

Division 1 Annual Report



*Beery Ditch in District 23
Photo taken by Russell Stroud*

Irrigation Water Year 2017

TABLE OF CONTENTS

WATER SUPPLY AND ADMINISTRATION	1
Well Administration - South Platte River Basin	3
Well Administration - Republican River Basin	4
COMPACT ADMINISTRATION.....	4
COMMUNITY INVOLVEMENT	5
TABLES.....	6
Table 1 - Transmountain Diversion Summary	6
Table 2 - Water Court Activities and Staffing	7
Table 3 - Organizational Chart.....	8

WATER SUPPLY AND ADMINISTRATION

Water Supply Conditions

November 2016 through January 2017

Conditions during the first quarter of Irrigation Year 2017 in Division 1 started warmer and dryer than normal before shifting to a more normal pattern later in the period. Temperatures were warmer than normal in November, but moved to below normal in December and January. Precipitation, though less uniform than temperature, also moved from below normal in November to, depending on elevation, normal to above normal by the end of January. In fact, while lower elevation precipitation was near normal, the South Platte basin snowpack moved from 45% of normal on December 1 to 156% of normal by February 1.

As further evidence of the early dry conditions, November brought the first 2016 appearance of an area in northeast Colorado with the USDA Drought Monitor “Severe Drought (D2)” rating while the rest of northeast Colorado remained in either the D0 “Abnormally Dry” or D1 “Moderate Drought” categories. Then, despite the more normal precipitation and the increase in snowpack in December, the drought conditions in northeast Colorado actually increased with a conversion of D0 area to the D1 category. January did at least bring a slight improvement in drought conditions with the movement of the D2 area to D1, but the D1 and D0 areas otherwise remained pretty much unchanged.

River flows at the two key index gages on the South Platte, Kersey and Julesburg, also reflected the shifting conditions described above. The flows at Kersey bounced between slightly above and below normal for the period with the following percentages of average; November 106%, December 74%, and January 108%. The Julesburg flows were more consistent with the following

percentages of average; November 60%, December 74%, and January 194%.

Despite all the variability in temperatures and precipitation just described, the calls on the South Platte mainstem were surprisingly “normal” during the first quarter of IY2017. A deep cold snap around December 10 resulted in free river downstream of Greeley as ice conditions reduced the amount reservoirs could safely divert into their fill ditches. The free river conditions remained in place through the end of January.

Even with the mid-December ice conditions limiting diversion rates, overall storage in the South Platte was good throughout the period. The end of month storage contents in 32 index reservoirs, as a percent of capacity, was; November - 61% (long term average 60%), December - 69% (long term average 66%), January - 74% (long term average 70%).

February through May 2017

Moving from February through May would normally be expected to show and increase in both temperature and precipitation in Division 1. Though that did happen in 2017, the period was marked by significant departures from normal in both temperature and precipitation. Temperature were generally warmer than normal until about the last week in April when they switched to cooler than normal. Precipitation was much less uniform than temperature as it alternated from below to above to below normal between the higher and lower elevations until, again about the last week of April switched to uniformly above normal through May. As a result, there was some minor low land flooding (pastures and bike trails) along the Cache la Poudre River near Greeley toward the end of May.

The snow water equivalent (SWE) did generally increase in the South Platte as it moved from 11 inches (156%) on February 1 to 13.5 inches (140%) on March 1 to 14 inches (103%) on April 1. The SWE then peaked on April 7 (well ahead of the normal April 26 peak date) at 15.4 inches (103% of the

normal peak). The SWE then declined until, again, near the end of April when wetter conditions gave the SWE a series of “boosts” that did not reach a new peak but did add significant moisture and extend the runoff to later in the irrigation season.

As might be expected from the precipitation conditions discussed above, the USDA Drought Monitor for northeast Colorado followed a slow decline with a D2 area reappearing by the end of March and continuing into April. However, by early May this had improved to a no drought rating for most of the eastern plains with continued improvement to the point that by the end of May only a D0 rated area covering most of Park and Teller Counties remained.

