ARKANSAS RIVER COMPACT ADMINISTRATION

COMPACT YEAR 2018

ANNUAL MEETING

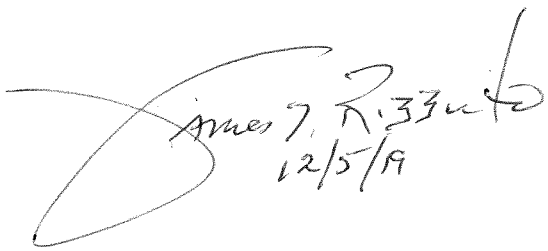
December 7, 2018

HELD AT THE

CLARION INN

1911 EAST KANSAS AVENUE

GARDEN CITY, KANSAS



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APPEARANCES

CHAIRMAN:

Jim Rizzuto

COLORADO:

Rebecca Mitchell

Lane Malone

Scott Brazil

KANSAS:

David Barfield

Randy Hayzlett

Hal Scheuerman

P R O C E E D I N G S

MR. RIZZUTO: Thank you. With that, I will call the Arkansas River Compact Administration meeting to order at 9:09 Central Standard Time, so I got the time right, hopefully. So with that, some guidelines before we actually get started.

First, anyone that comes in, and if you have not, please sign the attendance sheet. That will become Exhibit A of today's report. Also, I'd like to have everyone who wants to speak, if you can, come up to the microphone. If you have a card, please give the card to the recorder, as well as any transcripts that you'd like to make part of the report, we'll need four copies. Okay.

So with that, I'd like to first start off this meeting, it's kind of a special day, asking for a moment of silence. This past week, we went through the death and funeral services for former President H. W. Bush, and today is Pearl Harbor Day as well, so if we could take a few seconds of silence in remembrance of these activities.

(Moment of silence.)

MR. RIZZUTO: Thank you. For the first item of business, review and revision of agenda,

it's my understanding the agenda has been revised by the Administrative and Legal Committee, and the revision is part of or needs to be part of the agenda; is that correct?

MR. HAYZLETT: That's correct. Item 4-D, we deleted that because we did not have a presenter, which is the National Weather Service.

MR. RIZZUTO: Okay. I assume no objection?

MS. MITCHELL: No objection.

MR. RIZZUTO: We need to, in turn, move on to the adopted agenda will become Exhibit B.

MR. HAYZLETT: We'll move for the adoption.

MR. RIZZUTO: To adopt it, yes. Okay. Second, Colorado?

MS. MITCHELL: (Raises hand.)

MR. RIZZUTO: Kansas, how do you vote?

MR. HAYZLETT: Aye.

MR. RIZZUTO: Colorado, how do you vote?

MS. MITCHELL: Aye.

MR. RIZZUTO: Okay. Passes. So the agenda has been adopted.

Report of officers, I have no report, other than just to let everyone know from a personal

standpoint, I'm no longer president at Otero Junior College. I decided to retire and do some of the things my wife has wanted me to do for the last 25, 30 years, but I look forward to continuing on this board.

With that, Randy, anything to report?

MR. HAYZLETT: Just congratulations on your retirement and welcome you to Garden City this year for this Annual Meeting. We're glad to have you here.

MR. RIZZUTO: Okay. We'll defer Recording Secretary and Treasurer, Operations Secretary and Assistant Operations, till later in the agenda.

At this time, I would like to call on federal agencies for reports, although we've deleted that from the agenda; is that right?

MR. HAYZLETT: No, just Item 4.

MR. RIZZUTO: Oh, just Item 4-D. I'm sorry. Okay. With that, I'd like to call U.S. Geological Survey, Robert Kimbrough, forward.

MR. KIMBROUGH: Thank you, Mr. Chairman, for allowing me to speak today at the meeting. It's my pleasure to be here. Once again, my name is Bob Kimbrough. I'm with the USGS Colorado Water Science

Center, and I just want to spend a few minutes talking about streamflow conditions in Water Year 18 at a set of streamgages that USGS operates in cooperation with the Arkansas River Compact Administration.

USGS and ARCA have had a long-standing partnership to have USGS operate a network of gages in a reach of the Arkansas River that extends from about Fowler, Colorado, just downstream of the Colorado-Kansas Stateline, and here's a map showing the location of the gages. We have 10 continuous recording streamflow gages. We have five on the mainstem and those are, in the downstream order, one at Las Animas and then one right below John Martin Reservoir, one at Lamar, near Granada, and near Coolidge, Kansas; and then we also have gages on four tributaries, two upstream of the reservoir, Apishapa River near Fowler, the Purgatoire River at its mouth near Las Animas, and Big Sandy Creek near Lamar and Wild Horse Creek above Holly, and then we also have a continuous recording gage on the Frontier Ditch.

We also have a CSG or a crest-stage gage on the upper reaches of Big Sandy Creek. It doesn't provide a continuous record, but it does capture

peak flow events that may occur from rainfall when they do occur.

So what I want to do now is just run through streamflow conditions for these 10 continuous recorded gages for Water Year 18. So here's a graph of seven-day average streamflow in cubic feet per second for the Arkansas River at Las Animas, and it's a -- runs from October, 2017 through September, 2018, and you'll notice that flow and CFS is on a log scale on the Y axis, and I chose to plot seven-day average flow because it just smooths out some of those short duration daily spikes that you see in a daily hydrograph, so each point along that black line is just an average of the previous seven days.

So streamflow for '18 is plotted against the distribution of historical flows for the period of record at this site, and we've color coded those. Flows that fall within the 25th and 75th percentile, or half the flows that have occurred in history, are considered to be in the normal range, and they're in that light green band in the middle.

Flows in the upper 25th percentile are considered above normal and they're shown in the blue colors and, further definition, the dark blue

are flows in that highest 10 percentile; and then on the bottom, we have flows in the lowest quartile are considered below normal, with flows in dark red being considered much below normal.

So total flow for the Water Year was just over 100,000 Acre Feet for '18, only about a third of what flows were in '17. Yet, overall, if you look at the last column, well, overall flows were only about 50% of the long-term average, and what really caused this is this last few months during the summer when flows were consistently in that below normal range, and that's a time of year when we really would have liked to see flows at the very least in the green band, having high flows from a normal snowmelt runoff year, which we did not have last year.

If we go to the next slide, we see it was a little different story downstream of John Martin Reservoir. Total flow for the Water Year was about 245,000 Acre Feet, slightly higher than '17 and about 120% of the long-term average. So after flows were kept, you know, anywhere from -- from a single digits, seven, eight CFS up to about 70 CFS in the winter, flows were increased pretty sharply, and in March, it kept fairly high through the rest of the

summer, with flows generally in the normal to above normal range.

And moving downstream, we see -- you would expect to see a similar pattern. Arkansas River at Lamar, total flow for the Water Year, just over 90,000 Acre Feet. Again, slightly larger than '17 and 113% of the long-term average, and you can see flows during June and July were quite high, in that upper 25th percentile in the above normal range, so a good flow year for Lamar.

At Granada, we see a very similar pattern. Total flow for the Water Year, almost 123,000 Acre Feet. Again, slightly larger than '17 and 104% of average, and looks like we got another peak in July that was quite high. Flows were up in that 90th -- above that 90th percentile and, all year long, flows were really never less than the 25th percentile.

Next slide. If you look at total flow at Coolidge, Kansas, this number actually increased from Granada from inflows. Groundwater inflow, total flow for the year was about 159,000 Acre Feet, a little bit larger than '17, 109% of average, and flows were in that normal to above normal range all year.

Now we can switch gears and look at

hydrographs for the four tributaries, or a couple of the tributaries, starting with the Apishapa River near Fowler. Total flow for the Water Year, about 15,000 Acre Feet, only about half of what flows were in '17 yet, overall, not a bad year. 88% of average, which is really not too bad, and that's indicated in the hydrograph. Flows were never in that lower quartile. We had some nice increases in flow in late summer from storm runoff events that occurred July, August, September.

Purgatoire River near Las Animas, total flow for the year, just shy of 40,000 Acre Feet, about half of what occurred in '17, but then again, overall not too bad, 91% of average, and if you look where we began the year, flows were really high and kept high all winter long, above normal, but it was this, you see the big dive in June and July. The flows really dropped quite low, down to less than one CFS, and it appears we set some new records, seven-day average flows in June and July, where the black line crosses these -- these white areas before flow rebounded quite nicely in response to some late summer storms, and for those of you who are in the audience yesterday, you heard my colleague, Krystal Brown, talk about how these storms originated from

runoff from storms that were situated downstream from the City of Trinidad, so they were not the result of the releases from Trinidad Lake.

And then, lastly, I had to summarize flow in Big Sandy and Wild Horse Creek in a table. Total flow in Big Sandy for the Water Year of 15,400 Acre Feet, very similar to '17. If you look at that last column, flows were 154% of average, so we had two back-to-back years of high flow in Big Sandy, which is good to see, '17 and '18.

At the request of ARCA, we partitioned out the portion of flow at Big Sandy that can be attributed to baseflow, and the -- and the difference being the amount of flow contributed to above baseflow, these two numbers here, so you can see the majority of the flow was considered baseflow in '18.

Wild Horse Creek is a seasonal gage. It's not operated in the winter, but we do provide flow summaries for the entire Water Year, which includes October, '17, and then the summer months in '18, 6,200 Acre Feet, and then we also break it out for April through September as well, and if you look at the percentages on the far right, again, a good flow year in '18 at Wild Horse, although slightly less than '17.

And then lastly, for Frontier Ditch near Coolidge, we had about 7,500 Acre Feet for the Water Year, about 88% of average. So that's all I have for summarizing streamflow conditions.

I just wanted to make a few comments on our streamflow measurements or what we refer to as discharge measurements. We routinely make discharge measurements throughout the year at all our gages as a means of checking the calibration of the gage, but it's not uncommon where we do get requests to make additional discharge measurements from our cooperators, just to ensure that the real-time provisional data that we're showing on the web is as accurate as possible and, during '18, we did make several discharge measurements at the request of Kansas and Colorado.

We do this every year, and so it's nothing new for ARCA. We typically, these requests are associated with releases from John Martin Reservoir, so we're concentrating on making additional measurements at those mainstream gages downstream of the reservoir.

When we get a request from the state, we try to respond as quickly as possible. The states often do a great job of giving us a heads-up that there's

going to be a release in a few days, so we can plan for that. We -- we try to get the results of these measurements to the states as quickly as possible, and email has proven to be just a real efficient way to have good communication on this topic, and this year, we actually, I think we started doing a better job even emailing the results of our routine measurements to the states. So from my perspective, I -- I saw some -- just some really great communication between the states and the USGS on this issue.

We just want to give a quick shout-out to the folks in Division 2, Colorado DWR, and Kevin Salter and his staff in Kansas and USGS hydrologic technicians in the Pueblo, Colorado office and the Hays, Kansas office for getting out there and making those measurements, so thanks to everybody.

So in summary, Water Year 18 streamflow in the mainstem Arkansas was below average upstream of John Martin Reservoir but above average downstream of the reservoir, with flows ranging anywhere from 104 to 121% of average. Water Year 18 tributary flow was below average in the Apishapa and Purgatoire Rivers, yet it was above average in Big Sandy and Wild Horse Creeks. Streamflow in Water Year 18 was greater

than Water Year 17 flow at six of 10 streamgages, and the exceptions were the Arkansas, Las Animas, and then three tributaries, the Apishapa, Purgatoire and Wild Horse.

And then lastly, upon request, USGS did obtain additional discharge measurements at several sites during Water Year 18. So that's all I have, and I'm more than happy to take any questions if anybody has one.

MR. RIZZUTO: Any questions?

MR. BARFIELD: Not from Kansas.

MR. RIZZUTO: Not from Kansas? Colorado?

MS. MITCHELL: No.

MR. RIZZUTO: Okay.

MR. KIMBROUGH: All right. Then I'd like to submit for the record just a table of all the numbers that I just talked about.

MR. RIZZUTO: Okay.

MR. KIMBROUGH: For the record. Thank you.

MR. RIZZUTO: Okay. Thank you. Robert, did you provide copies so as to be part of the overall report today, or did you wish not to?

MR. KIMBROUGH: Copies of the numbers or the Power Point?

MR. RIZZUTO: Power Point.

MR. KIMBROUGH: Well, yeah, I've submitted the Power Point. That can be entered into the record, and then we have the table, which really just summarizes everything on one page.

MR. RIZZUTO: Okay.

MR. KIMBROUGH: That's typically what USGS submits, to my understanding.

MR. RIZZUTO: So would that be an exhibit, Exhibit C? And this last attachment could be part of that C exhibit. Okay.

All right. Next, Ryan Gronewold, U.S. Army Corps of Engineers. Did I pronounce your name correctly?

MR. GRONEWOLD: Yes, you did.

MR. RIZZUTO: Okay.

MR. GRONEWOLD: Good morning, Mr. Chairman and members. My name is Ryan Gronewold with the Army Corps of Engineers in Albuquerque. Our commander, Lieutenant Colonel Dale Caswell, was not able to attend this year, so I'll be -- I'll be presenting for him.

Let's see. Go ahead to the next slide. I'll be -- I'll be brief. I'll be short and sweet here. We presented on some of this yesterday at the -- at

the committee meetings, so I'll just -- I'll be brief, go through these pretty quick, but if at any point in the presentation, you have any questions, feel free to ask. Go ahead.

So snowmelt the Water Year, this year, snowpack for the June 1st forecast in the Upper Arkansas Basin was 60% -- 67% of median. Overall throughout the basin was 60% of median at that time.

In the Purgatoire Basin, snowpack was 0% of median, and in -- for the June 1st forecast and wasn't ever much above that before. I think it was maybe peaked at about 7%.

At Trinidad Dam, peak storage was 39,388 Acre Feet. The peak release was 150 cubic feet per second and the total release for the Water Year was 32,050 Acre Feet.

At John Martin, peak storage was at 316,650 Acre Feet. The peak release was around 1,300 CFS and the total release for the year was 232,995 Acre Feet. So as you can imagine, with those numbers, we did not conduct any flood control releases at Trinidad, John Martin, or within the Flood Pool at Pueblo Dam.

So in addition to our routine operation maintenance activities at the Corps dams, I wanted

to highlight a couple of significant efforts, nonroutine efforts that were -- that were done at Trinidad. You may recall the gabion baskets downstream of the outlet works failed in May of 2017. I want to assure you that that failure did not compromise the integrity of the dam, the structure itself. There was no -- no dam safety issues associated with that. Those baskets were put in simply for erosion protection of the downstream channel. In the -- in the last year, we did remove the remainder of those gabion baskets, too, so that they wouldn't interfere with our ability to release the full 5,000 CFS if needed. Go ahead to the next slide, Kevin.

Staying at Trinidad, the -- on the upstream face of the dam embankment, we've had issues with the riprap deteriorating for years now. We were able to secure significant funds to do a lot of replacement of that riprap. The contract was awarded and they're going to begin placement of that in March of 2019 and are hoping to -- to complete that in June of 2019.

At John Martin, we have a very significant effort going on. The -- the stilling basin downstream of the dam has not been inspected since

the dam was constructed. It's a significant effort to dewater and -- and dredge and remove the sediment so that the -- the stilling basin can be inspected. It's about a 12-acre surface area, the stilling basin is in total, and the -- the stilling basin itself has baffles that are -- that are energy dissipating baffles, so we did award a contract.

A mobilization began in October and dewatering began November 5th. They started excavating sediment ahead of schedule, I believe November 20, so we're a little ahead of schedule there. The -- we intend to have excavation complete no later than February 20 but, like I said, we're ahead of schedule there, after which we would inspect all of the -- the structure itself. We will have that completed no later than March 1st, but sooner if we're able to, and that gives us about a month to perform any -- any minor repairs and maintenance of the -- of the structure. Go ahead to the next slide.

I'm going to mention a few of our other civil works projects that are going on in the basin. Our -- our continuing authorities program, our CAP program, those are a smaller level of detail studies that are intended to get to implementation

and construction in a timely manner. One of those -- one ongoing one that we had is a emergency streambank protection project along Fountain Creek at the Highway 85/87 Bridge crossing. The -- the local sponsor for that project is El Paso County and the intent is to repair some of the erosion that's going on here. You can see this is the Fountain Creek Regional Trail that's -- that's being affected by this erosion. We completed the study phase of that and we're awaiting -- awaiting direction from the sponsor to proceed to -- to implementation. Go ahead to the next, or I'm sorry.

Also, we have a new start emergency streambank stabilization project in Fremont County. That is with the local sponsor, of Fremont Sanitation District. The objective of that project is to repair and prevent further erosion of the south bank of the Arkansas River, to protect the district's wastewater main, and the adjacent Canon City Area Recreation and Parks District recreation trail.

Emergency management coordination. The Spring Creek fire near La Veta and Walsenburg, Colorado, was a large wild land fire that occurred within the Arkansas Basin watershed in June and July of 2018. This fire created a burn scar of over 100,000 acres,

which will have potential long-term impacts to the watershed. The flood threat potential from the burn scars has been significantly increased from the prefire condition as a result of the denuded watershed and subsequent increased runoff potential.

Albuquerque District's Readiness and Contingency Operations Office and the Hydrology and Hydraulics section are providing a technical assistance report to the Colorado Division of Homeland Security and Emergency Management. That report is -- will include conducting hydrologic and hydraulic watershed modeling and to include recommendations for flood risk mitigation.

So that concludes my report and I'm happy to stand for questions.

MR. RIZZUTO: Okay. Colorado, any questions? Kansas?

MR. BARFIELD: None.

MR. RIZZUTO: You've done a good job, Ryan.

MR. GRONEWOLD: All right. Thank you.

MR. RIZZUTO: And you've supplied copies?

MR. GRONEWOLD: Of the report, yes, and of the presentation as well.

MR. RIZZUTO: Okay. And that would

become Exhibit D in the final report. Thank you.

Next, I'll call on U.S. Bureau of Reclamation, Roy Vaughan.

MR. VAUGHAN: Good morning. I'm Roy Vaughan. I'm the facility manager, also responsible for water scheduling in the East Slope Fryingpan-Arkansas Project reservoirs.

A little bit about our Water Year. Imports were well below average, right around 40,000. That's 70% of our 40-year average. We have had four good years of imports. The snowpack in the collection system was a little below average for most of the winter. We'll look at that slide a little bit later.

The collection system opened April 14th, which is about normal. Runoff peaked June and then continued to the beginning of August, so we kind of had a early or about normal runoff and then it slowed down significantly. Normally, we get about six inches of precip in the collection system in May. This year, we got 1.1-inch, so...

This is just Turquoise Lake. The silver column is 2018, the blue column is 2017, and the heavy black line is average, so that's kind of the way the Water Year looked. We didn't drop down as

much because of the forecast. Go ahead.

This is Twin Lakes. It's kind of set up the same way.

Pueblo Reservoir, you can see we're a little below where we were in 2017, but quite a bit above average.

And this is just a summary of what that is. Turquoise is 89% of average, Twin Lakes 85% of average, and Pueblo is 132% of average; so even though it was pretty dry, our storage is in better shape than one would think.

Here's our forecasts: February, 46 (sic); March, 38 (sic); April, 40th, 40,000; and May, 58,000.

And this is kind of how -- the red line is how we imported water through the Boustead Tunnel and the blue line is the maximum that it can convey, and I just wanted to show you this slide.

The red line is average. This is the Colorado Basin and this is the -- the blue line, the lighter blue line, is how the snowpack came off in the upper Colorado, so as you can see, it never really got to average, and it came off early and pretty fast and hard, and the Arkansas Basin was even more sad.

Winter operations. We're currently just

releasing the minimum flows from our upper reservoirs to Pueblo. We'd like to have about 60,000 Acre Feet of space available for runoff, and we'll adjust that according to the snowpack.

Some of the projects that are going on on our lands, and I think Southeastern will probably talk more about this, but the Lease of Power Privilege has been finalized with Southeastern Colorado Water Conservancy District. Reclamation has approved the submittals for Phase 1 and 2 and are reviewing the final phase. Construction of the plant begins September, 2017, and it's the completion date is January of 2019, and just a few photos of the big unit going in from the top, inside the plant, under construction.

Temporary Excess Capacity Storage Contract EA. The Temporary Storage Contract EA was expiring that they finished that up. The document is available at that address.

[https://www.usbr.gov/gp/ecao/nepa/fryark.html]

Terry Stroh is the contact in our Loveland office.

New Long-term Storage Contract. We're planning on entering into a 40-year Excess Capacity Storage Compact, or Contract, with Donala Sanitation District for storage in Pueblo, as well as the

Bureau of Land Management, and Robert Rice, Bob Rice at USBR, is the contact in Loveland. He's our contracting officer.

Master Storage Contract. That was completed with Southeast and we began storage of those entities' waters under -- in 2017, under the Master Contract.

Arkansas Valley Conduit and, once again, I think Chris Woodka will probably talk a little bit more about this, but the Record of Decision has been signed. Contract to study Regionalization was awarded in September, 2018 to CDM Smith. Feasibility Study Reports and Cost Estimates are expected by March, 2020.

The TSC, our Technical Service Center in Denver, is currently working on final design for the "Boone Reach" with expectations -- with expected completion in late 2020. We're in -- we're holding technical sessions with Southeast and Pueblo Water for -- we may use a piece of Pueblo Board's infrastructure for conveyance, and Sam Braverman is the contact in Loveland for this project, as well as Chris Woodka out of Southeast.

A little bit about SDS. We talked about this before. I guess the only significant change is

Williams Creek Reservoir. They're still doing land acquisitions and they thought it would be done in 2019. It's -- or 2018. It's going to be done in 2019 now, and that's the second phase of this project.

Facility assessment for Fry-Ark are complete, and this is concerning the zebra and quagga mussels. To date, we still have found no adults on substrate samples and it was negative again this year for larvae, and Pat McCusker out of our Loveland office is the contract for this, and that's all I have. I'd be happy to take questions, and I'm glad you're not asking any.

MR. RIZZUTO: Questions? No questions? I could ask when is the conduit really going to get going?

MR. VAUGHAN: You know, I'm going to defer that to Chris.

MR. RIZZUTO: To Chris? Okay. Thank you. And you've -- you've made copies available, Roy?

MR. VAUGHAN: Yes.

MR. RIZZUTO: Okay. And it will become Exhibit E.

We'll move on to reports from local water user

and state agencies. Purgatoire River Water Conservancy District, Steve Kastner. Steve.

MR. KASTNER: Thank you, Mr. Chairman. I have a few slides of our operations in the last season and I'll also talk about some events that occurred during the year and some mentions of appreciation.

This first slide is a little bit of history, including last year's diversions in total in the district for the project ditches. The blue is the project diversions during the project periods and the orange is priority waters. Mention was made of our snowpack or our lack of snowpack, and you can see things went down last year. Next slide, Kevin.

Last year at this time, Kevin Salter predicted that places in the Arkansas would spill into a drought was his words. This -- this slide shows that. Our -- we had some carryover water at the end of 2017, about 10,000 Acre Feet. That blue line and our capacity in that pool, the Model Pool in the reservoir, is 20,000, so we reached that last winter in January and held that until opening the irrigation season.

The orange line is our cumulative diversions for the year, 30 -- a little over 30,000 Acre Feet,

so 20,000 of that was, obviously, the reservoir-stored water. The other 10,000 was return flows within the district and inflows to Trinidad Reservoir that would pass through. So beyond our storage, it was a drought, and we won't -- unless something unusual happens, we won't have that level of storage going into this irrigation season, so hoping Kevin predicts an abundant snowpack. That's kind of our only other option.

