Wyoming
State Engineer's Office

2020
Annual Report

Water Year 2020 (WY2020)
October 1, 2019 through September 30, 2020

STATE OF WYOMING

WATER YEAR 2020
(WY2020)

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, 2019 through September 30, 2020

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ADMINISTRATION DIVISION

Submitted by: Greg Lanning, State Engineer

The Administration Division is comprised of the State Engineer, fiscal operations, and human resources. Throughout the year, like other divisions, Administration has experienced changes as a result of budget reductions. The positions of Assistant State Engineer and the Executive Assistant to the State Engineer are no longer funded. Our single human resources position has now been consolidated with other similar positions throughout the state, but continues to be placed in the State Engineer's Office in Cheyenne.

STATE ENGINEER

The period of this report coincides with the water year beginning October 1 and ending September 30. Although outside of this reported water year, the retirement of Pat Tyrrell in April 2019 set off a chain of events that affected this report year. Pat Tyrrell served as the State Engineer for eighteen years. For several years leading up to Pat Tyrrell's retirement, Rick Deuell served as the assistant and interim State Engineer through November 2, 2019, one month into the water year. Greg Lanning was appointed State Engineer and arrived three weeks later on November 25, 2019.

Few could have predicted this water year would be so different. Not only was it unique for the physical nature of the weather and the management of Wyoming's water, but different in terms of the profound effects of a global pandemic resulting in facial coverings, social distancing and a serious decline in state revenues.

Any annual report written this year most likely includes some discussion of COVID-19. COVID-19 is the short term for Coronavirus Disease, identified in the year 2019. COVID-19 arrived in the United States early last year and was detected several weeks later in Wyoming on March 11, 2020. A state of emergency was declared two days later in Wyoming. On April 3, 2020, Wyoming reported 153 cases in 16 counties and cases continued to mount throughout the year. Subsequent orders and guidance defined operational measures taken to reduce the spread of the virus, such as restricting travel, social distancing, and teleworking. Later in the month and throughout the summer and fall, orders were extended as necessary.

While nationally major events such as the NCAA basketball tournament or the Kentucky Derby were being canceled or postponed, the State Engineer's Office (SEO) was forced to cancel public meetings to avoid gatherings that could have put persons at risk. In addition to conducting work at home to maintain distance and isolation, meetings that were not canceled were held virtually. Technology supporting remote or virtual meetings evolved from

occasional use to mainstream necessity. We now live in a world of sharing electronic documents, waiting in a virtual waiting room, and raising a virtual hand.

What began as a decent water year with good snowpack and predominantly full reservoirs quickly became a very hot and dry summer. More detailed descriptions of the water year follow later in this report; however, in general, you will find very little spring precipitation in the state and little to none of the typical monsoonal rains in mid-summer, resulted in varying degrees of drought throughout the state by the end of the water year. The worst areas of drought run in a line from north to south in the central portion of the state and extend to the eastern mid section of the state. These hot and dry (and windy) conditions resulted in draws on stored water and the regulation of many steams throughout the state, as well as some orders for emergency stock watering and fire suppression. Resultant fires in southern Wyoming and northern Colorado, in some of the worst drought areas, burned several hundred thousand acres.

Legislative sessions alternate every year between Budget and General Session. And even though this year was a Budget Session, which is roughly half the length in duration as the General Session, there seemed to be quite a bit of activity other than work on the budget. Bills affecting the SEO (listed by short title) in addition to the budget bill included the following: de minimis and instream flow, the possible formation of a Colorado River Committee, measuring devices, emergency water projects and state engineer qualifications.

Each of these bills generated good discussion throughout the session with the emergency water projects bill finding a place and funding within the Water Development Office. This bill was brought to the legislature as a result of the Goshen Irrigation Canal tunnel collapse and concern for other aging infrastructure. Discussion continued throughout the summer to refining guidelines in which irrigation projects may ultimately qualify for funding. All the remaining bills listed above never found full approval, but continue to be part of the discussion and have helped guide operations in the agency.

Interim topics for the summer of 2020 included orphan water rights, connected groundwater, North Platte employees and aging infrastructure. Discussions of aging infrastructure tended to follow the emergency funding discussions with the Water Development Office. Orphan water rights is a term that became associated with water rights that originally attached to irrigated farm lands and subsequently became orphaned with land development or other changes of land use. Many of these water rights are very senior in priority, yet in statute and procedure, it becomes cumbersome to transfer and/or put to use otherwise. Several changes to statute were discussed in committee, however only one change - easing notification requirements - carried through the summer. More work on this topic and the others will continue through the years to come.

Restrictions and budget cuts due to the pandemic have changed (and will change) service delivery within the SEO. Teleworking to enhance safety during the pandemic has proven to work reasonably well for routine operations. Much of the day-to-day business can be done remotely as long as there is access to computer networks. Phones, messaging, and virtual conferences are easily set up, and when in-person meetings are needed, customers are

encouraged to schedule ahead of time with adequate precautions. Throughout the pandemic, SEO doors remained open and with the goal of business as usual.

Almost all regular conference or board meetings were conducted virtually after pandemic restrictions, and although there were difficulties, there were also benefits. As an example, Board of Control meetings, having been held in-person for over one hundred years, were conducted online and virtual. These meetings of course lacked the conversations and other social benefits of in-person meetings; however, there were certain benefits and efficiencies such as reduced travel.

The efforts in the Green River basin, also known as the Upper Colorado River basin, were able to continue in a virtual environment. General meetings in previous years regarding drought contingency planning on the Colorado River throughout the upper and lower basin states was distilled into four focus groups in Wyoming last year to consider demand management and the effects of potential curtailment and/or mitigation of a water shortage. These meetings were well-attended virtually and for the most part, received the same attention and benefit as in-person meetings. In some instances, the virtual format provided a better platform to see presentations while also being able to share and scroll through documents and participate remotely. More details of these meetings and other similar compact interactions can be found later in this report.

FISCAL OPERATIONS

Fiscal operations manage funds, receipts, and payments for the SEO and relevant boards. In addition to revenue and expenditure oversight, fiscal operations oversees and manages the application of State and Federal accounting policies and procedures, grant fiscal management and reporting, payroll, fleet management, inventory control, and reporting.

The State of Wyoming coffers and budgets have historically depended on the energy sector and are known for trends that cycle with the industry. When the energy sector is doing well, budgets follow. The opposite also holds true. Revenues for the legislative budget session at the beginning of the year were somewhat soft and the total state biennial budget was reduced accordingly. However, after the session was over and budgets were set, the pandemic struck and projected state revenues dropped. Revenue reports commissioned as a result of the onset of the pandemic calculated a devastating one third less revenue than previously assumed for the budget session just a few months earlier.

State agencies were then set on a course to reduce general fund budgets in three phases. Phase I measures froze hiring, captured unspent money from the existing budget, and reviewed certain contracts for scope and possible savings. Phases II and III began the process of reducing the recently adopted biennial budget. Reductions in Phase II for the SEO resulted in a 10% decrease in the general fund budget. Phase II reductions included across the board cuts of nearly every operating budget line item, such as supplies and travel expenses. In addition, three positions were eliminated, and maintenance funds for e-Permit, the water right management system, were greatly reduced. Phase III reductions include additional cuts across

the board, and three additional positions. Phase III reductions totaled 5% of the general fund, and when combined with Phase II, the SEO general fund budget has been reduced 15% since March 2020.

Phase II reductions were implemented by the end of this reporting period, while Phase III reductions remain in the planning stage to be considered as a supplemental budget in the next legislative session. Both Phase II and III are published and are represented in Table 1 below. Please note changes to the budget and the tables below may still occur.

TABLE 1. SEO 2021-2022 BIENNIUM BUDGET

Divisions	BFY 2021 Total Budget	Phase II & III Reductions	Governor's Recommended Appropriation
Administration	2,132,672	(423,847)	1,708,825
Ground Water	3,187,774	(253,562)	2,934,212
Surface Water and Engineering	2,339,282	(292,288)	2,046,994
Board of Control	14,278,062		14,278,062
Support Services	2,158,744	(525,776)	1,632,968
Board of Professional Engineers and Professional Land Surveyors	976,556		976,556
Interstate Streams	1,406,325	(37,884)	1,368,441
Special Projects	17,820		17,820
North Platte Settlement	1,462,188	(39,664)	1,422,524
Well Drillers Licensing Board	266,946		266,946
Total By Division:	**$ 28,226,369**	**($ 1,537,021)**	**$ 26,653,348**
Sources of Funds			
General Funds	12,584,032	(1,537,021)	11,011,011
Other Funds	15,642,337		15,642,337
Total	**$ 28,226,369**	**($ 1,537,021)**	**$ 26,653,348**

In Table 1, salary and benefits total $21,451,721 (after Phase II and Phase III reductions), and comprise just over 80% of the SEO total budget appropriation. Below, SEO employment through September 31, 2020 is shown in Table 2.

TABLE 2. AGENCY PERSONNEL

Position Type	Number
Full-Time Employees	113
Part-Time Employees	6
Total	**119**

HUMAN RESOURCES

The primary functions of the HR department include recruitment and selection activities, classification of positions, compensation analysis, benefits administration, payroll services, performance management, and employee relations. HR also provides general counsel to employees, including Division Administrators and Superintendents, conducts administrative actions as required, state and federal employment and labor law compliance, and develops and implements policies, procedures, programs, and practices with input from employees and management. In addition to these duties, the one-person SEO HR department has a major role in advising the SEO budget team and preparing analyses as positions were considered in the budget reduction exercise. As mentioned above, the HR department of the SEO was combined with other HR positions and departments in the state-wide HR consolidation effort.

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GROUND WATER DIVISION

Submitted by:
Lisa Lindemann, P.G., Administrator
and the
Groundwater Division Staff

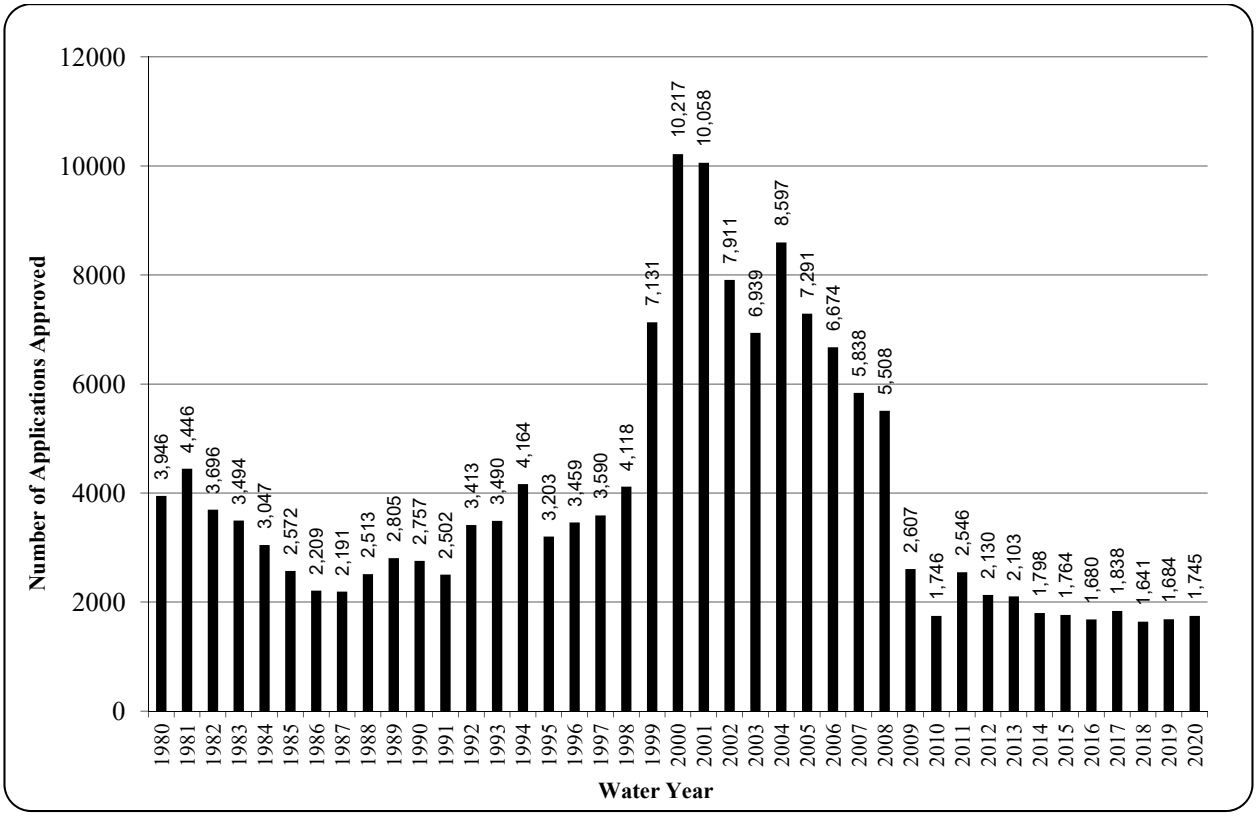
This report summarizes the activities of the Ground Water Division (GW) during Water Year 2020 (WY2020) which extends from October 1, 2019 to September 30, 2020.

PERMIT PROCESSING AND MAINTENANCE

APPLICATION PROCESSING

According to the State Engineer's Office (SEO) electronic water rights database, e-Permit, GW received 1,805 U.W. 5 Forms, or *Applications for Permit to Appropriate Ground Water* in WY2020. 1,745 applications were approved to permit status (Figure 1).

FIGURE 1. GROUND WATER APPLICATIONS APPROVED PER WATER YEAR



GW is increasingly more efficient in processing permit applications. Due primarily to an excessive workload associated with CBNG applications and permit maintenance, in 2009 only 44% of applications were processed within 30 days. In Fiscal Year 2020, GW processed 98.02% of 1,631 applications within one month, successfully exceeding the Performance Measure #2 goal of 85%. An experienced and dedicated staff, effective task management, and increased efficiencies in both e-Permit software and staff proficiencies in using e-Permit, all contributed to exceeding our goal.

GW received 1,150 Forms U.W. 6 (*Statement of Completion and Description of Well or Spring)* and 351 Forms U.W. 8 (*Proof of Appropriation and Beneficial Use of Ground Water).* Of the 351 Forms U.W. 8, 107 were Forms U.W. 8-P *(Proof of Appropriation and Beneficial Use of Ground Water – Pump Information)* which are required when a Form U.W. 6 is submitted without the pump information.

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

Permit Maintenance

GW cancelled 455 permits because 1) the permittee 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 1,278 expiration letters on September 1, 2020, notifying applicants that the time limitations to complete construction and/or beneficial use of water expire on December 31, 2020. During WY2020, GW received 303 requests for extension of time to complete construction or beneficial use. GW assigned approximately 2,118 water rights to reflect a different appropriator or a change in contact information.

ADJUDICATION OF WATER RIGHTS

During WY2020, GW received 83 *Maps to Accompany Proof of Appropriation and Beneficial Use of Groundwater* (Beneficial Use or "BU" Maps), representing 95 water rights to be inspected by GW staff (Note: maps may depict more than one well/water right). Of the 83 BU maps, 33 were drafts submitted for review prior to a licensed surveyor or engineer submitting a final acceptable BU Map, 41 were first submissions, and were revisions.

GW staff conducts field inspections, prepares proof forms, collects signatures and fees from the applicable appropriators, and presents proofs to the Board of Control (BOC) for adjudication. In WY2020, 28 groundwater proofs were presented at the November 2019 BOC meeting, and 79 groundwater proofs were presented at the May 2020 BOC meeting.

During Fiscal Year 2020 (the reporting period captured in the SEO's Strategic Plan), 80.3% (i.e., 85 of 107) of GW's water right adjudication files were completed within three years or

less from the date of acceptance, exceeding GW's and BOC's combined Performance Measure No. 6 Goal of 50%.

GROUND WATER CONTROL AREAS

LARAMIE COUNTY CONTROL AREA

Elections

Elections for the Laramie County Control Area (LCCA) Advisory Board members representing Districts 2 and 3 were held on August 20th, 2020. There were no nominees for District 2; Laurie Jackson was elected to represent District 3. Respectful of Governor Gordon's public health restrictions related to COVID-19, completed ballots were accepted in-person, by the U.S. Postal Service, and by email. Compliant with W.S. 41-3-913(e), the Advisory Board will be asked to nominate a candidate to replace the board position representing District 1 which was vacated during term. The Advisory Board comprises the following members:

District 1: Vacant (to be filled by the Board)
District 2: Vacant
District 3: Laurie Jackson
District 4: Ty Lerwick
District 5: Brady Petsch

Petitions

The LCCA Advisory Board met on October 16, 2019 and on June 29, 2020. The Board provided favorable recommendations for two petitions to the Board of Control (BOC):

Grace Valley LLC: BOC Petition Docket No. I-U-2019-1-2 (Amended) for a change in location of the Werner #11 Well, Permit Nos. U.W. 17034, and 156192, the Enl. Werner # 11 Well. The Werner #11 well is located in the SWNE of Sec. 3, T12N, R63W, and is adjudicated for 675 gallons per minute (gpm) to irrigate 136.9 acres; the Enl. Werner # 11 well is for 0 gpm to irrigate 784.6 acres. The reason for relocating the well is because it was not cased correctly during the 2017 relocation and requires another relocation to produce an adequate supply of water. The relocated well will be located within the same groundwater basin as the original well and will withdraw water from the same aquifer as nearly as can be determined. Depth of the original well was 235 feet, the previously relocated water was 350 feet, and the depth of the current well will be 370 feet. The petition was publicly noticed in both the Pine Bluffs Post and the Wyoming Tribune Eagle August 8 – 22, 2019. The protest period ended September 3rd, 2019. No protests were received.

Burnett Land and Livestock: BOC Petition Docket No. I-U-2020-1-1 for change in location of the Bauman Ranch 14-A, Permit No. U.W. 19798, priority March 6, 1973. The well is located in the NWSW of Section 17, T12N, R61W, and is adjudicated for 600 gpm to irrigate 130.1 acres. The reason for the requested change is the casing of the present well has

deteriorated and a partial cave in has occurred. There will be no increase in the amount of the appropriation or the number of acres irrigated. Petition was publicly noticed commencing January 30, 2020. Protest period ended February 23, 2020. No protests received.

Applications

The LCCA Advisory board reviewed the following groundwater applications in WY2020 and recommended the State Engineer approve the applications as presented:

Gen Park Holdings LLC and Meriden Energy Partners LLC: TFN U.W. 45-10-198 (FH-1), and U.W. 45-1-199 (FH-2). Both applications are for miscellaneous use. Water from the wells will be used for construction of well pads, roads, drilling completions and dust abatement involved with drilling exploratory and production wells in Goshen and Laramie Counties, Wyoming. The estimated depth of both wells is 1,150 feet, and the target is the Fox Hills Sandstone. The FH-1 well will be located in T18N, R62W, Section 06, SESE. The application requests 250 gpm and 70 acre feet annually. The FH-2 well will be located in T18N, R62W, Section 07, NENE. The application requests 250 gpm and 39 acre feet annually. Applications were publicly noticed commencing January 16, 2020. Protest period ended January 30, 2020. No protests received.

Roaring Fork Midstream: TFN U.W. 45-8-177, Chalk Bluff 2, is an application for Industrial use. The proposed Chalk Bluff 2 well will be located in T12N, R66W, Section 11, NWSW, Laramie County, and at an estimated depth of 700 feet. The well will provide makeup water for an amine system to treat natural gas of excessive carbon dioxide .The proposed maximum volumetric quantity of water to be used is 460,000 gallons. Application was publicly noticed commencing December 5, 2019. Protest period ended December 30, 2019. One protest received and resolved.

The State Engineer's LCCA Order

On April 1, 2015, the State Engineer issued an order to guide groundwater development within the LCCA for the next five years. The 2015 Order identified four distinct areas within the LCCA characterized by varying hydrogeologic conditions and levels of development; the "Drawdown Area," the "Conservation Area," the "Unaffected Area," and "Underlying Units." In all but the "Unaffected Area," which is largely north of Horse Creek, the order set forth well spacing requirements for all new wells. The Order also required meters for all wells except for stock and domestic uses, and annual reporting of metered amounts of water to the State Engineer's Office annually. Meters had to be installed prior to use in Water Year 2017.

The State Engineer's Office has been reviewing the effects of the Order since November 2019. On March 4, 2020, the State Engineer held a hearing to present the results of operations under the first five years of the Order and to seek testimony from interested parties. State Engineer Greg Lanning accepted comments for 30 days after the hearing. A new order was not issued by April 1, 2020; subsequently, the terms of the 2015 Order will continue in force, for consecutive three year periods until a new order is issued. The 2015 Order will remain effective until rescinded, superseded, or modified by another order of the State

Engineer, or replaced by an appropriator agreement as envisioned in Wyoming Statute § 41-3-915(c) and approved by the State Engineer.

Adjudication of groundwater rights is required under the State Engineer's Order for the LCCA, and was to be completed by the end of November 2017. Three separate notices have been sent to affected appropriators since the Order was issued in 2015 - two of those by certified mail. Those appropriators had approximately two and a half years to adjudicate their water rights.

For the second year, Water Superintendent Brian Pugsley (Division 1) appointed Adam Quist (GW) as an Assistant Hydrographer-Commissioner to District 1 of Wyoming Water Division 1, to assist the Division 1 Hydrographer/Commissioner with conducting inspections of flow meters on Miscellaneous, Irrigation, Municipal, and Industrial use wells within the LCCA.

To assist in this effort, Markus Malessa (GW) developed an application for smart phones with both Geographic Information System (GIS) mapping capability as well as aerial imagery so wells and meters could be accurately located. These tools increased efficiencies exponentially in taking photos, logging notes, logging meter readings, and filtering data as to which meters required inspections. Due to accessibility issues, not all wells were visited to document meter installation and water usage reporting, however 693 of 807 permits were addressed; and 480 of 564 wells or points of diversion were inspected.

Of the 183 groundwater rights that required adjudication, 41 water rights (22%) were eliminated or cancelled. Of the remaining 142 water rights, 87 water rights (48%) were adjudicated, 21 (11%) were in some stage of the adjudication process, and 34 (19%) had taken no action to adjudicate their water rights by the end of WY2020.

Of the 44 groundwater permits that were approved subsequent to the effective date of the Order, five have been adjudicated, six are pending adjudication, twelve do not require adjudication (i.e., Parts II and III are waived), one requires no further action, one has expired, 17 are in the "pre-expiration" stage (i.e., expire December 31, 2020), and two were eliminated.

As the Division 1 Water Commissioner/Hydrographer discovers unadjudicated wells, they will be foreclosed from use until the process of adjudication is complete.

PLATTE COUNTY CONTROL AREA

Elections

Elections for the Platte County Control Area (PCCA) Advisory Board members representing Districts 1 and 2 were held August 20, 2020. Respectful of Governor Gordon's public health restrictions related to COVID-19, completed ballots were accepted in-person, by the U.S. Postal Service, and by email. Compliant with W.S. 41-3-913(e), the Advisory Board will be asked to nominate a candidate to replace the board position representing District 3 which was vacated during term. The Advisory Board comprises the following members:

District 1: Doug DeRouchey
District 2: Richard Johnson
District 3: Vacant (to be filled by the Board)
District 4: Jason Reyes
District 5: Amy Miller

Petitions

The PCCA Advisory Board met on June 23, 2020 and provided favorable recommendations for one petition to the Board of Control (BOC):

Southard Land and Cattle LLC: BOC Docket No. I-U-2018-4-3, for change of type of supply, clarification of the record, and issuance of an amended Certificate of Appropriation for the Russell No. 1 Well, Permit No. U.W. 82848, with priority of July 14, 1989. The Russell No. 1 Well is adjudicated for the irrigation of 112.6 acres in Sections 26 and 27 of T27N, R68W, at a rate of 400 gpm. This appropriation will be re-described as providing an additional supply to lands that have an original supply from water diverted from Cottonwood Creek. There will be no additional lands irrigated under this proposal.

Applications

The PCCA Advisory Board reviewed two groundwater applications in WY2020 and recommended the State Engineer approve both:

Stellpflug Cattle Co LLC: TFN U.W. 45-4-217, John #1, and TFN U.W. 45-5-217, Roy #1, both propose Stock and Irrigation use in Platte County, Wyoming. TFN U.W. 45-4-217, the John #1 well, would be located in T26N, R66W, Section 23, SESE. TFN U.W. 45-5-217, the Roy #1 well, would be located in T26N, R66W, Section 24, NESW. Each application proposes using 900 gpm for a 160-acre center pivot sprinkler and four stock tanks. The volumetric quantity would not exceed 427 acre-feet per application. *Applications were publicly noticed commencing May 6, 2020. Protest period ended May 20, 2020. No protests received.*

Southard Land and Cattle LLC: TFN U.W. 45-6-311, Enl Russell No. 1. The Russell No. 1 Well is located in the SENE of T27N, R68W, Section 27 and is adjudicated for the irrigation of 112.6 acres in Sections 26 and 27 of T27N, R68W at a rate of 400 gpm. This proposal requests to use water from the Russell No. 1 well to irrigate an additional 50.5 acres in Section 27 at an additional 200 gpm rate of flow. The total volumetric quantity to be used on an annual basis would be 200 acre-feet. These lands have an original supply from water diverted from Cottonwood Creek. *Application was publicly noticed commencing May 13, 2020. Protest period ended June 6, 2020. No protests received.*

PRAIRIE CENTER CONTROL AREA

There were no applications or petitions that required a recommendation from the Prairie Center Control Area (PrCCA) Advisory Board during WY2020.

MONITORING WELL NETWORK

GW maintains a network of 112 active monitoring wells throughout the state and a number of inactive monitoring wells. Data for the SEO's monitoring wells are available at http://seoflow.wyo.gov/.

Furthermore, GW 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.

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.

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.

PLATTE COUNTY

There are fourteen active monitoring wells in Platte County. Both PCCA 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.

