

# Division 1 Annual Report



Kersey Gage

## Irrigation Water Year 2015

# TABLE OF CONTENTS

WATER SUPPLY AND ADMINISTRATION .....	1
Water Supply Conditions.....	1
Well Administration - South Platte River Basin.....	2
Well Administration - Republican River Basin.....	3
Compact Administration .....	3
COMMUNITY INVOLVEMENT .....	4
TABLES .....	5
Table 1 - Transmountain Diversion Summary.....	5
Table 2 - Water Court Activities and Staffing.....	6
Table 3 - Organizational Chart .....	7

## **WATER SUPPLY AND ADMINISTRATION**

### **Water Supply Conditions**

Irrigation Year 2015 in Water Division One continued the recent trend of unsettled or abnormal water conditions. Though it was not marked by a single, catastrophic, event like the flood in September 2013, it did have what many are calling the “Miracle May”. The large amount of May precipitation did shift the water supply picture from below normal to well above normal, but it also created very high water conditions on the South Platte mainstem that caused significant damage to many water diversion structures. The large amount of May precipitation also prevented planting of many fields because they were simply too wet to work.

Temperature and precipitation during the first quarter of Irrigation Year 2015 were a study in contrasts in Division 1. Much of the period was characterized by abnormally warm temperatures interspersed with weeks of very cold temperatures. Overall, precipitation was somewhat below normal in Division 1, though certain areas, like the eastern plains, did see bursts of very heavy snowfall.

Stream flow on the South Platte mainstem, unlike temperature and precipitation was uniformly above normal throughout the November through January period. In fact, streamflow and water supplies were so good that the mean monthly flow at the Julesburg gage exceeded the flow at the Kersey gage throughout the period. This is a VERY unusual occurrence.

As could be expected, the excellent flow conditions resulted in free river conditions over virtually the entire basin for almost the entire period. There was one week of call on the mainstem above Strontia Springs Reservoir, but other than that the only calls were on Ralston, Boulder and South Boulder Creeks. Another benefit of the excellent flow conditions that both ended Irrigation

Year 2014 and started Irrigation Year 2015 was that a significant number of reservoirs started the 2015 Irrigation Year already at “winter fill”, which led to storage being significantly above normal for the entire first quarter of the 2015 Irrigation Year.

The second quarter of Irrigation Year 2015 showed just how extreme weather variations in northeast Colorado can be. February started cool and wet (Denver and Boulder set new record maximum snowfall amounts for February), but the weather then turned so warm and dry that by mid-April a good chunk of the area had a Drought Index Rating of “Abnormally Dry” - only to turn so cool and wet the last two weeks of April that the “Abnormally Dry” rating was removed. As a further example of this, the South Platte basin snow water equivalent was 96% of average February 2; then jumped to 110% of average on March 3; then fell to 87% of average by April 2; and finally jumped up to 98% of normal on April 28.

River flows at the Kersey and Julesburg gages followed the chaotic weather pattern: Flows at both gages were above normal for February (and Julesburg flows again exceeded Kersey flows), but while the March Kersey flows remained above normal, the Julesburg flows fell to normal. Finally, the April flows at Kersey continued to remain above normal, while the Julesburg flows fell to approximately 70% of normal.

The bright spot in all the topsy-turvyness was that the general free river conditions of the first quarter continued for most of the second quarter. There was a call on most of the South Platte mainstem from April 7 to 17, but the only consistent call through this period was on Boulder Creek. The companion bright spot to the calls was reservoir storage, which continued the above average trend established during the first quarter of Irrigation Year 2015.

The third quarter of Irrigation Year 2015 with the “Miracle May” previously referenced. May 2015 turned out to be the wettest May on record for both Colorado and the entire

contiguous United States - precipitation in some areas of the South Platte Basin was 300% above normal. Snowpack in May generally decreases, but May 2015 was the exception and went from 98% of normal on April 28 to 101% of the normal peak on May 24 (the normal peak snowpack date is April 26), before falling to 0 by July 1. Precipitation in the southern 1/2 of Division 1 remained above normal in June, but in the northern 1/2 was near to below normal, as was July precipitation over all of Division 1.