This slide is I like to keep track of the comparison between the Trinidad gage, which is right above in the town and right above our diversions, and the Thatcher gage down below the district. These gages have a relationship, as you can see, and they were both below average this year. The horizontal lines are the average, but they are only separated by 7,000 Acre Feet. So when we had 31,000 Acre Feet of diversions off of the flows through Trinidad gage, you can see there is also a degree of independence of the Thatcher gage.

And this last slide is a little history of our irrigated area in the district. The Operating Principles for the project limit us to 19,499 acres, and the total between actual irrigated and dried up acres is -- the sum of those is 13,300 and some

acres, so we're quite below. That was 2017, during a good Water Year.

Jeff Montoya, the Water Commissioner, and myself independently surveyed the irrigated area this past summer, and I guess my prediction would be a lower number for the graph next -- next year, or maybe a similar number. Just the lands weren't well irrigated is kind of the result.

Okay. That's -- that's my last slide, but I will talk on some other subjects. This was -- this was our second year of the Irrigation Improvement Rules plan. We jumped from two sprinkler systems to 14 being approved. Only eight were actually operated. They diverted about 1,000, just under 1,000 Acre Feet of water under that plan. Replacements of any return flow deficits were made out of Trinidad Reservoir or by return flows of diversions of fully consumable waters.

Other accomplishments or significant events, there was a -- there was a number of them related to our controlling documents. Our -- our contract, our 1967 contract with the federal government to repay the project, was amended for the second time. The amendments were some administrative issues, some updates of languages, and an extension of our

repayment term and our construction loan con- -- our construction loan to the originally authorized 75-year term under the project. The original loan was a 70-year term.

Our operating criteria document was also amended or updated. That -- that's an internal document between the District and the Bureau on operations of the District. Again, some -- some updates on definitions, principally, and -- and, and updates concerning operations over irrigation improvement plans.

Finally, the -- the Operating Principles were also finally amended this -- this year. Those principles are a contract to -- or excuse me -- they're an exhibit to our contract, so Reclamation required an update of our contract to approve the Operating Principles, so it was all in those, the contract, the criteria and the principles all involved in an environmental assessment report by the Bureau, so all those things were coordinated together and, and, and thankfully completed.

The -- the specific -- specific amendments to the Operating Principles were to allow, recognize another 470 Acre Feet of water that the City of Trinidad can place into storage in Trinidad

Reservoir for the result of another 220 some acres up at the John Flood Ditch being dried up.

Another event was the completion of the Ten-Year Operating Principles Review Report by Reclamation. That covered the years 2005 to 2014, so we're relatively caught up on that. We do continue to meet annually, the states and the Bureau and the signatory parties, each fall to stay up to date and prevent, I guess, disagreements from growing, hopefully.

Another accomplishment was we finished some grant work on head gate structure improvements and erosion protection. We -- we -- total funds in this grant were about a quarter of a million dollars and there was eight -- eight tasks or individual subprojects, and those were finished this year after a couple years of work.

We also, just a matter of a week or two ago, got an installation on the Lewelling-McCormick Ditch for telemetry equipment, and we're also trying to finalize work on the Burns and Duncan Ditch for similar telemetry. That will -- that will complete telemetry functions on all of our project diversions from the Purgatoire River.

That is -- in looking forward, that was --

that was it for accomplishments in 2018. Looking forward, the District has initiated efforts to get congressional approval of extending our construction loan term an additional 25 years. This -- this requires federal Congress approval. I'm confident, I'm not sure why, but I'm confident we'll -- hopefully that will -- that will go through. I think it will -- it will be entered this, this, this -- later this winter or this spring.

And, finally, express some appreciation. I am 50% of the staff of the District, so we do -- we do rely on others quite a bit. Appreciation to the Compact Administration for approval of the Principle Amendments. Speaking also on behalf of the City of Trinidad, the principal beneficiary of those, appreciation. Also to Chris Gnau of Reclamation. He was the force behind the drafting of the Ten-Year Review Report.

Kevin Salter yesterday mentioned there is concern that we don't seem to get enough dedication maybe from the Bureau on -- on some of the efforts regarding Trinidad, but from an individual standpoint, I think I know the District and I think both states appreciate it, Chris's efforts, in the last couple years.

Also to Becky Mitchell and CWCB for some grant money. We may be back, and the Corps for daily gate changes and, lastly, to our water commissioners, Jeff Montoya and Justin Lucero. They -- they run it pretty tight. It's -- it's pretty closely watched district operations during the summer, and also to Phil Reynolds for reservoir accounting, making sure all the different colors of water go into the right place. And that is my report, Mr. Chairman.

MR. RIZZUTO: Okay. Thank you, Steve. Questions of Steve? Okay. Thank you.

MR. KASTNER: And Kevin has the slides.

MR. RIZZUTO: Okay. And those will become Exhibit F in the report. Next, Southeastern Colorado Water Conservancy District, Chris Woodka.

MR. WOODKA: Good morning. Yeah, I'm going to piggyback a lot, a little bit on what Roy said, and then we have some other kind of information in here, too.

Our imports, the May 1st projection, we were expecting fifty-eight two. I think we -- we calculated a little different number because we included the Twin Lakes exchange in there as well, so it's 42,000. Our final allocation, we take deductions out of the water for evaporation transit

loss and -- and such things, and our final allocation was 20 -- about 27,500 Acre Feet, which is about 67% of our average allocation. So that, 9,000 went to municipal and 18,000 went to irrigation. We also sold about 6,500 Acre Feet of return flows.

I call this my dirty snowball slide. Reclamation gave us a very good explanation of the difference in -- in the projected snowpack in May 1st. As Roy mentioned, the May through August precipitation was only 1.8 inches. It's usually about 6.5 inches, and Shane Hayden from Roy's office did a very good job of explaining it to our board of what that meant in terms of Acre Feet. So in a year like 2017, we would get a surplus of maybe 16,000 Acre Feet and, this year, we're getting a deficit of probably 20,000 Acre Feet, so the snowpack is important and, this year, we just didn't have it.

Winter Water is a program that we operate to store flows to -- to avoid these sorts of things. I -- I stole most of the slides in this presentation. I stole these from Bill, but this shows why we have the Winter Water Program.

In 2017 and '18, I think we were fortunate that we had such high flows in the previous year

that we were able to come in at about 104% of the average, the 20-year average. So far in 2018, we don't have a lot of data there yet, but we're about 54% of the 20-year average there.

This kind of -- this chart probably looks familiar. Roy used it for a different reason, but this just shows the early snowfall, snowpack that we've had, and again, that doesn't mean it's much, because it really depends on what happens in the spring.

In our ex- -- we have an Excess Capacity Master Contract. Roy talked a little bit about those. We're still in the process. We have up to about 30,000 Acre Feet that we can store in ours, and we're only at about 6,500 of that, but it's one of four long-term contracts and they total nearly 100,000 Acre Feet that we could keep in storage in Lake Pueblo.

We had a lot of questions about the Arkansas Valley Conduit and so I'll attempt to answer some of those in the presentation. This just is the basic facts of it. We -- we kind of accepted the cost of it at 640 million this year. We're hoping to save a little bit with a different approach that I'll get to later. It goes -- it goes from Pueblo Reservoir

to Lamar and Eads. There's 40 communities in it, 20,000 taps, 50,000 people served, and an average delivery through that pipeline of 10,000 Acre Feet.

Our new plan, if you look at the little inset graph at the top, the pipeline seems to go around Pueblo and then come in at a point right here, which is right in front of the Pueblo Chemical Depot.

Where we've worked with Reclamation, and when Roy said the Boone Reach of it, that's the first reach that we're doing. We're using capacity in Pueblo water system to deliver the water through Pueblo. This will save us about 10 years of construction on the pipeline. The old pipeline route would have gone like this around here (indicating) and then back up here and across the mesa and over -- over to -- well, out here. That's the edge of the Pueblo airport where, for some reason, our offices are located. I don't know why a water district is located at the airport. We put helicopters in the budget, but they won't give them to us.

So the Boone Reach then becomes from the end of the airport to Boone, which is only about 12 miles, and the -- the process of this is that we have alternate points of delivery from Pueblo. We

have one over here and we have one right there, so there's three separate points. Those three points then converge on the pipeline, as I mentioned, in front of the Pueblo Chemical Depot and deliver to the people east of Pueblo. The Boone Reach is the first part of that and, because we can phase deliveries into the pipeline, we can also phase in the deliveries from the pipeline and serve some of the communities a little more quickly than we previously were anticipating.

The reason we want to get down there faster is that in Otero County, we have 15 communities that are facing enforcement actions for radionuclides. 14 of those are in Otero County. Boone and Fowler, as well as Avondale, which we may get back into the conduit, all have immediately water quality issues as well that require action even sooner, within the next five years. We can get to all those places sooner. And if we -- if all goes as planned, we may be even be able to do that within five years, which I never like to say that the Arkansas Valley Conduit is ahead of schedule, but it just might be. And we work closely with the Colorado Department of Health and Environment to -- and Water Quality Control Division to make sure that we can get that

construction going and make sure that that's a suitable time period for these communities that are under enforcement.

Roy mentioned a little bit about regionalization, where we're still kind -- we're working with CDM Smith as consultants to define what that is. We have a tour planned later this month that kind of kicks that off.

What we're -- what we're trying to do is we know we won't be able to get to everywhere where we need to with the conduit within the next 30 years, so with -- until that time, we're developing strategies with these communities as to how they can serve their local needs until we can get the conduit built.

Roy mentioned the hydroelectric plant construction. These are some shots outside the -- outside the area as it was being built. I think Roy showed this bottom one here of our large turbine being ducted in. Next slide.

We have -- we have these three turbines here and, this past week, we -- we've installed the generator, so we have all the big parts in now. This is a -- this is from last week. The reason that we have three separate generators is the flows

at Pueblo Dam vary from -- vary during the year, when there's not much water being released and then there's a lot. So we can generate electricity on flows from the north outlet of the dam anywhere from 35 CFS to 810 CFS, and what -- what they do is the generators work either together or independently to match those various flows, so we can -- we can change the generators and we've been interviewing operators.

We're anticipating getting this online in early 2019. We'll probably bring the two smaller ones online first because -- because of the flow situation. Then when flows ramp up in the springtime, we'll be able to bring the larger one online as well. They have to go through a period of testing first and that requires certain minimum flows. The power from this will be purchased by the City of Fountain and Fort Carson through the Colorado Springs Utilities.

Roy didn't mention our contract negotiations. They're probably more important to us than Reclamation, I guess, but we -- we restructured our debt so that we would pay it off in the full 50-year period. We were on pace to pay it off sooner than that. We -- we believe that we would like to keep

our contract in -- in place. We have to get a new contract negotiated by 2022, and a lot of what we've determined from public discussions is that a lot of people think, well, you're just paying off a contract, that then your -- your obligation is over, but with the Fryingpan-Arkansas Project, what we really have to do is ensure that the operation and maintenance of the project continues as well, and a portion of the payments that we've made to Reclamation over the years has paid for the local share of the operation and maintenance of that.

So with our new contract, we put more emphasis on that, anticipating there will be more repairs needed in the project in future years, and so we've -- we've stretched out the payment time so that we can meet a few more, and there are some immediate needs that we have to meet, so that we can have the cash on hand to -- to help take care of the project.

This is my final slide and it's -- it's a -- we had a state-wide celebration of the 50th anniversary of Ruedi Reservoir. Ruedi Reservoir was built as compensatory storage for the Western Slope when we built the Fryingpan-Arkansas Project. It's a -- it's one of

the most unique dams in the state, if not the nation, and the color that you see matches the local color there, and it's a beautiful facility.

We invited the Colorado Water Conservation Board and several West Slope entities to party with us at the Aspen Yacht Club, and it's -- it's significant from the fact that we almost lost our State Engineer. Kevin went on the -- what we call the Gilligan's Island tour, where their boat went out to a far corner of the lake and then the motor kicked out, and so they basically sailed back in. Kevin was one of our speakers at the celebration and I think was running up the -- the hill and shaking water out of his shoes when -- when it was his turn to speak, so that's kind of why I included the slide here.

We had -- you'll see John Stulp was there. Becky was speaking as -- as well, and -- and as I said, the Aspen Yacht Club was gracious enough to give us some boat rides while we were out there, but it didn't always work out so well, so -- and anyway, that's my -- that's my report, and if you -- this can be part of the record. I don't have any additional written materials. I'd be happy to answer any questions.

MR. RIZZUTO: Questions of Chris?

MR. BARFIELD: I've got a couple, actually. The Ark Valley Conduit, I guess I wasn't aware of the significant time frame for completing that project. What's the reason for that?

MR. WOODKA: The driver for that is federal appropriations, and we -- we have a -- well, we've been, through the planning phase, we've been getting three to $5 million every year for it. This year, as Roy mentioned, we -- there because of the change in the plan where we had a little money saved up, so we have actually about $6.8 million worth of studies this year.

In their zeal to cut the federal budget, the Administration cut the funding for the Arkansas Valley Conduit out of the '19 budget. As I said, we think we have that covered. We're hoping that they reinstate the funding in the '20 budget, and we're actually going to need a lot more. We're going to need on the order of 15 to 20 million a year once we get started building it, even to complete it in the time frame that I was talking about.

So we do have revenues from the excess capacity storage in Lake Pueblo to, you know, to pay for some of that, but we really -- we really can't

get it going without a substantial, you know, federal contribution to the project to get it started, so we are starting to look at whether there's other ways to fund that as well, so...

MR. BARFIELD: Appreciate you bringing up the regionalization. I was going to ask Roy, but so can you just a few more words about that? So because of the long time scales to get the project on the ground and the ongoing quality concerns, you're having to sort of regionalize in the short-term to --

MR. WOODKA: Yes, sir. What we've realized in the last few years is that the time scale of getting this done and to have to get it done before you turn it on was -- was going to be enormous, so when we started looking at coming through Pueblo more quickly, Reclamation started looking at what do we do for these communities until we can get there, and asking that question, and so that's the question we're asking now. We've only just asked the question. We don't know the answer yet.

There was a study as part of the EIS that said what would happen if the conduit were not built, and that's kind of our starting point there, so we're

looking -- we're going back to that before there -- it was a predecisional document and we're going back to that point and starting looking at that and saying "Well, what's that mean?" Because these communities are all moving into a time when they're facing decisions on where they put their money, how they spend it, and we don't really have a plan in place to tell them how to do that.

MR. BARFIELD: Okay. Thank you.

MR. RIZZUTO: Other questions of Chris? Okay.

MR. WOODKA: Thank you very much.

MR. RIZZUTO: Thank you, Chris.

MR. WOODKA: And, oh, Jim Broderick sends his regrets that he's not able to make it today. He's got a little meeting in Las Vegas next week that he has to get ready for.

MR. RIZZUTO: Okay. And your report, you said you gave people copies to be part of --

MR. WOODKA: I don't have any copies of it, but it can be part of the record, yes.

MR. RIZZUTO: So that would be Exhibit G. Lower Arkansas Valley Water Conservancy District, welcome, Mike Weber.

MR. WEBER: Thank you for having me. I

do want to point out I'm pinch hitting for Jack Goble today. Jack is in another conference and couldn't be here and I don't have anything for the record. Jack told me to just put some notes together for what we've been working on and what we've been doing over the past year and moving forward into the upcoming year.

You guys hear from Jack a lot about the water quantity type of things that we work on. I'm hired on at Lower Ark for water quality, so I'm going to talk about some of the water quality things, as well as what Jack usually talks about, so hopefully, it's a little bit different change of pace for you today and a new face, so you can throw rocks at me, I guess, if you want to.

To start off with, I want to point out the Catlin Lease Fallow Pilot Project. We completed the fourth year this year, where 268.5 acres were fallowed on six Catlin farms. That's up just a little bit from last year by about 2%. Had a little more participation within that project.

Here's the important fact, though. We only delivered 289 Acre Feet this year. That's down from last year, where it was close to 390 Acre Feet, so down by about 100 -- 100 Acre Feet. The reason for

that was there was only 129 days of exchange potential in 2018, as opposed to 2017, when there was 230 days of exchange potential, and the Catlin Canal where we operate this on actually went out for 60 days. There was no water within the canal system itself for 60 days. So with all of those put together, that's why we're down from 390 to 289 Acre Feet delivered.

The next thing that Jack wanted me to really mention on, and I -- I gave a presentation yesterday to the Engineering Committee, is the work on John Martin Reservoir. We're continuing to do the study and work with the feasibility, the John Martin Reservoir account Colorado multi -- multijoint use Colorado account within there. We -- we want to keep moving forward and -- and put this project forward. CWCB has given money towards the project in 2017 and 2018 and will be again in 2019.

We've hired a consultant, Deere & Ault Consultants, to do the work and move it forward. The plan is to bring something a little more formal in 2019 but, as of right now, it is in the planning stages and everyone has been notified about it moving forward.

Fort -- sorry. The Rule 10, we operated both

the Fort Lyon and the Non-Fort Lyon Rule 10 Plan. We had 21 new sprinklers, 15 of which were within the Fort Lyon Rule 10 Plan, so 21 total throughout both plans.

I do want to point out that we were notified just this week of some new improvements that are going in. We are showing six new pipelines that are going to be within our plan and we were notified of eight new sprinklers, so that's what we're anticipating for next year, and Division of Water Resources notified us of 25 other sprinklers that could be going in, but those landowners have not notified us to be in our plan or if they're going to be in a different plan, so quite a few new improvements going in for the upcoming year.

This is where -- where I get to come in and talk about water quality, so that's all the quantity things. The quality piece is why I work at the District. We got a grant with Colorado Department of Health and Environment to install sprinklers and see what that effect has on water quality. We've collected two years of baseline data, and that baseline data is showing that the deep perk coming off of that irrigated furrow irrigated land is not very pleasant to look at. The drain water is almost

200% that of what is going onto the field. So you think of the water coming onto the -- onto the field increasing by 200% within nutrients, selenium, uranium and arsenic. So those are the things we're looking at there. The plan is to put up sprinklers this winter and see what that effect has long-term within that project.

We also have a project going in where we're going to replace a dirt ditch and put it into an underground pipe, 36-inch underground pipe. That is breaking ground next Monday. The pipe is coming in and we're going to put that -- that ditch into an underground pipe. Again, we're looking at the deep perk coming out of that system to see what impacts we can have long-term.

The other projects we started this year, just collecting baseline data, so those two projects as first I mentioned, they're going in this year. The other ones, we're collecting baseline data to implement next year.

We're going to convert six more fields to sprinkler irrigation, one field from furrow irrigation to drip irrigation. We're going to line four sprinkler ponds, see what effect that has on it. We're going to put in another ditch into an

underground pipe, and whenever I say "ditch," it's more of a lateral than a ditch. We're putting in riparian buffer zones at the edge of fields to see what we can do as far as surface runoff, if we can filter that water out and settle out the sediment before it gets back to the stream. We're going to implement rotational fallowing as a means of water quality.

Soil health practices, and soil health is kind of a different one because you say, well, what is soil health? What we're looking at it from is a manure application, cover crops, no tillage and fertilizer application, if we can reduce that to reduce the amount of nutrients getting back to the river.

Grazing techniques, where we're going to go hard grazing, flash grazing, overall grazing, pasture grasslands and cattle compaction within the ground, and then finally, this is one that just came up today is horse manure, using it as a fertilizer with -- with limited amount of nutrients into it, so I don't know how that's going to work out, but we're going to try all these.

So with all that, we've really tried to look into water quality and how we can improve the

downstream effect of these different things. All these projects are based either in below JMR or between JMR and Pueblo, but 90% of them are below JMR, so we're trying to make an impact at the Stateline in particular, but especially throughout the whole basin.

Two more things that I want to point out, we are working with the Soil Health Group with EPA and Colorado Department of Health and Environment to where we can put more of these soil health practices throughout the whole basin. These are things of cover crops, no-till, fertilizer application, anything like that, so we're hoping to get that off the ground next year.

And then the last thing is conservation easements. We did buy out three -- three new conservation easements as of last year, and the plan is to add two more conservation easements within our program in the upcoming year. Are there any questions?

MR. BARFIELD: I do. I can -- I'll -- you keep the mic. So on all these practices that you're putting in, then how do you monitor the -- the precondition and postcondition to determine whether you're making an improvement or not?

MR. WEBER: So that's actually a really good question. So we started off with doing research on what has been done within the basin, so we targeted areas that have a lot of research as far as baseline data, and then we collected our own data for two years. All of our different projects have edge of field monitoring, where monitoring is taken every single week as far as in situ data, along with water quality data monthly. That's edge of field as it comes out of the field and as it leaves the field, and then we're also looking at drain water as it comes downstream, so we've targeted drains within that area that can actually show the loading from the deep perk coming off. All of these are using USGS and EPA requirements for monitoring. We use ISCO samplers and we use YSI through their multi-probe sensors.

MR. BARFIELD: Thanks.

MR. RIZZUTO: Other questions? None? Good. Thank you, Mike. I assume you didn't have a report to submit.

MR. WEBER: No.

MR. RIZZUTO: Okay. Great. Thank you. Colorado Parks and Wildlife, Brett Ackerman. Brett.

MR. ACKERMAN: Thank you, Mr. Chairman.

Brett Ackerman, Colorado Parks and Wildlife, Southeast Region, Deputy Regional Manager. Appreciate the opportunity to be here today.

Before I start, Mr. Chairman, I just quickly wanted to mention another issue that we often deal with on the Arkansas River, and that is low flows associated with rafting. The Arkansas River in its upper stretch between its headwaters and the town of Canon City is the most commercially rafted river in the United States and, so far as we know, in the world, and it requires a high degree of coordination to make sure that the water flows remain acceptable for moving water, but also for whitewater rafting, and so with this last year being a low flow year, I just wanted to quickly recognize Southeastern, and it looks like Roy has stepped out, but the Bureau for their great work and partnership in continuing, as always, to step up to make resources and coordination available to continue rafting throughout most of the summer this year, and so I wanted to just appreciate them for their great work and continued cooperation and a great partnership on the Upper Ark.

Speaking of recreation, if you wouldn't mind, the next slide, Kevin. Thank you. I'm always here

to talk about recreation at John Martin Reservoir. In addition to its purposes as flood control and water management and certainly, agriculture, it's a very important recreation site in southeastern Colorado and the region, and I think I've mentioned in years past that it, at times during the year, is the most populous place east of I-25 in Colorado, with the exception of the town of Greeley, and we certainly see that on high use weekends. It is a very important recreation site and I've been here for the past number of years to talk about making sure that we maintain the fishery, which makes it the -- in large part, such an attraction for recreation. Thanks, Kevin.

Very quickly, just the reason that I've been here for the last number of years is to try to maintain an adequate Permanent Pool. As with most reservoirs, there's a Permanent Pool decreed in John Martin Reservoir that is intended to act as a bottoming out point that if the reservoir is drawn down significantly will protect, to a large degree, the existing fishery in the lake, and this decreed Permanent Pool has what we believe is a big enough capacity to protect, in large part, the fishery there if it's operating properly, and you've heard

me say, like a broken record in years past, that unfortunately, it's not -- it's not doing its job, and the reason that it's not is because there's water available.