LA GRANGE AREA

Nine active monitoring wells are located in the area surrounding LaGrange. These monitoring wells are predominantly located in the LaGrange aquifer and assist with developing a record of long term water availability in the greater LaGrange and Hawk Springs Reservoir area.

PRAIRIE CENTER CONTROL AREA AND MADISON MONITORING WELLS

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

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 Formations. 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. This well has been permitted as U.W. 210094, and Conditions and Limitations allow for continued access by the SEO to record water levels. As of this writing, the well has not been connected to the landowner's distribution system and the landowner has not installed any pumping equipment.

Additionally, the Lakota and Minnelusa wells in this area are both compromised with obstructions or casing collapse. GW does not currently have financial means to abandon the Lakota and Minnelusa wells. During WY2018, GW completed installation of locking monuments on these wells to limit unauthorized access.

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 systems continue to communicate with this office, including reports 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.

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.

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 released a Request for Proposals and secured a contract with Matheson Drilling, Inc. to

perform well abandonment activities for five coal seam and gas pressure monitoring wells. GW is also pursuing the option to turn several of the CBNG monitoring wells over to landowners or grazing leaseholders for conversion to water wells. This activity is expected to occur during WY2021.

SPLIT ROCK MONITORING WELLS

During WY2017, 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.

During WY2018, GW abandoned 11 of the wells. The Arkansas Flats and Upper Rush Creek locations were not plugged due to interest in developing them for stock watering. The SEO has no future plans for these locations.

During WY 2019, GW finished rehabilitation efforts on the Split Rock project Site Well No. 2 (sometimes referred to as Split Rock #2 or Split Rock Recorder Site). The site now consists of a locking monument and the annulus has been filled with bentonite chips to the ground surface.

During WY 2020, GW abandoned the Split Rock Project Site Well #1 and secured the Split Rock Project Site Well #4 (also referred to as the Production Well).

Ground Water does not anticipate any future activities with the Split Rock Monitoring Well network.

GROUNDWATER INVESTIGATIONS/STUDIES

USGS/SEO LANCE/FOX HILLS STUDY

As part of the cooperative agreement with the United States Geological Survey (USGS), the SEO authorized the USGS to conduct a study to 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:

- 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

- 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.

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 surface. A basal White River Group (Chadron Fm.) well was installed between 467 and 482 feet below ground surface. 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. Past reports have lamented how this project is beyond the control of the Division; however, during WY 2019 the USGS provided a draft version of the report during internal USGS colleague review. GW does not know if a report is forthcoming for this effort.

CROW CREEK STUDY

During WY2017, the State Engineer rejected several Surface Water filings (TFN 36 5/158 and TFN 36 1/145) and declared "*surface waters of Crow Creek, downstream of Cheyenne, to be 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*" (see State Engineer's Letter to Burnett Land and Livestock LTD, LLP, dated May 31, 2017 associated with the above referenced TFNs). During WY2018, GW developed a plan to install and measure Crow Creek downstream of the City of Cheyenne. Pressure transducers were purchased and installed to collect data.

During the summer of 2018, SEO staff installed 13 stream gauge locations in Crow Creek and assumed management of one historic USGS gauge location. The locations were chosen to help further characterize the relationship between stream flow and groundwater following the "one source of supply determination".

During WY2019, the State Engineer's Office convened a collaborative group to help guide data collection efforts on Crow Creek. The collaboration explored the importance of the resource to each stakeholder and provided a summary of WY2018 data-collection activities. In a second meeting, the collaborative discussed various locations of interest using mapping software. After developing a list of options, interested parties considered how desirable each location was for them. In the third meeting, interested parties indicated how important each option was to them within the financial constraints of the State Engineer's Office. Interested parties also collectively arrived at the importance of each gauging location for the State Engineer's Office staff to focus measurement activities. The collaborative effort helped develop working relationships among stakeholders and also between stakeholders and the State Engineer's Office.

During WY2020, the State Engineer's Office again convened the collaborative group to help guide data collection efforts on Crow Creek. The group decided to focus data collection on a few key sections of Crow Creek and also supported adding two groundwater monitoring wells as data-collection points. One of these wells is an unused irrigation borehole on the Smith's property and the other is at the Carpenter Cemetery. These wells will be used to evaluate the timing of groundwater recharge from high stream-flow events which reach the Carpenter Area.

OIL AND GAS RELATED ACTIVITIES

WATER SUPPLIES FOR OIL AND GAS ACTIVITIES

GW continued to receive applications for water supply wells supporting oil and gas exploration, drilling, and completion activities in WY2020, primarily in Converse and Campbell counties. Applications 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, does not receive a permanent water right, and provides the opportunity to request an extension of the permit period. 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. Both companies and individuals are taking advantage of the online reporting option and thousands of monthly water production reports are submitted through GW's 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. Scanned images of the water production reports are currently available to the public through e-Permit.

Due to control measures restricting new well development in the 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 LCCA (April 1, 2015) by adhering to spacing requirements and possibly targeting deeper sources such as the Lance or Fox Hills Formations.

GW staff spent significant resources providing guidance to oil and gas operators in obtaining and permitting water supply sources, and cooperating with other divisions in the agency to ensure proper permitting and/or authorization of appropriate water use.

COAL BED METHANE

Coal bed natural gas (CBNG) or coal bed methane (CBM) production remains suppressed in the Powder River basin and few groundwater permits for coal bed methane have been issued as a result. 36 new CBM applications were received in WY2020 (Table 3).

TABLE 3. CBM GROUNDWATER PERMITS

Annual Report Year	Total Applications
2020	36
2019	22
2018	31
2017	65
2016	0
2015	42
2014	76
2013	50
2012	180
2011	654
2010	747
2009	706
2008	2157
2007	3405
2006	3632
2005	4784
2004	4758
2003	3938
2002	5663
2001	6093
2000	5811
1999	2532

CONVERTING COAL BED METHANE WELLS TO WATER WELLS

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 (http://seo.wyo.gov/home/news-and-press-releases). Any application received by GW after January 21, 2014 must be accompanied by both a landowner release form and an approved Sundry Notice from the WOGCC (and/or the U.S. Bureau of Land Management (BLM)), indicating the CBM well is appropriate for conversion to a water supply well.

Requests for extension of time for completion and beneficial use of water have been granted since the initial approval of the conversion applications. Recompletion of CBM wells to water wells appears to be a slow process, largely dictated by economics.

ELECTRONIC REPORTING OF WATER PRODUCTION

The *Online Water Use Reporting Web Application* became available for use by the public in January 2017. During WY2020, GW received several thousand 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, as well as a mechanism that tracks compliance of water rights affected by the State Engineer's LCCA Order.

MODIFIED NORTH PLATTE DECREE

During WY-20, GW continued to report to the North Platte Decree Committee (NPDC) on a monthly basis about applications received, and permits approved for Irrigation use within Wheatland Irrigation District, and for Industrial and Municipal use within the remainder of the Basin, which are subject to the provisions of the Modified North Platte Decree. Two Municipal use and twelve Industrial use applications were received in WY2020. Eleven Industrial use and one Municipal use permits were approved in WY2020.

The Ground Water Division also reported the annual production pumpage of ground water under 77 Irrigation use permits within the Wheatland Irrigation District to the NPDC during WY-20.

COMPLIANCE WITH EXECUTIVE ORDER 2019-3

GW reviewed 210 U.W. 5 Forms proposing de minimis uses of water, and attached applicable conditions and limitations to approved water rights compliant with Governor Gordon's Executive Order 2019-3, Greater Sage-Grouse Core Area Protection.

When appropriate, applicants were directed to the Wyoming Game and Fish Department (WGFD) when a Density and Disturbance Calculation Tool (DDCT) process was required.

GW and other SEO staff developed the GIS and aerial imagery data from which Big Game Migration Corridor information could be assessed while processing permit applications.

CUMULATIVE HYDROLOGIC IMPACT ASSESSMENTS

GW provided agency reviews of the following Cumulative Hydrologic Impact Assessments (CHIAS) to the Department of Environmental Quality/Land Quality Division:

Draft Cumulative Hydrologic Impact Assessment of the Proposed Brook Mine, Upper Tongue River Basin, Wyoming (TFN 6 2/025) (CHIA #39).

Revised Draft Cumulative Hydrologic Impact Assessment of the Proposed Brook Mine, Upper Tongue River Basin, Wyoming (TFN 6 2/025) (CHIA #39).

INDUSTRIAL SITING COUNCIL DOCKET REVIEW

GW provided an agency review of the Exxon Mobil Corporation LaBarge Carbon Capture Project (Wyoming Industrial Siting Council Docket DEQ/ISC 19-06) to the Department of Environmental Quality/Industrial Siting Division.

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 29 reviews in WY2020 – 17 of which were requested by WDEQ and 12 that were related to minor or simple subdivisions requested by county government. Of those, seven WDEQ reviews yielded water right issues that had not been properly addressed, and eleven county government reviews revealed water right issues.

GROUND WATER ADVISORY COMMITTEES

The Ground Water Advisory Committees did not meet in WY2020. Recruitment of active participants on the committees remains a challenge for GW, as does both the statutory responsibilities related to the advisory committees and their subsequent effectiveness.

WATER YEAR 2020 IN REVIEW

GW was extremely fortunate to have the following skilled and talented people join our staff in WY2020:

Michelle Gess, Natural Resource Analyst (March 2, 2020).
Rachael Ross, Office Support Specialist II (February 3, 2020).
Kaila Willis, Natural Resource Analyst (December 2, 2019).

GW also lost employees during WY2020. We wish them well and support their professional growth in other arenas:

Cyndee Linn, a GW employee since November 1, 2005, transferred to the Support Services Division on October 9, 2019.
Kelley Calhoun transferred to the SW Division on November 18, 2019.
Bill Kledaris departed on December 27, 2019.
Michelle Gess transferred to the SW Division on September 14, 2020.

THE EFFECTS OF COVID-19

Telework

Subsequent to March 11, 2020 virus detection in Wyoming, agency staff began a trial implementation of teleworking based on social distancing on March 19. On March 24, 2020, the State Engineer provided the "COVID-19 Teleworking Continuity of Operations Plan" to Superintendents, Administrators and Managers. The plan determined a reduced force in the Cheyenne office was well-advised, depending on the specific factors and needs, and that a reduction of employees in the office must be balanced with the need to maintain a functioning office that remains open for business. Each Division submitted a proposed telework plan for the State Engineer's consideration and approval. GW has since been operating in accordance with that plan.

GW staff continues to have a strong physical presence in the office and has successfully kept up to date on all work tasks. Telework has allowed staff to have productive conversations with appropriators and clients, uninterrupted by busy office interruptions (and most likely, a need for human contact). GW staff rotate in and out of the office on a routine basis to maintain relations and communications with both GW and other Agency staff. Email communication has been maximized and is currently the "glue that binds" us together.

However, the success that we enjoy would not be possible without the amazing GW staff who continue to work, either from home or the office, who support each other, serve our customers without interruption, and do an incredible job, each and every day. The Administrative Support Staff Dani Castle, Linda Miller, Rachel Ross, Sue Kinsley, and Marla Wertz (Supervisor), handle the brunt of incoming calls and requests, perform the vast majority of GW's data entry, maintain an accurate water rights database, performs countless water rights searches, and serve as the agency's "front desk". I cannot thank them enough for all they do.

The Technical Staff, John Harju (Assistant Administrator), Adam Quist, Beth Tebben, George Moser, James Neely, Jeremy Manley (Supervisor), Josh Koldeway, Kaila Willis, and Markus Malessa (Supervisor) continue to not only exceed GW's strategic plan goals, but professionally handle the myriad of groundwater-related issues that arrive on a daily basis, ranging from water right disputes, well contamination, permitting issues, unpermitted wells, inadequate water supplies, etc., in addition to their primary responsibilities of permit processing, water rights maintenance, adjudication of water rights, maintenance of our monitoring well network, groundwater and surface water data collection, and the manipulation and presentation of that data so it is publicly accessible. I appreciate the leadership provided by both the supervisors and senior staff, and their willingness to assist and mentor each other on a daily basis.

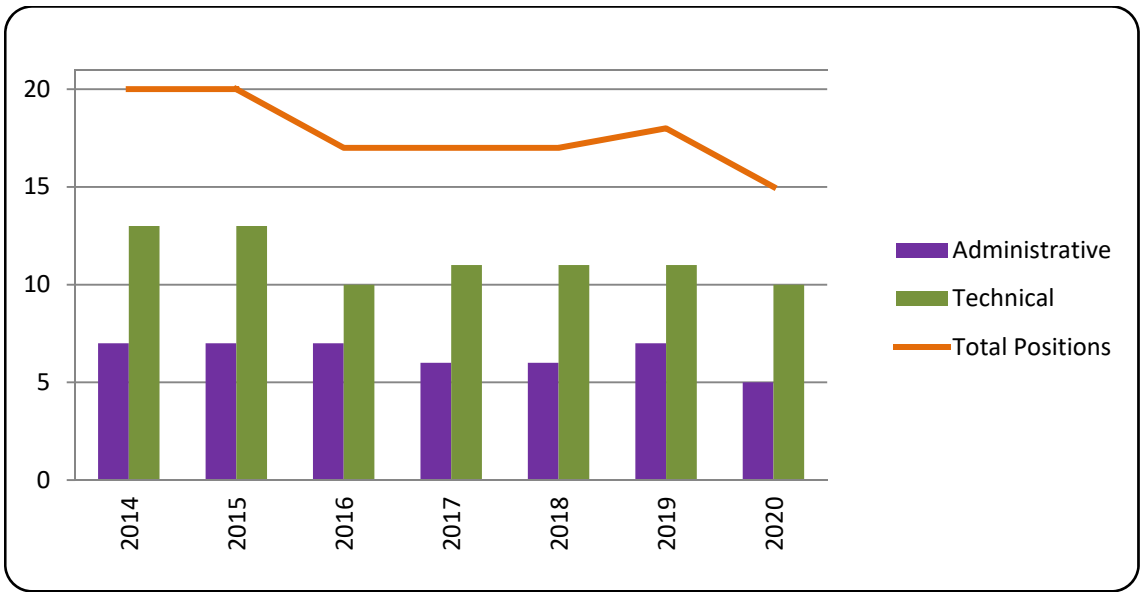
Staff Reductions

During WY2020, GW was reduced to a staff of 16 positions with 15 assigned employees.

- Position #00660 (Natural Resource Analyst) was transferred to the Surface Water Division effective September 14, 2020.
- Position #00220 was reclassified and transferred to the Support Services Division. However, the position is still budgeted as a GW position.
- Position #00960 (Office Support Specialist II) was taken in the COVID-19 Step Two reduction in August 2020.

As shown on Figure 2, GW has reduced by 5 positions during the span of 6 water years. Staff reductions have an effect on the services we can provide our clients.

FIGURE 2. GROUND WATER DIVISION STAFF NUMBERS



Education and Outreach

Budget cuts and ramifications associated with COVID-19 all but eliminated GW's travel, continuing education, and outreach efforts during WY2020. However, several GW staff, George Moser, Kaila Willis, and Michelle Gess, took every opportunity to reach out to local groundwater appropriators, establish open channels of communication, foster mutually beneficial working relationships, work cooperatively on water-related projects, and further our appropriators' understanding of both groundwater and surface water regimes as well as resource management.

GW staff coordinated remotely with other state and federal regulatory agencies, reviewed water management and usage proposals, investigated groundwater supply and quality issues, and fulfilled a broad variety of information requests, including:

Jeremy Manley represented the Agency on the U.S. Army Corps of Engineers (USACE) Missile Site 4 Restoration Advisory Board, USACE Missile Site 4 Technical Project Planning (TPP) workgroup, and USACE Missile Site 3 public meetings and history for new USACE staff.

Jeremy Manley represented GW at the Platte River Recovery Program Technical Advisory Committee meetings and the Platte River Recovery Program Independent Scientific Advisory Committee meetings.

GW staff responded to multiple Wyoming Oil and Gas Conservation Commission (WOGCC) injection well aquifer exemption request documents.

Marla Wertz participated in the National Multi-agency Coordination Group's Delegation of Authority to Area Command. The Area Command Team 2, an All Hazard Incident Management Team, was tasked with writing a Covid-19 Wildfire Response Plan for 39 states and Puerto Rico, as well as Strategic Planning for Wildfire Preparedness.

GW staff are members of several trade affiliations, participate on professional boards, and maintain professional licensures. Participation was largely "remote" due to COVID-19 restrictions:

- Wyoming Board of Professional Geologists,
- National Ground Water Association,
- Wyoming Geological Association,
- Wyoming Licensing Board for Water Well Drilling Contractors and Water Well Pump Installation Contractors, and
- Wyoming Geological Survey Advisory Board.

ACCOMPLISHMENTS

Electronic Notifications

GW's move to electronic notification of approved water right documents, permit extensions, water right searches, etc. in 2019, continue to have an increased positive effect on staff efficiency, significantly decreased the time for which an appropriator has to wait for a water-rights related document and/or correspondence, and resulted in tremendous cost savings due to the near elimination of physical mailings through the U.S. Postal Service.

Electronic Reporting

Continued improvements to GW's water production database increased the ease with which appropriators report high-capacity groundwater production electronically. During WY2020, GW staff modified the reporting program to allow the SW Division to track groundwater production associated with temporary water use agreements (TWUAs).

CHALLENGES

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 reduced 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 USGS 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 have been reduced to the point at which it is often unclear if financial support is available until the end of a fiscal biennium. In some instances, the lack of funding leads to Permit Conditions and Limitations specifying monitoring equipment which an appropriator must install to provide valuable hydrologic information to the Division.

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, 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 for minimal maintenance of the observation well network and monitoring equipment replacement/repairs.

IN MEMORIAM
Martin Zimmerman (1961 - 2020)

Words, even the best of words, cannot capture the void created by the loss of our coworker and friend, Martin Zimmerman. We grieve for you, cry for your family, and only now, can begin to laugh and smile at your memory. We will miss you always…

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SURFACE WATER DIVISION

Submitted by: Nathan Graves, P.E., Administrator

The Surface Water and Engineering Division report includes surface water and weather modification permit activities, petitions submitted to the State Engineer, and dam safety activities. Except for the Dam Safety Program, the numbers and comments are for the period from October 1, 2019, through September 30, 2020, which is referred to as WY2020.

SURFACE WATER SECTION

OBJECTIVES

Wyoming Statutes direct the objectives of the Surface Water section (SW). The objectives of the Surface Water Division (SW), 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 rights records to reflect the current status of said records accurately.

3. Providing technical advice and instruction to constituents regarding procedures for filing applications, petitions, and temporary water use agreements.

4. 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

The Surface Water section continues to process applications and petitions with a "paperless" approach. Ongoing outreach and education efforts with agents, applicants, and other State Engineer's Office staff have resulted in a system that is more compatible with our e-Permit computer database.

Table 4 provides a comparison of applications and petitions filed with the State Engineer for the past years, beginning with WY2008 and continuing through WY2020.

TABLE 4. APPLICATIONS/PETITIONS RECEIVED, PROCESSED, END OF YEAR (EOY) BACKLOGGED

WY	APPLICATIONS			PETITIONS		
	No. Recd	Approve/ Reject	EOY Backlog	No. Filed	Approve/ Dismiss	EOY Backlog
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
18	554	602	43	119	108	8
19	608	608	43	69	49	28
20	499	505	37	19	21	10*

*Number corrected to reflect hand audit of outstanding petition instruments.

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.

Table 5 provides a breakdown of applications received for processing by type, for WY2016-2020.

TABLE 5. APPLICATIONS RECEIVED

Category	WY2016	WY2017	WY2018	WY2019	WY2020
Ditches/Pipelines	79	105	109	96	69
Enlargements	37	30	55	43	31
Reservoirs	116	168	173	240	160
Stock Reservoirs	180	120	104	131	129
Temporary Use	113	96	113	93	108
Instream Flow	0	3	0	5	2
Totals	**525**	**522**	**554**	**608**	**499**

TEMPORARY WATER USE AGREEMENTS

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 two years, for temporary use. Persons interested in temporarily acquiring the ability to use an existing water right can enter into temporary water use agreements (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.

The number of TWUAs received and processed in WY2020, compared with previous water years, is shown in Table 6.

TABLE 6. TEMPORARY WATER USE AGREEMENTS PROCESSED

Water Year	No. of TWUAs
2011	123
2012	144
2013	138
2014	122
2015	94
2016	85
2017	98
2018	76
2019	114
2020	79

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 e-Permit database. A total of 948 endorsements were completed in WY2020. Table 7 provides an overview of the number and type of permit endorsements executed in WY2020.

TABLE 7. WY2020 PERMIT ENDORSEMENTS

Endorsement Type	Number
Extension Requests	148
Assignment Requests	253
Cancellations	240
Statements of Completion/Beneficial Use	194
Eliminations	70
Total Endorsements	**905**

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 the issuance of water rights permits.

SAGE GROUSE PROTECTION

We continue to ensure 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 2019-3, Greater Sage-Grouse Core Area Protection (GSCPA) and a actively working to provide data to the Sage Grouse Implementation Team (SGIT).

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

Five permits were issued for weather modification (cloud-seeding) purposes during WY2020.

SAFETY OF DAMS SECTION

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, those which impound 50 acre-feet or more, or 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 ensure the public safety or the protection of property. Essentially, the Act requires applicable facilities to be designed by a professional engineer and inspected every 10 years. Agency policy, however, requires these dams to be inspected every 5 years.

OBJECTIVES

The objective of the Wyoming Safety of Dams program is to protect the public by reducing the potential for flooding, loss of life, and property as a result of the failure of a dam. This objective is accomplished in part by assisting owners, operators, and engineers with resources needed to maintain a safe dam. This includes periodic dam inspections, plans and specifications, owner education, review for new and existing facilities, outreach seminars, and workshops.

ACCOMPLISHMENTS

The Safety of Dams program continues to review plans and specifications for the repair of existing dams and construction of new dams. The review process for both new and rehabilitation projects involve working with the owners and their engineers to ensure the dam project meets the current state of the practice design standards.

All of the active dams in the inventory of the Safety of Dams program are inspected at least once every five years by personnel of the State Engineer's Office. There were 1542 active dams in the inventory during WY2020, which is up from the 1528 dams that were active in WY2019. Several dams associated with Coal Bed Methane (CBM) production have been reclaimed and removed from the active dams list. A total of 292 dams were inspected from October 1, 2019, to September 30, 2020. Correspondence is delivered to the owners after every dam inspection detailing findings of the inspection and recommending repair or maintenance action. There is an ongoing effort to better involve the owners and operators of the dams with the inspection process and general education about dam safety. The owners and operators of the dams are encouraged to inspect their facilities more often than required by state statute and agency policy.

The Safety of Dams program has updated inundation maps for all of the dams classified as high or significant. The significant hazard dams are being reviewed for possible classification changes.

OTHER ACTIVITIES

The Wyoming Safety of Dams program is active with the Association of State Dam Safety Officials (ASDSO). ASDSO is a national organization with over 3,000 members representing private dam owners, state and federal government, consultants, and engineers.

Wyoming receives funding from the Federal Emergency Management Agency (FEMA) in the form of the National Dam Safety Program (NDSP) grant. This grant is provided annually to states with active dam safety programs that meet several requirements set by FEMA. The Safety of Dams program continues to assist dam owners and engineers with outreach training and informational seminars.

NDSP funds are continually used to purchase equipment for the Safety of Dams program. Cameras and survey equipment are purchased annually.

SUMMARY

The number of new dams constructed in the state continues to decrease every year. Reconstruction and repair of existing dams are increasing as the average age of the dams approaches 60 years old. The Safety of Dams section continues to work with dam owners, operators, and engineers to ensure that the existing dams in the state are in a safe condition, and new dams are designed and constructed to the current state of the practice. This is accomplished with increased inspection efforts, technical assistance, and continuing education opportunities for everyone involved with dam safety.

BOARD OF CONTROL DIVISION

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

OBJECTIVES

1. To promptly process petitions seeking to amend adjudicated water rights and to present these petitions for review and consideration by the Board of Control.
2. To review water distribution plans and/or authorizations for detachment of water for consideration by the State Engineer or the Board of Control within 30 days.
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 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 4 Water Divisions.

MAJOR ACCOMPLISHMENTS

PETITIONS

During the period of October 1, 2019 to September 30, 2020 (WY2020), the Board of Control Division (Board) received 110 petitions, a decrease of 30 petitions or 21.4% 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 8.

TABLE 8. PETITIONS RECEIVED

Water Division	Surface Water	Ground Water	Total
I	36	12	48
II	15	6	21
III	15	5	20
IV	21	0	21
TOTAL	**87**	**23**	**110**

Final action was taken on 119 petitions, which were either granted, denied, dismissed or withdrawn. This was a decrease of 2 petitions or 1.7% from the previous reporting period. Some petitions carried over from the previous reporting period allow for the resolution of technical, engineering, legal problems, and in some cases, public hearings. The petitions handled by the Board of Control ranged from those with simple issues, such as a change of point of diversion, to those more complex in nature, such as change of use and declaration of abandonment.

PROOFS

During WY2020, the Board received 330 proofs. One hundred and seven (107) were groundwater rights (wells), and two hundred and twenty-three (223) were for surface water rights. In addition to these 330 proofs, 116 stock reservoirs were inspected and found to be constructed within the terms of the permit. This was a slight increase of 4 proofs and an increase of 30 stock reservoirs inspected from the previous reporting period. The total number of proofs and stock reservoirs received to be endorsed by each division are shown in Tables 9 and 10 respectively.

TABLE 9. PROOFS RECEIVED

Water Division	Surface Water	Ground Water	Total
I	30	10	40
II	95	42	137
III	58	17	75
IV	40	38	78
TOTAL	**223**	**107**	**330**

TABLE 10. TOTAL STOCK RESERVOIRS ENDORSED

Water Division	Total
I	1
II	100
III	14
IV	1
TOTAL	**116**

As reported in WY2019, the Board of Control assumed responsibility for reviewing and advertising all Ground Water proofs due to staffing changes in the Ground Water Division. This change streamlined the process by removing several duplicative steps between the Ground Water Division and the Board of Control. The Board was able to quickly assimilate this additional responsibility as a similar process was already in place for the review and advertisement of Surface Water proofs. This additional responsibility has created a larger work load for the Board of Control in WY2020.

