

# DIVISION 6

## 2017 ANNUAL SUMMARY



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August 12, 2018



**COLORADO**  
Division of Water Resources  
Department of Natural Resources

# 2017 ANNUAL SUMMARY

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## Introduction

The following report summarizes the activities of the Division 6 office of the Colorado Division of Water Resources in 2017, presents an overview of the administration activities that took place during both the calendar and irrigation year 2017 and provides statistical data for both the water and irrigation year 2017.

## Basin Hydrology

### Snow Pack

Table 1 below shows the snow water equivalent for the period October 2016 through May 2017. At the onset of the water year, we started out dry with little snow, but a wet February and March made up for the dry fall.

**TABLE 1**

**End of Month Snow Water Equivalent as Percent of Median  
Water Year 2017**

Drainage	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May
Laramie/North Platte River	12	8	60	105	131	125	101	98
Yampa/White River	4	9	66	105	129	121	90	88

### Stream Flows

Despite above median snowpack in February and March, streamflows were above average at only one of the below reported gauges, the North Platte near Northgate gauge. Table 2, below, shows the February 1<sup>st</sup>, March 1<sup>st</sup> and May 1<sup>st</sup> runoff forecasts developed by the NRCS in comparison to the actual runoff between April 1 and July 31 as measured at the selected USGS gauging stations.

**TABLE 2**

**2017 Runoff Forecast in 1000's of Acre-Feet**

<u>Station Name</u>	<u>1-Feb</u>		<u>1-Mar</u>		<u>1-May</u>		<u>Actual</u>	
	Runoff	% Avg	Runoff	% Avg	Runoff	% Avg	Runoff	% Avg
North Platte nr Northgate (Apr-Jul)	305	136	285	127	210	112	236	118
White River nr Meeker (Apr-Jul)	310	111	285	102	191	78	213	95
Little Snake River nr Lily (Apr-Jul)	435	126	420	122	320	93	270	78
Yampa River nr Maybell (Apr-Jul)	1110	119	1060	113	790	84	664	68



Provided in Table 3 below are the annual runoff values for the water year for these same stations as well as the minimum daily average flow recorded at each station.

**Table 3**

**2017 Annual Discharge**

Station Name	Historic Lowest (AF)	Total 2017 (AF)	Historic Average (AF)	% of Average
North Platte River near Northgate	66,240	331,140	312,540	106
White River near Meeker	198,600	362,060	446,760	81
Little Snake River at Lily	79,600	343,600	409,840	84
Yampa River near Maybell	345,100	985,320	1,123,600	88

**Lowest Daily Mean**

Station Name	Minimum on Record (cfs)	Minimum WY2017 (cfs)	Date of Occurrence
North Platte River near Northgate	15	64.1	Sept. 9, 2017
White River below Boise Creek	53	98.6	Sept. 6, 2017
Little Snake River at Lily	0	0.17	Sept. 14, 2017
Yampa River near Maybell	1.8	88.6	Sept. 10, 2017

**Precipitation**

Table 4 below shows the monthly precipitation data for the towns of Walden, Meeker and Steamboat Springs.



**Table 4**

**Monthly Precipitation Data for Selected Sites  
Water Year 2017**

Site	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Total
Walden (inches)	0.74	0.42	0.96	1.74	0.65	0.19	1.37	1.4	0.1	1.07	1.11	2.24	11.99
% Avg	75.5	46.2	152	316	103	10.5	116	98.6	7.7	75.4	94.1	162	89.5
Meeker (inches)	0.96	1.27	1.18	1.48	0.8	0.57	1.86	1.55	0.78	1.91	1.27	1.84	15.47
% Avg	51.9	87.0	107	170	78.4	43.8	121	106	63.9	167	94.8	104	96.3
Steamboat (inches)	1.72	1.45	2.39	3.69	1.69	0.4	2.17	3.52	0.47	1.02	0.42	1.81	20.75
% Avg	79.3	64.7	96.4	162	89	22	90	157	26.6	66.2	26.1	82.3	84.2