We acquire water for the Permanent Pool. It evaporates off with the rest of everyone else's here's water during times when there aren't water, and you can see when the reservoir level drops below the 10,000 Acre Foot Permanent Pool line. We haven't had the water there at that time to be able to maintain the fishery and we've lost the fishery a couple of times in the last decade. It's a very, very big blow to recreation, very big blow to the fishery, and a lot of work and time and effort and money to restore the fishery each time the fishery crashes.

But so -- thank you, Kevin. We've been working diligently at the request of the Administration, as a Special Engineering Committee, for the last several years on trying to fix this issue, and for the last two years, we've been working on a pilot program whereby the Highland Ditch water has been used in part to maintain the evaporative loss from the Permanent Pool in the reservoir and, as I mentioned yesterday to the

Engineering Committee, that we've had a great period of being able to look at this, because we had essentially a high Water Year and a low Water Year and, during both of those years, you can see by the upper blue line there, as opposed to the red line, where the trend of continued evaporation would have dropped the Permanent Pool down to about 5,500 Acre Feet.

With the maintenance from the Highland Canal, it's been able to gain a little bit over the -- that period of time, and the intent has always been to replace the evaporative loss from the Permanent Pool on a consistent basis so that when we do enter periods of low water and start to draw the reservoir down, that Permanent Pool goes in at a high capacity, rather than a low capacity. Thank you, Kevin.

So, in short, we believe that the Pilot Program has been working. We've been working diligently, the State of Kansas Engineer's office and the State of Colorado Engineer's office and others, to try to put together a long-term agreement based on this pilot program. We think -- we think we're there. We are just finishing up the documents and trying to put the final -- the finishing touches

on it.

As was mentioned in the Corps' report, you know, several fish were moved from the stilling basin back up into the reservoir, and you can see some of the pictures here are some of those fish. Others are some actual angling caught state records from John Martin. It's an exceptional fishery, draws a lot of folks, and it's a great -- a great place to fish. So I'm told that no fewer than 15 state records were moved from the stilling basin back up to the reservoir as part of the stilling examination project.

So, Mr. Chairman, I'm here to formally make two requests today, and the first one would be that we adjourn the meeting and head over to John Martin Reservoir and I'll provide the boats, and maybe we can come up with a state record, somebody in this room; but secondly, as we're not quite ready to put together the -- to finalize the agreements and ask for a resolution, we'd like to respectfully request a potential special ARCA meeting sometime prior to February 15th in order to finalize those agreements and finalize a long-term resolution associated with maintenance of the Permanent Pool.

And that said, once more, I would just like to

again thank everyone for their diligent work on this issue. It's been a complex and lengthy process, but a very thoughtful one, and certainly the recreationists of the state have taken notice and appreciate the great work that's gone on to bring this to fruition, Mr. Chairman.

MR. RIZZUTO: Great. Thank you, Brett. Questions for Brett? Did you file your report or your --

MR. ACKERMAN: Yes. Kevin has copies of our slides.

MR. RIZZUTO: Okay. So that would be H. Thank you.

Okay. My plan is to get through Item 6 and then take a 10-minute break, if that works for everyone. Okay. No one's in dire need of anything? Okay. All right.

At this time, Ten-Year Compact Compliance Accounting Table, joint report of the states, Kevin Salter.

MR. SALTER: Each year, there is a Compact Compliance Accounting done by Colorado and then they work with us to come up with the results for a particular year, and those results for a particular year goes into a Ten-Year Accounting

Table, which I have up on the screen, and we would like to submit this to ARCA as an exhibit to memorialize that moving forward.

So in 2017, we run an H-I Model that compares two different scenarios in the basin as a determinant of Compact Compliance as far as what would happen if we were back in the 1948 condition with the hydrologic conditions of 2017 for this particular table, and then compare that to what actually happened with the pumping and replacements that are occurring in Colorado.

So out of that H-I Model, and I have to watch, because the signage changes on this particular table from positive to negative, so we actually had an accretion come out of the model in 2017 of 1,900 Acre Feet. We do have the Stateline delivery from the Offset Account of about 8,800 Acre Feet, and we run the table across and we actually had an accretion in 2017 of about 7,400 Acre Feet. That breaks up a series of a number of years of depletions that were incurred at the Stateline. Overall, the number that matters is the total of those 10 previous years, so with that, there's an accretion at the Stateline of about 16,945 Acre Feet.

One of the things that we always look at is what's coming on. We really don't know until we run that model in the spring of 2018, but we do note that there's going to be an accretion of about 12,500 Acre Feet that will drop off in this particular year, so this is something the states watch fairly closely and moving forward, so I don't know if there's any questions on this. Again, we would like to make this a part of the record.

MR. RIZZUTO: Okay. And that will become Exhibit H -- or pardon me -- I. Are there any questions for Kevin?

Okay. Colorado's Presumed Depletion Factor Evaluation, Kelley Thompson.

MR. THOMPSON: Thank you, Chairman Rizzuto and the ARCA committee. Thanks, Kevin.

Each year since 2012, we've given ARCA a brief update on our presumptive depletion factor evaluation that we do each year. Appendix A.4 requires us to do that, and these PDFs, as we call them, are used in our replacement plans and our Rule 14 replacement plans to relate the pumping amounts to the stream depletion amounts, and the number we're looking at is just the number for the supplemental flood and furrow irrigation and, as

you've seen, that number has stabilized over the past few years, and again for 2019, our evaluation suggests a number of 36% for that value, and we produce that and provide it to the Kansas, and Kansas experts did confirm that result, so for 2019, our Rule 14 plans will use this 36% number.

Kevin, if you wouldn't mind. And I don't need to get into the table. This is part of the evaluation of how we produce this number, but the two things to point out: The current number is sort of dictated by the 2012-2013 drought at 36%, but for 2017, we sort of had an odd result that will probably, I believe, serve to keep this number at 36 for quite a while, or close to that number, so just to suggest that this number probably isn't going to change much for quite a while.

So, Kevin, one more. And, at this meeting, we have often commented on one little issue between the states in our evaluation methodology, and so in a gesture of goodwill, I believe I -- we just wanted to state that Colorado is willing to accept the Kansas position on the evaluation methodology that ditch efficiencies will be used for the 20-year period and applied to represent current efficiences. So Colorado will modify our 2015 evaluation

methodology agreement and so, hopefully, we won't have to always discuss that every year, too, so thank you.

MR. RIZZUTO: Any questions of Kelley? And you submitted your report and we'll --

MR. SALTER: Yeah, I've got copies.

MR. RIZZUTO: That will become Exhibit J. At this point, we'll take a 10-minute break, so plan to start up at 11 -- 10:45.

(A break was then taken from 10:36 a.m. to 10:48 a.m.)

MR. RIZZUTO: I'd like to call the Arkansas River Compact Administration meeting back to order at 10:48. With that, I'd like to call on David Barfield, report of Special Engineering Committee.

MR. BARFIELD: Thank you. So the Special Engineering Committee was created in 2005 and has been around ever since that date. It's been more active in certain periods than others, so there's a very active period there after being created. Before Hal Simpson and David Pope retired, we worked through a whole slew or quite a -- quite a number of issues related to accounting in John Martin that were in dispute at that time.

Anyway, two years ago -- or I'm sorry -- last year at the Annual Meeting, there was a resolution that essentially allowed the Special Engineering Committee or SEC to continue for two years and gave us a very specific list of assignments, seven -- or six specific assignments in a somewhat prioritized list, and so we've been a -- it's been a pretty active year of the SEC sort of working on two or three of those issues.

One of them was the -- the first one was a dedicated discussion to flood spill issues in the first quarter. If you remember last year, there was an expectation of a potential spill. As the -- as the time wore on, it became apparent that it wasn't going to spill, but we did have a dedicated discussion, essentially sort of went back to some work that the SEC had done on the issues a few years ago and dusted that off, and we're sort of starting to get organized to have that discussion.

With -- with the spill sort of not happening, we sort of moved priorities. We will -- we will get back to that discussion probably in the context of the Colorado account because the Colorado account, if authorized, will create more -- more frequent spills, and so the issues that are sort of

unresolved related to spills and upstream storage are -- are going to be part of that discussion, so I expect us to get back to that.

The second -- second item on the prioritized list was the Permanent Pool, and Brett Ackerman has sort of brought us fairly up to date on that. We did essentially work to come up with a second one-year agreement that ARCA, in a special meeting, authorized, and then as Brett mentioned, we've been working on a permanent sort of agreement that we're very close and we will be meeting on here early next year to hopefully adopt that as states and then ARCA's blessing of that.

The other big issue, and you've -- you've heard reference to this as well, that has dominated our time is working on the Colorado -- the proposed Colorado multipurpose account. You know, this is -- this is a big deal to Colorado and it's a -- you know, it's something that is significant to Kansas to make sure that -- that as more storage is added and more exchange potential upstream and all those sorts of things that it, you know, it doesn't -- doesn't impact us below in terms of the part of the supply that we get and, you know, we're very interested in the water quality benefits of a -- of

an account to facilitate some of the irrigation improvements as well.

So, you know, I -- we expect that this will be the big issue that we would work on this coming year is just we, we, we started that discussion, got a -- got a good overview of -- of the project participants and sources and uses of that account, some of the modeling work we've started to look at, but this coming year, we'll sort of get into the details of all those sources and uses and, you know, try and -- try and move this forward, but it is a pretty significant issue for all of us, so it will take some, some, some diligent work.

Last week, I actually met in this room with some of our water users and sort of brought them up to speed on -- on sort of this issue, and I'll be working to engage them in those discussions as well. So I think I'll leave it at that.

MR. RIZZUTO: Okay. Any questions of Dave? None? Okay. One thing I'd like to mention, prior to the meeting ending, anyone who has not signed in on the sign-in sheet, if you would please do that. I believe it's out on the table right outside the door.

MR. BARFIELD: Can I add to my report?

Sorry about that. I mentioned -- just, just mentioned I wanted to say appreciation. Kevin Rein and Becky have both been very engaged in that and their staffs and the Attorney General's office. We have quite a group and I just appreciate everybody's work, and last week's meeting was hosted by GMD Number 3 here and so appreciate that as well, so -- but anyway, it's -- yeah. Thank you.

MR. RIZZUTO: Okay. Report of Engineering Committee, Scott Brazil.

MR. BRAZIL: Okay. The Engineering Committee met and we heard a presentation from Kelley Thompson from the Colorado Division of Water Resources and he provided an update on the progress related to the Colorado Decision Support System.

And Kevin Slater (sic), the Kansas Division of Water Resources, mentioned that the Trinidad Operating Principles had been recently amended and that the meeting process for the annual Trinidad issue meetings will be changed in the upcoming year.

Brett Ackerman, Colorado Parks and Wildlife, gave a presentation providing the update on the issue of the Highland Canal water under the recent one-year Permanent Pool agreement and plans to adopt the long-term agreement next year.

Mike Weber from the Lower Arkansas Valley Water Conservancy District provided an overview of the proposed Colorado multipurpose account in John Martin Reservoir.

Kevin Slater (sic) provided a status update on the efforts to replace the 50 plus-year-old Frontier Ditch flume.

Amy Louise from the U.S. Army Corps of Engineers provided an update on the 2018 reservoir operations for Trinidad and John Martin Reservoir and the USGS gages downstream of Trinidad Lake and the 2018 Bathymetric Survey of the Trinidad Lake and John Martin Reservoir.

Jonathan Tague provided an update on the status and scheduling of the John Martin Stilling Basin Project, and Chris Gnau, U.S. Bureau of Reclamation, reported on the 2018 accomplished, the costs associated with reviewing of the Trinidad Project, and the Bureau's proposal of the Ten-Year process for the next review period from 2015 to 2024. The Bureau submitted a proposed resolution to the committee and asked either the resolution or a process of dialogue between the states and the Purgatoire River Water Conservancy District shall occur.

Krystal Brown of the U.S. Geological Survey reported on the predicted and actual flows through the gages and their precipitation network and events that contribute to the flows in the 2018 and the effects of the 2018 beaver activity on the Apishapa River gage.

Kevin Slater (sic) provided update on the status review of the implementation process for the Elevation-Area-Capacity tables for Trinidad and John Martin Reservoir.

Recommendations from this committee to ARCA's special meeting to be provided February 14th, 2019, to work on finalizing a permanent agreement that allows the Highland Canal water for the John Martin Reservoir Permanent Pool and recommended to ARCA that the states take the lead on discussing the process to develop the next Trinidad Project Ten-Year Review period from 2015 to 2024. And that's it for my report.

MR. RIZZUTO: Okay. Questions for Scott?

MR. BARFIELD: I just have one additional comment.

MR. RIZZUTO: Dave?

MR. BARFIELD: I -- I meant to -- to do this in my SEC report as well. On the last one, it

says the states should take the lead on discussing the next Trinidad Ten-Year Review. I imagine that that discussion will be in the SEC, even though we weren't formally asked to do it, so I -- but I expect that to be the case, so that's all I have.

MR. RIZZUTO: Anyone else? Okay. And your report would become Exhibit K.

MR. BARFIELD: We probably -- we probably want to do all the committee action items as one.

MR. RIZZUTO: Okay. We can.

MR. BARFIELD: That's what I would suggest.

MR. RIZZUTO: Okay. So strike that.

MR. BARFIELD: Well, you could make it -- what are we up to; K?

MR. RIZZUTO: So K will become the exhibit for engineering operations.

MR. BARFIELD: Right.

MR. RIZZUTO: Okay. All right. With that, I'll call on Hal Scheuerman, report of Operations Committee.

MR. SCHEUERMAN: Thank you. With the aid of Rachel Duran and Andrew Rickert, they helped provide us a summary of our efforts yesterday.

The committee received the Compact Year 2018

reports of Operations Secretary Bill Tyner and Assistant Operations Secretary Kevin Salter. The committee also received a 2018 report of the Offset Account from Rachel Zancanella from the Colorado Department of Water Resources, and then Bill Tyner also provided an update of the implementation of the Irrigation Improvement Rules.

And the only one real action item that we have, the committee directed the states to work on resolving the issues on the -- why there hasn't been an approval of the 2006 to 2018 Operations Secretary reports, which specifically relates to an issue with the Pueblo Winter Water Storage Program, and we would like to see some, well, maybe not resolution, but at least some progress towards that in the next year, for the next meeting of ARCA.

And according to the way this outline is written here, I will defer the recommendations to letter E, and which actually is part of the report, but the next item is Bill Tyner is going to give us the Operations Secretary report. Thank you, Bill. I have -- I have the magic wand.

MR. TYNER: Thank you, Chairman Rizzuto and members of the Administration. Thank you, Hal, for your report on the Operations Committee meeting

yesterday.

I want to thank a number of people just very quickly. A lot of work goes into managing John Martin Reservoir, working successfully with Kansas and federal agencies to be able to document what we do and to make sure that operations are done properly and pursuant to agreements and pursuant to the Compact, and so I definitely do want to thank many of the Colorado Division of Water Resources staff members, some of whom aren't here today.

I won't get a chance to mention them by name, but those who have joined me here in Garden City include John Van Oort and Phil Reynolds, who work extensively on just the day-to-day operations with both John Martin Reservoir and Trinidad Reservoir, constant communication with Kevin Salter and the good staff he has in working with all of the staff, including Brent Campbell, who is no longer on his staff, moved on to another position. Certainly glad to have Rachel Duran back and enjoyed the opportunity to work with all of your folks and enjoy also working with Brandy in those daily operations that Phil and John participate in.

I also was able to bring along Rachel Zancanella, who will present after me one of the

reports. She is filling my old position with Division of Water Resources as my Assistant Division Engineer, and we were recently able to hire Lori Lest, who is here in Garden City with us today, as my other Assistant Division Engineer.

Bethany Arnold is here. She supervises our groundwater team that manages key data that helped us stay in compliance for Post Compact well pumping, and two great water commissioners here today, Jeff Montoya and Lonnie Spady. Their day-to-day operations make sure the river run right and these reservoirs also run right and stay in compliance.

I, too, want to thank the federal agencies that we work with. The USGS, the Corps of Engineers, the Bureau of Reclamation have all been great to communicate with and, as Bob Kimbrough mentioned, that's really important to make this project and the Trinidad Project work well.

The 2018 Compact Year began with a storage volume in John Martin Reservoir that was 243,935.34 Acre Feet, and the ending balance in the reservoir at the end of the year, at the end of October, 2018, was 132,945.8 Acre Feet.

This first Power Point slide shows kind of the makeup of the water that existed in the reservoir by

major category at the beginning of the Compact Year. Both Kansas and Colorado enjoyed a good amount of stored water under Section II: Colorado slightly over 90,000 Acre Feet; Kansas, 86,637 Acre Feet.

Colorado ditches that share space in Article 3 accounts, mostly in Amity's Article 3 account, had 49,217 Acre Feet. The Permanent Pool, as Brett Ackerman supplied us information on his Power Point slide, one of the points along that graph was the starting content of the Permanent Pool on 7,638 Acre Feet. The Offset Account carried over 8,518 Acre Feet from last Compact Year into this Compact Year, and then the Transit Loss Account used to help deliver Kansas Section II water had 1,615 Acre Feet.

During the year, those major accounts had inflows into the accounts and releases from the accounts, evaporation from those accounts. Inflows are represented by the light blue colors on this Power Point slide, the evaporation by the kind of orange color, and then the tan-gray color represents the releases of water of significance.

I think you could see from Bob Kimbrough's presentation on streamflows the importance of that reservoir stored water that was available to the states below average streamflows coming into John

Martin, especially down the mainstem of the Arkansas into John Martin during the year, and yet, above average streamflows below, and that certainly was the result of having some good storage available to make it through a tough drought year and allow both states to have water available to supply the ditches that I think made it a better year than in other places in the Arkansas Basin, certainly other places in Colorado, where the drought was severe and extensive.

Let's go ahead and go to that last slide, Kevin. At the end of the year, as I had previously mentioned, the total content, the amounts, by major account at the end of the year, with those inflows and releases, the net result was that the Colorado ditches ended up with a little over 65,000 Acre Feet stored in their accounts at the end of the year. Kansas ended up with a little over 49,000 Acre Feet.

The only account to gain a little bit during the year was the Permanent Pool. As reflected in Brett Ackerman's presentation, the use of the Highland Canal water to help offset evaporation was effective to keep it from going down and actually increase it slightly. The Offset Account still had a carryover balance that will be helpful in the

upcoming year to Kansas, should they choose to take it, 7,680 Acre Feet.

The Colorado Section III accounts were heavily depleted this year. However, that was an important supply to the Amity Canal in addition to use of Section II water from John Martin, and also quite a bit of use that could be taken from the Section III account by the Consolidated Canal. There was some water at the end of the 2017 season, and yet Section III account at Consolidated was unable to fully use, and that did book into conservation storage during the winter of this past Compact Year.

Additionally, during the Operations Committee meeting yesterday, I had become aware from a fall meeting that we had with the Bureau of Reclamation that we had a reporting requirement on the current pool in Trinidad that maybe had been overlooked over the years, and so I provided a report to the Operations Committee yesterday explaining what that provision was that Chris Gnau had spotted and presented. Chris with the Bureau of Reclamation had mentioned it in communication in, I believe, in October or September or October of this year, and so we -- we reported on the original fill of the larger Permanent Pool space in Trinidad, which had to be

done with imported Colorado River Basin water and was done back in 1999 and documented in the prior Ten-Year Review Report for 1995 to 2004.

And then this state report that I gave yesterday was just to show the amounts of evaporation that had occurred and then the replacement that Colorado Parks and Wildlife has been able to do with some changed Purgatoire District water rights.

I'll continue to just give that brief update to the Operations Committee unless the Administration decides there's no need for that, but I think until the Operating Principles might be adjusted to eliminate it, I'll -- I'll continue to report it.

I think that is the conclusion of my report for today. Again, thank you for all those who helped to make a tough set of cooperation much better.

I do want to express a lot of thanks to those from Kansas on the Special Engineering Committee. It's a lot of hard work to try to work through an issue. I think when Brett Ackerman and I began to work together on the Permanent Pool issue, we maybe had a different understanding of how long it would

take. It was Brett's first experience. I knew it would be a little bit longer process, and it does sometimes take years to resolve an issue, but I think we've got a good process of communication that helps us to come up with very good solutions when we finally do resolve them, so thank you for that.

MR. RIZZUTO: Thank you, Bill. Any questions of Bill? Okay. Go ahead, Hal. Continue.

MR. SCHEUERMAN: The next is Assistant Operations Secretary Report from Kevin Salter.

MR. SALTER: Kevin Salter, Assistant Operations Secretary for the Compact Administration. I submitted my report, like most things I was doing this year, at the last minute, but it did get out on December 1st, the date it was due, but that's been kind of a typical thing. I'm looking forward to making better -- better -- getting done before some of the deadlines I have.

As mentioned before, Brent Campbell that worked with me the last about 18 months moved on to a different position, but he actually did some work that we'll be building on over the next couple years so, again, we kind of wish him well in his new endeavors. It did give the opportunity to get Rachel Duran back and she's hit the ground running

and really appreciate that. Her efforts, along with Brandy Cole in my office, is kind of the force of the Ark River team for the state of Kansas.

And again, for the thank-you's, I really do appreciate the efforts of Bill Tyner and his staff to keep us in the loop on a lot of the things that are going on. It certainly helps avoid some maybe issues that we will have going on, and there's a couple issues that we'll be working on here in the next couple months that we'll try to get resolved moving forward. So specifically working with John Van Oort and Phil Reynolds and Lonnie and the water commissioners within the lower district, it certainly helps us get our job done more efficiently.

I am able to have a little more fun this year with the position. We talked about doing a tour with the federal agencies and, through a lot of efforts through the year, we finally got that done this fall, so the USGS, the Corps of Engineers, the Colorado Division of Water Resources staff and Brandy and I participated in a tour of the Ark River from Las Animas down to Coolidge, Kansas.

We were able to get inside the dam and take a look at some different sites, get some people out

and take them to look at the augmentation stations and recharge ponds and stabilization ponds, so I think it was real good for those people that were involved, and I really appreciate just being able to talk with people that you deal with on a more business nature in the traveling between these sites in the vehicles, at lunch and breakfast. It was -- it was good and, hopefully, we can kind of continue to have these type of events so we can talk on each other, besides just kind of the business things that go on. So go ahead to the next.

I think this is a little bit different presentation than what Bill Tyner had had. This is kind of more of the operations of the accounts through the year. It is kind of neat to see we did have one Compact conservation storage event here. You can kind of see the dimple on the reservoir that it caused.

So been doing this a few years and, like I said, I think it's kind of an impactual thing when you start really looking at it and, again, you can see that we started the year fairly good and we didn't end quite as well, and I think we'll be okay with what we got. It kind of depends what's going in. Steve Kastner, sorry, no prediction. I was

right last year, so I don't want to ruin my record. So go ahead and go to the next slide.

Part of the work that we do with the Division 2 office is we developed a method to track the deliveries to the state of Kansas, whether it's Offset Account water, Section II account, or a combination of both. There are different ways that each of those waters are tracked and as far as the accounting at the Stateline.

So this first release that was done between June 11th and July 27th is shown on the graph. That's how we kind of come up with what was the success of delivery to the state of Kansas. This particular run generated a delivery deficit of about 3,100 Acre Feet, based on our accounting, and this was a combination of both Section II and Offset Account.