BOARD MEETINGS

In WY2020, 4 quarterly Board meetings were conducted. The November 2019 and February 2020 meetings were held in the typical fashion, at the Wyoming Water Development Commission conference room in Cheyenne. The May and August 2020 meetings took place virtually. The COVID-19 global pandemic changed many ways business was conducted in WY2020, and keeping a safe distance from others was imperative for public safety. The virtual meetings did come with their own set of difficulties; however, they proved to be quite successful.

In this time period, the State Board of Control also implemented a practice referred to as Consent Lists at the virtual meetings. A Consent List groups similar routine business and/or reports into one agenda item. The Consent List can be handled in a single action, rather than addressing each item separately. This practice has resulted in a significant increase in efficiency and will continue to be employed at all future State Board of Control meetings. The meetings resulted in 656 final actions on petitions that were pending before the Board of Control. Table 11 shows the total number of on petitions the Board acted upon at each of the quarterly meetings.

TABLE 11. SURFACE WATER (SW) AND GROUND WATER (GW) PETITION ACTIONS

Board Meeting Date	11/2019	2/2020	5/2020	8/2020	Total WY2020
Number of SW Petitions	143	130	122	125	**520**
Number of GW Petitions	35	33	36	32	**136**
Total	**178**	**163**	**158**	**157**	**656**

TAB BOOK UPDATE

In WY2020, our staff continued the certificate verification process. All certificate records must be verified in order for all 4 water division Tab Books to be printed accurately. During this water year, staff continued to focus on Divisions II & III while finalizing Division I. A

Division IV Tab Book published in February 2016 was due to be re-published in WY2018. However, due to staffing as well as the need to update the Tab Books for the other divisions, it was put on hold. Staff also concentrated on assigning "trib sequence" numbers to stream sequences in all divisions. A "trib sequence", short for tributary sequence, is a 10 digit number which allows streams to print in the proper order in all Tab Books. Unfortunately, a draft version of the Surface Water portions of Divisions I, II or III has not been completed, as was anticipated in the previous reporting period. This can be attributed to several factors, among them were losing technical support for e-Permit, reduced staffing levels, the unfortunate death of the IT Administrator, and the COVID-19 pandemic. The goal is to have a draft version of the Surface Water portion for Division I ready during the next reporting period, with Division II and III following shortly thereafter.

Due to missing certificates, the Board established e-Permit data entry rules required for the certificate verification process for Tab Books. These rules have been instrumental in creating a protocol so staff follow the same rules for data entry, which improves data integrity. The Board continues to note improvements, defects, and enhancements among others that optimize functionality and consistency of records in e-Permit. However, due to the loss of technical support for the system, it is unclear how changes to e-Permit will occur in the future.

COVID-19 GLOBAL PANDEMIC – REMOTE WORK

The COVID-19 global pandemic created a host of issues during WY2020. Social distancing was necessary. In order to ensure the safety of employees, the Board of Control implemented a part-time telework schedule on March 23, 2020 in order for the office to remain open to the public. The staff was divided evenly, so half worked in the office and half worked from home on any given day. This schedule continued through WY2020. To effectively transition to working from home, proper equipment and internet connections were necessary to remotely access work computers. Learning new video software (Zoom, Google Meet, WebEx, etc.), what supplies to bring home, how to use your home space effectively for work purposes, and how to create boundaries between work and personal life became of the utmost importance. As more and more business normally conducted in person became remote, the use of webcams also became increasingly important.

This situation created issues that many have never dealt with before: feelings of isolation, loss of interaction, disconnection, lack of good communication, difficulty maintaining morale, issues related to the separation of work and personal life, and the list goes on. Working from home can often lead to feelings of disconnection and isolation. In an office with a defined schedule and setup, communication between coworkers happens organically throughout the course of a day. At home, that is often not the case. Many of the biggest challenges were prioritizing what to do and when to do it, as well as taking a more active approach to communication. The right kind of communication proved to be key in overcoming the trials and tribulations of telework. Daily check-ins with the Administrator were required, weekly conference and video calls were conducted, as well as weekly emails to foster camaraderie and self-awareness, written and shared by the Administrator. In hindsight, the advantages that

telework provided were clear: we could accomplish our job duties while protecting each other and the public.

PROBLEM AREAS

Data entry anomalies can occur when inputting certain types of water rights into e-Permit, though most issues have been resolved. Due to previous cuts in staffing, the number of staff available to verify certificates remains low.

As reported in WY2019, the Board of Control assumed responsibility for reviewing and advertising all Ground Water proofs. While there is a similar process in place for the review and advertisement of Surface Water proofs, the additional responsibility necessarily created a larger work load for the Board of Control. Previously, the Board only reviewed and advertised Surface Water proofs for the February and August Board meetings, allowing staff to "catch up" in between those meetings. With the addition of Ground Water proofs for the May and November Board meetings, that opportunity has disappeared. Though this change has increased the overall efficiency of the Agency, the results have impacted the Board of Control, as it now takes longer to issue new Certificates of Appropriation or Construction than in previous years. New Certificates of Appropriation or Construction take longer to be issued than has been the case in previous years.

In previous annual reports, it was reported that the loss of a petition team member due to budget cuts continued to cause significant impacts to the petition team overall. In WY2020, a long-term employee retired, thereby giving the Board of Control an opportunity to reclassify that position from a supervisory role dealing with adjudications to a petition team member. This change has alleviated some of the impacts to the petition team in WY2020. It is expected that as this new team member gains experience and knowledge, the petition team will return to its previous level of efficiency and no longer be a problem area.

With the reclassification of the adjudication position referenced in the above paragraph, the job duties and supervisory functions related to adjudications is now shouldered by other staff members, in addition to their existing duties. The supervisory role and portion of those adjudication tasks were taken over by the Administrator of the Board. As a result, some of the Administrator's duties were then re-assigned to the Assistant Administrator. The remaining obligations were distributed between two technical staff members and the clerical staff. These new duties, along with the addition of reviewing and advertising of Ground Water proofs discussed in the paragraphs above, have impacted the staff that processes adjudications.

RECOMMENDATIONS

TAB BOOKS

Tab Book verification is a high priority in the Board of Control. As we move towards completing the verification of the Surface Water portions of the Tab Books, our focus will continue to shift to Ground Water and Unadjudicated Stock Reservoirs. There are still a significant number of records that require verification in these categories. All Board of Control staff assist in this effort as time allows, but progress is slow, due to the necessity of maintaining the current workload. We continue to recommend an additional time-limited technical position, or two, to expedite data verification. This 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 may aid our efforts.

Once the existing data is verified in e-Permit, the verification process will be complete. Only updates and maintenance would be required, for which current staffing levels are expected to be sufficient. At that point, the publication of all Tab Books could occur at specified intervals as defined in statute, as all data would be perpetually up to date.

ADJUDICATION TEAM

By addressing our issue with understaffing of the petition team, we have at least partially shifted the issue from the petition team to the adjudication team. When a large number of proofs are received for any given meeting, the loss of one adjudication team member will cause review and processing times to increase, creating a backlog. Although current staff has worked diligently to process and advertise all proofs in a timely manner, returning the adjudication team to its previous staffing level will decrease processing times. Another method to accelerate review and processing times would be to add a clerical staff member. This additional staff member could assist in the advertising process, update records, and create Certificates of Appropriations or Construction, lessening the workload of the Board's adjudication team.

INTERSTATE STREAMS DIVISION

Submitted by:
Steve Wolff, Administrator

and

Jeff Cowley, River Basin Coordinator
Charlie Ferrantelli, River Basin Coordinator
Samantha Swartz, 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.

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

In 2014, the National Integrated Drought Information System (NIDIS) program began the first Drought Early Warning System (DEWS) coordination efforts in the Missouri River Basin. Led by the National Oceanic and Atmospheric Administration (NOAA), the goal of DEWS is to improve the resilience of communities by developing proper drought risk management at the regional level. This includes improving observations and forecasting, proactive state planning, and outreach to vulnerable regions. The SEO joined the Missouri River Basin DEWS stakeholder group in 2017 and continues to be an active participant with the group. During the summer of 2020, the Wyoming Condition Monitoring Team was created with guidance from NIDIS representatives. This team seeks to collaborate between state and federal agencies and local producers to monitor weather and field conditions on the ground during the growing season in order to create a robust drought response when warranted. Sam Swartz continues to be involved in the DEWS efforts as well as the continued development of the Wyoming Condition Monitoring Team.

Missouri River Recovery Implementation Committee

In 2007, the Water Resources Development Act authorized the Missouri River Recovery Implementation Committee (MRRIC), a group of stakeholders, tribes, states, and federal agencies providing guidance on the Missouri River Ecosystem Restoration Plan. With over 70 members representing 15 federal agencies, 8 states, 29 tribes, and 16 non-governmental groups, MRRIC serves as a forum for highly diverse interests to collaborate on recommendations for river management actions led under the Army Corps of Engineers and U.S. Fish and Wildlife Service. This group meets in-person on a quarterly basis at various locations throughout the Missouri River Basin, and Wyoming has actively participated in MRRIC since its inception.

Although Wyoming is not located on the main stem of the river, we currently hold cooperating agency status in support of ecosystem recovery efforts. The Missouri River Recovery Management Program (MRRMP) has been developing Environmental Impact Statements since 2016, in an effort to evaluate the effectiveness of current habitat development and highlight any necessary modifications. SEO provided comment letters supporting the inclusion of Adaptive Management as a recovery program action for implementation On Thursday October 24, 2019, the USFWS announced the delisting of the Interior Least Tern from the federal register. The delisting process was long anticipated by the MRRIC group. The piping plover and pallid sturgeon remain the main focus of the recovery program. This office has continued to stay informed about management plan efforts.

YELLOWSTONE RIVER BASIN

The Yellowstone River Compact Commission met on December 4, 2019 in Sheridan, Wyoming. The Technical Committee met on April 9, 2020 remotely via webinar. Both groups continued discussions about Tongue River water supply and water right exchange issues in the basin, including updates on Montana's adjudication efforts. The Technical Committee continued their effort to seek ways to improve the confidence in the forecast of state line flows of the Tongue River, in order to assist with the administration of the Tongue River under the terms of the 2018 Final Judgment and Decree. Over the summer of 2020, the TAC set up a cloud-based drive accessible to both states as an official medium to exchange water right information. The format and frequency of the exchange was also mutually agreed upon. A resolution regarding the modification of paragraph G.1. of the Decree will be submitted to the Commission during the upcoming December meeting. It is expected to pass with unanimous action from the Commission representatives. 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 continues to meet twice a year and examine operations at Yellowtail Dam. The group also includes operations for Boysen and Buffalo Bill Reservoirs, as well as a water supply outlook for the region. Reclamation updated their reservoir operating criteria in order to balance the varied needs, some of which depend on reservoir elevation and others who depend on downstream channel releases. This issue continues to be contentious for local stakeholders, and there is still discussion about the

Reclamation's proposed changes to operational improvements. Superintendent Loren Smith is Wyoming's lead representative on this matter.

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 21, 2019 in Hulett, Wyoming. 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

The annual Niobrara Compact meeting with Nebraska was held on October 23, 2019 in Scottsbluff, NE. The minute of that meeting are in the ISS files.

The states' technical group met via conference call on April 23, 2020. As usual, Wyoming's Wray Lovitt and Nebraska's Tom Hayden compared their springtime state line flow measurements. Both agreed that it was a wet spring with good snow totals, and that local reservoirs were full, with Lovitt reporting good carryover for the last few years. Nebraska also indicated that the water level increasing in the state line monitoring well. Wyoming's John Harju presented three new well permits, and also reported on the Town of Lusk's efforts to install a new well.

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 (BOR), and the states of Wyoming, Nebraska and Colorado that meet in the spring and fall every year. Carlie Ronca, Wyoming Area Manager for BOR, is acting Chair for 2020-21. 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:

For WY2019, Wyoming reported in a January 15, 2020 letter to the NPDC, that the intentionally irrigated acreage for the North Platte River basin above Guernsey Reservoir, exclusive of the Kendrick Project, was 197,112 acres and in the Lower Laramie River basin, exclusive of the Wheatland Irrigation District (WID), was 29,106 acres. Of the 197,112 acres irrigated above Guernsey Reservoir, 151,456 acres were irrigated above Pathfinder Dam and 45,656 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.

For WY2019, Wyoming also reported in a May 15, 2020 letter to the NPDC that the ten-year calculated consumptive use of irrigation water in the North Platte basin upstream of Pathfinder Dam was 1,120,000 acre-feet for 2010 through 2019. In addition, Wyoming reported the ten-year calculated total was 830,000 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 full-time field staff assigned to Division I, and one 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 its appropriation of this valuable water resource.

Platte River Recovery Implementation Program

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

The Platte River Recovery Implementation Program (PRRIP) agreement was signed by the Governors of Colorado, Nebraska, and Wyoming and the Secretary of Interior in late 2006 and again in late 2019. The PRRIP is currently in an extension of the first increment for another 13 years. This decision was made as the program has not met the water goal for the first increment. Mr. Harry LaBonde, retired Director of the Wyoming Water Development Office (WWDO), represents Wyoming on the GC and is bringing Brandon Gebhart, current Director of the WWDO up to speed on all PRRIP aspects.

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 February 24, 2020, Wyoming reported for the 2019 water year that Wyoming's total water uses are less than the 1997 baselines, and those under-runs translated to the state line are 48,723.28 acre-feet for the irrigation season and 5,812.47 acre-feet for the non-irrigation season. On that same date Wyoming submitted a Revised 2018 report as errors were found. The revised report showed that Wyoming's total water uses are less than the 1997 baselines, and those under-runs translated to the state line are 49,516.42 (previously 67,917.37) acre-feet for the irrigation season and 4,720.07 (previously 4,808.65) acre-feet for the non-irrigation season. In addition to the reporting of depletions, Wyoming remains responsible to evaluate every new or enlarged beneficial use of water 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 2019 water year, 13,761 acre-feet were diverted out of the Laramie River. The diversion amounts for the past few water years are as follows; 16,339 acre-feet (2018), 21,559 acre-feet (2017), 13,529 acre-feet (2016), 11,785 acre-feet (2015), 15,406 acre-feet (2014), and 20,898 acre-feet (2013). 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

During WY2020, the Upper Colorado River Commission (UCRC) met several times. This included formal Commission meetings the week of December 9, 2019 in Las Vegas, NV, and May 19, 2020 by teleconference, as well as work sessions the week of December 9, 2019 and by teleconference August 7, 2020. The Engineering and Legal Committees also met on several occasions.

During WY2020, several issues were worked on by all four states under purview of the Commission. These included:

- Agricultural Consumptive Use
- Demand Management Program Planning
- Execution of a new Basin Fund Memorandum of Agreement (MOA2) with Reclamation.

Agricultural Consumptive Use Study: ISS personnel continue to participate in the UCRC/Reclamation-sponsored Agricultural Consumptive Use Study. This three phase study started in 2013 and has reviewed the methodologies utilized by each Upper Basin State to measure agricultural consumptive use through evapotranspiration. The study has installed 29 new climate stations (5 in Wyoming's Green River basin), and is evaluating the possibility of using remote sensing technologies to assess consumptive use across the entire Upper Colorado basin. Phase III, currently underway, analyzes various techniques of measuring crop evapotranspiration, including two remote-sensing methods. The project was extended one year through water year 2020, with a modified scope with plans to help Wyoming better understand water shortages and crop coefficient curves.

Demand Management - Upper Basin Efforts: The Upper Division States and Commission staff have been engaged in investigations to determine the feasibility of a Demand Management Program in the Upper Basin. While each of the four Upper Division States has intrastate processes underway to assess the potential for basin-wide Program, Commission staff have also been engaged in interstate Demand Management efforts. These include administering a substantial, multi-year grant to the Commission from Reclamation to support Upper Basin Demand Management investigations and to procure the necessary contract support to assist in these investigations.

Demand Management – Wyoming: Beginning in the summer of 2019, the State of Wyoming, with the assistance of the University of Wyoming Extension, initiated an outreach effort to engage Wyoming stakeholders on the feasibility, benefits, and impacts of a demand management program in Wyoming. The ongoing investigation requires consideration of many outstanding issues before any decision relative to a demand management program in Wyoming can be made. Ultimately, any program must work within Wyoming as well as the other three Upper Basin States.

Basin Fund Memorandum of Agreement (MOA2): Although we still had 5 years remaining in the term of MOA1, WAPA, Reclamation and CREDA all wanted enter into a new agreement (called MOA2). They wanted to proceed with a new agreement because WAPA was starting a new Colorado River Storage Project rate case in the fall of 2020. The results of that rate case will influence the amount of CRSP revenues generated for the Basin Fund during the 5-year rate period. The four Upper Basin States agreed to this process in hopes of correcting deficiencies they experienced under the MOA1. Accordingly, a new agreement was reached and executed in the summer of 2020. MOA2 will provide an additional $29,046,000 of apportioned hydropower revenues to Wyoming to support Reclamation-owned infrastructure in the Colorado River basin.

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 SEO's ISS Division actively participates in the Salinity Control Forum, Work Group and Salinity Control Advisory Council (established as a Federal advisory committee by the 1974 Salinity Control Act). The Forum and Advisory Council met in Phoenix, AZ on October 24-25, 2019, and by teleconference on June 3, 2020. The Work Group met on several additional occasions during the year. The Wyoming SEO has also spent time in 2020 as a cooperating agency in the review of the Paradox Valley Unit EIS, which Reclamation has prepared to review various alternative technologies to follow the current salt injection well. The SEO will continue to participate in this process into 2021.

Various salinity projects have been underway in recent years. 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. Due to increases in pipe costs, the budget was increased in 2017. In 2017, a study began with Austin Wall Irrigation District and landowners. In April 2018, installation was complete and data collection began. In 2017, the USGS initiated a study, funded via the salinity control program, to assess the hydrosalinity conditions in the Blacks Fork drainage of Wyoming. This study is scheduled to finish in Q1-2021.

Glen Canyon Adaptive Management Program

The Glen Canyon Dam Adaptive Management Program (GCAMP) was developed to provide an organization and process for cooperative integration of dam operations, downstream resource protection and management, monitoring and research information, as well as to improve the values for which the Glen Canyon National Recreation Area and Grand Canyon National Park were established.

The Adaptive Management Work Group, a federal advisory committee, is chaired by a designee, appointed by the Secretary of the Interior. Membership is appointed by the Secretary of Interior with representation from each of the cooperating agencies, Colorado River basin states, environmental groups, recreation interests, and contractors for federal power from Glen Canyon Dam. State representatives are nominated by Governors and then officially appointed by the Secretary of Interior. Steve Wolff is Wyoming's representative to the AMP, with Charlie Ferrantelli designated as the alternate.

The AMP met three times during WY2020, once in person and twice by teleconference. The primary issue in front of the AMP during WY2020 was finalizing and approving a new three year work plan and associated budget.

Upper Colorado River Endangered Fish Recovery Program

The Upper Colorado River Endangered Fish 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, two of the four species are on track for down-listing in 2021 and 2022. 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 (IC) met twice in WY2020, once in-person and once via webinar. No major issues came before the IC. The Management Committee met several times during WY2020, with the three major issues being capital construction activities, post-2023 planning discussions, and necessary federal reauthorization activities that resulted in a FY2019 & 20 funding issue. We continue to seek a long-term solution to the funding issue which is integral to the post-2023 discussion.

Due to COVID-19, our annual non-federal partners briefing trip to Washington DC was done virtually. We were able to meet with the majority of 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 organized and participated in these briefings for Wyoming.

Green River Basin Consumptive Use Program

Since 2000, the Colorado River basin has been in a serious drought, bringing the subject of water use to the forefront. Understanding Wyoming's current and future water use is key to complying with our interstate compact obligations and ultimately protecting water users in our Green and Little Snake River basins (collectively herein called the Green River basin). The vast majority of our consumptive use (CU) is from the irrigation of grass-hay via evapotranspiration (ET); however, significant CU also occurs from the municipal, thermal energy, mineral extraction sectors, and by two major trans-basin exports (Broadbent Supply and the City of Cheyenne). All of these require the measurement or estimation of water depletions from the basin.

Over the last decade, the SEO has improved its methods of calculating ET in the basin, including: 1) increasing our weather station network in the basin from 5 to 10 sites (see WACNet later in this report), 2) installing 150 stream, diversion and reservoir measuring and recording devices (led by Division IV staff), 3) improving our ET analysis to Penman-Monteith, the most scientifically defensible method of measuring *potential* ET, and 4) developing a collection of satellite-based ET imagery (remote-sensed data), the most defensible method of measuring *actual* ET. Our current collection of model output using remote sensed data includes METRIC™ for 2011 and 2015, as well as METRIC™ and SSEBop for 2017-2019 from the UCRC CU Study. In WY2020, using Reclamation funds, we started another project with ET Plus to complete 2 more years of METRIC™ modeling, beginning with the 2016 growing season, and a second year still undetermined. Future efforts will be to incorporate these remote sensing data further into our CU methods.

Assessing both potential and actual CU enables us to understand current and historical CU in a way that allows us to understand water use and water shortages, as well as annual variability. With this we can better plan for any future curtailments could impact our users. Our WY2019[1] Green River basin CU and historical CU (Figure 3) are provided. In addition to irrigation consumptive use, ISS also works with multiple entities, Water Development Office, and SEO staff to compile water use from all other sectors, such as municipal, minerals, energy, and trans-basin diversions. These are summarized in Table 12 for water year 2019 (2020 is still in process).

TABLE 12. SUMMARY OF 2019 ESTIMATED CONSUMPTIVE USE IN THE GREEN RIVER BASIN

Use Sector		2019 Consumptive Use (Ac-Ft)
Agriculture	**Sector Total**	**448,763**
Agricultural Irrigation (Adjusted CU)	Surface Water and Groundwater	441,908
Livestock[A]	Surface Water and Groundwater	6,855
Municipal/Industrial	**Sector Total**	**59,812**
Urban	Surface Water	6,773
Urban	Groundwater	817
Rural	Surface Water	0
Rural	Groundwater	3,042
Thermal Electric Power	Surface Water	22,875
Thermal Electric Power	Groundwater	5,861
Mineral Resources	Surface Water	18,479
Mineral Resources	Groundwater	1,965
Transbasin Diversions (Exports)	**Sector Total**	**16,015**
City of Cheyenne Diversions	Surface Water	14,500
Broadbent Supply	Surface Water	1,515
Reservoir Evaporation	In-State Reservoirs[B]	**27,000**
	Main Stem, Shared CRSP Evap[C]	—
Grand Total		**551,591**

Notes

[A] Livestock use includes depletions from livestock watering and stock pond evaporation.

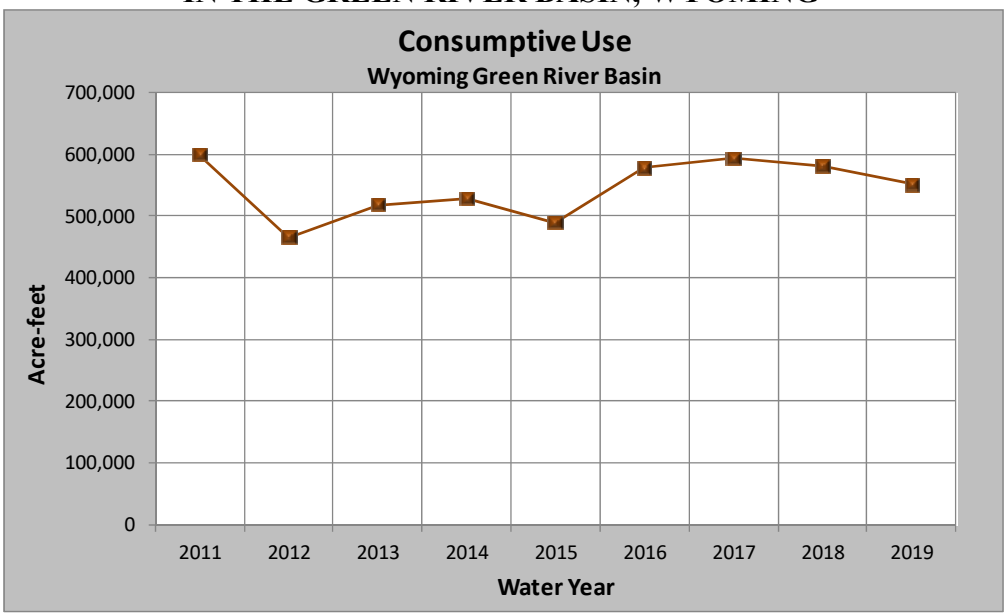
[B] Wyoming depletion schedule

[C] "Shared CRSP Evap" refers to evaporation from the reservoirs constructed under the Colorado River Storage Project (CRSP) Act. This evaporation amount is the anticipated long-term average whose evaporative losses are to be shared among the Upper Basin states. Evaporation will vary annually depending on reservoir storage and climatic conditions.

All values in this table were the best available at the time they were reported. Always check with the Wyoming SEO Interstate Streams Division to ensure they are the most recent before using.

[1] WY2020 CU data collection was still in process at the time this report was written.

FIGURE 3. 2011 to 2019 TOTAL CONSUMPTIVE USE IN THE GREEN RIVER BASIN, WYOMING



BEAR RIVER BASIN

The Bear River Commission (BRC) met on November 19, 2019 and April 21, 2020. Due to concerns about COVID-19, the Operations Committee and the Records & Public Involvement Committee meetings were cancelled in the Spring, and the Commission convened via webinar to conduct business. Both meetings continued discussions regarding the 20-year review period for the Amended Bear River Compact. The review examines the operations and water distribution under the Amended Compact, with input allowed from affected water users and the general public. Based on the public comments received, the BRC determined no changes to the compact were warranted. Minor edits were made to the 20-Year Compact Review document early in 2020, and the final version was adopted by the Commission during the April 21 meeting. The spring meeting also marked the kick off of the Bear River Depletions update. The TAC began tackling questions regarding depletion methodology while a sub-group of GIS experts from each state was formed to begin updating the base map from 2009 to 2019. All agendas and minutes from these meetings can be found on the BRC's website: http://bearrivercommission.org.