**Monthly Precipitation Data for Selected Sites  
Calendar Year 2017**

Site	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Walden (inches)	1.74	0.65	0.19	1.37	1.4	0.1	1.07	1.11	2.24	1.75	0.53	0.46	12.61
% Avg	316	103	10.5	116	98.6	7.7	75.4	94.1	162	179	58.2	73	94.2
Meeker (inches)	1.48	0.8	0.57	1.86	1.55	0.78	1.91	1.27	1.84	1.8	0.68	0.15	14.69
% Avg	170	78.4	43.8	121	106	63.9	167	94.8	104	97.3	46.6	13.6	91.4
Steamboat (inches)	3.69	1.69	0.4	2.17	3.52	0.47	1.02	0.42	1.81	2.76	1.84	0.17	19.96
% Avg	162	89	22	90	157	26.6	66.2	26.1	82.3	127	82.1	6.9	81.0

## Water Administration

Water administration in water year 2017 in Division 6 was limited to the typical calls. In the North Platte River basin Government Creek went under administration for a period of about two month. In the Yampa River basin, administration occurred on Bear River, South Hunt Creek, Middle Hunt Creek, Smith Creek of Deep Creek of the Elk River, the Elk River itself, West Fish Creek of Trout Creek, Little Bear Creek of Fortification Creek and Fortification Creek itself. In the Little Snake River drainage of the Yampa River, nothing was under administration. In the Green River basin, administration was limited to Talamantes Creek. Finally, in the White River basin, administration occurred on Piceance Creek, which included a split call from the Metz and Reigan Ditch upstream to a dry up point below the Schutte Ditch and from the Schutte Ditch upstream to the headwaters. A complete list of the calls that occurred within Division 6 can be found on the CDSS website.



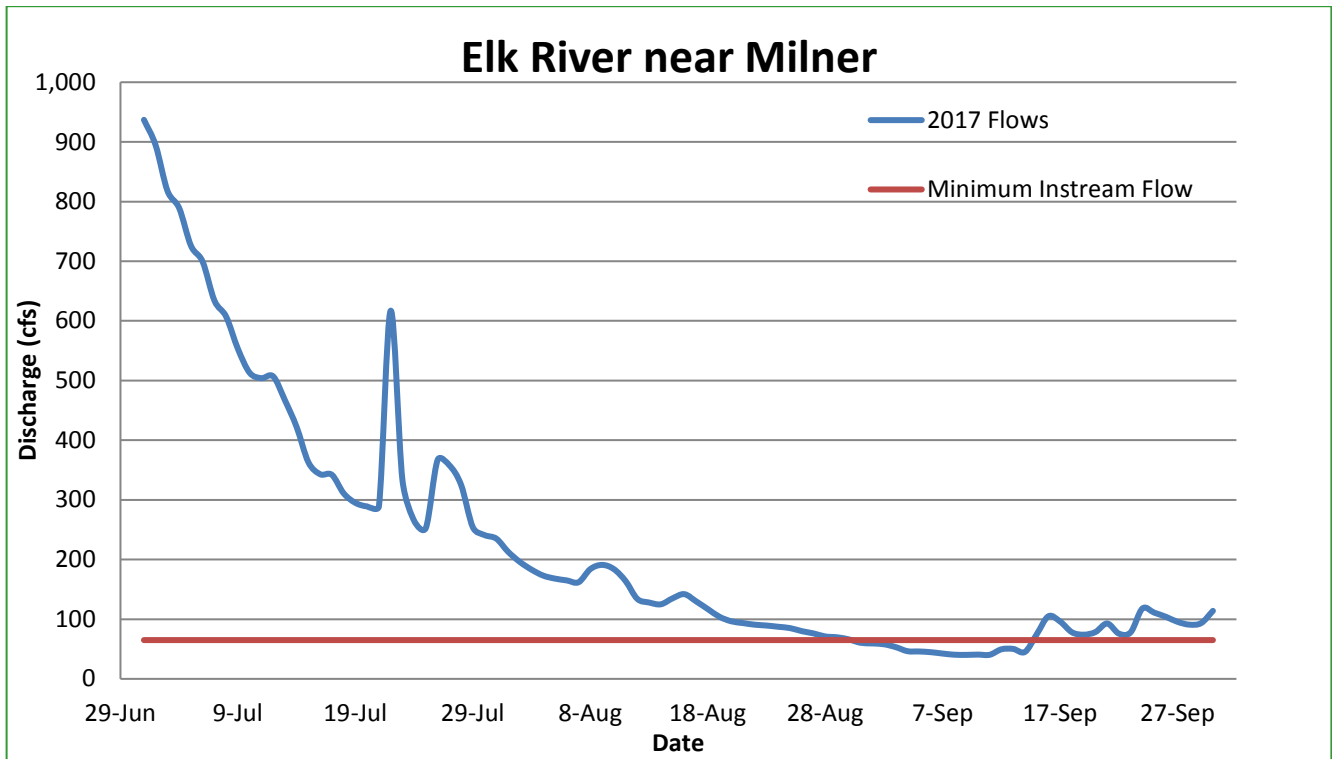
Additionally, releases were made from Elkhead Creek Reservoir and Stagecoach Reservoir that were protected by our office and are further described below.

