP INSTALLATION
CONTRACTORS

October 1, 2016 through September 30, 2017

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STATE ENGINEER

Patrick T Tyrrell, P.E.

WATER YEAR 2017

Water year 2017 was simply “over the top.” That can be construed literally, as we had so much water in the central and western parts of the state that high and sometimes damaging flows were observed in many areas. To begin, we entered mid-April with what amounted to twice the normal snowpack (or more) in much of our central and western mountains. While the Big Horn Mountains and North Platte drainage weren’t quite as heavily packed with snow, they did have above average years. Only the extreme northeast corner of the state saw below normal moisture, and parts of the Black Hills trended toward drought.

The real story was in the northwestern basins (Yellowstone, Shoshone, and Snake Rivers), the Wind River Mountain Range (including the Sweetwater River), and the western fringe (Wyoming Range and vicinity). Records were set on the Wind River and tributaries to the Green River. Boysen Reservoir outflows were above 5,000 cubic feet per second (cfs) for several months. The Riverton Valley Canal was breached and required emergency repairs. Without going into great detail, some of which is provided in the various reports from the Division Superintendents, it was a phenomenal year for water supply which still required significant field and office time because of the flooding concerns that accompanied the runoff. Certainly in the central and western part of the state, it was the most prodigious snowpack and runoff I’ve seen in my tenure.

THE 2017 GENERAL SESSION

This year’s legislature was notable because of budget changes directed at the State Engineer’s Office (SEO) funding sources, and two water bills that passed.

In a move reminiscent of the mid-1990s, the Appropriations Committee opted to move funding for part of the SEO from the general fund to Water 1 (one of the Water Development accounts). From the mid-90s to the mid-2000s, SEO was fully funded from Water 1 in an effort to save general fund monies. In 2017, the move only affected the Board of Control (BOC) Division. This move, in an amount of over \$6 million for fiscal 2018, means that about half the agency (BOC) is funded from that source, while the rest of the agency is still generally funded. While the change does save general fund dollars, it sets up an unusual dynamic within the agency. For example, at budget closeout, when some movement of resources typically occurs to balance overruns with underruns in similar expenditure series, the BOC and the rest of SEO will be somewhat restricted to their original budget resources. Another area affected is the reassignment of positions if necessary, where now a vacancy in Cheyenne cannot be moved to a crucial field need (or vice versa). While this is not a huge problem, it does pose accounting challenges not faced before (not the least of which is our fiscal staff now dealing with two state funding sources instead of one).

On the legislative side, two bills of interest passed. The first was House Bill (HB) 47 (House Enrolled Act 67) which changed the mechanism by which proof advertisements are paid. Before, the county where the water right was located paid for proof advertising, and we simply instructed the local newspaper to send the bill to that county. Under HB 47, the responsibility for paying advertising fees was shifted to the individual appropriator. This change required a rulemaking by SEO to set a larger fee from the appropriator that would cover advertising in addition to the recording fees we already collected. This rule was adopted as an emergency rule in July, 2017, and became a final rule after the proper notice and approvals.

The second bill was Senate File (SF) 4 (Senate Enrolled Act 11). This bill was a final cleanup following the major overhaul of the Board of Professional Engineers and Land Surveyors practice act (Title 330) in 2013. In essence, it simply moved language about small water projects, and when an application required certification by a licensed engineer or surveyor, to Title 41 from its previous location in Title 33. This bill made sense, as there was no reason SEO-specific requirements should be in the Professional Engineers' and Surveyors' practice act even though they had been there for years. In the move, minor editorial changes, which we also supported, were made to the small dam permitting language.

ADDITIONAL BUDGET REDUCTIONS

During the 2017 General Session, on top of the 2017 Governor's mandated cuts, the SEO lost two additional positions due to Joint Appropriations Committee budget cuts. In this unfortunate move, the positions, which were open in November when the legislature received the vacancy list on which they acted, were filled before the session commenced. So, we were in the position of finding two other positions with vacancies that would be released to comply with the budget language. Then section 320 of the final budget bill required more cuts from generally funded agencies, and we offered up yet another position in our budget submittal to the Governor.

As a final note, because of the state's revenue picture, SEO did not request a single exception item that requested more money in the 2019-2020 budget submission to Governor Mead. It obviously remains to be seen what the legislature will do with the state budget in the 2018 Budget Session.

GROUNDWATER ORDERS

The first three years of the Horse Creek Order (entered on July 19, 2013) ended with water year 2016, and by its terms that order was revisited this year. Over those years, water supply in the Horse Creek Basin was plentiful and, at least in part due to some plumbing changes by larger water users, groundwater pumpage was significantly below earlier years and only about half what the Order contemplated when it was written in 2013. As a result, annual groundwater pumpage and year-to-year carryover amounts were increased in an amended Order. For example, the nominal 12-inches (one acre-foot per acre) allowed in 2013 was increased to 15 inches for the upcoming three year period. For more detail on the Order, the reader is referred to the "First Amended Order of the State Engineer, Horse Creek Basin," dated May 31, 2017.

Regarding the Laramie County Groundwater Control Area Order, issued on April 1, 2015, installation of meters and adjudication of unadjudicated permits has lagged. While the numbers change weekly, appropriators are only about half done with both of those tasks. Entering the summer of 2018 wells without meters, or those that are not adjudicated, are at risk of being tagged and turned off until the work is complete.

INTERSTATE STREAMS

While details of many interstate issues will be provided in that section, and in the Attorney General's section, I will hit a few high points here.

The North Platte River basin saw decent runoff, and with good carryover from 2016 there was no allocation year declared. Wyoming's term as Chair of the North Platte Decree Committee will end on December 31, 2017, after which Nebraska (NE) will chair that body. Interestingly, Mr. Jeff Fassett, former Wyoming State Engineer during the long and contentious litigation between the two states, and now Director of the Nebraska Department of Natural Resources, will be the Chair for NE.

As mentioned below and in the Attorney General's section (and likely the section written by Water Division II Superintendent David Schroeder), runoff was good in the Tongue River basin in 2017 and there was no call for interstate regulation. This was a nice break from 2015 and 2016, when interstate regulation occurred both years prior to Tongue River Reservoir filling.

In the Colorado River Basin, work continued toward Minute 323 (known as 32X last year), as it did not come to fruition at the end of calendar 2016. It was finally adopted in late September, 2017, and is a "contingent minute" in that the Mexican Water Scarcity Plan included in the Minute is contingent upon execution of the Lower Basin Drought Contingency Plan. So, both the Upper Basin and Lower Basin Drought Contingency Plans are front and center as we enter water year 2018.

The System Conservation Pilot Program continued into 2017 and plans are being made for another year of the program in 2018. Interest in this program is significant, and important questions are being raised about its future. When and how will this program become operational? Will it need to be operational every year, or will it be sidelined in high runoff years? Are we paying too much (nearly \$200/AF) for conserved water, and if so, what is the correct price? What should its future administration look like? These questions linger as this important program gains momentum.

LITIGATION

With the exception of the Montana v. Wyoming lawsuit, which will largely be covered in the Attorney General's section of this annual report, there was no other significant active litigation on which to report. In that litigation, little substantive work was done other than the two states worked toward a final decree in the case.

AGENCY NOTES

The Cheyenne office of SEO spent all of this year on the 1st floor of the west wing of the Herschler Building, having moved from the 4th floor of the east wing in June of 2016. This is a temporary location, as it appears we will move to the newly-remodeled east wing in about March 2018. Those too will be temporary accommodations as it appears we will move back to the west wing sometime in 2019 in what hopefully will be our final move to a permanent location. My hat is off to all the employees here in Cheyenne as they endure three complete moves in about three years.

This year we saw the retirements of Doug Oliver (Water Division I Assistant Superintendent), Jack Clark (Division I), and Claire Engkvist and Chris Couch (Surface Water). My thanks to these individuals who gave of their time and talent for so many years.

Once again I will recognize the notable efforts of the SEO staff. It's a privilege to work alongside such a dedicated group of professionals. As we engage in the business of assuring the beneficial use of Wyoming's water under our time-tested water law, the constituents of this state should be proud of the people shepherding that work. In the last couple years, that work has had the added stress of budget and manpower reductions resulting from the state's revenue downturn. And yet, our core mission is being accomplished by the leadership and work ethic from the management team on down the line. I sincerely wish for better days, financially, for the State of Wyoming so we can return to being able to do the many helpful things expected by our constituency, which do not diminish just because the money does.

ADMINISTRATION DIVISION

Submitted by:
Rick Deuell
Assistant State Engineer

GENERAL

The Administration Division is responsible for three separate functions in support of this agency. They include fiscal operations, human resources/personnel management, and support staff for the State Engineer. The Assistant State Engineer and Surface Water Administrator are responsible for preparing and publishing the Annual Performance Report, Strategic Plan, Annual Report and other special projects. This report covers the October 1, 2016 through September 30, 2017 time period, also known as Water Year 2017 (WY2017).

FISCAL OPERATIONS

Fiscal Operations are supervised by Ms. Cricket Hoskins and is responsible for processing all fiscal transactions, budget preparation, fleet management, and inventory control of the agency. This includes accounts payable and accounts receivable.

WY2017 coincided with the adjustment of the supplemental 2017-2018 biennium budget to reduce the budget as required by the Joint Appropriations Committee (JAC). JAC moved the funding for the Board of Control Division to the Water 1 Account. Fiscal was the lead in making the budgetary changes.

Table 1 provides a summary of Agency's budget sent to the Governor's Office, the approved budget, and supplemental budget reduced by the JAC.

TABLE 1. TOTAL AGENCY REQUEST FOR 2017-2018 BIENNIUM BUDGETS

Division	Agency Request	Approved Budget	Supplemental Budget after JAC
Administration	\$2,468,986	\$2,285,672	\$1,864,466
Ground Water	\$3,669,808	\$3,583,710	\$3,276,288
Surface Water and Engineering	\$3,159,270	\$3,105,587	\$2,509,621
Board of Control	\$13,534,280	\$13,123,960	\$12,287,972
Support Services	\$2,685,027	\$2,567,036	\$2,324,176
Board of Professional Engineers and Professional Land Surveyors	\$946,458	\$946,458	\$946,458
Interstate Streams	\$2,106,998	\$1,844,745	\$1,322,004
Special Projects	\$17,820	\$17,820	\$17,820
North Platte Settlement	\$1,489,050	\$1,460,715	\$1,371,640
Well Drillers Licensing Board	\$271,219	\$271,219	\$271,219
Total	\$30,348,916	\$29,206,922	\$26,191,664

The majority of this budget, \$21,709,381 represents the costs associated with salaries and benefits. Personnel costs are 83 percent of the Agency’s budget; the agency’s employment makeup is shown in Table 2.

TABLE 2. AGENCY PERSONNEL

Position Type	Number
Full Time Employees	115
Part Time Employees	8
Total	123

HUMAN RESOURCES

Ms. Rachael Reinhardt administers Human Resources (HR) for the State Engineer’s Office. Primary functions of the HR department include recruitment and selection activities; classification of positions; compensation analysis; benefit administration; payroll services; performance management and employee relations. HR also provides general counsel to employees, Division Administrators and Superintendents; conducts administrative actions as required; state and federal employment and labor law compliance, interpretation and advice; develop and implement policies, procedures, programs and practices with input from employees and management.

Last year, employee turnover within the agency totaled nearly ten percent of the workforce. A breakdown of each category is shown in Table 3.

TABLE 3. EMPLOYEE TURNOVER CATEGORIES

Category	No. of Employees
Retired	4
Transfer	2
Relocation	3
Compensation	0
Other	4

CAPITOL SQUARE PROJECT

As part of the Capitol Square Project, the Herschler Building is being renovated in phases. The first phase is renovation of the east wing. This necessitated a move for the SEO from the 4th floor west to the 1st floor east of the Herschler Building. The move occurred during the summer of 2016. As a result of the move it was necessary to reduce the occupied floor area significantly. A reduction in office, work cubes, and storage sizes required that files be consolidated and moved to electronic format as much as practicable. This current location on Herschler 1st floor, another temporary move is scheduled for March 2018.

HEALTH AND SAFETY MANUAL

The Agency Health and Safety Manual was updated again in 2017 and submitted Wyoming Workers' Safety and Compensation Division (Division). This is planned to be a dynamic plan. It is being added to and modified by the personnel most directly impacted. It has been given as PMI goal for several field personnel to update portions of the safety plan where they have in-depth expertise.

GROUND WATER DIVISION

This report summarizes the activities of the Ground Water Division (GW) during Water Year 2017 (WY2017) which extends from October 1, 2016 to September 30, 2017.

Submitted by:
Lisa Lindemann, P.G., Administrator
John Harju, Assistant Administrator
and
the Ground Water Division Staff

PERMIT PROCESSING AND MAINTENANCE

Application Processing

GW received 1,918 U.W. 5 Forms, or *Applications for Permit to Appropriate Ground Water*, for review and approval. Of these, 1,838 applications were approved to permit status and 59 applications were rejected (Figure1).

GW received and processed 1,650 Forms U.W. 6 (*Statement of Completion and Description of Well or Spring*). Of these, 110 were submitted without pump information (requiring a Form U.W. 8-P (*Proof of Appropriation and Beneficial Use of Ground Water- Pump Information*), and 449 were unacceptable and returned to the agent or applicant for additional information.

GW received and processed 484 Forms U.W. 8 (*Proof of Appropriation and Beneficial Use of Ground Water*).

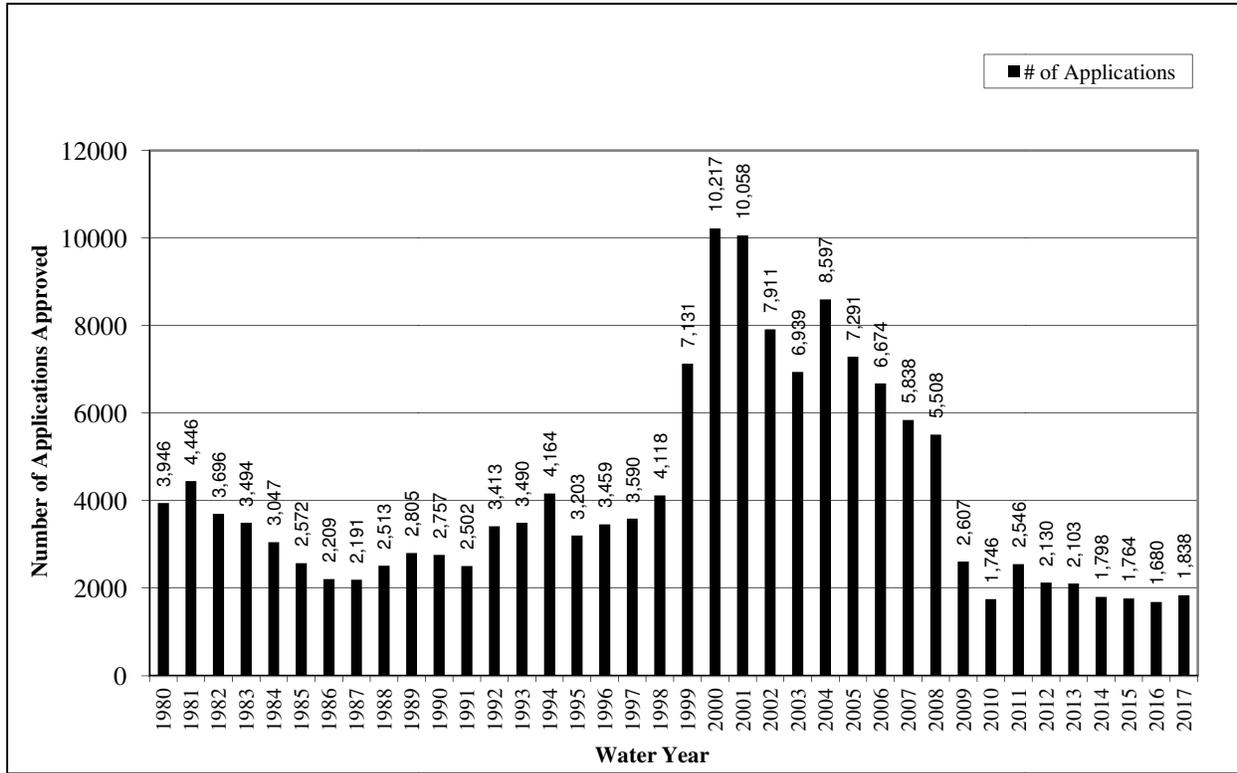
GW received, processed, and approved 76 Forms R&D-1, or *Applications to Relocate &/or Deepen an Existing Domestic &/or Stock Well*.

Permit Maintenance

GW either abandoned or cancelled 196 groundwater permits because the permittee 1) failed to submit the required notices (i.e., Forms U.W. 6, U.W. 8, and/or U.W. 8-P) within the statutory time limits, 2) the permittee requested cancellation of the permit, and/or 3) the well was physically abandoned.

GW prepared and mailed 1,626 expiration letters, notifying applicants that their groundwater permits were about to expire because complete U.W. 6 and/or U.W. 8 Forms had not been submitted. GW received and processed 503 requests for extension of time to complete construction or beneficial use.

FIGURE 1. GROUND WATER APPLICATIONS APPROVED PER WATER YEAR



Water Rights Search Requests

Approximately 10,000 to 15,000 requests for “small” searches (i.e., less than 10 water rights per search) were received and processed. GW and Surface Water staff provided several training sessions to realtors to provide them with basic water rights information, as well as how to search e-Permit for water right information.

ADJUDICATION OF WATER RIGHTS

GW received 155 *Maps to Accompany Proof of Appropriation and Beneficial Use of Groundwater* (Beneficial Use or “BU” Maps), representing 170 water rights to be inspected by GW (Note: maps may depict more than one well/water right). Of the 155 BU maps, 74 were drafts submitted for review prior to the licensed surveyor or engineer submitting a final acceptable BU Map, 71 were first submissions, nine9 were first revisions, and one was a second revision.

GW staff inspected 286 water rights. Staff then prepared proofs, collected fees and signatures from the applicable appropriators, and presented the proofs to the Board of Control (BOC) for adjudication. Ninety-five proofs were presented at the November 2016 BOC meeting (although 106 proofs were advertised, 11 proofs were pulled out due to the newspaper errors), one hundred thirteen proofs were presented at the May 2017 BOC meeting, and sixty-seven proofs were

presented at the August 2017 BOC meeting. Two hundred seventy-five groundwater proofs were adjudicated.

CONTROL AREAS

Laramie County Control Area (LCCA)

The Laramie County Control Area (LCCA) Advisory Board members are:

- Ty Anderson (District 1),
- Jay Burnett (District 2),
- Casey Epler (District 3),
- Jay Berry (District 4), and
- David Romsa (District 5).

The LCCA Advisory Board met on January 26, 2017, and August 9, 2017. The Board provided favorable recommendations for five petitions:

1. BOC Docket No. 1-U-2017-3-1,
2. BOC Docket No. 1-U-2017-2-2,
3. BOC Docket No. 1-U-2017-2-3,
4. BOC Docket No. 1-U-2017-1-1, and
5. BOC Docket No. 1-U-2016-4-3.

The LCCA Advisory Board reviewed two *Application(s) for Permit to Appropriate Ground Water* - one of which received a favorable recommendation (T.F. No. U.W. 44-9-227) and the other a negative recommendation (T.F. No. U.W. 44-2-312).

T.F. No. U.W. 44-2-312 was received on April 6, 2017. The applicant, James A. Hastings, proposed the appropriation of groundwater within the LCCA for Irrigation Use with a maximum instantaneous flow of 850 gallons per minute, and a maximum volumetric quantity of 260 acre-feet, to be applied to 140 acres located in T16N, R64W, Section 13, NESW, SESW, and the SE1/4. Groundwater was to be applied through a center pivot sprinkler system.

T.F. No. U.W. 44-2-312 was advertised in the Pine Bluffs Post and the Wyoming Tribune Eagle for three consecutive issues commencing on April 20, 2017 in conformance with Article 9 §41-3-932, Wyoming Compiled Statutes, Am. 1991, received protests and was assigned Docket No. 2017-1. Donald D. Towns, James McWilliams, James T. Pike, and Rod Stone filed letters of protest, requesting the State Engineer not approve the application. The protestants concerns included the potential impact of a new irrigation well on existing Domestic and Stock Use wells in the vicinity of the proposed well, and additive impacts to a declining water table in the Laramie Control Area.

A scheduling conference was held June 7, 2017 to set a date for a contested case hearing pursuant to Wyo. Stat. Ann. § 41-3-932. A continued scheduling conference was held June 19, 2017 as the parties agreed to meet to mediate an agreement in lieu of a contested case hearing. The parties successfully mediated an agreement resulting in the applicant amending his application as follows:

- No. 7(a) will be amended from a maximum instantaneous flow of water to be developed and beneficially used of 850 gallons per minute down to 750 gallons per minute.
- Item No. 7(b) will be amended from a maximum volumetric quantity of water to be developed and beneficially used per calendar year of 260 acre feet down to 252 acre feet.
- Item No. 8 will be amended from 140 acres to be irrigated by the Hastings well down to 126 acres.

Docket No. 2017-1 was dismissed by stipulated order June 29th, 2017. The LCCA Advisory Board reviewed the application on August 9, 2017 and recommended the application be denied.

The State Engineer approved T.F. No. U.W. 44-2-312 to permit status (Permit No. U.W. 208074) on September 26, 2017 in accordance with W.S. §41-3-932(a) as “there are unappropriated waters in the proposed source, that the proposed means of diversion or construction is adequate, that the location of the proposed well or other work does not conflict with any well spacing or well distribution regulation, and that the proposed use would not be detrimental to the public interest.”

Web Application and Form Development Update

The *Online Water Use Reporting Web Application* became available for use by the public in January 2017. To date, GW has received more than 1,500 Monthly and Annual water use reports through the web application, significantly reducing the time and effort normally required to upload reports into the Agency’s electronic water rights database, e-Permit, by eliminating the manual scanning process.

GW also developed a data storage solution wherein water use data can be stored and queried, and a mechanism that tracks compliance of water rights affected by the State Engineer’s LCCA Order.

Compliance with the State Engineer’s Order for the Laramie County Control Area

The State Engineer issued a permanent Order affecting groundwater development in the Laramie County Control Area (LCCA) on April 1, 2015. Compliance with the Order is summarized below:

✓ Adjudication by November 30, 2017

Of the approximate 180 permits/water rights within the LCCA that required adjudication by November 30, 2017:

- 88 water rights have either been adjudicated, cancelled, or the use requiring adjudication was removed from the permit;
- There has been "no action" on 46 water rights;
- Resolution of an issue is required on 9 water rights, either by GW or the appropriator, and
- 37 water rights are "pending" (i.e., an inspection has been conducted, an GW received an acceptable map , or GW is waiting for a signed proof to be returned).

- ✓ Installation of Flow Meters Prior to Use in Water Year 2017
 - There are approximately 642 active permits affected by the Order of which 67 are "enlargements" of existing permits. Of the 575 permits that require meter installations, 374 meters have been installed and 369 of those have been inspected by Hydrographer/Commissioner Skadsen.

- ✓ Monthly and Annual Total Groundwater Production Reports Delivered by November 15
 - Of approximately 642 permits (including the 67 enlargements), some attempt at reporting production was submitted to GW for 149 permits (i.e., the reports may have been monthly reports but not the required annual reports). Annual reports were submitted for 108 permits.

Appropriators have been reminded that failure to comply with the terms of the Order can and will result in foreclosure of use of those wells until compliance is met.

Order-Related Activities

The State Engineer's Order generated several related activities, including:

- An economic analysis of the LCCA, funded jointly through the USGS National Institutes for Water Resources annual allotment program and the Wyoming Water Development Commission. This study should provide county leaders and residents with information on the economic impact of various groundwater management approaches in Laramie County. The analysis will estimate the economic impacts, direct and indirect, of four management scenarios modeled by AMEC, et al, in the *Hydrogeologic Study of the Laramie County Control Area* (2014). The scenarios will be further analyzed under two alternative hydrologic scenarios; a baseline scenario based on the AMEC study, and a second scenario that assumes greater connectivity between the western and eastern portions of Laramie County. The results of the study should also provide information related to potential benefits, costs, and uncertainties of proposed groundwater management plans. Project proponents also expect the results to “generate farm-level budget and management insights that agricultural producers could use to quantify tradeoffs of applying more water today at the risk of having less water in the future, or applying less water today to increase the chances of having more water in the future” (Water Research Program FY 2016 Proposal: Economic Assessment of Alternative Groundwater Management Strategies in Laramie County, 2016).

- The Laramie County Conservation District (LCCD) began meeting with irrigators in the Carpenter area to discuss various options for conserving groundwater in southern Laramie County.

- The LCCD received funding from the Wyoming Water Development Office to conduct a Level 1 study of the South Platte River Watershed within Wyoming (including Lone Tree Creek, Crow Creek and Lodgepole Creek). The watershed study would “evaluate current

watershed function, current condition of wetlands and riparian areas within the drainage, geomorphic classification of rivers and streams, and to provide hydro-geologically based recommendations for future groundwater resource utilization and recharge. This information would provide baseline data from which the District can pursue implementation of management practices that address the natural resource issues within the drainage” (Request for Proposal No. 16-11: South Platte River Watershed, Level 1 Study).

- Appropriators, in coordination with the Laramie County Conservation District (LCCD), have been evaluating their options in developing a watershed improvement district in the Carpenter area.
- Laramie County is in the process of developing a Comprehensive Land Use Plan which will include water quantity and quality.
- The Agency is also aware of several projects in the planning stage which propose diverting water from Crow Creek to recharge aquifers in the vicinity of Carpenter.

Platte County Control Area

The Platte County Control Area (PCCA) Advisory Board members are:

- Rex Johnson,
- Jennifer Reyes – Burr,
- Silvia Rutherford, and
- Brooke Brockman.

The board seat for District 3 is vacant.

The PCCA Advisory Board met on May 24, 2017 to review the following applications, all of which received favorable recommendations:

1. Temporary Filing No. U.W. 44-6-194,
2. Temporary Filing No. U.W. 44-8-235,
3. Temporary Filing No. U.W. 44-9-235,
4. Temporary Filing No. U.W. 44-10-235, and
5. Temporary Filing No. U.W. 44-4-274.

Prairie Center Control Area

The Prairie Center Control Area (PrCCA) Advisory Board members are:

- Dennis Isakson,
- Greg DesEnfants,
- Blake Ochsner,
- Kelly Francis, and
- Chuck Berry.

The PrCCA Advisory Board did not meet in WY2017.

MONITORING WELL NETWORK

GW maintains a network of 112 active monitoring wells throughout the state and a number of inactive monitoring wells. GW conducted an inventory of the agency's monitoring well network in WY2016 and identified wells that required 1) removal from the network, 2) rehabilitation, 3) secured installations (i.e., sanitary well caps, surface seals and locking steel protectors), and/or 4) plugging and abandonment. Remaining biennium funds were used to conduct these activities, in addition to acquisition and installation of new recording equipment (i.e., water level sensors/data loggers) which replaced aging equipment that could no longer be technologically supported. In WY2017, many new pressure transducers were installed and most obsolete equipment was removed. Many locations no longer have hourly data-collection equipment and are instead measured during scheduled spring and fall monitoring events.

Data for the SEO's monitoring wells are available at <http://seoflow.wyo.gov/>.

Furthermore, GW now presents maps of monitoring well locations and up-to-date hydrographs on the SEO website. These packages are organized by county to aid the general public in locating hydrographs of interest.

Thermopolis

GW does not currently maintain any groundwater monitoring wells in the vicinity of Thermopolis. For more information regarding historic monitoring locations, see the WY2016 Annual Report.

Albany County

Two monitoring wells are located in the Laramie, WY area. These wells are completed and used to track water levels in the Casper Formation. Data from these wells continue to be used as support for groundwater development projects in the vicinity. New pressure transducers were installed in these wells during WY2017.

Laramie County

Twenty-nine active monitoring wells are located within Laramie County. Data from the Laramie County monitoring well program continues to be used for Control Area Advisory Board recommendations and State Engineer actions. Extensive remedial work and evaluation of the Laramie County monitoring well network is described in the SEO WY2016 Annual Report. Evaluation subsequent to the remedial work identified the Laramie County No.15 well as potentially having limited connection with the surrounding aquifer. Additional investigation will be performed during WY2018 to evaluate remedial options.

Platte County

There are 14 active monitoring wells in Platte County. Platte County Control Area Advisory Board recommendations and State Engineer actions rely on data from the Platte County

monitoring well program. These data sites remain a valuable tool in the review and processing of groundwater applications submitted for all uses within and subject to the Platte County Control Area.

New pressure transducers with built-in barometric loggers were purchased for most Platte County monitoring wells. GW installed these transducers in WY2017.

Additionally, the Cottonwood Creek #3 well was plugged and abandoned during WY2017.

La Grange Area

Nine active monitoring wells are located in the area surrounding LaGrange. It was GW's intent to collect water levels from monitoring wells in the La Grange area on a monthly basis. The data assist the Water Division I Superintendent and State Engineer in the management and regulation of groundwater usage, as well as implementation of the State Engineer's Order relative to the Horse Creek Basin. However, WY2016 data collection was postponed until data collection access agreements could be secured. To date, GW has obtained access agreements for only six of the 20 monitoring wells that have been measured in the past. Three monitoring wells were removed from the La Grange area monitoring well network but remain in the care of the current respective land owner(s). GW installed three pressure transducers with built-in barometric loggers in WY2017.

Prairie Center Control Area and Madison Monitoring Wells

The Prairie Center Control Area network consists of seven wells in northern Goshen County and three wells in the vicinity of Lusk. Additionally, two inactive and one active monitoring well are located north of Lusk (ETSI wells). Twelve active monitoring wells are located in northern Weston and Crook Counties.

In WY2017, new pressure transducers were installed in one well in the Prairie Center network and two wells in Crook County. Additionally, new recording instrumentation was installed for the CCMOW-2 and CCMOW-2A (State Line wells).

Of particular note are developments with the ETSI location north of Lusk. Historically, the SEO maintained three monitoring wells at this location. The wells were completed in the Lakota, Minnelusa, and Madison. When originally completed, the Lakota well was designated "O-2", the Minnelusa well was designated "T-1", and the Madison well was designated "O-2". The Madison test-pumping well was originally named "T-2", and was ultimately developed by the landowner under Permit No. U.W. 130460.

The Madison observation well drilled and originally designated as O-2 has been commonly referred to in GW as the ETSI T-2 East Well dating to at least 1984. In WY2017, the landowner applied to the SEO to use this Madison Formation monitoring well as back-up supply (TFN U.W. 44-7-284). Negotiations are still underway with respect to how the SEO could maintain the monitoring location while still authorizing an emergency use.

Additionally, the Lakota and Minnelusa wells in this area are both compromised with obstructions or casing collapse. In WY2016, GW staff mis-identified the Minnelusa location and installed a locking monument on a valve for the landowner's stock-watering pipeline. GW expects to develop and implement abandonment plans for the Lakota and Minnelusa wells in this location during WY2018.

Gillette Area Monitoring and Subdivision Wells

The Gillette Area and Subdivision Monitoring wells provide information related to groundwater developments in Campbell County and in the vicinity of the City of Gillette. These wells continue to be used for verification of reported water level declines in the Fort Union Formation. The water systems and water system operator covering the majority of public water systems continue to communicate with this office, including the reporting of water levels on a routine basis, allowing the systems to have better control of well head protection and for GW to maintain the acquisition of water levels that are representative of 24-hour shut-in values. This cooperative effort will continue in the future.

New recording equipment and sanitary well caps were purchased in WY2016 and were installed in WY2017.

Coal Bed Natural Gas

GW's series of Coal Bed Natural Gas (CBNG) monitoring wells provides data related to the long-term state of groundwater resources post-CBNG development. Data from these wells are provided to the Gillette Area Groundwater Monitoring Organization (GAGMO) for modeling efforts related to the surface coal mining activities in the Powder River Basin.

The CBNG monitoring wells are equipped with aging data acquisition equipment. Several new transducers and recording equipment were installed in WY2017.

Given that significant resources are expended on maintaining GW's network of CBNG wells, and the historic difficulty with maintaining these sites and collecting defensible information, GW is discussing the value of continued data acquisition.

Split Rock Monitoring Wells

GW staff attempted to find 16 wells in the area of Muddy Gap/Split Rock that had not been visited for approximately 25 years. Thirteen locations were successfully found and global positioning coordinates and depth details were recorded. GW anticipates plugging and abandoning most of these wells during WY2018, but is also exploring options to turn viable locations into U.S. Geological Survey climate response network wells or into privately owned stock watering wells.