In addition to normal BRC activities, Idaho and Utah continued to investigate opportunities to increase demands on the Bear River system. Their efforts include the development of a Riverware model of Bear Lake and the Lower Division, in order to investigate the potential for increased storage targets at Bear Lake and increased demand below Bear Lake. The baseline model is built on historic flows and operations and was completed in February 2020. An Analysis Report of the model findings is expected to be released early in 2021. Although Wyoming is not a proponent of this effort, we have stayed involved as an "interested observer" to safeguard our position relative to the Compact. Utah and Idaho are anticipated to expand the model capabilities during a second phase of model development in 2021, and Wyoming will continue to stay actively involved in the project.

SNAKE RIVER BASIN

The SEO, the Wyoming Game and Fish Department, Water Development Commission, the Bureau of Reclamation, and other interested parties, like Trout Unlimited and Teton County Conservation District, have been meeting each fall and spring since Wyoming acquired 33,000 acre-feet of storage in Palisades Reservoir in 1990. Pursuant to Wyoming Statues (1991), the water in Wyoming's Palisades account can be used for the below described purposes in the following priority:

1. Meeting the requirements of the Snake River Compact,
2. Supplementing flows in the Snake River below Jackson Lake or maintaining water levels in Jackson Lake (via exchange) for the benefit of the fisheries, and
3. Selling water on a short-term basis to Wyoming water users and the Idaho water bank.

Water contracted under priority #3 is sold under the terms of Idaho's Upper Snake Rental Pool program administered by the State of Idaho's Water District 01 (WD1) and overseen by the WD1 Committee of Nine.

The spring inter-agency meeting was held May 21, 2020 and the fall meeting on September 24, 2020, both held remotely via webinar. Information and minutes from both meetings can be found in the ISS files. Steve Wolff also attended the Water District 1 (WD1) (Idaho) Annual Meeting in March. The State of Wyoming has an advisory seat on the Committee of Nine due to our storage right in Palisades Reservoir. WD1 is a recognized government entity created and supervised by the Idaho Department of Water Resources (IDWR) to distribute water consistent with water rights on record with IDWR.

Wild and Scenic Rivers

The congressional action designating Wild and Scenic segments in the Snake River basin occurred in March 2009, and Bridger-Teton Forest and 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.

The SEO and the two federal agencies have held several coordination meetings to decide how best to incorporate the Wild and Scenic water rights into the states permitting system. The Surface Water Division now has the lead on this effort for the SEO.

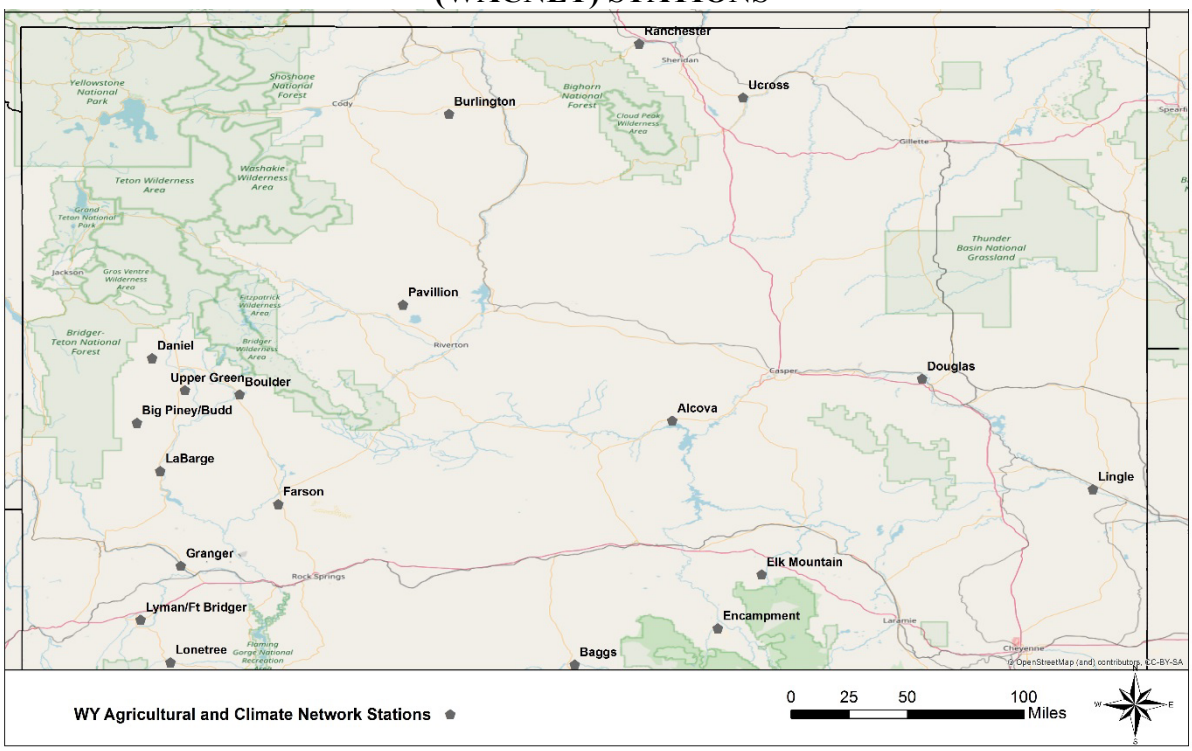
WYOMING AGRICULTURAL CLIMATE NETWORK

Over the last 13 years, the SEO has installed 19 fully-sensored weather stations. Currently there are six stations in Division 1, two in Division 2, two in Division 3 and nine in Division IV. This network of stations is termed the Wyoming Agricultural Climate Network

(WACNet) and is maintained by ISS Division personnel. See map below (Figure 4) for station locations. For the most part, these stations have been installed in specific basins to support Wyoming's consumptive use monitoring efforts relative to intrastate compact and decree compliance.

Collected weather data provides the baseline for the consumptive use work and is used in estimating potential evapotranspiration (ET), for calibrating remote sensing analysis and in support of the modeling efforts. All collected data is currently downloaded, maintained and served by the Water Resources Data System at the University of Wyoming. The ISS personnel conduct all upgrades, and operation and maintenance activities of the sites, with at least one visit per site per year and often more.

FIGURE 4. LOCATION OF WYOMING AGRICULTURAL CLIMATE NETWORK (WACNET) STATIONS



WATER EDUCATION, POLICY AND PLANNING

WATER FORUM

This division sponsors a monthly meeting from September through May with numerous state, federal and third-party entities for the discussion of current water topics. Water Forum meets on the second Tuesday of each month, typically in-person and online. This meeting gives several diverse agencies and participants an opportunity to share their updates and insights on water-related issues. Each month, a guest speaker is invited to give an in-depth presentation

on a relevant topic, with time reserved for questions and conversation from the audience afterwards. A roundtable discussion follows each presentation, with updates from each participant at the meeting. Water Forum is open to the public, and attendance from any interested party is highly encouraged.

Beginning in April 2020, Water Forum switched to a webinar-only format, and subsequent Forums continued to host all presentations and discussions remotely for the remainder of the water year. This new arrangement has been successful so far, and has not hindered conversation or updates from the many participants who join in. However, we look forward to a return to in-person sessions when it is safe to do so.

During the 2019-20 water year, topics for Water Forum covered: USGS method to predict streamflow in ungaged watersheds in Wyoming using machine learning and geospatial tools, green infrastructure uses and upkeep in urban areas, sage-grouse conservation banking and water leases at Pathfinder Ranch, Water Development Office's weather modification and cloud seeding program, the feasibility and economic impacts of demand management in the Upper Colorado River Basin, Laramie County Conservation District's plan for Crow Creek restoration, Water Development's River Basin Planning update on technology and modernization efforts, April's water supply outlook from Reclamation offices around the state, and non-profit Inland Ocean Coalition's efforts to reduce plastic pollution in our local waterways. The current presentation schedule for the Water Forum season, as well as all presentations from prior seasons, is available online at the State Engineer's website: 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. Sam Swartz is the Division's lead contact for agency review of NEPA and Governor's Planning Office activities.

The Interstate Streams Division is also responsible for attending any meetings that pertain to projects of special interest to the SEO. 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. The Governor's Planning Office regularly holds State and Federal Partners' meetings. These meetings on the first Wednesday of each month provides an opportunity for state and federal agencies to discuss NEPA project updates, notices, public concerns, and other activities occurring around the state.

INTERSTATE WATER COUNCILS

Members of ISS staff regularly participate in meetings and other activities of interstate organizations, principally the Western States Water Council and the Interstate Council on Water Policy.

WATER PLANNING

This Division provides technical review and support of WWDC planning products. 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. Each plan consists of a series of technical memorandums describing a topic outlined in the contract, which can include topics such as basin hydrology, geology, fish and wildlife, land cover, water use and water storage, among others. The final report includes an executive summary, spreadsheet models, and various mapping products. Sam Swartz serves as the SEO liaison to water planning activities.

The following is a list of key Water Year 2020 WWDC River Basin Planning activities:

GIS Data Model Implementation

This project is focused on developing statewide water infrastructure data. With this data, the Office can ensure consistency and accuracy and create cost savings on all future Level I projects. Outcomes include an inventory of water infrastructure by basin in a statewide GIS dataset. The newly adopted WWDC GIS standards and data can be accessed here: https://water.geospatialhub.org/pages/wwdc-gis-standards.This project was completed January 2020. In April 2020, the River Basin Planning Team was awarded an Esri SAG (Special Achievement in GIS) Award. The SAG Award recognize the outstanding work to standardize large sets of GIS, with a goal to understand water use and enable sustainable resource management.

Water Supply Index

Instead of examining water use basin by basin, the River Basin Planning Team made substantial strides in creating a statewide water supply index. This project combines all previous basin data to make current estimates of water use in the agricultural, industrial, and municipal sectors. Additionally, this tool utilizes Landsat imagery, Google Earth Engine, and a point of diversion layer from e-Permit layer to estimate the total irrigated acreage across the state. This statewide analysis will help assess current and future water use and availability trends. The results will provide a consistent, credible method to assess needs for supplemental water supplies. Outcomes include a common medium to effectively communicate the findings to the public, the WWDC, and legislators. It was completed in February 2020. Further refinement of the water supply index is still ongoing.

National Hydrography Dataset Update

The National Hydrography Dataset (NHD) is a digital representation of the water surface features found on topographic maps. These features form a stream network and represent the water drainage network across Wyoming. This update to the NHDPlus High Resolution (NHDPlus HR) integrates other hydrographic, topographic, and watershed information at a local resolution. This project was completed December 2019, and serves as the foundation layer for the StreamStats Web Application.

StreamStats Web Application

StreamStats is a USGS web-based application for retrieving watershed basin and streamflow characteristics. This application will provide the public an assortment of analytical tools useful for water resource planning and management. The StreamStats tool will assist all WWDC projects that rely on streamflow quantities and flow duration. This application will lower individual project costs and improve consistency and defensibility in work products. Currently, only the Yellowstone River Basin has been implemented in StreamStats. It is expected to be completed December 2021.

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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, 2019, to September 30, 2020, referred as Water Year 2020 (WY2020). Water Division One is comprised of the North Platte, South Platte, Niobrara, and Little Snake River drainages in southeast Wyoming. Water Division I 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

WY2020 began with slightly below average precipitation as compared to the beginning of Water Year 2019. Rainfall ranged from 0.53 inches to 2.10 inches as recorded by five weather station sites throughout Division 1. This in turn caused soil moisture profiles to be below average. Throughout most of the winter months, snowfall and precipitation trended above average. However by the middle of May, conditions changed to a drier than normal trend with little to no precipitation. Snowpack levels through the winter averaged from 97% to 191% of the 30-year median in the different drainages throughout Division 1. While April and May are historically the most productive months for precipitation, WY2020 saw November and May as being the most productive in terms of precipitation amounts.

North Platte River reservoirs began the water year with just under 2 million acre feet of carryover from the previous year. Other sizable reservoirs within Division also saw sizable carryover coming into the year (Tables 13 - 15).

TABLE 13. DIVISION I RESERVOIR STORAGE

District 14 Bureau of Reclamation Ownerships		
Reservoir/Ownership	**Content on Oct. 1, 2019**	**Content on Sept. 30, 2020**
North Platte Project	669,755 AF	411,124 AF
Kendrick	1.121,590 AF	1,073,776 AF
Glendo Unit	164,963 AF	131,202 AF
District 2 Reservoirs		
Hawk Springs Reservoir	10,707 AF	3,607 AF
Goshen Hole Reservoir aka Springer	2,590 AF	889 AF
Goshen Reservoir aka Bump Sullivan	1,516 AF	926 AF
Districts 4A & 4C Reservoirs		
Lake Hattie	79,500 AF	63,380 AF
Wheatland Res No. 3	58,000 AF	33,900 AF
Wheatland Res. No. 2	47,000 AF	46,100 AF
Grayrocks Reservoir	104,467 AF	79,674 AF

TABLE 14. DIVISION I PEAK FLOWS FOR WY2020

Station	**Date of Peak**	**Peak Amount (CFS)**
North Platte River near Sinclair	June 3	6,600
Medicine Bow River near Hanna	June 4	959
Sweetwater River near Alcova	June 5	232
North Platte River near Orin Junction	May 5	4,778
North Platte River at WY-NE Stateline	April 20	3,436
Crow Creek at 19th Street	April 4	35
Horse Creek at Go.-Lara. Co. Line	May 22	66
Laramie River Nr. Woods Landing	June 2	1,056
Laramie River Nr. Bosler	June 10	1,503
Little Laramie River Nr. Filmore	June 2	1,394
Laramie River above Grayrocks	May 20	391
Laramie River near Fort Laramie	February 26	476

TABLE 15. NORTH PLATTE OWNERSHIP FILL DATES

Ownership	**Capacity (AF)**	**Fill Date**
Inland Lakes	46,000	APRIL 15, 2020
Guernsey	45,612	MARCH 15, 2020
Glendo Irrigation	100,000	MARCH 19, 2020
Glendo Evap. Pool	20,090	MARCH 24, 2020
Pathfinder (Irr)	1,016,507	MAY 12, 2020
Pathfinder (WY)	20,000	APRIL 27, 2020
Pathfinder (EA)	33,493	MAY 15, 2020
Kendrick	1,201,678	MAY 24, 2020

LOWER NORTH PLATTE RIVER

Many North Platte River reservoirs in Division 1 had average to above average carryover from WY2019.

The Bureau of Reclamation (BOR) runoff forecast from February through May predicted WY2020 would likely not be an allocation year. The BOR's forecasts showed 1,956,826 AF for February, 2,055,347 AF for March, 2,158,208 AF for April and 1,868,928 AF for May. All being well above the 1,100,000 AF allocation year threshold under the North Platte Modified Decree. Therefore, regulation above Guernsey for the Federal Reservoirs was not warranted throughout WY2020.

The North Platte Modified Decree (Decree), Exhibit 10, obligates Wyoming to replace 24.4 AF per active "Triangle" irrigation well the following water year. For WY2019 Wyoming determined there were 230 active irrigation wells within the "Triangle". This resulted in 5,612 AF having to be replaced during WY2020. 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 16 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 6,205 AF for the WY2019 active triangle wells and WY2020 triangle tributary diversions. This water was released from Guernsey to supplement natural flow from July 1st to July 28th, August 7th and September 4th and 8th. Wyoming will be obligated to replace September diversions in Water Year 2021.

TABLE 16. NORTH PLATTE TRIANGLE TRIBUTARY REPLACEMENT WATER

Month	Total Diversions (AF)	Natural Flow (AF)	Out Of Priority Diversion (AF)	Total Replacement (AF)
MAY	147.84	147.84	0.00	0.00
JUNE	248.16	125.72	122.44	61.22
JULY	675.43	307.50	367.93	183.97
AUGUST	717.63	22.29	695.34	347.67
SEPTEMBER	356.39	140.71	215.68	107.84
TOTAL	**2,145.45**	**1,147.13**	**1,404.39**	**700.70**

The State of Wyoming is 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 pump irrigation diversions cannot exceed 6,600 acre-feet for any two-week period during the irrigation season. Even with WY2020 not being an allocation year, Wyoming continues to monitor these diversions. This data is not required to be reported to the North Platte Decree Committee for compliance purposes. The State of Wyoming monitors this information on a monthly basis rather than bi-weekly. The maximum amount of water diverted in a one month period was 12,566 AF during the month of August.

Wyoming is also tasked with shepherding the Environmental Account (EA) water from Pathfinder to the Wyoming-Nebraska State line. At the state line, Nebraska then conveys this EA water to Lake McConaughy. The EA water is to be use for the North Platte River Recovery and Implementation Plan (NPRRIP). During August, the BOR transferred 31,985 AF from the Pathfinder Environmental Account along with 9,600 AF from the Pathfinder Wyoming Account to Glendo. This water, less the conveyance losses of 4,006 AF, was then released from Glendo in September and transferred to Lake McConaughy.

NORTH PLATTE IRRIGATED ACRES AND STORAGE

WY2020 acreage and storage accrual numbers are below the Modified North Platte Decree limitations, as 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 WY2020, Acreage Inspectors reported 199,502 “intentionally irrigated” acres in the North Platte basin, well below the acreage cap of 226,000 acres imposed by the Decree. This was also true in the Lower Laramie River basin; there were 29,457 “intentionally irrigated” acres reported, well below the 39,000 acre Decree limit. See Table 17 below.

For WY2020, a total of 13,441 AF of accrued storage was monitored and recorded by the Hydrographer/Commissioners and Acreage Inspectors for reservoirs above Pathfinder. This was slightly above the 10 year running average of 12,455 AF. Reservoir storage carry-over into WY2021 was 5,862 AF, well below the 10 year running average of 7,135 AF. Storage accruals for each reservoir were calculated by subtracting the WY2019 carry-over amount from the WY2020 highest recorded stage. WY2020 storage accruals were below the 18,000 AF accrual cap set forth in Appendix A II (b) (3) of the Decree.

TABLE 17. 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	147,953	16	641	1,475	150,085 (169,100 limit)
NPR bet. Pathfinder and Guernsey Excl. Kendrick	41,948	3,085	1,694	2,691	49,418 (56,900 limit)
L. Laramie River basin Excl. W.I.D.	24,601	142	4,714	0	29,457 (39,000 limit)
Totals	**214,502**	**3,243**	**7,049**	**4,166**	**228,960 (265,000 limit)**

This year, Acreage Inspectors utilized the Dell tablet computers for mapping WY2020 intentionally irrigated acres. The total paperless system allows for real time digitization as fields are inspected. These tablets are approximately 3 years old, and the inspectors are starting to see them fail. If we intend to move forward with our real time collection of data in the field, these tablets are going to need to be replaced in the near future. This year, the final irrigated acre report was completed and compiled by December 15, 2020 which is approximately two and half months ahead of the February 28, 2018 deadline for reporting to the North Platte Decree Committee.

HORSE CREEK

The Horse Creek drainage followed a typical pattern this year with steadily increasing flows throughout the winter and spring, then steadily decreasing flows during the irrigation season. However, unlike WY2019, the creek flows diminished to a point that only allowed senior ditches to divert a portion of their appropriation. Winter proved to be relatively mild and dry with minimal snowpack on the eastern side of the Laramie Range. Stream flows still managed to recover throughout the winter months, providing enough water for most appropriations and most reservoirs to reach their full capacities (Table 14).

Most irrigation reservoirs within the Horse Creek Drainage would have achieved their one time fill. However, a few reservoir owners elected to delay filling in late April in order to protect the integrity of their dams. In most years, the spring precipitation allows these reservoirs to fill to their capacity later in the year, but that was not the case this year. One saving grace of the reservoir supply was the amount of carryover most reservoirs had at the end of WY2019. For instance, Hawk Springs Reservoir filled on December 25, 2019, more than 3 months sooner than the previous year.

WY2020 marks the first year of a sequential three-year order of the State Engineer for Horse Creek Basin. Due to COVID-19 and other obstacles beyond the State Engineer's control, there was no public hearing or public comment period to discuss the First Amended Order of the State Engineer's Horse Creek Order. A provision in the First Amended Order states "if no new order is issued by April 1, 2020, the terms of the First Amended Order will continue in force, for consecutive three-year periods, until a new Order is issued." Therefore, to the Order was carried forward. The majority of the original Order remained in effect for the duration of the First Amended Order, with only a few amendments to the total allotment of groundwater withdrawal in the LaGrange Aquifer. These changes consisted of an increase in the annual allotment from 36 acre-inches to 45 acre-inches. Additionally, the total maximum acre-inches allowed to be withdrawn in any year was increased from 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 from 6 acre-inches to 10 acre-inches. With the overabundance of moisture since the inception of the Order, it is difficult to decipher what effect the Order has on the District and the Horse Creek Basin. With this year being dry, we may see the effects going into next year. Appropriators with both groundwater and surface water rights were only able to divert surface water during the first part of the irrigation season. Later on in the season, they relied on the groundwater because the surface flows in Horse Creek and Bear Creek had diminished to a point that only senior water right holders could divert. Average groundwater withdrawals in WY2020 were in excess of 6 acre-inches per acre compared to WY2019, and 4 acre-inches per acre compared to WY2018. This was mainly due to the hot and dry conditions in the Horse Creek Drainage.

CROW CREEK DRAINAGE

The Crow Creek drainage started off with average to well-above average snowpack for a majority of the winter and spring. The Crow Creek snow telemetry site reported a peak SWE of 8.4 inches in mid April. The month of May brought very little rain and colder the average temperatures. Rainfall throughout the rest of the summer was somewhat dismal, with only 10.8 inches recorded during the irrigation season, as compared to the 10-year average of 13.4 inches. Laramie County seems to continually see hail storms and late summer snow storms. This year was no exception. Hot and dry temperatures also played a drastic role on area crops.

This was the fifth full year of the Laramie County Control Area Order (LCCA Order). The LCCA Order was issued April 2015 and requires all irrigation, municipal, industrial, and miscellaneous use wells located within the Laramie County Control Area (LCCA), and new

wells completed in the High Plains Aquifer, be fitted with properly sized and accurate totalizing flow meters. The local hydrographer for this area spent considerable time checking wells for LCCA Order compliance by collecting data about well usage. On March 4, 2020, the State Engineer held a public hearing at Laramie County Community College to review the effects of the first three years of operation under the LCCA Order, as well as determine whether or not the terms of thorder should continue to apply or whether a new order should be issued. To date, the order stands as issued.

LARAMIE RIVER DRAINAGE

The Laramie River drainage began the season off with above average snowfall throughout the month of October that resulted in a wet start to the water year. November and December were the biggest snowfall months for the Laramie Range, with most other months being average. The February snowpack came in at an average of 126% of the 30-year median. The initial forecast led appropriators to have hopes for an above-average water year. Unfortunately, the snowpack averages decreased in May to 91% after having reached a peak of 137% in December.

Wheatland Irrigation District placed a call on the Laramie and Little Laramie River system for Wheatland Reservoir No. 2 and later for Wheatland Reservoir No. 3. These calls lasted until the end of the water year.

The major reservoirs on the Laramie River drainage that filled this water season included Wheatland Reservoir No. 2 and Grayrocks Reservoir. Unfortunately Wheatland Reservoir No. 1, Reservoir No. 3, and Lake Hattie were only partially filled. Many irrigators were able to rely on natural flow for much of the season, but then needed their reservoir supply towards the end of the summer. This resulted in WY2020 ending with an average carryover storage in all major reservoirs (Table 13). The largest carryover was at Grayrocks Reservoir and Lake Hattie, which ended the season with 76% and 75% of their storage capacity respectively. Wheatland Reservoir No. 2 and 3 ended the season with average carryover storage.

MEDICINE BOW RIVER DRAINAGE

The fall of 2019 was cold, with above-average precipitation on the plains of District 9. Snow in the mountains started in October and continued throughout the fall and winter in the Medicine Bow drainage. By the February 1, 2020 snowpack report, the Medicine Bow drainage was at 116% of the median, with an average snow water equivalent (SWE) content of 21.7 inches. The Little Medicine Bow River drainage reported 150% of median and 7.9 inches of SWE content. By the May 1st snow report, the Medicine Bow drainage had maintained an above-average condition with 110% of median and an average SWE content of 37.1 inches. The Little Medicine Bow River reported above-average at 120% of median and 7.3 inches of SWE in the snowpack. Springtime snows continued throughout the drainage in April and the early half of May, but by later May and June, very little precipitation had fallen and most rivers and creeks were experiencing earlier than normal runoff.

UPPER NORTH PLATTE RIVER DRAINAGE

The winter of WY2020 started with near to average snowpack and temperature conditions. On May 1st, the SWE for the upper North Platte system was at 105% of median. However by mid May, temperatures turned warm and precipitation became almost non-existent throughout the valley. This caused an earlier-than-normal runoff and lower-than-normal stream flows. Only 3.26 inches of precipitation fell in the Saratoga area throughout WY2020, with only 1.37 inches falling during the May to September period. This leads to below-average grass production, with many appropriators claiming only 70% of normal yields for hay production. The North Platte River in Saratoga peaked on June 2, 2020 at a discharge of 7,185 cubic feet per second.

Brush Creek appropriators once again requested aid from the local hydrographer. Most irrigation reservoirs were depleted by the end of the water season because of overly dry conditions. Due to outlet issues, both South Spring Creek and Cow Creek Reservoirs were drained this season, and they are currently not allowed to store water until repairs are made to their outlet structures. The only call for regulation in the Upper North Platte Drainage was for Rattlesnake Creek.