### Elk River Administration

The Elk River was under administration between August 31 and September 21. The Elk River instream flow water right, the calling water right, is decreed in the amount of 65 cfs year round. The lowest daily mean flow that occurred in the months of August and September was 40.2 cfs on September 9 as measured at the Elk River near Milner gauge station. The outlet of Steamboat Lake was under construction during this time however, the contractors had installed a pump to pass 5.0 cfs through the reservoir during the entire construction period and this 5.0 cfs was more than sufficient to pass all inflow to the reservoir during the call.



Shown in the following graph are the flows during the summer and fall at the Elk River near Milner gauge station which typically drop below 65 cfs.



In 2010, the first call on the Elk River was requested by the Colorado Water Conservation Board and though the call was short lived due to rain events that began after the call was honored that increased the streamflows above 65 cfs, it prompted this office to evaluate whether the basin should be deem over-appropriated. Ultimately, it was determined that it should be and thus as of January 1, 2011 the entire Elk River basin has been considered over-appropriated. This action prompted the Upper Yampa Water Conservancy District to file in Water Court a request for approval of an augmentation plan. This application was file with the Court in December 2015. The State and Division Engineers were opposers in the case, but have since entered into a stipulation. The plan is designed to provide a means for water users to divert water out of priority during administration on the Elk River, yet have their depletions replaced through the plan. When calls are honored on the Elk River itself, the replacement source of water will be from Steamboat Lake; whereas if a call is honored on the Yampa River below the Elk River, the replacement source will be either Stagecoach Reservoir or Yamcolo Reservoir. As of the end of the year 2017, this application was still pending.

[Elkhead Creek Reservoir](#)