These overall wet conditions resulted in South Platte River flows at the Kersey and Julesburg gages that were almost unbelievably large in May and June. For comparison, the historic annual mean flow (1902-2014) at the Julesburg gage is approximately 382,000 acre-feet. The May 2015 flow was approximately 586,000 acre-feet and the June 2015 flow was approximately 722,000 acre-feet! The July flows, though still well above normal, were not nearly as spectacular as May and June.

As could be expected with the wet conditions, there were very few calls within the South Platte basin during May and June. The drier conditions in July did result in most of the basin being under at least junior calls by the end of the month. The drier July conditions also resulted in some use of stored water - though the end of July storage was still above normal.

The last three months of Irrigation Year 2015 (August through October) saw a significant shift from wet to dry conditions in northeast Colorado. Most of this period was characterized by above normal temperatures and below normal precipitation. As a matter of fact, things were dry enough that by the end of September well over half of northeast Colorado had a U.S. Drought Monitor rating of D0 "Abnormally Dry". Thankfully, a significant precipitation event over the October 21-23 period, especially along the Front Range, moved the basin back to near normal water supply conditions.

The dry conditions were also reflected in the Kersey and Julesburg gage flows when, for the first time since August 2013, the September mean flow at both the Kersey and Julesburg gages fell to below the long term average. The late October precipitation event did allow flows to recover to just above average by the end of October.

The call conditions within the South Platte basin "felt" fairly normal during the last quarter of the Irrigation Year in that, though more junior than normal, there were almost continuous calls throughout the basin in August and the first half of September, but moving to fewer calls through the last half of September and October. These call conditions allowed storage to be the continuous bright spot for the entire year as even though the reservoirs were hit hard during this time, overall storage remained above the long term average through the end of October.

### **Well Administration - South Platte River Basin**

The South Platte Well Measurement Rules (SP Rules), adopted via Case No. 11CW292 had an effective date of December 31, 2013 and a required compliance date of December 31, 2015. Compliance with the SP Rules requires approximately 6,000 wells within the scope of the SP Rules to either be equipped with a measurement device, primarily a totalizing flow meter, or declared as inactive. Great effort by the Division One Ground Water Team (D1 Team) and other key Division One staff has been focused on notifying water users subject to the SP Rules of the requirements and compliance deadlines including mailing notifications letters to well owners of approximately 4,000 wells.

Efforts throughout 2015 in preparation for transitioning into the administration of the SP Rules, included the D1 Team conducting approximately 155 installed flow meter verification field tests, processing over 1,400 measurement tests into DWR's database, inventory of more than 600 wells, and responding to many questions from water

users. The D1 Team assisted with two new Well Tester certification training classes in April and May of 2015 and also tested individually with more than 20 certified well testers. This supports the requirements of the SP Rules, and other basin's Ground Water Measurement Rules, that installed measurement devices be verified by a person qualified by the State Engineer.

The well enforcement program continued administration by sending out approximately 15 install flow meter and cease and desist orders. The D1 Team also continued efforts in support of the upcoming 2020 Abandonment including providing field inspections and research.

### **Well Administration - Republican River Basin**

The Republican River Well Team (RR Team) continued their efforts of administering the Republican River Basin Groundwater Measurement Rules (RR Rules) in 2015, including conducting approximately 141 well measurement device verification field tests, inventory of more than 500 wells, and field inspection of more than 140 wells filed as inactive in accordance with the RR Rules. The RR Team also assisted with two new Well Tester certification training classes in April and May of 2015 and also tested individually with more than 30 certified well testers, supporting the RR Rules requirement that the measurement devices be verified by a person qualified by the State Engineer.