On September 17th, the Mullen Fire started in the Savage Run Creek area and quickly grew to become the 2nd largest fire in Wyoming history, at over 176,000 burned acres. The fire encompassed an area as east as Jelm Mountain and as north as South French Creek drainage. Eventually, the fire spread south into Colorado where it was contained on the north side of Highway 230. Many water sources in the area were used in the firefighting effort, including Rob Roy Reservoir, Lake Hattie and many small stock reservoirs.

LITTLE SNAKE RIVER DRAINAGE

The Little Snake River drainage started the water year with average to above-average precipitation during the months of December through May. These conditions were reflected in the first snow report on February 1, which averaged 122% of the 30-year median. Snowpack conditions continued to track above-average throughout the next couple of months before falling back to an average of 103% in the May report. Total precipitation at the Battle Mountain weather station for the year was 20.4 inches, compared to the 10-year average of 23.0 inches, and 25.1 inches in 2019.

High Savery reservoir filled to the full capacity of 22,432 acre-feet on May 17. Releases began for irrigation delivery on July 24th and continued until September 15th, when they started to decrease releases down to approximately 15 cubic feet per second for the rest of the season.

Work continued slowly with the State of Colorado on a Memorandum of Understanding regarding both the Wyoming and Colorado water rights in the Battle Creek drainage. Because of the onset of COVID-19, discussions have stalled, and will hopefully continue later on during the winter months of 2021. These discussions are also a stepping stone for the need to

develop the "Interstate Priority Schedule" mentioned in Article XI, (b) (2) of the Upper Colorado River Basin Compact, 1948. It is imperative that the State of Wyoming and Colorado come to a mutual agreement on this interstate priority schedule of water rights and whether Colorado water rights should be regulated by their "decreed date" or "appropriation date", when compared to Wyoming water rights.

TABLE 18. DIVISION I CALLS FOR REGULATION

District	Stream	Calling Facility	Date Of Request	Action Taken
4A	Laramie River and Little Laramie River	Wheatland Res. #2	10/01/2019	Approved
4B	Little Laramie River	Lee Hughes & Greasewood Ditch	10/1/2019	Approved
16	Rattlesnake Creek	Rattlesnake No. 1 & 2	10/1/2019	Approved
8	Battle Creek	Wilson/Salisbury Ditch	10/9/2019	Denied
3	Horseshoe Creek	Walker No. 1 & 2	6/1/2020	Approved
4A	Laramie River and Little Laramie River	Wheatland Res. #3	06/9/2020	Approved
11	Bates Creek	Bates Creek Ditch	07/6/2020	Approved
16	Rattlesnake Creek	Rattlesnake No. 1 & 2	7/6/2020	Approved
4B	Little Laramie River	Fillmore Ditch	7/13/2020	Approved
4B	Little Laramie River	Scott Ditch	7/13/2020	Approved
4C	Laramie River	T Cross No. 2	7/14/2020	Cancelled
4B	Little Laramie River	Lee Hughes & Greasewood Ditch	8/3/2020	Approved
4C	Laramie River	T Cross No. 2	8/12/2020	Approved
11	Squaw Creek	Rice No. 2	8/14/2020	Approved
2	Bear Creek	Lowe Cattle #2 Ditch	8/17/2020	Approved

PERSONNEL

WY2020 saw two new faces in Division I. After the passing of long time Hydrographer-Commissioner Kent Becker, who lost his battle with cancer in June of 2019, Tylor Hanzlik was hired for the District 14 area. He has continued to learn the area, the complex Modified North Platte Decree, and the accounting of the river waters at a rapid pace. Long time Acreage Inspector Scott Haskamp decided to retire this water year after serving the State Engineer's Office for over 18 years. He was replaced by John Starnes. John has worked very hard this season learning a very large area. He has done well in completing the tasks as an acreage inspector.

ACCOMPLISHMENTS

Division I prepared and attended each of the four quarterly Board of Control (Board) meetings during the past year. In 2020, this division had 23 new surface water petitions and 24 new groundwater petitions docketed with the Board. The Board granted 25 surface water petitions and 26 groundwater petitions within Division I. 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 on completing field proof inspections. This includes not only backlogged stock reservoir proofs but also new proofs out of Cheyenne that are either requested by the appropriator or are in the final stages of the permitting process. During this year, we have completed and adjudicated 30 surface water rights and 21 groundwater rights.

Proofs for instream flow permits within Division I continue to be a difficult task. Staff continues to measure 7 segments of instream flow in the Sierra Madre range, with 1 segment in the Sweetwater Drainage and 1 segment on Deer Creek near Glenrock. These measurements are used to verify that the permitted stream flows are available during the specific time frames issued on the permit. Many of these segments are located in very remote wilderness areas and in many cases, it takes hours to hike in and make these measurements.

I would like to express my sincere thanks and appreciation to State Engineer Lanning and the other members of the Board 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 2020 Water Year (WY2020). 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. Currently, Division II employs a single, full time hydrographer/commissioner in both Casper and Sundance, and five full-time hydrographer/commissioners and one administrative professional at the division headquarters located in Sheridan.

GENERAL CONDITIONS

Due to the extremely wet conditions with little reliance on stored water in the preceding year, WY2020 began with robust reservoir capacity carryover in Division II (Tables 19 and 20). Reported carryover was 45% in both the Tongue River and Powder River Basins, excluding Lake DeSmet (the Powder River was 81.5% including Lake DeSmet). Lake DeSmet is better removed from the carryover 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. In general, the carryover values heading into WY2020 were 10% higher than the previous year (which was somewhat of an average year).

TABLE 19. DIVISION II RESERVOIR STORAGE - POWDER RIVER BASIN

Reservoir Name	Pre-Compact Capacity (AF)	Post-Compact Capacity (AF)	Total Capacity (AF)	Contents on Sept. 30, 2020	Contents on Sept. 30, 2019	Change in Contents
Cloud Peak	3,398	173	3,570	224	3,186	-2,962
Dull Knife	0	4,345	4,345	573	965	-392
Healy	0	5,140	5,140	2,499	3,991	-1,492
Kearney Lake	1,854	4,470	6,324	1,178	0	1,178
Lake DeSmet	37,515	197,472	234,987	196,257	202,243	-5,986
Muddy Guard	0	2,336	2,336	581	1141	-560
Tie Hack	1,647	788	2,435	698	2,435	-1,737
Willow Park	4,457	0	4,457	895	852	43
Posy No. 1	0	1,537	1,537	886	1,215	-329
Basin Wide (Total)	**48,871**	**216,261**	**265,131**	**203,791**	**216,028**	**-12,237**

TABLE 20. DIVISION II RESERVOIR STORAGE - TONGUE RIVER BASIN

Reservoir Name	Pre-Compact Capacity (AF)	Post-Compact Capacity (AF)	Total Capacity (AF)	Contents on Sept. 30, 2020	Contents on Sept. 30, 2019	Change in Contents
Big Horn	2,749	1,876	4,624	597	1445	-848
Cross Creek	0	798	798	13	39	-26
Dome	1,843	188	2,031	1151	1404	-253
Granger	146	0	146	0	0	0
Last Chance	210	0	90	0	0	0
Martin	561	0	561	0	0	0
Park	7,347	3,015	10,362	1,892	4,637	-2745
Sawmill	0	1,275	1,275	662	802	-140
Twin Lakes	1,180	2,231	3,411	2,149	2,360	-211
Weston	370	0	370	0	0	0
Willits	79	0	79	0	0	0
Basin Wide (Total)	**14,485**	**9,383**	**23,747**	**6,464**	**10,687**	**-4,223**

After the record breaking WY2019 in the Belle Fourche River Basin, both in terms of precipitation and stream flows, Keyhole Reservoir carried over 89% of its permitted storage going into WY2020 (Table 21), which was a 10% gain from the previous year. Keyhole Reservoir spilled for the second year in a row in 2020.

TABLE 21. DIVISION II RESERVOIR STORAGE - BELLE FOURCHE RIVER BASIN

Reservoir Name	Pre-Compact Capacity (AF)	Post-Compact Capacity (AF)	Total Capacity (AF)	Contents on Sept. 30, 2020	Contents on Sept. 30, 2019	Change in Contents
Keyhole	0	188,671	188,671	153,944	167,307	-13,363

Across the Division, the season started strong with above-average precipitation. Heavy snow and rain in late September carried into October. After a brief return to balmy conditions, heavy snow accumulated in early November, providing a jump start for a good mountain snowpack. February provided ample precipitation across all basins, setting records for the highest monthly snowfall throughout portions of the State. As soon as the calendar advanced to March, conditions changed significantly, as very little precipitation fell, and the snowpack began to dwindle (Table 22).

TABLE 22. DIVISION II SNOW WATER EQUIVALENTS AND PRECIPITATION (VALUES LISTED ARE % OF NORMAL)

River Basin	1-Jan-20		1-Feb-20		1-Mar-20		1-Apr-20		1-May-20		1-Jun-20	
	Snow Water Equivalent	Prev. Month Precipitation	Snow Water Equivalent	Prev. Month Precipitation	Snow Water Equivalent	Prev. Month Precipitation	Snow Water Equivalent	Prev. Month Precipitation	Snow Water Equivalent	Prev. Month Precipitation	Snow Water Equivalent	Prev. Month Precipitation
Powder	129	*	120	87	132	171	115	55	103	60	4	56
Tongue	107	*	101	75	121	207	105	44	103	70	80	47
Belle Fourche	113	*	126	131	148	124	132	35	433	58	M	62
Cheyenne	111	*	125	93	135	94	125	28	M	57	M	58
Basin Wide Average	**115**	*	**118**	**97**	**134**	**149**	**119**	**41**	**160**	**61**	**21**	**56**

* - values unavailable

M – denotes site was melted out

Even with the meager precipitation amounts in late winter and early spring, the snowpack in the Powder-Tongue basin remained around 100% of normal, due to the early-season boost, up until early May. However, the critical spring rains and snow did not materialize, and once the weather warmed, there was little reserve to keep area streams flowing enough to meet irrigation demand. The National Weather Service (NWS) termed northeast Wyoming to be "abnormally dry" on May 5, and conditions continued to deteriorate afterwards. By the end of summer, much of Wyoming was engulfed in "extreme drought." The runoff peaks were significantly lower in WY2020, and seasonal flow volumes were severely attenuated. Priority regulation of stream systems occurred earlier and more severely than in any year in recent memory. Soil moistures were noticeably drier, and precipitation events throughout the summer were scant or insignificant. Agricultural producers reported crop yields on dry land pastures as low as 10% of the previous year. Even irrigated land production was down. Accounts vary, but the average report was approximately 70% of normal for the first cutting of hay grass and alfalfa. Out of necessity, conveyance losses from reservoirs to individual headgates were doubled or tripled from what is normally applied. Due to below-average stream flows and limited precipitation, irrigators called for reservoir releases earlier than normal to augment direct flow irrigation water. Consequentially, carryover for WY2021 was significantly lower.

POWDER RIVER HIGHLIGHTS

While all river basins in Division II experienced poor conditions in WY2020, the Powder River Basin was especially hard-hit. The promising start provided by the autumn snowfall was overcome by sheer lack of snow and precipitation in the late winter and early spring. National Resource Conservation Service (NRCS) snow telemetry stations indicated the basin was completely melted out by June 1. Accordingly, most stream gages peaked on or near this date due to the unseasonably hot weather in late May that brought down the remaining high mountain snow. The stream gage peaks were generally 1/3 of the previous year, and seasonal flow volumes were between 41-81% of normal (Table 23). Indicative of the diminished runoff, smaller systems, such as French Creek, had peaks almost entirely controlled by its imported water. The majority of water in the French Creek system is imported from the North Fork of Clear Creek via the Four Lakes, French Creek Ditch, and Flume Company Ditch. Similarly, Rock Creek's seasonal flow amount of 81% is also skewed as it benefits from imported water from South Piney Creek, Willow Park, and Cloud Peak Reservoirs, and the amount of natural flow experienced in Rock Creek was certainly lower. To further drive home the point of how little snow existed in the Bighorn Mountains during the normally robust early June period, the Piney Creek at Kearny stream gage was down to 12 cubic feet per second a mere two weeks after it peaked on June 2.

Despite the less than ideal conditions, all reservoirs in the Powder River basin were able to fill to maximum storage capacity, although Kearney Lake barely did so. The reservoir was down three feet on June 16 when storage was curtailed by a call from a senior appropriator on Piney Creek. Daily briefings were provided to the dam tender as to conditions on Piney Creek and how much water needed to be bypassed. They were able to store water during the late afternoon diurnals, and thankfully filled entirely later in the month when a few days of cool weather and light rain improved conditions temporarily.

TABLE 23. POWDER RIVER PEAK AND SEASONAL FLOWS

Station	Date of Peak	Peak Amount (CFS)	Total Seasonal Flow (April - September)
Piney Creek at Kearny, Wy	2-Jun	500	27,381 AF=52% of 31 year average
Clear Creek at Buffalo City Park	1-Jun	610	13,500 AF=41% of 34 year average
Clear Creek at Double Crossing, Wy	1-Jun	958	56,400 AF=56% of 46 year average
French Creek near Buffalo, Wy	7-Jun	80	6,450 AF=71% of 8 year average
Rock Creek near Buffalo, Wy	1-Jun	254	19,885 AF=81% of 30 year average

Johnson County (the majority owner of the storage) began filling Lake DeSmet out of its Piney Creek diversion on April 30, and turned off the intake on May 11 when all Piney Creek

rights were satisfied. The first water orders commenced on May 10 for Boxelder Creek irrigators, released out of the south dam. Irrigation water orders from the north dam began on June 17 in response to stream regulation on Piney Creek (Table 24). Releases to Piney Creek and Clear Creek irrigators continued through the remainder of September, and the north dam outlet was closed for the season on October 1. In general, stream regulation took place much earlier than normal, and Division II Hydrographer/Commissioners regulated to far earlier priority dates than previously.

TABLE 24. DATES OF REGULATION IN TRIBUTARIES OF THE POWDER RIVER

District	Stream	Requested By	Date of Request	Action Taken
2, 3	French Creek	Four Lakes and French Creek Ditch and Flume Co.	12-Jun	Approved – apportioned natural flows
9, 11	Piney Creek	Pratt & Ferris No. 1 Ditch	16-Jun	Approved – delivered reservoir water and apportioned natural flows
3, 11	South Piney Creek	Willow Park & Cloud Peak Reservoir Co.	9-Jul	Approved – delivered reservoir water and apportioned natural flows on Rock Creek
11	Clear Creek	Clear Creek Land & Ditch Co.	7-Jul	Approved - apportioned natural flows
11	North and South Piney Creek	Prairie Dog Water Supply Co.	9-Jul	Approved – delivered reservoir water and apportioned natural flows
8	North Fork Powder River	North Fork Irrigation District	9-Jul	Approved – delivered reservoir water and apportioned natural flows
9	Clear Creek	Pratt & Ferris No. 2 and No. 3 Ditch	13-Jul	Approved – delivered reservoir water and apportioned natural flows
2	Clear Creek	Carwile & Lobban	17-Sept	Approved - adjusted headgate to North Fork Clear Creek to keep majority of flow in the main stem

The Leiter Ditch, property of the Lower Clear Creek Irrigation District, diverted water from Piney Creek to fill their 11,800 acre-feet appropriation in Lake DeSmet for the first time in a decade following their major rehabilitation project of the ditch, completed in the spring of 2020. In the interim, they utilized their alternate point of diversion, Johnson County's Piney Creek intake tunnel. The Wyoming Water Development Commission (WWDC) funded the project, including putting a portion of the ditch into pipe, cleaning and regrading the ditch, and improvements to the headgate and diversion structure. The Leiter Ditch is vital to filling

the upper elevations of Lake DeSmet due to the elevation head limitations of the gravity fed tunnel that is ordinarily used by Johnson County. The ability to fill these upper elevations of the lake is necessary should a future use materialize for the water rights prescribed to the upper portions of the lake.

Due to the fact that it gages almost entirely natural stream flows, the State Engineer's Office (SEO) stream gage on Clear Creek at the Buffalo City Park is a good indicator of the general condition of the water year. In WY2020, this gage saw 41% of its average annual discharge. Clear Creek above Buffalo went into regulation on July 9, and it was only a few short days later on July 13 when the lower portion also went into water restrictions. Accordingly, Healy Reservoir, now owned by the State of Wyoming via the WWDC, began releasing on this date. The City of Buffalo had to release a good portion of Tie Hack Reservoir throughout the summer when they exceeded their senior water right; the reservoir ended the season with scant carryover. A hard freeze on September 8 led many irrigators to winterize early and reduced demand on the system, which led to most of Clear Creek coming out of regulation on September 10. However, upper Clear Creek received another call for regulation on September 17 which lasted into October.

It was a fairly quiet year on the upper Powder River near Kaycee, WY. Despite a diminished snowpack upstream and only having 27% carryover from WY2019, Dull Knife Reservoir spilled in late June. It wasn't long afterwards that poor conditions on the North Fork of the Powder River dictated supplemental releases from the reservoir, and the District 8 Hydrographer/Commissioner granted a call for regulation to distribute the ordered water to the individual shareholders. Continuing the prevailing theme, a hot and dry summer necessitated leaning on the reservoir to the point where they carried over a mere 14% of the available storage on October 1, 2020. Despite the substandard stream flows, there was no regulation on the upper Middle Fork of the Powder, as those irrigators made do with what they had available at their headgate without calling for regulation.

As a result of budget reductions in the United States Geological Survey (USGS) cooperative stream gaging program, two stream gages on the North Fork of the Powder River were discontinued in late summer 2020, among others. The SEO recognizes the importance of these gages to stream administration, so both are being absorbed into the SEO gaging program. USGS 06311400 North Fork of Powder River below Pass Creek near Mayoworth, WY gage has already been outfitted with new telemetry and is transmitting data. The gage above Dull Knife Reservoir, 06311000 North Fork of Powder River near Hazelton, WY will be completed this coming spring when staff is able to access the site. The SEO online gaging platform can be accessed at http://seoflow.wyo.gov/ .

Continuing a recent trend, the Crazy Woman Creek system was quiet this year. Muddy Guard Reservoirs filled despite the meager runoff, and it provided enough water in the system to keep any senior appropriators from making a call for regulation. The upstream mountain watershed was completely melted out by May 29, and stored water orders began on June 11 and continued into the next water year.

TONGUE RIVER HIGHLIGHTS

The Tongue River drainage experienced similar conditions to those in the Powder River – low peak flows and below-average runoff volumes (Table 25). While no one looks forward to drought, the folks on the west end of Sheridan who were flooded out by Big Goose Creek in both 2018 and 2019 were probably relieved with the low-flow conditions.

TABLE 25. TONGUE RIVER PEAK AND SEASONAL FLOWS

Station	Date of Peak	Peak Amount (CFS)	Total Seasonal Flow (April - September)
Big Goose Creek above P.K. Ditch	1-Jun	780	36,600 AF=69% of 19 year average
Little Goose Creek in Canyon near Big Horn, Wy	31-May	328	25,900 AF=64% of 31 year average
Wolf Creek near Wolf, Wy	31-May	155	10,000 AF=57% of 31 year average
Prairie Dog Creek	5-Mar	223	6,850 AF=59% of 39 year average

Continuing the prevailing theme, the Tongue River drainage was subjected to drought conditions throughout the irrigation season. Through most of the winter, the snowpack hovered at or just above 100% of normal. Yet, the spring rains that battered reservoir spillways and caused local rivers to come out of their banks in the preceding two years were mostly absent. Given the abnormally wet WY2019, reservoir carryovers were high, which was important for some of the junior storage rights to be able to fill ahead of a potential call senior appropriators on Big Goose Creek. All mountain reservoir facilities filled and spilled without fanfare, most in late May or early June.

While it teetered on the edge most of the summer, the main stem of the Tongue River did not go into regulation in WY2020 (Table 26). Always a welcome relief, the State of Montana did not make a call to fill Tongue River Reservoir in WY2020. Despite the lackluster runoff, it carried over enough storage that filling was easily accomplished, and it spilled on May 28 during the peak of the runoff. The USGS stream gage at the Wyoming-Montana State line indicated a peak flow of 2,100 cfs on June 1. For comparison, last year it went over 10,000 cfs.

Owning a limited watershed, very little reservoir storage, and a bevy of water rights, Wolf Creek saw steep regulation this past year, although surprisingly, it held out until July. Wolf Creek's peak flow was just 10% of 2019. Imported reservoir water from Park Reservoir via the P.K. Ditch is the only thing that prevented irrigation from being called off entirely to maintain instream stock use. Regulation persisted up to the end of the water year in this system.

It was a historic year on Prairie Dog Creek, as many of the diversions were regulated for the first time in recent memory, if ever. Due to curtailments of the imported direct flow rights

from Piney Creek and the lack of natural flow, a call was received in mid-June when conditions were at their worst. The SEO stream gage at the mouth of the creek was struggling to record any water flowing past, and users at the bottom of the system were severely short of their senior rights and their ordered reservoir water. Upon receiving a call for regulation, the hydrographer/commissioner worked tirelessly to get the system back under control, coordinating orders from Kearney Lake Reservoir from appropriators that had either been regulated off or were on the verge of it. Eventually, robust return flows and lessening demand allowed the system to come out of regulation in late August.

TABLE 26. DATES OF REGULATION IN TRIBUTARIES OF THE TONGUE RIVER

District	Stream	Requested By	Date of Request	Action Taken
11	Prairie Dog Creek	PD-14 Ditch	16-Jun	Approved – delivered imported water and apportioned natural flows
4	Little Goose Creek	Colorado Colony Ditch	22-Jun	Approved – delivered imported water and apportioned natural flows
4	Big Goose Creek	Park Reservoir	17-Jul	Approved – delivered reservoir water and apportioned natural flows
5	Wolf Creek	SR Cattle Co.	25-Jul	Approved – apportioned natural flows
5	Tongue River			No regulation WY2020

Little Goose Creek appropriators are more accustomed to regulation, as the system is highly over-appropriated. To that end, this year was somewhat normal, although similar to other systems in Division II, regulation occurred earlier than normal.

Big Goose Creek was put into regulation by Park Reservoir Company's request to deliver water to their shareholders. It was a fairly nondescript season with one notable exception: the phenomenon of cyanobacterial algae blooms. Weston and Dome Lake Reservoirs were identified by the Wyoming Department of Environmental Quality as having elevated levels in late September. This is noteworthy for the fact that the City of Sheridan's drinking water is supplied partially from Dome Lake Reservoir, when their municipal diversion exceeds their senior rights in Big Goose Creek. In addition, Weston Reservoir spills year round into Babione Creek, which is a tributary of the East Fork of Big Goose. This event led to reduced releases from Dome Lake Reservoir and vigilant water quality sampling by the City of Sheridan water treatment staff. On September 29, the City coordinated a 24 hour shutdown of their intake system on Big Goose Creek in order to facilitate the full release of the weir pond, a small facility just below Dome Lake. Draining of the weir pond occurs annually at the close of the water year. The demand for stored water was so significant that the pressure transducer supplying reservoir elevation data at Park Reservoir was exposed on September 20 when the reservoir was 32 feet below spillway elevation. SEO staff reset the transducer to a deeper

dead pool in the reservoir. Park Reservoir was not alone in its scant carryover volume, every mountain reservoir in the Big Goose Creek drainage carried over less storage than the previous year

BELLE FOURCHE AND CHEYENNE RIVER HIGHLIGHTS

The Belle Fourche and South Fork Cheyenne River drainages in northeast Wyoming experienced the same drought conditions as the more western parts of Division II, albeit with subtle differences. Both of these drainages lack high mountain snowpack, and typically melt out and experience the runoff earlier than the Powder-Tongue Basin. However, springtime moisture was more prevalent, evidenced by the robust snowpack values well into April. When a storm event occurred in early March, the ground was still frozen, so local creeks and rivers swelled. The Belle Fourche River came out of its banks near Moorcroft for the second consecutive year.

The predominate feature on the Belle Fourche River is Keyhole Reservoir, located north of Moorcroft, WY. For the 2nd consecutive year, it did not lack for excitement during the spring time runoff. After a record breaking year in 2019, both in terms of precipitation and stream flow, Keyhole carried over a higher allotment of storage than normal going into WY2020. The reservoir slowly gained storage over the late fall and early winter months. Over 120% of normal precipitation in January and February combined with 148% of normal snowpack on March 1 led to ample water content in the drainage upstream of the reservoir. Not surprisingly, stream flows spiked quickly as the weather warmed significantly in late February and early March and the snow began to melt. The inflows quickly overwhelmed available storage space, and the reservoir spilled on March 9. That same day, the Bureau of Reclamation (BOR) initiated a safety/maintenance release as an internal alert response was announced. Throughout the ensuing irrigation season, the maintenance release continued as the BOR brought down the elevation of the reservoir. The release greatly benefitted downstream irrigators, because similar to the rest of the Division, climactic conditions soured. Very little precipitation fell after April, so the extra water put into the system kept the river out of regulation for the majority of the irrigation season. However, once the BOR terminated the 31 cfs release at the end of July, the river had very little natural flow to sustain the demand. Belle Fourche Irrigation District in South Dakota placed an order from Keyhole on August 18; the Belle Fourche River was placed into regulation by a call from the State of South Dakota (Table 27).

TABLE 27. DATES OF REGULATION IN TRIBUTARIES OF THE CHEYENNE RIVER

District	Stream	Requested By	Date of Request	Action Taken
1	Walker Creek	Henderson Ranch	21-Feb	Denied – deemed a futile call to regulate upstream facilities to fill P644S LeBar No. 5 Stock Reservoir
7	Belle Fourche River	State of South Dakota	18-Aug	Approved – shepherded storage water to the state line while ensuring Wyoming was within its 10% allocation under the Compact

A little explanation is in order in regards to South Dakota's request. Priority stream regulation in Wyoming requires that the calling party provide a signed, written request for regulation. Prior to my appointment as superintendent, it seems that a handshake agreement existed wherein we assumed that an order from Belle Fourche Irrigation District or another South Dakota entity would automatically trigger regulation on the Wyoming side, to deliver the stored water to the state line. This was an arrangement I was not comfortable with. This year, I required South Dakota to provide us in writing that they wanted our staff to deliver this water to the state line, which they did. My hydrographer went to work checking diversions and ensuring that Wyoming was within its allotment of water based on the flows at the state line on both the Belle Fourche River and Redwater Creek. In some cases we encouraged members of the Crook County Irrigation District (CCID) to order water, which they did follow through with. To my knowledge, we did not actually regulate any stream diversions, and with CCID's water order we were within our allotment as stipulated in the Belle Fourche River Compact.