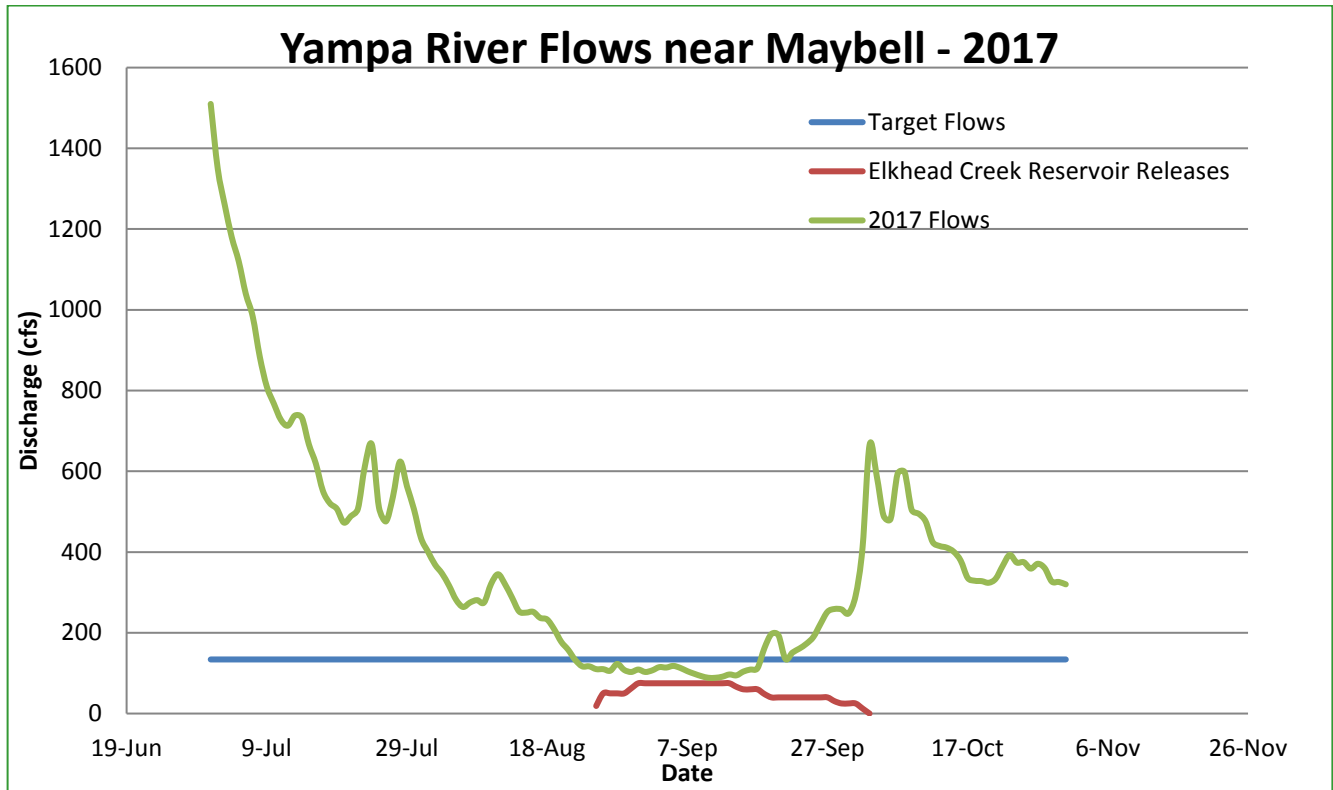
Releases were made from Elkhead Creek Reservoir between August 25 and October 2, 2017 for a total of 4,173 acre-feet. This release was made for the purpose of in-river fish habitat and river

flow maintenance and enhancement under the Upper Colorado River Endangered Fish Recovery Implementation Program (Recovery Program). The target flows established by the Recovery Program for the Yampa River as measured at the Yampa River near Maybell gauge station from August 1 to October 31 are:

Dry Years	93 cfs
Average Years	134 cfs
Wet Years	Under evaluation

Generally speaking, “dry” corresponds to hydrologic conditions of 75% or greater exceedance, “average” corresponds to 75% to 25% exceedance, and “wet” corresponds to 25% or less exceedance. The Recovery Program sets the corresponding flow target in June after considering the conditions on the river, forecasted streamflow, and the volume of storage in Elkhead Creek Reservoir. Water released from Elkhead Creek Reservoir is protected by this office through the entire length of the critical habitat reach, which extends from the City of Craig downstream to the confluence of the Yampa River and Green River.

Shown in the following graph are the flows during the summer and fall on the Yampa River near Maybell in 2017, which dropped below the 134 cfs target flow, including during the Elkhead Creek Reservoir releases.





### Maybell Canal

Prior to 2016, the Maybell Canal typically diverted between 50 and 60 cfs during times when Elkhead Creek Reservoir water was released under the Recovery Program. However, in an effort to reduce their tailwater return flows, the Maybell Irrigation District now diverts between 30 and 40 cfs. This reduction in tailwater return flow is critical for the Recovery Program. The headgate of the canal is located upstream of the Yampa River near Maybell gauging station yet its tailwater is released back to the River 15 miles downstream of the gauge station. During low flow times when the Recovery Program is making decisions on how much water to release from Elkhead Creek Reservoir, they are basing their determination on the streamflows at the Maybell gauge station. By reducing the amount of water going through the tail end of the ditch and rather keeping the water in the river at the headgate of the canal, which is then being measured at the gauge station, allows for smaller daily releases that could then extend the releases for a longer period of time.

As mentioned in the 2016 Annual Report, in 2016, the Maybell Irrigation District applied for and was awarded grants for improvements on the Maybell Canal from the Recovery Program (\$63,000), Colorado River Water Conservation District (\$49,000) and the Yampa White Green Roundtable (\$48,000). The entire project cost for the improvements was estimated to be \$197,000 which included the cost for hillside stabilization, construction of a new flume to carry water across the Yampa River, installation of check gates within the ditch to assist in better management of water flows and reduction of tailwater, and installation of a measuring device and automated “waste gate”. This project was completed in 2017.