The flows in the South Platte River at the Julesburg and Kersey index gages were more variable than the Drought Monitor conditions, but also ended the period on a positive note. The flows for the period were the following percentages of average; Kersey - February 110%, March 79%, April 40% and May 159%; Julesburg - February 93%, March 30%, April 32% and May 129%.

Even with the low river flows just discussed, the calls on the South Platte mainstem were surprisingly near normal for most of the period. As could be expected with the generally above average precipitation starting in late April, the calls moved to be more and more junior to the point than most of the basin was under free river conditions by the end of May.

Overall storage in the South Platte continued run a bit ahead of normal throughout the period. The end of month storage contents in the 32 index reservoirs, as a percent of capacity, was; February - 80% (long term average 74%), March - 85% (long term average 80%), April - 87% (long term average 82%) and May - 94% (long term average 83%).

June through August 2017

There was a definite change in weather pattern in from May to June and July in

Division 1, with another switch in August. Where May had been cool and wet, June and July were both warm and generally dry - though the far eastern and southern portions of Division 1 did receive near to above normal precipitation. However, during the first half of August pretty much all of Division 1 was wet and cool while the last half of the month shifted back to warm and dry.

The Division 1 USDA Drought Monitor ratings lagged the precipitation patterns with essentially no change from the end of May to the end of June, but a marked change in July. At the start of July there was an area with a D0 rating covering most of Park and Teller Counties, but the rest of Division 1 had no drought rating. By the end of July, the Park and Teller County area had disappeared, but a D0 rating extended north from the Denver metro area along the Front Range and eastern plains to Wyoming with another D0 area covering most of Logan, Phillips and Sedgwick Counties. Then the wet early August period shrank the D0 area to a relatively small area near the northeast corner of the state.

The flows in the South Platte River at the Julesburg and Kersey index gages reflected the precipitation conditions and increased demand for water during the heart of the Division 1 irrigation season. The flows for the period were the following percentages of average; Kersey - June 108%, July 60%, and August 149% (though this was influenced by a delivery of CBT water through the gage for about the last week of August); Julesburg - June 84%, July 20%, and August 56%.

The generally dryer conditions during this period were reflected in the river calls on the South Platte. The South Platte mainstem began moving off of free river at noon on June 10 and ended June with the entire main stem was under call by June 30. All of Division 1 remained under varying call through the end of August. Of note, from June 30 through the end of the period the Julesburg flows were below the 120 cfs that triggers curtailment of Colorado water rights junior to June 14, 1897 in Water District 64

under the South Platte River Compact. That curtailment was done to keep Colorado in compliance with the terms of the Compact

Overall South Platte storage remained good during the period, especially because the relatively wet and cool start of August reduced demand for reservoir releases significantly. The end of month storage contents in the 32 index reservoirs, as a percent of capacity, was; June - 96% (long term average 85%), July - 83% (long term average 72%) and August - 74% (long term average 58%).

September and October 2017

Temperatures and precipitation during this period were generally near normal. September started out a bit dryer and warmer than normal, but conditions shifted over the course of the period to be somewhat wetter and cooler, which resulted in the period, as a whole, being pretty “normal”. These normal conditions resulted in the fairly small area near the northeast corner of Colorado that had a USDA Drought Monitor rating of D0 at the end of August shrinking by about half. There was literally no change in this area during October.

During both September and October, the flows at the Kersey and Julesburg index gages were above and below, respectively, the long term mean flows. The Kersey flows for the period were the following percentages of average; September 120% and October 125%. The Julesburg flows for the period were the following percentages of average; September 41% and October 44%.

The warm and dry conditions that continued from August into September also continued the mainstem calls until the unusual circumstance of going to free river on the mainstem below metro Denver on October 3rd and remaining there for the rest of the month. This was heavily influenced by many of the major plains reservoirs not being able to take water because of maintenance/repair work on the inlet ditches or dams. Also, the South Platte Compact call, which impacts

only Water District 64, was on at the start of September and remained until September 16, when the state line flow went above 120 cfs and remained there through the end of the Compact call period on October 16.