The releases from Keyhole, both for safety and for irrigation use, greatly benefited users on both sides of the state line. They also inflated the seasonal flow volumes. By my calculation, the BOR released 17,650 acre-feet of excessive water – deemed as water released after the reservoir quit spilling and prior to the irrigation districts ordering stored water. By removing the excessive releases from the computation, the SEO stream gage recorded 121% of median and 98% of average discharge during the seasonal water year. Tabulating the total flow reveals it was a far better than normal year (Table 28). For comparison, in WY2019, 144,270 acre-feet flowed past the gage, which obliterated the previous record by 120%.

TABLE 28. BELLE FOURCHE RIVER PEAK AND SEASONAL FLOWS

Station	Date of Peak	Peak Amount (CFS)	Total Seasonal Flow (April - September)
Belle Fourche River near Alva, Wy	8-Apr	533	55,100 AF=178% of 32 year average

The peak annual flow recorded was 1,445 cfs on March 9, and the seasonal peak occurred on April 8 with 533 cfs. The seasonal water year is considered April 1 through the end of September.

The only other noteworthy event in this drainage was the successful completion of the major repair of Cook Lake in the Black Hills National Forest. The cooperative endeavor between the BOR and Department of Agriculture – Forest Service was years in the making and involved special funding from Congress. Due to an active landslide on the mountain to the west side of the reservoir, there was concern that a large slide could cause a flood wave to develop that could overtop the dam due to insufficient spillway capacity. The repair involved removing 4 – 72" CMP spillway culverts and replacing them with a precast 24' wide concrete box culvert, which greatly enhanced the ability to route a flood through the reservoir and still allowed vehicle traffic across the dam. An emergency spillway on the east side of the dam was added and lined with riprap, while a siphon type low-level outlet was added (although they had trouble getting it to function properly, and at this writing it is unclear if this problem was rectified). The final punch list items were completed in the summer of 2020, and despite the issues with the siphon, all parties involved are satisfied with the outcome.

ACCOMPLISHMENTS

My mostly young staff learned the hard realities and difficulties of water administration in a drought year. WY2020 was the worst I have witnessed in my almost 15 years in this agency. I oftentimes advise my field staff that it usually takes 5 years or more to really feel comfortable in your assigned district(s). However, a drought year will always accelerate that learning curve, because when you get called to go regulate a stream outside of your normal periphery you had better know the sequence of water rights, where the headgates lie, the lands in question, and the players involved. Learning on the fly seemed to suit each and every one of them, and I could not be more proud of not only their efforts, but their dedication to their job and their constituents.

As I have stated in previous years, Division II staff continue to work hard towards the goal of erasing the substantial proof backlog that has existed for many years. This is compounded by the more recent transfer of reservoir storage facilities built during the coal bed methane boom to the landowners. As properties sell and permit applicants move on, in addition to on the ground changes, it becomes more difficult by the year to complete many of these, so timing is of the essence. Due to the drought conditions experienced throughout Water Division II, the field staff had to increase their time commitments to stream administration, and there was not much time to devote to inspecting and finalizing proofs. Given that, they made tremendous progress, and I commend the staff for their efforts, because they were certainly productive. We submitted 194 proofs to the Board of Control in Cheyenne for endorsement and adjudication, including the cancellations of 23 proofs on our backlog and receiving 104 new proofs in the same time period. As of this writing, our proof backlog stands at 531. This is a far cry from a few years ago when we were hovering near 1,000, but more work remains.

The Safety of Dams (SOD) program involves an inspection every five years of reservoirs that exceed 20 feet in dam height and 15 AF in capacity, or are greater than 50 AF in capacity. According to the Safety of Dams Office in Cheyenne, there are approximately 1542 active dams falling under SOD jurisdiction statewide. Of those, 734 dams in this program are located in Division II, of which 136 were inspected in WY2019. Division II hydrographer/commissioners continue to focus on getting unadjudicated SOD size reservoirs adjudicated; unfortunately many of the older facilities are not. Back in 2017, 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.

Division II saw 20 new petitions docketed with the BOC in Cheyenne, a slight increase from years past. Of these, 14 were Surface Water and 6 were Ground Water petitions. Along with carryover petitions from previous years, 1 Ground Water and 13 Surface Water petitions were finalized by the BOC, including 1 that was dismissed or withdrawn. 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. This past year there were 5 petitions that were referred to hearing. Fortunately, none progressed to the formal public hearing. No protestors appeared at the noticed pre-hearing scheduling conference calls and all petitions were later granted at the next scheduled Board meeting.

Staffing wise, it was thankfully a quiet year. I was able to convert 2 part-time water commissioner posts in Kaycee and Casper to 1 full time hydrographer/commissioner, based in Casper. We welcomed Gordon Sawyer, formerly a hydrographer in Sheridan back to the agency in October of 2019. Gordon wasted no time in asserting himself. He has a challenge in front of him, as he now covers one of the largest, if not the largest area in the State. He stayed busy this last summer administering and regulating water use in the Kaycee area on the upper Powder River and its tributaries. In addition, he performed a multitude of reservoir and proof inspections in the almost entirely ephemeral streams of District 1, encompassing portions of Niobrara, Converse, Weston, and Campbell Counties.

There is no handbook to being a superintendent, and as I enter my 5th year in this job, I continually feel like I am better than the year before, and I try to expand my knowledge base and contributions to the other members of the Board of Control. When the Board convenes every 3 months, and we go through the various surface and ground water petitions, I am always hesitant to evaluate historic water use based solely on aerial photography. The technology we are now afforded makes our jobs easier in many ways, but it can also lead one astray. In these cases, there is no substitute for an eyewitness account of the conditions on the ground, and a superintendent's field inspection is helpful to the other Board members to evaluate the project. I completed more field inspections than ever before, and I continue my efforts to actively participate in the petition process while remaining mindful of the impartiality that is required should the docket be referred to a public hearing.

I continued to work on public outreach and my public speaking skills. In May, I gave a presentation in front of Wyoming Rural Water Association in regards to the role and authorities of the Wyoming State Board of Control. Along with my fellow Board members, I appeared in front of the Wyoming Select Water Committee in November of 2019, in addition to other Legislative appearances. I attended and spoke in front of several town councils in regards to water rights and related issues. As more senior Board members look to retire in the coming years, I hope to pick up more of the responsibilities that they have been shouldering.

I am pleased to report that my staff and I, in addition to my counterparts across the State, continue to work with municipalities across the State in dealing with the development and annexation of irrigated, agricultural lands into our ever expanding towns, in an effort to save pre-compact water rights. A loophole exists in the Wyoming statutes where lands can be annexed or developed within municipal boundaries without any sort of water distribution plan, whereas Title 18 stipulates they are required when done in the county. By attending city council meetings, meeting with city planners, developers, and other entities we have fostered a real appreciation for these water rights, and their importance to the State of Wyoming and its users. Pertinent to Division II, the City of Sheridan continues to give us a voice in their development review committee, and recently the Town of Ranchester passed an ordinance requiring developers to distribute, move, or change the use of water rights to the Town for their municipal use. The Dayton Town Council is pursuing moving historic, irrigated lands under their town boundary to their municipal diversion on the Tongue River through efforts on our part to educate the Council. The other members of the Board of Control, including State Engineer Greg Lanning, continue to work with the Select Water Committee of the Wyoming Legislature to address orphaned water rights under our towns and municipalities, and ensure that water rights are properly dealt with by amending Titles 15 and 18 of the Wyoming statutes. Furthermore, we are working to make the petition process easier for appropriators by relaxing the hearing notice requirements when petitions seek to change their points of diversion. It is not an easy process to add or amend statutes, but through these efforts, we hope to address the preponderance of orphaned rights under our cities and towns and the deleterious effects they create.

While not befitting the idea of an accomplishment but still deserving to be mentioned, budget cuts affected the SEO's ability to fund the cooperative agreement with the USGS. Due to the lack of matching funds from the SEO, the USGS discontinued the following gages in Division II at or near the end of WY2020:

- 06429905 Sand Creek near Ranch A near Buelah, WY
- 06289600 West Pass Creek near Parkman, WY
- 06289820 East Pass Creek near Dayton, WY
- 06392900 Beaver Creek at Mallo Camp near Four Corners, WY
- 06392950 Stockade Beaver Creek near Newcastle, WY
- 06429500 Cold Springs Creek at Buckhorn, WY

The following stream gages are only funded through 2021 and are at risk of being discontinued:

- 06324970 Little Powder River above Dry Creek near Weston, WY
- 06298000 Tongue River near Dayton, WY

While the loss of data is disappointing, hard decisions had to be made when faced with shrinking budgets, and I could not justify the continued expense for the gages that aren't critical to our everyday stream administration.

Lastly, I am happy to report that we completed a new 5 year cooperative agreement with the NRCS in the last year to provide snow survey measurements. Not only is the work vitally important to ensure quality data are available to runoff forecasters, but the activity is highly enjoyable for the staff to get out in the field for up to 5 days for each end-of-month snow survey run. SEO staff measures both manual snow courses as well as performs ground truths to the scattered snotel sites to ensure that the data are accurate and consistent with the telemetry that exists. This work is taking on added meaning in the Tongue River drainage, as the Yellowstone River Compact Commission Technical Advisory Committee is charged with improving water supply forecasts and to further that aim the expansion of the snotel/snow course network has been discussed.

SUMMARY

Notwithstanding the extreme drought conditions, it was a challenging year for me, Division II staff, and the SEO as a whole. The global pandemic changed the way we shopped, dined out, interacted with coworkers, friends, and family. Managers and administrators learned on the fly how to implement COVID-19 safety protocols while maintaining adequate service to the public. Despite the unusual circumstances, we came together as a team and I am proud of all that we accomplished. The steady leadership of Greg Lanning was instrumental to this process. I cannot imagine the stress of coming into the state engineer position, which seems daunting enough, but having the immediate challenges of tightening the agency budget, reducing positions including the deputy state engineer, and guiding approximately 120 employees through economic and social turmoil. We all made due with fewer resources, and no one personified this more than Greg. I am grateful for his tireless efforts and brave face he has exhibited throughout.

On-line reporting of data by the NRCS, USGS, NWS and NOAA, and the BOR was used in this report.

WATER DIVISION III

Submitted by:
Loren Smith, Superintendent
Riverton, Wyoming

This report will summarize Water Year 2020 (WY2020) for the Wind River/Big Horn River basins 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.

The beginning of water year 2020 dawned with Division III in rather good shape hydrologically speaking. Late season flows were higher than normal going into the fall period and progressed nicely into the snow season, with reservoirs being filled quicker than normal and the basin in good shape carryover wise. This pattern extended into the winter months and snowpack began to accumulate at average levels into February. This is when the year 2020 began to rear her ugly head. Snow quit coming, COVID-19 showed up, budgets went to heck and literally everything normal gave way to the will of a global pandemic during a drought.

The larger on-channel reservoirs in the basin were in good shape after previous years of good water supplies leaving most of the division producers in decent shape going into the irrigation season. Pilot Butte was allowed its customary fill of Boysen water captured higher in the basin in coordination with the SEO, the Bureau of Reclamation, and Midvale Irrigation District. This water is generally needed in the fall to replenish the Boysen to Bull exchange account, which through paper accounting, provides minimum physical flows of water throughout the winter months below Bull Lake Reservoir. This annual exchange agreement culminates in the relocation of Boysen storage water held in Bull Lake to Boysen Reservoir during the winter or non-diversion period for Midvale Irrigation District. Once the runoff had subsided, the reservoirs were called upon heavily across the entire division to make up for natural flow shortages. Table 29 provides information as to the depth that reservoirs in the division were drafted to replenish natural flow shortages across the division. The Change in Contents column in the table below clearly shows that most reservoirs ended the water year much lower than how they had started, and in very similar fashion to WY2018.

TABLE 29. DIVISION III RESERVOIR STORAGE TABULATION

Reservoir or Lake Name	Total Capacity	Usable Contents on Sept. 30, 2020	Usable Contents on October 1, 2019	Change in Usable Contents
(Lake) Adelaide Reservoir	4,764	485	1,299	-814
Anchor Reservoir	9,252	471	463	8
Bighorn Lake	1,116,000	939,880	999,265	-59,385
Boysen Reservoir	757,851	571,249	647,649	-76,400
Buffalo Bill Reservoir	644,580	455,099	487,014	-31,915
Bull Lake	151,951	74,692	86,068	-11,376
Christina Reservoir	3,860	0	0	0
Corral Reservoir	1,027	368	640	-272
Diamond Creek Dike Reservoir	18,378	270	296	-26
Enterprise Reservoir	1,698	0	0	0
Fairview Extension Reservoir	1,411	1,410	1,290	120
Greybull Valley Reservoir	33,169	6,594	16,326	-9,732
Harrington Reservoir	1,202	600	800	-200
Lake Cameahwait Reservoir	6,683	6,683	6,683	0
Lake Creek Reservoir	1,373	358	358	0
Lower Sunshine Reservoir	58,748	28,827	41,882	-13,055
Newton Reservoir	4,525	1,575	2,200	-625
Perkins and Kinney Reservoir	1,202	324	645	-321
Pilot Butte Reservoir	34,600	18,895	16,088	2,807
Sage Creek Reservoir	2,785	2,681	2,714	-33
Shell Reservoir	1,949	95	487	-392
Shoshone Lake Reservoir	9,741	0	0	0
Upper Sunshine Reservoir	52,988	30,421	39,373	-8,952
Teapot Reservoir	1,578	0	0	0
Ten Sleep Reservoir	3,509	3509	3789	-280
Wiley Reservoir	1,020	821	953	-132
Worthen Meadow Reservoir	1,504	1,384	1,292	92
		Total Loss		**-210,882**

April through September stream flow averages are reflective of a quite varied and localized snowpack, when compared to the long-term average of State of Wyoming stream gaging points,. With very little precipitation received across most of the division, and no sustained spring storms, flows never picked up. Stream flows averaged between 29% on Cottonwood Creek and 120% on the Little Popo Agie drainage. The Little Popo Agie figures are skewed some due to the fact that late season draining of Christina Lake Reservoir contributed to the low natural flows bringing the appearance of higher flows in that drainage. The users have not released Christina storage over the last couple of wet years, but it was nice to have it available on this drier year. The best snowpack and runoff occurred on the eastern side of the basin

with drainages heading in the Big Horn Mountains averaging about 74% of the long-term average while the western side only ran at about 44% of the normal.

TABLE 30. DIVISION III STREAM FLOW PERCENTAGES WY2020

Stream Source	% Of Average	Stream Source	% of Average
Middle Popo	70%	Nowood	60%
Little Popo	128%	Nowood TenSleep	76%
Big Horn River	49%	Ten Sleep Creek	73%
Wind River @ Hywy 26	76%	Shell Creek near Shell	81%
South Fork Owl	42%	Medicine Lodge	78%
South Fork Owl	54%	Paint Rock	77%
North Fork Owl	32%	Gooseberry	31%
Owl Ck	38%	Cottonwood Creek	29%
Wind River	94%	Greybull River	81%

Administrative regulation was called for in 7 separate drainages during the 2020 season. Pre-runoff regulation was called for on 4 streams, with regulation continuing until the end of the water year on Gooseberry Creek, Greybull River, and Owl Creek. Bennett Creek stayed high enough to satisfy all demand on that system after runoff subsided. Without a significant runoff event, it is generally best to keep regulation in place so appropriators do not try and play catch-up as the stream drops off quickly after the peak.

TABLE 31. DIVISION III CALLS FOR REGULATION WY2020

District	Stream System	Tributaries	Date of Call	Calling Party	Status
13	Gooseberry Creek	Blake Denton	4/29/2020	Travis Griemsman	Approved
8	Greybull River	Farmers Canal	4/30/2020	Greg Piotrowski	Approved
10	Bennett Creek	Berry	5/6/2020	Dave Hoffert	Denied
10	Bennett Creek	Berry (North) Ditch	5/11/2020	John Schina	Approved
5	Owl Creek	Hale Ditch	5/20/2020	Landis Webber	Denied
5	Owl Creek	Owl Creek	5/20/2020	Matt Brown	Approved
14	Meeyero Creek	Brassington	6/1/2020	Jim Butterfield	Approved
12	Paint Rock Creek	Anita Ditch	7/24/2020	Martin Mercer	Approved
12	Medicine Lodge Creek	Anita Ditch	7/24/2020	Martin Mercer	Approved
5	Owl Creek	Owl Creek Instream Stock Use only	8/20/2020	Matt Brown	Approved

Spring planting of crops was a bit early for once this year as the rains were few and the temperatures were right. The last reported frost in the Powell area was on May 8th. These conditions generally result in good production which is a direct result of a good germination period with good temperatures and sufficient moisture. According to the Western Sugar folks, sugar beet production in this area of Wyoming is forecasted at 28.6 Tons/acre and at 17% sugar average. These are very good numbers and with an increase in value per ton, the producers are looking at a very good harvest this year. Barley came down a bit from last year, by about 5-8% tonnage but very good quality. It is believed that the decrease may be attributed to the rotational plantings where barley was sowed in fields where there was a major freeze of sugar beets last year. Alfalfa seed growers did a great job this year; with the dry conditions allowing the cutter bees to do their work, they realized a dandy crop. Statewide yields tend to be around 550-650 lbs while this year, there were reports as high as 1400lbs! Bean and corn production in 2020 didn't fare as well as the other crops. A hard freeze in mid to low 20's with some snow showers around hit on September 9, damaging the standing corn as the leaves burnt and dried quickly. The commercial bean crops were only about 75% of normal tonnage. The dry seed beans did a bit better due to being slightly ahead of schedule in their maturation.

ACCOMPLISHMENTS

The primary duties of this position dictate that a significant amount of time each year be dedicated to Board of Control activities. This past year was no exception as we were able to shepherd 22 surface water and 3 ground water petitions through the Board processes. Currently, there are 27 surface water petitions and 4 ground water petitions on the Division III docket with the bulk of the petitions being on the Owl Creek drainage.

Apparently, based solely upon our level of involvement, the State Engineer's Office and the Board of Control must be more affected by proposed legislative changes this year. We have been called upon quite a few times this past year to provide research, input, and add testimony to proposals for statutory changes through various interim committees and other agencies. These changes appear to be within two primary categories: 1) Working with water rights owners to provide them with an efficient and more predictable process to change their water rights while keeping the process at a lower cost and 2) possible revenue changes that could potentially assist in funding our portion of State Government. The first category is an interesting beast in that, while we are trying to think outside of the proverbial box and come up with new ideas, we keep getting knocked back by legal constraints. The problem is, if we don't do something soon, we stand to lose out as a State. Rather than lose what we have and take a seat behind our western neighbors, we must do something to secure the future of water for our following generations, before a downstream neighbor takes that option away from us in court.

The staff of Division III continue to work diligently toward completion of field inspections for proof of construction and proof of appropriations. As of this writing, there are currently only 32 proofs remaining in our files needing inspection and finalization of the proof for adjudication. During this past year, agency and division staff inspected and completed 61

surface water and 16 ground water proofs for submission to the Board of Control for adjudication.

The field staff of Division III continues to stay current with periodic dam safety inspections completing 30 such inspections this year. Three dams in the division currently have fill restrictions in place. The Ewen Reservoir in Big Horn County off of Beaver Creek continues to be under a fill restriction issued in 2016. The Prince Reservoir near Wapati is significantly impacted by a landslide, which damaged the outlet channel and spillway of this facility. This reservoir remains under restriction, but its primary source is a groundwater well that is easily controlled. The Renner Wetlands Reservoir project has been completed by the Game and Fish Department, which lifted the fill restriction on that facility. One other reservoir in the Big Horn Mountains, the Wayne Jones Reservoir, is also under a fill restriction as this facility was constructed over double the permitted size. The increased size has made this facility now qualify as a safety of dam size reservoir. The additional permitting needed has not been forthcoming and discussions have been initiated to have this facility breached or reconfigured in order to limit its ability to store only the permitted amount.

A significant amount of time in this position is spent working and growing with staff. Building a well trained, confident staff continues to be a goal of mine. With the lack of turnover in this division for the past 6 years, my intermediate supervisors and myself have continued to expand the training of our staff by involving them in more and more of the finer details of their jobs. We have utilized PMI goals to get the division hydrographers more familiar with the petition work going on in each of their areas. We had them research and write a manual for stream gaging, as well as review each and every water right and its associated details in preparation for the upcoming review of a long awaited new tab book for Division III. All of these efforts are designed to build their knowledge base and confidence so they can approach their job in the best way possible. As many of us get closer to retirement, it is important that we leave behind a staff that is well-situated to move up the chain and succeed at the highest level possible. This year, no appeals of any Hydrographer decisions came in, and it can be concluded that the agency is really benefitting from these efforts.

The cooperative snow survey program for the Wind River basin has been run out of the Division III office for 8 years now. The surveys are completed on time and with a professionalism consistent with a dedicated crew of 4 surveyors are doing all of the work in Division III. It is my firm belief that the quality of the surveys continues to improve due to these efforts. The NRCS contract has been changed this year, and we are now receiving funding reimbursement for our time, mileage, and equipment needs. It also appears that having a trained instructor in the field for CPR and First Aid certification is paying dividends by allowing the efficient training of all snow surveyors across the State in a timely manner at a reduced cost. Of note this year is we saw four grizzlies during survey trips to the Castle Creek snow telemetry site. This is often the case at this site during the end of April survey trip, but it can happen at any of the sites we measure.

The NRCS water rights verification forms continued to stream in for projects with proposed funding through the NRCS programs. This year, Division III completed 67 of these verifications, down by nearly half of what was completed in prior years. The verifications are

used to confirm that all lands under a federal cost share project, like being considered for funding under NRCS programs, 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 lot of staff 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 25-30% of the proposed projects require some amount of petition work or additional permitting prior to moving forward with funding. With the NRCS holding up their end of the deal by not funding anything that will create illegal water use, we have been able to help producers get their rights in order so they don't create administrative problems in the future. As of the writing of this report, there are approximately 75 of these verifications in review within this Division, so it appears that the lull realized last season is catching up with us.

The Big Horn River Long-term Issues Group (LTIG), led by the Bureau of Reclamation in Montana, continues at what appears to be a new normal. Only one meeting of this group took place this year, primarily due to the COVID-19 restrictions on meetings. A couple of years ago, the Bureau assembled a smaller technical group to evaluate the operating criteria that is in place and to determine whether or not the original goals and objectives outlined years ago are being met or not. Having been involved in this group from its onset in 2006, we completed our review of the operating criteria in 2019 and have worked to develop a Riverware daily timestep model of the dam operations. This led to some adjustment of the existing operating criteria, and operations were officially changed over to the daily timestep model beginning in January of 2020. Though the changes were minimal, the overall result is one with nearly zero human decisions necessary which should lead to a more predictable management of the reservoir.

This year, numerous meetings were attended as part of a multi-agency group of officials tasked with working toward a new operating plan and criteria for the Willwood Diversion Dam in Park County. This 100-plus-year-old structure stored significant silt over its lifespan, and once repairs were made to a regulation gate damaged years ago, a major, unintended flush of silt went down the Shoshone River. With the retirement of Rick Deuell in November of 2019, I moved from working group 2 to working group 1. The focus of this group is to review and analyze the work being performed by groups 2 and 3. Only one meeting of this group actually took place during the year due to COVID-19 limitations.

The State's Performance Management Initiative (PMI) time demands continue to ebb and flow with each season. Extensive time demands are placed upon supervisors three times during each calendar year. Goal planning, mid-term review, and annual evaluation stages all take time, and this section has taken a different approach this year by coming up with team goals and expanding the knowledge base of our staff through the completion of these goals. The main goal assigned was for our division staff to create a cloud-based data entry tool to record the thousands of diversion flow readings taken during the irrigation season. With this tool, staff enter readings while on site onto their cell phones, and the data is automatically uploaded to the master database. This saves huge amounts of time while also increasing the quality control of the readings. Everything with this new tool has worked extremely well.

AREA HIGHLIGHTS

With quite good carryover storage and a moderately good snowpack in the Wind River basin, WY2020 did not qualify as an accounting year by the Bureau of Reclamation in Mills. Nonetheless, our accounting system is run daily every year, and it continues to be such an important tool for staff and the appropriators. As 2020 was not a great water supply year, it was a very good reminder to folks of how fast things can go awry when shortages occur. With my longtime assistant superintendent now retired, no person, other than myself, has administered through a drought year like the one we entered in the summer of 2020. There were constant questions, calls, and meetings to explain how things work when water is not plentiful. The Bureau has experienced extensive turnover in the Wyoming Area Office, and though the new folks seem to be very bright and highly educated, they never had the opportunity to learn and understand the intertwined nature of all of the various pieces and priorities of water that must work together on the Big Wind and Big Horn River systems. Until the region experiences a full-fledged "accounting year" on the Big Horn system, there is no true incentive for folks to learn this complex system. With that said, we have worked diligently to get our hydrographers trained and cross-trained, so we are prepared for the inevitable when it does happen.

The Shoshone and Clark's Fork drainages had received a decent snowpack (88% in Shoshone and 112% in Clarks Fork) to work with during WY2020. Assistant Superintendent Landis Webber continues to train Ben Wollenzien in the finer details of stream regulation and administration. Ben is doing a fine job, and he actually was able to regulate a couple streams (Bennett and Little Rocky Creeks) earlier this past year, prior to runoff. The experience gained regulating is invaluable to a hydrographer, as it really brings to life some of the finer details of Wyoming Water Law in action. The new Heart Mountain Irrigation District enlargement application has now been fully inspected, and all proofs are ready to be advertised for adjudication.