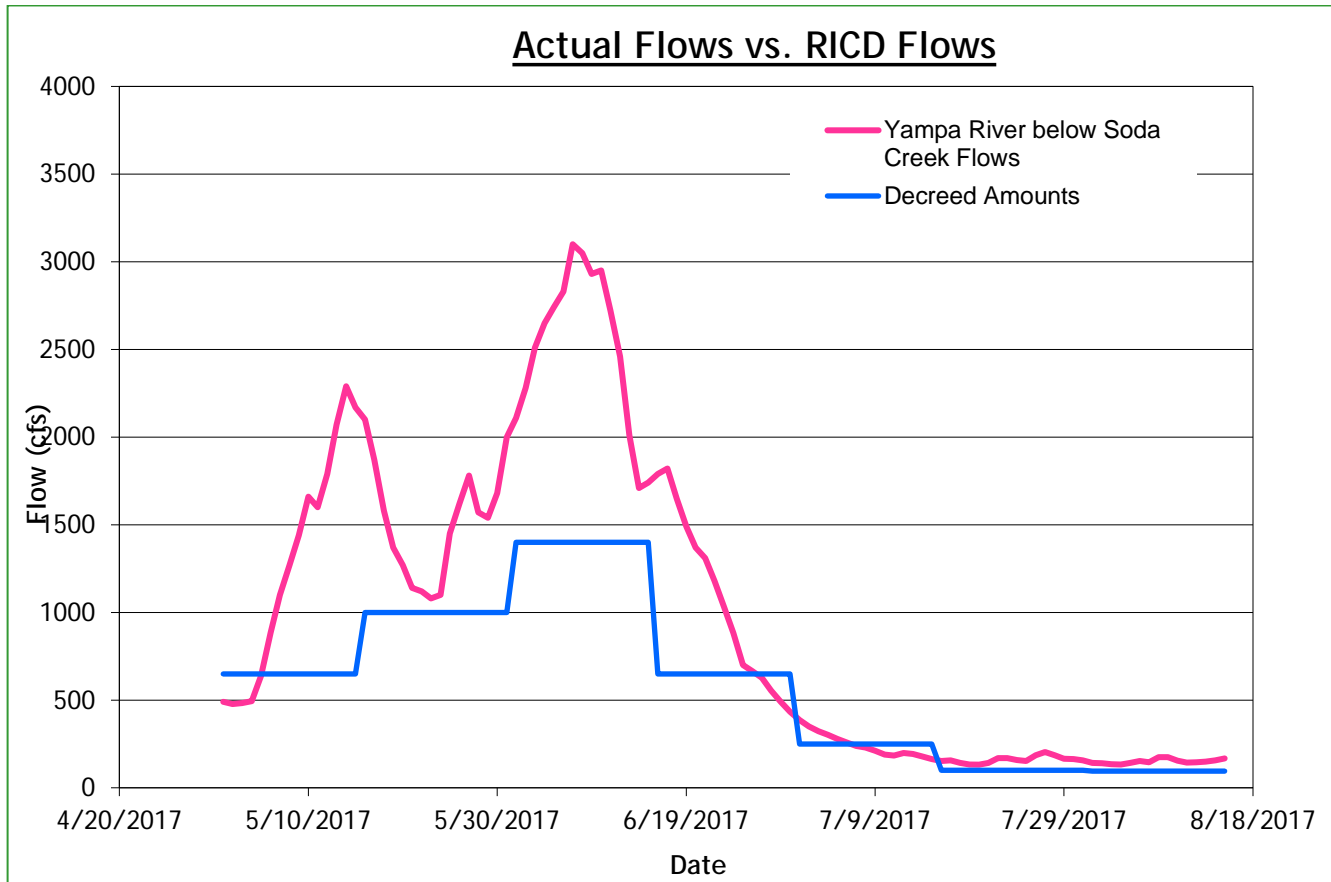


### Yampa River RICD Flows

Though the Yampa River has never been subject to administration as a result of a call for water by the City of Steamboat Springs for their Recreational In-Channel Diversion (RICD) water right, this office tracks the flows through the diversions in the event a call for administration is requested. The decreed amounts for the RICD are: 400 cfs from April 15 to April 30, 650 cfs from May 1 to May 15, 1000 cfs from May 16 to May 31, 1400 cfs from June 1 to June 15, 650 cfs from June 16 to June 30, 250 cfs from July 1 to July 15, 100 cfs from July 16 to July 31 and 95 cfs from August 1 to August 15. The City of Steamboat Springs does not begin operation of the gauge station (Yampa River below Soda Creek) that acts as their measurement for their water right until May 1 of each year, and as such a call would not be honored prior to May 1 unless they begin operation of the gauge station prior to this date.