GROUNDWATER INVESTIGATIONS/STUDIES

USGS/SEO Lance/Fox Hills Study

As part of the Cooperative Agreement with the USGS, the SEO authorized the USGS to conduct a study that would provide additional characterization of the High Plains aquifer system in eastern Laramie County, as well as characterization of underlying Upper Cretaceous aquifers (Lance Formation and Fox Hills Sandstone) which likely have some potential to be utilized as a supplemental or alternative water supply to the High Plains aquifer system.

The objectives of the study are to:

1. Improve understanding of the physical and chemical characteristics of the Tertiary High Plains aquifer system and underlying Upper Cretaceous aquifers (Lance Formation and Fox Hills Sandstone) in eastern Laramie County, Wyoming, and initially evaluate the relative hydraulic connection between the aquifer system and aquifers; and
2. Improve understanding of recharge to and apparent groundwater age of the High Plains aquifer system and Upper Cretaceous aquifers through the use of chemical tracers in the unsaturated and saturated zones.
3. A USGS Scientific Investigations Report (SIR) will be prepared describing the results of the study. The report will consist of text, tables, illustrations, and photographs of core and/or thin sections, as well as one or two plates—the plates will graphically show/describe the physical, chemical, and geophysical characteristics of the entire exploratory borehole at the drilling site. The results of this study will be placed in the context of all previous investigations in order to improve understanding of these critically important aquifers in southeast Wyoming and in the United States.

As part of this project, the USGS drilled and logged a stratigraphic test hole in November 2012 to approximately 960 feet below ground surface. The test hole drilling included continuous coring from ground surface through the Fox Hills Sandstone.

During WY2014, the USGS installed a clustered set of three groundwater monitoring wells. A Fox Hills Sandstone well was completed between 810 to 840 feet below ground. A basal White River Group (Chadron Fm.) well was installed between 467 and 482 feet below ground. Additionally, a Brule Formation well was installed between 117 and 128 feet below ground. The wells were developed and groundwater quality sampling was performed.

During WY2015, the wells were equipped with groundwater level recording instrumentation. Additionally, the USGS collected a water-quality sample from a Fox Hills Sandstone completion installed under Permit No. U.W. 202090 (Shatto 1-10 WSW). Furthermore, the USGS collected a water-quality sample from a Fox Hills Sandstone completion installed under Permit No. U.W. 203406 (FORNSTROM FRESH WATER SOURCE WELL).

No contract is currently in place associated with this project and the SEO's funding match for the project is exhausted. At this point, GW is not certain when we might receive a draft or final report for this project.

OIL AND GAS RELATED ACTIVITIES

Oil and Gas Related Activities

GW received 77 applications for water supply supporting oil and gas exploration, drilling, and completion activities throughout the state. Each application must comply with existing stipulations (e.g. control area limitations, sage grouse review, N. Platte River review, etc.) and follow the same review process as any other groundwater application.

Water supply for oil and gas water hauls is a time-limited activity and does not receive a permanent water right. Permits are typically issued for 2-year periods with the option to request extension. Some of these wells will revert to the underlying landowner for stock watering or reservoir supply, but most will continue on a temporary basis.

Appropriators are required to install a flow meter and report monthly water production as a condition of the permit. Many companies are taking advantage of the online reporting option that was initiated last year. Monthly water production reports can be submitted through our web portal or e-mailed to a designated website. This effort has streamlined the GW tracking efforts and facilitates the process of making those documents part of the permit record. The water production reports are available to the public through e-Permit.

Due to control measures restricting new well development in the Laramie County Control Area (LCCA), most water sources are secured through Temporary Water Use Agreements from existing, permitted water rights on a temporary basis. These agreements are currently administered by the Surface Water Division regardless of whether the source of supply is surface or groundwater. Appropriators seeking new water well permits must comply with the State Engineer's Order for the Laramie County Control Area (April 1, 2015) by adhering to spacing requirements and possibly targeting deeper sources such as the Lance or Fox Hills Formations.

Coal Bed Natural Gas

Coal Bed Natural Gas (CBNG) or Coal Bed Methane (CBM) production remains suppressed in the Powder River Basin and few groundwater permits have been issued as a result. Two companies submitted 65 new CBM applications (Table 1). However, these were existing facilities that needed a water right appropriation for ongoing activities and did not represent any new CBM development:

The SEO continues to monitor industry activity in the Powder River Basin through annual reports submitted in compliance with permit conditions. Two companies reported water and gas production for 293 wells. Of those reported, 95 wells exceeded the required 10:1 water to gas ratio. Many of the CBM wells throughout the state are currently "shut in" and are not producing water or gas.

TABLE 1. CBM GROUNDWATER PERMITS

Annual Report Year	Total Applications	Number Companies
2017	65	2
2016	0	0
2015	42	*
2014	76	*
2013	50	*
2012	180	*
2011	654	*
2010	747	*
2009	706	*
2008	2157	30
2007	3405	34
2006	3632	56
2005	4784	52
2004	4758	39
2003	3938	48
2002	5663	58
2001	6093	55
2000	5811	86
1999	2532	51

**This search is no longer available.*

Conversion of a CBM Well to a Water Well

Landowners continue to show interest in converting existing CBM wells for water production using the process established by the Wyoming Oil & Gas Conservation Commission (WOGCC) and the SEO. Any application received by GW after January 21, 2014 requires a Landowner Release Form and a Sundry Notice filed with WOGCC indicating the well will be converted for water supply. GW granted 77 permits to convert CBM wells for water production. To date, approximately 400 CBM wells have been permitted for conversion to water supply wells.

MODIFIED NORTH PLATTE DECREE

GW continued to report to the NPDC, on a monthly basis, applications received, and permits approved, for Irrigation use permits within Wheatland Irrigation District, and for Industrial and Municipal use permits within the remainder of the Basin subject to these provisions of the Modified North Platte Decree. Four applications for municipal use and four applications for industrial use were approved to permit status and reported.

GW also reported the annual groundwater production under 70 irrigation use permits within the Wheatland Irrigation District to the NPDC.

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENTS (CHIAS)

GW reviewed the following Cumulative Hydrologic Impact Assessments (CHIAS) at the request of the Wyoming Department of Environmental Quality – Land Quality Division (WDEQ-LQD):

- *Draft* Cumulative Hydrologic Impact Assessment (CHIA #40) of Coal Mining in the Central Powder River Basin, Wyoming,
- *Draft* Cumulative Hydrologic Impact Assessment (CHIA #39) of the Proposed Brook Mine, Upper Tongue River Basin, Wyoming, and
- *Draft* Cumulative Hydrologic Impact Assessment (CHIA #38) of Coal Mining in the Central Powder River Basin, Wyoming.

SUBDIVISION REVIEWS

The objective of this program is to identify and comment on water right issues associated with county subdivision permit applications that have been submitted by either the Wyoming Department of Environmental Quality (WDEQ) or the respective county for SEO review. Occasionally, county zoning plans or conditional use permit applications are also submitted to the SEO for review under this process.

Wyoming Statute § 18-5-306 (c) (i) provides WDEQ with the ability to request assistance from the SEO to furnish information or recommendations within a specific time frame relative to water right issues. GW provided 38 reviews - 16 of which were requested by WDEQ, 17 that were related to minor or simple subdivisions requested by county government, and 5 that were related to other county review/comment requests. Sixteen reviews (seven WDEQ and nine County) yielded water right issues that had not been properly addressed.

SAGE GROUSE REVIEWS

GW reviewed 356 U.W. 5 Forms proposing de minimis uses of water, and attached applicable conditions and limitations to approved water rights compliant with Governor Mead's Executive Order 2015-4, Greater Sage-Grouse Core Area Protection. When necessary, applicants were directed to the WG&F when a Density and Disturbance Calculation Tool (DDCT) process was required.

GROUND WATER ADVISORY COMMITTEES

The Ground Water Advisory Committees did not meet in WY2017. Recruitment of active participants on the committees remains a challenge for GW.

GW STAFF ACTIVITIES

New Staff Members

GW had the following individuals join our staff:

- **Adam Quist**, Natural Resources Analyst (ENNR09), joined GW on November 7, 2016. Adam transferred to GW from the Board of Control where he was a Natural Resources Analyst since June 29, 2015. Adam has a B.S. in Rangeland Ecology and Watershed Management.
- **Josh Koldeway**, Natural Resources Analyst (ENNR09), joined GW on November 22, 2016. Josh has a B.S. in Environmental Management and was previously employed as a Public Health Environmentalist for the Mississippi State Department of Health in Gulfport.
- **Lindsay Morse**, joined GW on September 1, 2017 as an Office Support Specialist 1. Lindsay was previously employed as a Fitness Supervisor at the YMCA.

Promotions

The following staff who received promotions within the Division and/or Agency:

- **Kelley Calhoun** was promoted to the position of Office Support Specialist II (BAAS06) on July 6, 2017. Kelley began working with GW in August 19, 2013 as a contract employee, and was subsequently hired as an Office Support Specialist I (BAAS05).
- **Cindy Linn** was promoted to the position of Office Support Specialist II (BAAS06) on April 25, 2017. Cindy was an Office Support Specialist I (BAAS05) since November 1, 2005.
- **Terry Carpenter** was promoted to the Natural Resources Specialist position (ENNR08) on April 24, 2017. This position serves as the Supervisor of the Administrative Support Staff. Terry was an Administrative Office Support Specialist II (BAAS06) since September 2011.
- **Sheri Culver** was promoted to the Business Office Coordinator II position (BABO09) on April 24, 2017. This position serves as the Executive Director of the Examining Board of Water Well Drilling and Water Well Pump Installation Contractors. Sheri was a GW Natural Resources Specialist (ENNR08) since December 1, 2009.

Moved On

The following staff members left the Division.

- Sonia Miller resigned her position as an Office Support Specialist II (BAAS06) on June 29, 2017.
- Charlie Ferrentelli resigned his position as a Natural Resources Specialist (ENNR09) and joined the Interstate Streams Division as an ENNR10 on April 3, 2017.
- Lynn Ritter resigned as Business Office Coordinator II position (BABO09) on March 10, 2017. Lynn served as the Executive Director of the Examining Board of Water Well Drilling and Water Well Pump Installation Contractors since September 15, 2010.

Water Fall of Fame

In WY2016, the SEO implemented an Employee Recognition Award. The award is presented to one SEO Cheyenne Office staff and one Field staff each six months. Outstanding employees are nominated for various qualities, including:

- A. Successful completion of a special project which required the individual to go above and beyond the normal scope of their position;
- B. Overall mastery of a subject so that the individual is recognized as an expert statewide, regionally, or nationally;
- C. Exemplary performance day after day – the kind of person you can rely on to get the work done on time, without complaint, and with excellent quality;
- D. An individual who handled a politically volatile situation with poise and success;
- E. Someone who developed and implemented an innovative approach to solving a problem or streamlining a task;
- F. Someone who has received recognition by individuals both within and outside the division or agency;
- G. Developing or implementing ideas that improve work processes.

Jeremy Manley, GW, received the first Employee Recognition Award presented to an SEO Cheyenne Office staff in WY2016. Markus Malessa received the second Employee Recognition Award presented to an SEO Cheyenne Office staff in October 2017.

Education and Outreach

GW took advantage of several low- or no-cost educational opportunities in an effort to remain current on new advances and technical information related to both the management of the state's groundwater resources and service to our groundwater appropriators.

GW staff also provided groundwater-related information to the public via several formats, including public presentations, hearings, and written correspondence. Staff coordinated with other state and federal regulatory agencies, reviewed water management and usage proposals, investigated groundwater supply problems, and fulfilled a broad variety of information requests, including:

GW staff participated in the following community-based activities in WY2017:

- Former Atlas Missile D, Site 4 Restoration Advisory Board,
- Former Atlas Missile D, Site 4 TPP Membership,
- Former Atlas Missile D, Site 3 Public Meeting related to creation of Restoration Advisory Board for Site 3,
- Pavillion Working Group (well bore integrity and domestic water wells),
- Wyoming Licensing Board for Water Well Drilling Contractors and Water Well Pump Installation Contractors, and
- Wyoming Geological Survey Advisory Board.

CHALLENGES

Loss of Staff/Staff Turnover

During this biennium, GW lost two positions, one technical (ENNR09) and one administrative support (BAAS05). The Division lost one additional technical and one administrative position in the previous biennium. Division staff now comprises 11 technical staff (including the Administrator and Assistant Administrator) and 6 administrative staff.

Groundwater Investigations and Studies

As the State of Wyoming faces more and more difficult groundwater resource issues, GW's "resource data gathering" programs have been eliminated to accommodate budget reductions. In the past, the Division was able to contract with outside resources to assist GW staff in conducting cooperative studies with the U.S. Geological Survey and/or hydrogeologic consultants to evaluate groundwater use, characteristics, and effects in areas where either interference between water rights, over appropriation, or interconnection between groundwater and surface water was problematic. Those funds no longer exist.

Observation Well Network

Collection and analysis of data from the Agency's observation well network allows the State Engineer's Office to evaluate changes in the amount of water available in water-bearing formations over time, develop groundwater models and predict future impacts to the state's groundwater resources, and support permitting decisions as well as the design, implementation, and monitoring of the effectiveness of groundwater management and conservation programs (e.g., an Order of the State Engineer or a voluntary agreement developed by appropriators in a control area).

The existing budget allows maintenance of the observation well network and some monitoring equipment replacement/repairs. However, drilling and completion of new wells, rehabilitating existing wells, and/or plugging and abandoning wells can no longer be accomplished.

Interference Investigations

Loss of funding to conduct interference investigations (i.e., complaints of interference between groundwater and/or surface water users) will result in less ability to respond when interference issues arise or when conflict mediation is required.

Working in a Construction Zone

GW was the last of the SEO divisions to move to the first floor west of the Herschler Building in June 2016. Our temporary location – adjacent to the deconstruction and subsequent reconstruction of the building - has been somewhat disruptive with the noise, dust, and concussions from falling slabs.

SURFACE WATER AND ENGINEERING DIVISION

Submitted by:
Lee Arrington, Administrator

The Surface Water and Engineering Division report include surface water and weather modification permit activities, petitions submitted to the State Engineer, and dam safety activities. With the exception of the Dam Safety Program (whose numbers and comments are reported for calendar year 2016) the numbers and comments are for the period from October 1, 2016 through September 30, 2017, which is referred to as WY2017.

SURFACE WATER SECTION

OBJECTIVES

The objectives of the Surface Water Section (SW) are directed by Wyoming Statutes, the State Engineer's Rules and Regulations, and the State Engineer's Office (SEO) Core business functions. SW objectives include:

1. Timely review and processing of Applications for Permit to Appropriate Surface Water, Petitions to the State Engineer and temporary water use agreements in preparation for consideration by the State Engineer.
2. Maintaining and updating all unadjudicated water right records to accurately reflect current status of said records.
4. Providing technical advice and instruction to constituents regarding procedures for filing applications, petitions and temporary water use agreements.
5. Providing technical assistance to the State Engineer, other divisions and water administration field personnel in matters requiring interpretation of surface water rights.

ACCOMPLISHMENTS

Applications and Petitions

Improved work-flow processes implemented in October 2012 continue to provide efficiency in processing applications. Goals established for the "processing life" of applications and petitions (i.e. each step in the "processing life" of an instrument has a maximum time allowed for its completion), has been tightened over the last four years, resulting in improved constituent service. The attainment of all goals is monitored and reported on a monthly basis. SW also began utilizing the Agency's G.I.S. mapping software for electronic platting of water rights (instead of hand drawing on paper plat maps). These changes have improved Division processing efficiency as well.

In WY2017, the backlog of applications with priority dates prior to October 1, 2016, was reduced from 118 to 91, while the petition backlog for the same time period increased slightly from 14 to 22. Additionally, new applications and petitions submitted to the Section during WY2016 included: a) applications for permits - 522; b) petitions and Authorization to Correct the Record (ACR) – 173.

Table 1 provides a comparison of applications and petitions filed with the State Engineer for the past years, beginning with WY2007 and continuing through WY2017.

TABLE 1. APPLICATIONS/PETITIONS RECEIVED, PROCESSED, BACKLOGGED

WY	APPLICATIONS			PETITIONS		
	No. Recd	Approve/Reject	EOY Backlog	No. Filed	Approve/Dismiss	EOY Backlog
07	1003	1439	983	23	15	124
08	913	1042	854	22	25	121
09	798	953	699	62	25	158
10	657	502	854	25	10	173
11	432	520	766	15	7	181
12	593	742	617	36	25	192
13	460	871	206	282	411	63
14	546	584	168	305	307	61
15	454	509	113	274	273	62
16	525	587	118	191	170	14
17	522	550	91	173	165	22

Types of applications fall into several categories. The more complex types include ditches/pipelines, enlargements, and reservoirs. The less complex applications (and those that can easily be reviewed and approved) include applications for stock reservoirs and temporary water uses.

The first application for an instream flow permit was received by the SEO in WY1987. According to Wyoming Statute, only the state of Wyoming, by and through the Wyoming Water Development Commission, can file an application for instream flow permits. Wyoming Statute requires the State Engineer to conduct a public hearing before an application is advanced to permit status or rejected. The division received three (3) instream flow applications and there were no public hearings held in WY2017.

Table 2 provides a breakdown of applications received for processing, by type, for WY2014-2017.

TABLE 2. APPLICATIONS RECEIVED

Category	WY2014	WY2015	WY2016	WY2017
Ditches/Pipelines	95	88	79	105
Enlargements	25	18	37	30
Reservoirs	149	135	116	168
Stock Reservoirs	148	115	180	120
Temporary Use	129	92	113	96
Instream Flow	0	6	0	3
Totals	546	454	525	522

Temporary Water Use Agreements (TWUAs)

A means of acquiring the right to use water for temporary purposes is provided by Wyoming Statutes §§ 41-3-110 through 41-3-112. These statutes authorize the temporary acquisition of an existing adjudicated or valid unadjudicated water right, not to exceed a two-year period of time, for temporary use. Persons interested in temporarily acquiring the ability to use an existing water right can enter into TWUAs with holders of valid water rights to obtain water for their temporary needs. Only that portion of a water right which has been consumptively used under historical practices may be acquired for temporary purposes.

TWUAs must be reviewed and approved by the SEO and an Order approved by the State Engineer that ratifies the agreement and approves the temporary change in use. TWUAs are quickly reviewed and approval Orders are normally issued within a few days of receipt. In the reporting period, a total of 98 TWUAs were received and approved. As of September 30, 2017, there existed 131 active TWUAs in the following use categories: Road Construction (44), Oil & Gas Development (36), Irrigation (2), and Other (or combined) Uses (49). The number of TWUAs received and processed in WY2017, compared with previous water years, is shown in Table 3.

TABLE 3. TEMPORARY WATER USE AGREEMENTS PROCESSED

Water Year	No. of TWUAs
2010	114
2011	123
2012	144
2013	138
2014	122
2015	94
2016	85
2017	98

Permit Endorsements

When an application is approved and the permit is issued, it is recorded in the SEO e-Permit database system and a digital image is made and uploaded. Subsequent activities related to the permit must be recorded in the form of endorsements (updates) to the permit. Such activities include the filing of notices of completion of construction and/or beneficial use, approved requests for extensions of time to complete construction and/or beneficial use, eliminations of points of use, reinstatements, cancellations, assignments, or changes made through the granting of a State Engineer petition. Such endorsements require the updating of the physical, paper copy of the permit and updates to the e-Permit database. A total of 1016 endorsements were completed in WY2017. Table 4 provides an overview of the number and type of permit endorsements executed in WY2017.

TABLE 4. WY2017 PERMIT ENDORSEMENTS

Endorsement Type	Number
90-day Notice of Cancellation	251
Extension Requests	105
Assignment Requests	249
Cancellations	210
Statements of Completion/Beneficial Use	201
Total Endorsements	1016

Other Activities

The Division continues to participate in the activities of the U.S. Board of Geographic Names. This review provides for coordination of names used on maps, particularly those of streams, since every year, many streams are given names by issuance of water rights permits.

The Division maintains a complete file of all USGS maps covering the state of Wyoming for use by the State Engineer's office and field personnel.

COAL BED METHANE RESERVOIR IMPACTS

The Division is faced with the challenge of transfer of ownership (assignment) of CBM reservoir permits from CBM companies to landowners as CBM production continues to decline across the state. Such transfers can be potentially problematic if permit conditions were not met upon the completion of construction of the permitted facility and the landowners are not completely aware of the liability accepted with the transfer. The Wyoming Department of Environmental Quality communicates regularly with SW staff to ensure that the release of performance bonds to CBM companies does not occur unless State Engineer imposed permit requirements are met.

DATA VERIFICATION AND TECHNOLOGY USE

The e-Permit data base system continues to develop as the Division's primary tool for processing water right applications and maintaining permit records, and the Division has developed a reliance on the system. Verification of data in e-Permit for water rights that existed "pre-e-Permit" began in

earnest in WY2014. During that period, staff verified 6691 reservoir permits and 3810 stock reservoir permits. In WY2015, 5658 reservoir permits and 1460 stock reservoir permits were verified, completing the reservoir permits verification task. The task of verifying approximately 40,000 ditch and enlargement permits began in WY2016, resulting in 13,462 permits being verified. In WY2017, another 9566 ditch permits were verified and the project will likely continue at least through 2020 before being completed.

The Division made the move to electronic platting in June 2013. All paper plat maps were scanned and were made available electronically to agency staff in WY2014. Discussions continue regarding whether or not the digital copies of paper plats should be made available to the public. Additionally, all current permits and maps are scanned and uploaded to the e-Permit database which is available to the public online.

STATE ENGINEER'S INSTRUCTIONS AND REGULATIONS

In WY2017, work continued on revamping the SEO rules and regulations, partly in answer to Governor Matt Mead's desire to reduce rules, state-wide, in both number and volume. That work will continue in WY2018.

SAGE GROUSE PROTECTION

The SEO developed and implemented a process wherein all new applications, petitions and changes for water right permits where the proposed facilities are located in the following areas, are reviewed for compliance with Executive Order 2015-4, Greater Sage-Grouse Core Area Protection:

- a. Within a defined Greater Sage Grouse Core Population Area (SGCPA).
- b. Outside of a SGCPA but within two (2) miles of an active or occupied lek as defined by the Wyoming Game and Fish Department.
- c. Within Winter Concentration Areas.
- d. Within Connectivity Areas.

SEO involvement in implementation of Executive Order 2015-4 occurs primarily at the permitting stage and as such is focused on coordinating with other entities in Cheyenne. New development or land uses within SGCPAs are authorized or conducted only when it can be demonstrated that the activity will not cause declines in sage grouse populations. During the planning process, the SEO will put an application on hold if the proposed activity is in a sensitive sage grouse area, and will not move forward with processing the application until the applicant has submitted sufficient information to the WG&F to receive WG&F approval to proceed with the project.

The SEO has incorporated the requirements of Executive Order 2015-4 into otherwise routine permitting activities and partners with other agencies (such as DEQ and State Lands), that have

additional authority to direct reclamation activities. The SEO provides other services and expertise including mapping support.

In July 2014, WG&F asked all state agencies operating under the Executive Order to begin entering permitting data into their newly created Greater Sage Grouse Permit and Mitigation Reporting database. WG&F requested that historic data from permits issued in SGCPAs in calendar years 2013-14 be provided as well as data from any new permits issued on an ongoing basis. SW complied with WG&F's request by providing data on 38 Reservoir/Stock Reservoir permits and 20 Ditch/Enlargement permits that had been issued during the historic period, and continues to provide data as new permits are issued. In WY2015 and WY2016, 42 and 55 applications respectively were permitted that required reporting to the WG&F.

The SEO permits water sources that supply stock reservoirs and tanks. Often, stock tanks are pre-fabricated circular metal tanks with vertical sides. Greater Sage-Grouse may become trapped inside the tank. In partnership with the WG&F and others, the SEO has now incorporated information and requirements for Greater Sage-Grouse Escape Ramps into the permitting process for stock tanks.

Relative to enforcement of Attachment B to Executive Order 2015-4 stipulations, non-conformance with the conditions and limitations of a water right permit could jeopardize the permit and subject the permit to enforcement actions as provided in statute. That said, the SEO generally has a minor role in the planning of non-water related land use development such as roads, power lines, noise, etc. And, the SEO does not have statutory authority to extend regulation beyond the water right action. However, the SEO can impose timing and sequencing stipulations and conditions that deal with the construction of the permitted facility.

Additionally, as the coal bed methane activity recedes in the state, wells and reservoirs are either being reclaimed and/or transferred for other uses. The SEO is an active participant in the discussion and, if necessary, the permitting for conversion of wells and reservoirs to new uses, such as for stock and/or domestic use. Some reservoir transfers can benefit sage grouse as well. Likewise, if reservoirs are not transferred to other uses, the SEO coordinates with other agencies to close out and reclaim the sites. The SEO also partners with the WOGCC and DEQ for well transfers.

The SEO is part of the Greater Sage-Grouse initiative team and is involved in the discussions and solution formulation, and provides public presentations and answers other related questions and issues associated with the program when applicable and/or when asked.

The SEO has a good working relationship with the WG&F. This relationship helps ensure uniform application of the requirements under Executive Order 2015-4 and serves to minimize challenges with the uniform and consistent application of the Order with federal agencies. As a matter of course in water rights, water development, and use, the SEO has working relationships with nearly all active federal agencies in the state and these relationships help in coordinating the needs and requirements of the Greater Sage-Grouse Core Area Protection as well.

REGIONAL WATER SUPPLY PROJECT-GREEN RIVER PIPELINE (TF# 34 4/153)

On December 28, 2007, an application was received from the Million Conservation Resource Group (MCRG) proposing to divert water from the Green River and Flaming Gorge Reservoir for use in the state of Colorado. MCRG proposed to construct a 400 cfs pipeline that would convey water from the Colorado River Basin with points of diversion from the Green River (downstream of the City of Green River) and from the body of Flaming Gorge Reservoir, across southern Wyoming, to the Colorado Front Range through a facility that was named the Regional Water Supply Project-Green River Pipeline. The water was proposed to be utilized for municipal, industrial, irrigation, domestic, recreational, fish and wildlife, environmental, hydropower, aquifer storage and recovery and other purposes. The application was designated TF# 34 4/153.

Over the following years, several requests were made for additional information in accordance with Wyo. Stat. § 41-4-502 in order for the State Engineer to consider the application complete and to proceed to permit status. Ultimately, additional information was not forthcoming and on February 27, 2015, the State Engineer rejected the application.

On March 4, 2015, the MCRG again filed an application for the Regional Water Supply Project-Green River Pipeline. The application was essentially the same as the previously rejected application except that irrigation use was not requested. The applicant was notified by letter that the project would have to comply with Executive Order 2011-5, Greater Sage-Grouse Core Area Protection, before being approved. The application was placed on administrative hold until compliance with the Executive Order could be confirmed.

On May 4, 2015, MCRG filed an appeal of the state engineer's rejection action of TF# 34 4/153 with the Wyoming Board of Control (Docket No. IV-2015-2-4). After several months of legal communications with the state of Wyoming, the MCRG voluntarily withdrew its appeal. At the end of WY2017, there has been no response by the applicant regarding compliance with the Executive Order.

WEATHER MODIFICATION PERMITTING ACTIVITIES

Objectives

The primary objective of the Weather Modification Program is to procure, compile, and evaluate information resulting from weather modification experiments, research and related activities conducted in the state of Wyoming. Weather Modification Permits are issued by the State Engineer for each weather modification program, experiment or activity.

Accomplishments

Four (4) permits were issued for weather modification (cloud-seeding) purposes during WY2017.

Permit Number 132 was issued to North American Weather Consultants for weather modification in the Uinta Range south of Lyman, Wyoming. This project is intended to increase flows in the streams flowing into Wyoming on the north side of the Uinta Mountain Range.

Permit Number 133 was issued to Weather Modification, Inc. for cloud-seeding in the Wind River Mountains from northwest of Pinedale to the vicinity of Lander. This project is a fully operational spinoff of the 8-year long Wyoming Weather Modification Pilot Program, and was funded by the state of Wyoming as well as several downstream water user/interest groups, and is managed by the Wyoming Water Development Commission for the state of Wyoming.

Permit Number 134 was issued to Idaho Power for two ground-based generators that were placed on hills near the Wyoming-Idaho border in the Star Valley to target the Salt and Wyoming Mountain Ranges. The objective of the activities of the project was to increase the water supply in the Salt and Wyoming ranges in Wyoming. The project was expected to provide positive benefits to the residents of the Salt River, the Greys River, and drainages on the eastern slope of the Wyoming Range in western Wyoming and was expected to provide additional spring and summer stream flow to this part of Wyoming.

Permit Number 135 was issued to the Eden Valley Irrigation and Drainage District in Farson, Wyoming, with the objective of their continuing weather modification program to increase the water supply in the Big Sandy River drainage. From November 15th through April 15th, two mobile, ground-based, cloud-seeding generators are strategically placed along Highway 191 and on Muddy Ridge. The generators are operated in accordance with daily weather conditions in order to positively affect snowpack conditions on the western side of the Wind River Mountain Range.

WATER RIGHTS EDUCATION OUTREACH

Working closely with the Ground Water Division and the Safety of Dams Section, a basic "Water Rights 101" class was developed. This class was presented four times throughout WY2017 to a total of 100 realtors and attorneys and to a class from the University of Wyoming College of Law. The quality of the material and instruction was so highly valued by attendees that they requested additional instruction. Accordingly, a "Water Rights 102" class was developed as well as a "Survey Info" class. These two additional classes were presented to a total of over 60 realtors. Due to the quality of these educational endeavors, we were asked to present a class at the Professional Surveyors Conference in November to over 300 PLS professionals as part of their continuing education program.

STAFFING LEVEL/CHANGES

Before staff reductions due to mandatory budget cuts, the Surface Water and Engineering Division employed a 16 person staff. As of September 30, 2017, the Division is 100% staffed (one Natural Resources Program Manager, one Natural Resources Program Supervisor, five Natural Resources Analysts, one Senior Office Support Specialist, two Office Support Specialist IIs, and two Principal (Dam Safety) Engineers) with 12 personnel representing a 25% reduction in staff.

During WY2017, the following staffing changes occurred:

1. In November 2016, Natural Resources Analyst Adriene LaRue resigned and moved to Utah

2. In December 2016, Jay Smith joined our staff as a Natural Resources Analyst having most recently worked for the City of Cheyenne.
3. In April 2017, Natural Resources Analyst Chris Couch retired after 20 years of faithful service. Also in April 2016, Tyler McIlvain joined our staff as a Natural Resources Analyst having most recently worked in the groundwater consulting field.
4. In May 2017, Natural Resources Analyst Tabettha Wolf resigned to attend law school and Shelley Messer joined our staff as a Natural Resources Analyst having most recently worked in the production oilfield industry.
5. In June 2017, Office Support Specialist II Claire Engkvist retired after several years of service.

We wish all of our former team members well in their new endeavors and welcome our new team members as we move into the future.

WATER FALL OF FAME

In 2016, the SEO created an employee recognition program where, semiannually, two employees (one from the Cheyenne office and one from the field) are recognized for their contributions to the Agency's mission. In April 2017, Supervisory Technician Jason Feltner was recognized by his peers as deserving of the award. The staff member nominating Jason stated, in part:

“Jason has worked to develop a strong team and the team, through Jason's efforts and recognition of team members' accomplishments, recognizes and appreciates their value to the division and agency. Through Jason's leadership efforts, he and his team have exceeded all 4 core goals assigned them, some of which were exceeded by more than double the expected output. He also has led his team in tackling multiple special projects, the results of which will have significant and lasting effects on the agency and the division. Jason is constantly seeking opportunities to develop his staff as is evidenced by the meaningful training opportunities he has facilitated. Additionally, special projects that he has assigned to subordinates typically have a developmental quality to them, oftentimes resulting in products that benefit the division, agency, and/or constituents. At the division level, Jason is oftentimes called upon to provide advice and direction. Jason understands and values his leadership role and responsibility. He has an innate ability to lead and manage others to not only meet division goals, but in most cases exceed them to a very high degree. For his years of consistent contributions to the Surface Water Division and the Agency as a whole, Jason is very deserving of this recognition.”

We congratulate Jason on this much deserved recognition!