Shell Creek continues to keep Division III hydrographer Dan Laursen and other Division staff quite busy. Numerous contentious petitions, poor communications, short water supplies, and distrust in the valley continues to lead to an inordinate amount of time being spent chasing issues and problems in this area We have supplied equipment price quotes to the Shell Canal Board of Directors and various other individuals on a nearly annual basis, but to date, no one has decided to purchase gaging equipment that will likely alleviate much of the distrust and rumors going on in the valley. In 2019, we installed a new gaging system at the head of the McDonald / Shell Canal, and this gage is very informational with undisputed factual data that is quite useful in the administration of rights in the valley. One issue that seems to continually grow is that a single person, hired by multiple canals and ditches on this drainage, operates the whole thing. These users within the canal companies feel they can self-regulate better than official State regulation. This is fine, as long as they don't operate the system in a manner which could be detrimental to others; however, I am not always convinced this is the case. But, until we have a signed valid request for regulation in hand, we will not be turning any headgates on this drainage. Major land transfers are occurring in the area, and it appears that there are outside interests who are buying up longtime farm and ranch properties.

The Leavitt Reservoir re-construction and expansion project being funded by the Wyoming Water Development Commission (WWDC) is moving forward, and we are over most of the major hurdles of that project. Bids should be sought this spring with construction beginning during the summer of 2021.

WY2020 began with a rather good snowpack for the Nowood drainage and its tributary streams. Snowpack reached as high as 184% of normal prior to melt out in the Paint Rock and Medicine Lodge Creek drainages. The District 6 drainages were standing at around 130% of normal. Cooler spring temperatures held the snow on the mountains longer and runoff was a bit later than normal. Very little precipitation was realized, and this led to administrative regulation on major tributaries like Paint Rock Creek and Medicine Lodge Creek toward the end of July. Between regulation activities, dam safety work, and proof inspections, Mr. Philip Beamer, the area hydrographer, was needed to work with the consultants and engineers as they collected additional stream flow data to complete the study work on the Alkalie Reservoir project for WWDC.

The Owl Creek drainage did not appear to benefit from much snow accumulation after the 1st of March. An above-average snowpack in March and April ceased gaining and began to fall behind through the spring as very little accumulation occurred. Only one appreciable precipitation event occurred on June 29, and nothing again until September 9. It was a long hot dry summer on Owl Creek and Cottonwood Creek in western Division III. Most streams dried up in this area, and by the first of September, there were only a few spring channels running measureable water. Flows diminished that by August 20, major irrigators and the Tribes requested an "instream stock use" designation only for the Owl Creek drainage. Under the watchful eye of Mr. Tim Hawkins, the hydrographer for Districts 5 and 14, this regulation did exceedingly well through the end of the water year, providing stock water to those who have access to the stream channel between Anchor Reservoir and the Big Horn River. Tim also worked very hard with our Cheyenne staff, the appropriators on Owl Creek, and Mr. Rick Hudson, a local surveyor, to prepare the necessary paperwork to get approximately 29 diversions on Owl Creek properly recorded Points of Diversion through petitions to the Board of Control. Most diversions were washed out in the early 1960's and headgates were generally moved upstream to correct the washouts. However, petition work to record these moves was never completed. We came across these problems in 2017 and notified folks that they would have to get these inaccuracies remedied. This year, the project took a turn when we found out that actual timing of the washouts/changes and that these changes could generally be handled as pre-1965 changes under the Board of Control Rules, thus simplifying the mapping and petition work.

The Greybull River was caught in the middle between the absolutely horrible snowpack witnessed in the Cottonwood and Owl Creek drainages and the decent snowpack realized in the Shoshone and Clarks Fork basins. The Greybull performed quite well with early May, with figures in the high 80s to low 90s in percent of normal snowpack. Regulation began May 1, and as usual, regulation activities were relaxed during the peak runoff beginning about June 1. Most years, regulation is relaxed for 5 to6 weeks during runoff; this year, regulation was back in full force one week after it had been relaxed due to dwindling supplies. This was a year where the big three reservoirs held by the Greybull Valley Irrigation District really

displayed their worth. They were full going into the runoff and they were drafted hard during the remainder of the season in order to provide enough water to finish the valuable crops found in this drainage. These reservoirs provided at least twice as much water to their users through district water orders than any of the last few years. Heber Jensen and Mike Riley are the hydrographers on the Greybull River, and their experience and ability to follow and understand the leveling program utilized on this system pays dividends every year. They know which water goes where every day, and they see problems coming long before they appear. It is this consistency in administration that makes dry years work time after time.

The Gooseberry drainage in District 13 was in rather poor shape this year. This drainage is low elevation, very limited in high mountain snowpack, and over appropriated to the point where regulation is an annual event. With the conditions in 2020, Gooseberry actually dried up completely in stretches for periods of time, and only a couple of diversions saw any water after the middle of July.

The Popo Agie and Little Wind River drainages endured a near average snowpack year. A varied snowpack consisted of not much in the southern drainages, with 70-73% snowpack at South Pass and Deer Park courses, to bit more in the northern drainages (with 88% at Hobbs Park). The Little Wind basin provided fair runoff and a decent water year, even with the lack of precipitation. No flooding, no major storm events, no major forest fires, so nothing earth-shattering to really make note of. The new gages on Worthen Meadows Reservoir and the Roaring Fork Creek, above and below the reservoir, worked well and they are quite useful tools for both the SEO and the City of Lander, who funded their installation. Self-regulation continued again this year, and it worked fairly well. Land development and new subdivisions are constantly pulling staff in various directions in the Lander area. Keeping some of the more ambitious developers in line with the laws and regulations often times poses some issues. However, this is a nice place to live and I don't see these problems changing for quite some time.

SUMMARY

Water year 2020 followed a couple of rather normal years, water supply wise, and it was a far cry from the heavy water years of 2016-2017. We had good carryover storage, which often leads to exaggerated runoff due to lack of available storage space, but cooler temperatures across the division kept everything in check and strung the less-than-normal supply out well into the summer. This water division continues to work diligently with the appropriators to keep their water rights and water use in concert with each other as we assist them with the necessary petition work making sure they are utilizing properly recorded, defensible water rights. It is our intent to respond quickly to each and every request and inquiry that comes into our offices while maintaining our proper authorities and compliance with statutory requirements. With reduced staff numbers, it often times makes for some long days and weeks for those of us who are exempt employees, as we cover vacancies and deal with the bigger problems across the division. Burnout is a real and tangible thing. Then, while we were doing everything possible to accomplish our assigned work, this little problem of a global pandemic crops up in February and March, which added significantly to the daily

workloads of all staff. Masks, quarantines, social distancing etc., etc. all added to this mix. During the season, this division experienced a few periods of short staffing due to quarantine timing, closed offices, positive staff tests, and positive family members. The one shining star was that all division staff have been extensively cross-trained for this type of event. We were able to cover every absence, and I believe we did so in a manner that the appropriators found very transparent. The transition from the administration led by Mr. Pat Tyrrell for the past 18 years, to the new one led by Mr. Greg Lanning, who was appointed the new State Engineer in November of 2019, was about as easy and painless as we could imagine. There are changes, but to date, they have been necessary and welcomed by all. We continue to deal with major budget cuts and adjustments passed along by the Governor and the Legislature, but we strive to keep providing that same level of service to our constituents as we always have done. The Cheyenne staff support is essential for the success of the field staff and vice versa, but I believe the effects of this pandemic and how it has affected the day to day work of our staff will be felt for a long time. With everything going on in State Government, and now with having completed my 33rd field season, I can attest that things only continue to get harder and harder to keep up with on a daily basis. Yet, the dedicated staff of this water division continues to do more with less while doing everything necessary to accurately divide, regulate, and administer the waters of the State of Wyoming. Thank you.

WATER DIVISION IV

Submitted by:
Kevin Payne, Superintendent
Cokeville, Wyoming

INTRODUCTION

This report summarizes Water Year 2020 (WY2020) for the Green, Bear, and Snake River drainages located west of the Continental Divide that includes it's 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, which includes the easterly Separation/Soldier/Dry Lakes portion of the Great Divide Basin.

GENERAL CONDITIONS

The WY2020 consistently tracked about 90% to 120% of the median Snow Water Equivalent (SWE) throughout the division during the majority of the winter months.. In contrast to the two previous years, the Uinta Mountains enjoyed slightly above-median conditions. Abundant valley snow conditions gave false hope to water users as they continued to question our offices, expecting something closer to a 200% mountain snowpack. Winter snowstorms increased in the valleys, but weakened as they passed over the mountains. A few timely spring rain and snow storms aided in a good start to crop conditions. Most reservoirs throughout the division were able to fill and spill. As summer progressed, rain ceased, and the majority of the division started to realize drought conditions. Reservoir storage was steadily drafted to help alleviate the lack of precipitation. As a positive note to the very dry conditions, this was one of the only years I can remember that hay was not rained on for any of the crops.

Aside from the normal water-related issues typically encountered at our office, COVID-19 was first detected in the United States on January 15, 2020. On March 13, 2020, Governor Gordon declared a State of Emergency and a Public Health Emergency, and shortly after, most in person large meetings were moved online. Day to day regulation, stream gaging, and other statutorily related duties remained mostly unchanged; however, the multiple out-of-state meetings that have steadily trended upwards over the last several years were abruptly cancelled or moved to an abbreviated teleconference version. We noticed a large uptick in people relocating to Wyoming, especially in the Afton and Jackson areas due to the pandemic. The ability to work remotely and to avoid crowded cities seemed to escalate this move. With this move it brought challenges to our office to help with water right searches and education of Wyoming water law.

Twenty requests for regulation were received during WY2020 and were responded to within the two business days required by the strategic plan. This total includes two interstate calls for regulation, which required us to shepherd water to the state line.

Water users reported slightly less-than-average production from meadow hay and slightly above-average on alfalfa where water was available. The COVID-19 pandemic delayed meat packing plants processing, creating disruptions throughout the summer months on cattle prices. Cattle prices were once again reduced significantly from the previous year.

GREEN RIVER BASIN

Snowpack in the Upper Green River Basin on the February 1 snowpack report was 99% of median. The Wyoming Range side of the Green River Basin held close to average conditions throughout the winter months while the New Fork and Big Sandy-Eden Valley Basin fell short of average conditions. The May 1 snowpack report in the Upper Green River was at 106%, compared to 99% reported at the same time the previous year. The May 1st report forecasted 90% of average inflow to Fontenelle Reservoir.

Middle Piney water users were able to voluntarily reduce diversion amounts, delaying regulation until July 3rd. South Piney regulation began on May 27 and remained in regulation until August 3. After regulation ceased on South Piney, regulation continued on Fish Creek and is still being regulated as of the writing of this report. Once again regulation issues occurred within the Piney Creek drainages that resulted in Hydrographers being swapped between several different creeks. Multiple headgate and measuring device orders were sent throughout the summer months on Middle and South Piney Creek diversions with a deadline to be completed by late fall. Many diversions are still not in compliance with the orders and enforcement actions are taking place.

After multiple years of Boulder Canal exploring regulation and the requirements of a measuring device that would be required, regulation was requested on August 17. The initial request was denied due to the lack of a proper measuring device, but was later approved on August 17. The headwaters of this area South on the Wind River Range saw the worst conditions within the division for lack of snowpack.

The Henry's Fork drainage February snowpack report showed that the SWE was overall 192%, and by May, had dropped to 101%. Dry conditions triggered regulation on both the Henry's Fork and the Burnt Fork on July 13. The lower Henry's Fork avoided regulation until August 18, with the water users self regulating to allow adequate flows up until this date. Island Lake storage was short lived with the outlet opened on June 26 and had run out by June 30th. Measuring device and headgate issues continue to be addressed as needed along with upgrades to telemetry systems. Multiple petitions and new filings are being filed within this area to clean up old discrepancies in water rights, and also facilitate new irrigation systems.

Ham's Fork drainage started the winter season with 106% SWE and by May, had dropped to 92%. Viva Naughton Reservoir filled June 20, and PacifiCorp worked with the water users to provide the normal 6,000 acre-feet of storage, along with making available 4,000 acre-feet of

water for lease. The users utilized all 6,000 acre-feet as well as 360 acre-feet of the "lease pool water". Corral Creek was called into regulation on June 3; shortly after the call, there were reports of interference with regulation. Complaints were deemed valid, and locks and headgates were ordered upstream. Ham's Fork water users and tributary creek users are again requesting that the State Engineer's Office find a way to reinstate the position lost in this area several years ago.

The Black's Fork and Smith's Fork went into regulation on June 16 to start delivering storage water out of Meek's Cabin and Stateline dams. Hot and dry conditions throughout the summer months required adjusting the shrinkage rates to deliver water lower in the system. It was found that up to thirty CFS was being lost to the system at times on the Black's Fork. Multiple headgate and measuring device orders were sent out on both the Black's Fork and Smith's Fork, with some immediately complying and others requesting extensions.

Generally, carryover storage in Green River Basin reservoirs saw an overall drastic decrease compared to the previous WY2019 (Table 32.).

TABLE 32. GREEN RIVER BASIN RESERVOIR STORAGE

Reservoir Name	Usable Contents	Content on Sept. 30, 2019 (AF)	Content on Sept. 30, 2020 (AF)
Beaver Meadows	2,461	0	0
Big Sandy	39,700	18,659	7,146
Boulder Lake	22,280	16,042	8,466
Eden No. 1	18,489	2,773	610
Fontenelle	345,397	259,048	257,320
Fremont Lake	30,899	21,506	16,994
Hoop Lake	4,026	3,825	2,013
Island Lake	778	0	0
McNich #1	1,089	476	457
McNich #2	490	92	152
Meeks Cabin	33,571	10,642	3,693
Middle Piney	4,201	882	N/A*
New Fork Lake	20,340	10,170	9,560
67 Reservoir	5,211	2,053	646
Sphaeralcea	99	74	39
Stateline	14,020	5,748	3,940
Viva Naughton	45,465	34,129	32,280
Willow Lake	18,816	12,193	11,101

*Middle Piney under construction during 2020.

SNAKE RIVER BASIN

The February 1 NRCS report showed an overall Snake River Basin SWE of 103%. Unlike many other areas in the division, the snowpack slightly increased to 113% by the May report. Most of the Upper Snake River Basin enjoyed near normal runoff conditions and even a few of the normal reports of flooding.

Measuring device compliance began on Teton Creek with weirs being installed on North Side Canal, South Side Canal, and also the Waddell. Lack of summer precipitation in the Teton Creek drainage triggered interstate regulation on July 28. Last year we requested that an exchange petition be filed on Mill Creek and North Side Canal that was filed and is awaiting approval.

A call for regulation was received on Stewart Creek Pipeline on July 28. This call was denied due to the lack of a measuring device as required by my predecessor. Additionally, if a call for regulation was received and additional water was available at the headgate that was being bypassed, regulation may be denied. This denial of regulation and the subsequent enforcement of the measuring device order were appealed to me on July 31. I upheld the actions of the Water Commissioner in a lengthy letter on August 7. This was appealed to the State Engineer on September 8, and is now awaiting an outcome.

The State Engineer's Office continues to investigate the best way to permit Wild and Scenic segments on the Snake River and many tributaries. After the regularly scheduled meetings were discontinued in 2018 where our agency provided clear guidance, we received correspondence in April with all of our guidance disregarded. Quantification for adjudication without careful consideration in the permitting stage could prove to be extremely difficult. Once permitted, a regulation call could have far reaching implications throughout the basin that few appropriators likely fully understand.

Carryover storage at the end of WY2020 was 74,964 acre-feet higher than in the previous WY2019 (Table 33).

TABLE 33. SNAKE RIVER BASIN RESERVOIR STORAGE

Reservoir Name	Usable Contents (AF)	Content on Sept. 30, 2019 (AF)	Content on Sept. 30, 2020 (AF)
Grassy Lake	15,204	11,707	11,251
Jackson Lake	838,000	569,840	645,260

BEAR RIVER BASIN

The Bear River Basin as a whole, started January with a 106% of median snowpack and dropped to 104% by May. The Smith's Fork stayed mostly above-average throughout the winter months with a 112% in February eventually decreasing to 104%. The Uintas started with 106% snowpack and by May, dropped significantly to 73%. With decent snowpack and

high reservoir carryover amounts, concerns of flooding were expressed by the National Weather Service; however, as high flows came, almost 1,000 CFS was diverted, and very minimum return flows showed back in the system for almost a month.

Bear Lake was filled to 5,919.46 ft allowing reservoirs in the Upper Division to fill and spill without storage restrictions imposed by the limits within the Amended Bear River Compact. Peak run-off was 86.39% of normal and occurred on June 1. Interstate regulation was not imposed in the Upper Division, although state regulation began on July 6. As dry conditions persisted into late summer and early fall, a significant amount of storage water was used over the previous year (Table 34).

TABLE 34. BEAR RIVER BASIN RESERVOIR STORAGE

Reservoir Name	Usable Contents (AF)	Content on Sept. 30, 2019 (AF)	Content on Sept. 30, 2020 (AF)
Ben	303	222	188
Bonneville	43	22	19
Broadbent	893	338	326
Coy	80	0	0
Hatch (Grassy Lake)	350	166	32
Sulphur Creek	19,774	16,280	12,880
Whitney	4,664	2,206	1,032
Woodruff Narrows	57,300	43,232	28,903

Interstate Central Division regulation trigger points were hit in mid-July with both the 350 CFS at the border gage and a total of 870 CFS divertible flows; however, Wyoming remained below its allocation until July 31, following high runoff and diminishing return flows. The Central Division remained in regulation until September 30th, with deep regulation cuts occurring in September.

At the April Bear River Commission meeting, I was appointed as chairman of the Technical Advisory Committee (TAC). This Committee was officially created during the 20 year review of the Amended Bear River Compact. The TAC has been tasked with updating the depletion estimate last revised in 2009 with a final report in 2014. Frequent meetings were held throughout the summer months with multiple tasks assigned to the states to report back on.

Wyoming was tasked with finding a common method to estimate the depletion associated with supplemental use which has been ongoing since the 2009 depletion update. Several different comparative options have been investigated and reported back to the TAC.

As a result of the filings made for additional storage on Bear Lake by both Idaho and Utah, Wyoming is continuing to meet with both the policy group and the modeling group to make sure the additional water will not have repercussions upstream of Bear Lake. Phase 1 of the

model is now completed and results to the public should be available in December 2020. Although Phase 1 shows some water may be available for storage at times, there has been no progress on flood easements that would be needed in the Gentile Valley. Thoughts are being gathered to look at expanding the model in Phase 2 that may include Wyoming, Idaho and Utah above Bear Lake.

PERSONNEL

Ethan Overton transferred to the SEO Sheridan office, leaving a vacancy in Cokeville. Hilary McIntosh filled this position throughout the summer months, but sadly, passed away on August 30.

Aaron Erickson resigned in February, leaving a vacancy in Lyman. Luke Nieslanik filled this position in the spring.

SUMMARY

Near average snowpack and the ability to fill and utilize reservoir storage water allowed water users to harvest near average crop production, even with very dry conditions throughout the summer months. One timely rain storm in late spring allowed range conditions to last throughout the very dry remainder of the summer and fall.

Despite the hot and dry summer full of regulation requests, a great effort was made by staff to increase proof inspections and completions, especially this fall. The deeper we dig into a lot of these proof inspections, we continue to find issues that do not allow adjudications to move forward. Ponds and reservoirs especially in the highly developed areas are continually being modified from what was permitted, requiring them to be resurveyed and modified prior to adjudication.

Continued budget cuts, furloughs, insurance and retirement increases, along with doing more with less is a concerning trend that is having a toll on a great staff's morale. It was nice to have State Engineer, Greg Lanning, visit our division in-person a couple times during the summer months that helped give a boost in morale in these trying times. During the State Engineer visits, we were also able to meet with folks on-site from Boulder Irrigation District, and also give a presentation to Wyoming Rural Water in Pinedale.

It has once again been a pleasure to work with dedicated SEO/BOC staff during this challenging year. Even with the remote Board meetings, staff working from home in the Cheyenne office and other changes throughout the year, I am reminded of the dedication of staff in our agency that work hard to make sure our goals get accomplished.

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 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, 2019, through September 30, 2020 (WY2020).

ACCOMPLISHMENTS

Operationally, Board business was mildly affected by the COVID-19 pandemic. Staff transitioned to telework smoothly due to the 2017 conversion to an online licensing software, along with state ETS technical support to set up secure remote network access. This established a virtual office that could be open during business hours even if the physical office was not accessible.

Outreach to youth continued with Engineers Week, held in February. The 2020 event matched 105 professional engineers with 3,863 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 College of Engineering and Applied Sciences (UWCEAS) and the Wyoming Engineering Society (WES) and the financial support of Union Wireless.

A parallel outreach effort for surveying was developed by a team comprised of: Professional Land Surveyors of Wyoming (PLSW), UWCEAS, Wyoming WYGEO, and WES. This program was successfully tested in the Spring 2020 with a reach of approximately 130 secondary students. Full deployment of the program was halted due to the pandemic and the team began discussion on alternate delivery methods.

Other Board outreach efforts with various stakeholders were initially affected by the pandemic with some transitioning to virtual meetings. Board and staff representatives presented at six different meetings, fairs, or conferences during the year reaching college students, licensees, and entities that use professionals.

Rule revisions to Chapter 1 through Chapter 6 were filed and effective March 24, 2020. These changes updated and consolidated various definitions, removed irrelevant fees, clarified certain previous rule language, and included general housekeeping. An unintended consequence to a specific relicensure situation was discovered, therefore Emergency Rules were filed August 7, 2020 to address the situation. The Regular Rules process was also started to address the situation with public comment beginning September 9, 2020.

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, rules and bylaws, reciprocity analysis, 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.

ENFORCEMENT ACTIVITY

The Board and staff work closely with the Attorney General's office to process complaints and ensure due process for licensees. During WY2020, the Board worked on 17 different dockets. Of those dockets, 16 are resolved and 1 is ongoing.

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 Board 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 four letters during WY2020 and resolved all of those situations.

The Board continues to use the NCEES's national database for retrieving information on disciplinary matters as well as providing information on Wyoming licensees who are disciplined.

PROBLEMS AND RECOMMENDATIONS

The Board continues to look at ways to expedite licensure while ensuring minimum qualifications are vetted. This conversation is prevalent at the national level within these industries. The Board continued the 2019 effort to study barriers to licensure along with several western states and submitted a peer review report in May 2020.

LICENSING ACTIVITY

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 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 35 for a listing of license counts as of the end of WY2020.

TABLE 35. PE/LS LICENSES

Summary of Licenses as of October 1, 2020				
		Resident	**Non-Resident**	**Total**
Professional Engineer	Individual	1,140	6,267	7,407
	Corporation	103	1,080	1,183
	Total	**1,243**	**7,347**	**8,590**
Professional Land Surveyor	Individual	112	173	285
	Corporation	17	28	45
	Total	**129**	**201**	**330**
Professional Engineer & Land Surveyor	Individual	36	23	59
	Corporation	39	56	95
	Total	**75**	**79**	**154**
Engineer-In-Training		1,084	773	1,857
Land Surveyor-In-Training		40	8	48
Total		**2,571**	**8,408**	**10,979**

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

Submitted by:
Jimmy Gordon, Executive Director
Powell, Wyoming

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:** 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 # 2:** Regulate compliance with State Statutes, Rules and Regulations and State Minimum Construction Standards.

  - 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.
  - Conduct well site visits/inspections to verify compliance with construction standards and build positive relationships with the well drilling and pump installation industry.

- **Goal # 3:** Establish Public Support.

  - Continue to perform well and pump site visits for the public.
  - Review public complaints for license violations.
  - Investigate public complaints.
  - Work closely with Board Members and the Board's Attorney General on docketed public complaints.
  - Provide education to the public on the importance of licensure for water well contractors.

- **Goal # 4:** 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, 2020, a total of 290 license holders comprise:

- 91 Well Drilling Contractors.
- 92 Pump Installation Contractors.
- 106 with a combined Well Drilling and Pump Installation Contractors license.
- 194 License Holders are Wyoming Residents.

- 96 License Holders are non-Wyoming Residents.

ACCOMPLISHMENTS

- Issued 25 new licenses.
- Renewed 86 licenses out of a possible 127 that were up for renewal.
- Drafted and submitted an Annual Report for WY2019.
- Performed approximately 17 public well site visits.
- Sent three advisory letters to Contractors for non-compliance with the state minimum construction standards or not submitting a Notice of Intent.
- Contacted two contractors who performed work on water wells or springs that are not licensed with the Board.
- Worked closely with the Board of Control to require water well contractors to submit a completed Form U.W. 6, Statement of Completion and description of well or spring, to the State Engineer's Office.
- Launched new licensing software allowing applicants and licensed contractors to submit required paperwork and payments online.

BUDGET

Compliant with (W.S. § 9-1-904(b)), a portion of the groundwater application fees collected by the State Engineer 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 2020 (FY20)**, revenues from all sources totaled $**122,600.00** (Table 36).

TABLE 36. FEES COLLECTED IN FY18

Type Fee	Amount ($)
Groundwater Permits / Applications	$87,375.00
License Renewals/Application Fees	35,225.00
Total	**$122,600**

BOARD MEETINGS

In WY2020, the Board met three times as a quorum (Table 37).