We had a second run and this is an offset only, and that's the reason why it looks a little different on the deal where we're not seeing things up at the Stateline, because this water is delivered on top of the antecedent Stateline flows, so this kind of shows the results of the delivery to the state of Kansas. I look forward to kind of working, through this next year, through some of the issues

that we have.

We do have a person that's not at this meeting that had been at least the previous 29 years, because he was appointed Operations Secretary in 1988, and that would be Steve Witte. Having worked with Steve, I wanted to say a few words on the record about him. Later, ARCA will consider a resolution that, you know, paper just doesn't quite capture the service of the man.

I said in 1988, he was appointed. Had he decided to serve one more year, it would have been an even 30 years in that position, but he decided to retire.

You know, through the years that I've worked with him, I didn't always agree with Steve, but I hope I showed some respect to Steve. You know, it's often he faced criticism, not only from Kansas, but even his own water users in the position that he was in, in looking after the Division 2 office, which is the basin of the Arkansas River in Colorado, so that was a tough position to be in, and sometimes he found himself defending the state of Kansas, which I really appreciate his efforts with that.

Unfortunately, in those positions, it's pretty easy to give criticism. It's not very easy to give

thanks, so he probably didn't get thanked as often as he probably should have. He definitely had the best interests of his diverse group of water users in his state and he always kept that in mind as he approached any particular issue.

I kind of imagine, like other people I have talked to that are retired from the industry that we're in, I imagine he gets up and he takes a look at the Ark River Basin and sees what's going on, sees the flows at different spots, and I imagine he might also have the thought, "I'm glad it's not my responsibility anymore," so that's my report.

MR. RIZZUTO: Go ahead, Hal.

MR. SCHEUERMAN: Thank you, Kevin. The next report is the Offset Account Report from Rachel Zancanella.

MS. ZANCANELLA: Thank you, Hal, and thank you, Chairman Rizzuto. Again, my name is Rachel Zancanella. I'm the Assistant Division Engineer for the Colorado Division of Water Resources for Division 2. I am fortunate to have the opportunity to have the one-slide Power Point presentation for you, and it's a summary of the 2017-18 Compact Year Offset Account.

The balance of the Offset Account at the start

of the 2017-18 Compact Year was 8,517.93 Acre Feet. The total inflows to the Offset Account were 8,982.48 Acre Feet. The total transfers into the Offset Account were 1,678.22 Acre Feet. The evaporative losses from the Offset Account were 2,410.43 Acre Feet. The total transfers out of the Offset Account were 770.13 Acre Feet.

In 2017-18 Compact Year, Kansas called for two releases for a total of 8,318.14 Acre Feet, and the 2017-18 Compact Year ended with a total balance of 7,679.93 Acre Feet, and just for clarification, this year's report included a total value for the transfers out of the Offset Account. This total is new to this report as a result of Colorado's entities' utilization of their upstream consumable subaccount for making replacements to the conservation -- to conservation storage from the Offset Account, and that is my report. Thank you.

MR. SCHEUERMAN: Thank you, Rachel. The last of what I need to do here is Item E, the Operations Committee's recommendation. Lane Malone and I on the Operations Committee have two recommendations to ARCA. We recommend to ARCA referring the 2006 to 2018 Operations Secretary's reports to the Special Engineering Committee to work

towards resolution of the issues that are holding up approval of these reports; and the second item is recently, we recommend that the letters between the Corps of Engineers and Hal Scheuerman regarding the Water Control Manual for John Martin Reservoir be made an exhibit to the 2018 ARCA Annual Meeting script. I don't know if you want to make them separate or just make them part of the Operations Committee. It's your choice. Kevin has them. We -- we wrote in response to the -- the use of the Flood Pool and the operations on the -- on there, on that, so...

MR. RIZZUTO: Okay. Let's make them separate.

MR. SCHEUERMAN: Okay. Good choice. Thank you.

MR. RIZZUTO: Thank you, Hal. Next, report of Administrative and Legal Committee, Randy Hayzlett.

MR. HAYZLETT: Thank you, Mr. Chairman. I want to thank Rachel Duran and Andrew Rickert for summarizing our meetings yesterday. Becky Mitchell and I served on that committee yesterday.

During the meeting, Kevin Salter, Kansas Division of Water Resources, provided an update to

the status of the transcripts from prior Annual Meeting of 1998, 1999 and 2017.

And then Brent Newman, Colorado Division -- or Colorado Water Conservation Board provided an update on the status of the ARCA annual reports, noting the status of the reviews and publishing of the annual reports. Once a draft template of the '97 report is agreed to between the states, then it would be provided to the committee for a review.

The committee also heard a report from Stephanie Gonzales, Recording Secretary and Treasurer. She reported on the audit and as well as the acquiring of a debit card.

And Kevin Salter, Division of Water Resources for Kansas, mentioned the states would review the past resolution of 2012-01 for the Trinidad Operating Principles to determine if there was an open-ended ARCA approval that needs to be addressed, and that was to summarize the meeting.

There was an action item there of recommending the removal of 4-D from the annual agenda, and there will be some recommendations deferred to Item 12 in the agenda here.

We have Stephanie Gonzales has treasurer's report. Do you have that, Stephanie? And she did

present yesterday, so...

MS. GONZALES: Thank you, Chairman Rizzuto and Randy. Again, all I have to report is that the audit was completed. We present it for acceptance and approval today and, upon that approval, we will sign a management representation letter and, in addition, asking for consideration of the engagement for the 2018-19 audit of $3,000 with R. Farmer, LLC, and joint funding agreements were presented for signature. I believe that would be it.

MR. HAYZLETT: Thank you, Stephanie. The rest of our items will be deferred until after Item 11, Mr. Chair.

MR. RIZZUTO: Okay. Thanks, Randy. At this point, any new business to come before ARCA, from anyone?

Okay. We'll now move into action items, and the first action item I have is the ARCA special meeting summary of March 20, 2018.

MR. HAYZLETT: Our committee recommended the approval of the March 18th special meeting written summary.

MR. RIZZUTO: Okay.

MR. HAYZLETT: And we'd move that.

MR. RIZZUTO: Okay. And a second?

MS. MITCHELL: (Raises hand.)

MR. RIZZUTO: Discussion? How does Kansas vote?

MR. HAYZLETT: Aye.

MR. RIZZUTO: How does Colorado vote?

MS. MITCHELL: Aye.

MR. RIZZUTO: Okay. Motion passes. Next, any financial matters?

MR. HAYZLETT: Yes.

MR. BARFIELD: Mr. Chairman, should we get exhibit numbers on -- I think we've been -- I think we've been --

MR. RIZZUTO: K was the last exhibit number I had utilized.

MR. BARFIELD: So K was for the essentially the summaries of the three committees; correct?

MR. RIZZUTO: Correct.

MR. BARFIELD: Now, we've got these individual. The Operations Secretary Report should be an exhibit; correct?

MR. SALTER: We have made it -- yes. We have made it a report in the past.

MR. BARFIELD: So that would be L --

MR. RIZZUTO: L.

MR. BARFIELD: -- correct? The AOS report then would be M; correct?

MR. RIZZUTO: Correct.

MR. BARFIELD: And then the Offset Report, we got a -- the Power Point one-slide summary, but there's actually a report. We actually want to include the report; correct? So that would be N; okay? That covers the Operations Committee.

MR. RIZZUTO: Correct.

MR. BARFIELD: On Admin and Legal --

MR. SALTER: Excuse me.

MR. BARFIELD: Go ahead. Go ahead.

MR. SALTER: On the Operations meeting, there was also the letters that was exchanged between Hal Scheuerman and the Corps.

MR. BARFIELD: All right. So that would be O. See if we get through the alphabet this year. All right. So O is the letters between Hal and the Corps on the John Martin water control.

MR. RIZZUTO: Correct.

MR. BARFIELD: And then Stephanie's report, is that a -- is that a written report or not?

MR. SALTER: It's not a written report.

MR. BARFIELD: She mentioned the audit. Is that coming later?

MR. SALTER: Yes.

MR. HAYZLETT: Approval of the audit is.

MR. BARFIELD: Will be later, okay. All right. So these minutes that we just approved?

MR. SALTER: In my opinion, they do not need to be an exhibit, since they stand alone.

MR. BARFIELD: Okay. I think we're caught up then. Are we caught up?

MR. HAYZLETT: I think so.

MR. BARFIELD: All right. Thank you, Mr. Chairman.

MR. RIZZUTO: Okay. Thank you. So the last thing I said was financial matters, and Randy was ready to take the mic, so Randy.

MR. HAYZLETT: Yes. The Administrative and Legal recommended the approval of the Fiscal Year FY 2017-18 auditor's report and recommended signing the engagement letter for the auditor's services, and we would move that.

MR. RIZZUTO: Okay. Second?

MS. MITCHELL: Second.

MR. RIZZUTO: Second. Discussion? How does Kansas vote?

MR. HAYZLETT: Aye.

MR. RIZZUTO: Colorado?

MS. MITCHELL: Aye.

MR. RIZZUTO: Motion passes, and that would become P as an exhibit. Okay.

MR. HAYZLETT: We also recommend that Stephanie Gonzales be directed to sign both the Colorado and the Kansas USGS joint funding agreement. I would move that.

MR. RIZZUTO: Move that. Second?

MS. MITCHELL: (Raises hand.)

THE REPORTER: I need audible.

MS. MITCHELL: Becky Mitchell, second.

MR. RIZZUTO: Discussion? How does Kansas vote?

MR. HAYZLETT: Aye.

MR. RIZZUTO: How does Colorado vote?

MS. MITCHELL: Aye.

MR. RIZZUTO: Motion passes.

MR. HAYZLETT: We also recommend the adoption of the Fiscal Year FY 2019-2020 budget and assessments. We move that.

MS. MITCHELL: Second.

MR. RIZZUTO: Second from Rebecca Mitchell. Discussion? How does Kansas vote?

MR. HAYZLETT: Kansas votes aye.

MR. RIZZUTO: How does Colorado vote?

MS. MITCHELL: Aye.

MR. RIZZUTO: Motion passes. Kevin?

MR. SALTER: I would suggest making that an exhibit --

MR. RIZZUTO: An exhibit?

MR. SALTER: -- to the minutes.

MR. RIZZUTO: So that would be Q. Okay.

MR. HAYZLETT: The next item is the resolution.

MR. RIZZUTO: Okay.

MR. HAYZLETT: And I believe there is one for Mr. Witte, and I will pass the mic down.

MR. RIZZUTO: Rebecca.

MS. MITCHELL: This resolution is regarding the service and recognition of Steven J. Witte, so I'd like to read that into the record. So this is Resolution 2018-- I have no idea what -- -02, and whereas -- regarding Steven J. Witte recognition.

Whereas, Steven J. Witte was an outstanding employee of the Colorado Division of Water Resources for 40 years; and

Whereas, Mr. Witte served as the Colorado

Division Engineer for the Arkansas River Basin from 1998 (sic)[Resolution 2018-02 provides this date as 1988] until his retirement from state government in 2018; and

Whereas, Mr. Witte assisted the Arkansas River Compact Administration in numerous ways throughout his tenure as the Colorado Division Engineer; and

Whereas, Mr. Witte served as the Administration's Operations Secretary from 1989 until his retirement from state government; and

Whereas, Mr. Witte performed with distinction his responsibilities as an officer of the Administration; and

Whereas, he conducted himself at all times with the utmost professionalism and sense of public duty, despite the fact that Kansas and Colorado were at odds on disputed issues throughout much of his tenure.

Now therefore, be it resolved by the Arkansas River Compact Administration that it does hereby acknowledge with gratitude the outstanding service of Steven J. Witte to the Administration and to the states of Colorado and Kansas and expresses its appreciation to Mr. Witte for his dedication, and extend to him its best wishes for continued good

health and happiness in all of his future endeavors.

Be it further resolved that this Resolution be entered into the records of the Administration and that the Recording Secretary be instructed to send a copy to Mr. Witte.

Be it further resolved that the Administration honor Mr. Witte for his many years of service by including his picture and appropriate dedicatory remarks in the Administration's annual report for the Compact Year 2018.

ARCA resolution 2018-02, and be it adopted by the Arkansas River Compact Administration at its 2018 Annual Meeting on December 7th, 2018, in Garden City, Kansas.

MR. RIZZUTO: Okay.

MS. MITCHELL: And on a personal note, I would like to thank Steve Witte. He's not here, but he served great leadership and put a lot of pressure on me as I entered this role to make sure that I was actively focused on what was happening with this commission and made sure to shame me into -- to, to being focused on -- on the importance of the issues here, so I wanted to thank him for all of his leadership on a personal level.

MR. RIZZUTO: We'd like to thank him as

well for having you being focused on all these issues, Rebecca.

Rebecca has moved this resolution. Is there a second, and Randy, did you want to say something, or Dave, in your second?

MR. BARFIELD: Well, we certainly -- Kansas would certainly second and sort of echo the sentiment, and we need to make sure Mr. Witte reads the transcript so that he can, you know, hear -- hear these -- hear these remarks that are beyond the -- beyond the resolution, but yeah, we certainly -- certainly was a very dedicated individual, as others have said, including Kevin here, you know, so we appreciated working with him and we wish him a happy retirement.

MR. RIZZUTO: Okay. Good. Any other discussion, comments? Hearing none, how does Kansas vote on Resolution 2018-02?

MR. BARFIELD: Aye.

MR. RIZZUTO: How does Colorado vote?

MS. MITCHELL: Aye.

MR. RIZZUTO: Resolution 2018-02 is passed. Anything else, Randy?

MR. HAYZLETT: Yes. Yes, Mr. Chair. Officers and committee appointments, the

Administrative and Legal recommend the following positions: Vice-Chair, Randy Hayzlett; Recording Secretary and Treasurer, Stephanie Gonzales; Operations Secretary, Bill Tyner; and Assistant Operations Secretary, Kevin Salter; and we would need a motion, I believe, for those, so we would move.

MS. MITCHELL: I'll make a motion.

MR. HAYZLETT: And we will second.

MS. MITCHELL: For the officer and committee appointments.

MR. RIZZUTO: Okay. Discussion? Hearing none, how does Kansas vote?

MR. HAYZLETT: Aye.

MR. RIZZUTO: How does Colorado vote?

MS. MITCHELL: Aye.

MR. RIZZUTO: Okay. Motion is adopted.

MR. HAYZLETT: Our action was also to appoint committee chairs for next year. Our tradition is to rotate the chairs, so what we have for next year, Administrative and Legal would be Rebecca Mitchell as chair, Randy Hayzlett as member. Operations would be Lane Malone as chair, Hal Scheuerman as member. Engineering would be David Barfield as chair and Scott Brazil as member, and I

don't know that we need action on that, just appointing the chairs.

MR. RIZZUTO: No, we do not.

MR. HAYZLETT: And our final work yesterday is recommendation for next year's Annual Meeting. The default date was December 10th, but we looked at conflict with Colorado's meetings, so we are recommending December 4th, 2019, for the committee meetings in December of next year and December 5th for the Annual Meeting, and the tradition has been to rotate between Lamar for a couple years and Garden in one year.

MR. RIZZUTO: Mm-hmm.

MR. HAYZLETT: And so as we discussed yesterday, it was Lamar. If there's any comments, then we'd be glad to listen to those.

MR. RIZZUTO: All right. Motion is for next year's meeting, that it be December 4th and 5th, the 5th being the Annual Meeting day, and is there a second?

MS. MITCHELL: There's a second.

MR. RIZZUTO: Okay. Any discussion?

MS. MITCHELL: So I would like to offer -- I know it's a bit more burdensome for our Kansas folks, but there's better facilities in La

Junta, which is, we understand is 60 more miles, and we'll make sure better coffee is provided if you were willing to make it to La Junta, so I would -- I would like to bring that up as an option for location.

MR. HAYZLETT: And a location there?

MR. RIZZUTO: What I would do, as chair, I would contact Otero Junior College. A number of water meetings have been held at the college and it's probably a lot more conducive to a meeting situation than we've had in Lamar of late, but I will let Kansas, because I understand it's a few more miles.

MR. HAYZLETT: I'm right in the middle, so I'll let you talk, David.

MR. BARFIELD: Well, in view of you coming to Garden City here on an every third year schedule, I think let's give this a try. We're willing to try and see how it works out for next year. So is this action by ARCA then sufficient? I know the by-laws say we'll meet in La Junta, but --

MR. HAYZLETT: Lamar.

MR. BARFIELD: Lamar. I'm sorry.

MR. SALTER: Kevin Salter. It is, unless the Commission decides, at either this meeting or a

later special meeting, to hold it in a different location, so this would be an action that you would need to say December 4th and 5th in La Junta.

MR. BARFIELD: Which we have, so all right. So the motion on the table is to have it at La Junta; is that correct?

MS. MITCHELL: Yeah.

MR. HAYZLETT: That's correct.

MR. BARFIELD: So that's the motion.

MR. RIZZUTO: Okay. So any other discussion? How does Kansas vote?

MR. HAYZLETT: Aye.

MR. RIZZUTO: How does Colorado vote?

MS. MITCHELL: Aye.

MR. RIZZUTO: Motion passes. Okay. Any other business, Randy?

MR. HAYZLETT: No, that concludes our report.

MR. RIZZUTO: Okay. One thing was brought up about ARCA meeting prior to February 15th. Have we addressed that? I know it was part of the Operations Committee, I believe.

MS. MITCHELL: Yeah, and I believe the date was actually February 14th and to have a meeting regarding the Permanent Pool agreement,

and -- and we just would like to express that there's no reason to hold out till the last day, that we're -- we're open to having that as soon as possible. I'd love to be able to take it to my and report back to my board in late January that it's already been, so I think we'll -- we can get on with scheduling that.

MR. RIZZUTO: So no action is needed. There is action that is needed? No, no. Okay.

MR. BARFIELD: I think -- I think -- I think we've sufficiently committed on the record we're going to do it before February 14th, so we'll -- I think we'll honor that commitment and that's good enough, so...

MS. MITCHELL: Yes.

MR. RIZZUTO: Okay. Is there any other business?

MR. HAYZLETT: Public comment.

MR. RIZZUTO: Other than public comment? Is anyone in the public that would like to comment at this time? Hearing none, the chair is open for a motion to adjourn.

MR. BRAZIL: So moved.

MR. RIZZUTO: Okay. Scott Brazil has moved that we adjourn. Is there a second?

MR. SCHEUERMAN: Second.

MR. RIZZUTO: Second from Hal. Discussion? All in favor?

MS. MITCHELL: Aye.

MR. RIZZUTO: One aye vote. Passes unanimously. Thank you very much, everyone, and have a merry Christmas, happy New Year, and look forward to seeing you next year.

(Proceedings concluded at 11:41 a.m. Central Standard Time.)

STATE OF KANSAS)

COUNTY OF RENO)

This is to certify that I, Lee Ann Bates, a Certified Shorthand Reporter in and for the State of Kansas, reported in shorthand the proceedings had at the time and place set forth on the title page hereof and that to the best of my ability, the above and foregoing pages contain a full, true and correct transcript of the said proceedings.

Certified to on this 24th day of August, 2019.

Lee Ann Bates, CSR, RPR, CRR

ADVANCED COURT REPORTING SERVICES
LEE ANN BATES, CSR, RPR, CRR
27113 West Mills Avenue
Plevna, Kansas 67568
(620) 793-6555 or (620) 664-7230

ARCA 2018 ANNUAL MEETING
EXHIBITS/ATTACHMENTS TO MINUTES

Letter	Description	Offered By
A.	Attendance Sheet	Jim Rizzuto
B.	Adopted Agenda	Jim Rizzuto
C.	USGS PP Presentation and Table	Jim Rizzuto
D.	USACE PP Presentation and Report	Jim Rizzuto
E.	USBR PP Presentation	Jim Rizzuto
F.	PRWCD PP Presentation	Jim Rizzuto
G.	SEWCD PP Presentation	Jim Rizzuto
H.	CPW PP Presentation	Jim Rizzuto
I.	Ten-year Compact Compliance Accounting table	Jim Rizzuto
J.	Colorado's PDF Evaluation	Jim Rizzuto
K.	Committee Reports	Jim Rizzuto
L.	Operations Secretary Report (full copy electronically)	Jim Rizzuto
M.	Assistant Operations Secretary Report	David Barfield
N.	Offset Account Report (full copy electronically)	David Barfield
O.	Letters between USACE and Hal Scheuerman	David Barfield
P.	Auditor's Report	Randy Hayzlett
Q.	FY 2019-2020 Budget	Randy Hayzlett

Exhibit A

Annual Meeting

December 7, 2018

ARKANSAS RIVER COMPACT ADMINISTATION
2018 ANNUAL MEETING
Friday, DEC. 7, 2018, 9:00 am (CST)
Clarion Inn, Garden City, KS
TENTATIVE AGENDA (subject to change)
Presiding: James Rizzuto, Chairman

Before the meeting comes to order, introduction of representatives and visitors

1. **Call to Order: Chairman, James Rizzuto**
   (Instructions for those in attendance for benefit of court reporter)

2. **Review and revisions of agenda**

3. **Reports of Officers**
   A. Chairman – James Rizzuto
   B. Vice-Chairman – Randy Hayzlett
   C. Recording Secretary and Treasurer – Stephanie Gonzales (defer to item 10)
   D. Operations Secretary – Bill Tyner (defer to item 9)
   E. Assistant Operations Secretary – Kevin Salter (defer to item 9)

4. **Reports of Federal Agencies**
   A. U.S. Geological Survey
   B. U.S. Army Corps of Engineers
   C. U.S. Bureau of Reclamation
   ~~D. National Weather Service~~

5. **Reports from Local Water User and State Agencies**
   A. Purgatoire River Water Conservancy District
   B. Southeastern Colorado Water Conservancy District
   C. Lower Arkansas Valley Water Conservancy District
   D. Colorado Parks and Wildlife

6. **Compact Compliance / Decree Issues Updates**
   A. Ten-year Compact Compliance Accounting table (2009-2017) – Joint report of the States
   B. Colorado's PDF (presumed depletion factor) Evaluation

7. **Report of Special Engineering Committee**

8. **Report of Engineering Committee**
   A. Report from December 6, 2018 meeting – Scott Brazil
   B. Engineering Committee recommendations

Exhibit A

9. Report of Operations Committee

A. Report from December 6, 2018 meeting – Hal Scheuerman
B. Operations Secretary Report – Bill Tyner
C. Assistant Operations Secretary Report – Kevin Salter
D. Offset Account Report – Rachel Zancanella
E. Operation Committee recommendations

10. Report of Administrative & Legal Committee

A. Report from December 6, 2018 meeting – Randy Hayzlett
B. Recording Secretary and Treasurer Report – Stephanie Gonzales
C. Administrative & Legal Committee Recommendations – most actions will be deferred to Item 12 (concurrent with appropriate action item)

11. New Business

12. ARCA Action Items

A. Approval meeting minutes
B. Financial Matters
C. Resolutions
D. Officers & Committee appointments
E. 2019 Annual Meeting – set date and location