SAFETY OF DAMS SECTION

Submitted by:
Michael Hand, PE
Nathan Graves, PE

In 1977, the Wyoming Legislature, recognizing the potential hazards to public safety due to waters impounded by dams throughout the state, and the economic benefits of well maintained and safely operated dams, enacted the Wyoming Safety of Dams Act (Wyoming Statutes §41-3-307 through §41-3-318) (Act). The Act was amended in 1992 to clarify inspection requirements, duties of the State Engineer, and lien procedures.

While a permit from the State Engineer is required for all reservoirs, the Act pertains to dams greater than 20 feet high or which impound 50 acre-feet or more, and diversion systems with a capacity of 50 cubic feet per second or greater. However, the State Engineer may enforce any sections of the Act on any size facility, when necessary, to insure the public safety or the protection of property. Essentially, the Act requires applicable facilities be designed by a professional engineer and inspected every 10 years. Agency policy however, requires these dams to be inspected every five years.

OBJECTIVES

The objective of the Wyoming Safety of Dams Program (Program) is to protect the public by reducing the potential for flooding and loss of life as a result of the failure of a dam or diversion system. This objective is accomplished in two ways, as stipulated by the Act:

1. By reviewing plans and specifications for proposed construction work and reviewing inspection and progress reports outlining construction activities.
2. By conducting periodic safety inspections of existing facilities.

ACCOMPLISHMENTS

During calendar year 2017, eight (8) Safety of Dams size projects were referred to the State Engineer's Office for review. Of this number, five (5) were for new or enlarged reservoirs. The remaining applications were for reclamation, or reinstatement of existing facilities. Because not all of the plans received were complete, and some were submitted later in the year, not all were approved for construction during the reporting period. Four (4) projects were approved for construction. Three (3) Safety of Dams size projects were completed. The projects completed were not the same projects approved for construction. At least one project was not pursued by the owner because of Safety of Dams requirements.

In addition to the work involved with design review and/or construction monitoring activities, a considerable amount of time is spent on the other aspect of the Program; the Periodic Inspection Program. Wyoming Statute §41-3-311 states: "Any dam, subject to the terms of this [A]ct shall be inspected at least once every ten (10) years or as often as deemed necessary based on the

hazards of the dam to insure the continued protection of public safety and property." Current office policy requires each dam to be inspected every five years.

Currently, 1543 dams meet the criteria of the Act. A total of 337 dams were inspected in calendar year 2017 and 368 are due for inspection in 2018.

Inspections are coordinated with private dam owners and local municipalities as well as State and Federal agencies.

OTHER ACTIVITIES

Work is ongoing updating the Wyoming portion of the National Inventory of Dams (NID). Periodically, all information regarding the 1617 Wyoming Dams included in the NID is submitted to the U. S. Army Corps of Engineers (USACE). The criteria for inclusion in the NID differ slightly from the State of Wyoming criteria. This accounts for the difference in the number of dams included.

One engineer from the Wyoming Safety of Dams staff now sits on the national board of directors for the Association of State Dam Safety Officials. This position gives Wyoming a greater voice in national dam safety policy.

A total of **zero** dam incidents were reported this year. Beginning in 2017, the owner of every dam inspected in the state received the inspection report and a letter concerning the condition of their dam. This is one element of the effort to educate and inform private dam owners about issues associated with private dam ownership. Another part of this outreach effort has been a series of Dam Owner Workshops held around the state. Topics discussed at these workshops include: the history of dam engineering; the economic benefits of intensive dam maintenance programs; common dam failure modes and how to recognize them; cost-effective inspection and damage prevention programs. Recently, the Safety of Dams staff has partnered with the Surface Water staff to provide attendees a more complete picture of Wyoming water law. This allows the Safety of Dams staff to focus on engineering issues while at the same time providing someone to respond to water rights questions that arise. This process has resulted in many positive comments.

In March 2017, the highlight of the dam owner workshop was a presentation by Mr. Mike Roudner of Kaycee. Mr. Roudner is the owner of the Willow Glenn Dam at the base of the Bighorn Mountains. His dam suffered a rare double break in the outlet works in September 2015. His presentation included his reaction to the incident; his process to retain a consulting engineer; the design process, including review by the Safety of Dams staff; and the process he went through to complete the reconstruction of the dam.

Close to 60 percent of the privately owned dams in Wyoming are over fifty years old. Maintenance and rehabilitation of aging dams are one of the main priorities of the program. In order to address this situation, the Safety of Dams staff has conducted an annual series of education programs for consulting engineers. In October 2016, the Safety of Dams staff offered a two-day workshop on cost-effective rehabilitation technologies for extending the life of dam

outlet works. This workshop included sessions in the classroom discussing the theory and practice of outlet relining and rehabilitation as well as field demonstrations of four different outlet relining technologies. These were presented by nationally recognized experts in their respective fields.

Response to the dam owner workshops as well as the engineering workshops has been overwhelmingly positive. Assuming future NDSP funding, more workshops will be conducted in future years. Most attendees have indicated a desire to attend future workshops.

These workshops have been funded by the Wyoming's piece of the National Dam Safety Program (NDSP) grant. This grant is provided annually by the Federal Emergency Management Agency (FEMA) to states with active dam safety programs. Grant funds were also used to provide a two-day training session for field commissioners about dam safety and dam inspections. Additionally, because sometimes training does not translate from the classroom to the field, grant funds are used to fund travel by the Safety of Dams staff to field locations where the field staff assists the inspection of larger facilities. This is an efficient use of funds as it provides assistance to the Safety of Dams staff while concurrently educating the field staff in inspection techniques.

NDSP funds were used to purchase a new truck for use by the Safety of Dams staff. This has proved to be a good use of the funds because the Safety of Dams staff is no longer constrained by vehicle schedules. NDSP funds were also used to offset the costs of Cheyenne staff traveling to inspect significant and high hazard dams.

PROBLEM AREAS

Construction of new dams or modification of existing dams without proper engineering design or review has been a recurring problem in the state of Wyoming. The discovery new large dams constructed or enlarged without regard to downstream hazards or material science can pose a threat to persons or property downstream. Staff continues to work with these dam owners to bring these facilities into compliance as they are identified. Despite the stress these incidents place on the resources of this office, they are not included in the numbers shown in Accomplishments above.

SUMMARY

The Safety of Dams Section continues to work to minimize the number of dam failures and incidents through a combination of public outreach and enforcement action. State funds are used to accomplish these goals. Federal funds are used to improve and enhance the effectiveness these efforts.

BOARD OF CONTROL DIVISION

Cheryl Timm, Administrator
Jed Rockweiler, Assistant Administrator
Board of Control Division

OBJECTIVES

1. To promptly process petitions to amend adjudicated water rights and to present these petitions for review and consideration by the Board of Control.
2. To promptly review within 30 days water distribution plans and/or authorizations for detachment of water for consideration by the State Engineer or the Board of Control.
3. To promptly process proofs of appropriation for new adjudications and to present these proofs for review and consideration by the Board of Control.
4. To maintain and update the status of all adjudicated water right records to accurately reflect their current status.
5. To continuously evaluate the productivity of staff efforts in addressing the current workload.
6. To respond to inquiries by the public, as well as State and Federal agencies, regarding the current status of adjudicated water rights, and to give instructions and assist appropriators on the methods, procedures and format for filing petitions, plans, and authorizations for detachment with the Board of Control.
7. To provide technical and administrative support to the Board of Control members in matters concerning the evaluation of both surface water and groundwater rights and water administration.
8. To comply with statutory requirements and publish a tabulation of adjudicated water rights for the four (4) Water Divisions.

MAJOR ACCOMPLISHMENTS

Petitions

During the period of October 1, 2016 to September 30, 2017 (WY2017), the Board of Control Division (Division) received 183 petitions, an increase of 35 petitions or 23.6% received in the previous reporting period, throughout the State in addition to those already on the agenda. These new petitions are listed by division in Table 1.

TABLE 1. PETITIONS RECEIVED

Water Division	Surface Water	Ground Water	Total
I	60	25	85
II	22	1	23
III	36	10	46
IV	29	0	29
TOTAL	147	36	183

Final action was taken on 148 petitions, which were either granted, denied, dismissed or withdrawn, an increase of 12 petitions or 8.8% from the previous reporting period. Some of the petitions were carried over from the previous reporting period to allow for the resolution of technical, engineering and legal problems, and in some cases for public hearings. The petitions dealt with by the Division ranged from those with simple issues such as a change of point of diversion to those of a more complex nature such as change of use and declaration of abandonment.

Proofs

During WY2017, the Division received 994 proofs. Two hundred and seventy-five (275) or 28% of these proofs were for groundwater rights (wells), and 719 or 72% were for surface water rights. In addition to these 994 proofs, 159 stock reservoirs were inspected and found to be constructed within the terms of the permit. Under current Board of Control policy, these stock reservoir permits will be finalized, and will create their own report in the water right tabulation books; but no certificate of construction will be issued. The total number of proofs received and stock reservoirs received to be endorsed by division are shown in Tables 2 and 3 respectively.

TABLE 2. PROOFS RECEIVED

Water Division	Surface Water	Ground Water	Total
I	316	96	412
II	152	55	207
III	80	43	123
IV	171	81	252
TOTAL	719	275	994

TABLE 3. TOTAL STOCK RESERVOIRS ENDORSED

Water Division	Total
I	26
II	129
III	2
IV	2
TOTAL	159

E-Permit/ Tab Book Update

In WY2017, Division staff continued the certificate “verification” process. All certificate records need to be verified in order for all four (4) water division Tab Books to be printed accurately. During WY2017, staff concentrated on Divisions I & II, and started on Division III.

The above “verification” process for Tab Books and missing certificates has allowed the Division to establish “Board of Control e-Permit data entry rules.” This has been instrumental in staff following the same rules for data entry which increases data integrity. The Division continues to note improvements, defects, enhancements, etc. that can be made to e-Permit for improvements in functionality and consistency of records.

PROBLEM AREAS

There are still a few problematic issues with entering certain types of water rights into e-Permit. Most issues have been resolved. The issues reported in WY2016, with the Division III Court Adjudicated water rights printing in the Division III Tab Book, have been resolved. Due to cuts in staffing, the number of staff available to verify certificates has decreased.

During the drought years, water administration was a priority and, as a result, a backlog of proofs developed. To that end, the field staff in each division, as well as, the Ground Water Division, has worked diligently in decreasing the backlog of proofs. This resulted in a rather large increase in the number of proofs and the number of stock reservoirs inspected and found to be constructed within the terms of the permit submitted to the Board of Control.

The number of petitions submitted to the Division continues to increase. In addition, the loss of a petition team member due to budget cuts has caused significant impacts to the petition team overall. The nature of this petition work is such that if the analysis is not completed in time for the Board meeting that the petition has been docketed for, the public may see a minimum three month delay in obtaining a final action from the Board. This position was also one of the technical positions responsible for timely review of subdivision water distribution plans and authorizations to detach water rights. It is required that a water distribution plan be submitted and approved by the State Engineer and/or an authorization for detachment of water rights be submitted and accepted by the Board of Control prior to approval of many County subdivisions. Any delay in this process could delay the County subdivision process.

RECOMMENDATIONS

For Tab Books: Tab Book verification has a high job priority in the Board of Control. However, so do petition and adjudication actions which affect the Tab Books. It has been difficult to meet established timelines with only two (2) Board of Control technical staff assigned to work part-time on Tab Books. All Board of Control staff aid in this effort as time allows and it still is not enough. An additional time-limited technical position or two (2) to help with data verification would greatly benefit our efforts to meet the statutory requirements of printing Tab Books in a timely manner. If hiring additional temporary staff is not possible, a summer intern position or, possibly, offering overtime to those staff eligible may aid our efforts.

Once the existing data has been verified, it will not have to be done again. Only updates and maintenance would be required for which the two (2) technical staff members currently assigned would be sufficient. Once this effort has been completed, the production of Tab Books could occur at any interval as all data would be up-to-date.

For the proof backlog: As the field staff worked through their back log of pending proofs, the number of proofs submitted to the Division for review and advertising has increased. In WY2012, the Division developed a plan to deal with the backlog of proofs that we received and refinements were made to the plan in WY2013. Although this plan has helped with the backlog, an additional staff member was assigned to assist in this area in WY2017.

For petition backlog: As the number of petitions submitted to the Division continue to increase and with one (1) less petition team member to review petitions, processing times will continue to increase. Although current staff has worked diligently to avoid a backlog, an additional staff member to help in this area would greatly benefit the process and allow the Division to review and process petitions in a timelier manner.

During WY2017, with the improvements made in e-Permit the backlog has been addressed and staff strives to have all certificate records from one meeting finished before the next Board meeting begins.

INTERSTATE STREAMS DIVISION

Submitted by:
Steve Wolff
Administrator

and

Beth Callaway,
River Basin
Coordinator

Jeff Cowley,
River Basin
Coordinator

Charlie Ferrantelli,
River Basin
Coordinator

INTRODUCTION

The State Engineer is charged with administering and overseeing all matters involving Wyoming's interstate and intrastate streams and rivers. A primary objective of the agency is to safeguard the State's current and future water supplies by preserving Wyoming's ability to use and develop our water allocations under our interstate compacts and court decrees. The Interstate Streams (ISS) Division provides technical and policy support for water allocation and administration issues associated with these governing compacts and decrees. The ISS Division also monitors most of the federal and congressional activities related to water management, and coordinates the water planning activities of the agency. One staff change occurred in WY2017. Brenna Mefford, River Basin Coordinator, resigned in February. Charlie Ferrantelli transferred from the Ground Water Division to replace Brenna in April.

INTERSTATE STREAMS ACTIVITIES

The following summarizes notable activities of the Interstate Stream Division by river basin or issue:

MISSOURI RIVER BASIN

National Integrated Drought Information System

The National Oceanic and Atmospheric Administration's (NOAA) National Integrated Drought Information System (NIDIS) program began the first Missouri River Basin Drought Early Warning System (DEWS) coordination efforts in 2014. The goal of this program is to focus on improving data and information for drought risk management at the state level in the greater Missouri River Basin. The SEO joined the Missouri River Basin DEWS stakeholder group and participated in the 2017 NIDIS Missouri River Basin User Forum in Rapid City May 23-25.

Missouri River Recovery Implementation Committee

The 2003 Amendment to the U.S. Fish and Wildlife Service (FWS) Missouri River Biological Opinion outlined the need for a public stakeholder group to serve in an advisory capacity to the

FWS and the Army Corps of Engineers (Corps) as they moved forward with the Biological Opinion projects. Accordingly, the Water Resources Development Act of 2007 defined and authorized Missouri River Recovery Implementation Committee (MRRIC) which now regularly meets in person on a quarterly basis at various locations throughout the Missouri River Basin. MRRIC consists of 70 stakeholders who represent a wide array of local, state, tribal and federal interests. Wyoming has actively participated in MRRIC since its inception.

As Wyoming's representative to MRRIC, Beth Callaway prepared comments on behalf of the State of Wyoming regarding the Missouri River Recovery Management Program (MRRMP) draft Environmental Impact Statement that was issued in December 2016. Although Wyoming is not located on the Missouri River mainstem, the state currently holds Cooperating Agency status in support of MRRMP efforts. The comment letter discussed two key issues: 1) Wyoming's support for the inclusion of Adaptive Management as a recovery program management action in the preferred alternative and subsequent MRRMP implementation, and 2) a request to create additional state/federal consultation mechanisms at specific trigger points in addition to existing U.S. Army Corps of Engineers' Annual Operating Plan outreach efforts.

YELLOWSTONE RIVER BASIN

On January 31, 2007, Montana filed a Motion for Leave to File Bill of Complaint with the U.S. Supreme Court making the claim that Wyoming had violated the Yellowstone Compact by expanding water use in the Tongue and Powder River basins, by allowing groundwater pumping associated with coalbed methane development, and by constructing additional storage. More details on the activities regarding this lawsuit can be found in the Legal Activities section.

The Yellowstone River Compact Commission met on December 1, 2016 in Red Lodge, Montana. The Technical Committee met April 6, 2017 in Thermopolis, Wyoming. The Technical Committee continued efforts to work with the Natural Resources Conservation Service (NRCS) and National Oceanic and Atmospheric Administration (NOAA) with the goal of improving confidence in forecasting state line flows of the Tongue River to assist administration of the Tongue River under the terms of the Yellowstone River Compact and Special Master's findings. The two groups continued discussions on the status of Wyoming and Montana water supply and water rights issues in the basin, as well as updates on Montana's adjudication efforts. Agendas and minutes from these meetings can be found on the Compact Commission's website: www.yrcc.usgs.gov/index.html.

The Bureau of Reclamation's Long-Term Issues group that was examining operations at Yellowtail Dam continues to meet twice a year. It also includes water supply outlook and operations for Boysen and Buffalo Bill Reservoirs. Reclamation has instituted updated operating criteria that balance the needs dependent upon reservoir elevation to those dependent upon downstream channel releases. Evaluating options for controlling sediment was a focus area in WY2017. Landis Webber of the SEO joined the group for the meeting held in Billings, Montana on November 16.

BELLE FOURCHE RIVER BASIN

The annual coordination meeting between Wyoming, South Dakota, Bureau of Reclamation, U.S. Geological Survey, irrigation districts and local water users was held on November 7, 2016 in Belle Fourche, SD. This once-a-year meeting provides a good forum for the irrigators and the federal and state water administrators to discuss the previous year's deliveries and operations for the following year, as well as any potential issues. Minutes for each of these meetings are retained in the files of the ISS Division.

UPPER NIOBRARA RIVER BASIN

Nebraska and Wyoming held their annual Niobrara River Compact meeting on October 5, 2016 in Scottsbluff, NE. Nebraska reported that the contract deadline for the Aquifer Absent Study had to be extended to finish all tasks, but the goal is to have the study and reporting done by the end of 2017. They also reported that a meeting took place in August 2017 between the National Park Service (NPS), USGS, Nebraska Department of Natural Resources (NDNR), and the Niobrara River Basin Natural Resource Districts to get updates on the hydrogeologic study and modeling efforts. There has been one follow up phone call between NDNR and NPS since that time.

The states technical group met via conference call on April 20, 2017. Nebraska and Wyoming provided an update on the flows at the state line. The Bureau of Reclamation discussed plans to drain Box Butte Reservoir to make repairs to the toe drains, to be completed in December. Nebraska reported that basin-wide and individual NRD Integrated Management Plan (IMP) activities in the Basin are currently on hold as partners continue to discuss implications of a potential transfer of the Spencer hydropower right. NRD IMP activities are expected to begin again in 2018.

PLATTE RIVER BASIN

Modified North Platte Decree

The U.S. Supreme Court approved the Final Settlement Stipulation and entered the Modified North Platte Decree in *Nebraska v. Wyoming* on November 13, 2001. The goal of the settlement was protection of existing water rights while providing certainty about the extent of Wyoming's water use and future water development and management. In general, the settlement calls for an increase in monitoring, measurement, accounting, and reporting of water use, as well as future studies to be conducted by the North Platte Decree Committee (NPDC).

The NPDC consists of water officials from the Bureau of Reclamation, and the states of Wyoming, Nebraska and Colorado that meets in the fall and spring every year. Patrick Tyrrell, State Engineer, assumed the Chairmanship for 2016-17 and as of December 31, 2017 the chairmanship will rotate to the State of Nebraska. The NPDC maintains several subcommittees to assist in fulfilling its duties under the Modified Decree: Ground Water Wells, Control Crest, Finance, Consumptive Use, Replacement Water, and Official Files.

Wyoming performs the following tasks to comply with the Modified North Platte Decree and Final Settlement Stipulation and as a cooperating member of the NPDC:

1. For WY2016, Wyoming reported in a February 6, 2016 letter to the NPDC, that the intentionally irrigated acreage for the North Platte River basin above Guernsey Reservoir, exclusive of the Kendrick Project, was 205,472 acres and in the Lower Laramie River basin, exclusive of the Wheatland Irrigation District (WID), was 31,243 acres. Of the 205,472 acres irrigated above Guernsey Reservoir, 151,559 acres were irrigated above Pathfinder Dam and 53,913 acres were irrigated between Pathfinder Dam and Guernsey Reservoir. In accordance with the Settlement Agreement, the intentionally irrigated acreage caps for these basin areas are 39,000 acres in the Lower Laramie Basin, excluding WID, and 226,000 acres above Guernsey Reservoir, of which the caps are 169,100 acres above Pathfinder Dam and 56,900 acres between Pathfinder Dam and Guernsey Reservoir.
2. For WY2016, Wyoming also reported in a May 15, 2017 letter to the NPDC that the ten-year calculated consumptive use of irrigation water in the North Platte basin upstream of Pathfinder Dam was 1,220,000 acre-feet for 2006 through 2016. In addition, Wyoming reported the ten-year calculated total was 840,000 acre-feet for the North Platte basin between Guernsey Reservoir and Pathfinder Dam. The limit for each of the basins is 1,280,000 acre-feet and 890,000 acre-feet respectively.

Seven (7) full-time field staff assigned to Division I, and one (1) Interstate Streams position in the Cheyenne office carry out the tracking and reporting requirements of the Settlement Agreement. Many existing staff positions continue to be faced with additional responsibilities to comply with the Settlement Agreement. By accurately tracking and reporting Wyoming's water use in the North Platte River Basin, the State of Wyoming is able to protect Wyoming's appropriation of this valuable water resource.

Platte River Recovery Implementation Program (PRRIP)

In 1997, the States of Colorado, Wyoming and Nebraska and the U.S. Department of the Interior (DOI) signed the Cooperative Agreement (Agreement) for Platte River Research and Other Efforts Relating to Endangered Species Habitat along the Platte River in Central Nebraska. The Agreement addressed recovery of four species: the whooping crane, piping plover, least tern, and pallid sturgeon.

The PRRIP agreement was signed by the Governors of Colorado, Nebraska, and Wyoming and the Secretary of Interior in late 2006. The PRRIP remains in effect for the first increment, 13 years. In December 2016 the Governance Committee (GC) came to an agreement on a plan to extend the program for another 13 years. This process seems to make the most sense as the water goal for the first increment has not been met. As the draft federal legislation reads now, there is a provision allowing for 16,507 acre-feet of the irrigation pool in Pathfinder to have an environmental use added to it. This would allow the Bureau of Reclamation to sell water to the PRRIP. The 16,507 acre-feet roughly translates to 10,000 acre feet that would reach the Central

Platte and help the PRRIP get closer to meeting the water goal. The thirteen irrigation contractors (9 in Nebraska and 4 in Wyoming) would give up irrigation for about 1.5 days and allow that water to pass by their headgate so that the water can make its way to the Central Platte. The revenue derived from the water sales would be credited to the 13 contractors against O&M charges assessed by the Bureau. There are still several hurdles, including Federal Legislation, State Legislation, a Nebraska permit, and a Wyoming Board of Control Petition to get over in order to finalize this plan as it is written. Meetings have been held with the Governor, the four Wyoming Pathfinder Irrigation Contractors, and soon a meeting will take place with the Upper North Platte Water Users. Whether the language stays as it is written, or is changed, all these steps are being taken now to ensure the program moves forward as the first increment comes to an end in 2019. Mr. Harry LaBonde, Director, Wyoming Water Development Office (WWDO), represents Wyoming on the GC and is spearheading the extension process.

Wyoming's Coordinator of Wyoming's Depletions Plan within the State Engineer's Office is tasked with preparing annual reports to satisfy the requirements of the Depletions Plan and performing federal and state consultations on new water-related projects. The Depletions Plan requires Wyoming to extensively track and report municipal, industrial, rural domestic, agricultural water uses, and various new water uses implemented since July 1, 1997. On March 1, 2017, Wyoming reported for the 2016 water year that Wyoming's total water uses are less than the 1997 baselines, and those under-runs translated to the state line are 46,747.41 acre-feet for the irrigation season and 4546.42 acre-feet for the non-irrigation season. In addition to the reporting of depletions, Wyoming remains responsible to evaluate every new or enlarged beneficial water use in the North Platte and every new or enlarged surface water facility in the South Platte Basins that may potentially create a new depletion for the state of Wyoming.

More information regarding the status of the PRRIP is available at the following website: <http://platteriverprogram.org>.

LARAMIE RIVER BASIN

After initial meetings in 2006 between Wyoming and Colorado to review the provisions of the *Laramie River Decree of 1922*, Colorado has continued to provide Wyoming with year-end delivery numbers for the Laramie River. In the 2016 water year 13,529 acre feet were diverted out of the Laramie River. The diversion amounts for the past few years are as follows; 2015 11,785 acre feet, 2014 15,406 acre feet, 2013 20,898 acre feet, and 2012 19,746 acre feet. No meetings were held during this reporting period with Colorado.

COLORADO RIVER BASIN (GREEN RIVER AND LITTLE SNAKE RIVER BASINS)

Upper Colorado River Commission Activities

The 1948 Upper Colorado River Basin Compact divided the water apportioned to the Upper Basin states on an annual flow percentage, giving Colorado: 51.75 percent, New Mexico: 11.25 percent, Utah: 23 percent and Wyoming: 14 percent. The Compact created the Upper Colorado

River Commission (UCRC); an administrative agency addressing all matters affecting the operation and administration of the Colorado River system in the Upper Basin.

During WY2017, the UCRC met several times. This included formal Commission meetings held December 14, 2016, in Las Vegas, NV, and June 6, 2017, in Moran, WY. The Commission also held work sessions on November 21, 2016, (Denver) and June 5, 2017, (Moran). The Technical and Legal Committees also met on several occasions.

During WY2017, several issues were worked on by all four states under purview of the Commission. These included:

- Drought Contingency Planning
 - Upper Basin Drought Plans
 - Lower Basin Drought Plans
 - Binational with Mexico (Minute 323)
- System Conservation Pilot Program (SCPP)
- Agricultural Consumptive Use Studies
- Update to the Upper Basin Depletion Schedules
- Glen Canyon Dam LTEMP EIS

Drought Contingency Planning: Drought contingency planning efforts have continued throughout the basin. These include ongoing efforts in the Upper Basin (Colorado, New Mexico, Utah and Wyoming), and in the Lower Basin (Arizona, California and Nevada). In September, Minute 323 to the International Treaty with the Republic of Mexico was finalized and signed along with numerous associated documents. All efforts include both state and federal parties, as well as water contractors. Brief descriptions of each of these efforts are provided below.

- Upper Basin Drought Planning - The Upper Basin plan has three main components – weather modification, demand management and Colorado River Storage Project (CRSP) reservoir operations. The primary focus of current Upper Basin efforts has been on the development of an agreement on the operations of CRSP reservoirs to minimize the risk of Lake Powell falling below the minimum power pool elevation. This agreement is essentially complete and final details are currently being worked out. Signatories to this agreement will include the four Upper Basin States through the Upper Colorado River Commission (UCRC) and the Department of Interior. The role of the Western Area Power Administration (WAPA) is currently under discussion. The agreement assures cooperation between Interior and the Upper Basin States related to the movement of water from higher federal reservoirs to Lake Powell. This plan outlines how Lake Powell (Arizona – Utah), Flaming Gorge Reservoir (Wyoming – Utah), the Aspinall Unit (Colorado) and Navajo Reservoir (New Mexico) could be operated to minimize the risk of Lake Powell falling below critical elevations. Weather modification activities are ongoing in WY, CO, and UT, with some funding being contributed by lower basin water contractors. Efforts are currently underway to finalize an eight-year programmatic funding agreement between the four upper basin states and the lower basin funders. The concept and necessary elements of a demand management program is still under

development. The System Conservation Pilot Program discussed below could be considered a precursor to any larger demand management program.

- Lower Basin Drought Planning - The lower basin has been working on process documents to enable the conservation of additional water in Lake Mead. Ultimately, these efforts could conserve up to 1.2 million acre-feet of water in Lake Mead annually during times of drought and very low water levels, but would allow much of this water to be recovered once the system recovers. Although Wyoming is supportive of the intent to keep Lake Mead elevations higher, there are some policy/legal issues that must be addressed before Wyoming can fully support the Lower Basin's efforts. A final Lower Basin plan won't be finalized until sometime in 2018.
- Binational Negotiations with Mexico - Minute 319 to the Treaty between the United States and Mexico relative to utilization of the waters of the Colorado River was signed by representatives of the U.S. and Mexico in 2012 with a five-year term. Generally, the agreement outlined several actions to proactively manage the Colorado River system to obtain binational benefits and mitigate risks associated with variable water supplies and growing demands. Minute 319 is set to expire at the end of 2017. The successor to Minute 319 (Minute 323) was signed in September 2017 in Santa Fe, New Mexico. A few of the components of previous minutes that are included Minute 323 include Mexico's participation in both shortage and surplus conditions on the river, Mexico's ability to create Intentionally Created Mexican Allocation (ICMA) by deciding to defer water deliveries as well as allowing some ICMA to be converted to Binational Intentionally Created Surplus (BICS) for use within the U.S. There are also terms which are directly linked to the Lower Basin plan wherein Mexico would agree to take additional water reductions in proportion with the Lower Basin states. Binational work groups formed under Minute 319 will remain active under Minute 323. Steve Wolff will represent the Upper Basin on the Salinity Work Group.

System Conservation Pilot Program: The System Conservation Pilot Program (SCPP) is a program funded by the Bureau of Reclamation and four large municipal water providers. The purpose is to seek solutions to the long-term imbalance of supply and demand in the Colorado River system, by compensating willing water right holders to not use or reduce their water use for a one or two-year period. This is a pilot effort with funding available and projects implemented in 2015 – 2017. Over the course of these three years, over \$4.5 million has been paid out to water users in the Upper Basin, with about \$1.9 million of that coming to Wyoming water users. from 2015 through 2017. Due to continued interest and additional financial support, the UCRC decided to issue a request for proposals to water users for a 2018 SCPP program. Officially this is a stand-alone program, but is very supportive to our efforts relative to Demand Management discussed above.

Consumptive Use Study: ISS personnel have continued to spend significant time on the Commission-sponsored Agricultural Consumptive Use Study. This study is a project to review the consumptive use methodologies currently utilized by each state, and to evaluate the possibility of using remote sensing technologies to assess consumptive use across the entire Upper Colorado basin. Phase I of this study was completed in late WY2013. Phase II of the

study was completed in 2016. Phase II activities included analysis and funding for the siting of up to 29 weather stations and one eddy covariance towers sited across the upper basin. Remote sensing techniques were also further researched. A final report from Phase II was completed in 2016. Phase III of the study was scoped and initiated at the end of 2016. During 2017, Reclamation and Upper basin states installed one eddy covariance tower in each state, with the Wyoming tower located approximately 5 miles west of Big Piney. These towers will support further analyses of remote sensing techniques. The results of all the phases of this project will give all upper basin states and the Bureau of Reclamation a better idea of which method is most accurate and feasible to use.

Update to the Upper Basin Depletion Schedules: The UCRC regularly updates a table showing each state's current and forecasted (~50 year) Colorado River depletions (depletion schedules). These were last completed in 2007. New depletions schedules were finalized and approved by the UCRC in June 2017.

Glen Canyon Dam Long-Term Experimental and Management Plan EIS: In 2011, the Department of the Interior announced the need to develop a Long-Term Experimental and Management Plan for the operation of Glen Canyon Dam. Since that time, Interior has been engaged in the NEPA process to identify and address environmental impacts associated with Glen Canyon Dam's operations. Throughout the process, the seven basin states have been actively engaged in the EIS review process. In the fall of the final EIS was completed and the Record of Decision was signed in December 2016.

Colorado River Basin Salinity Control Program

Established by the Governors of the seven Colorado River Basin states in 1973, the Salinity Control Forum works jointly with federal agencies and the Congress to develop, fund and implement salinity reduction measures to meet national, international and state water quality objectives for the Colorado River system. The Salinity Program is a unique cooperative watershed effort resulting from EPA's interpretation that the 1972 amendments to the Clean Water Act required water quality standards, including beneficial use designations, numeric salinity criteria, and a plan of implementation for the Colorado River. Numeric criteria stations were subsequently established (below Hoover Dam, below Parker Dam and at Imperial Dam) by the Forum. To date, the Program has controlled more than a million tons of salt discharge annually and has reduced the salt concentration in the Lower Colorado River basin by approximately 130 milligrams per liter.