The warmer and dryer conditions in September led to a significant draw on reservoirs, but the storage volumes still ended Irrigation Year 2017 in good shape. The end of month storage contents in the 32 index reservoirs, as a percent of capacity, was September at 61% (long term average 52%) and October at 65% (long term average 54%).

Well Administration - South Platte River Basin

The South Platte Well Measurement Rules (Case No. 11CW292) were finalized in water court, with a required compliance date of 12/31/2015. Compliance with the Rules initially required approximately 6,400 wells within the scope of the South Platte Measurement Rules to either be equipped with a measurement device that is verified as accurate, primarily a totalizing flow meter, or declared as inactive. Great effort by the Division One Ground Water Team and other key Division One staff has been focused on maintaining compliance for wells in decreed augmentation plans, approximately 3500, and bringing wells not covered by a decreed augmentation plan into compliance with the Rules. The staff continues to work with augmentation plans and well users to allow more efficient and effective reporting and recording of well diversions and status for more than 4,000 wells.

Efforts continued throughout 2017 in the administration of the South Platte Measurement Rules, including the Well Team conducting approximately 70 installed flow meter verification field tests, processing over 460 measurement tests into DWR’s database, the inventory of more than 700 wells, inspection of more than 375 wells filed as inactive in accordance with the Measurement Rules, and responding to many questions

from water users. The well team recertified 24 certified well meter testers and approved three new certified well meter testers. These efforts support the requirements of the South Platte Well Measurement Rules, and other Basins Ground Water Measurement Rules, that measurement devices be verified by a person qualified by the State Engineer.

The well enforcement program continued administration by sending out approximately 1400 Notice of Violation and Cease and Desist Orders. Additionally, the team mailed out 232 Notices for Expiring Flow Meter Tests and 135 flow meter correction factor notifications. The Well Team continued efforts in support of the upcoming 2020 Abandonment List, providing field inspections and research.

Well Administration - Republican River Basin

The Republican River Well Team continued their efforts of administering the Republican River Basin Groundwater Measurement Rules (Rules) in 2017, including conducting approximately 200 well measurement device verification field tests, inventory of approximately 800 wells, and field inspection of approximately 140 wells filed as inactive in accordance with the Rules. The well team assisted with Well Tester certification training classes, and conducted in-field one-on-one recertification of approximately 30 certified well testers. These efforts support the requirements of the Republican River Compact Area Well Measurement Rules, and other Basins Ground Water Measurement Rules, that measurement devices be verified by a person qualified by the State Engineer.

Well Team enforcement efforts continued with the Greeley office and Republican field crew distributing approximately 139 Notice of Violation and Orders to Cease & Desist. Additionally, 844 Notices for Expiring Meters and 534 Annual Usage Reporting Forms were mailed to well users in the basin.

The Republican River well 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 well team staff is assisting the State Engineer in Public Meetings and outreach in Advisory Committee meetings being held as part of the Republican River Compact Use Rules rulemaking process. In addition, in coordination with the State and Division Engineer's offices, the Republican River staff worked closely with the USGS on three stream flow compact gages and the Bureau of Reclamation regarding the administration of stream flows through Bonny Reservoir.

In addition, the Republican River well team has been busy assisting the Designated Basins Team in the administration of well permit volume limits by investigating dozens of wells and posting and documenting Orders on approximately 5 wells that exceeded their annual limitation in the 2017 Irrigation Year. These Orders are being administered by the Designated Basins Team in Denver, and require the reduction of the annual pumping limits for 2018 Irrigation Year by the amount over-pumped in 2017.

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 with priority dates junior to June 14, 1897. There were 73 days of South Platte Compact call during the 2017 Irrigation Year, which is nearly twice the number of days recorded in Irrigation Year 2016.

During Irrigation Year 2017 the Republican River Compact was administered by staff in both Division One and the Denver Office in conjunction with the Republican River Water Conservation District. On August 24, 2016 the Republican River Compact Administration approved a resolution establishing Colorado's permanent approval of the Republican River Compact Compliance Pipeline. During Irrigation Year 2017, the pipeline operated with the provisional approval of Kansas and Nebraska through the end of 2016 and beginning January 1, 2017 the operation of the pipeline was subject to the aforementioned resolution for a total delivery of 11,449 acre-feet to the Colorado/Nebraska state line. The recorded delivery in Irrigation Year 2017 is slightly greater than the delivery recorded in Irrigation Year 2016. Finally, to assist with Compact compliance, diversions by surface water rights junior to the signing date of the Compact (December 31, 1942) in the Republican River basin within Colorado continue to be curtailed.