13. Public Comment

14. Adjourn

Exhibit B

Annual Meeting

December 7, 2018

ATTENDANCE LIST

2018 ARKANSAS RIVER COMPACT ADMINISTRATION ANNUAL MEETING

Friday, December 07, 2018, 9:00 A.M. (CST), Garden City, Kansas

NAME	REPRESENTING	ADDRESS	PHONE & FAX	EMAIL
Ryan Gronewold	USACE	Albuquerque NM	505-342-3340	Ryan.P.Gronewold@USACE.Army.mil
Van Truan	Corps of Engineers	Pueblo, Co	719-250-5700	van.a.truan@usace.army.mil
Scott Brazil	ARCA	Pueblo CO	719-250-7113	s.brazile live.com
Bethany Arnold	CO Div. Water	Pueblo, CO		bethany.arnold@state.co
[illegible]	ARCA	Lamar CO	719-940-0646	[illegible]
CHRIS GNAU	USBR	Loveland, CO	970962 4532	cgnau@usbr.gov
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Rodney E. Radcliffe	Wano 1, Township	P.O Box 812 Saint Francis KS 67756	989-670-3467	RERadcliffe@hotmail.com
Chris Woodka	SECWCD	31717 United Blvd Pueblo, Co 81001	719-289-0785	chris@secwcd.com
MARK RUDE	SW KS GMD 3		620-275-7147	MRUDE@GMD3.ORG

Exhibit B

ATTENDANCE LIST

2018 ARKANSAS RIVER COMPACT ADMINISTRATION ANNUAL MEETING

Friday, December 07, 2018, 9:00 A.M. (CST), Garden City, Kansas

NAME	REPRESENTING	ADDRESS	PHONE & FAX	EMAIL
Nabil Shafike	USACE	Albuquerque, NM	505-342-3421	
Steven Hines	Frontier D. Ch	Coolidge KS	620-384-4842	
Stanley Hines	Frontier Ditch	Coolidge, KS	620-384-4427	
Kim Falen	USACE	Trinidad, CO	719 846-7990	
Nathan Sullivan	USGS	Hays, KS	785-764-6266	nsullivan@usgs.gov
Andrew Clark	USGS	Hays, KS	785-760-3100	alclark@usgs.gov
JONATHAN TAGUE	USACE – JOHN MARTIN	HASTY, CO	719-336-3476	
Philip Reynolds	CDWR	Pueblo CO	719-	
Rachel Duran	KDWR	Garden City, KS	620-276-2901	Rachel.duran@ks.gov
BILL TYNER	CDWR	PUEBLO, CO	719-542-3368	bill.tyner@state.co.us

ATTENDANCE LIST

2018 ARKANSAS RIVER COMPACT ADMINISTRATION ANNUAL MEETING

Friday, December 07, 2018, 9:00 A.M. (CST), Garden City, Kansas

NAME	REPRESENTING	ADDRESS	PHONE & FAX	EMAIL
Lori Lest	Colo DWR		719 542-3368 2106	lori.lest@state.co.us
Rachel Zancanella	Colo DWR		719 542 3368 2108	rachel.zancanella @state.co.us.
Jeff Montoya	CO. DWR		719-680-1052	jeff montoya @ state.co.us
Randy Cole	KS DWR	GC		
Roy Vaughan	Reclamation	Pueblo		R VAUGHAN@USBR.GO
Brent Newmen	CWCB	Denver	303 681-8470	brent.newmen @ state.co.us
John Van Oort	CDWR	Pueblo	719-542-3369	john.vanoorte stat.co.us
Connie Spady	CDWR	Pueblo	719-344-1000	connie.spady@state.co.us
Chris Beightel	KS	Manhattan		
Mike Valentine	City of Trinidad Colorado	135 N. Animas Trinidad, CO 81082	719 846-9843	Mike.Valentine @ Trinidad.co.gov

ATTENDANCE LIST

2018 ARKANSAS RIVER COMPACT ADMINISTRATION ANNUAL MEETING
Friday, December 07, 2018, 9:00 A.M. (CST), Garden City, Kansas

NAME	REPRESENTING	ADDRESS	PHONE & FAX	EMAIL
Roy F Dixon	Upper Ark	GC	Cell 785 694 3247	~~roy~~ roy.dixon@sbcglobal.net
Don Steerman	D-67	P.O. 390 Lamar, CO 81052	719-336-4313 FAX 719-336-4315	dsteerman@shinnsteermanlaw.com
Dan Steuer	CO Atty Gen'l	1300 Bway Denver	720 317 7064	Daniel.Steuer@coag.gov
Andrew Rickert	CWCB	1313 Sherman St		~~rickert.andrew~~ andrew.rickert@state.co.us
Armando Zarco	KWO	Garden City	620 276 2901	Armando.Zarco@kwo.ks.gov
Dale Book	Spronk Water Eng.	Denver	303 861-9700	dbook@spronkwater.com
Krystal Brown	U.S. Geological Survey	201 E 9th St	719-562-2841	kbrown@usgs.gov
Kelley Thompson	Colo Div Water Res	1313 Sherman St Rm 818 Denver CO 80203	~~303-866~~	kelley.thompson@state.co.us
TJ Randolph	Amazon Ditch Company	Lakin KS	620-640-7767	ditchrider98@gmail.com
Stephanie Gonzales	ARCA	PO Box 97 Granada CO	719-688-0799	arca.co.ks@gmail.com

ATTENDANCE LIST

2018 ARKANSAS RIVER COMPACT ADMINISTRATION ANNUAL MEETING

Friday, December 07, 2018, 9:00 A.M. (CST), Garden City, Kansas

NAME	REPRESENTING	ADDRESS	PHONE & FAX	EMAIL
Jason Norquest	SWKS GMD3	Garden City	620-275-7147	norquest@gmd3.org
Brett Ackerman	CO Parks & Wildlife		719-227-5209	brett.ackerman@state.co.us
Kevin Salter	KDA-DWR			
Dan Mayfield	Amazon Canal	Lakin KS	620-272-6980	wht@pld.com
Amy Louise	USACE	ABQ, NM		amy.louise@usace.army.mil
Fred Jones	City of Garden City	GCK		
Michael Weber	Lower Arkansas Valley Water Cons. Dist.	Rocky Ford, CO	719-688-0554	mweber@lowerark.com
Randy Hayzlett	AKCIT	LITKIN	620-355-7499	
Troy Dumler	Great Eastern Ditch	Garden City, KS	620-276-3246	troy.dumler@sbcglobal.net
Hal Scheuerman	ARCA	Deerfield Ks.	620-260-6540	

ATTENDANCE LIST

2018 ARKANSAS RIVER COMPACT ADMINISTRATION ANNUAL MEETING

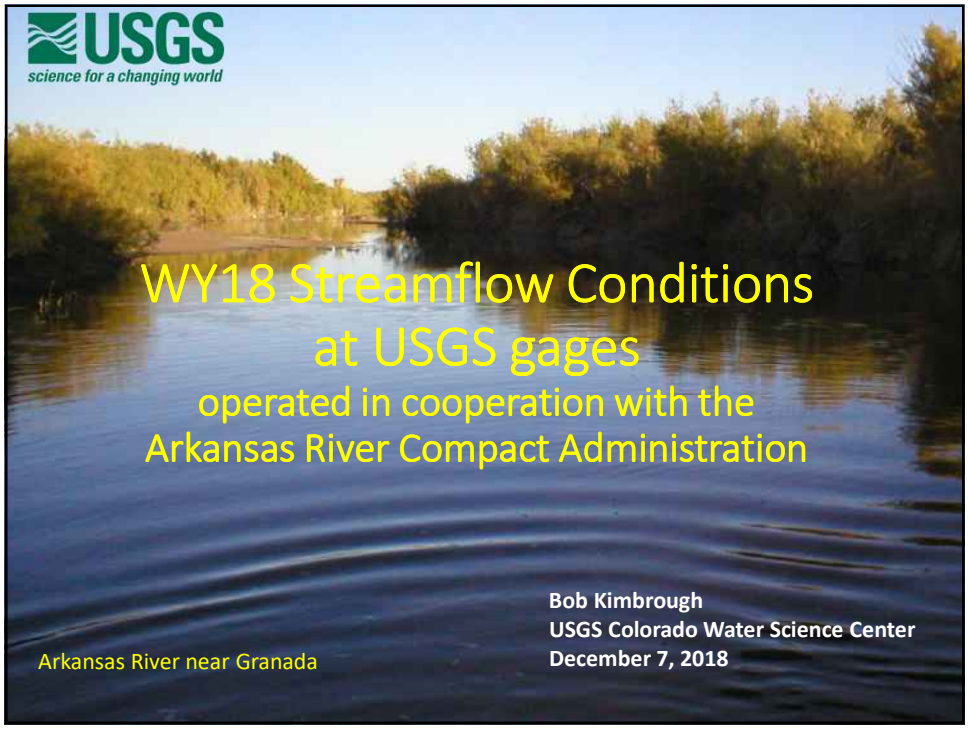
Friday, December 07, 2018, 9:00 A.M. (CST), Garden City, Kansas

NAME	REPRESENTING	ADDRESS	PHONE & FAX	EMAIL
STEVE KASTNER	PRWCD	TRINIDAD		PRWCD@YAHOO.COM
BOB KIMBROUGH	USGS	LAKEWOOD CO		rakimbro@usgs.gov

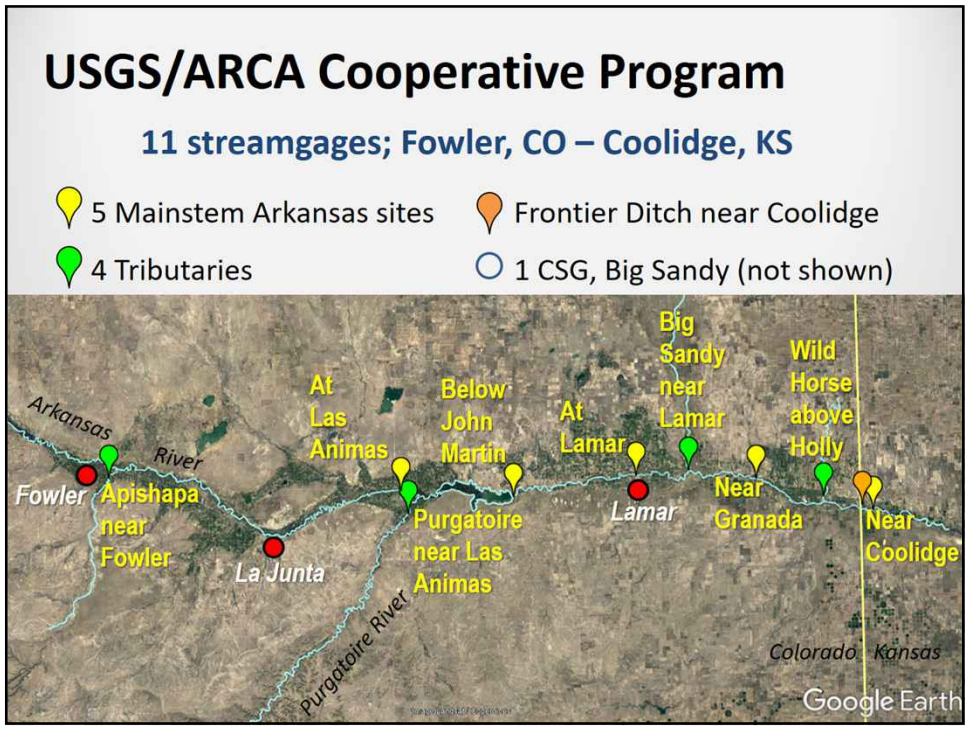
Exhibit C

Annual Meeting

December 7, 2018


USGS
science for a changing world
WY18 Streamflow Conditions
at USGS gages
operated in cooperation with the
Arkansas River Compact Administration
Bob Kimbrough
USGS Colorado Water Science Center
December 7, 2018
Arkansas River near Granada

1


USGS/ARCA Cooperative Program
11 streamgages; Fowler, CO – Coolidge, KS
5 Mainstem Arkansas sites
Frontier Ditch near Coolidge
4 Tributaries
1 CSG, Big Sandy (not shown)
Arkansas River
Fowler
Apishapa near Fowler
La Junta
At Las Animas
Below John Martin
Purgatoire near Las Animas
Purgatoire River
At Lamar
Lamar
Big Sandy near Lamar
Near Granada
Wild Horse above Holly
Near Coolidge
Colorado
Kansas
Google Earth

2

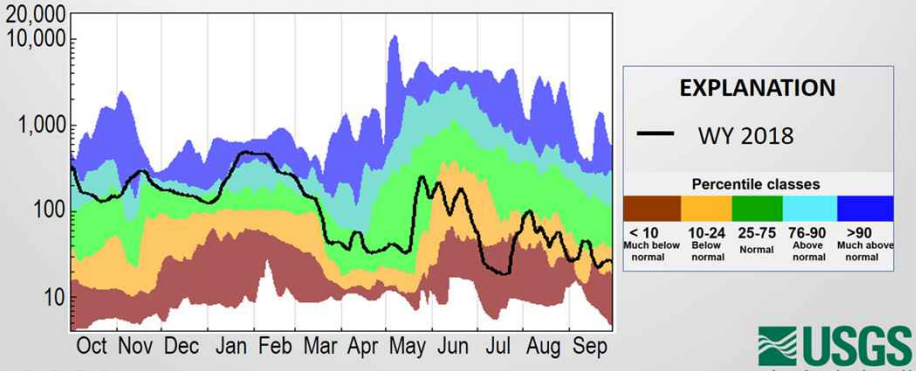
Exhibit C

WY 2018 streamflow conditions

Arkansas River at Las Animas

WY18 Annual Flow, in ac-ft	WY17 Annual Flow, in ac-ft	2018 as % of 2017	2018 as % of average
102,200	314,500	32%	53%

7-day average flow, cubic feet per second



USGS science for a changing world

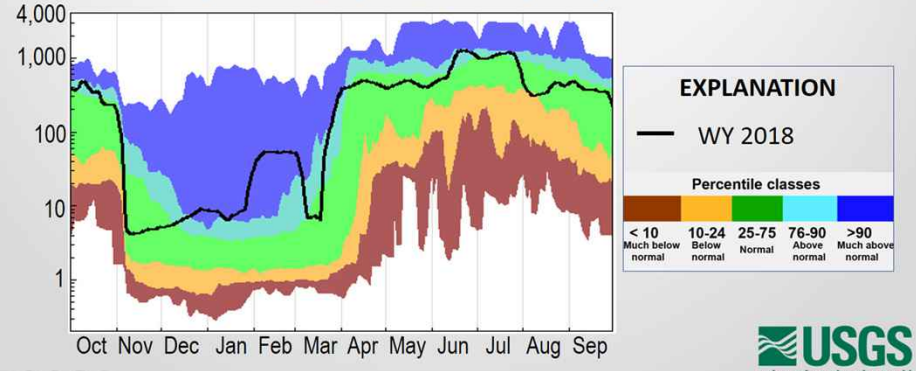
3

WY 2018 streamflow conditions

Arkansas River below John Martin Reservoir

WY18 Annual Flow, in ac-ft	WY17 Annual Flow, in ac-ft	2018 as % of 2017	2018 as % of average
245,100	214,700	114%	121%

7-day average flow, cubic feet per second



USGS science for a changing world

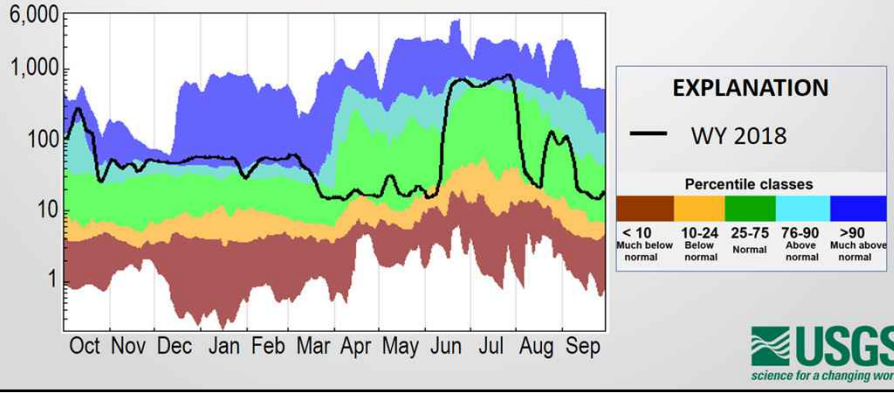
4

WY 2018 streamflow conditions

Arkansas River at Lamar

WY18 Annual Flow, in ac-ft	WY17 Annual Flow, in ac-ft	2018 as % of 2017	2018 as % of average
91,510	81,880	112%	113%

7-day average flow, cubic feet per second



USGS science for a changing world

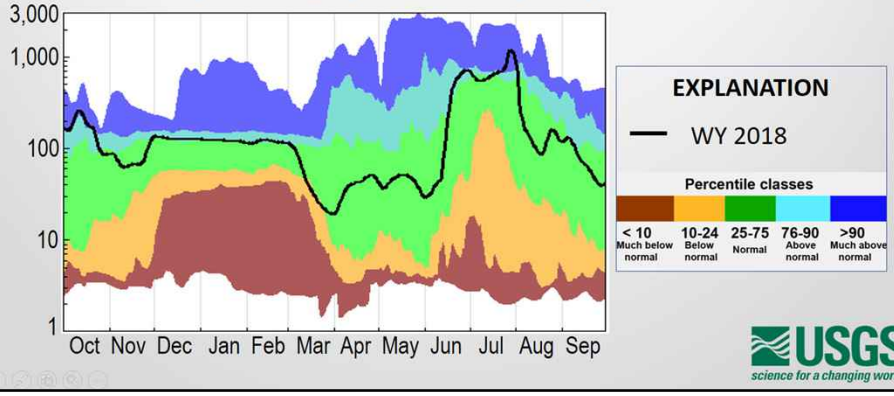
5

WY 2018 streamflow conditions

Arkansas River near Granada

WY18 Annual Flow, in ac-ft	WY17 Annual Flow, in ac-ft	2018 as % of 2017	2018 as % of average
122,900	114,300	108%	104%

7-day average flow, cubic feet per second



USGS science for a changing world

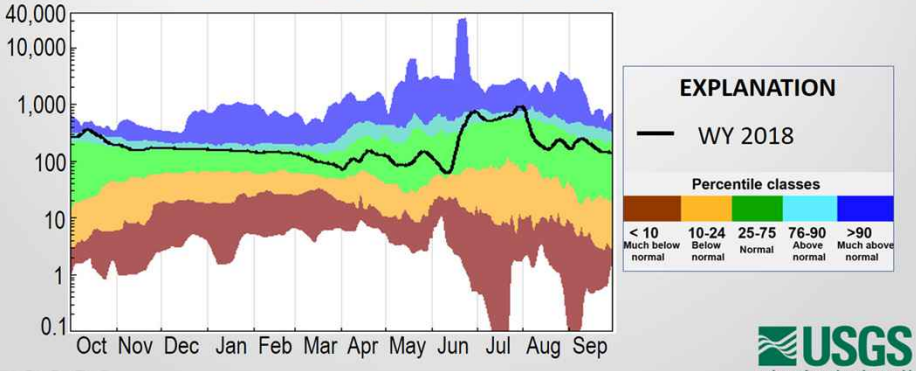
6

WY 2018 streamflow conditions

Arkansas River near Coolidge, KS

WY18 Annual Flow, in ac-ft	WY17 Annual Flow, in ac-ft	2018 as % of 2017	2018 as % of average
159,300	154,100	103%	109%

7-day average flow, cubic feet per second



USGS science for a changing world

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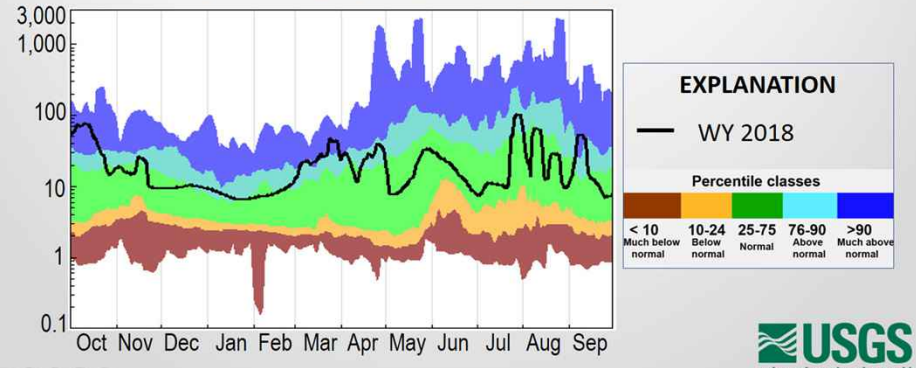
WY 2018 streamflow conditions

Apishapa River near Fowler

WY18 Annual Flow, in ac-ft	WY17 Annual Flow, in ac-ft	2018 as % of 2017	2018 as % of average
15,490	33,010	47%	88%

7-day average flow, cubic feet per second



USGS science for a changing world

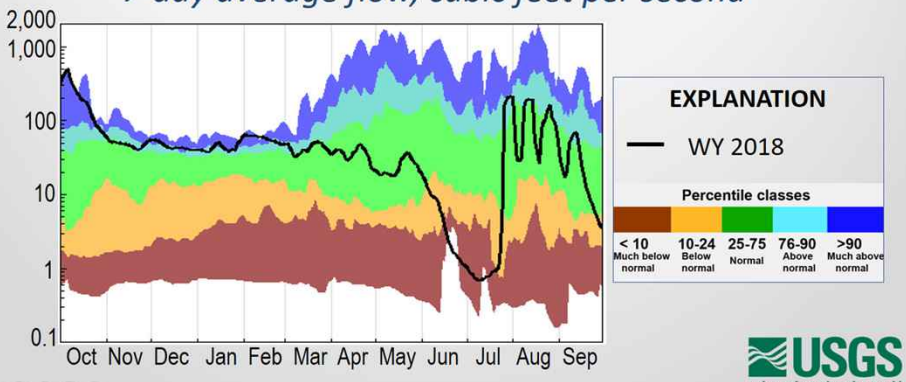
8

WY 2018 streamflow conditions

Purgatoire River near Las Animas

WY18 Annual Flow, in ac-ft	WY17 Annual Flow, in ac-ft	2018 as % of 2017	2018 as % of average
39,750	82,820	48%	91%

7-day average flow, cubic feet per second



USGS science for a changing world

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WY 2018 streamflow conditions

Station	WY18 Annual Flow, in ac-ft	WY17 Annual Flow, in ac-ft	2018 as % of 2017	2018 as % of Average
Big Sandy Creek near Lamar	15,420	15,130	102%	154%
Base flow	11,660	10,870	107%	156%
Above Base flow	3,760	4,260	88%	104%
Wildhorse Cr. above Holly (Oct, Apr-Sept)	6,280	8,330	75%	178%
(April – Sept)	5,140	7,670	67%	189%
Frontier Ditch near Coolidge	7,530	6,800	111%	88%

USGS science for a changing world

10

Additional flow measurements

- During WY18, USGS made several discharge measurements at request of Colorado and Kansas
- Typically during releases from John Martin Reservoir
- USGS emails measurement results to Kansas and Colorado
- Excellent communication between the States and USGS

USGS science for a changing world

11

Summary

- WY18 streamflow in the main stem Arkansas River was below average upstream of JMR (53% at Las Animas) and above average downstream of JMR a 4 sites (104-121%)
- WY18 tributary flow was below average in the Apishapa and Purgatoire, and above average in Big Sandy and Wild Horse
- Streamflow in WY18 was greater than WY17 flow at 6 of 10 streamgages (exceptions; Arkansas Las Animas, and 3 tributaries; Apishapa, Purgatoire, Wild Horse)
- Upon request, USGS obtained additional discharge measurements at several sites during WY18

USGS science for a changing world

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Summary of streamflow at USGS/ARCA stations
Water Year 2018 (Oct 1, 2017 - Sept 30, 2018)

Station Number	Station Name	Period of record included in the long-term average (water years)	WY2018 Annual total flow, in acre-feet	WY2017 Annual total flow, in acre-feet	2018 as % of 2017	2018 as % of long-term average
07119500	Apishapa River near Fowler	1923-25, 1940-2018	15,490	33,010	47%	88%
07124000	Arkansas River at Las Animas	1975-2018	102,200	314,500	32%	53%
07128500	Purgatoire River near Las Animas	1978-2018	39,750	82,820	48%	91%
07130500	Arkansas River below John Martin Reservoir	1949-2018	245,100	214,700	114%	121%
07133000	Arkansas River at Lamar	1949-55, 1960-2018	91,510	81,880	112%	113%
07134100	Big Sandy Creek near Lamar	1969-82, 1996-2018	15,420	15,130	102%	154%
	Base flow	1996-2018	11,660	10,870	107%	156%
	Above Base flow	1996-2018	3,760	4,260	88%	104%
07134180	Arkansas River near Granada	1982-2018	122,900	114,300	108%	104%
07134990	Wildhorse Cr. above Holly, October, April-Sept	2002-18	6,280	8,330	75%	178%
	April – September	2002-18	5,140	7,670	67%	189%
07137500	Arkansas River near Coolidge, KS	1951-2018	159,300	154,100	103%	109%
07137000	Frontier Ditch near Coolidge, KS	1951-2018	7,530	6,800	111%	88%

Exhibit D

Annual Meeting

December 7, 2018

2018 ARCA ANNUAL MEETING CORPS OF ENGINEERS UPDATE

US ARMY CORPS OF ENGINEERS ALBUQUERQUE DISTRICT

Ryan Gronewold, P.E.
Chief, Planning Branch
Albuquerque District
7 December 2018

"The views, opinions and findings contained in this report are those of the authors(s) and should not be construed as an official Department of the Army position, policy or decision, unless so designated by other official documentation."