The Interstate Streams Division of the State Engineer's Office actively participates in the activities of the Colorado River Basin Salinity Control Forum, the Forum's Work Group and the Colorado River Basin Salinity Control Advisory Council (established as a Federal advisory committee by the 1974 Salinity Control Act). The Forum met in Moran, WY on June 8th and 9th, and in Sacramento, CA on October 24th and 25th. The Advisory Council only met during the October Forum meeting due to a suspension of all Federal Advisory Committee Act meetings that was in effect at the time of the June Forum meeting. The Work Group met on several additional occasions during the year.

In 2015 Reclamation and Wyoming awarded Eden Valley Irrigation and Drainage District with \$2.2 million from the Basin States Program to continue piping canals in the district. In June 2017, a Draft version of the Master Plan Level 1 Study was issued by J-U-B Engineers, Inc. Also, starting October 1, 2017, the USGS will be initiating a study funded via the salinity control program to assess the hydro-salinity conditions in the Blacks Fork drainage of Wyoming.

Upper Colorado River Endangered Fish Recovery Program

This recovery program has been an essential component to allow water development activities in the basin since 1988. Despite some significant impacts by non-native fish species, three of the four species are on track for down-listing by 2019 and delisting by 2023. This program is a model on how ESA compliance can work. Under this program, water development activities have continued, the species are being recovered and there has been no litigation.

The Implementation Committee met twice in WY2017, once in person and once via webinar. No major issues came before the IC. The Management Committee met several times during WY2017, with the three major issues being capital construction activities, a required Report to Congress and getting ready for necessary congressional action on funding authorization. In late 2017, the non-federal partners with the program will be seeking a Congressional date extension to the program authorization legislation. This date extension is only necessary to make the program authorization end-date match those already in place for the Cooperative Agreement and capital construction pieces of the program (December 2023).

In addition to the above committee activities, a group of program partners travel to Washington DC each year to brief staff members of all Senate and House members from each state, authorizing and appropriating committees and executive branch offices about the program's status. Steve Wolff and Pete Cavalli (Wyoming Game & Fish Department) participated in these briefings for Wyoming. This year's partner trip was March 20 - 24, 2017. During the week, 36 appointments to both congressional and executive branch offices were attended.

Green River Basin Consumptive Use Program

The Green River Basin Consumptive Use Program (Program) continued to move forward during WY2017. The Program entails three main components; 1) basin instrumentation, 2) remote sensing and 3) consumptive use modeling. Basin instrumentation work has entailed the installation of approximately 150 stream, diversion and reservoir measuring and recording devices throughout the basin. This effort has been led by Division IV field staff. In late 2016 and early 2017, five additional automated weather stations were installed in the basin, bringing the Wyoming Green River Basin total to 10 stations. These weather stations are part of the SEO's Wyoming Agricultural Climate Network (WACNet) discussed later. We now have satellite-based ET imagery for two complete irrigation seasons in the basin (2011 and 2015). Having two years of actual ET data is a big step towards achieving the Program's goals of obtaining more accurate estimations of consumptive use.

In 2013, Wilson Water Group was hired to develop a consumptive use model for the Green River basin. The specific model being used is StateCU. The StateCU model framework was

completed at the end of 2016; however, there are still some issues to work through concerning water rights and ditches before it can be used to determine consumptive use in the future. We will continue to refine the model input as time allows.

Municipal, domestic, and industrial water use in the Green River Basin has remained relatively constant over the past years. Agriculture use tends to change annually based on winter snowpack and summer precipitation. There are only two major trans-basin exports, the Broadbent Supply and the City of Cheyenne Diversions. There are some other small diversions that export water out of the basin, but they are very small and considered almost negligible. Table 1 gives a summary of the average estimated consumptive use in the Green River Basin.

TABLE 1. SUMMARY OF 2016 ESTIMATED AND AVERAGE CONSUMPTIVE USE IN THE GREEN RIVER BASIN

Sector of Use	Type of Use	Water Year	Consumptive Use (Acre-Feet/Year)
Agricultural ¹	Actual Irrigation	2016	488,815
	Stock	Average	1,755
Municipal	Surface Water	Average	6,578
	Groundwater	Average	817
Domestic	Surface Water	Average	<i>de minimis</i>
	Groundwater	Average	3,042
Industrial	Surface Water	Average	40,569
	Groundwater	Average	7,982
Exports	City of Cheyenne Diversions	2016	7,553
	Broadbent Supply	2016	1,060
Evaporation	Main Stem	Average	N/A
	In State	Average	32,100
TOTAL		2016	590,272

¹ Beginning in 2011, the ASCE Standardized Reference Evapotranspiration (2005) method has been used to support consumptive use estimates from irrigated lands in the Green River Basin. This has resulted in an increase in consumptive use estimates from previous years. This method has been shown to be more accurate than previous methods used.

BEAR RIVER BASIN

The Bear River Commission met November 22, 2016 and April 18, 2017. The April meeting commenced the 20-year review period for the Amended Bear River Compact. The review consists of an examination of operations and water distribution under the Amended Compact and input from water users, as well as receipt of public comment. As part of the review effort, the Commission has scheduled a series of public meetings around the Bear River Basin. Meetings will be held in Evanston, WY, Logan, UT, Grace, ID, Montpelier, ID and Salt Lake City, UT

during October 2017. The Commission will then determine whether there are warranted changes, and if such changes can be met within the boundaries of the Amended Compact (as was found in 1997) or actual amendments to the Compact are necessary. These meetings and the subsequent evaluation of the public comments received during the 20-year review process will be discussed in next year's Annual Report.

Agendas and minutes from these meetings can be found on the Compact Commission's website: <http://bearrivercommission.org>. Adrian Hunolt was appointed by the Governor to serve as one of Wyoming's Commissioner (replacing Sam Lowham) in mid-April.

SNAKE RIVER BASIN

The Wyoming State Engineer's Office, the Wyoming Game and Fish Department and the Bureau of Reclamation (BOR) have been meeting each fall and spring since Wyoming acquired 33,000 acre-feet of storage in Palisades Reservoir in 1990. The contracted water out of both Jackson Lake and Palisades Reservoir is delivered to lands downstream of Palisades in Idaho, therefore the Bureau of Reclamation and the State of Idaho - Water District 01 allows Wyoming (through a paper transfer) to use the Palisades water right storage out of Jackson Lake to support winter flow releases in the Snake River downstream of Jackson Lake.

The spring agency meeting was held May 18, 2017 and coincided on the same day as the Bureau of Reclamation's Water Supply Outlook public meeting. At the time, the Bureau of Reclamation's snowmelt forecast was very high. Winter releases from Jackson Lake for November through February were 300 cfs. Starting about March 1, Reclamation increased releases from the Dam significantly to begin to make space for the forecasted run-off. Peak releases above 7,000 cfs occurred in June and remained high through the remainder of WY2017

The fall agency meeting was held on September 19, 2017. Reclamation reported that Jackson Lake Reservoir did fill during WY2017. In addition, winter releases from the reservoir were set at 400 cfs.

Wild and Scenic Rivers: The congressional action designating segments in the Snake River basin occurred in March 2009, and the Bridger-Teton Forest and the Grand Teton National Park personnel have now completed developing the Outstandingly Remarkable Values for each of the segments. Both agencies have completed the update of their comprehensive river management plans (CRMP) and are also continuing to gather flow data related to their segments. Two new stream gages were installed in support of the Wild and Scenic flow data: USGS 13011820 Blackrock Creek below Split Rock Creek near Moran, WY; and USGS 13014300 Gros Ventre River above Upper Slide Lake near Kelly, WY.

Beginning in WY2018, the Wyoming State Engineer's Office and the two federal agencies will begin to meet to address how best to incorporate the Wild & Scenic water rights into the states permitting system.

businesses. Each month, a special program is presented providing a more in-depth view of a specific water related issue or topic.

During the 2016-17 season, topics for Water Forum covered: water quality monitoring at the Atlas Missile site near Cheyenne, Drought and climate change in the Upper Colorado River Basin, modeling riparian areas with remote sensing, USGS' StreamStats, grazing impacts on wetland topography, groundwater-surface water interactions in the Upper Colorado River Basin, snow cover and streamflow generation, and the spring and summer water outlook from the Bureau of Reclamation. The current schedule and past and current Water Forum presentations are kept on the State Engineer's Office website at: <http://seo.wyo.gov/interstate-streams/water-forum>.

Governor's Planning Office

The Interstate Streams Division is responsible for reviewing and responding to all National Environmental Policy Act (NEPA) and related notices received from the Governor's Planning Office or directly. The notices include, but are not limited to, proposed actions, scoping statements, environmental impact statements (draft and final), environmental assessments and resource management plans as well as other National Environmental Policy Act (NEPA) documents. Beth Callaway is the Division's lead contact for agency review of NEPA and Governor's Planning Office activities. During this last reporting period, 27 notices were received from the Governor's Planning Office and/or federal agencies; six SEO comments were submitted.

The Interstate Streams Division is also responsible for attending any meetings that pertain to projects of special interest to the State Engineer's Office. These meetings often include tours of the affected area, open houses and public meetings. Meetings with other cooperators to help develop purpose and need statements and alternatives for projects are also attended by this division. Notable meetings that Interstate Streams participated in during this reporting period include cooperating agency meetings regarding Bureau of Land Management's efforts to gather ideas on land use planning efforts and environmental reviews.

The Governor's Planning Office regularly holds State and Federal Coordinating Committee (SFCC) meetings. These meetings convene on a monthly basis and provide an opportunity for state and federal agencies to discuss NEPA projects and other activities occurring around the state. Beth Callaway attends these monthly meetings.

Western States Water Council (Council)

As Past Chair, State Engineer Tyrrell served on the Management Committee of the Council. Agency personnel attended the following Council meetings during WY2016:

Spring 2017 (183rd) Council Meetings
Nebraska City, Nebraska
Lied Lodge and Conference Center
April 12-14, 2017

Summer 2017 (184th) Council Meetings
Rohnert Park, California (Sonoma County)
Doubletree by Hilton Sonoma-Wine Country
June 27-29, 2017

Upper Missouri Water Association

The 2017 Annual Meeting was held in Spearfish, South Dakota October 18-20, 2016. Beth Callaway attended alongside Assistant State Engineer Rick Deuell.

Wyoming Inter-Agency Coordination Meetings

During this reporting period, the Division also served on the NRCS's State Technical Committee and coordinated the inter-agency meetings with Water Development Commission, Department of Environmental Quality, Game and Fish Department, Department of Agriculture and State Lands.

Water Planning

There are seven water basin planning areas within Wyoming: Bear, Green/Little Snake, Powder/Tongue, Northeast Wyoming (Little Missouri, Belle Fourche, Cheyenne, and Niobrara), Snake/Salt, Wind/Bighorn, and Platte basins. The products created for each plan consist of a series of technical memorandum describing each topic outlined in the contract with the WWDC. An executive summary and final report, spreadsheet models of the basin's water supply and uses, and various mapping products are also part of the final product. Beth Callaway is the lead SEO representative assigned to technical review of WWDC planning products. The following is a list of key Water Year 2016 WWDC River Basin Planning activities:

Bear River Basin

The Bear River Plan update was completed in June 2012 and was conducted in-house by the water planning team consisting of the WWDO, WRDS, and the SEO. In June 2016 the WWDC commenced the Bear River Data Model Pilot Level 1 Study project. This project seeks to develop and organize the water resource data needed for the WWDC planning program and will establish standards that improve consistency and usability of Geographic Information System (GIS) data. A draft report will be forthcoming in late 2017.

Powder/Tongue and Northeast River Basins

Two separate river basin plans were developed for the Powder/Tongue basin and Northeast river basin (Belle Fourche, Cheyenne, Little Missouri, and Niobrara rivers). The plans were completed concurrently in 2002. Currently, the plans are undergoing a comprehensive update. Separate groundwater studies led by the WSGS are also being developed. Final reports are expected in mid-2018. Information on the status of the basin plan updates can be found here: <http://waterplan.state.wy.us/plan/powder/2017/2017Plan.html>.

Platte River Basin

The Platte River Basin plan was first conducted in 2006 by Tri-hydro Corporation. The final report can be found via the Water Development Commission's website link below, including the

Platte River Basin Water Atlas, a web-based presentation tool that houses the data, mapping and modeling information from the plan:

<http://waterplan.state.wy.us/plan/platte/platte-plan.html>.

The separate Platte River Basin groundwater study led by the WSGS was completed in 2013 and can be found here:

http://waterplan.state.wy.us/plan/platte/2013/gw-finalrept/gw_toc.html.

The latest basin plan update was completed in 2016 by WENCK and can be found here:

<http://waterplan.state.wy.us/plan/platte/2016/finalrept/finalrept.html>.

Wyoming Water Updates

Throughout the water planning process, the Wyoming Water Update meetings gather stakeholders from throughout each basin and provide an opportunity for community members at-large to learn about WWDO river basin planning and give feedback about local water concerns. Wyoming Water Updates are held in all of the basins in the spring of each year. When basins start into the active planning process, public outreach meetings are conducted multiple times throughout the project period. At least one member of Interstate Streams and/or SEO staff attends these meetings. The 2017 Wyoming Water Updates meetings were held May 16-18th and 23-25th throughout the state.

Environmental and Recreational Water Use

The Basin Planning Environmental and Recreational Water Use Study was completed in April 2012 by Harvey Economics. The purpose of this study was to refine the statewide water planning process to better address environmental and recreational water uses. In 2016, the WWDC approved funding to complete a second study that covers the entire state; this report is in progress and will be completed mid-2018.

The 2012 report can be found in the link below. This report also includes a handbook to guide future planners in the methods.

http://library.wrds.uwyo.edu/wwdcrept/Wyoming/Wyoming-Environmental_and_Recreational_Water_Use_Study-Final_Report-2012.html.

SUPPORT SERVICES DIVISION

Submitted by:
Martin Zimmerman
Administrator

GENERAL

The Support Services division has a total of eight employees and is responsible for the following operations:

- Information Technology and Telecommunications
 - Agency Enterprise Systems - Hardware, Software, Backup, and Business Continuity of Agency Specific Applications.
 - Help Desk & Support – Agency Specific Applications.
- Application Programming and Databases
 - Programming - Application development and support.
 - Database – SQL programming, reports, and queries.
 - Database management.
- Geographic Information Systems
 - GIS – ArcServer, ArcGIS, and ArcSDE application support, and spatial data management.
 - GIS training.
- Microfilm & Imaging
 - Scan paper and microfilm records into electronic formats.
 - Manage documents systems and storage for scanned documents.
 - Maintain quality of scanned records and appropriate and safe archival.

INFORMATION TECHNOLOGY AND TELECOMMUNICATIONS

The group supported Agency users' for the Agency Specific Applications of ePermit and Aquarius. Project related to the Herschler remodel included serving as Move Coordinator for Agency, temporary move back to Herschler 1 and 3 East included floor plan mapping, inventory of Agency physical document storage, inventory of users equipment, location, data port(s) and telephone.

APPLICATION PROGRAMMING AND DATABASES

The group worked with Field and Ground Water staff to add additional sites to the Aquarius database to receive near real-time stream gage data and historic data to present the data on the Aquarius Web Data Portal. More than 800 sites are available on the portal. The group worked with the vendors to test and validate upgrades of the Aquarius software systems including Aquarius Server, Aquarius Workstation, Aquarius Database, Aquarius Web Portal, DCSTool, and LoggerNet to enhance the capabilities in support of the Agency. ePermit was upgraded to maintenance Version 7.1 that included system fixes and enhancements.

GEOGRAPHIC INFORMATION SYSTEMS

GIS continued to manage geospatial efforts including geospatial software and data inventory. Projects in GIS were completed to support the Laramie County Control Area (LCAA) included the mapping of newly issued and existing irrigation wells, domestic and stock wells, and monitoring wells. Other projects included expanded and updated GIS layers in Agency SDE database. These included Sage Grouse Leks, BLM GCDB, statewide parcel data, groundwater well data, new and historic imagery, and update of the NHD stream layer and platting operations in GIS.

MICROFILM & IMAGING

Microfilm and Imaging group continued scanning the Agency's inventory of over 6,000,000 microfilm images along with millions of paper documents. The group supported other divisions in scanning daily incoming applications and correspondence for uploading into ePermit. The group continues to make progress of scanning of historic documents including Interloctory Books, Minute Record Books, Ground Water Permit Books, Surface Water Enlargement Books, Surface Water Small Ditch Books, and Surface Water Folded Maps. Over 3.37 million documents were available to the public via ePermit at end of reporting period.

SUMMARY

This department continues to support, advance and enhance agency specific applications use of technology to accomplish the Agency's mission.

WATER DIVISION I

Submitted by:
Brian Pugsley, Superintendent
Torrington, Wyoming

INTRODUCTION

This report is a summary of water related activities and trends within Water Division I for the period October 1, 2016, to September 30, 2017, referred as Water Year 2017 (WY2017). Water Division One is comprised of the North Platte, South Platte, Niobrara, and Little Snake River drainages in southeast Wyoming. Water Division One consists of twenty water districts served by a staff of one division Superintendent, one Assistant-Superintendent, one division Secretary, eleven Hydrographer-Commissioners, one Field Investigator, three Acreage Inspectors, one Well Inspector and one Tributary Inspector.

GENERAL AND CLIMATIC CONDITIONS

WY2017 started off with very dry conditions compared to the beginning of Water Year 2016. Below average rainfall was consistent throughout Division I during October through December. In January, things began to look up for the division. January and May recorded above average snowfall amounts. Snowpack levels through the winter averaged from 2% to 138% above the 30-year median in different drainages throughout Division 1. While April and May are historically the most productive months for precipitation, WY2017 fell somewhat short with most sites recording below average amounts.

North Platte River reservoirs began the water year with approximately 2-million acre feet of carryover from the previous year (Table 2). The February 1st snowpack in all 3 major drainages

TABLE 1. DIVISION I PEAK FLOWS FOR WY2017

Station	Date of Peak	Peak Amount (CFS)
North Platte River near Sinclair	June 6	6,740
Medicine Bow River near Hanna	June 10	948
Sweetwater River near Alcova	May 20	1,412
North Platte River near Orin Junction	June 12	4,775
North Platte River at WY-NE Stateline	June 5	4,264
Crow Creek at 19 th Street	May 27	104
Horse Creek at Go.-Lara. Co. Line	February 5	96
Laramie River Nr. Woods Landing	June 9	1,495
Laramie River Nr. Bosler	June 15	1,240
Little Laramie River Nr. Filmore	June 7	1,161
Laramie River above Grayrocks	May 23	760
Laramie River near Fort Laramie	March 24	550

averaged close to 130% of the 30-year median. It looked to be another year of high stream flows and potential flooding throughout the drainage. By late March and early April snowpack percentages began to dip below average marks and stream flows never quite produced the volume expected. One area that did see above average stream flows was the Sweetwater River. Although conditions looked favorable for extreme flooding, cooler than normal spring and summer temperatures delayed runoff and lessened high flows, prolonging stream flows throughout the summer.

NORTH PLATTE RIVER HIGHLIGHTS

Many of the North Platte River Reservoirs in Division One had average to above average carryover from WY2016.

The Bureau of Reclamation (BOR) runoff forecast from February through May showed that WY2017 would likely not be an allocation year. The BOR’s forecasts showed 2,063,344 A.F. for February, 2,227,321 A.F. for March, 2,055,824 A.F. for April and 1,872,826 A.F. for May. All were well above the 1,100,000 A.F. threshold under the North Platte Modified Decree. Therefore, regulation above Guernsey for the Federal Reservoirs was not warranted throughout WY2017.

All ownerships within the North Platte Project reservoirs filled in WY2017 (Table 2). Guernsey

TABLE 2. DIVISION I RESERVOIR STORAGE

District 14 Bureau of Reclamation Ownerships		
Reservoir/Ownership	Content on Oct. 1, 2016	Content on Sept. 30, 2017
North Platte Project	694,920 A.F.	600,892 A.F.
Kendrick	1,119,416 A.F.	1,144,253 A.F.
Glendo Unit	164,076 A.F.	152,592 A.F.
District 2 Reservoirs		
Hawk Springs Reservoir	8,539 A.F.	3,710 A.F.
Goshen Hole Reservoir aka Springer	1,609 A.F.	1,672 A.F.
Goshen Reservoir aka Bump Sullivan	776 A.F.	894 A.F.
Districts 4 ABC Reservoirs		
Lake Hattie	72,900 A.F.	63,500 A.F.
Wheatland Res No. 3	70,000 A.F.	61,600 A.F.
Wheatland Res. No. 2	33,100 A.F.	37,000 A.F.
Grayrocks Reservoir	104,825 A.F.	96,135 A.F.

ownership was the first to fill on March 17th, followed by the Glendo Irrigation and Evaporation sub-accounts on March 23rd. Inland Lakes Ownership on April 18th was the next to fill. Kendrick filled on May 11, 2017. Most other reservoirs within Division I either filled or accrued substantial water throughout the year.

NORTH PLATTE DECREE HIGHLIGHTS

The North Platte Modified Decree (Decree), Exhibit 10, obligates Wyoming to replace 24.4 A.F. per active “Triangle” irrigation well the following water year. For WY2016 Wyoming determined there were 245 active irrigation wells within the “Triangle”. This resulted in 5,978 A.F. having to be replaced during WY2017. Along with the well replacement water, Wyoming is also obligated under Exhibit 11 to monitor surface water diversions from tributaries within the Whalen Dam to Stateline reach of the North Platte River and replace 50% of the out-of-priority diversions the following month. For diversions in September, replacement occurs the following irrigation season as a supplement to natural flow upon first release of storage water from the North Platte Project. Diversion amounts for the year are shown in Table 3 below. Wyoming Water Development Commission has secured replacement water for these obligations on a permanent basis through their long-term contract with the BOR for Wyoming’s portion of Glendo water and available water from the Wyoming Account of the Pathfinder Modification Project. This year, the State of Wyoming was obligated to replace a total of 6,215 A.F. for the WY2016 active triangle wells and WY2017 triangle tributary diversions. This water was released from Guernsey to supplement natural flow from July 16th to July 31st, August 3rd, September 12th and 13th. Wyoming will be obligated to also replace September diversions in Water Year 2018.

TABLE 3. DIVISION I TRIBUTARY REPLACEMENT WATER

Month	Total Diversions (A.F.)	Natural Flow (A.F.)	Out Of Priority Diversion (A.F.)	Total Replacement (A.F.)
MAY	12.12	12.12	0.00	0.00
JUNE	300.04	300.04	0.00	0.00
JULY	656.28	464.79	191.49	95.75
AUGUST	460.01	178.32	281.69	140.85
SEPTEMBER	330.63	188.77	141.86	70.93
TOTAL	1759.08	1144.04	615.04	307.53

The State of Wyoming is also required to monitor and limit the pump diversions from Alcova Reservoir to Guernsey Reservoir during allocation years. Under Exhibit 5 of the North Platte Modified Decree, cumulative irrigation diversions of 6,600 acre-feet for each two-week period cannot be exceeded during allocation years. Even with WY2017 not being an allocation year, Wyoming continues to monitor these diversions. This data was not reported to the North Platte Decree Committee for compliance purposes. However, Wyoming continues to track these diversions throughout the irrigation season. Due to a shortage of staff this year, the State of Wyoming monitored this information on a monthly basis rather than bi-monthly. The maximum amount of water diverted in a one month period was 12,217 A.F. during the month of July.

Wyoming is also tasked with shepherding the Environmental Account (EA) water from Glendo Reservoir to the Wyoming-Nebraska State line. At that point, Nebraska conveys the EA water to Lake McConaughy. The EA water is to be use for the North Platte Recovery and Implementation

Plan. During August and September, the BOR transferred 32,750 A.F. from the Pathfinder Environmental Account along with 9,600 A.F. from the Pathfinder Wyoming Account to Glendo. This water, less the conveyance losses of 1,884 A.F., was then released from Glendo in September and transferred to Lake McConaughy.

NORTH PLATTE IRRIGATED ACRES AND STORAGE

WY2017 acreage and storage accrual numbers were below the Modified North Platte Decree limitations. Per Exhibit 4, Paragraph III D 1 and Exhibit 12, Paragraph III A. 6 of the North Platte Modified Decree, surface water diversions and stored irrigation water supplies continued to be tracked.

In WY2017, Acreage Inspectors reported 206,314 “intentionally irrigated” acres in the North Platte basin; well below the acreage cap imposed by the Decree of 226,000 acres. This was also true in the Lower Laramie River basin in that there were 30,843 “intentionally irrigated” acres reported (Table 4). Also well below the 39,000 acre Decree limit (Table 4).

TABLE 4. IRRIGATED ACRES

Stream Reach	Irrigated by Surface Water Diversions of Natural Flow (acres)	Irrigated Solely from Stored Irrigation Water (acres)	Irrigated Solely from Hydrologically Connected Groundwater (acres)	Equivalent Acreage under Transfers: (acres)	Total (acres) Decree Limits
NPR above Pathfinder Dam	150,082	0	1,082	1,600	154,764 (169,100 limit)
NPR bet. Pathfinder and Guernsey Excl. Kendrick	45,997	790	1,554	3,209	51,550 (56,900 limit)
L. Laramie River basin Excl. W.I.D.	25,369	462	5,012	0	30,843 (39,000 limit)
Totals	223,448	1,252	7,648	4,809	237,157 (265,000 limit)

For WY2017 a total of 14,605 A.F. of accrued storage was monitored and recorded by the Hydrographer/Commissioners. This was well above the 10 year average of 12,106 acre feet. Reservoir storage carry-over into WY2017 was 7,411 acre feet, which was below the 10 year average of 7,993 acre feet. Storage accruals for each reservoir were calculated by subtracting the WY2016 carry-over amount from the WY2017 highest recorded stage. WY2017 storage

accruals were below the 18,000 acre-foot accrual cap set forth in Appendix A II (b) (3) of the Decree.

Once again Acreage Inspectors utilized the Xplore tablet computers for mapping WY2017 intentionally irrigated acres. This totally paperless system was implemented and allows for real time digitization as fields are being inspected. This year, the final irrigated acre report was completed and compiled by December 22, 2017 which is approximately two months ahead of the February 28, 2018 deadline for reporting to the North Platte Decree Committee.

HORSE CREEK

The Horse Creek drainage saw somewhat of a different water supply as compared to both 2015 and 2016. This year, stream flows in most creeks proved to be vastly different. A warmer and milder fall, minimal snowpack throughout the winter, and little to no rainfall throughout the summer months led to reduced stream flows. Snowpack conditions in the drainage were somewhat average to below average throughout the winter.

All irrigation reservoirs within the Horse Creek Drainage were able to achieve their one time fill. In some instances many reservoirs were in surcharge conditions by the first part of May. Hawk Springs Reservoir reached its full capacity on January 16, 2017, a full month later than the previous year. The rest of the reservoirs within the drainage achieved their one fill by the first part of May. This was attributed to average or above average carryover and fairly decent stream flows throughout the winter months.

Water Year 2016 was the final year of State Engineer Tyrrell's three-year Order in the Horse Creek Basin. On May 31, 2017 the First Amended Order was published and implemented. The majority of the original Order remained in effect with only a few amendments to the total allotment of groundwater withdrawal within the LaGrange Aquifer. These changes consisted of an increase in the annual allotment to a total of nine (9) acre-inches (36 acre-inches to 45 acre-inches from WY2017 to water year 2019). Additionally, total maximum acre-inches withdrawn in any year increased by five (5) acre-inches (15 acre inches to 20 acre-inches). Lastly, carry-over for appropriators who use less than their total allotment during the three-year Order increased by four (4) acre-inches (6 acre-inches to 10 acre-inches). These may seem like trivial changes when compared to the original Order, but this change proved to be quite beneficial for groundwater appropriators in the LaGrange Aquifer. Flows from Horse Creek steadily diminished throughout the irrigation season leaving no choice for many than to withdraw groundwater. Groundwater withdrawal for many appropriators was very close to the limits set forth by the First Amended Order, including carry-over from the original Order. WY 2017 would have proved to be a very tough year for appropriators in the LaGrange Aquifer had it not been for the changes made in the First Amended Order.

CROW CREEK DRAINAGE

Crow Creek drainage started the year off with below average snowpack and drier than normal soil moisture. Spring seemed to arrive earlier than usual with mild temperatures, moderate precipitation, and below average snowpack. Thankfully, there were some late season snows and

rain storms that helped maintain soil moisture. With that, there were higher flows in Crow Creek and that allowed all reservoirs on the system to fill and spill. In mid June, the southeastern portion of Laramie County was hit by a severe storm that brought damaging hail and heavy rains. This storm also produced several tornadoes that passed not only through this area but also moved into western Nebraska. This storm played havoc on area crops and dwellings along its line of travel.

This was the second full year of the Laramie County Control Area Order (Order). The Order was issued in April of 2015 and required that all irrigation, municipal, industrial, and miscellaneous use wells located within the Laramie County Control Area (LCCA) and completed in the High Plains Aquifer, be fitted with properly sized, functional and accurate totalizing flow meters. These meters were to be installed prior to use in water year 2017. The other requirement of the Order was that “All unadjudicated appropriations must be adjudicated by November 30, 2017. Wells that are not adjudicated by this date will be tagged, locked, and foreclosed from use until adjudication is completed“. The Hydrographer for this area spent much of his time in WY2017 checking these wells for Order compliance. In some cases, he was forced to regulate wells that were not in compliance with the meter requirement.

LARAMIE RIVER DRAINAGE

The Laramie River drainage started off with below average snowfall throughout the month of October and didn't see any significant accumulations of snow until January. The February snowpack came in at an average of 133% of the 30-year median. This led appropriators to assume high stream flows were in their future. Unfortunately, the snowpack averages started to decline in March and by April and May those numbers dropped significantly. This led Wheatland Irrigation District to place a call on the system for Wheatland Reservoir No. 2 and then for Wheatland Reservoir No. 3. Luckily, significant rains from April 20th through May 29th (4.36”) kept the system from tighter regulation. The calls for the reservoirs were lifted on June 15th and free river conditions continued for the remainder of the season.

All major reservoirs on the Laramie River Drainage filled this season with the exception of Lake Hattie. Although there was plenty of water to fill Hattie, owners again decided to not take the reservoir to the full elevation due to legal issues associated with adjacent land-owners. Many irrigators were able to rely on natural flow throughout the summer and did not fully use their reservoir supply. This would help finish WY2017 with an abundance of carryover storage in all major reservoirs (Table 1). Grayrocks Reservoir and Wheatland Reservoir No. 3 ended the season with well above 80% of its storage capacity as carryover. Both Wheatland Reservoir No. 2 and Lake Hattie ended the season with above normal carryover storage for this season and should be in excellent shape for the 2018 season.

UPPER NORTH PLATTE RIVER DRAINAGE

The winter of WY2017 produced below normal precipitation. As of May 1, 2017, snow-water equivalent (SWE) for the Upper North Platte River basin was at 95% of historical median. The Brush Creek drainage was one of the lower snow-pack areas in the region with 72% of median SWE as of May 1st. The Upper North Platte River basin received a cool spring and early

summer. Temperatures rose in June and stayed hot throughout July. Precipitation was scarce from June until August. Rains finally returned in August and continued through September to regain some level of moisture in the ground. Despite the below normal available soil moisture, hay yields and irrigated meadow production were near average across the region, however, non-irrigated upland hay and pastures appeared to suffer. The North Platte River in Saratoga peaked on June 11, 2017 at a discharge of 6,958 cubic feet per second.

There were no calls for regulation in Districts 16 and 17 (Table 5). However, District 17 appropriators requested my aid in administration of direct flow water rights and stored water rights. Five of the six reservoirs in District 17 were used in their entirety along with District 16 having heavily used Turpin Reservoir.

TABLE 5. DIVISION I CALLS FOR REGULATION

District	Stream	Calling Facility	Date Of Request	Action Taken
4A	Laramie River	Wheatland Res. #2	05/09/2017	Approved
4A	Sand Creek	Sand Creek Agreement	05/10/2017	Approved
4A	Laramie River and Little Laramie River	Wheatland Res. #3	06/08/2017	Approved
2	Horse Creek	Horse Creek Lateral	07/05/2017	Denied – Excess Water at H.G.
4B	Little Laramie River	Scott Ditch	07/05/2017	Approved
4C	Horseshoe Creek	Walker #1 Ditch	07/11/2017	Approved
11	Bates Creek	Bowie No. 1 Ditch	6/13/2017	Approved
11	Bates Creek	Bates Creek Ditch	6/30/2017	Approved
11	Squaw Creek	Rice #1 and #2 Ditch	8/25/2017	Approved

PERSONNEL

WY2017 has seen some new faces in Division I. After 27 years of service with the agency, Assistant Superintendent Doug Oliver in the Wheatland office retired. Trevor Hiegel out of the Laramie Office has taken Doug’s place and will continue to be based out of Laramie. The Hydrographer position that was created by Trevor’s promotion was filled by Steven “Josh” DeBerard. Josh comes to us from the University of Wyoming and before that, he was with Game and Fish. Division I also saw Hydrographer John Mumm take a position with Division II out of Sheridan. That position was filled by Ryan Barker. Ryan was a college student attending Black Hills State, but was originally from the Sheridan area. Although these gentlemen will have fairly steep learning curves, I believe that all of them will pick things up fairly quickly and continue to

gain a good understanding of Wyoming Water Law and the administration practices within their respective areas.