Enforcement efforts continued with the Greeley office and RR Team distributing approximately 50 Notice of Violation and Orders to Cease & Desist. Additionally, 439 Notices for Expiring Meters and 983 Annual Usage Reporting Forms were mailed to well users in the basin.

The RR Team continues work related to the Republican River Compact, including monitoring and verifying the accuracy of the currently operating Republican River Compact Pipeline; verification and coordination of measurements of the official

delivery measurement flume for the Compact Pipeline; and publishing official diversion records of all high capacity wells within the Republican River Ground Water Measurement Rules boundaries.

The RR Rules (originally adopted in 2009) were amended through the Administrative Procedures Act (APA) rulemaking process, and the amendments were adopted by the State Engineer on September 16, 2015 after several public meetings, stakeholder notifications and a Public Hearing were conducted. The primary focus of the amendments to the RR Rules include: 1) Modify the inclusion boundary to incorporate wells that are included in Colorado's Republican River Compact Accounting, primarily extending the southern portion to include additional wells; and 2) Include additional definitions and language to help clarify the RR Rules; and 3) Provide standards regarding the minimum accuracy and application of the Power Conversion Coefficient (PCC) as an alternate method of measurement. Approximately 251 wells were incorporated into the amended RR Rules, and an additional 90 wells are subject to Amended Rules Rule 16.2(A)(3) and Rule 5.A of East Cheyenne Ground Water Management District.

In addition, the RR Team has been busy assisting the Designated Basins Team in the administration of well permit volume limits by investigating more than 20 wells and posting and documenting Orders on approximately 3 wells that exceeded their annual pumping limitation in the 2015 Irrigation Year. These Orders are being administered by the Designated Basins Team in Denver, and require the reduction of the annual pumping limits for 2016 Irrigation Year by the amount over-pumped in 2015.

### **Compact Administration**

Division One is responsible for administration of the State of Colorado's obligations under the South Platte River Compact, the Republican River Compact, the Laramie River Decree, and the Sand Creek Agreement (1997

Addendum) to meet the requirements of those respective documents.

Under the terms of the South Platte River Compact, if there is not 120 cfs in the South Platte at the state line between Colorado and Nebraska between April 1 and October 15, Colorado will curtail all diversions in the Lower Section of the river (basically Water District 64) with priority dates junior to June 14, 1897. There were 7 days (September 9 - 15) of South Platte Compact call during the 2015 Irrigation Year. This was five more days than recorded in Irrigation Year 2014.

During Irrigation Year 2015 the Republican River Compact was once again administered by staff in both Division One and the Denver Office in conjunction with the Republican River Water Conservation District. The Republican River Compact Compliance Pipeline was successfully operated in Irrigation Year 2015 with the provisional approval of Kansas and Nebraska with a total delivery of 10,330 acre-feet to the Colorado/Nebraska state line. The recorded delivery in Irrigation Year 2015 was twice that of the delivery recorded in Irrigation Year 2014. With two years of successful operation, it is expected Compact Compliance Pipeline will again be operated with provisional approval in Irrigation Year 2016. Finally, to assist with Compact compliance, diversions by surface water rights junior to the Compact in the Republican River basin within Colorado continue to be curtailed.

During Irrigation Year 2015 Division One personnel regulated all diversions in the Laramie River basin in compliance with the terms of the U.S. Supreme Court decree in *Wyoming v. Colorado*. Division One personnel also regulated Sand Creek in compliance with the terms of the Sand Creek Agreement.

## COMMUNITY INVOLVEMENT

Division One personnel continue their active involvement in many issues important to the

water community. When requested or needed, Division One personnel attend, participate in, and present at Ditch Company and Conservancy District meetings. Also, Division One personnel participate in meetings of water users, realtors, and homeowner groups to educate and inform those present. Meetings of both the South Platte Basin Round Table and Metro Basin Round Table are also regularly attended by Division One personnel. This year, Division One hosted its biennial Irrigationist Symposium on March 26, 2015. The symposium was an all day event with breakout sessions related to water and irrigation in Colorado. Prior to the event, Division One offered a training day for attendees at the USDA-ARS hydraulics lab in Fort Collins.