The following graph shows the average daily flows for the period of May 1 through August 15, 2017 at the Yampa River below Soda Creek gauge station in comparison to the decreed flows. The

average daily flow on the Yampa River below Soda Creek dropped below the decreed amounts on three different occasions for a total of 18 days between May 1 and August 15, 2017.



### Stagecoach Reservoir Releases

In July 2012, DWR approved a temporary loan under Section 37-83-105(2), C.R.S. for instream flow water use. The loan allowed releases of water from Stagecoach Reservoir to be protected through the instream flow reach on the Yampa River between its confluence with Morrison Creek and the inlet to Lake Catamount. The aforementioned statute allows for a water right owner to loan water to the Colorado Water Conservation Board for use as instream flows pursuant to an instream flow water right held by the board for a period not to exceed one hundred and twenty days and such loan shall not be exercised for more than three years in a ten year period. The loan for water from Stagecoach occurred in 2012 and 2013 and once again in 2017 to make up the three years in ten.

In 2017, the Upper Yampa Water Conservancy District (UYWCD) and the Colorado Water Trust (CWT) entered into a contract for water to be released from Stagecoach Reservoir in the amount of 1200 acre-feet. According to our records 600 AF of water was released in 2017 under this loan;

approximately one-third of which was protected down to the City of Steamboat Springs' effluent discharge point. In addition, in 2017, 472 acre-feet of water was released from Stagecoach Reservoir under the City of Steamboat Springs' contract (552 acre-feet) with UYWCD. The releases were made in an effort to reduce streamflow temperature at the location of the City of Steamboat Springs' effluent discharge point along the Yampa River.

## Groundwater and Well Permitting

In the summer of 2017, the Division 6 Engineer became concerned about how well permits had been issued in over-appropriated basins and specifically those basins recently designated over-appropriated in Routt County. After investigating the concerns, the Division Engineer in August 2017 requested that no well permits be issued in over-appropriated basins on lots less than 35 acres within Routt County until further notice. Up through August 2017, the Division 6 Office had, in all over-appropriated areas, issued well permits under 37-92-602(3)(b)(II)(A) without regard to when the subdivision or lot had been created, whether there was an opinion of the State Engineer on file concerning the subdivision approval by a County and without taking into consideration the cumulative effect of all wells within a subdivision. This cessation of the issuance of well permits in over-appropriated basins continued through February 1, 2018, when the State Engineer presented a solution to Routt County on how DWR would move forward with issuing well permits.

Effective July 1, 2006, the Yampa River and all of its tributaries upstream of what is referred to as the D-Hole of the City of Steamboat Springs' recreational in-channel diversion, was designated as over-appropriated. Additionally, effective January 1, 2011, the entire Elk River basin was designated as over-appropriated. The two designated areas are very large and cover nearly all of Water District 58 and a substantial portion of Routt County. It goes without saying that these designations effected how well permits were to be issued in these areas going forward.

When evaluating an application for an exempt well permit, the State Engineer must first determine whether the affected stream system is over-appropriated. For a stream system that is not over-appropriated, the use of a well would typically not cause material injury because water is still available for appropriation, and there is sufficient water to satisfy all decreed water rights within that system. If a stream system is over-appropriated, the State Engineer must consider the potential for material injury to other water rights. If certain statutory criteria are met, the State Engineer can presume there is no material injury and an exempt well permit can be issued.

Technically, if in an over-appropriated area, a proposed well is to be located on a parcel included in a subdivision as defined in Section 30-28- 101(10)(a) C.R.S, approved by the county after the county implemented the requirements of Senate Bill 35 (enacted in 1972) and a subdivision water supply plan has not been recommended for approval by the State Engineer, the State Engineer can no longer presume no injury. Without the statutory presumption of no injury, an exempt well permit would not be available.