ACCOMPLISHMENTS

I prepared for and attended each of the four quarterly Board of Control meetings during the past year. 27 surface water petitions and 11 groundwater petitions were granted by actions of the Board. Staying up to speed on the various petitions, meeting preparation, hearings, field inspections of the proposals, and communication with the agents and engineers takes considerable time.

Division I staff continues to work hard on completing field proof inspections. They are not only working on a backlog of stock reservoir proofs but also on new proofs that come out of Cheyenne that are requested by the appropriator or are in the final stages of the permitting process. During this year we have completed and adjudicated approximately 316 surface water rights and 95 groundwater rights. The Board has also recorded approximately 22 stock reservoirs that were inspected and found to be in good standing but the owners requested that they remain unadjudicated. Water Division I still has close to 100 proofs that have been field inspected but are being processed either by the Torrington staff or waiting on signatures by land-owners. The process of getting signatures seems to take the most time due to a large number of absentee landowners.

Proofs for instream flow permits began within Division I three years ago and the staff is finding these proofs more difficult to complete than first thought. Field staff members are making stream-flow measurements at 7 of the sites within the Snowy Range verifying that the permitted stream flows are available during the specific time frames of the permit. Many of these segments are located in very remote wilderness areas. In some cases, it takes hours to hike into and make these measurements.

I would like to express my sincere thanks and appreciation to State Engineer Tyrrell and the other members of the Board of Control for all the support and guidance they have given me throughout the year. I would also like to thank all of my staff for all their hard work and dedication that they have put in this year. I look forward to working with and alongside each and every one of them in the coming years.

WATER DIVISION II

Submitted by:
David Schroeder, Superintendent
Sheridan, Wyoming

The following annual report submitted for Water Division II is a summary of the water-related activities and conditions which occurred within the division in the 2017 Water Year (WY2017). Division II is generally located in northeast Wyoming and contains 11 distinct water districts lying in the drainages of the Little Horn River, Tongue River, Powder River, Belle Fourche River, Little Missouri River, and the South Fork of the Cheyenne River. Division II contains seasonal water commissioners in Kaycee and Casper, one full-time Hydrographer/Commissioner in Sundance, five full-time Hydrographer/Commissioners and one administrative professional at the division headquarters located in Sheridan.

GENERAL CONDITIONS

WY2017 started off with lower-than-normal usable reservoir capacity carryover in Division II with 34% carryover in the Tongue River basin and 24% in the Powder River basin excluding Lake DeSmet (79% including Lake DeSmet). Lake DeSmet is better removed from the carryover

TABLE 1. DIVISION II RESERVOIR STORAGE - POWDER RIVER BASIN

Reservoir Name	Pre-Compact Capacity (A.F.)	Post-Compact Capacity (A.F.)	Total Capacity (A.F.)	Usable Capacity (A.F.)	Usable Contents on Sept. 30, 2017	Usable Contents on Sept. 30, 2016	Change in Contents
Cloud Peak	3,398	173	3,570	3,570	3,570	0	3,570
Dull Knife	0	4,345	4,345	4,345	35	546	-511
Healy	0	5,140	5,140	4,410	3,491	2,169	1,322
Kearney	1,854	4,470	6,324	6,324	1,822	0	1,822
Lake DeSmet	37,515	197,472	234,987	196,207	162,336	155,260	7,076
Muddy Guard	0	2,336	2,336	1,825	924	344	580
Tie Hack	1,647	788	2,435	1,644	1,649	1,464	185
Willow Park	4,457	0	4,457	4,132	656	1,484	-828
Posy No. 1	0	1,537	1,537	1,517	1,378	745	633
Basin Wide (Total)	48,871	216,261	265,131	223,974	175,861	162,012	13,849

analysis as it carries over a large amount of its storage in any given year and is not indicative of general conditions in the basin. The reduced carryover was due in large part to lower precipitation and snowmelt, which reduced overall stream runoff and the associated higher reliance on stored water sources in WY2016. These carryovers were approximately 5% lower than the previous water year throughout the Tongue and Powder River basins (Tables 1 and 2, figures rounded to nearest whole number). The good news is that WY2017 reversed the several year trend of diminished carryover, and conditions were vastly improved as of September 30, 2017.

TABLE 2. DIVISION II RESERVOIR STORAGE - TONGUE RIVER BASIN

Reservoir Name	Pre-Compact Capacity (A.F.)	Post-Compact Capacity (A.F.)	Total Capacity (A.F.)	Usable Capacity (A.F.)	Usable Contents on Sept. 30, 2017	Usable Contents on Sept. 30, 2016	Change in Contents
Big Horn	2,749	1,876	4,624	4,624	0	210	-210
Cross Creek	0	798	798	798	396	533	-137
Dome	1,843	188	2,031	2,009	923	627	296
Granger	146	0	146	146	0	0	0
Last Chance	210	0	90	90	50	0	50
Martin	561	0	561	561	40	0	40
Park	7,347	3,015	10,362	9,774	3,946	2,880	1,066
Sawmill	0	1,275	1,275	1,213	722	687	35
Twin Lakes	1,180	2,231	3,411	3,403	2,811	2,826	-15
Weston	370	0	370	0	0	0	0
Willits	79	0	79	73	4	0	4
Basin Wide (Total)	14,485	9,383	23,747	22,691	8,892	7,763	1,129

In the Belle Fourche River Basin, Keyhole Reservoir carried over 80% of usable storage going into WY2017. Unfortunately, conditions were very poor in northeast Wyoming and Keyhole lost ground, taking 13% less water into WY2018 (See Table 3). The 1,399 acre-feet of water that Keyhole Reservoir accrued from October 2016 through the end of April 2017 quickly vanished as irrigation releases began in late June. The area has been mired in a now two-year drought that has ravaged the Northern Plains and Dakotas.

WY2017 began in an ominous way, with one of the driest and warmest Octobers on record, and November wasn't far behind. December brought snow and bitter cold but little precipitation.

TABLE 3. DIVISION II RESERVOIR STORAGE BELLE FOURCHE RIVER BASIN

Reservoir Name	Pre-Compact Capacity (A.F.)	Post-Compact Capacity (A.F.)	Total Capacity (A.F.)	Usable Capacity (A.F.)	Usable Contents on Sept. 30, 2017	Usable Contents on Sept. 30, 2016	Change in Contents
Keyhole	0	188,671	188,671	182,079	122,129	145,950	-23,821

Continuing a recent trend, Snow Water Equivalent (SWE) was less than normal throughout all basins by January 3, 2017 as explained by the NRCS Basin Outlook Report, but nonetheless did improve from the dire conditions of WY2016. The lower elevation Belle Fourche and Cheyenne River basins were slightly better as far as SWE, but still well below normal precipitation. Unfortunately, conditions did not improve much and these basins in particular entered the growing season well behind in soil moisture, and consequently dry land crops suffered.

In the Powder-Tongue basins, conditions remained less-than-normal until mid-March and April, when plentiful snow fell in the Big Horn Mountains. Water managers in Wyoming and Montana up to this point were concerned that Tongue River Reservoir (located just over the border in Montana) would not fill. However, by the time the Yellowstone River Compact Commission met for the spring Technical Meeting on April 6 in Thermopolis, WY, it was agreed upon by both states that the reservoir would most likely fill and an interstate call for regulation by Montana would not be necessary, to the relief of all involved in Compact administration. This ended a streak of two consecutive years of interstate regulation between the states.

The snow and rain continued to accumulate through the spring, and by May 1st, SWE values were above 300% of median in both the Powder and Tongue River basins (more than double compared to the previous year), and precipitation was robust (Figures 1 and 2).

FIGURE 1.

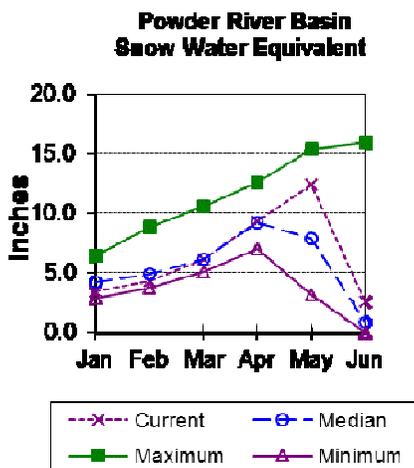
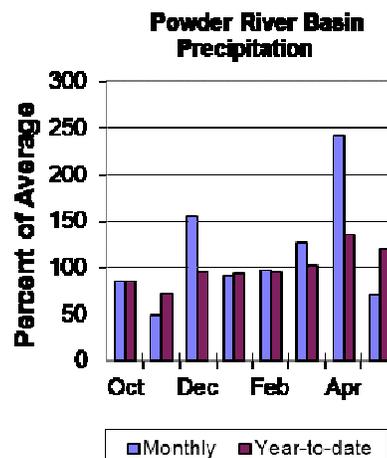


FIGURE 2.



SWE values continued to stay above normal through the conclusion of the river forecasting period in early June as evidenced by Figures 1 and 2 (the Powder and Tongue drainages had very similar amounts). This welcome data all but guaranteed that area reservoirs would fill to capacity, and most importantly stream flows would be adequate to irrigate and grow crops.

POWDER RIVER HIGHLIGHTS

The major storage reservoirs residing in the Powder River drainage all filled easily before senior appropriators began diverting water. Mountain reservoirs such as Willow Park, Cloud Peak, and Kearney Lake were dumping storage to create room for high water, and all ultimately filled and spilled in June and early July. Lake DeSmet started filling before the runoff and topped off all Piney, Rock, and Shell Creek rights by May 8. Muddy Guard Reservoirs in the Crazy Woman River drainage began the winter with poor carryover, but both got a jump start in filling over the winter and had no trouble topping off by the end of June. High water in Piney and Clear Creek occurred in the second week of June, and total seasonal (April through September) flows were all well above normal, as evidenced by Table 4.

TABLE 4. POWDER RIVER PEAK AND SEASONAL FLOWS

Station	Date of Peak	Peak Flow (CFS)	Total Seasonal Flow (Apr - Sept)
Piney Creek at Kearny, WY	13-Jun	973	74,360 AF=151% of 32 year average
Clear Creek at Buffalo City Park	13-Jun	1880	67,880 AF=206% of 31 year average
Clear Creek at Double Crossing, WY	14-Jun	2691	181,500 AF=186% of 44 year average
French Creek near Buffalo, WY	12-Jun	211	11,190 AF=125% of 6 year average
Rock Creek near Buffalo, WY	13-Jun	868	38,240 AF=163% of 33 year average

Despite the stellar snowpack, the runoff did not produce exceptionally high peaks in the larger river systems of Piney, Clear, and Rock Creeks; rather, temperatures remained fairly cool and combined with heavy spring rains, the runoff was sustained more gradually and much further than normal. Given that though, there was significant flooding on the North Fork of Crazy Woman Creek in the spring, as is sometimes the case with smaller watersheds with large snow packs subjected to significant rain events.

Many irrigators all through the basin forwent irrigation prior to first cutting, and those that did delayed it several weeks later than is customary. In late July, things finally started to dry out and stream flows were approaching levels that usually trigger senior appropriators to make a call for regulation, but the reservoir companies and their shareholders began ordering stored water (in the interest of getting mountain reservoirs down to reasonable wintertime carryovers for safety) which bolstered the natural flows and kept the majority of the creeks out of regulation. Lake

DeSmet began releasing irrigation water on July 19th, and the mountain reservoirs followed suit within the next week. Much of the rest of the summer Division II Hydrographer/Commissioners shepherded reservoir orders, but did not regulate any head gates because no calls for regulation came in until the beginning of September when a call was granted on Clear Creek near Buffalo. Piney, Rock, and Crazy Woman Creeks were never regulated in WY2017. The smaller and more heavily appropriated French Creek was regulated on July 24th, as the imported direct flow water from North Fork of Clear Creek dropped because of the falling stage of the river, prompting a call from a senior appropriator on French Creek (Table 5).

TABLE 5. DATES OF REGULATION IN TRIBUTARIES OF THE POWDER RIVER

District	Stream	Requested By	Date of Request	Action Taken
3	French Creek	Hopkins Ditch	24-Jul	Approved
2	Clear Creek	Clear Creek Land & Ditch Company Ditch	15-Jul	Approved

In other news, the Bull Creek Reservoir project continues to build momentum but is a long ways from realization. This project was proposed in Governor Matt Mead’s 2015 Water Strategy report, and would provide approximately 14,500 acre-feet of irrigation, municipal, and recreation/fish storage. A presentation was given in the spring at the Lake DeSmet Conservation District meeting by the chosen consultant, Wenck Associates, detailing where the project stands and what alternatives are being discussed as part of the Level II feasibility study. One of the big hurdles at this time is figuring out the best method of diverting and conveying water from Clear Creek into Bull Creek, but even more problematic is that the estimated \$100+ million project cost seems prohibitive in these times of reduced state revenues and budgets. Nevertheless, a land swap between the state and a private landowner has been approved, which would allow for the construction of the facility at more geologically friendly site identified by the consultant.

In the 2017 Wyoming Legislative session, House Bill No. 118 proposed to allow the Wyoming Water Development Commission (WWDC) to negotiate a purchase agreement with Sasol Synfuels to purchase 62,000 acre-feet of water rights and other assets at Lake DeSmet and Healy Reservoir. Part of the state’s interest in these water rights are tied to the proposed Bull Creek project, as a transfer of one of the senior storage rights involved to the Bull Creek Reservoir would increase the firm annual yield available to divert, and consequently increase the viability of the project. The bill would not have authorized the purchase of the water rights, but allowed the negotiation of a purchase agreement with Sasol, which would then require approval of the WWDC, the full legislature, and the governor. Ultimately, the bill failed on the third reading in the Wyoming Senate. However, there is a feeling that the bill was unnecessary and that WWDC does not need pre-approval to negotiate. Stay tuned for more developments next year.

On the upper Powder River, conditions were much the same as experienced in Piney and Clear Creeks. Good spring snow and rain bolstered natural stream flows and irrigation was for the most part delayed until after the first cutting. In addition, Dull Knife Reservoir was slated for significant repairs to its emergency spillway and outlet structure in the late summer; soon after it filled and spilled the process of draining it began. Due to the increased flows, the upper Powder

River (North and Middle Fork and their tributaries) did not receive any regulation by our seasonal Water Commissioner based in Kaycee, WY. Despite these favorable conditions, the repair to Dull Knife was delayed at the last minute as the bids came in higher than anticipated. The downfall of this was that Dull Knife carried over only 1% of its available storage going into WY2018, so the irrigators on the North Fork of the Powder River are clearly hoping for another good snow pack this winter. One other item of note was the completion of the new head gate and diversion dam for the Nolan Ditch, which is located on Middle Fork on the western fringe of Kaycee. Unfortunately, the head gate became silted in and unusable because of high water, and the ditch did not divert this season.

Irrigators on Rock Creek rely heavily on imported water from South Piney Creek via the trans-basin diversion below Willow Park Reservoir. With the benign runoff lasting approximately two weeks later than normal and the need to reduce storage going into the winter, shareholders in Willow Park and Cloud Peak Reservoirs voluntarily began stored water orders in late July to stave off a call from a senior appropriator and to begin to draw down Willow Park. All orders were jointly filled out of Willow Park Reservoir, leaving Cloud Peak Reservoir spilling going into the winter. The longtime management practice is to either drain Cloud Peak completely, or to leave it spilling, as the prevailing wind at this high-mountain reservoir usually builds a sizeable snow drift in the emergency spillway, which is a safety concern if the reservoir were to spill before the spillway is clear of ice and snow.

Lastly, the Lower Clear Creek Irrigation District is in the final stages of their Level III WWDC study to put approximately one mile of their ditch into 72" pipe, due to the ditch being prone to sloughing and erosion. Also included in the cost are improvements to the head gate structure on Piney Creek and a large-scale cleaning of the rest of the ditch. This diversion not only is the primary supplier of the District's 11,800 acre-feet of storage rights in Lake DeSmet, but would be vital to fill the upper elevations of Lake DeSmet because of limitations with the gravity fed tunnel that Johnson County uses farther downstream. The ability to fill these upper rights is necessary should acquisition of an industrial customer come to fruition and need the extra storage.

TONGUE RIVER HIGHLIGHTS

The multitude of storage reservoirs located in the Little Goose and Big Goose Creek drainage all filled to capacity in WY2017, with a few exceptions. Big Horn Reservoir was limited by a storage restriction placed on it by the State Engineer because of a large, transverse crack discovered on the dam in 2015. The reservoir was restricted to staying seven feet below spill elevation or more, and their dam tender did an admirable job of keeping the reservoir below this threshold despite the higher than average runoff from Cross Creek. It was a familiar theme similar to Dull Knife Reservoir, as Big Horn was slated for late summer repairs and started aggressively dumping storage in order to prepare, which kept the Little Goose system fatter than normal. The contractor began repairs in early August and had the outlet pipe extension, blanket and toe drains, and downstream slope re-grading and armoring complete by November 2017. Weston Reservoir, while adjudicated for 370 acre-feet, has been under a similar storage restriction dating back to the 1970's because of issues with the dam and spillway. It did not accumulate any water and remains as essentially zero storage.

While the conditions were not quite so promising in the Tongue River drainage as compared to the Powder, stream flows were considerably higher and regulation lessened in WY2017, which was especially well received by basin irrigators considering the less than favorable conditions of 2015 and 2016 (Table 6).

TABLE 6. TONGUE RIVER PEAK AND SEASONAL FLOWS

Station	Date of Peak	Peak Flow (CFS)	Total Seasonal Flow (Apr - Sept)
Big Goose Creek above P.K. Ditch	9-Jun	1,170	52,652 AF=147% of 17 year average
Little Goose Creek in Canyon near Big Horn, Wy	9-Jun	592	40,476 AF=144% of 32 year average
Wolf Creek near Wolf, Wy	14-May	276	17,093 AF=191% of 32 year average
Prairie Dog Creek	2-May	290	11,680 AF=167% of 37 year average

Peaks in early June were observed and baseline flows lasted longer than normal, and combined with Big Horn Reservoir releasing water beginning in early July, regulation did not go into effect until much later in the irrigation season, if at all. For instance, Little Goose Creek is the most heavily appropriated and therefore typically the most regulated system in Division II, and it did not go into regulation until early August (Table 7).

TABLE 7. DATES OF REGULATION IN TRIBUTARIES OF THE TONGUE RIVER

District	Stream	Requested By	Date of Request	Action Taken
4	Big Goose Creek	Nelson Pump	25-Jul	Approved
4	Little Goose Creek	Colorado Colony	9-Aug	Approved
5	Wolf Creek	Hardin/Campbell	29-Aug	Approved

Things were a little tighter and closer to normal on Big Goose Creek, strictly because they rely on natural flows more than Little Goose Creek. The majority of the stored water goes down the P.K. and Alliance Ditches, making things a little tighter below these diversions until return flows and tributary inflows from Rapid Creek and others contribute to satisfy senior appropriators farther downstream.

WY2017 saw three public meetings held in Sheridan concerning the WWDC Goose Creek Watershed Level 1 study. The initial meeting in January and then again in June were updates to the project, and the third was held to present the draft final report, which was completed just before Christmas. It detailed issues pertaining to the Goose Creek drainage as well as proposed 87 water projects for further consideration.

State Engineer's Office (SEO) personnel repaired the reservoir elevation stream gage at Dome Lake No. 1 Reservoir on September 11th, and it is again providing quality data after being inoperable since the previous winter. The gage was damaged when the reservoir was allowed to completely drain unexpectedly in the fall of 2016, and the pressure transducer and cable were

damaged by ice. This gage was one of five installed in 2016 to better aid in Yellowstone River Compact administration and compliance, funded by the Governor's Water Strategy initiative under the credible climate, weather, and stream flow data provision. Previous to these gages being installed, Division II personnel were forced to travel to the remote, high mountain reservoirs located in the Big Goose Creek drainage to survey elevation and storage amounts, as they all contain large amounts of post-compact storage rights.

An order by the Superintendent in 2016 to install measuring devices on Prairie Dog Creek carried a June 1, 2017 deadline, which led to a flurry of activity in the spring for the water users who procrastinated. Ultimately, good compliance was achieved, with only two identified in the order not completing them in time; one is petitioning the Board of Control (BOC) to move his point of diversion to a pump and leaving the ditch once granted, and the other received an extension as he is changing his down-ditch conveyance arrangement. Otherwise it was a good year to be an irrigator in the Prairie Dog Creek drainage, as the system did not go into regulation. One thing to note was as a condition of the granting of BOC Docket II-2015-2-4, a head gate was installed in the Piney Cruse Ditch near Story to drop water into the main stem of Prairie Dog Creek. This made it possible for appropriators with Piney Cruse Ditch water rights to receive their water from the correct source and conveyance, which was not the case before the installation. Also new for WY2017 was an ordering method for Kearney Lake Reservoir as prompted by an earlier order by the Superintendent. The reservoir company then hired a local accounting firm to gather, tabulate, and issue the orders. Despite a few minor hiccups it was an uneventful summer, as they released more water than was actually ordered or even needed in the interest of reducing carryover storage. Again, the favorable conditions and lack of regulation had welcome consequences; namely, extra water was available for most of the irrigation season.

While Wolf Creek did go into regulation, it was approximately six weeks later than normal, occurring on August 29th. New for this season was the installation of a precipitation gage at the Wolf Creek stream gage near Wolf, WY. This adds valuable data in the aim of better stream runoff forecasting.

Smith and Columbus Creeks were not regulated in WY2017 because of the ample stream flows. It was a fairly non-descript year, as the Five Mile Ditch diverted all winter from Columbus Creek and filled and spilled the Wagner and Five Mile Reservoirs by the end of May.

The main stem of the Tongue River did not go into regulation in WY2017, and as stated earlier Montana did not place an interstate call for regulation in order to fill Tongue River Reservoir. In fact, Montana began increasing their outflows out of the reservoir beginning in mid-February to make room for the anticipated strong runoff. By the time Tongue River Reservoir spilled on May 12th, the release had been bumped up to 1,320 cfs, which far exceeds the normal outflow of approximately 175 cfs.

The ongoing litigation with Montana made some tangible progress towards resolution in the last year. The special master appointed to oversee the case by the Supreme Court issued his Opinion on Remedies on December 20, 2016. In the document, he outlined the following: 1) Wyoming's motion regarding damages was granted. Montana is entitled to \$35,877.06 (which includes interest) or repayment of 1,356 acre-feet of water (Montana elected the money); 2) Montana is

not entitled to disgorgement damages. Wyoming’s breach was not knowing, willful, or reckless; 3) Montana is not entitled to injunctive relief. There is no cognizable danger of recurrent violation by Wyoming; 4) Montana has a right to fill the pre-Compact capacity of Tongue River Reservoir, or 72,500 acre-feet; 5) Montana is the prevailing party for the purposes of costs. However, Montana is only entitled to costs it incurred through February 10, 2010 (when the First Interim Report was issued by the special master).

This report went a long ways towards settling some of the remaining issues, and as part of the report the special master directed the two states to work on a proposed decree of the Tongue River that would incorporate the legal rulings in the case. Montana and Wyoming had until February 10, 2017 to confer and agree, which ultimately did not occur. Montana filed its proposed judgment and decree on February 10, and Wyoming filed its proposed decree on February 27, 2017. Montana then filed a Bill of Costs for \$67,270.87, to which Wyoming did not object. A hearing was held on May 1, 2017 in Denver where each party was afforded the opportunity to comment on the draft proposed decree. The special master provided the states with a draft final report and a proposed decree on November 2, and the states provided comments to those documents shortly afterwards. Once the special master issues the final report and proposed decree, the states will then have an opportunity to take exceptions to the final report, or the proposed decree, to the United States Supreme Court if they choose to.

BELLE FOURCHE RIVER HIGHLIGHTS

For the second consecutive year, the Belle Fourche River drainage suffered drought that far exceeded anything in relation to the rest of Division II, and the state as a whole. The frost came out of the ground earlier than normal in late February, and the drought conditions only worsened as spring and early summer was mostly bereft of any significant moisture. Only 0.02 inches of precipitation fell in February in Hulett, Wy, and only 0.54 inches in March. The outlook was poor enough that by late June regional climatologists, water managers, and river forecasters came together in a series of meetings to discuss the situation, current impacts, short-term and long-term outlooks, and how the Drought Monitor was put together.

Meanwhile, pasture grasses and dry-land hay crops suffered under the unrelenting heat, and stream flows were very poor. The Belle Fourche River reached a low of 6.1 cfs on June 23rd, and for the seasonal water year the total volume of water recorded at the stream gage near Alva was one of the poorest on record (Table 8).

TABLE 8. BELLE FOURCHE RIVER PEAK AND SEASONAL FLOWS

Station	Date of Peak	Peak Flow (CFS)	Total Seasonal Flow (Apr - Sept)
Belle Fourche River near Alva, Wy	29-Jul	496	21,704 AF=62% of 29 year average

Because of the low stream flows, the Belle Fourche River went into regulation early (Table 9), and the Belle Fourche Irrigation District and Crook County Irrigation District both ordered stored water from Keyhole Reservoir beginning June 26th and continuing through the end of September.

TABLE 9. DATES OF REGULATION IN TRIBUTARIES OF THE BELLE FOURCHE RIVER

District	Stream	Requested By	Date of Request	Action Taken
7	Belle Fourche River	Dorrance No. 2 Ditch	23-Jun	Approved

The good news is that things turned around sharply in July, where 3.4 inches of moisture fell in the area near Sundance, and August continued the recovery with 1.00 – 2.00 inches of precipitation scattered throughout the month.

Because of the poor conditions experienced for the second consecutive year, Keyhole Reservoir lost a net total of almost 24,000 acre-feet, and its ability to furnish water to Crook County and South Dakota irrigators could be in jeopardy in the future if conditions don't improve.

ACCOMPLISHMENTS

Being a member, constitutionally, of the Wyoming Board of Control takes up a considerable amount of the Superintendent's time, between preparing for and attending the quarterly board meetings, guiding consultants through initial petition submission and follow-up communications, field inspections, holding hearings, and review of the constant influx of amended petition materials. This workload increased in the last year as the BOC dealt with the turnover of several petition technicians in Cheyenne, and the superintendents as well as the administrators at the BOC took on extra responsibilities while replacements were hired and trained. These are difficult positions to not only fill, but become proficient at, and it was a trying time for all involved.

Hydrographer/Commissioners continue to discover water rights issues through both on-the-ground observations, as well as proposed changes to points of diversion and places of use brought about through Natural Resources Conservation Service (NRCS) water rights verifications. In particular, the Prairie Dog Creek drainage continues to have several petitions docketed to the BOC at any one time, as we have now have a water commissioner dedicated to this small but complex system since Jessica Winter's appointment in 2015. A large portion of these petitions are to correct changes in means of conveyance brought upon by irrigators moving to pumps in the creek rather than continue to receive deliveries through antiquated and time-intensive ditch laterals. Many of these pumps have existed for some time, so the process of cleaning up the records is ongoing.

Division II Hydrographer/Commissioners inspected 203 Surface Water diversions. Of those, 63 were reservoirs and 71 were stock reservoirs. Pipelines, domestic pumps, and ditch diversions comprised the remainder of the inspections (69).

The Safety of Dams (SOD) program involves the inspection every 5 years of reservoirs that exceed 20 feet in dam height and 15 A.F. in capacity, or are greater than 50 A.F. in capacity. There are approximately 757 dams that fall into this program in Division II and 159 were inspected in WY2017. Division II Hydrographer/Commissioners continue to focus on getting unadjudicated SOD size reservoirs adjudicated, as unfortunately many of the older facilities are not. At the recommendation of the Superintendent, 72 SOD facilities in Division II were

reinstated to active permits and proofs generated. A water right is considered expired if it is not adjudicated or granted an extension by the BOC within twenty years from the date of completion. This effort led to a large number of these reservoirs being adjudicated in conjunction with the periodic safety inspections, which will continue for the foreseeable future.

This past year, 152 Surface Water and 55 Ground Water Final Proofs of Appropriation were taken and submitted to the Board of Control for adjudication, along with the inspection of 129 stock reservoir for endorsement/not to be adjudicated. On-site inspections were performed and proof of ownership, signatures and fees were collected for proofs. During WY2017, 20 new petitions were filed in Division II. Of these, 18 were Surface Water and 2 were Ground Water petitions. Along with carryover petitions from previous years, 2 Ground Water and 25 Surface Water petitions were finalized by the Board of Control. In the case of petitions, sometimes it is necessary to hold a public hearing, typically due to the inability to garner all the required consents. There were 5 petitions that were referred to hearing, but none reached a formal hearing as no protestors appeared at the noticed pre-hearing scheduling conference calls and all were later granted at the next scheduled Board meeting.

Division II continues to measure two instream flow permits; one on Clear Creek in District 2 and the other in District 6 on Dry Fork of the Little Horn River. The segment on Dry Fork is very difficult to access, as it involves a five mile hike each way up the Little Horn River canyon. Consequently, in the fall of 2017 Division II personnel installed continuous pressure transducer data loggers to gather stage data during the winter months when access is difficult or impossible. By measuring the chosen site and developing rating curves, the stage data can then be quantified to minimum fish flows as the permit requests. Mr. Pelloux has no trouble accessing the Clear Creek segment, and we anticipate the submission of this proof to the BOC in the near future.

The extension of the cooperative agreement between the State Engineer's Office and the Natural Resources Conservation Service to perform snow survey was agreed to and finalized in the fall of 2017. This agreement allows for the SEO to gather snow pack data throughout the state, from the measurement of both manual snow courses and ground truths of Snotel sites. It is enjoyable yet important work, and the SEO looks forward to continuing this partnership well into the future. In the spring of 2017 I was appointed as the SEO snow survey technical contact, and I attended several coordination meetings along the way.

Deb Reed, our terrific administrative specialist, was awarded with the field SEO Employee Recognition Award for April 2017. This award was new in 2016, and so to be nominated and selected by her peers while the program was in its infancy certainly speaks to Debbie's contributions. Her name is now added to the "Waterfall of Fame" found in the Cheyenne Office which signifies employees of exemplary service. Congratulations to her and thank you for all that you do.

Division II gained two new staff members in the last year. John Mumm, formerly the Hydrographer/Commissioner for District 3 and 4C in Water Division I in Wheatland, was promoted to lead Hydrographer/Commissioner for Districts 9, 10, and 11 in Division II. He began his new role on May 8. John brings good experience and a strong technical background in hydrology, and his presence has already brought positive dividends to both his constituents on

Piney and lower Clear Creeks, as well as the employees he supervises. Bryan Lozier was hired as a Hydrographer/Commissioner for District 4 – Little Goose Creek. Bryan was the successful candidate of a competitive pool of applicants, and he wasted no time in getting up to speed learning his assigned area. He demonstrates a maturity beyond his years, and has proven since he officially started work on May 15th that he has the necessary skills to succeed in his position. Having these two new staff members has been a blessing to the harmony and overall productivity of the Division II office in Sheridan, and I look forward to their continued service.

SUMMARY

No two water years are ever the same, yet WY2017 was rather similar to the conditions experienced in 2016, albeit slightly more productive. We came into the water year with marginal reservoir carryover figures due to the increased demand on storage facilities from the past irrigation season, and the early winter snow pack and runoff forecasts were bleak. But March and April brought relief in the form of substantial snow pack and moisture (in the Powder and Tongue River drainages) that allowed reservoir managers to fill their facilities ahead of calls from senior appropriators, as was the case in 2016. However, WY2017 exceeded this situation and then some; Montana did not feel the need to make a call for regulation to fill Tongue River Reservoir (it filled easily), and many streams in Division II did not go into regulation, and if they did, it was quite a bit later than normal. It was a great year to train new employees without the crushing anxiety of severe water shortages. Large-scale planned repairs to Big Horn and Dull Knife Reservoirs only added to the extra water in the streams, and by late July most of the mountain reservoirs were releasing water far above their orders just to get the water elevations down to reasonable and safe wintertime carryover amounts.