During Irrigation Year 2017 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 continued to be active and involved in many issues important to the water community. When requested or needed, Division One personnel attended, participated in, and presented at ditch company meetings, conservancy district

meetings, groundwater management district meetings, Colorado Water Congress, and in numerous meetings with water users, realtors, and homeowner groups. In addition, Division One personnel continued to assist the Natural Resources Conservation Service (NRCS) with snow survey measurements.

Meetings of the South Platte Basin Round Table, Metro Basin Round Table, and Republican River Water Conservancy District are also regularly attended by Division One personnel. This past year, Division One staff continued to participate by attending and contributing to regular meetings of the South Platte Basin Roundtable Groundwater Technical Subcommittee.

In addition to regular meetings, the Republican River Basin Team attended a Water Fest sponsored by the Yuma County Conservation District. Division One hosted this year's annual Colorado Water Officials Association meeting in Estes Park that included presentations by Justice Gregory Hobbs and the stars of "Gold Rush" a reality based television show that features gold mining operations in Fairplay.

Outside of office work, Division One personnel formed a Relay for Life team and raised \$2,946 for the American Cancer Society. The Division One chapter of Colorado Water Officials Association continued to contribute to its scholarship fund, in memory of former Division Engineer W.G. Dugan Wilkinson, and awarded another \$500 scholarship to a deserving student in the Watershed Science program at Colorado State University.

TABLES

Table 1 - Transmountain Diversion Summary

2017 TRANSMOUNTAIN DIVERSION SUMMARY - INFLOWS (November 2016 - October 2017)

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	1,226	92	2,018	132	48	4604	SAND & DEADMAN CR.
3	4608	DEADMAN DITCH	CACHE LA POUFRE RIVER	506	78	808	122	48	4608	DEADMAN CREEK
3	4606	BOB CREEK DITCH	CACHE LA POUFRE RIVER	139	36	235	51	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	7,353	103	8,545	125	48	4600	LARAMIE RIVER
3	4605	SKYLINE DITCH	CACHE LA POUFRE RIVER	16	4	0	0	48	4605	LARAMIE RIVER
3	4602	CAMERON PASS DITCH	CACHE LA POUFRE RIVER	48	27	95	39	47	4602	MICHIGAN RIVER
3	4603	MICHIGAN DITCH	CACHE LA POUFRE RIVER	1,698	351	2,583	359	47	4603	MICHIGAN RIVER
3	4601	GRAND RIVER DITCH	CACHE LA POUFRE RIVER	7,923	154	7,990	151	51	4601	COLORADO RIVER
4	4634	ADAMS TUNNEL	BIG THOMPSON RIVER	117,512	327	115,864	326	51	4634	COLORADO RIVER
6	4655	MOFFAT TUNNEL	SOUTH PLATTE RIVER	20,907	358	21,761	354	51	4655	FRASER RIVER
7	4625	BERTHOUD PASS DITCH	CLEAR CREEK	316	101	406	84	51	4625	FRASER RIVER
7	4626	VIDLER TUNNEL	CLEAR CREEK	337	59	203	35	36	4626	MONTEZUMA CREEK
7	4682	STRAIGHT CREEK TUNNEL	CLEAR CREEK	134	365	129	365	36	4682	STRAIGHT CREEK
7	4650	A P GUMBLICK TUNNEL	CLEAR CREEK	271	10	72	6	51	4603	COLORADO RIVER
23	4611	BOREAS PASS DITCH	SOUTH PLATTE RIVER	69	56	59	50	36	4685	INDIANA CREEK
23	4612	HOOSIER PASS DITCH	ARKANSAS RIVER	4,257	182	6,614	193	36	4683	BLUE RIVER
23	4490	AURORA HOMESTAKE	SOUTH PLATTE RIVER	12,390	199	12,655	212	37	4644	HOMESTAKE CREEK
80	653	ROBERTS TUNNEL	SOUTH PLATTE RIVER	31,277	205	43,464	311	36	4684	BLUE RIVER