US Army Corps of Engineers

U.S.ARMY

File Name

1

1

OUTLINE

- 2018 Reservoir Operations
- Operation and Maintenance
  - Gabion Basket Removal;
  - Rip Rap Replacement; and
  - Stilling Basin Dewatering Project.
- Civil Works Projects
- Emergency Management Coordination

US Army Corps of Engineers

U.S.ARMY

2

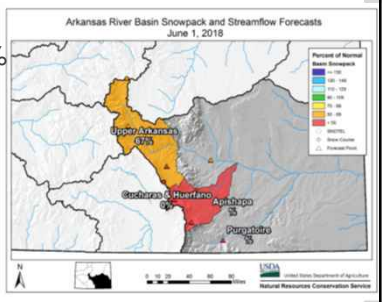
2

2018 RESERVOIR OPERATIONS

3

Snowmelt Runoff (June 1st Forecast)

- Upper Arkansas Basin Snowpack – 67% of median.
- Purgatoire River Basin Snowpack – 0% of median.
- Below normal snowpack
- No Flood Ops during 2018



Trinidad Dam Storage and Releases:

- Peak Storage = 39,388 af (Jan 21st, 2018)
- Peak Release = 150 cfs (May 16th, 2018)
- Total release = 32,050 af

John Martin Dam Storage and Releases:

- Peak Storage = 316,650 af (Mar 19, 2018)
- Peak Release = 1314 cfs (Jun 18, 2018)
- Total Release = 232,995 af

US Army Corps of Engineers.

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3

TRINIDAD DAM & RESERVOIR: GABION BASKETS

4

- Gabion baskets collapsed 10-12 May 2017 during Historic High Release Rate 2000 cfs
- Failure did not compromise the integrity of outlet structure
- Were removed March 2018.

4

TRINIDAD DAM AND RESERVOIR RIPRAP REPLACEMENT

5

- Replacement of deteriorated upstream embankment riprap
- Contract awarded September 2018.



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5

JOHN MARTIN RESERVOIR & DAM STILLING BASIN PROJECT

6

- Dewatering, dredging, and inspection
- First time since dam was constructed
- Contract awarded September 2018
- Contractor mobilized 25 October 2018
- Dewatering activities commenced on 5 November 2018, scheduled completion before April 1st, 2019.




6

7

CIVIL WORKS PROJECTS

Section 14 Emergency Streambank Protection

- **Fountain Creek at Highway 85/87 (El Paso County sponsor)**
  - Completed a project feasibility study along Fountain Creek at US Highway 85/87 Bridge and the Fountain Creek Regional Trail
  - Protect both banks from further erosion
  - Awaiting a decision from El Paso County to proceed to the design and implementation phase
- **Fremont County (Fremont Sanitation District sponsor)**
  - Protect the District's wastewater main and the adjacent Canon City Area Recreation and Parks District recreation trail

File Name

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7

8

EMERGENCY MANAGEMENT COORDINATION

Spring Creek Fire

- June & July 2018
- La Veta & Walsenburg, CO
- Burn scar (107,967 acres)
- Flood threat potential increased with reduced infiltration and increased runoff
- Hydrologic watershed analysis will determine flood risk and recommend flood risk management measures

File Name

US Army Corps of Engineers

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8

Arkansas River Basin

US Army Corps of Engineers®
Albuquerque District

Report of Civil Works Activities for 2018

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Contents

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1. General

During Water Year 2018 (1 November 2017 – 31 October 2018), activities of the U.S. Army Corps of Engineers (USACE), Albuquerque District, in the Arkansas River Basin consisted of dam safety activities, water operations, civil works, flood risk management, regulation under Section 404 of the Clean Water Act, and wildfire response and post fire flooding concerns.

2. Dam Safety

a. Trinidad Lake

The Trinidad Annual Inspection was completed 11 July 2018 and the report has been prepared in accordance with ER 1110-2-1156, Safety of Dams – Policy and Procedures, Chapter 11 and Appendix V. The findings and recommendations include determining if emergency gates should be fully open during service gate releases, placement of additional erosion protection at corners of flip bucket training walls, remediating all lead paint in the tower, cleaning and repairing a spall on the exterior of the tower at elevation 6189 ft, working with Safety Office to mitigate concerns for radon in the tower, replacing the sump pump with a new submersible pump, and wire-brushing and painting rusty spots on the bulkhead.

An Issue Evaluation Study (IES) for Trinidad Dam was completed in May 2018. The study reassessed the risks associated with the dam and lowered the risk rating.

b. John Martin Reservoir

The John Martin Annual Inspection was completed 23 May 2018 and the report has been prepared in accordance with ER 1110-2-1156, Safety of Dams – Policy and Procedures, Chapter 11 and Appendix V. The findings and recommendations include dredging the upstream face of dam so the bulkheads can be placed and replacement of the bulkhead stops for conduits 1 and 2. It is also recommended that the gates and crane monorail webbing be repainted, conduits inspected, and a portable backup generator purchased.

The John Martin Dam Semi-Quantitative Risk Assessment (SQRA) kicked off on 1 June 2018. Albuquerque District will work with Great Lakes and Ohio River Division risk cadre based out of Louisville District. During the March 2014 Periodic Assessment (PA), it was recommended that an Issue Evaluation Study be completed for both John Martin Dam and the Fort Lyon Protective Works.

The primary concerns identified during the 2014 PA for John Martin Dam include overtopping/overwash of the south wing dam, global instability of the south wing dam and internal erosion in the foundation of the main embankment and south wing dam. The primary concerns for the Fort Lyon Protective Works include overtopping/overwash of the embankment, internal erosion along the conduit and internal erosion along the embankment/foundation contact.

3. Water Control Operations

In 2018, the Arkansas Basin snowmelt runoff was below normal throughout the entire basin. As of June 1st, the basin wide snowpack was below average at 60% of median with the Upper Arkansas Basin reporting 67% of median and the Purgatoire River Basin reporting 0% of median. As of end of May, reservoir storage for John Martin Reservoir was 189% of average compared to 156% last year. For Trinidad, reservoir storage was 103% of average compared to 129% last year.

Figure 1: Trinidad Lake, 2017. USACE photograph

Storage at Trinidad Dam peaked at 39,388 acre-feet (elevation of 6206 ft) on 21 January 2018 and the maximum release was about 150 cfs on 16 May 2018. Storage peaked at 316,647 acre-feet (elevation of 3,849.8 ft) at John Martin Dam on 18 March 2018, and the maximum release was about 1,314 cfs on 18 June 2018. USACE did not operate for flood control at Trinidad, John Martin, or Pueblo Reservoirs in 2018. For Water Year 2018, total inflow for Trinidad Reservoir was 21,868 acre-feet and total outflow was 32,045 acre-feet. Total inflow for John Martin Reservoir was 170, 383 acre-ft and total outflow was 232,995 acre-ft.

a. Trinidad Lake

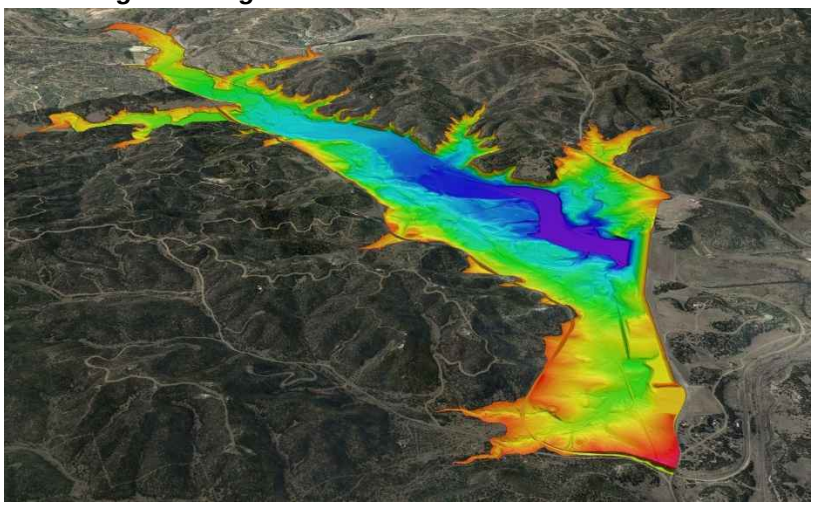
In 2018, several projects were completed at Trinidad Lake that focused on extending the life of the facilities: A new USGS auxiliary gage was installed; a bathymetric survey was completed June 2018; the collapsed gabion baskets were removed; and the Water Control Manual was revised and implemented. A contract was awarded in September 2018 to replace a section of deteriorated upstream embankment riprap. In addition, the Trinidad 10-Year Review for the period 2005 through 2014 was finalized.

To accurately measure high releases (above 800 cfs) from Trinidad dam, the USGS installed a new auxiliary stream gage about 1000 ft downstream of the current gage located at the flip bucket (Purgatoire River below Trinidad Lake, CO, 07124410). The current gage will continue to be used for lower releases, less than 800 cfs.

The bathymetric survey was done by the St Louis District Hydrologic Team from 13 – 20 June 2018. The purpose of the survey is to determine available storage volume capacity and amount of accumulated sediment since the previous 2009 survey. A new Area Capacity Table will be developed with an anticipated implementation date of November 2019. There have been five (5) sediment surveys since 1977. They were completed in 1986, 1994, 1997, 2009 and 2018. Based on previous sediment surveys, total accumulated sediment (1977 to 2009) is 6,400 acre-ft with an average rate of

about 200 acre-ft per year. Total reserved space for sediment in Trinidad Lake is 39,000 acre-ft, of which 32,000 acre-ft was remaining as of 2009 survey.

Figure 2: Digital Elevation Model for Trinidad Dam



The gabion baskets that collapsed 10-12 May 2017 with releases between 1176 cfs and 2000 cfs were removed by Trinidad and John Martin Lake personnel to ensure future releases meet downstream safe channel capacity. The gabion baskets were intended to provide channel bank erosion protection. Their failure did not compromise the integrity of the outlet structure.

Figure 3: Photo courtesy of Nick Young, USGS

In 2017, the Trinidad Water Control Manual was reviewed and updated to include hydrologic data, operating and reporting procedures, and general project information such as recreation and watershed characteristics. No changes were made to the Water Control Plan. The new manual was revised in November 2017 and implemented in February 2018 after agency review.

The United States Bureau of Reclamation conducted a 10-year review for the period 2005 through 2014 as it pertains to the Trinidad Operating Principles, Article VI and State of Kansas Condition 4 per Arkansas River Compact Administration (ARCA) Resolution No. 2014-2. Previous reviews were completed in 1988, 1996 and 2010. The purpose of the 10-year review is to obtain optimum beneficial use of the water available to the project consistent with the laws and policies of the State of Colorado and the United States including the Arkansas River Compact. The report was finalized July 2018.

The annual meeting for the next 10-Year review (2015-2024) was on 5 October 2018. The stakeholders presented data from 1 October 2017 through 30 September 2018 that included review of project operations, climate and hydrologic data, accounting summary, discussion on agency lead for annual meeting, sedimentation, irrigation requirement vision and the ArkDSS modeling update.

b. John Martin Reservoir

A bathymetric survey of both the reservoir and stilling basin was completed December 2017 to determine the volume of accumulated sediment in the lake and stilling basin. Periodically sediment passing through the dam collects in the stilling basin and it needs to be periodically dredged out as part of the dam's maintenance operations. The accumulated sediment in the stilling basin was estimated to be approximately 60,000 cubic yards. The lake survey will be used to determine accumulated sediment and a new Area-Capacity curve will be developed in Fiscal Year 2019.

In September 2018, the contract for the stilling basin dewatering, dredging and inspection project was awarded. The stilling basin below the dam at John Martin Reservoir covers approximately twelve (12) acres and serves as an energy dissipater as water in the lake passes through the dam under pressure and then is slowed by concrete baffles built into the stilling basin structure. The baffles and floor of the stilling basin will be inspected for the first time since the dam was constructed by dewatering, dredging, and sediment removal. The scope of work includes mobilization of equipment to the site and preparations for and removal of sediment within the stilling basin. Pre-construction submittals have been completed by the contractor and the contractor started mobilization on 25 October 2018. Dewatering activities of the stilling basin commenced on 1 November 2018.

4. Operations and Maintenance

a. Trinidad Lake

During 2018, several projects were completed at Trinidad Dam as described below:

a. A new security camera was installed and wired at the tower bridge entry from the dam road and a larger security surveillance monitor was installed in the Project Office. Vegetation was removed to avoid any potential structural impacts to the engineered fill of the earth embankment dam. Vegetation was also trimmed to create line of sight for USGS gages from primary gage at the flip bucket to the auxiliary gage approximately 1000 feet downstream. A contract was awarded in September 2018 to repave the Visitor Center/administration area parking lot; paving will take place in the spring of 2019, depending on weather. The service bridge inspection was completed May 2018.

b. The ADA accessible features include renovated restroom facilities, installation of an ADA-compliant water fountain, a new access door for administration area, a security barrier between the Visitor Center and the administrative office, and replacement ADA-compliant entry door actuators. Construction will take place during November and December 2018.

c. The slope stabilization project will protect banks upstream of the south shore area from erosion during high lake elevations. Work is being performed by the Bureau of Land Management through an interagency agreement. Areas of the site disturbed by construction activities will be seeded. Those areas include temporary access roads, borrow area, staging areas, and embankment fill not covered by slope protection.

d. Sediment accumulation near the control tower is being investigated because it is impossible to read the lake staff gauge at elevations below 6,164 ft. Since the staff gauge is an important tool for verifying the lake elevations, dredging will be completed when lake elevation is at 6,150 ft or lower. The work will be scheduled after irrigation season ends since the lake will most likely be at its lowest elevation and water operations will not be affected.

b. John Martin Reservoir

During 2018, several operations and maintenance projects were completed at John Martin Dam as described below:

a. In May 2018, three (3) tainter gates were inspected as part of the Inspection of Hydraulic Steel Structure program per ER 1110-2-8157. Eight more tainter gates will be inspected at John Martin Dam in Fiscal Year 2019.

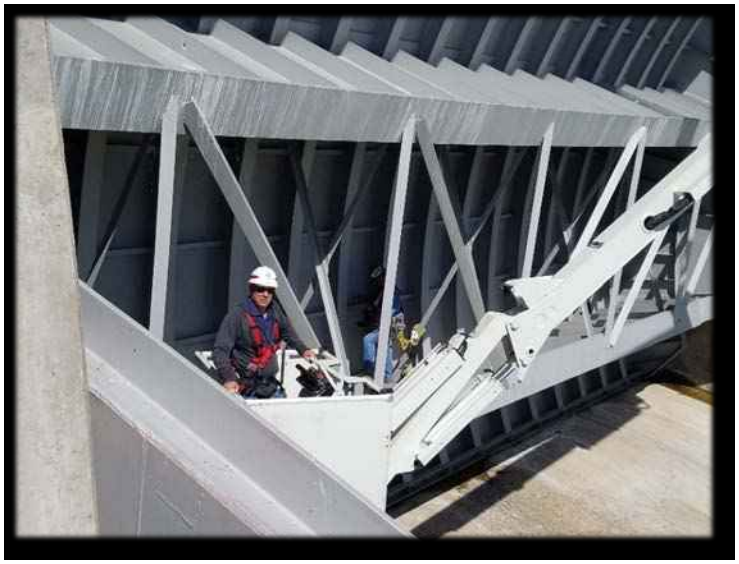


Figure 4: Lance Faerber (SPA-EDCFS) carefully maneuvers the snooper bucket to give contractor access to the downstream side of Tainter Gate #10

Figure 5: Upstream view of Tainter Gate #1

b. A contract for vegetation removal and herbicide application was awarded in April 2018. The work includes permanent removal of vegetation on dam face and groins so that regrowth does not occur and application of a herbicide with a dye on all vegetation. The spillway bridge inspection was completed May 2018.

c. In 2018 US Army Corps of Engineers (USACE) finalized the update and revision of John Martin Reservoir's Master Plan, which was last updated in 1974. A Master Plan is "the strategic land use management document that guides the comprehensive management and development of all project recreational, natural and cultural resources throughout the life of the water resource development project". In general, it focuses on all USACE fee-owned land including easements, licenses, and leases at John Martin Reservoir. The Master Plan does not address the technical operational aspects of the lake with respect to flood risk management.

   The process started with a Public Meeting held on 27 October 2016 in Lamar, Colorado to describe the Master Plan and its purpose. A second meeting was held on 16 February 2017 to discuss the overall goals for resources, review current and future land classifications and public/agency comments in view of the goals. The final draft Master Plan and Environmental Assessment with the accompanying Finding of No Significant Impact (FONSI) was made available for public and agency review online beginning 09 February 2018 and remained open for public and agency review through 12 March 2018. Upon incorporation of public comments, the Master Plan was finalized in June, 2018.

5. Civil Works

a. Continuing Authorities Program

The Continuing Authorities Program (CAP) is a group of nine legislative authorities under which the Secretary of the Army, acting through the Chief of Engineers, is authorized to plan, design, and implement certain types of water resources projects without additional project-specific congressional authorization. USACE had one active CAP project in the Arkansas River Basin in 2018.

Section 205

Section 205 of the 1948 Flood Control Act, as amended, provides authority to USACE to plan and construct small flood damage reduction projects that have not been specifically authorized by Congress. USACE conducted a preliminary investigation along Fountain Creek above Manitou Springs and Colorado Springs in an area that experiences significant risk of flooding. The investigation concluded that the Section 205 authority was not appropriate due to the magnitude and complexity of potential flood risk solutions. The project was terminated in June, 2018.

Section 14

Section 14 of the 1946 Flood Control Act, as amended, provides authority for USACE to plan and construct emergency stream bank protection projects to protect endangered highways, highway bridge approaches, public facilities such as water and sewer lines, churches, public and private nonprofit schools and hospitals, and other nonprofit public facilities. USACE and El Paso County have completed a Section 14 project feasibility study along Fountain Creek at US Highway 85/87 Bridge and the Fountain Creek Regional Trail. The project objective is to protect both banks from further erosion. The project has been suspended awaiting a decision from El Paso County to proceed to the design and implementation phase.

A new start Section 14 project with the Fremont Sanitation District, Fremont County, is scheduled to begin in November 2018. The objective of the project will be to repair and prevent further erosion of the south bank of the Arkansas River to protect the District's wastewater main and the adjacent Canon City Area Recreation and Parks District recreation trail.

b. Investigations Program

The USACE Investigations Program includes specifically authorized studies for comprehensive solutions to large complex problems relating to flooding, ecosystem restoration, loss of land and property, floodplain management, and watershed planning and analysis. The Investigations program consists of two phases: the feasibility study phase, and the pre-construction engineering and design (PED) phase. The feasibility study is used to investigate the Federal interest, engineering feasibility, economic justification and environmental acceptability of a recommended water resources project, and results in a feasibility report. The feasibility report is the document on which congressional authorization for PED and Construction is based. During the pre-construction engineering and design phase, development of the first construction contract bidding package can be completed while waiting for congressional construction authorization. If the project is authorized for construction by Congress, USACE and the project sponsor can move forward with the remaining detailed design and construction. USACE had no active Investigations or Construction projects in the Arkansas River Basin in 2018.

6. Flood Risk Management Program

USACE established the National Flood Risk Management Program (FRMP) in May 2006 to integrate and synchronize USACE activities, both internally and with counterpart activities of the Department of Homeland Security, Federal Emergency Management Agency (FEMA), other Federal agencies, state organizations, and regional and local partners and stakeholders. The USACE Levee Safety Program was authorized in WRDA 2007 and established by the National Levee Safety Act of 2007. The Inspection of Completed Works/Rehabilitation Program (ICW/RP) is the USACE program that provides for the inspection and rehabilitation of Federal and non-Federal flood risk management projects within the RP.

An additional component of FRMP is the Silver Jackets Program, which is part of the National Flood Risk Management Program. The Silver Jackets Program proposes establishing an interagency team in each state with a representative from FEMA, USACE, the State National Flood Insurance Program Coordination Office, and the State Hazard Mitigation Office as standing members and lead facilitators. The lead FRMP Manager for the formation of the Silver Jackets Program in Colorado and the Arkansas River Basin resides in the USACE Omaha District, and the Albuquerque District performs a support role.

The Colorado Silver Jackets team was officially created in 2013. The team consists of four USACE Districts that include the Sacramento, Albuquerque, Kansas City, and Omaha Districts. The State of Colorado is represented by the Colorado Water Conservation Board as well as the Colorado Department of Homeland Security. FEMA Region 8 is also part of the State team. USACE had no active Silver Jackets projects in 2018 within the Arkansas River Basin.

7. Regulatory Program

USACE regulates Section 404 of the Clean Water Act for the discharge of dredged or fill materials into waters of the United States, including wetlands. USACE reviewed a total of 146 activities in the Arkansas River Basin during Water Year 2018. All activities were authorized by general (Regional or Nationwide) permits. General permits, which typically involve minimal delays and paperwork, are activity-specific permits that are issued for projects that have minimal impact on the aquatic environment.

USACE issued permits for post wildfire activities including the removal of sediment and debris, stream restoration, bank stabilization, and flood prevention activities related to the Waldo Canyon, Hayden Pass, Junkin, Beulah Hills, and Spring Fire in Fountain Creek, Hardscrabble Creek, Arkansas River, Cuchara River, Huerfano River and St Charles River (and tributaries) in Custer, El Paso, Fremont, Pueblo, and Teller Counties.