Prior to the determination of any basin being over-appropriated, the State Engineer would have reviewed the proposed water supply plan for a subdivision as contemplated in section 30-28-136(h)(l), and would have given the opinion that a water supply plan that proposed to use individual on-lot exempt wells, would not cause material injury because water was available for appropriation at the time of subdivision creation. As a matter of established practice, in such situations, if, after making such a determination, the stream system becomes over-appropriated, the State Engineer relies on and honors the original opinion.

In Routt County there are multiple subdivisions where it appears the State Engineer did not receive a referral to review proposed water supply plans and thus there is no opinion of the State Engineer on file. This obviously presented a problem in determining how well permits can and should be issued for lots within such subdivisions and in areas that are now considered over-appropriated. In order to resolve matters and allow for the issuance of well permits, a letter was written and provided to Routt County on February 1, 2018. This letter is intended to serve as the opinion of the State Engineer for those subdivision approved by Routt County after Senate Bill 35 and prior to a basin becoming over-appropriated. For those subdivisions where there is an opinion of the State Engineer on file, that opinion will be adhered to regardless of when the basin became over-appropriated. This letter can be found on the DWR Website under Division Offices, Division 6.

## Compacts and Inter-State Agreements

Following is a description of the interstate compacts and agreements administered by Division 6.

### Upper Colorado River Compact

Under Article XIII (a) of the Upper Colorado River Compact, the State of Colorado will not cause the flow of the Yampa River at the Maybell gauge to be depleted below an aggregate amount of 5,000,000 acre-feet for any period of ten consecutive years. The annual runoff for water year 2017

at this gauge was 985,190 acre-feet and the ten year (2008 to 2017) aggregate flow was 11,771,560 acre-feet; obviously well above that required under Article XIII (a).

The Little Snake River is administered jointly with the State of Wyoming during times of shortage pursuant to Article XI of the Upper Colorado River Compact. There were no calls made in water year 2017 on the Little Snake River. However, releases were made from High Savory Reservoir located in Wyoming for use by both Colorado and Wyoming (primarily) water users in the amount of 11,720 acre-feet.

### Nebraska v. Wyoming, U.S. Supreme Court Decree

Under the “North Platte River Decree”, Colorado is limited to a total of 145,000 acres of irrigation, no more than 17,000 acre-feet per year of storage for irrigation purposes and no more than 60,000 acre-feet of transmountain diversions in any period of ten consecutive years from the North Platte drainage of Colorado. In water year 2017, a total of 110,975 acres were irrigated and 6,422 acre-feet was stored for irrigation purposes. Transmountain diversions out of the basin totaled 5,129.5 acre-feet. The cumulative ten-year transmountain diversion out of the basin is 34,709 acre-feet. None of the limits established by the Supreme Court Decree were exceeded in 2017.

A Division 6 representative attended the North Platte Decree Committee meeting held in Scottsbluff, NE in April 2017; however, we were unable to attend the meeting in Torrington, WY in November 2017 due to travel conditions.

### Pot Creek MOU

Pot Creek is a small tributary of the Green River; the headwaters of which are in Utah and enter the Green River in Colorado. Pot Creek water is apportioned among the users of Utah and Colorado under a Memorandum of Understanding (MOU) last updated and signed by the State Engineers of Utah and Colorado on March 1, 2005.

The Pot Creek system is comprised primarily of five reservoirs; three of which are located in Utah and two of which are located in Colorado. The three Utah reservoirs are Matt Warner, Calder and Crouse with Matt Warner being the highest, most upstream reservoir in the system, and Crouse the lowest. Matt Warner Reservoir is used primarily for recreation and is considered a gold water fishery. Crouse Reservoir on the other hand was abandoned, for the most part, many years ago and its low level outlet was filled with concrete. As such when water is released from Matt Warner or

Calder Reservoirs for delivery to Colorado users, Crouse Reservoir must fill a large dead pool before water can be released from it.

At the end of the storage season (April 30, 2017), the senior water rights decreed to the two reservoirs located in Colorado (Dry Lake and Offield Reservoirs) were full and no water had to be released from the three Utah reservoirs due to out of priority storage over the winter.