Division One staff has been active in the South Platte Basin Round Table Groundwater Technical Subcommittee since it was formed in September of 2014. The Technical Subcommittee was formed to examine both short and long term solutions to the high groundwater issues in the Sterling and LaSalle/Gilcrest areas. This year, Division One staff continued to participate by attending and contributing to regular meetings.

A first year law student was hired by Division One as an intern during the 2015 summer break. The intern aided the assistant division engineers with some of their daily job duties. During her short tenure with Division One, the intern observed our legal system operate first hand and learned a great deal about Colorado water law and water administration. This experience was insightful for the intern since she hopes to practice water or environmental law in Colorado.

## TABLES

### Table 1 - Transmountain Diversion Summary

#### 2015 TRANSMOUNTAIN DIVERSION SUMMARY - INFLOWS (November 2014 - October 2015)

RECIPIENT								SOURCE		
WD	ID	NAME	STREAM	10 YEAR AVG		CURRENT YEAR		WD	ID	STREAM
				AF	DAYS	AF	DAYS			
3	4604	WILSON SUPPLY DITCH	CACHE LA POUFRE RIVER	1178	83	1045	142	48	4604	SAND & DEADMAN CR.
3	4608	DEADMAN DITCH	CACHE LA POUFRE RIVER	499	72	553	111	48	4608	DEADMAN CREEK
3	4606	BOB CREEK DITCH	CACHE LA POUFRE RIVER	123	36	256	59	48	4606	NUNN CREEK
3	4607	COLUMBINE DITCH	CACHE LA POUFRE RIVER	0	0	0	0	48	4607	DEADMAN CREEK
3	4600	LARAMIE-POUDRE TUNNEL	CACHE LA POUFRE RIVER	7789	95	4640	77	48	4600	LARAMIE RIVER
3	4605	SKYLINE DITCH	CACHE LA POUFRE RIVER	32	6	0	0	48	4605	LARAMIE RIVER
3	4602	CAMERON PASS DITCH	CACHE LA POUFRE RIVER	52	31	34	29	47	4602	MICHIGAN RIVER
3	4603	MICHIGAN DITCH	CACHE LA POUFRE RIVER	1827	349	506	365	47	4603	MICHIGAN RIVER
3	4601	GRAND RIVER DITCH	CACHE LA POUFRE RIVER	8448	159	6155	160	51	4601	COLORADO RIVER
4	4634	ADAMS TUNNEL	BIG THOMPSON RIVER	119178	326	60717	254	51	4634	COLORADO RIVER
6	4655	MOFFAT TUNNEL	SOUTH PLATTE RIVER	23781	360	12905	361	51	4655	FRASER RIVER
7	4625	BERTHOUD PASS DITCH	CLEAR CREEK	317	105	179	85	51	4625	FRASER RIVER
7	4626	VIDLER TUNNEL	CLEAR CREEK	365	63	336	71	36	4626	MONTEZUMA CREEK
7	4682	STRAIGHT CREEK TUNNEL	CLEAR CREEK	137	365	149	365	36	4682	STRAIGHT CREEK
8	653	ROBERTS TUNNEL	SOUTH PLATTE RIVER	32571	210	9098	82	36	4684	BLUE RIVER
23	4611	BOREAS PASS DITCH	SOUTH PLATTE RIVER	75	57	57	70	36	4685	INDIANA CREEK
23	4612	HOOSIER PASS DITCH	ARKANSAS RIVER	4142	188	3359	196	36	4683	BLUE RIVER
23	4490	AURORA HOMESTAKE	SOUTH PLATTE RIVER	13280	226	4946	115	37	4644	HOMESTAKE CREEK

## Table 2 - Water Court Activities and Staffing

### Water Court Activities

Calendar Year 2015

New Applications made to water court this year.....	226
Referee Rulings Reviewed.....	334
Decrees Issued by Court this year.....	214