Persons or agencies who are planning to conduct work activities in any waterway in the basin are advised to contact the Southern Colorado Regulatory Office, 201 W. 8th Street, Suite 350, Pueblo, Colorado 81003 or telephone 719-744-9119. Information, including all public notices, is also available on the USACE Albuquerque District web home page at: http://www.spa.usace.army.mil/reg.

8. Emergency Management Coordination

Public Law 84-99 provides USACE with the authority to assist state and local governments before, during, and after flood events. In the Arkansas River Basin, USACE works with the State of Colorado Division of Homeland Security and

Emergency Management and the Colorado Water Conservation Board to prepare for flood fight activities in years with significant snowpack and spring snowmelt runoff.

Spring Creek Fire

The Spring Creek fire was a large wild land fire occurred within the Arkansas River Basin watershed in 2018. This fire has created a burn scar which will have potential long-term impacts to the watershed. The flood threat potential from the burn scars has been significantly increased from the Pre-fire to Post-fire conditions as a result of the denuded watershed with reduced infiltration and increased runoff. Both moderate and high intensity burns during the Spring Creek Fire produced hydro-phobic soils and greatly increased the runoff potential for the area. The loss of vegetation in the heavily burned areas will add to the runoff potential. The Spring Creek Fire burn scar (107,967 acres) is near the community of La Veta, and Walsenburg, CO in Huerfano County. The Spring Fire burn scar has created an unusual and imminent threat of flooding and debris flows. Albuquerque District's Readiness and Contingency Operations Office (RCO) and Hydrology and hydraulics (H&H) will provide technical assistance to the Colorado Division of Homeland Security and Emergency Management (CDHSEM), by performing hydrologic and hydraulic watershed modelling which was initiated in Oct 2018 and is expected to be completed in 6 months.

Assistance can be obtained by contacting the U.S. Army Corps of Engineers, Albuquerque District, Readiness and Contingency Operations Office, 6200 Jefferson Street NE, Albuquerque, New Mexico 87109-3435 or telephone 505-342-3686 during our normal business hours between 7 am and 4 pm, weekdays.

Exhibit E

Annual Meeting

December 7, 2018

RECLAMATION

Managing Water in the West

Arkansas River Compact Administration Meeting

2018 Report

Roy Vaughan
Facility Manager
Pueblo Dam

U.S. Department of the Interior
Bureau of Reclamation

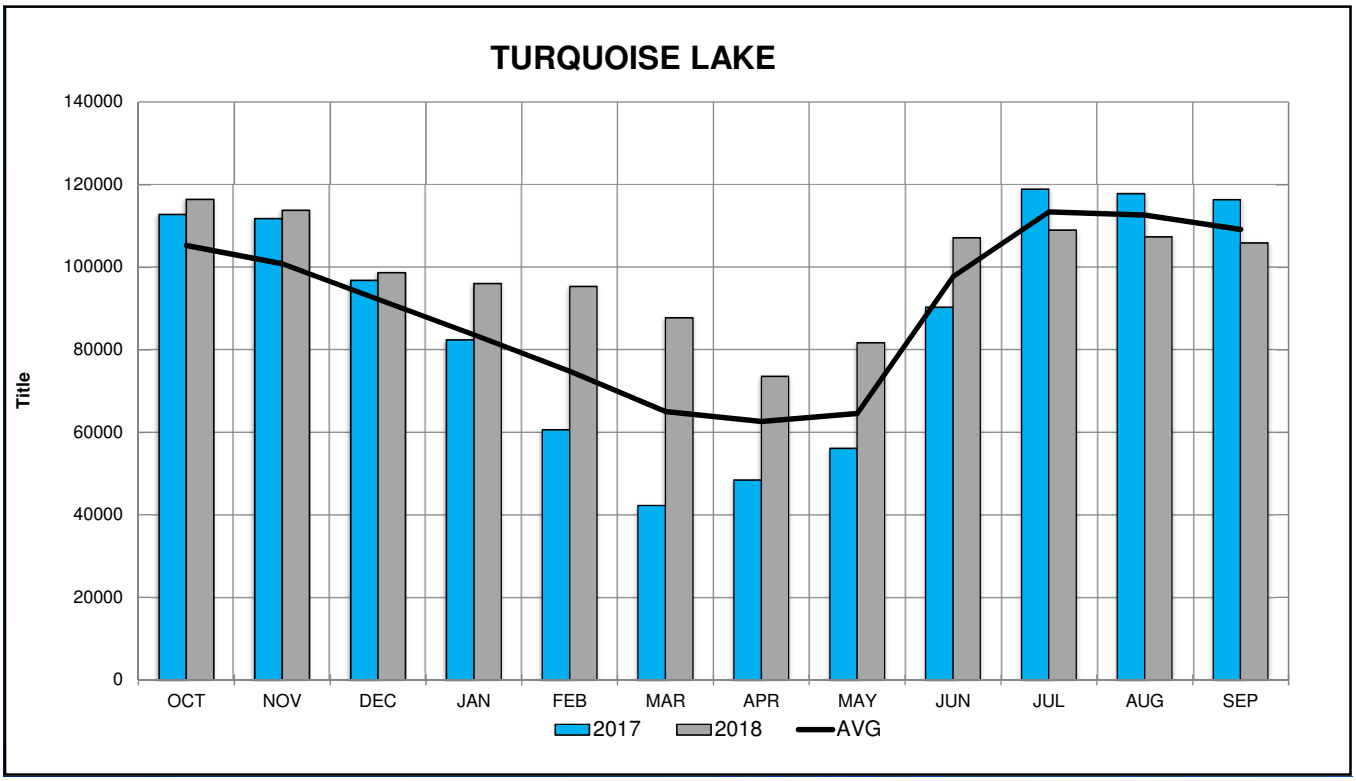
1

Fry-Ark Project 2018 Water Year

- Imports were well below average at 39,100 AF. That is approximately 70% of our 40 year average.
- This is after 4 years of above average imports
- Snowpack in the collection system was a little below average for most of the winter
- The collection system opened April 14. Runoff peaked in June and continued to the beginning of August.

RECLAMATION

2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2017
2018
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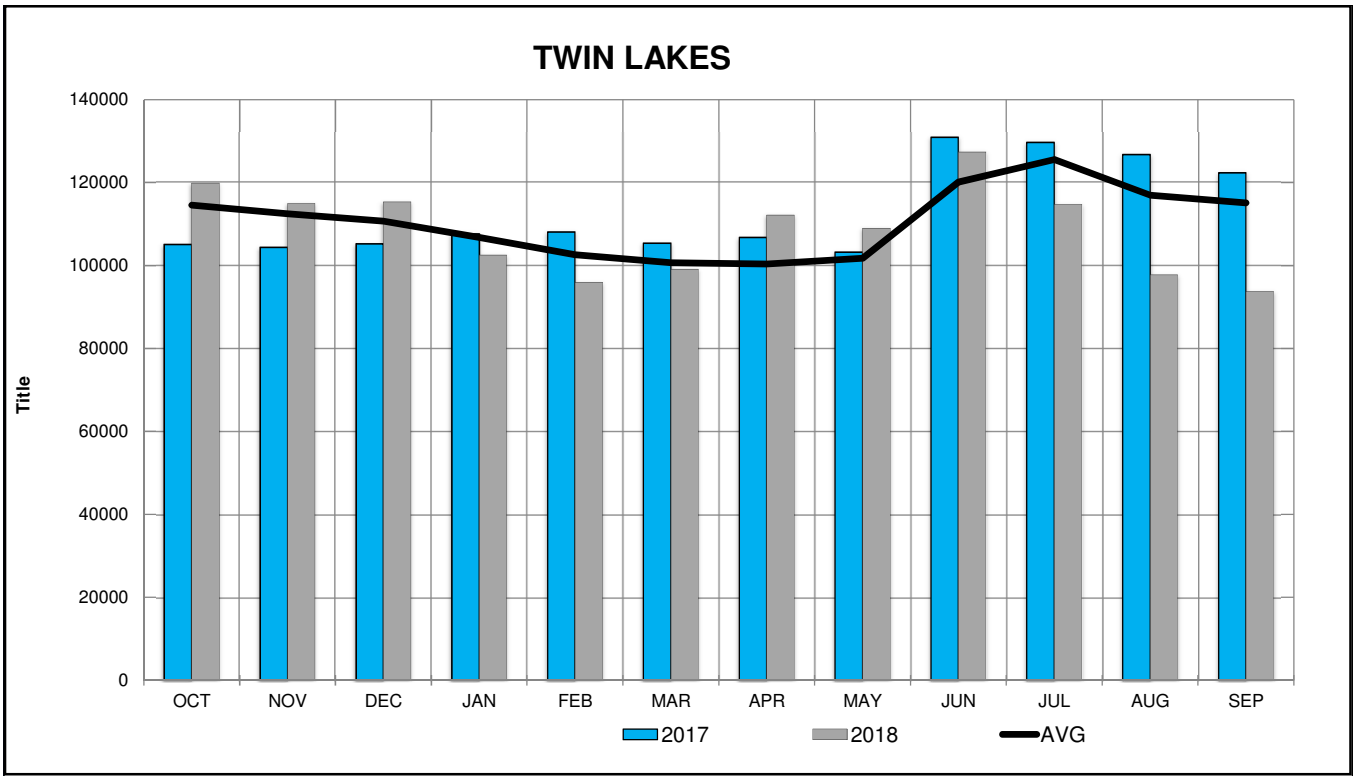
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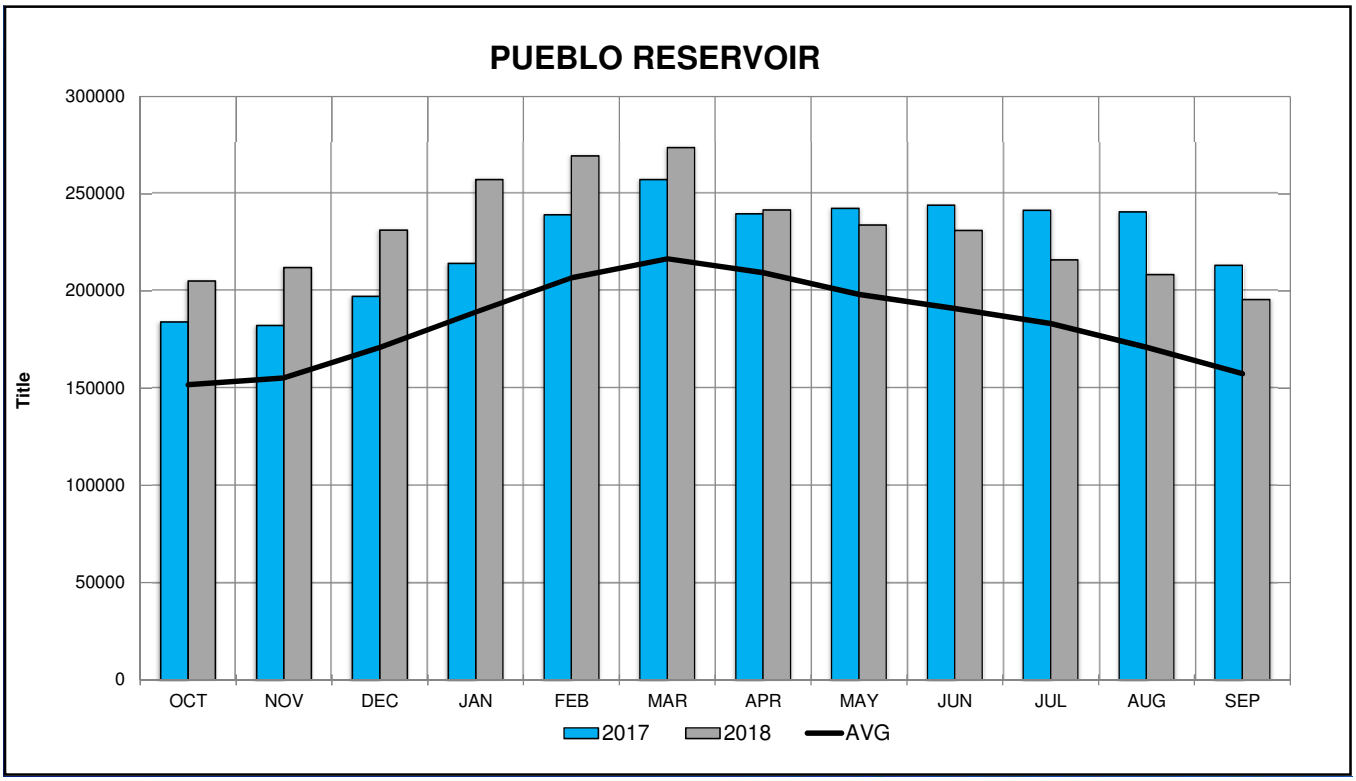
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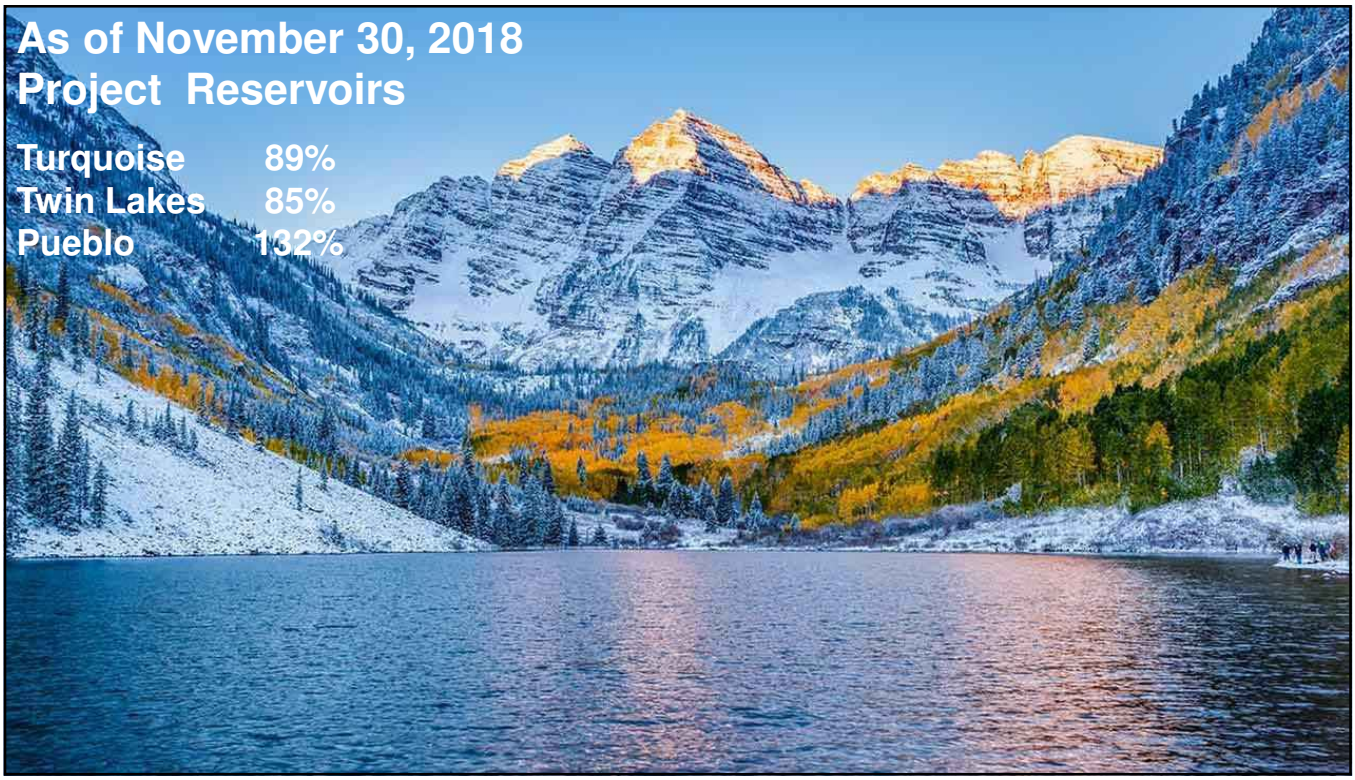
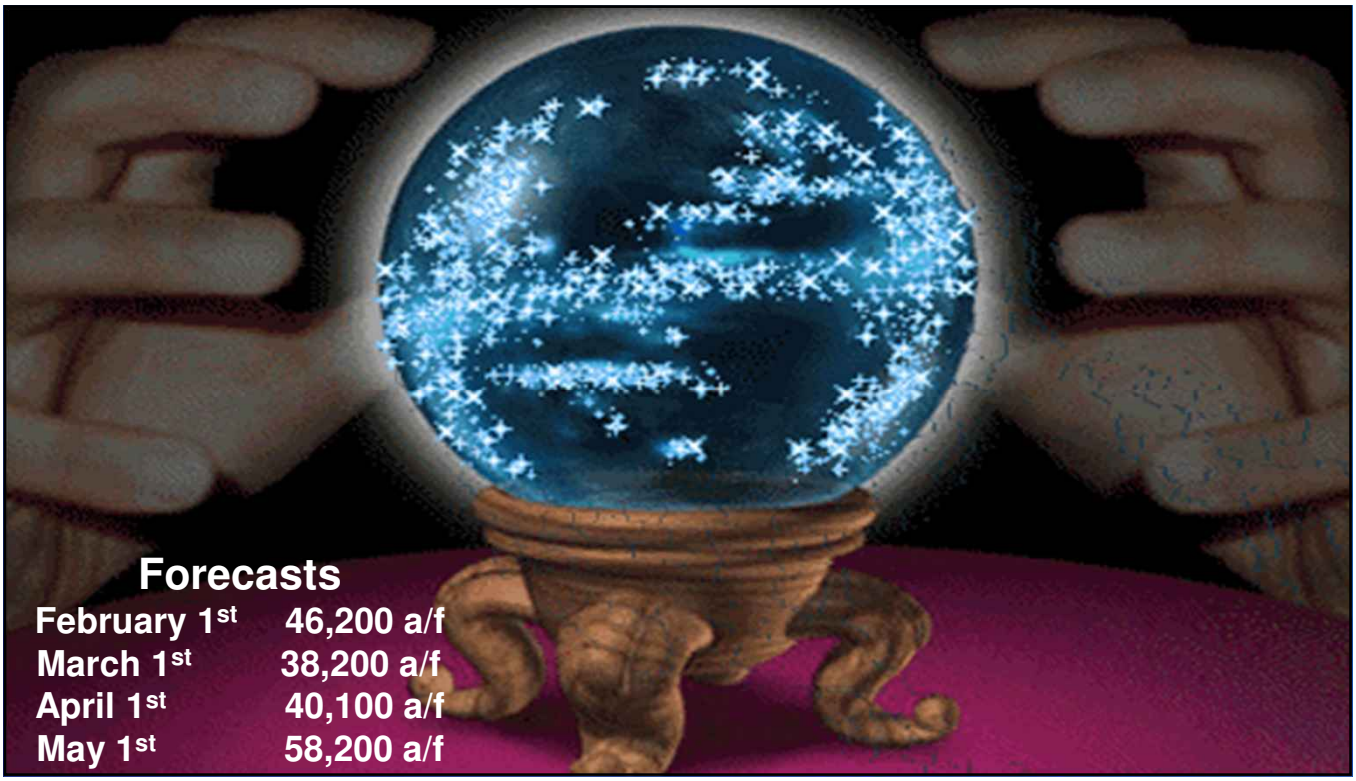
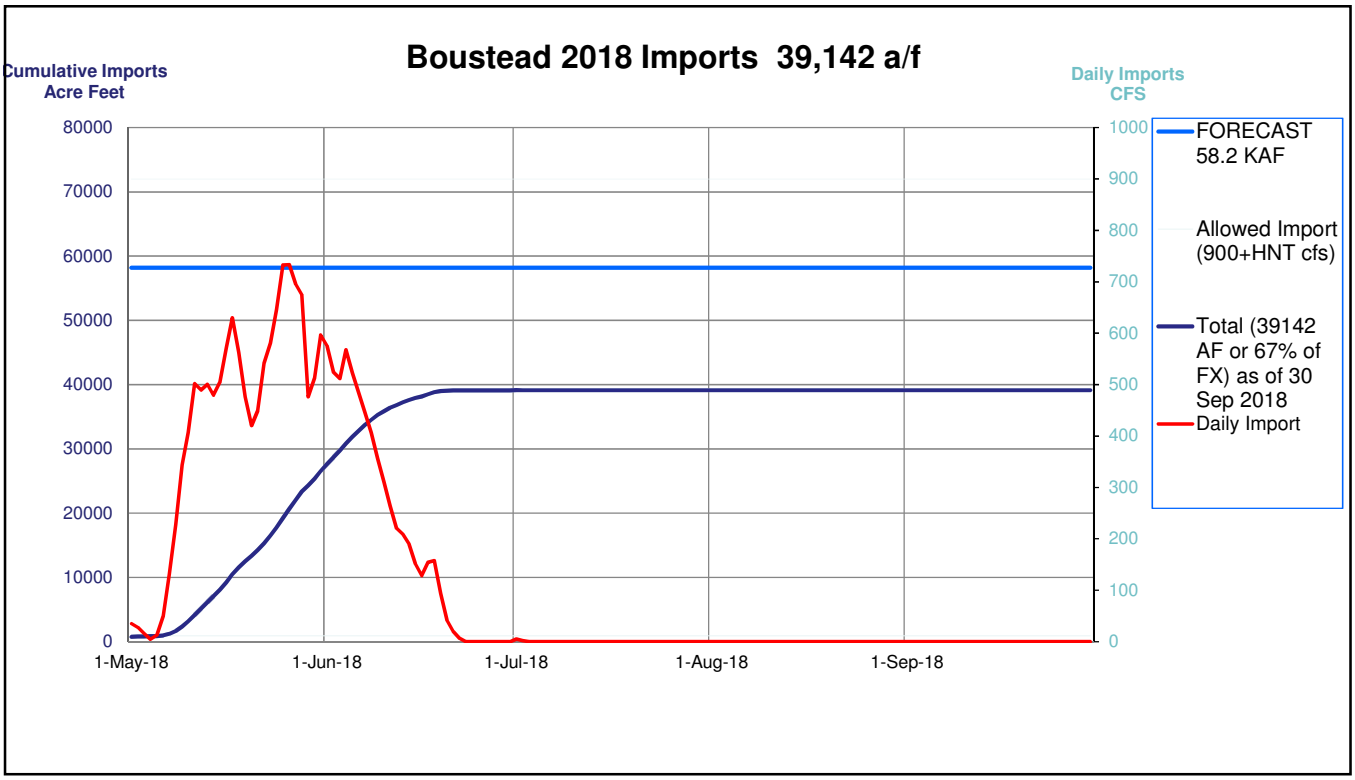

As of November 30, 2018
Project Reservoirs
Turquoise 89%
Twin Lakes 85%
Pueblo 132%