The State of Colorado owns and operates a gauging station located on Pot Creek just upstream of the state line. The records from this gauge show that a total of 454 acre-feet of water entered into Colorado between February 7 and May 3.

The 2017 Pot Creek Distribution System Water Users meeting held on February 22, 2017 in Vernal, Utah was attended by phone by Division 6 representatives. Likewise, the 2018 Pot Creek Distribution System Water Users meeting held on February 21, 2018 in Vernal, Utah was attended by Division 6 representatives. Both the 2016 and 2017 Annual Water Distribution Reports of the Pot Creek Distribution System can be found in Laserfiche.

## Division Highlights

### Lysimeter Project

The Yampa-White Lysimeter Study (Study) was a five year study that began with the installation and operation of a weather station in fall 2011 and the final installation and start of operation of the lysimeter plots in the spring of 2012. The funding for the study ended in early spring 2016; however, because it was believed that not enough high quality data was obtained during the study period, the Colorado Climate Center and Division 6 Water Resources applied for and received additional grant money through the Round Table process to allow five additional years of operation of the Study.

The purpose of the Study is to provide a quantitative assessment of irrigated hay meadow consumptive use and its relationship to local weather conditions. The Study site consists of four lysimeter plots. Two of the plots were seeded in 2012 with an ET grass reference crop (Orchard Grass) and the other two had sod from the surrounding irrigated meadow planted in them.

In 2017 the site was visited by the water commissioner on regular intervals between April and October. Measurements were taken twice on each day of a visit. The plots are weighed upon

arrival (referred to as the dry weights) and then weighed again several hours after saturation (referred to as the wet weights). There is no consistency on the timing between the first and second weighing however ample time is given to assure that all excess water applied to the plots has drained out of them.

The photo below show the lysimeter plots and weather station during the 2017 irrigation season.



Lysimeter Site 2017

### Abandonment Process

In 2017, this office assisted staff in Denver with the development of an Internal Abandonment Process Guide. This guide is intended to be used not only in the 2020 abandonment process but also for all future abandonment processes.

With the 2020 abandonment proceeding on the near horizon, as water rights are discovered that this office believes should be included on the abandonment list, Division 6 staff is flagging these water rights in HBDMC under the Activity Manager. Additionally, starting in the fall 2018, staff will begin their field investigations of water rights proposed for abandonment.

### Important Court Cases

The State Engineer and Division 6 Engineer have filed very few statements of opposition in new cases or filed protests to cases as of recent. In 2013 and 2014, no statements of opposition were filed; in 2015, two statements of opposition were filed; in 2016, two statements of opposition were



filed and in 2017, no statements of opposition were filed. Additionally, no protests to any of the referee rulings were filed in 2017. Today there is only one case still pending in which the State and Division Engineers are opposers. The Division Engineer filed 69 Reports of the Division Engineer in 2013, 79 in 2014, 90 in 2015, 89 in 2016 and 72 in 2017.

## Involvement in the Water User Community

The Division 6 staff continues to assist the public in preparing water court and well permit applications by providing water right and diversion record information, by providing information on proper selection and installation of water measuring devices, and by providing assistance to dam owners with completing Notices of Intent to Construct Non-Jurisdictional Dams, Livestock Water Tank Permits and Emergency Action Plans. The Division 6 field office in Craig continues to be a vital aspect of our public relations.

Following is a list of meetings attended by Division 6 staff in 2017. This list is not intended to be all-inclusive, but rather provide an idea of the types of meetings attended.

- Spring North Platte Decree Committee meeting held in Scottsbluff, NE
- Annual meeting of the Pot Creek Distribution System in Vernal, UT
- Little Snake River Conservation District annual meeting held in Baggs, WY
- Board meetings held by the Upper Yampa Water Conservancy District
- Board meetings held by Yellow Jacket Water Conservancy District in Meeker, CO
- Bear River Irrigators annual meeting
- Stillwater Ditch Company annual meeting
- All roundtable meetings for the Yampa/White River and North Platte River
- Colorado Water Congress Annual Convention held in Denver, CO

Division 6 staff also made presentations at several water workshops and conferences in 2017.

## Division 6 Organization Chart (08/10/2018)