Table 2 - Water Court Activities and Staffing

Water Court Activities

Calendar Year 2017

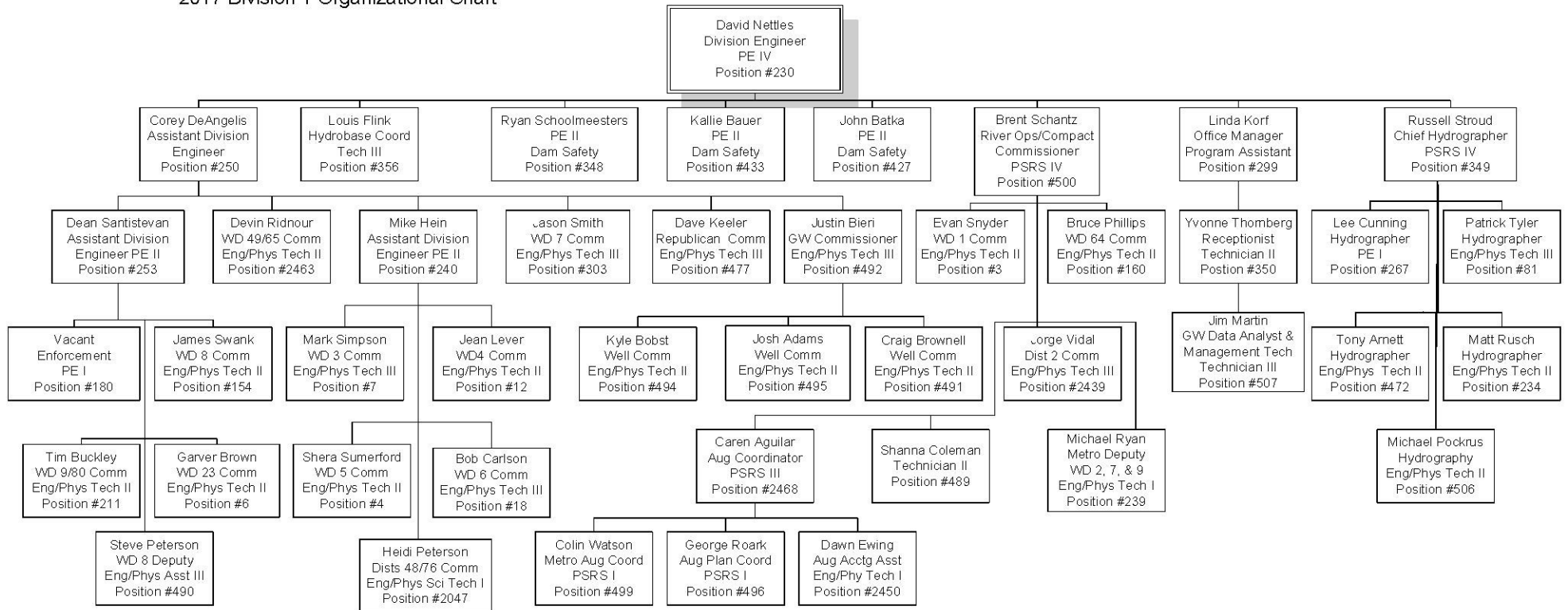
New Applications made to water court this year.....	275
Referee Rulings Reviewed.....	189
Decrees Issued by Court this year.....	246