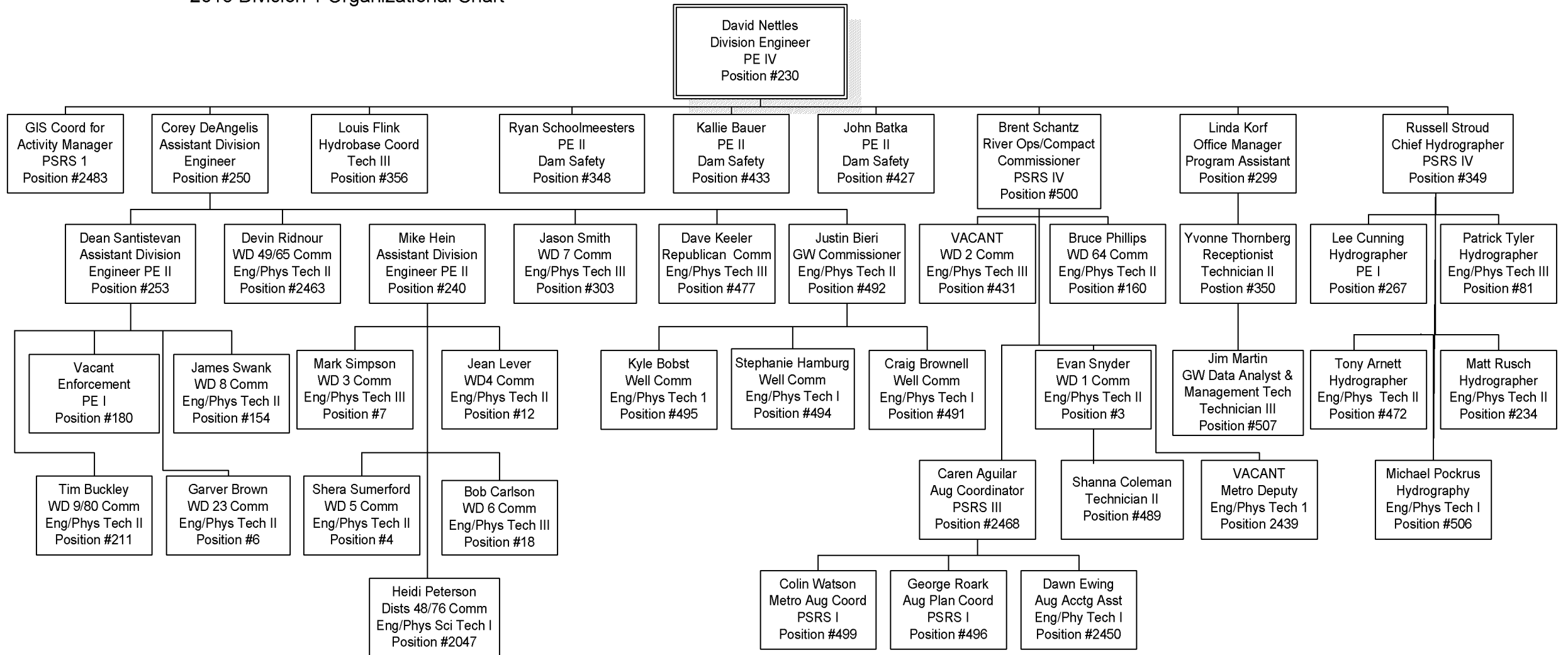
### Staffing

Dam Safety Engineers	3
Water Resource Engineers	6
IT Professional	1
Engineering/Physical Science Techs/Assistants	9
Program Asst 1, Technician II, Tech III	4
Physical Science Researcher/Scientist	6
Full-Time Water Commissioners	26
Permanent Part-Time Water Commissioners	<u>2</u>
<b>TOTAL STAFF</b>	<b>57</b>



Table 3 - Organizational Chart

2015 Division 1 Organizational Chart



## 2015 Division 1 Organizational Chart for Water Commissioners