TABLE 37. BOARD MEETING DATES AND LOCATIONS

Date of Meeting	Location
January 14, 2020	Casper, Wyoming
April 8, 2020	Virtual/Teleconference
September 2, 2020	Virtual/Teleconference

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PERSONNEL LISTS

STATE ENGINEER'S OFFICE
(As of September 30, 2020)

ADMINISTRATION DIVISION

	TITLE
Lanning, Greg (started November 25, 2019)	**State Engineer**
Reinhardt, Rachael	Human Resources Specialist
Hoskins, Cricket	Senior Accounting Analyst
Jenkins, Susan	Senior Office Support Specialist
Wertz, Tina	Fiscal Specialist
Trembath, Jessica	Fiscal Specialist

GROUND WATER DIVISION

NAME	TITLE
Lindemann, Lisa	**Administrator**
Harju, John	**Assistant Administrator**
Castle, Daniela	Office Support Specialist II
Kinsley, Sue	Office Support Specialist II
Koldeway, Josh	Natural Resources Analyst
Linn, Cyndee	Records and Data Management Technician
Malessa, Markus	Natural Resources Analyst
Manley, Jeremy	Natural Resources Program Principal
Miller, Linda	Office Support Specialist II
Moser, George	Senior Project Geologist
Neely, James	Natural Resources Analyst
Quist, Adam	Natural Resources Analyst
Ross, Rachel	Office Support Specialist II
Tebben, Beth	Natural Resources Analyst
Wertz, Marla	Natural Resources Specialist
Willis, Kaila	Natural Resources Analyst

GROUND WATER ADVISORY COMMITTEES

WATER DIVISION	NAME	TERM EXPIRES
I	Vacant	9/30/2023
	David Evans	9/30/2024
	Ralph Brokaw	9/30/2023
II	Larry Suchor	9/30/2023
	Jerry Hunt	9/30/2023
	Sheridan Little	9/30/2024
III	Gerald Geis	9/30/2024
	Jeanette Sekan	9/30/2023
	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	Vacant		7/31/2020
	Vacant		7/31/2020
	Laurie Jackson	Hillsdale	7/31/2024
	Ty Lerwick	Cheyenne	7/31/2023
	Brady Petsch	Meriden	7/31/2023
Platte County	Doug DeRouchey	Wheatland	7/31/2024
	Richard Johnson	Wheatland	7/31/2024
	Vacant		7/31/2020
	Jason Reyes	Wheatland	7/31/2023
	Amy Miller	Wheatland	7/31/2023
Prairie Center	Blake Ochsner	Torrington	7/31/2022
	Kelly Francis	Torrington	7/31/2022
	Eldin Baldwin	Torrington	7/31/2022
	Dylan Hagen	Torrington	7/31/2023
	Greg DesEnfants	Torrington	7/31/2023

SURFACE WATER DIVISION

NAME	TITLE
Graves, Nathan	**Natural Resources Program Manager**
Feltner, Jason	**Natural Resources Program Supervisor**
Smith, Jay	**Natural Resources Program Supervisor**
Fegler, Melinda	Natural Resources Analyst
Gess, Michelle	Natural Resources Analyst
Lamblin, Cindy	Office Support Specialist II
Locatelli, Mike	Natural Resources Analyst
Lorentz, Sandra	Office Support Specialist II
McNulty, Jacy	Natural Resources Analyst
Messer, Shelley	Natural Resources Analyst
Ruess, Joseph	Principal Engineer - SoD

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
Hull, Laretta	Office Support Specialist II
Sexton-George, Octavia	Office Support Specialist I
Mumper, Karen	Natural Resources Analyst
Nichols, Trista	Office Support Specialist II
Pierce, Dixie	Natural Resource Specialist
Pino, Roxanne	Senior Office Support Specialist
Quick, Kevin	Natural Resources Analyst
Tully, Karyl	Natural Resources Program Principal
Wright, Cheryl	Natural Resources Analyst

SUPPORT SERVICES DIVISION

NAME	TITLE
Wickham, Brent	**Computer Technology Supervisor**
Coy, Carolynn	Records & Data Management Supervisor
Grady, Laura	Records & Data Management Clerk
Merrill, Kimberly	Records & Data Management Clerk
Vossler, Steve	Natural Resource Specialist
Wallace, Tony	Computer Technology Business Applications Analyst

INTERSTATE STREAMS DIVISION

NAME	TITLE
Wolff, Steve	**Administrator**
Cowley, Jeff	River Basin Coordinator
Ferrantelli, Charlie	River Basin Coordinator
Swartz, Samantha (Sam)	River Basin Coordinator

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

BEAR RIVER COMMISSION
(Idaho, Utah and Wyoming)

NAME, TITLE	POSITION
Greg Lanning, State Engineer	Commissioner
Tim Teichert, Citizen	Commissioner
Adrian Hunolt, Citizen	Commissioner
Kevin Payne, Superintendent, Water Division IV	Alternate Commissioner; Member & Chair, Technical Advisory Committee
Sam Swartz, River Basin Coordinator, ISS	Member, Technical Advisory Committee
David Waterstreet, Water Quality Division, Department of Environmental Quality (DEQ)	Member, Water Quality Committee
Chris Brown, Senior Assistant Attorney General	Advisor

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

NAME, TITLE	POSITION
Patrick Tyrrell, Former State Engineer	Commissioner
Benjamin C. Bracken, Citizen	Alternate Commissioner
Keith Burron, Citizen	Alternate Commissioner
Randy Bolgiano, Citizen	Alternate Commissioner
Steve Wolff, Administrator, ISS	Member & Chair, 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
Steve Wolff, Administrator, ISS	Member
David Waterstreet, Water Quality Division, DEQ	Member
Chad Espenscheid, Citizen	Member
Charlie Ferrantelli, River Basin Coordinator, ISS	Alternate

COLORADO RIVER BASIN SALINITY CONTROL FORUM

NAME, TITLE	POSITION
Steve Wolff, Administrator, ISS	Member
David Waterstreet, Water Quality Division, DEQ	Member
Chad Espenscheid, Citizen	Member
Charlie Ferrantelli, River Basin Coordinator, ISS	Alternate & Work Group Member
Mike Thomas, Water Quality Division, DEQ	Work Group Member

GLEN CANYON ADAPTIVE MANAGEMENT PROGRAM

NAME, TITLE	POSITION
Steve Wolff, Administrator, ISS	Wyoming Representative, Adaptive Management Work Group & Technical Work Group
Charlie Ferrantelli, River Basin Coordinator, ISS	Wyoming Alternate, Adaptive Management Work Group and Technical Work Group

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
Vacant	Member
Steve Wolff, Administrator, ISS	Alternate

YELLOWSTONE RIVER COMPACT COMMISSION

(Montana, North Dakota and Wyoming)

NAME, TITLE	POSITION
Greg Lanning, State Engineer	Commissioner
Sam Swartz, 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
Chris Brown, Senior Assistant Attorney General	Advisor

BELLE FOURCHE RIVER COMPACT

(South Dakota and Wyoming)

NAME, TITLE	POSITION
Greg Lanning, State Engineer	Member
Steve Wolff, Administrator, ISS	Advisor
David Schroeder, Superintendent, Division II	Advisor

UPPER NIOBRARA RIVER COMPACT

(Nebraska and Wyoming)

NAME, TITLE	POSITION
Greg Lanning, 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
Greg Lanning, 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 (Retired), Former Director, Water Development Commission	Wyoming Representative, Governance Committee; Member, Finance Committee; Member, Alternate, Land Advisory Committee
Bryan Clerkin, Water Development Commission	Alternate, Governance Committee; Member, 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
Jay Smith, Surface Water Division	Member, Land Advisory Committee
David Ray, 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
Jeremy Manley, Groundwater Division	Alternate, Technical Advisory Committee; Member, Adaptive Management Group

SNAKE RIVER COMPACT
(Idaho and Wyoming)

NAME, TITLE	POSITION
Greg Lanning, State Engineer	Member
Steve Wolff, Administrator, ISS	Advisor & Alternate
Sam Swartz, 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
Mark Gordon, Governor	Governor Member
Steve Wolff, Administrator, ISS	Executive Committee Representative and Member
Chris Brown, Senior Assistant. Attorney General, Attorney General's Office	Member & Legal Committee Chair
Todd Parfitt, Administrator, Department of Environmental Quality	Member
Kevin Fredrick, Administrator, Water Quality Division, Department of Environmental Quality	Alternate

WYOMING STREAMBANK MITIGATION INTERAGENCY REVIEW TEAM

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

WATER ADMINISTRATION PERSONNEL

WATER DIVISION I

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

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	Ashley Carter, ashley.carter@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	Trent Knez, trent.knez@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
6,7,8,16,17,18	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

DISTRICT	TITLE	NAME	ADDRESS
6,7,8,18	HC	Robin Blake, robin.blake@wyo.gov	PO Box 710 Saratoga, Wyoming 82331
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	Tylor Hanzlik, tylor.hanzlik@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	John Starnes, john.starnes@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 HC	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, 8	LH	Amelia Rothleutner, amelia.rothleutner@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
7,10 Assists 1	HC	Kody Steinbrecher	Sundance, Wyoming 82729
5,6 Assists 4	AS	Pat Boyd, pat.boyd@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
1,8	HC	Gordon Sawyer gordon.sawyer@wyo.gov	2020 Fairgrounds Rd., Ste. 104 Casper, Wyoming 82604
9,10, 11	HC	Ryan Barker, ryan.barker@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
4	HC	Paul Ratigan paul.ratigan@wyo.gov	1833 South Sheridan Ave. Sheridan, Wyoming 82801
5, 9,11	HC	Ethan Overton ethan.overton@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	Landis Webber, Landis.Webber@wyo.gov	1201 E 7th Powell, WY 82435
Office Support Specialist II	Janet Wempen, Janet.Wempen@wyo.gov	715 East Roosevelt Riverton, Wyoming 82501

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	Ben Wollenzien Ben.Wollenzien@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. 7th Powell, WY 82435

WATER DIVISION IV

PERSONNEL AT LARGE

TITLE	NAME	ADDRESS
Superintendent	Kevin Payne, kevin.payne@wyo.gov	PO Box 277 Cokeville, WY 83114
Assistant Superintendent, 1, 3, 9, 14, 15, and At Large	John Yarbrough, john.yarbrough@wyo.gov	PO Box 1208 Lyman, WY 82937
Office Support Specialist I	Carol Reed, carol.reed@wyo.gov	PO Box 277 Cokeville, WY 83114

DIVISION IV: WATER ADMINISTRATION PERSONNEL

DISTRICT	TITLE	NAME	ADDRESS
2, 4, 8, 12,13, 13, 16	LHC	Mike Johnson, mike.johnson@wyo.gov	PO Box 277 Cokeville, WY 83114
2, (Assist in 4, 8, 12)	HC	Hilary McIntosh	PO Box 277 Cokeville, WY 83114
3	WC	Michael Livingston, michael.livingston@wyo.gov	101 Joy Lane Lyman, WY 8 2937
4	HC	Travis McInnis, travis.mcinnis@wyo.gov	100 Liberty Ave. Evanston, WY 82930
5, 6, 7, 10, 11	LHC	Ed Boe, ed.boe@wyo.gov	PO Box 1080 Big Piney, WY 83113
6, 10, 11, (Assist in 7)	WC	Courtney Skinner, courtney.skinner@wyo.gov	PO Box 61 Daniel, WY 83115
7, 10, (Assist in 11)	HC	Jeff Davis, jeff.davis@wyo.gov	PO Box 1080 Big Piney, WY 83113
8, 12	WC	John Hunsaker, john.hunsaker@wyo.gov	PO Box 134 Smoot, WY 83126
1, 9	Asst. Superintendent	John Yarbrough, john.yarbrough@wyo.gov	PO Box 1208 Lyman, WY 82937
14	WC	Reed Thomas, reed.thomas@wyo.gov	159 County Road 233 Lyman, WY 82937
15, (Assist in 3 & 14)	HC	Luke Nieslanik luke.nieslanik@wyo.gov	PO Box 1208 Lyman, WY 82937
16, (Assist in 11 & 13)	HC	Hayes Buxton, hayes.buxton@wyo.gov	PO Box 11203 Jackson, WY 83002

STATE BOARD OF PROFESSIONAL ENGINEERS AND PROFESSIONAL LAND SURVEYORS

BOARD MEMBERS

NAME	POSITION	E-MAIL	TERM EXPIRES
Shelley R. Macy, PE shelley.macy@wyoboards.gov	Chair	717 East College Drive Cheyenne, WY 82007 307-631-4049	3/31/2023
Robert R. Norton, PELS robert.norton@wyoboards.gov	Vice Chair	155 Meadowlark Jackson, WY 83001 307-690-2089	6/30/2021
Steven Barrett, PhD PE steve.barrett@wyoboards.gov	Secretary/ Treasurer	University of Wyoming 1000 E University Ave. Laramie, WY 82071 307-766-2666	3/31/2024
Jeffery B. Fuller, PE jeff.fuller@wyoboards.gov	Member	MC Schaff 3099 Big Horn Ave Sheridan WY 82801	3/31/2021
Skylar V. Wilson, LS skylar.wilson@wyoboards.gov	Member	P.O. Box 938 Pinedale, WY 82941 307-360-8169	3/31/2023
Cevin C. Imus, LS cevin.imus@wyoboards.gov	Member	Land Surveying Inc. 209 N Works Ave Gillette WY 82716	3/31/2022
Jeffrey B. Jones, LS jeffrey.jones@wyoboards.gov	Member	6451 Big Sky Trail Cheyenne, WY 82009 307-634-7273	6/30/2021
Thomas V. Anderson thomas.anderson@wyoboards.gov	Public Member	1781 Moonstone Lane Casper, WY 82601 307-377-5561	3/31/2021
Greg Lanning, PE greg.lanning@wyo.gov	Member	122 W. 25th Street 2nd Fl W Cheyenne, WY 82002 307-777-6150	Indefinite

BOARD STAFF

NAME	POSITION
Shannon Stanfill	Executive Director
Troy A. Niesen	Office Support Specialist
Krista M. Wilson	Licensing 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 Driller	3/31/21
Wes Moody	Water Well Driller	3/31/22
Steven R. Barbour	Water Well Pump Installation Contractors	3/31/21
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	3/31/19

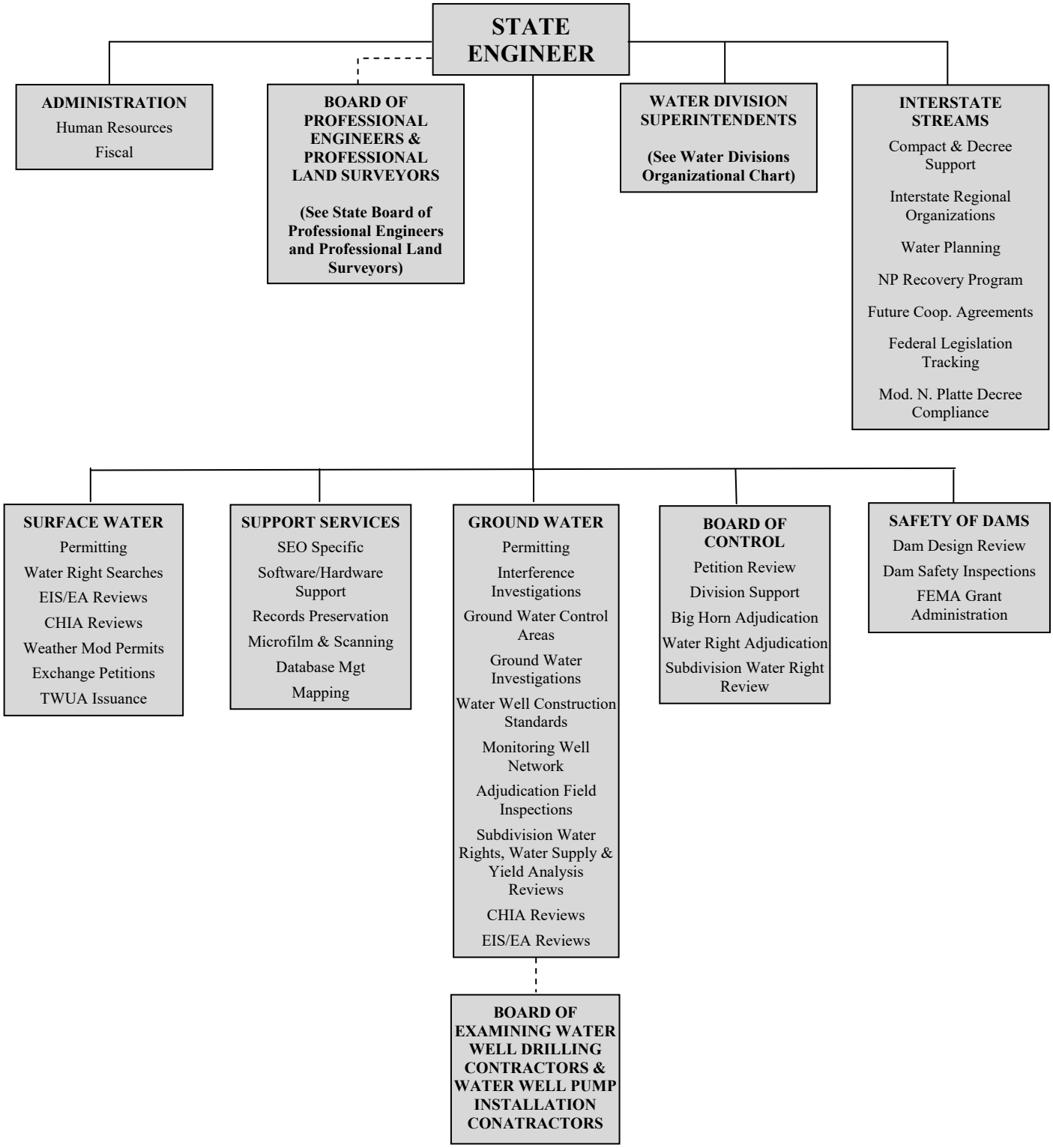
EXECUTIVE DIRECTOR

NAME	ADDRESS	PHONE	E-MAIL
Jimmy Gordon	1201 E. 7th Street, Suite 103 Powell, WY 82435	307-851-7770	jimmy.gordon@wyo.gov

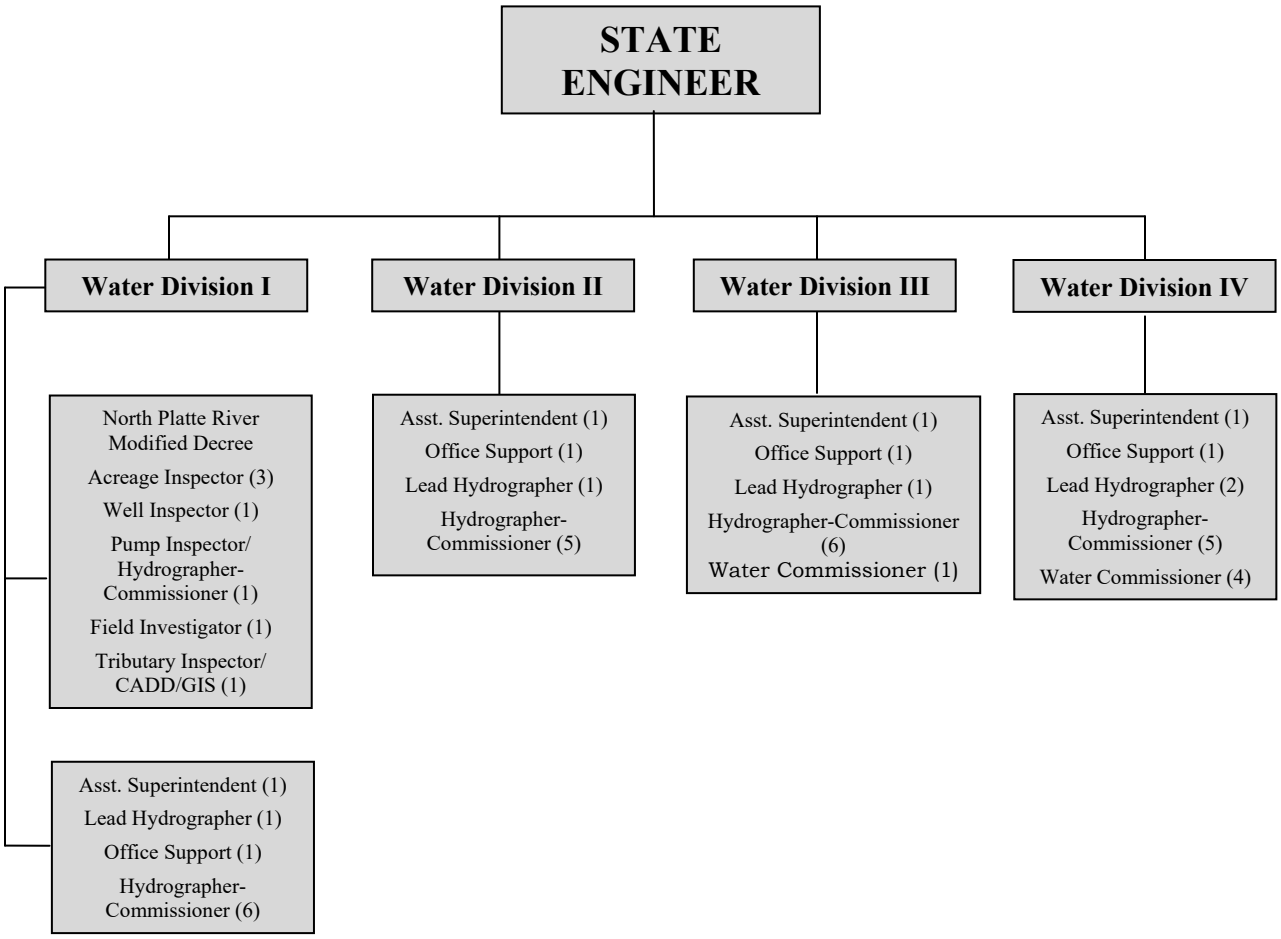
ATTORNEY GENERAL CONTACT

NAME	ADDRESS	PHONE	E-MAIL
Sean Towles	2320 Capitol Avenue Cheyenne, WY 82002	307-777-7376	sean.towles@wyo.gov
Eric Easton	800 Werner Court Ste 190 Casper, WY 82602	307-265-2225	eric.easton@wyo.gov

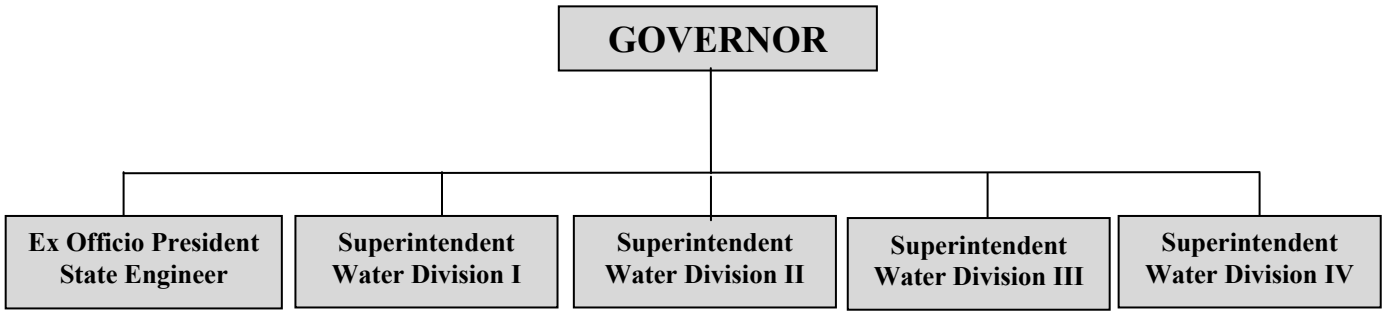
STATE ENGINEER'S OFFICE
WY2020 ORGANIZATIONAL CHART



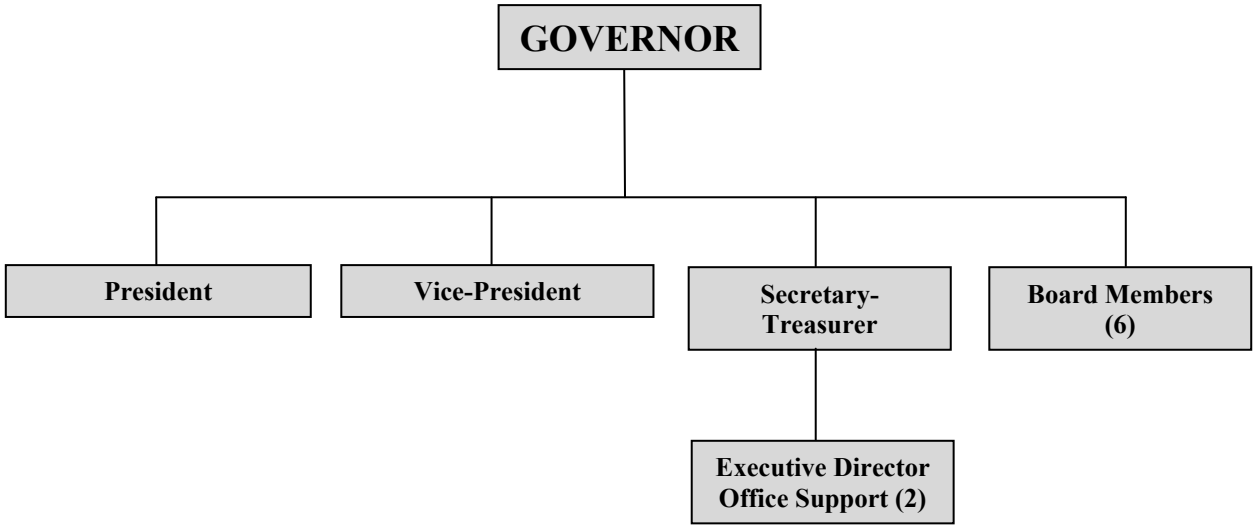
WATER DIVISIONS
WY2020 ORGANIZATIONAL CHART



WYOMING BOARD OF CONTROL
WY2020 ORGANIZATIONAL CHART



STATE BOARD OF PROFESSIONAL ENGINEERS AND PROFESSIONAL LAND SURVEYORS WY2020 ORGANIZATIONAL CHART



STATE BOARD OF EXAMINING WATER WELL DRILLING CONTRACTORS AND WATER WELL PUMP INSTALLATION CONTRACTORS WY2020 ORGANIZATIONAL CHART