Things were not as optimistic in northeast Wyoming in the Little Missouri, Belle Fourche, and South Fork of the Cheyenne River drainages. The rain and snow showers felt in the Big Horn Mountains dissipated as the storms moved east across the Powder River basin, and by late June upper Campbell County, Crook County, and Weston County were classified as being in drought. Keyhole Reservoir was a godsend to bolster the productivity of area hay and alfalfa crops that otherwise would have shriveled under the hot and dry conditions. Fortunately, relief did arrive for this area in July and August in the form of rain showers, yet Keyhole lost a large portion of its available storage as compared to the previous season because of the poor spring runoff and heavy usage.

Lastly, I must take time to thank those who have been instrumental to my success in this position. The other members of the BOC have never flinched at answering my many questions, and special thanks are in order for Division III Superintendent Loren Smith, who continues to guide the Board and the agency as a whole with his firm and competent manner. I appreciate the faith shown to me by the State Engineer Patrick Tyrrell, who provides a wonderful example of leadership and integrity, and points me in the right direction when needed but otherwise does not micromanage. The past year has demonstrated a better working relationship and communication with the varying agency divisions, and specifically Surface Water, Ground Water, and Board of Control, and I appreciate everyone's willingness to work as a team. Finally, thank you to my

professional and competent staff, to which I am indebted. You make my job easier by taking care of your business. The fact that Division II has not had an appeal of a commissioner's decision in some time speaks to their character and know-how.

On-line reporting of data by the NRCS, United States Geological Survey, NWS and NOAA, and the United States Department of Interior-Bureau of Reclamation was used in this report.

WATER DIVISION III

Submitted by:
Loren Smith, Superintendent
Riverton, Wyoming

This report will summarize WY2017 for the Wind River/Big Horn River system as well as that of the Clark's Fork River Drainage in North Central Wyoming. Water Division III is made up of thirteen water districts served by a staff of seven hydrographer-commissioners, one lead hydrographer, one assistant-superintendent and one division secretary.

GENERAL CONDITIONS

The beginning of WY2017 dawned in Division III with fairly good soil moisture, streamflows were slightly above normal, and fall storage was increasing in most reservoirs in the division. Early October rains in the lowlands, and mountain snows, helped regain some of the ground lost throughout the dry waning months of WY2016. Snow pack continually improved through the winter with basin wide percentages climbing from 119% of normal in January to 168% in February, 198% in April and continuing to climb to 236% in May before finally topping out at an amazing record setting snow pack of 441% of normal for the basin above Boysen Reservoir! The Little Wind River topped out at 469% in June but this was nothing compared to the smaller component Popo Agie drainages which were reporting over 900% of normal at the first of June due both to accumulating late seasons snows and delayed melt. The Big Horn Basin snowpack was similar on the western side while the eastern side drainages lagged some as the Nowood River drainage only peaked out at 132% in May.

Bull Lake recorded 309% of the normal inflows for the month of October and these type of inflows stayed throughout the winter months at most of the reservoirs in the division. This was especially important for Bull Lake as it had been drained down at the end of the season for some repair work on the outlet gates, carrying over only 38,288 AF of storage into WY2017 (Table 1.). Boysen reservoir inflows averaged nearly 200% of normal throughout the entire winter and into the normal runoff period. Buffalo Bill inflows were very similar and even as high as 339% of normal for the month of March. Big Horn Lake Reservoir on the Montana-Wyoming border realized a huge runoff as all of the above mentioned flows worked their way downstream. This reservoir saw an April through July runoff of just under 3 million acre-feet which equates to a new record inflow of 270% of the long term normal. Needless to say, all of the reservoirs in the division stored to spill or even above during the peak run off in 2017.

A Chinook type event took place about the 9th and 10th of February in the Wind River and Big Horn River basins. Returning from Cheyenne late on February 9th, I witnessed 50 mph winds with 50 degree temperatures and rainfall in the Riverton valley. These warm temperatures, cutting winds, and heavier rain on snow through the night raised stream flows exponentially and resulted in massive, damaging ice flows on the Little Wind River drainages and downstream along the Big Horn River as it makes its course northward. Flows of nearly 4000 CFS in the Big Horn River near Worland expanded the low 900 CFS Boysen release, with flows over 7000 CFS in the Little Wind River at Riverton on February 11th resulted during this event. The ice flows

TABLE 1. DIVISION III RESERVOIR STORAGE TABULATION

Reservoir Name	Usable Contents (AF)	Usable Contents on Sept 30, 2016 (AF)	Usable Contents on Sept 30, 2017 (AF)	Change in Contents (AF)
(Lake) Adelaide Reservoir	1,450	3,320	4,770	1,128
Anchor Reservoir	0	9,252	17,410	1174
Bighorn Lake	0	1,116,000	1,312,000	1,014,564
Boysen Reservoir	757,851	0	701,500	717,007
Buffalo Bill Reservoir	456,600	187,940	644,500	528,150
Bull Lake	151,951	0	77,040	120,528
Christina Reservoir	3,860	0	3,860	3,860
Corral Reservoir	0	1,027	1,030	608
Diamond Creek Dike	0	18,378	18,380	314
Enterprise Reservoir	1,494	204	1,700	306.9
Fairview Extension Reservoir	791	620	1,410	1,290
Greybull Valley Reservoir	0	33,169	33,170	21,010
Harrington Reservoir	315	887	1,200	800
Lake Cameahwait Reservoir	0	6,683	6,680	6,683
Lake Creek Reservoir	1,373	0	1,370	655
Lower Sunshine Reservoir	0	58,748	58,750	47,637
Newton Reservoir	4,525	0	4,520	1008
Perkins and Kinney Reservoir	1,202	0	1,200	1,097
Pilot Butte Reservoir	34,600	0	34,600	17,956
Sage Creek Reservoir	440	2,345	2,780	2,785
Shell Reservoir	1,949	0	1,950	1017
Shoshone Lake Reservoir	4560	5180	9,740	9,740
Sunshine Reservoir	52,988	0	52,990	52,222
Teapot Reservoir	1,578	0	1,580	0
Tensleep Reservoir	3,509	0	3,510	3,509
Wiley Reservoir	689	331	1,020	920
Worthen Meadow Reservoir	0	1,503	1,500	1,504

damaged gaging stations, roadways, bridges and property throughout the entire division. This event gave way to more seasonable cooler and wet spring which allowed the runoff to come off in a much more controlled manner which was the only thing that saved many folks from more severe damage or worse along most streams in the Wind River or west side tributary streams. A lot of erosion high in the water shed has been reported or witnessed this year. Landslides, bridge damage, road/highway damage and immeasurable amounts of stream bank erosion changed the landscape as only Mother Nature can. The high flows (Table 2.) eventually subsided in July and minimal late summer precipitation and near normal temperatures resulted in a fairly decent growing season during WY2017.

TABLE 2. DIVISION III STREAM FLOW PERCENTAGES WY2017 (APR-SEPT)

Stream Source	% of Avg	Stream Source	% of Avg
Middle Popo near Lander	141%	Nowood near Manderson	103%
Little Popo near Lander	234%	Nowood near Ten Sleep	141%
Big Horn River near Boys School	311%	Ten Sleep Creek above Ten Sleep	96%
Wind River @ Hywy 26 (below diversion dam)	219%	Shell Creek near Shell	97%
South Fork Owl Above Anchor Reservoir	184%	Medicine Lodge near Hyattville	90%
South Fork Owl below Anchor Reservoir	209%	Paint Rock near Hyattville	90%
North Fork Owl	225%	Gooseberry	350%
Owl Ck @ Arapahoe Ranch	274%	Cottonwood Creek near Hamilton Dome	205%
Wind River near Crowheart	181%	Greybull River @ Meeteetse	180%

Crop production in the division has reportedly been quite good. Delayed planting due to the wet spring caused some early concerns but the warm July and August resulted in most Alfalfa being put up under dry conditions and it appears that the sugar beet crop was able to catch-up on both tonnage and the cool September and early October evenings helped to push the sugar content to near or slightly better than normal levels. The barley also was able to catch up from the late start and tonnage appeared to come in slightly above average with good quality. The bean harvest was delayed a bit as producers tried to make up for the later start on that crop as well and it appears to have paid off in yields which came in at good to slightly above average again this season.

Administrative regulation across Division III was quite minimal in WY2017 (Table 3.). Only receiving requests for regulation on 4 drainages and only one of those came prior to the end of July is evidence of an amazing runoff year. The Greybull River drainage went into administrative regulation on July 29th for delivery of storage while the other three drainages are

TABLE 3. DIVISION III CALLS FOR REGULATION WY2017

District	Date of Call	Stream System	Tributaries	Calling Party	Status
8	7/29/2017	Greybull River	Wood & Burnett Ditch	Darrell Bullinger	Approved
13	8/3/2017	Gooseberry Creek	Blake Denton Ditch	Steve Griemsman	Approved
12	8/24/2017	Paint Rock Creek	Anita Supplemental Ditch	Martin Mercer	Approved
12	8/24/2017	Medicine Lodge Creek	George and Bayne Ditch	Martin Mercer	Approved

perennially short of water/over appropriated systems which require regulation nearly every year. Even though there were no official requests for regulation on most of the division drainages the hydrographers are out there every day assisting the public, collecting streamflow and diversion data, advising users, answering questions and helping to solve problems.

ACCOMPLISHMENTS

Preparation for and attendance of the four quarterly Board of Control meetings during the past year is always a primary duty and obligation of this position. The Board workload continues to increase as our staff continues to work with appropriators to make sure their rights are properly recorded and that they actually represent the activity on the ground. This year the Board granted 39 surface water petitions and 11 ground water petitions both of which were an increase of from the previous year. Eighty five surface water proofs of construction/appropriation were submitted for adjudication as were 44 ground water proofs. One additional instream flow permit was adjudicated this past year as we continue to do the data collection on another eight segments across the division. Some headway has been made on resolving some longstanding disputes and docket files this year as we are close to completing the City of Riverton petition for change of use, place of use of various rights within the City to municipal supply. Through various meetings and pressure to get folks to talk and work out their differences it appears that we may actually have a chance to resolve the involuntary abandonment of some valuable pre-compact water rights in the Shell Creek drainage without losing them.

The LeClair Irrigation District was required by the District Court to rehabilitate the river channel above and below their diversion as a term of the decision in their lawsuit against the Tribes over illegal channel work done by their previous manager in the early 2000's. Much time and effort was invested during the winter as we watched and surveyed this work to move river channels, raise stage levels and create islands etc. etc. all in an effort to restore the river to a northern channel that flows right against the LeClair canal. LeClair performed drone surveys, topographic surveys, as well as work to protect their canal and headgate structures from the impending high runoff. Throughout the entire runoff we were watching on more than a daily basis, the water levels and erosion taking place to their facilities and the work that had been completed during the winter. All in all, I was quite amazed with what I witnessed. The erosion taking place in the river channel mined out another new channel which essentially returned the main flow to the southern channel at about the same rate as it eroded out much of the work completed this past winter. This all resulted in the LeClair system coming through the record runoff event rather unscathed and in excellent condition. Our attention during the runoff was quickly moved from LeClair to the Riverton Valley Irrigation facilities; Wyoming Canal No.2, during June and the high flows jumped the river bank on June 8th and caused a significant portion of the flow to enter the canal below the headgate in an uncontrolled manner. On June 9th the river had continued to rise and we measured 565 CFS in a canal that normally runs 130 CFS. This rise continued into the 10th when we witnessed a head cut migrating around the headgate and back to the river channel. If this cut had been successful there would have been nothing left of the Riverton Valley canal in its upper reaches. By the afternoon of the 10th we pulled out our gaging equipment and within the hour the raging waters breached the canal bank just above their sand trap taking out about 100 yards of canal bank and eroding the bed of the original canal down about 15 feet deeper. Construction crews were quickly mobilized to save the canal and the

crops that are irrigated from this system. In 20 days of herculean efforts by the district, their contractors and many others the canal was reopened and irrigation once again took place. Few if any crops were lost through this event but there were numerous reports of damage from lack of irrigation etc. heard during the remainder of the season. This event could have been much worse if not for the efforts of those in charge. We provided constant streamflow data and projections, technical advice, and took part in inventories of facilities and numerous meetings and work groups throughout the event to assist our appropriators. The work continues at the time of this writing and next spring will be more rehabilitation and reconstruction as monies begin to become available through federal channels.

Just as things began to quiet down in the Riverton area we were faced with the next emergency of the summer. On the evening of July 8th I was contacted by Homeland Security asking if I could get to the Dubois area to do some quick reconnaissance of a landslide west of the Union Pass road. Upon arriving at the sight just before dark a quick survey found that a ditch cleaning effort on the Wind River Ditch had weakened the toe of a land slide enough that the slide began to move down gradient across the ditch and into the Wind River. The slide was actively moving and had choked the river channel down to about 20 feet wide as the opposite bank was a sandstone cliff. The resulting ponding of flows upstream of the slide were encroaching on households in a subdivision and within about ¼ mile of the slide was a bridge over the Wind River on the highway to Jackson. Multiple trips to this sight and meetings have been attended as the landowners work to secure funding and expertise to remedy this issue. If no work is done the slide will reactivate and will eventually pinch off the river flow as the last visit to the site only presented about a 7 foot wide channel for the Wind River at the toe of the slide.

Numerous meetings have been attended as part of a multi agency group of officials tasked with working toward a new operating plan and criteria for Willwood diversion dam in Park County. This 100 plus year old structure had stored significant silt over its lifespan and once they had repaired a regulation gate damaged many years ago, it was opened which led to a major unintended flush of silt down the Shoshone River. This group is primarily focused on monitoring the flow levels for turbidity, assessing the amount of silt still behind the dam and coming up with plans of how, if possible, to remove that silt from the river. Ultimately, we will expect to create a new operations plan to prevent this from occurring in the future.

The field staff of Division III continues to work diligently on staying current with periodic 5 year, dam safety inspections again completing 39 such inspections this year. Two dams in the division currently have fill restrictions in place. The Ewen Reservoir in Big Horn County off of Beaver Creek began to leak extensively after an attempt was made to complete some maintenance work on the outlet gate. Efforts taken late this fall to rehabilitate the outlet valves and remove the blockage in the outlet pipe upstream of the valving proved fruitless and the appropriator is again weighing his options. In the Nowood drainage, the Wyoming Game and Fish initiated plans to reconstruct the Renner Wildlife Reservoir and that facility has been breached and drained. They have completed some dredging work in the basin of the reservoir but we continue to await an acceptable set of plans for review of the proposed reconstruction of the dam.

This was the 5th year that the cooperative snow survey program has now been completely run out of the Division III office for the Wind River. We have in place a crew of 4 well trained experienced surveyors all of who can ride sleds and complete the surveys on time and with professionalism. Having such a solid crew was exceptionally important this season with the sheer amount of snow being dealt with on the mountains. Record depths and water content was realized at nearly all sites during the survey trips. It is quite impressive to have to dig down to find the 14' tall equipment shelters so that the equipment can be measured and verified during our site visits. We are still trying to weed out what the ramifications actually are of having so many of our measurement sites affected by forest fires over the past few years. It also appears that we will not have the use of the Younts peak course again this year due to access and equipment problems with this very remote site.

The NRCS water rights verification forms continued streaming in for projects being proposed for funding through the NRCS programs. This year Division III completed 141 of these verifications. This is actually down 4 from the previous year but I have completed 103 already in WY2018 so it doesn't appear that there is any easing of this burden. The verifications are used to confirm that all lands under a federal cost share projects being considered for funding, are adequately covered with water rights so as to not leave or create conflicting water rights or unpermitted water use on project lands. These reviews each take a significant amount of time to research and complete, but they do serve well to advise appropriators where the deficiencies are so that they can be remedied prior to funding. It is estimated that 25% of the proposed projects require some amount of petition work or additional permitting prior to moving forward for funding.

The State's Performance Management Initiative (PMI) continues to pull time away from important duties at inopportune times of the year. One positive is that the process does force a better documentation and tracking of larger scale projects that are added to the workload of subordinate employees. The employee response to this whole process is quite interesting as there are those who have tumbled to the realization that as long as they do the basic minimum they have nothing to worry about. If they excel, there is no real incentive, as the evaluation ratings have only resulted in a couple of small salary increases over the years and with the state of the State economy right now, they see very little chance of getting a raise for their efforts. This all appears to be quite counterproductive.

The Big Horn River Long Term Issues group is beginning to gain some new traction as the water year comes to a close. The Bureau of Reclamation, Great Plains Region is talking about starting a process of reviewing the past work of this group to evaluate how effective the changes we made in 2006-2010 have been. Changes in the operating criteria for Yellowtail dam on Big Horn Lake Reservoir were implemented utilizing a series of Rule Curves developed to accomplish a balance between flat water (reservoir) levels and downstream river flow levels. This was done in response to years of managing the river flows to the detriment of the lake level thus pitting the river fishing interests against the flat water fishing and recreational users. The rule curves have done a good job in my opinion at balancing this resource across the State line. We have experienced some record setting events and flow levels in the Big Horn and Shoshone Rivers in recent years and I believe these have been handled very well within the structure that is currently in place. Stay tuned as this new analysis should take place in early 2018.

AREA HIGHLIGHTS

Record snowpack levels led to record flow levels during this water year. During the monthly snow surveys we complete, we couldn't believe the huge snow pack that had built up in the Wind Rivers and Absaroka ranges. As melt out began, we were concerned that we could be in for some extreme flooding but the temperatures and June precipitation events were such that the runoff was as close to manageable as conceivable in many of the area streams. Much time was spent by the District 3 hydrographer Josh Frederickson maintaining equipment, measuring high flows and just plain getting around helping out the appropriators and district personnel wherever needed. Long days and weeks mounted up but the efforts were greatly appreciated by those involved. Our primary concern going into runoff was the remediation work done in the area of the LeClair Irrigation District headgate, as part of their court ordered settlement of a longstanding lawsuit with the Tribes. It appears that the high flows actually scoured parts of the new construction allowing more water down those channels than had been designed and this area was spared any substantial damage. Riverton Valley Irrigation District (Wyoming Canal No.2) didn't fare so well. A portion of the river jumped channel and began to enter the canal downstream of the diversion in early June. The canal was closed but flowing nearly 10 times the normal operating level until the canal breached on June 10. Once runoff ceased Josh worked hard to get equipment back in place and to assist the Riverton Valley Irrigation District with measuring of flows etc. after they got their canal reconstructed. That system was without water only 20 days as resources were brought in from everywhere to get water back on the crops. This work led into the fall when he spent time working on the proofs for 10 instream flow segments in the East Fork Wind River drainage among his normally extensive workload.

Many of the numerous big snow storms of early 2017 were upslope storms which really hit the southern tip of the Wind River Mountains and the Beaver Rim area of Fremont County. Strange conditions with a Chinook wind event followed within hours by a substantial rain on snow event in the area caused significant flooding in the Little Popo Agie and on down the Little Wind River drainages in February. The Town of Hudson was hard hit as high water lifted huge ice blocks and jammed area drainages. Snow packs built to record levels forcing our snow surveyors to dig down to find the 12-14 foot tall shelters at more than one location! Snotel and Snow Course data indicated that at the end of April all sites in the Little Wind River drainage were reporting between 219% and 384% of the 30 year normal for that date. Excellent runoff conditions and a lot of preplanning and preparation made for very few flooding incidents in the area even with this record snowpack melting out. Hydrographer Ryan Mikesell continues to make very good strides in educating the area water users of their rights, priorities and how they fit into the grand picture of administration. These efforts are resulting in a renewed interest by the users in the area to properly maintain their water rights as evidenced by the numerous large scale petitions being submitted to the Board of Control to clear up years of neglected water rights points of diversion and places of use. Ryan continues to work closely with the Nature Conservancy, the local Conservation District and the City of Lander to improve the flow volume and quality through Lander without impacting water rights holders in the area.

The Shoshone and Clark's Fork drainages had an excellent irrigation season with high natural flow, full storage and very good growing conditions. Landis Webber, the lead Hydrographer for this area, was able to concentrate on proof inspections during the irrigation season. The main

reason for the extra time to complete these important inspections is that for only the second time in his long career on the Shoshone and Clarks Fork Rivers there were no calls for regulation. The Heart Mountain Irrigation District continues to work on the mapping and application for their fifth enlargement of the Heart Mountain canal. Much time has been spent working in District 7 sorting out the various water rights, reservoir projects, petitions and complaints coming in from this area. This is the first full year without a resident water commissioner with Landis and seasonal Hydrographer Dan Laursen covering the district from Powell. This small drainage has its share of issues and large profile projects to deal with. Mapping of the water rights in the Beaver and Bear Creek drainages in response to the advancing proposed Leavitt Reservoir project by the Wyoming Water Development Commission (WWDC) has led to a much clearer understanding of many of the issues and water use intricacies of those drainages. The Shell Creek drainage didn't have the huge snow pack that was found in other parts of the division but ample water was available throughout the season and good crops were realized by those appropriators.

The Nowood drainage from the Big Horn Mountain side of the division didn't receive the heavy snows that we had in the Wind River and Absaroka ranges. Ample snow (generally about 115% of normal), though did lead to a decent runoff but regulation was necessary to get through the last couple of months of the irrigation season. Phil Beamer the area Hydrographer was busy as usual chasing the dwindling water supply, reviewing petitions, taking proof of appropriation inspections as well as trying to chase down illegal diversion construction in the area of the Medicine Lodge Creek State Park and the improper-unpermitted breaching and draining of Renner Reservoir. In addition Phil has spent some valuable time following the Alkali Reservoir project as it makes its way through the WWDC process. This reservoir will provide needed flows for the lower end of the Nowood drainage and even those upstream on the Nowood by exchange. Phil was also instrumental in assisting the Kirby Creek Conservation District with the siting, construction and development of a new gaging station on Kirby Creek in District 6.

The Owl Creek had a very wet year in 2017. High mountain snowpack reached a high recorded during April at 167% of the 30 year normal. This percentage then continued to climb due to cool temperatures which delayed any runoff so that the snotel site on Owl Creek reported 900% of normal for specific date in May. This number is generally skewed heavily by delayed melt out and doesn't actually translate directly into more water than what was expected. What it does indicate though, is that the runoff/melt out has been compressed substantially from the normal which can lead to increased flow levels but not in total volume during the normal April-July runoff period. These large snowpack numbers also allowed Anchor Reservoir to fill to a new modern day high of 8,034 Acre-feet on the 8th of June. Area Hydrographer Tim Hawkins did a great job of working to manage the outflows of Anchor so as to maximize the amount of storage while preventing flooding downstream and also keeping enough water to meet the demands in the stream channels. The Cottonwood Creek drainage didn't fair quite as well but most of their shortages were experienced late in the season and this is a direct result of the lack of storage on this small drainage. After these latest high flow years in both district 5 and 14, Tim reports the need for extensive repair work, diversion reconstruction, ditch maintenance and measuring device work prior to the next irrigation season.

The Greybull River system had a wonderful water year with great carryover storage, sufficient runoff to fill available space and long lasting natural flows delaying regulation. Regulation for storage delivery finally became necessary at the end of July a full 3 ½ months later than normal. Hydrographers Mike Riley and Heber Jensen worked to complete the gaging for proof of appropriation on another four instream flow segments this year on area tributaries. The Greybull River at Meeteetse gage station was relocated downstream from its historic location in October and the move has proved to be a much more stable and accurate gaging site than the previous one. Mike and Heber work very aggressively to their monitoring of the leveling program on the Greybull River and they do a great job of following every bit of water through their districts. The Gooseberry drainage had a very similar year as was witnessed on the Greybull with high flows satisfying area water users throughout the season and regulation wasn't even necessary until the 3rd of August on this system.

SUMMARY

WY2017 will go down as one heck of a record year. Record snow pack, record stream flows, great reservoir carryover on both ends of the season and very little administrative regulation all contributed to a phenomenal year. It will also be one of the years that required this superintendent to put in more time, more miles and more effort than any of my previous years. At one point I had worked 70 days straight without a full day off, it is what we do and we do it for the appropriators of our division. There are many issues with which we are working on which all take time and effort as we attempt to continue to work at serving our constituents at the same level they have grown to expect from us, even with reduced budgets and resources. Without the efforts of such a capable well trained staff, I couldn't accomplish near as much and it is this employee resource which needs to be recognized for their hard work and conscientious attitude that makes it all possible. It has been quite a few years since the State had monies for salary increases but the moral is suffering and the burdens on lead staff are escalating to near the breaking point. It is time to take a serious look at what services the public wants and how we can best compensate and retain such a highly trained staff. I appreciate the hard work of the other Superintendents and the State Engineer on Board issues and all of the Cheyenne staff for their unwavering assistance with all that goes on in the field. Thank you all!

WATER DIVISION IV

Submitted by:
Kevin Payne, Superintendent
Cokeville, Wyoming

INTRODUCTION

This report summarizes WY 2017 for the Green, Bear and Snake River drainages located west of the Continental Divide that includes its westerly Red Desert Basin in Wyoming. Detailed accounts of respective local areas can be obtained from the individual summaries published in the Hydrographers' Annual Report. (The Little Snake drainage, although part of the Green [Colorado River] basin, is administered under Water Division I as is the easterly Separation/Soldier/Dry Lakes portion of the Great Divide Basin.)

GENERAL CONDITIONS

Snow conditions started out below normal in November and the first part of December and then conditions changed drastically. Snowpack began to increase at the end of December and continued throughout the remainder of the winter. By the end of April, record snowpack amounts were still present in all basins within the division at over 150% of median. With the very high snowpack, users started evacuating storage in reservoirs to make room for the high flows. Flooding started in March in areas that were still iced over when low elevation runoff and reservoir releases started to combine which created ice jams. Reservoir managers were able to forecast flows and adjust releases in a timely manner to allow flood flows to pass and still be able to fill and spill their reservoirs. Temperatures cooled down in the end of April and the first part of May, reducing the flood flows from the low elevation runoff. Meetings were held in local communities with the Department of Homeland Security and other local government entities to address flooding concerns. Cool temperatures continued throughout the spring and early summer months minimizing the expected flooding.. Rain was minimal during the spring and early summer months and users started irrigating, thus reducing flooding along many stretches of rivers. Thirteen requests for regulation and two forms for record of administration were received and acted upon.

Hay crops were abundant and most farmers reported above average harvests of alfalfa and meadow hay crops. Grain prices were very low and many fields were harvested as hay rather than low priced grain.

GREEN RIVER

Conditions in the Upper Green River basin were extremely good with a very high snowpack. In the first part of May the snowpack was 196% of median in the upper Green River. The lower Green River basin also enjoyed a very high snowpack with a 182% of median snowpack as of May 1st. A new record was set on the New Fork River near Big Piney USGS gage with a flow of 9,200 cfs. This was slightly above the previous high flow set in 1986 at 9,190 cfs.

The only request for regulation in the Upper Green River basin was on Fish Creek in September and continued throughout October. Once again disputes between landowners on Fish Creek resulted in two separate visits from the Superintendent to verify legal use of water. Like the previous year, the field visits indicated a change in operations of the Sphaeralcea reservoir in which additional water spilled over onto the downstream neighbors. Middle Piney dam construction plans were to begin during this water year; however, the only progress made to date is some road work to access the site that began this fall.

In the lower Green River Basin, Meeks Cabin Reservoir was operated to allow a buffer during high water to try and alleviate flooding concerns. Project users began to voice concerns that the reservoir would not be able to fill if flows continued to be released; however, the reservoir did fill and spill on the 2nd of June and concerns were alleviated. Natural flows continued to be abundant enough to prevent a call for storage until the 27th of June, when an administrative call was received to deliver storage water.

As flows dropped on Smith's Fork and storage deliveries began from Stateline Reservoir, periodic rains along with ranchers turning off to hay proved to be difficult to regulate. Ranchers were being delivered storage water at the same time they were denying natural flows. Lamb Supply water was called for from the Black's Fork; however, this call lasted less than seven days with the abundant amount of water in the Smith's Fork system. China Lake storage water was requested on June 27th, and deliveries continued for 18 days. In early July questions arose in regards to whether or not flows had been released from China Lake at the same time water was being delivered. Since this reservoir is situated in Utah, requests from Wyoming were made to have Utah verify the releases, which were then passed on to Bridger Valley Joint Powers Board as a shareholder.

Users on the Ham's Fork were once again able to work with PacifiCorp to contract the use of 6,000 acre feet of storage out of Viva Naughton Reservoir. With the bountiful flows on the Ham's Fork and its tributaries this year, only 5,000 acre feet of storage was used. Ice jams, along with added flows from Black's Fork in the Granger area, caused flooding in early spring. Flows were continually monitored and adjusted from Viva Naughton to try and evacuate water at the same time, trying to prevent flooding in the Granger area. Concerns were expressed at the Ham's Fork Water Users meeting in regards to the lack of a solely dedicated Water Commissioner to district 9. Luckily, the abundant snow pack and runoff prevented a natural flow call for regulation.

Henry's Fork users also enjoyed a high snowpack and even though regulation was called on July 11th, on Burnt Fork, frequent rains reduced the impacts. During high runoff, many headgates were washed out and many repairs are still needed. Ongoing efforts are being made in this area to map headgate locations with GPS, along with the Utah Division of Water Rights to correlate records and determine if changes are needed. Island Lake and Beaver Meadows storage release correlation continues to be refined by increased gaging.

TABLE 1. GREEN RIVER RESERVOIR STORAGE:

Reservoir Name	Usable Contents	Content on Sept. 30, 2016 (A.F.)	Content on Sept. 30, 2017 (A.F.)
Beaver Meadows	2,461	0	0
Big Sandy	39,700	14,292	25,408
Boulder Lake	22,280	3,342	11,808
Eden No. 1	18,489	3,512	8,505
Fontenelle	345,397	227,962	262,502
Fremont Lake	30,899	16,098	26,264
Hoop Lake	4,026	4,026	2,416
Island Lake	778	0	0
McNich #1	1,089	334	555
McNich #2	490	95	28
Meeks Cabin	33,571	6,043	15,107
Middle Piney	4201	1,134	1,134
New Fork Lake	20,340	5,735	14,035
67 Reservoir	5,211	2,344	1,808
Sphaeralcea	99	42	99
Stateline	14,020	4,921	5,888
Viva Naughton	45,465	31,826	36,900
Willow Lake	18,816	3,462	15,053

SNAKE RIVER

Inflows to Jackson Lake exceeded 11,000 cfs but due to reservoir operations anticipating high flows, the outflows during this period were less than 6,500 cfs, which reduced flooding concerns. The Snake River below Flat Creek peaked at 26,700 cfs. Once again the Jackson area remained busy with an abundant amount of proofs submitted. This area also continues to deal with many water related questions that do not usually fit within the bounds of the scope of our duties. With the abundance of water and the lack of regulated streams, people continue to find creative ways to permit uses that present additional challenges for local staff to overcome. The March 30, 2009 Craig Thomas Snake Headwater Legacy Act, which designated 13 rivers and streams in the Snake River drainage has yet to be permitted by the SEO and additional research is being investigated in the efforts to get these segments permitted.

With the district 13 Water Commissioner contract not being renewed, Mike Johnson was reappointed to cover district 13 for the first part of the season. Jim Wilson was appointed mid-season as an emergency Water Commissioner to cover the remaining portion of the season. Teton Creek hit the trigger point of the Roxana Decree on August 8th, however, as with several previous years; no regulation was needed in Wyoming due to Wyoming users taking less than their apportioned amount during the irrigation season.

With high snowpack amounts, and no reservoirs to control high flood flows in the Salt River drainage, there was some minor flooding in the lower valley on the main stem of the Salt River. There was also some minor flooding on most tributaries to the Salt River. Federal funding continues to increase the number of center pivots installed in the Star Valley. At least three more

pivots were installed this summer. The growth of subdivisions continues to change the focus in this area from dividing water between irrigation appropriators to verifying compliance and permitting of ponds and other non agriculture uses. A large scale subdivision continued to be developed in the Grey’s River, which generated many calls to our office to verify compliance of ponds, ditches, and other water features.