Staffing

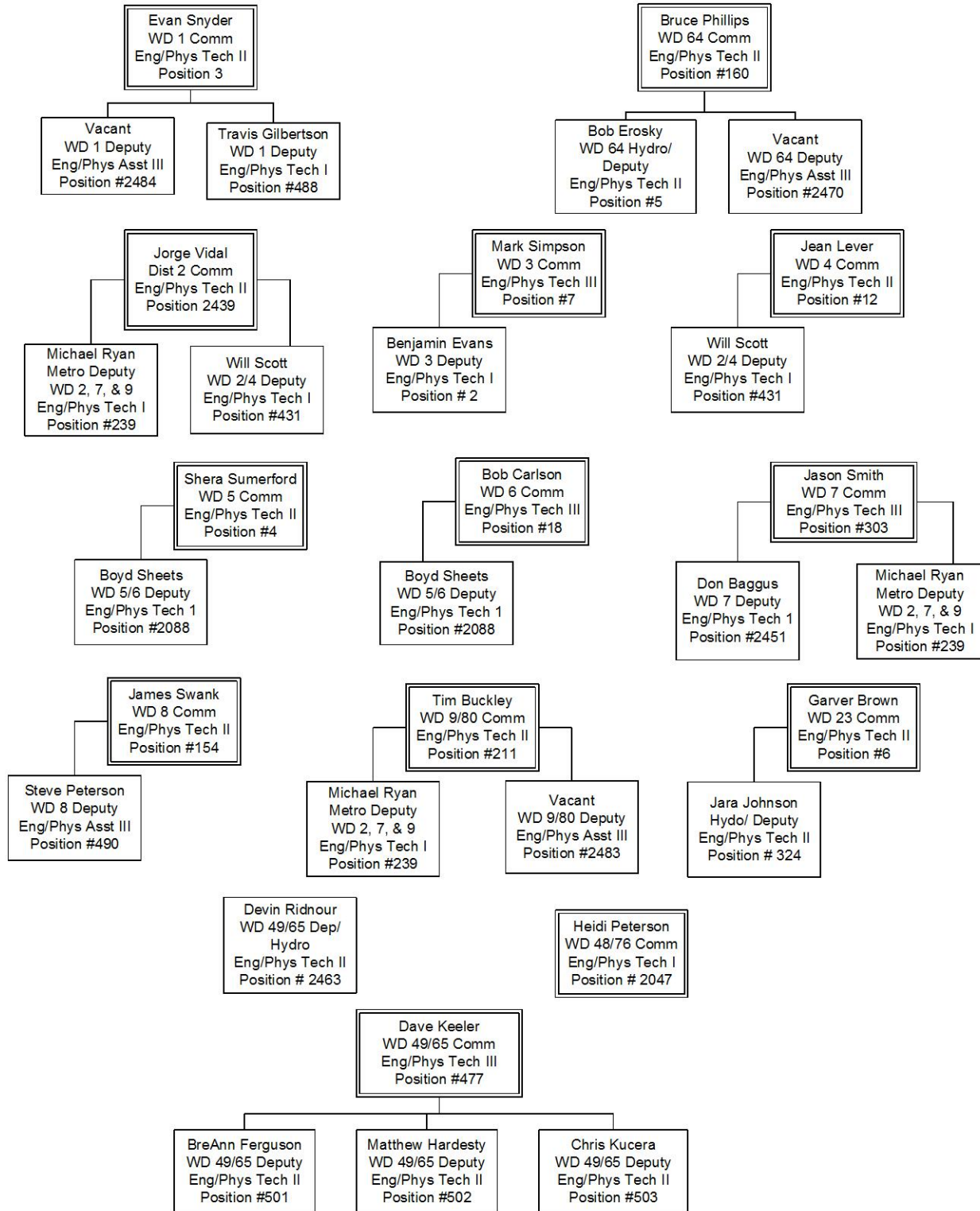
Dam Safety Engineers	3
Water Resource Engineers	6
IT Professional	1
Engineering/Physical Science Techs/Assistants	10
Program Asst 1, Technician II, Tech III	4
Physical Science Researcher/Scientist	5
Full-Time Water Commissioners	27
Permanent Part-Time Water Commissioners	<u>2</u>
TOTAL STAFF	58

Table 3 - Organizational Chart

2017 Division 1 Organizational Chart



2017 Division 1 Organizational Chart for Water Commissioners



Positions #239, #2439 are supervised by Position #500
 Position #2088 is supervised by Position #18
 Position #490 is supervised by Position #253