TABLE 2. SNAKE RIVER RESERVOIR STORAGE:

Reservoir Name	Usable Contents (A.F.)	Content on Sept. 30, 2016 (A.F.)	Content on Sept. 30, 2017 (A.F.)
Grassy Lake	15,204	12,315	12,163
Jackson Lake	838,000	444,140	653,640

BEAR RIVER

In early March, Woodruff Narrows began to spill from the low runoff; at this same time an inspection was made finding some damage in the spillway. Outflows were increased to draw down the reservoir so repairs could be made. The increase in outflows added to flooding throughout the Cokeville area down to Bear Lake in Idaho. At this same time period, Sulphur Creek Reservoir filled and spilled quickly, adding to the flooding. Periodic cool temperatures throughout the spring reduced the flooding in the lower Bear Basin and prevented excessive damage. River flows continued high until after the first part of July with more than enough water to supply all appropriators until the middle of August when flows began to be distributed between priorities in the Evanston area. Bear Lake went into the fall of 2016 below the trigger point in which upstream storage would be restricted; this soon changed and set a record of a single year lake recovery by the lake adding over 10’ of elevation during runoff.

Snowpack in the Smith’s Fork of the Central Division remained around 100% of median until January when the snowpack continued to build throughout the remainder of the winter and spring. By the first part of May, the Smith’s Fork was over 200% of median. Runoff extended well into July and prevented an interstate call until August 4th. Once a call for interstate regulation occurred, diversion totals were called in weekly to the Engineer Manager of the Commission and subsequent allocation numbers were returned back to the states. There were no physical adjustments needed from Wyoming during this water year since Wyoming was always diverting less than our allocation under the compact.

This year Wyoming hosted the Bear River Commission tour in the Lower Wyoming section of the Bear River Compact and also in the Wyoming portion of the Central Division in the Bear River Compact. This tour was held just after high water in which many of the diversions were already turned off and also many were in disrepair from recent flooding. Overall, the tour proved to be successful with Wyoming being able to demonstrate advanced technologies that have been referred to as the “gold standard” by adjoining states.

The proposed Sublette Creek Reservoir did not meet the deadlines stipulated by the State Engineer to hold the original compact allocation that was originally set aside for a Smith’s Fork project in the Central Division of the Bear. After a few other requests for this allocation were received, it was determined that a memorandum should be created to explain how this original

compact water should be allocated. This memorandum was shared at a public meeting in Evanston and a few comments were received. Two projects were able to be considered under this memorandum that had filed their requests prior to the September 30, 2017 deadline.

As mandated by Article XVII of the Bear River Compact stating in part “at intervals not exceeding twenty years, the Commission shall review the provisions hereof” requiring that the compact be reviewed. This year marked the beginning of this process in which five public hearings were held throughout the basin. Wyoming’s public meeting was held in Evanston on October 3, 2017. There were also several Wyoming users at the Montpelier meeting held on October 12, 2017. Final comments are due on December 4, 2017 and the process will continue to determine the need for any changes.

TABLE 3. BEAR RIVER RESERVOIR STORAGE:

Reservoir Name	Usable Contents (A.F.)	Content on Sept. 30, 2016 (A.F.)	Content on Sept. 30, 2017 (A.F.)
Ben	303	200	210
Bonneville	43	43	43
Broadbent	893	262	262
Coy	80	3	3
Hatch (Grassy Lake)	350	86	266
Sulphur Creek	19,774	13,842	15,306
Whitney	4,664	295	1,862
Woodruff Narrows	57,300	42,258	38,867

PERSONNEL

Levi Walker resigned in May, in which Mike Johnson and I split up duties in district 2 until the first part of August when Ethan Overton was hired to fill this vacancy. Zach Rasmussen resigned in mid-August as the district 3 water commissioner, in which John Yarbrough filled in on this district until this vacancy was refilled in September with Michael Livingston. Jim Wilson was appointed as an emergency water commissioner in the end of June and remained throughout the remainder of the water year.

SUMMARY

Record snowpack allowed an overall very productive year throughout the division with minimal flooding. Minimum amounts of rain in most parts of the division along with the high runoff amounts, created a great combination to harvest good hay crops. Some of the rangeland suffered in mid-summer due to the lack of rain, but this was overcome with the amount of feed produced from the abundant snowpack that held in the mountains until early summer. Feeder hay prices remained average and helped offset the lower calf prices for the year. As dairy quality alfalfa hay prices continue to increase, the amount of pivots continue to increase to be able to export this hay out of state to satisfy this market.

Budget decreases along with staffing changes continue to challenge our usual day to day tasks. After our record reviews were discontinued with the USGS in the summer of 2016, we have

developed a system internally within the division to review records and assure quality and accuracy of the data being produced.

During WY 2017, 12 surface water petitions were granted by the Board. There were 11 petitions referred to hearing conditionally. Most of these hearings were resolved with pre-hearings via teleconference, with one in person pre-hearing held in Pinedale with no formal protests being received. Two petitions that were referred to hearing are scheduled for hearing in March of 2018.

There were 53 Ground Water proofs submitted to the Board of Control for adjudication. There were 119 Surface Water proofs completed along with several additional inspections completed. One stock reservoir was also endorsed.

The never ending changes in staff in both the field and Cheyenne continues to present challenges of ongoing training, but it also presents new opportunities for staff growth by learning new areas and tasks. The consistent willingness of staff taking on these new challenges is very much appreciated in both Cheyenne and the field. Nothing replaces the knowledge and experience of long term staff who give their insight to newer inexperienced staff on a regular basis. I am very thankful for knowledge and experience of the State Engineer and other Board members to continue to pass along their expertise.

LEGAL ACTIVITIES

Christopher M. Brown
Senior Assistant Attorney General

Attorneys within the Water and Natural Resource Division of the Wyoming Attorney General's Office have the pleasure of advising and representing the Wyoming State Engineer's Office and the Wyoming Board of Control on water related issues. As has been the case for the last two years, the State did not see much activity with regard to formal litigation during Water Year 2017 (WY2017). Accordingly, the bulk of legal activities during the year, some of them described below, took the form of day-to-day advice and representation.

MONTANA V. WYOMING, UNITED STATES SUPREME COURT, NO. 137, ORIGINAL

The United States Supreme Court case of Montana v. Wyoming experienced its tenth year during WY2017. The States previously contested the trial to determine liability in WY2014, and the Special Master assigned to hear the case issued his Second Interim Report in WY2015. Also in WY2015, Montana and Wyoming each took one exception to the Special Master's Report to the United States Supreme Court. During WY2016, the Supreme Court did not explicitly rule on the states' exceptions, but instead issued an Order and Judgment adopting the Special Master's liability recommendations. After that ruling, the remedies phase of the case began. Summaries of those previous years' activities can be found in previous versions of this annual report.

With the liability phase of the case complete, the states began to address remedies. At the outset, that took the form of summary judgment motions from each state which they filed in WY2016. The Special Master issued his Opinion on Remedies on December 19, 2016, addressing each state's summary judgment motion. Briefly, the Special Master found as follows:

- Wyoming was entitled to summary judgment regarding damages. The Special Master found that Montana was entitled to \$35,877.06, which includes some prejudgment interest, or, alternatively, Montana was entitled repayment of 1,356 acre-feet of water which was the total volume of water for which Wyoming was found liable in 2004 and 2006. Montana later elected the monetary amount as opposed to water amount of damages.
- Montana was not entitled to disgorgement damages. Wyoming's breach was not knowing, willful or reckless.
- Montana was not entitled to injunctive relief. There was no cognizable danger of recurrent violation by Wyoming.
- Montana has a right to fill the pre-Compact capacity of Tongue River Reservoir, or 72,500 acre-feet. At various times during the litigation, Montana had asserted that the

pre-Compact water right of Tongue River Reservoir was all unappropriated water, 127,324 acre-feet, or 79,071 acre-feet.

- Montana was a prevailing party for the purposes of costs. However, Montana was only entitled to the costs it incurred through February 10, 2010, the date the Special Master filed his First Interim Report. For the most part, Montana did not prevail on its claims after that date.

The Special Master also gave Montana and Wyoming until February 10, 2017, to confer and agree with regard to the terms of a decree which will incorporate all of the legal rulings in the case. The states made multiple attempts but were ultimately unable to agree on decree terms. As such, each state filed its own proposed judgment and decree. The Special Master held a hearing regarding the terms of a decree on May 1, 2017, and also provided a draft decree to which the states provided comments. Montana also filed a Bill of Costs for \$67,811.62, to which Wyoming did not object.

The states anticipate that the Special Master will issue his third and final report and a proposed decree during WY2018. Each state will then have the opportunity to take exceptions to that final report to the United States Supreme Court.

INTERSTATE LEGAL ACTIVITIES

The Wyoming Attorney General's Office provided advice and representation to the State Engineer's Office regarding various interstate legal matters during WY2017. Those matters related to almost all of Wyoming's interstate compacts and decrees. As usual, the bulk of that activity related to the Colorado River.

The Attorney General's Office works closely with the State Engineer's Office Interstate Streams Division regarding Colorado River issues. Due to, in large part, the extended and historic drought within the Colorado River Basin, like last year those issues were many and commanded much attention from the Attorney General's Office during WY2017. However, because they are likely described in the Interstate Streams Division portion of this report, some of those issues are only briefly mentioned here.

1. Drought Contingency Planning. To develop plans in response to the sustained historic drought, both the Upper and the Lower Basins have been actively engaged in drought contingency planning since WY2013. In the Upper Basin, those efforts during WY2017 focused primarily on reaching agreement with the Secretary of the Interior regarding specified drought operations of Colorado River Storage Project Act reservoirs. In the Lower Basin, those efforts concentrated on formulating additional plans by the Lower Basin States to voluntarily forego up to 1.1 MAF of deliveries per year from Lake Mead if water levels reach critically low elevations. Additionally, both basins worked collaboratively on a Companion Agreement intended to bring the separate drought planning efforts together and address common issues.

2. Minute 323 of the 1944 Mexico water treaty. Minute 319 of the 1944 Mexico water treaty expired at the end of 2017. Accordingly, the Basin States were actively involved with the Bureau of Reclamation and the International Boundary and Water Commission in efforts to extend certain provisions of Minute 319 as well as add additional components related to, among other things, voluntary reductions of water deliveries to Mexico. Minute 323 was signed on September 21, 2017, as were multiple domestic agreements required to implement Minute 323, three of which were signed by the Wyoming State Engineer.

3. System Conservation Pilot Program. In 2014, a consortium of mostly municipal interests and the Bureau of Reclamation funded a demand management pilot, the “System Conservation Pilot Program.” The program in the Upper Basin is currently administered by the Upper Colorado River Commission, and will inform the demand management element of the Upper Basin’s drought contingency plan. In WY2017, four projects were awarded in Wyoming, two in Colorado, six in Utah, and three in New Mexico. This Office closely reviewed and monitored the Wyoming projects and their individual contracts, as well as provided advice regarding the contract between the program funders and the UCRC.

4. Basin Fund Memorandum of Agreement. On January 24, 2011, Wyoming and other Upper Colorado River Basin States entered a Memorandum of Agreement with federal entities for the purpose of making a percentage of revenues generated under the Colorado River Storage Project Act available to each state for qualifying water projects and activities. Since the agreement was entered, there has been some misunderstanding about what projects qualify for funding. This Office worked with federal and state representatives in an effort to provide clarification and guidance regarding qualifying projects.

INTRASTATE LEGAL ACTIVITIES

The State Engineer issued his Horse Creek Order on July 19, 2013. That Order generally related to the conjunctive management of groundwater and surface water within the Horse Creek Basin. By its own terms, the effects of the 2013 Order were subject to review by the State Engineer after three years of operation to determine if the 2013 Order should continue to apply or whether a new order should be issued. The Horse Creek Basin benefited from favorable hydrology during the three year term of the original Order, and Hawk Springs Reservoir filled every year. After holding a public hearing, considering evidence in the records of the State Engineer’s Office, and considering written comments submitted by interested parties, the State Engineer issued his First Amended Order for the Horse Creek Basin on May 31, 2017. In the First Amended Order, the State Engineer raised the groundwater pumping cap from twelve inches per acre per year, to fifteen inches per acre per year, to be applied with some flexibility over a three year period. By the terms of the First Amended Order, the State Engineer will again review the effects of the Order three years after its implementation, beginning in November of 2019.

One of multiple bills related to water introduced during the 2017 Legislative session, House Enrolled Act 67 addressed the payment of advertising fees required for the adjudication of water

rights. Under previous statutes, the county where water right was located was required to pay the necessary advertising fees. The act shifted that payment responsibility from the county to the appropriator who owns the water right. The amendments require the secretary of the State Board of Control to collect a fee from the appropriator to pay for the necessary advertising and recording costs prior to adjudication. This Office provided assistance with ensuring that the amendments were consistent with the existing statutory scheme.

The State Engineer's Office considered multiple applications for the appropriation of water from Crow Creek downstream of Cheyenne during WY2017. That stretch of Crow Creek lies within the Laramie County Control Area which has been the subject of considerable study by the State Engineer's Office from a groundwater perspective for many years. The State Engineer rejected the applications because he found that the surface waters of Crow Creek, downstream of Cheyenne, are so interconnected with the groundwater supply in the High Plains Aquifer system proximal to Crow Creek as to constitute in fact one source of supply. Accordingly, the priorities of rights to the use of all such interconnected waters shall be correlated and such single schedule of priorities shall relate to the whole common water supply. This finding effectively recognizes the ability of proximal groundwater rights which are dependent upon Crow Creek's recharge to request regulation of junior surface rights to the common water supply. The State Engineer further found that diverting surface water to a location where it becomes unavailable to existing groundwater wells would tend to impair, or conflict, with at least some existing groundwater rights between the proposed points of diversion and the Colorado state line. Such diversions would also, at some point in the future, tend to reduce groundwater recharge relied upon by existing rights in the Spring Creek drainage south of Pine Bluffs. This Office advised the State Engineer in his consideration of those applications.

OTHER MATTERS

This Office assisted and coordinated with other western states regarding a Ninth Circuit Court of Appeals decision relating to federal reserved water rights and groundwater. The Agua Caliente Band of Cahuilla Indians sued the Coachella Valley Water District and the Desert Water Agency in federal district court in 2013, claiming aboriginal groundwater rights, federal reserved groundwater rights, and ownership of the pore space beneath the reservation. On summary judgment, the District Court held that the Tribe does not have aboriginal rights in groundwater, that federal reserved rights may extend to groundwater, and that California's correlative rights system, which gives each overlying landowner a right to use a proportionate share of the basin's safe yield, does not preclude recognizing a federal reserved right. Quantification of the reserved right will occur during a later phase of the case. The Ninth Circuit Court of Appeals affirmed the grant of summary judgment finding that federal reserved water rights extend to groundwater, and that those rights exist if some use of water was contemplated at the time of reservation. Further, the limitations to the reserved rights doctrine established in *New Mexico v. United States* only apply to the quantification of an existing reserved water right—not whether a right exists in the first place—and that State law is completely preempted and is thus irrelevant to question of reserved rights. On July 3 and 5, 2017, the water agencies filed Petitions for a Writ of Certiorari with the United States Supreme Court for review of the Ninth Circuit decision. On August 7, 2017, nine other states joined Nevada and filed an Amicus Curiae Brief supporting the water agencies' Petitions for Writ of Certiorari. The nine states which joined Nevada were: Arizona,

Arkansas, Idaho, Nebraska, North Dakota, South Dakota, Texas, Wisconsin and Wyoming. Although it occurred during WY2018, the U.S. Supreme Court denied both petitions for certiorari.

During WY 2017, this Office continued to participate in federal litigation involving EPA's water transfers rule. These cases challenge whether water transfers require a National Pollutant Discharge Elimination System (NPDES) permit under the federal Clean Water Act. Generally, under the current rule a permit is not required for water transfers such as trans-basin diversions when the water is not subjected to intervening use through the transfer. Wyoming, along with several western states, has supported the EPA's current rule which exempts such transfers from NPDES permitting. Challenging the rule are New York state—with eight other states and a province of Canada—and the Catskills Mountains Chapter of Trout Unlimited joined by interveners EarthJustice and the Miccosukee Tribe. Western water providers, eleven Western States, New York City, and the South Florida Management District intervened on the side of defendant EPA. The federal trial court had previously vacated the water transfers rule to the extent it was inconsistent with the phrase "navigable waters" as interpreted by the United States Supreme Court in *Rapanos*, and remanded the rule to the extent EPA did not provide a reasoned explanation for its interpretation. On January 18, 2017, the Second Circuit Court of Appeals reversed the trial court and reinstated the rule. The environmental, tribal, and eastern state plaintiffs sought rehearing *en banc* by the entire Circuit on March 6, 2017. The Second Circuit denied the petitions for rehearing. Some members of the three plaintiffs and plaintiff-intervenors/appellees' groups filed petitions for certiorari with the U. S. Supreme Court on September 15, 2017. The Supreme Court will consider those petitions during WY2018.

The Water Section welcomed attorney Sean Towles at the tail end of WY2017. Sean is originally from Berthoud Colorado, and received his bachelor's degree from Colorado State University in 2011. He attended law school at Indiana University, and also earned a master's degree of Public Administration. He worked for the Office of the Indiana Attorney General from 2013 to 2017. Sean will represent the Wyoming State Engineer's Office, almost exclusively, to help this Office improve its attention to water related issues. We are excited to have Sean on board.

BOARD OF PROFESSIONAL ENGINEERS AND PROFESSIONAL LAND SURVEYORS

Submitted by:
Shannon Stanfill
Executive Director

INTRODUCTION

The primary responsibility of the Board of Professional Engineers and Professional Land Surveyors (Board) is self-regulation of the engineering and land surveying professions. The Board's mission is to safeguard life, health and property of the public by assuring that those who practice the profession of engineering and land surveying are licensed and attain and maintain competence in those professions. The Board makes the final licensure decision for all professional engineers, professional land surveyors, and engineers and land surveyors in training, and businesses that offer professional engineering and/or land surveying services. The Board develops and administers state specific land surveying exams, ethics exams and contracts with the National Council for Examiners of Engineering and Surveying (NCEES) to administer national exams for both engineers and land surveyors. The Board, staff and assigned representatives from the Attorney General's office work closely with Board members to ensure complaints are properly investigated and vetted. In addition, the Board directs continuing education audits and engages in statewide outreach. The Board is also active with NCEES at the regional and national level with several board members holding committee or elected roles. This involvement ensures Wyoming's input during critical conversations and development of model language to facilitate reciprocity across state lines for these professions. The information provided is for the period from October 1, 2016, through September 30, 2017.

ACCOMPLISHMENTS

The Board's outreach efforts continue to be a valuable opportunity to connect Board and staff with various stakeholders. Board representatives presented at ten different meetings or conferences during the year reaching both licensees and entities that use professionals.

Outreach to youth continued to grow. Engineers Week, held in February, matched nearly 100 engineering practitioners with over 3,300 3rd grade students across Wyoming. The presentations included a hands-on engineering design project. This event was made possible through a partnership with the University of Wyoming and the Wyoming Engineering Society. A similar outreach effort began this year with Surveyors Week, held in March. The 2017 effort matched surveyors with 18 middle schools across Wyoming and approximately 1,256 middle school students. This collaborative effort with the Professional Land Surveyors of Wyoming (PLSW) began with a Proclamation signing by Governor Mead.

The 2017 Legislative session brought a few changes to the Board Practice Act. Board Rules were discussed at the September Meeting and will go through public comment during the 2017-2018 Water Year.

The Board underwent its audit by the Department of Audit in September. Many verbal suggestions were offered and only one written finding was presented.

The Board issued a Request for Proposal (RFP) for a new a licensing software system and after interviews selected a firm, inLumon. The priority development was a new online renewal system which went live mid-October 2017. Remaining components are scheduled for completion by mid-2018.

The Board continues to provide exceptional leadership at the national level. Five of the nine Board members provided their service in areas such as fiscal guidance, assessing model law and rules, determining how to adapt to changing practices and technology, and developing national examinations. Several members serve as officers, committee chairs or committee members of the NCEES. The purpose of the NCEES is to provide an organization through which state Boards may act and counsel together to better discharge their responsibilities of regulating the practice of engineering and land surveying as it relates to the welfare of the public in safeguarding life, health and property. Eight of the Board members attended at least one of the industry meetings.

ENFORCEMENT ACTIVITY

The Board and staff work closely with the Attorney General's office to work through complaints and ensure due process for licensees. During WY2017, the Board worked on 26 different dockets. Of those dockets, 21 are resolved and 5 will be addressed during the next water year.

Every complaint concerning the practice of the licensees is investigated by the Board. All docketed cases are assigned to an Investigative Board Member who oversees and works with the prosecuting attorney on the investigation and presents recommendations to the entire Board for decision. When required a formal hearing is conducted. The BPEPLS has assistance from two investigators and hires subject matter experts on an as-needed basis. This has streamlined the process and resolution on most cases is accomplished without a formal hearing.

Where the Board is made aware of situations where individuals or business may have engaged in unlicensed practice, the board issues an inquiry letter to help determine if unlicensed practice has occurred. The Board issued 22 letters during WY2017. The BPEPLS continues to use the National Council of Examiners for Engineering and Surveying's (NCEES) national database for retrieving information on disciplinary matters, as well as providing information on Wyoming registrants who are disciplined.

LICENSING ACTIVITY

The BPEPLS makes the final licensure decision for all professional engineers, professional land surveyors, and engineers and land surveyors in training, and businesses that offer professional engineers and/or land surveying services. Applications are vetted through Application Review Committees (ARC) and in specific instances application review has been delegated to the Executive Director. All recommendations are ratified by the full Board. See Table 1 for a listing of license counts as of the end of WY2017.

TABLE 1. PE/LS LICENSES

Summary of Licenses as of September 30, 2017				
		Resident	Non-Resident	Total
Professional Engineer	Individual	1183	5644	6827
	Corporation	108	851	959
	Total	1291	6495	7786
Professional Land Surveyor	Individual	118	173	291
	Corporation	20	24	44
	Total	138	197	335
Professional Engineer & Land Surveyor	Individual	42	25	67
	Corporation	39	47	86
	Total	81	72	153
Engineer-In-Training		1642	1046	2688
Land Surveyor-In-Training		79	17	96
Total		3231	7827	11,058

PROBLEMS AND RECOMMENDATIONS

WY2017 brought several efforts for the Board to begin resolving issues experienced in WY2016. A failed contract with a licensing software provider in May 2015 led to a successful RFP process

and selection of a new contractor in November 2016. That developer worked diligently to deploy an online renewal system for the 2017 season. The next steps will be to expand the software capabilities, test and transition the remaining data.

Administering the land surveying State Specific Exam has been difficult for several years in part due to the age of the exam and quality of questions and graphics. In April, a contractor led a group of Wyoming professionals met to review the exam framework and assess the question bank. The group then resorted and developed new questions. The reworked exam framework and questions will be incorporated into the new licensing software system for the coming year.

A high profile regulatory case in North Carolina has spurred conversation across the continent about the role and oversight of regulatory boards. This climate makes dialogue even more important especially as focused on this Board's mission and efforts to support that mission.

STATE BOARD OF EXAMINING WATER WELL DRILLING CONTRACTORS AND WATER WELL PUMP INSTALLATION CONTRACTORS

Submitted by:
Sheri Culver, Executive Director
Cheyenne, Wyoming

REPORT PERIOD

This report covers the period of October 1, 2016 through September 30, 2017, also known as Water Year 2017 (WY2017).

BASIC FACTS

The State Board of Examining Water Well Drilling Contractors and Water Well Pump Installation Contractors (Board) was created by legislation in the 2003 session. The Board consists of seven members and has been a functioning entity since June 2003.

MISSION

Since the 2008 Legislature passed HB0055, *Water Well Drilling And Pump Installation Licensure*, which requires mandatory licensing of water well drilling contractors and water well pump installation contractors, the Board's role is now one of administering a mandatory licensing program. The purpose of the licensing program is to protect the public from incompetent or unethical water well drilling and water well pump installation contractors, as well as to promote excellence in the practice of their area of expertise. The Board is authorized to suspend or revoke the license of water well contractors that fail to meet established standards of the profession. Additionally, licensing protects the groundwater resources of the state, and promotes excellence in water well drilling and pump installation practices.

APPLICABLE STATUTES

The statutes governing the mandatory licensing program can be found in Title 33 – Professions and Occupations, Chapter 42 – Water Well Drilling Contractors and Water Well Pump Installation Contractors, W.S. §§ 33-42-101 through 117.

GOALS AND KEY INITIATIVES

The Board established the following goals and key initiatives to guide the direction of Board activities:

Goal # 1: Update and amend Wyoming State Statutes applicable to the Board. W.S. § 33-42-101 through 117.

- Present to Legislators, Senate File No. SF0160.

Goal # 2: Update and amend the Board’s Policy & Procedure Manual.

- Revised Contract Signatory Authorization Policy & Procedure to remove the word “employment” from the document.
- Add Conflict of Interest to Policy & Procedure Manual to ensure compliance by Board employees and members with all applicable ethical and conflict of interest requirements. W.S.§ 33-42-107

Goal # 3: Increase Budget and Board Revenue.

- Continue to enforce license laws and increase the number of licensed contractors.
- Send out license renewals and work closely with licensed contractors to support license renewal.

Goal # 4: Regulate compliance with State Statutes, Rules and Regulations and State Minimum Construction Standards.

- Work closely with the State Engineer’s Office to establish forms required to be filled out and sent to state from water well drilling contractors.
- Work closely with the State Engineer’s Office to establish forms required to be filled out and sent to state from water well pump installation contractors.
- Continue to educate licensed contractors on compliance with minimum construction standards.
- Meet with and establish a good working rapport with licensed contractors while attending continuing education classes.
- Meet with County and Municipal Officials throughout the state to increase awareness of current Rules and Regulations, Statutes, and Minimum Construction Standards.
- Help to educate the public about required rules and standards.

Goal # 5: Establish Public Support.

- Continue to perform well and pump inspections for the public.
- Review public complaints for license violations.
- Investigate public complaints.
- Work closely with Board Members and Prosecuting Attorney General on docketed public complaints.
- Provided education to the public on the importance of licensure for water well contractors.

Goal # 6: Create and Submit Annual Report.

- Review, evaluate, and update previous year’s goals and initiatives, and create new ones for coming year.

- List accomplishments.
- List on-going and new goals.

LICENSING

As of September 30, 2017, a total of 278 license holders exist as follows:

- 92 Well Drilling Contractors,
- 96 Pump Installation Contractors, and
- 90 with both a Well Drilling and Pump Installation Contractors license.

ACCOMPLISHMENTS

- Issued 8 new licenses.
- Renewed 138 licenses out of a possible 174 that were up for renewal.
- Drafted and submitted Annual Report for WY2016.
- Docketed 3 complaints.
- Performed approximately 24 public well inspections.
- Removed sensitive information from licensee’s files.
- Attended Wyoming Water Well Association Convention – met with licensed contractors, gave presentation, attended educational classes offered.
- Provided classroom instructions on Wyoming water rights and the importance of licensure for water well contractors.
- Worked closely with Wyoming Water Well Association with structuring penalties and possibly developing new legislation to promote compliance with Wyoming Water Statutes, State Engineer’s Office and Board’s Rules and Regulations.
- Worked closely with State Engineer’s Office enforcing compliance with state minimum construction standards.

BUDGET

According to statutory provision (W.S. § 9-1-904(b)), a portion of the fees collected by the State Engineer for processing applications for permits to appropriate groundwater is deposited into an account created under W.S. § 33-42-116 to support the costs of operating the Board. Additional revenues for Board operations include new license fees, license renewal fees, and miscellaneous fees. In **Fiscal Year 2017 (FY17)**, revenues from all sources totaled **\$124,750** (Table 1).

TABLE 1. FEES COLLECTED IN FY17

Type Fee	Amount (\$)
Groundwater Permits	\$81,125
License Renewals	\$46,625
Total	\$124,750

In WY2017, the Board presented Senate File No. SF0160 to the legislature. This bill would have imposed fines or probation on licensees as specified; provided for a hearing before a disciplinary action by the board; provided for the recovery of costs, expenses and attorney’s fees by the

Board; and provided for an effective date. The Bill died in Committee. On April 26, 2017, the Board formed a Penalty Committee to work together with the Wyoming Ground Water Association on structuring penalties and possibly developing new legislation, to promote compliance with the Wyoming Water Statutes, State Engineer’s Office and Board’s Rules and Regulations.

BOARD MEETINGS

In WY2017, the Board met five times as a quorum (Table 2). Additional meetings were needed to assist in development of the proposed State Statute and Rules and Regulation Changes.

TABLE 2. BOARD MEETING DATES AND LOCATIONS

Date of Meeting	Location
January 18, 2017	Casper, Wyoming
March 3, 2017	Casper, Wyoming
April 26, 201	Casper, Wyoming
July 27, 2017	Teleconference
September 6, 2017	Cheyenne, Wyoming

NEW STAFF

The State Board of Examining Water Well Drilling Contractors and Water Well Pump Installation Contractors Executive Director, Lynn Ritter resigned from state service on March 10, 2017. On April 24, 2017, Mrs. Sheri Culver was hired as the new Executive Director.

PERSONNEL LISTS

STATE ENGINEER'S OFFICE

(As of September 30, 2017)

ADMINISTRATION DIVISION

NAME	TITLE
Tyrrell, Patrick T.	State Engineer
Deuell, Rick	Assistant State Engineer
Bales, Nancy	Human Resource Associate II
Reinhardt, Rachael	Human Resource Supervisor
Hoskins, Cricket	Senior Accounting Analyst
Jenkins, Susan	Senior Office Support Specialist
Wertz, Tina	Accountant

SURFACE WATER DIVISION

NAME	TITLE
Arrington, Lee	Natural Resources Program Manager
Blanks, Dana	Senior Office Support Specialist
Bratton, Leah	Natural Resources Analyst
Feltner, Jason	Natural Resources Program Supervisor
Graves, Nathan	Principal Engineer
Hand, Mike	Principal Engineer
Lamblin, Cindy	Office Support Specialist II
Lorentz, Sandra	Office Support Specialist II
McIlvain, Tyler	Natural Resources Analyst
Messer, Shelley	Natural Resources Analyst
Smith, Jay	Natural Resources Analyst
Wright, Cheryl	Natural Resources Analyst

SUPPORT SERVICES DIVISION

NAME	TITLE
Zimmerman, Martin	Computer Technology Program Manager II
Carpenter, Elva.....	Records & Data Management Clerk
Castle, Daniela.....	Records & Data Management Clerk
Merrill, Kimberly.....	Records & Data Management Clerk
Smith, Linus.....	Natural Resources Analyst
Vossler, Steve.....	Natural Resources Specialist
Wallace, Tony.....	Computer Technology Business Applications Analyst
Wickham, Brent.....	Computer Technology Supervisor

GROUND WATER DIVISION

NAME	TITLE
Lindemann, Lisa	Administrator
Harju, John	Assistant Administrator
Blain, Liberty.....	Natural Resources Program Principal
Calhoun, Kelley.....	Office Support Specialist II
Carpenter, Terry.....	Natural Resources Specialist
Koldeway, Josh.....	Natural Resources Analyst
Lett, Sunny.....	Natural Resources Analyst
Linn, Cyndee.....	Office Support Specialist II
Malessa, Markus.....	Natural Resources Analyst
Manley, Jeremy.....	Natural Resources Program Principal
Miller, Linda	Office Support Specialist II
Morse, Lindsay.....	Office Support Specialist I
Moser, George.....	Senior Project Geologist
Neely, James	Natural Resources Analyst
Peterson, Krissie.....	Office Support Specialist II
Quist, Adam.....	Natural Resources Analyst
Tebben, Beth.....	Natural Resources Analyst

BOARD OF CONTROL DIVISION

NAME	TITLE
Timm, Cheryl	Natural Resources Program Manager
Rockweiler, Jedadiah	Natural Resources Program Supervisor
Duncan, Bonnie.....	Office Support Specialist I
Hallberg, Debra.....	Natural Resources Analyst
Hardy, Cullen.....	Natural Resources Analyst
McCann, Nancy.....	Natural Resources Program Principal
Moore, Taylar.....	Office Support Specialist I
Mumper, Karen.....	Natural Resources Analyst
Nichols, Trista.....	Office Support Specialist II
Pierce, Dixie.....	Natural Resources Specialist
Pino, Roxanne.....	Senior Office Support Specialist
Quick, Kevin.....	Natural Resources Analyst
Trembath, Jessica.....	Office Support Specialist II
Tully, Karyl.....	Natural Resources Program Principal
Pugsley, Brian	Superintendent
Water Division No. I.....	Torrington
Schroeder, David	Superintendent
Water Division No. II.....	Sheridan
Smith, Loren	Superintendent
Water Division No. III.....	Riverton
Payne, Kevin	Superintendent
Water Division No. IV.....	Cokeville
Tyrrell, Patrick	State Engineer
State Engineer.....	Cheyenne

INTERSTATE STREAMS DIVISION

NAME	TITLE
Wolff, Steve	Administrator
Callaway, Beth	River Basin Coordinator
Cowley, Jeff	River Basin Coordinator
Ferrantelli, Charlie	River Basin Coordinator

WATER ADMINISTRATION PERSONNEL

(As of September 30, 2017)

Key to Title Abbreviations:	NRA	=	Natural Resources Analyst
	NRS	=	Natural Resources Specialist
	AI	=	Acreage Inspector
	WI	=	Well Inspector
	PI	=	Pump Inspector
	LH	=	Lead Hydrographer
	HC	=	Hydrographer-Commissioner
	AHC	=	Asst.HydrographerCommissioner
	TI	=	Tributary Inspector

WATER DIVISION I

PERSONNEL AT LARGE

TITLE	NAME	ADDRESS
Superintendent	Brian Pugsley, brian.pugsley@wyo.gov	510 West 27th Torrington, Wyoming 82240
Assistant Superintendent and At Large	Trevor Hiegel, trevor.hiegel@wyo.gov	Laramie Civic Center 710 Garfield, Room 114 Laramie, Wyoming 82070
Natural Resources Program Principal	Rob Foreman, rob.foreman@wyo.gov	510 West 27th Torrington, Wyoming 82240
Office Support Specialist II	Sharon L. Hackett, sharon.hackett@wyo.gov	510 West 27th Torrington, Wyoming 82240

WATER ADMINISTRATION PERSONNEL

DISTRICT	TITLE	NAME	ADDRESS
1, assist 4A, 4B and 4C	HC	Adam Skadsen, adam.skadsen@wyo.gov	Laramie Civic Center 710 Garfield, Room 114 Laramie, Wyoming 82070
2	HC	Cory Rinehart, cory.rinehart@wyo.gov	510 West 27th Torrington, Wyoming 82240
3,4C	HC	Ryan Barker, ryan.barker@wyo.gov	1560 B Johnston St. Wheatland, Wyoming 82201
4A	HC	Steven “Josh” DeBerard, josh.deberard1@wyo.gov	Laramie Civic Center 710 Garfield, Room 114 Laramie, Wyoming 82070
16,17	HC	Justin Stern, justin.stern@wyo.gov	PO Box 710 Saratoga, Wyoming 82331
4B	HC	Susan Kersey, sue.kersey@wyo.gov	Laramie Civic Center 710 Garfield, Room 114 Laramie, Wyoming 82070
	HC	Robin Blake, robin.blake@wyo.gov	PO Box 710 Saratoga, Wyoming 82331

WATER ADMINISTRATION PERSONNEL (cont'd)

DISTRICT	TITLE	NAME	ADDRESS
9,13	LH	Rod Oliver, rod.oliver@wyo.gov	277 Dutton Creek Road Laramie, Wyoming 82070
10,11, 12, assist 14	HC	Forrest Kiezer, forrest.kiezer@wyo.gov	2020 Fairground Rd., Ste. 104 Casper, Wyoming 82604
14	HC	Kent Becker, kent.becker@wyo.gov	510 West 27th Torrington, Wyoming 82240
North Platte River	TI	Tracy Brown, tracy.brown@wyo.gov	510 West 27th Torrington, Wyoming 82240
North Platte River	AI	J. Scott Haskamp, scott.haskamp@wyo.gov	2020 Fairground Rd. Ste. 104 Casper, WY 82604
North Platte River	AI	Chad Pickett, chad.pickett@wyo.gov	PO Box 710 Saratoga, Wyoming 82331
North Platte River	WI	Kelly Mehling, kelly.mehling@wyo.gov	510 West 27th Torrington, Wyoming 82240
North Platte River, 14,15-5,19,20	PI AHC	Wray Lovitt, wray.lovitt@wyo.gov	117 S. 2nd Street, Ste. 2B Douglas, Wyoming 82633
North Platte River	AI	Connie Kersting, connie.kersting@wyo.gov	1560 B Johnston St., Wheatland, Wyoming 82201

WATER DIVISION II

PERSONNEL AT LARGE

TITLE	NAME	ADDRESS
Superintendent	David Schroeder, d.schroeder@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
Office Support Specialist II	Deborah Reed, deb.reed@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801

WATER ADMINISTRATION PERSONNEL

DISTRICT	TITLE	NAME	ADDRESS
2,3	AS	David Pelloux, dave.pelloux@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
7,10 Assists 1	HC	Kody Steinbrecher, kody.steinbrecher@wyo.gov	113 S. 21st St. Sundance, Wyoming 82729
8	WC	Robert Furnival bob.furnival@wyo.gov	P.O. Box 3 Kaycee, Wyoming 82639
5,6 Assists 4	HC	Pat Boyd, pat.boyd@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
1,8	WC	Karla Gallegos, karla.gallegos@wyo.gov	2020 Fairgrounds Rd., Ste. 104 Casper, Wyoming 82604
9,10, 11	LH	John Mumm, john.mumm@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
4	HC	Bryan Lozier bryan.lozier1@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
11 Assists 9&10	HC	Jessica Winter jessica.winter@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801

WATER DIVISION III

PERSONNEL AT LARGE

TITLE	NAME	ADDRESS
Superintendent	Loren Smith, Loren.Smith@wyo.gov	715 East Roosevelt Riverton, Wyoming 82501
Assistant Superintendent At Large	David Deutz, Dave.Deutz@wyo.gov	2009 Big Horn Avenue, Ste 1 Worland, WY 82401
Office Support Specialist II	Janet Wempen, Janet.Wempen@wyo.gov	715 East Roosevelt Riverton, Wyoming 82501

DIVISION III: WATER ADMINISTRATION PERSONNEL

DISTRICT	TITLE	NAME	ADDRESS
1, 11	HC	Ryan Mikesell, Ryan.Mikesell@wyo.gov	715 East Roosevelt Riverton, Wyoming 82501
1,3	HC	Josh Fredrickson, Josh.Fredrickson@wyo.gov	715 East Roosevelt Riverton, Wyoming 82501
5, 14	HC	Timotheè Hawkins, Tim.Hawkins1@wyo.gov	2009 Big Horn Ave., Ste 1 Worland, WY 82401
6,12	HC	Philip Beamer, Phil.Beamer@wyo.gov	2009 Big Horn Ave., Ste 1 Worland, WY 82401
8	HC	Heber Jensen, Heber.Jensen@wyo.gov	1201 E. 7th Powell, WY 82435
9, 10, 15, & At Large	LHC	Landis Webber, Landis.Webber@wyo.gov	1201 E. 7th Powell, WY 82435
13,16	HC	Mike Riley, Mike.Riley@wyo.gov	1201 E. 7th Powell, WY 82435
7,15	HC	Dan Laursen, Dan.Laursen@wyo.gov	1201 E. 7 th Powell, WY 82435

WATER DIVISION IV

PERSONNEL AT LARGE

TITLE	NAME	ADDRESS
Superintendent	Kevin Payne, kevin.payne@wyo.gov	PO Box 277 Cokeville, Wyoming 83114
Assistant Superintendent, 1, 3, 9, 14, 15, and At Large	John Yarbrough, john.yarbrough@wyo.gov	PO Box 1208 Lyman, Wyoming 82837
Office Support Specialist I	Carol Reed, carol.reed@wyo.gov	PO Box 277 Cokeville, Wyoming 83114

WATER ADMINISTRATION PERSONNEL

DISTRICT	TITLE	NAME	ADDRESS
2, 4, 8, 12,13,16	LHC	Mike Johnson, mike.johnson@wyo.gov	PO Box 277 Cokeville, WY 83114
2, assist 4, 8, 12	HC	Ethan Overton Ethan.overton@wyo.gov	PO Box 277 Cokeville, WY 83114
3	HC	Michael Livingston Michael.livingston@wyo.gov	101 Joy Lane Lyman, WY 82937
4	HC	Travis McInnis, travis.mcinnis@wyo.gov	217 Bodine Dr. Evanston, Wyoming 82930
5,6,7,10,11,13,1 6	LHC	Ed Boe, ed.boe@wyo.gov	PO Box 1080 Big Piney, Wyoming 83113
6, 10, 11, assist 7	HC	Courtney Skinner, courtney.skinner@wyo.gov	PO Box 61 Daniel, Wyoming 83115
7, 10, assist 11	HC	Jeff Davis, jeff.davis@wyo.gov	PO Box 1080 Big Pine, WY 83113
8, 12	HC	John Hunsaker john.hunsaker@wyo.gov	PO Box 134 Smoot, Wyoming 83126
14	HC	Reed Thomas, reed.thomas@wyo.gov	159 County Road 233 Lyman, Wyoming 82937
15, assist 3, 14	HC	Tim Redmon tim.redmon@wyo.gov	P.O. Box 1208 Lyman, Wyoming 82937
16, assist 11, 13	HC	Bodean Barney, bodean.barney@wyo.gov	PO Box 9575 Jackson, Wyoming 83002

**STATE BOARD OF PROFESSIONAL ENGINEERS AND PROFESSIONAL
LAND SURVEYORS**

BOARD MEMBERS

NAME	POSITION	E-MAIL	TERM EXPIRES
Corky Stetson, PE corky.stetson@wyoboards.gov	President	P.O. Box 12702 Jackson, WY 83002 307-733-5150	3/31/2021
Skylar V. Wilson, LS skylark.wilson@wyoboards.gov	Vice-President	P.O. Box 938 Pinedale, WY 82941 307-367-6417	3/31/2019
Shelley R. Macy, PE shelley.macy@wyoboards.gov	Secretary- Treasurer	217 W. 18 th Street Cheyenne, WY 82001 307-631-4049	3/31/2019
Thomas V. Anderson thomas.anderson@wyoboards.gov	Public Member	1010 Sussex Casper, WY 82609 307-377-5561	3/31/2021
Steven Barrett, PhD PE Steven.barrett@wyoboards.gov	Member	College of Engineering Department 3295 1000 E University Ave. Laramie, WY 82071 307-766-6181	3/31/2020
Paul A. Blough, LS paul.blough@wyoboards.gov	Member	1402 Stampede Ave. Cody, WY 82414 307-587-6282	3/31/2018
Jeffrey B. Jones, LS jeffrey.jones@wyoboards.gov	Member	6451 Big Sky Trail Cheyenne, WY 82009 307-634-7273	6/30/2021
Robert R. Norton, PELS robert.norton@wyoboards.gov	Member	P.O. box 1599 Jackson, WY 83001 307-733-2087	6/30/2021
Patrick T. Tyrrell, PE patrick.tyrrell@wyo.gov	Secretary- Treasurer	122 W. 25 th Street, 4E Cheyenne, WY 82002 307-777-6150	Indefinite

ATTORNEY GENERAL CONTACT

NAME	ADDRESS	PHONE	E-MAIL
Christopher Brown	2320 Capitol Ave. Cheyenne, WY 82002	307-777-3406	chris.brown@wyo.gov

**STATE BOARD OF PROFESSIONAL ENGINEERS AND PROFESSIONAL
LAND SURVEYORS**

BOARD STAFF

NAME	POSITION
Shannon Stanfill	Executive Director
Krista M. Wilson	Office Support Specialist
Troy A. Niesen	Office Support Specialist

**STATE BOARD OF EXAMINING WATER WELL DRILLING
CONTRACTORS AND WATER WELL PUMP INSTALLATION
CONTRACTORS**

BOARD MEMBERS

NAME	REPRESENTING	TERM EXPIRES
Jerry Hunt	At-large Water Well Drilling Contractors	3/31/19
John Midkiff	Water Well Drillers	3/31/21
Nick Bebout	Irrigation Well Contractors	3/31/18
Steven R. Barbour	Water Well Pump Installation Contractors	3/31/17
Michelle Christopher	Public Who Owns an Active Well	3/31/21
Lisa Lindemann	State Engineer's Office Designee	3/31/21
James O'Connor	Department of Environmental Quality Designee	3/31/18

* All terms expire March 31st of the year indicated.

ATTORNEY GENERAL CONTACT

NAME	ADDRESS	PHONE	E-MAIL
Abigail Boudewyns	2320 Capitol Ave. Cheyenne, WY 82002	307-777-3442	abigail.boudewyns@wyo.gov

GROUND WATER ADVISORY COMMITTEES

WATER DIVISION	NAME	TERM EXPIRES
I	Ben Jordan	9/30/2023
	David Evans	9/30/2018
	Ralph Brokaw	9/30/2023
II	Floyd Canfield	9/30/2017
	Jerry Hunt	9/30/2023
	Sheridan Little	9/30/2018
III	Dan Wychgram	9/30/2018
	Jeanette Sekan	9/30/2017
	Doyle Ward	9/30/2020
IV	Nick Bettas	9/30/2023
	John Reed	9/30/2023
	Kellen Lancaster	9/30/2023

CONTROL AREA ADVISORY BOARD MEMBERS

CONTROL AREA	NAME	CITY	TERM EXPIRES
Laramie County	Ty Anderson	Pine Bluffs	7/31/2020
	Jay Berry	Cheyenne	7/31/2019
	Jay Burnett	Carpenter	7/31/2020
	David Romsa	Albin	7/31/2019
	Casey Epler	Hillsdale	7/31/2020
Platte County	Brooke Brockman	Wheatland	7/31/2019
	Silvia Rutherford	Wheatland	7/31/2020
	Rex Johnson	Wheatland	7/31/2020
	Jennifer Reyes-Burr	Wheatland	7/31/2020
	VACANT		7/31/2020
Prairie Center	Kelly Francis	Torrington	7/31/2018
	Dennis Isakson	Van Tassel	7/31/2019
	Greg DesEnfants	Torrington	7/31/2019
	Chuck Berry	Torrington	7/31/2018
	Blake Ochsner	Torrington	7/31/2018

**WYOMING MEMBERS OF INTERSTATE COMPACT COMMISSIONS
AND REGIONAL AND INTERSTATE COMMITTEES RELATING TO
WATER RESOURCES**

(As of September 30, 2017)

**BEAR RIVER COMMISSION
(Idaho, Utah and Wyoming)**

NAME, TITLE	POSITION
Patrick T. Tyrrell, Wyoming State Engineer	Commissioner
Tim Teichert, Citizen	Commissioner
Adrian Hunolt, Citizen	Commissioner
David Waterstreet, Water Quality Division, Department of Environmental Quality (DEQ)	Member, Water Quality Committee
Kevin Payne, Superintendent, Water Division IV	Alternate Commissioner; Member, Technical Advisory Committee
Beth Callaway, River Basin Coordinator, ISS	Member, Technical Advisory Committee

**UPPER COLORADO RIVER COMMISSION
(Colorado, New Mexico, Utah and Wyoming)**

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Commissioner
Benjamin C. Bracken, Citizen	Alternate Commissioner
Keith Burron, Citizen	Alternate Commissioner
Randy Bolgiano, Citizen	Alternate Commissioner
Steve Wolff, Administrator, ISS	Member, Engineering Committee
Charlie Ferrantelli, River Basin Coordinator, ISS	Member, Engineering Committee
Chris Brown, Senior Assistant Attorney General	Member, Legal Committee

**SALINITY WORK GROUP;
MINUTE 323 OF THE INTERNATIONAL TREATY WITH MEXICO**

NAME, TITLE	POSITION
Steve Wolff, Administrator, ISS	Upper Basin Representative

COLORADO RIVER 7-STATES MANAGEMENT WORK GROUP

NAME, TITLE	POSITION
Steve Wolff, Administrator, ISS	Member
Chris Brown, Senior Assistant Attorney General	Member

COLORADO RIVER BASIN SALINITY CONTROL ADVISORY COUNCIL

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Member
David Waterstreet, Water Quality Division, DEQ	Member
Chad Espenscheid, Citizen	Member
Steve Wolff, Administrator, ISS	Alternate
Lindsay Patterson, Water Quality Division, DEQ	Alternate

COLORADO RIVER BASIN SALINITY CONTROL FORUM

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Member
David Waterstreet, Water Quality Division, DEQ	Member
Chad Espenscheid, Citizen	Member
Steve Wolff, Administrator, ISS	Alternate
Lindsay Patterson, Water Quality Division, DEQ	Alternate
Charlie Ferrantelli, River Basin Coordinator, ISS	Member, Work Group
Mike Thomas, Water Quality Division, DEQ	Member, Work Group
Keenan Hendon, Water Development Commission	Member, Work Group

GLEN CANYON ADAPTIVE MANAGEMENT PROGRAM

NAME, TITLE	POSITION
Steve Wolff, Administrator, ISS	Wyoming Representative, Adaptive Management Work Group & Technical Work Group
Don A. Ostler, Executive Director Upper Colorado River Commission	Alternate Member

UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM

NAME, TITLE	POSITION
Steve Wolff, Administrator, ISS	Wyoming Representative, Implementation Committee
Steve Wolff, Administrator, ISS	Wyoming Representative & Chairman - Management Committee
Pete Cavalli, Wyoming Game and Fish Department	Wyoming Representative, Biology Committee

MISSOURI RIVER RECOVERY IMPLEMENTATION COMMITTEE

NAME, TITLE	POSITION
Beth Callaway, River Basin Coordinator, ISS	Member

YELLOWSTONE RIVER COMPACT COMMISSION

(Montana, North Dakota and Wyoming)

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Commissioner
Beth Callaway, River Basin Coordinator, ISS	Advisor & Technical Committee Member
David Schroeder, Superintendent, Division II	Advisor & Technical Committee Member
Loren Smith, Superintendent, Division III	Advisor & Technical Committee Member

BELLE FOURCHE RIVER COMPACT

(South Dakota and Wyoming)

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Member
Steve Wolff, Administrator, ISS	Advisor

UPPER NIOBRARA RIVER COMPACT
(Nebraska and Wyoming)

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Member
Brian Pugsley, Superintendent, Division I	Advisor
Jeff Cowley, River Basin Coordinator, ISS	Advisor
Charlie Ferrantelli, River Basin Coordinator, ISS	Advisor

NORTH PLATTE DECREE COMMITTEE

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Wyoming Representative
Brian Pugsley, Superintendent, Division I	Alternate, Wyoming Representative; Member, Crest Control Subcommittee
Jeff Cowley, River Basin Coordinator, ISS	Chair, Finance Subcommittee; Member, Replacement Water Subcommittee; Member Official Files Subcommittee
George Moser, Ground Water Division	Chair, Groundwater Wells Subcommittee
Charlie Ferrantelli, River Basin Coordinator, ISS	Member, Consumptive Use Subcommittee

PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM

NAME, TITLE	POSITION
Harry LaBonde, Water Development Commission	Wyoming Representative, Governance Committee; Member, Finance Committee; Member, Alternate Land Advisory Committee
Bryan Clerkin, Water Development Commission	Alternate, Governance Committee; Alternate, Water Advisory Committee, Scoring Subcommittee
Jason Mead, Water Development Commission	Alternate, Governance Committee
Jeff Cowley, River Basin Coordinator, ISS	Alternate, Water Advisory Committee; Alternate, Scoring Subcommittee
Brian Pugsley, Superintendent, Division I	Member, Environmental Account Committee / Reservoir Coordinating Committee
Lee Arrington, Surface Water Division	Member, Land Advisory Committee
Andrea Odell, Water Development Commission	Alternate, Finance Committee
Barry Lawrence, Water Development Commission	Member, Technical Advisory Committee; Member, Adaptive Management Group
Jason Feltner, Surface Water Division	Alternate, Environmental Account Committee/Reservoir Coordinating Committee
Liberty Blain, Groundwater Division	Alternate, Technical Advisory Committee; Member, Adaptive Management Group

SNAKE RIVER COMPACT
(Idaho and Wyoming)

NAME, TITLE	POSITION
Patrick T. Tyrrell, State Engineer	Member
Steve Wolff, Administrator, ISS	Advisor
Beth Callaway, River Basin Coordinator, ISS	Advisor

SNAKE RIVER COMMITTEE OF NINE (IDAHO)

NAME, TITLE	POSITION
Steve Wolff, Administrator, ISS	Advisory Member

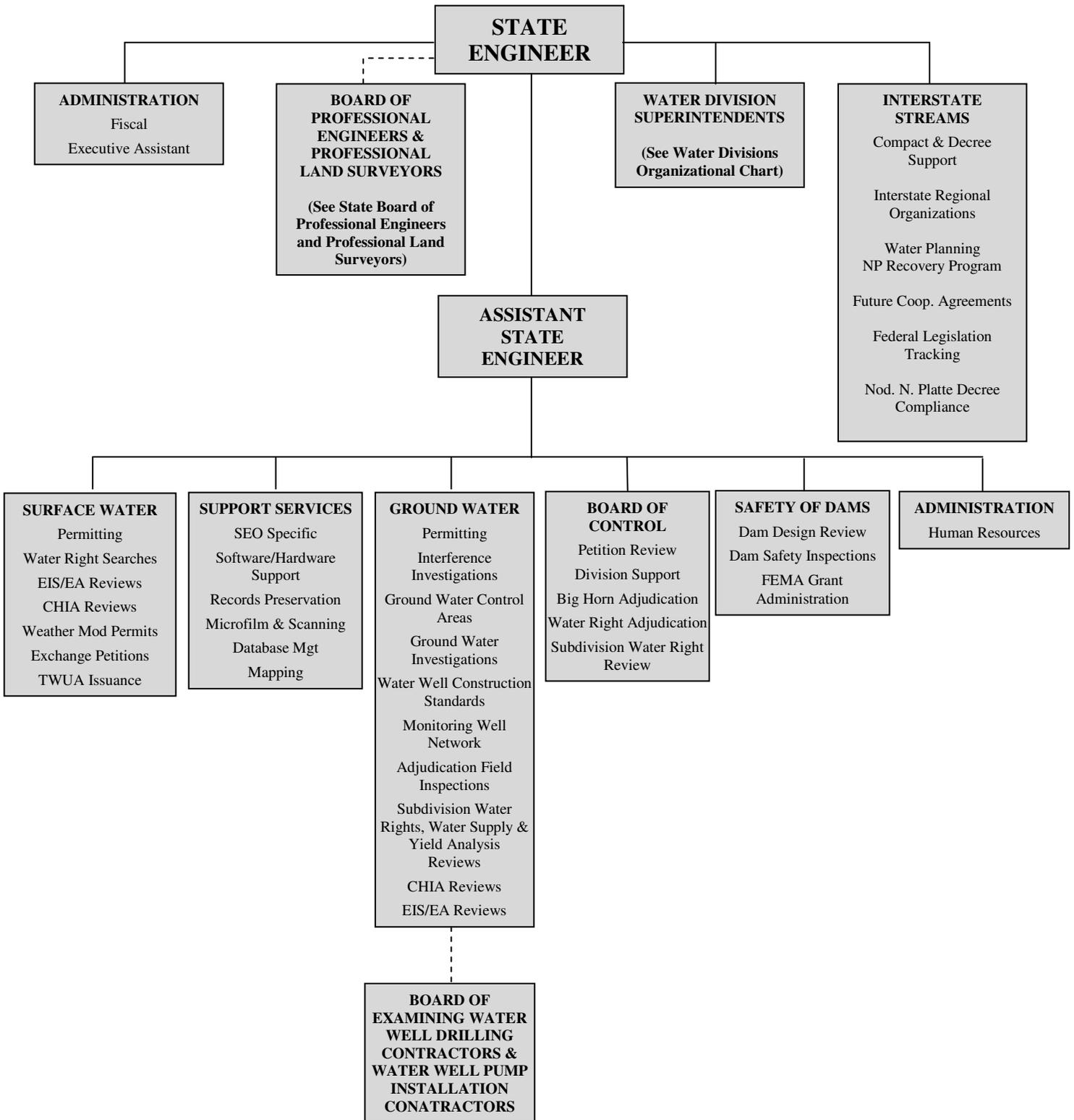
WESTERN STATES WATER COUNCIL

NAME, TITLE	POSITION
Matthew H. Mead, Governor	Governor Member
Patrick T. Tyrrell, State Engineer	Member
Chris Brown, Senior Assistant. Attorney General, Attorney General's Office	Member
Todd Parfitt, Administrator, Department of Environmental Quality	Member
Steve Wolff, Administrator, ISS	Alternate
Kevin Fredrick, Administrator, Water Quality Division, Department of Environmental Quality	Alternate
Harry LaBonde, Administrator, Water Development Commission	Alternate

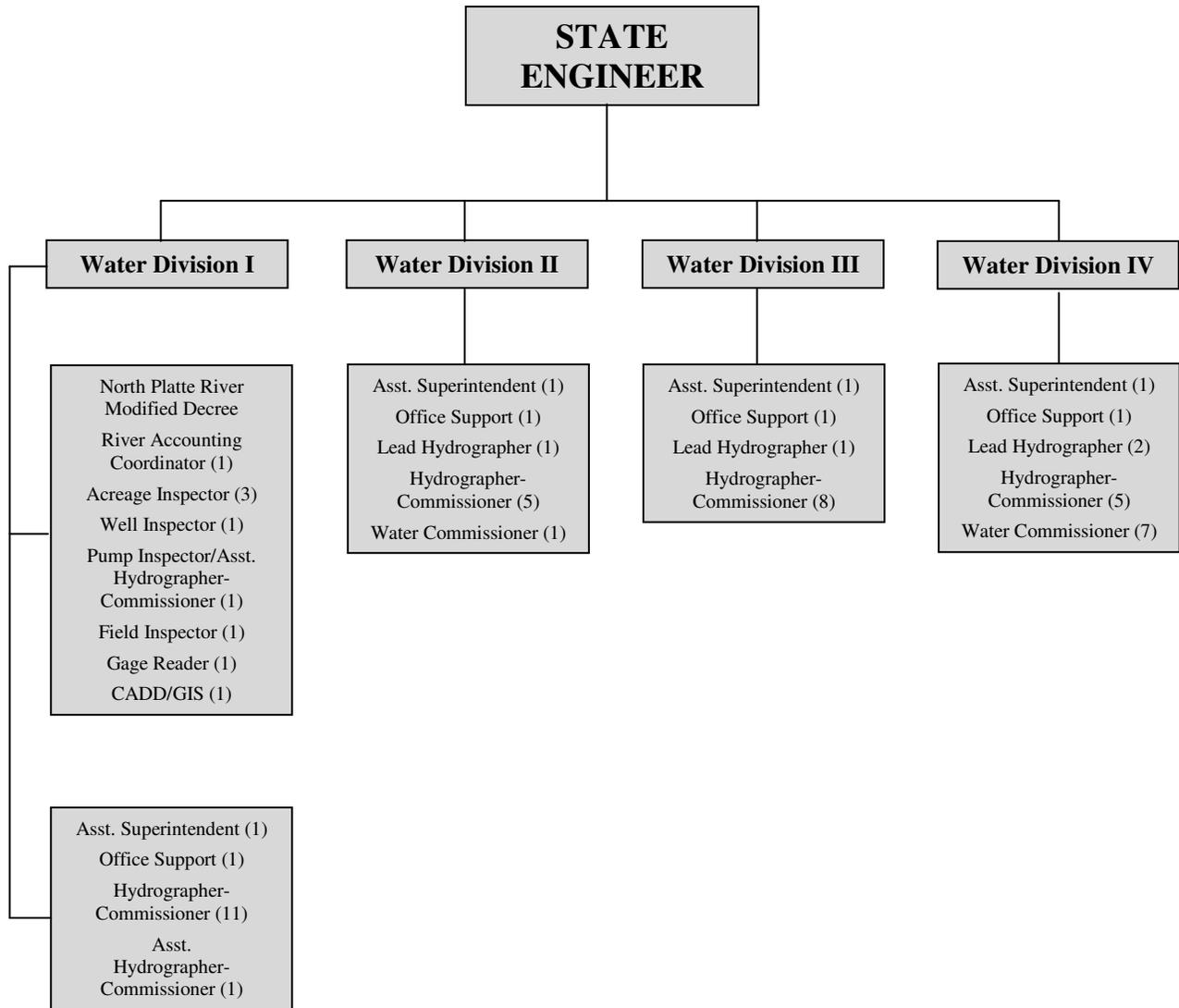
WYOMING STREAMBANK MITIGATION INTERAGENCY REVIEW TEAM

NAME, TITLE	POSITION
Jeff Cowley, River Basin Coordinator, ISS	Member

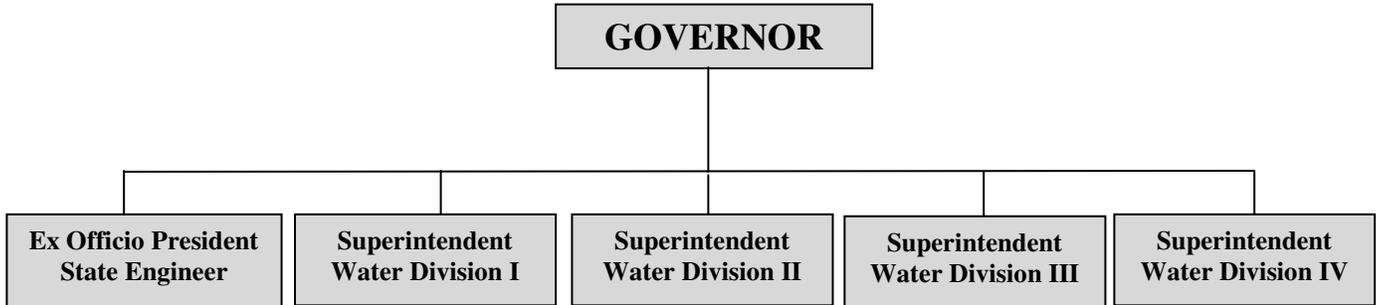
STATE ENGINEER'S OFFICE WY2017 ORGANIZATIONAL CHART



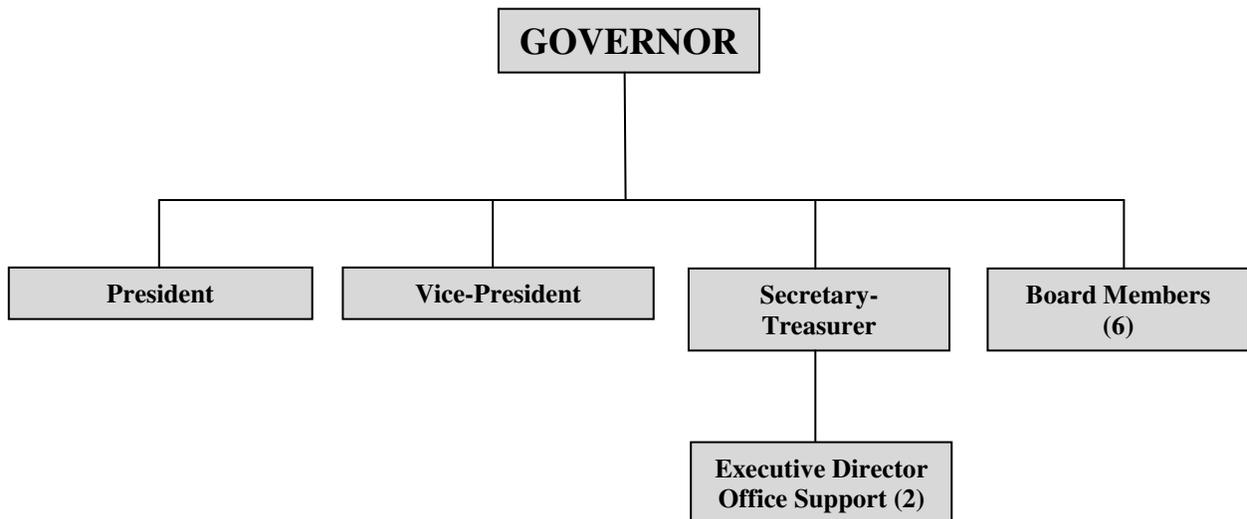
WATER DIVISIONS WY2017 ORGANIZATIONAL CHART



**WYOMING BOARD OF CONTROL
WY2017 ORGANIZATIONAL CHART**



**STATE BOARD OF
PROFESSIONAL ENGINEERS AND PROFESSIONAL LAND
SURVEYORS
WY2017 ORGANIZATIONAL CHART**



**STATE BOARD OF
EXAMINING WATER WELL DRILLING CONTRACTORS AND WATER
WELL PUMP INSTALLATION CONTRACTORS
WY2017 ORGANIZATIONAL CHART**