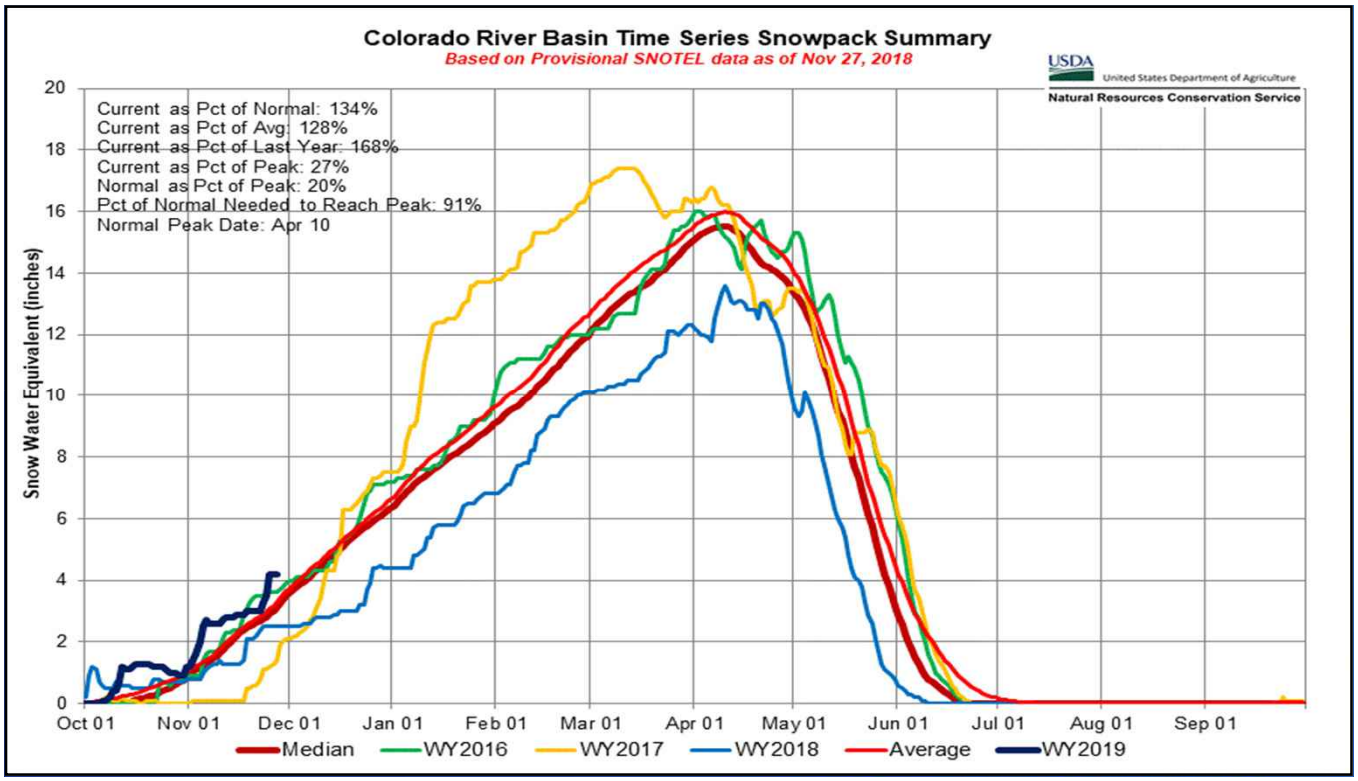
6


Forecasts
February 1st 46,200 a/f
March 1st 38,200 a/f
April 1st 40,100 a/f
May 1st 58,200 a/f

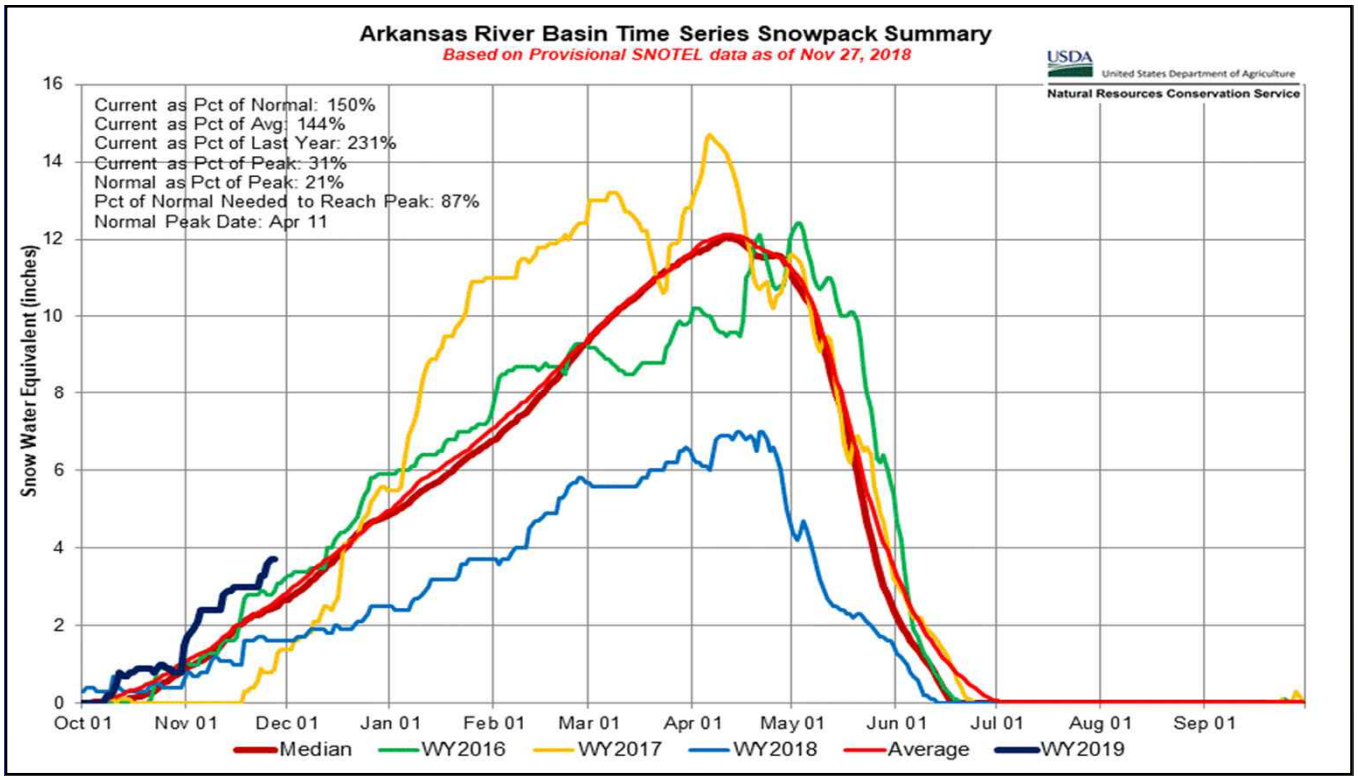
7


Boustead 2018 Imports 39,142 a/f
Cumulative Imports Acre Feet
Daily Imports CFS
80000
70000
60000
50000
40000
30000
20000
10000
0
1000
900
800
700
600
500
400
300
200
100
0
1-May-18
1-Jun-18
1-Jul-18
1-Aug-18
1-Sep-18
FORECAST 58.2 KAF
Allowed Import (900+HNT cfs)
Total (39142 AF or 67% of FX) as of 30 Sep 2018
Daily Import

8


Colorado River Basin Time Series Snowpack Summary
Based on Provisional SNOTEL data as of Nov 27, 2018
USDA United States Department of Agriculture
Natural Resources Conservation Service
Current as Pct of Normal: 134%
Current as Pct of Avg: 128%
Current as Pct of Last Year: 168%
Current as Pct of Peak: 27%
Normal as Pct of Peak: 20%
Pct of Normal Needed to Reach Peak: 91%
Normal Peak Date: Apr 10
Snow Water Equivalent (inches)
0
2
4
6
8
10
12
14
16
18
20
Oct 01
Nov 01
Dec 01
Jan 01
Feb 01
Mar 01
Apr 01
May 01
Jun 01
Jul 01
Aug 01
Sep 01
Median
WY2016
WY2017
WY2018
Average
WY2019

9


Arkansas River Basin Time Series Snowpack Summary
Based on Provisional SNOTEL data as of Nov 27, 2018
USDA United States Department of Agriculture
Natural Resources Conservation Service
Current as Pct of Normal: 150%
Current as Pct of Avg: 144%
Current as Pct of Last Year: 231%
Current as Pct of Peak: 31%
Normal as Pct of Peak: 21%
Pct of Normal Needed to Reach Peak: 87%
Normal Peak Date: Apr 11
Snow Water Equivalent (inches)
0
2
4
6
8
10
12
14
16
Oct 01
Nov 01
Dec 01
Jan 01
Feb 01
Mar 01
Apr 01
May 01
Jun 01
Jul 01
Aug 01
Sep 01
Median
WY2016
WY2017
WY2018
Average
WY2019

10

Winter Operations

- Currently releasing minimum flows requirements from Twin and Turquoise to Pueblo.
- We anticipate moving a total of 60,000 AF from our upper reservoirs to Pueblo.
- Movement of water will be adjusted according to the forecast and customers needs.

RECLAMATION

11

Hydro Plant Update

- The Lease of Power Privilege has been finalized with SECWCD.
- Reclamation has approved the design, specifications, and submittals for phase 1 & 2 and is currently reviewing the final phase.
- Construction on the Hydro plant began in September 2017 and completion is set for January 2019.

RECLAMATION

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14

Temporary Excess Capacity Storage Contracts EA

- Required for the Fryingpan-Arkansas Project's Temporary Excess Capacity Program to continue .
- The document is available online at: https://www.usbr.gov/gp/ecao/nepa/fryark.html.
- For additional information or questions, please contact Terence Stroh at: tstroh@usbr.gov.

RECLAMATION

15

New Long Term Storage Contracts

- Reclamation plans to enter into a 40-Year Excess Capacity Storage and Conveyance Contract with the Donala Water and Sanitation District for the use of excess capacity in Pueblo Reservoir. The Draft Environmental Assessment has been completed. For additional information please contact Robert Rice at: rrice@usbr.gov.
- Reclamation plans to enter into a 40-Year Excess Capacity Storage contract with the Bureau of Land Management for the use of excess capacity in Pueblo Reservoir. The Draft Environmental Assessment has been completed. For additional information please contact Robert Rice at: rrice@usbr.gov.

RECLAMATION

16

Master Storage Contract

- The Long Term Excess Capacity Master Contract Environmental Impact Statement has been completed and the Record of Decision was signed.
- The Master Contract was executed with the SECWCD and utilization of storage begin in 2017. For additional information please contact Robert Rice at: rrice@usbr.gov.

RECLAMATION

17

Arkansas Valley Conduit

- The Arkansas Valley Conduit Environmental Impact Statement has been completed and the Record of Decision was signed.
- Contract to study Regionalization was awarded in September 2018 to CDM Smith. Feasibility Study Reports and Cost Estimates are expected by March 2020.
- The TSC is currently working on final design for the "Boone Reach" with expected completion in late 2020.
- Reclamation, SECWCD, and Pueblo Water are currently holding technical sessions to discuss a potential contract for conveyance of AVC water through Pueblo Water's infrastructure.
- For questions specific to the project, please contact

Sam Breverman at: sbraverman@usbr.gov

RECLAMATION

18

Southern Delivery System

- SDS is a $1.1 billion dollar project by Colorado Springs, Security, Fountain, and Pueblo West to build a 62-mile pipeline from Pueblo Dam with a capacity of 96 mgd.
- Phase 1 is complete and the delivery of water commenced April 28, 2016.
- Fountain Creek Diversion and Pinello Ranch Mitigation Projects were completed in 2017.
- Land acquisition for the Gary M. Bostrom Reservoir (Formerly Williams Creek Reservoir) is ongoing and will be completed in 2019 with construction (SDS Phase 2) to begin in 2029.
- No schedule has been discussed for the construction of the Williams Creek Reservoir Visit: ***http://www.sdswater.org***

RECLAMATION

19

Mussels

- Facility assessment for the Fry-Ark are complete.
- The action response plans are complete.
- To date we have found no adults on substrate samples, and results were negative this year for mussel larvae Pueblo Reservoir.
- For a copy of the Pueblo assessment/findings reports please contact: Pat McCusker at: ***PMcCusker@usbr.gov***

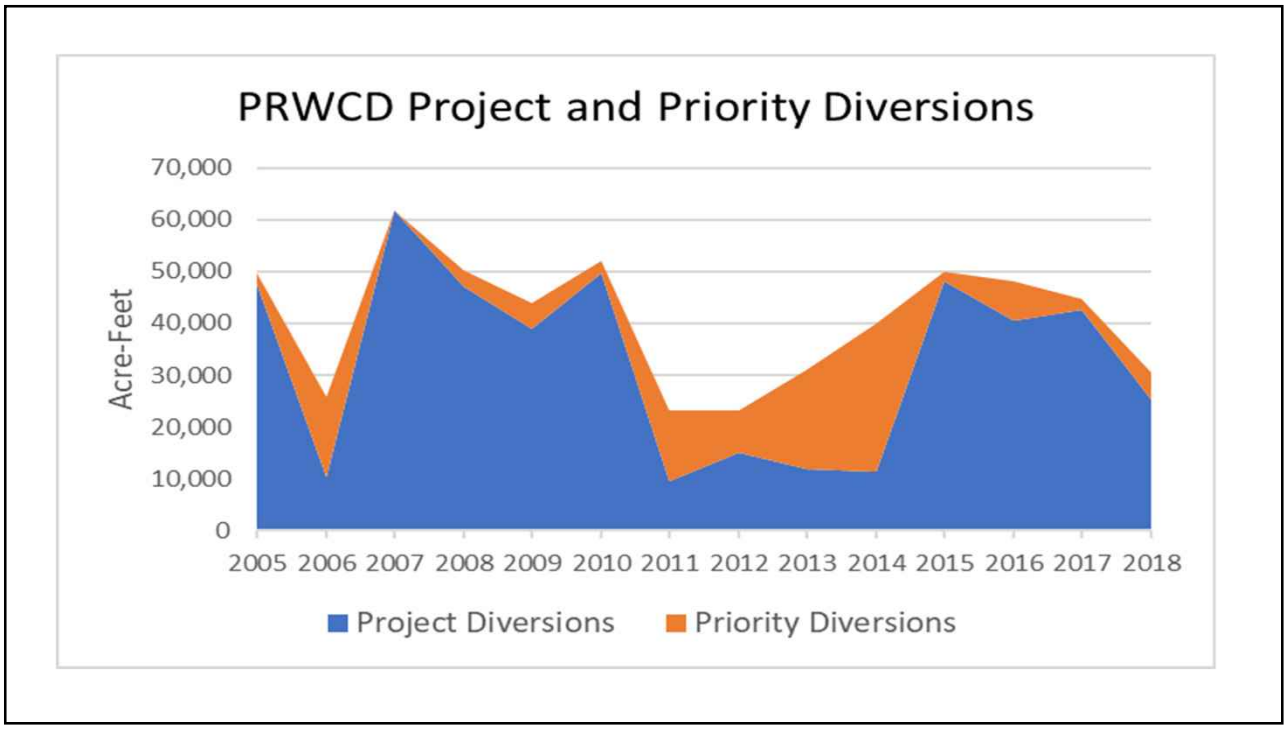
RECLAMATION

20

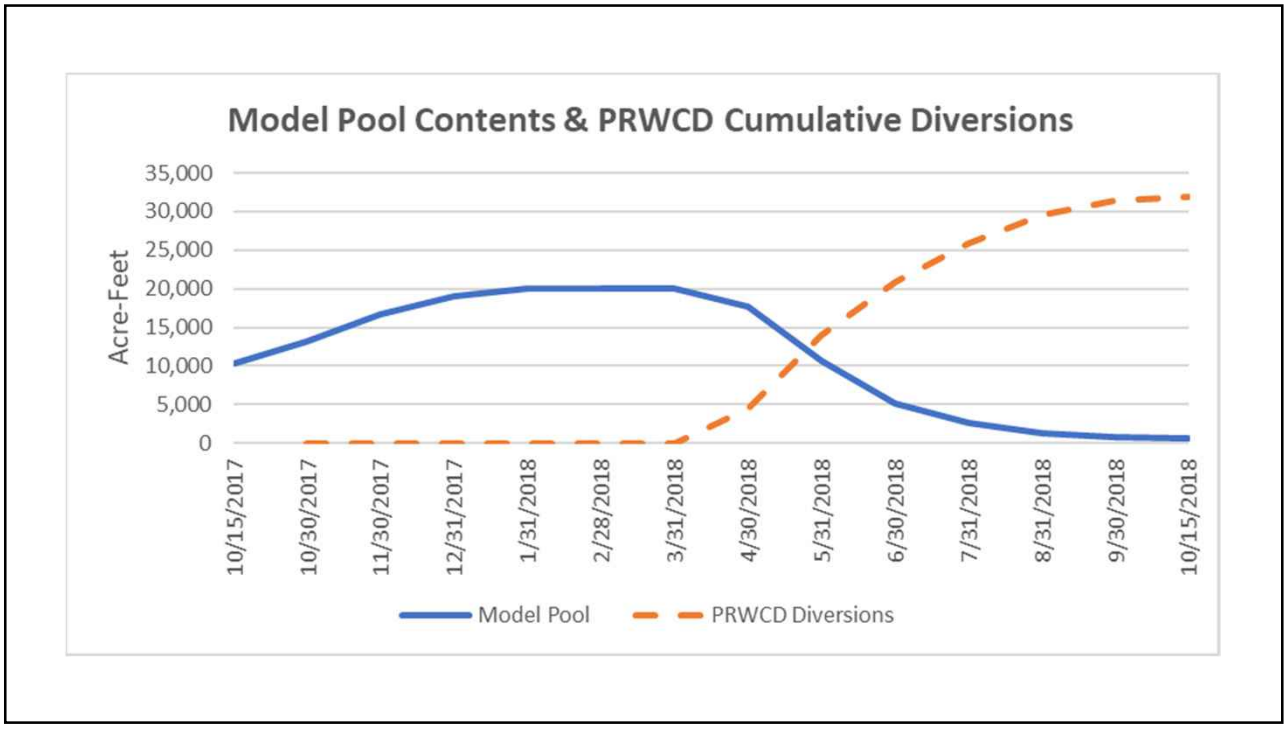
Exhibit F

Annual Meeting

December 7, 2018

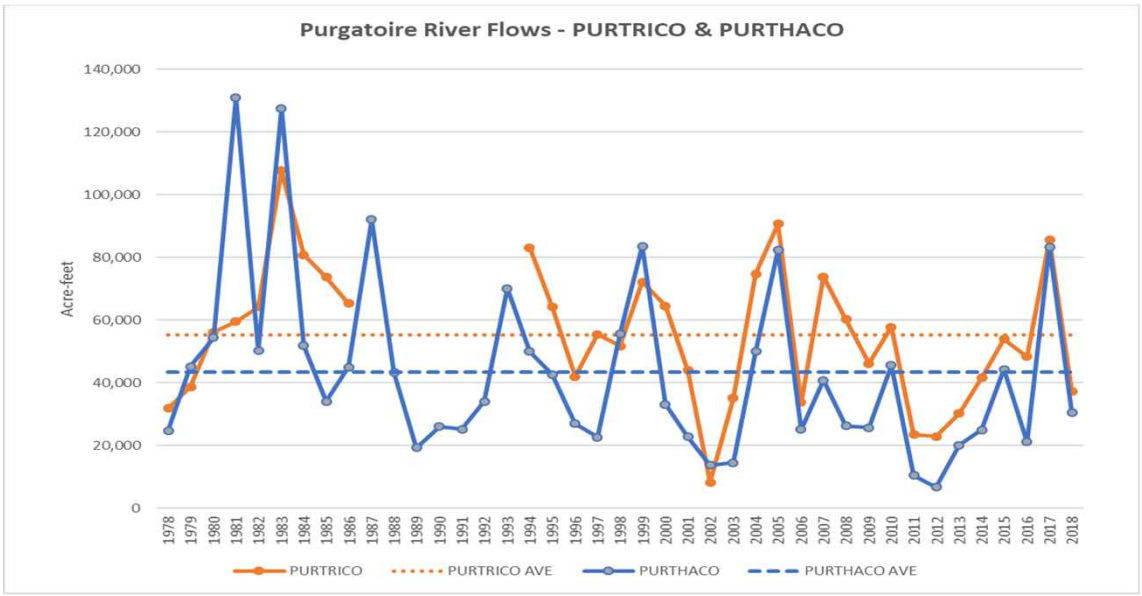

PRWCD Project and Priority Diversions
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Acre-Feet
2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018
Project Diversions
Priority Diversions

1

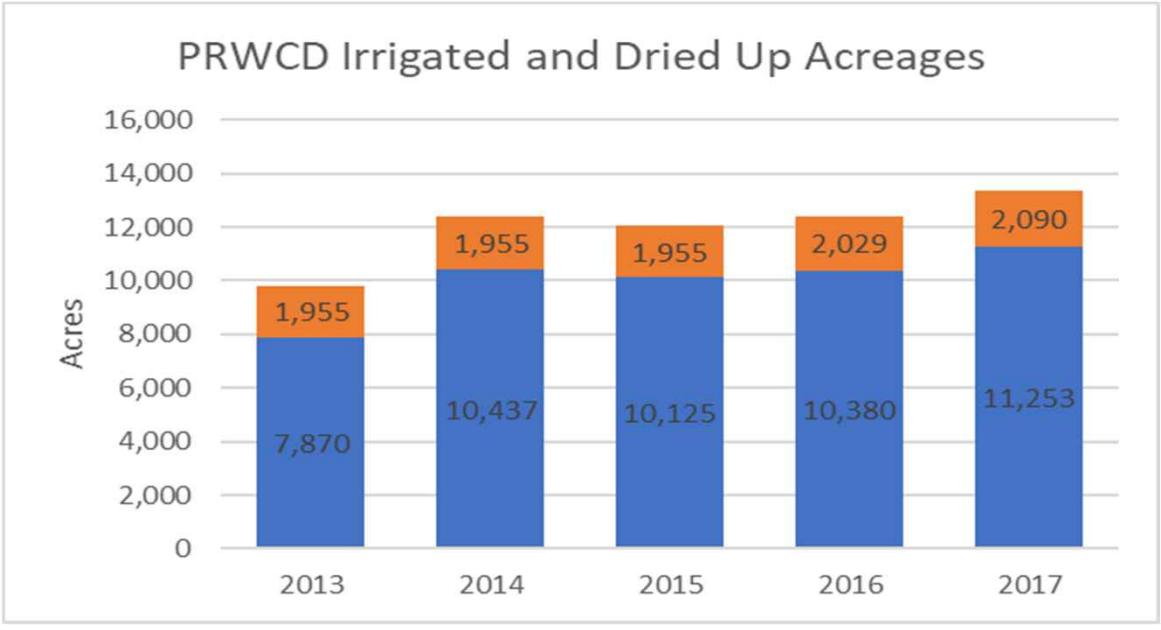

Model Pool Contents & PRWCD Cumulative Diversions
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
Acre-Feet
10/15/2017
10/30/2017
11/30/2017
12/31/2017
1/31/2018
2/28/2018
3/31/2018
4/30/2018
5/31/2018
6/30/2018
7/31/2018
8/31/2018
9/30/2018
10/15/2018
Model Pool
PRWCD Diversions

2

Exhibit F


Purgatoire River Flows - PURTRICO & PURTHACO
Acre-feet
140,000
120,000
100,000
80,000
60,000
40,000
20,000
0
1978 1979 1980 1981 1982 1983 1984 1985 1986 1987 1988 1989 1990 1991 1992 1993 1994 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018
PURTRICO
PURTRICO AVE
PURTHACO
PURTHACO AVE

3

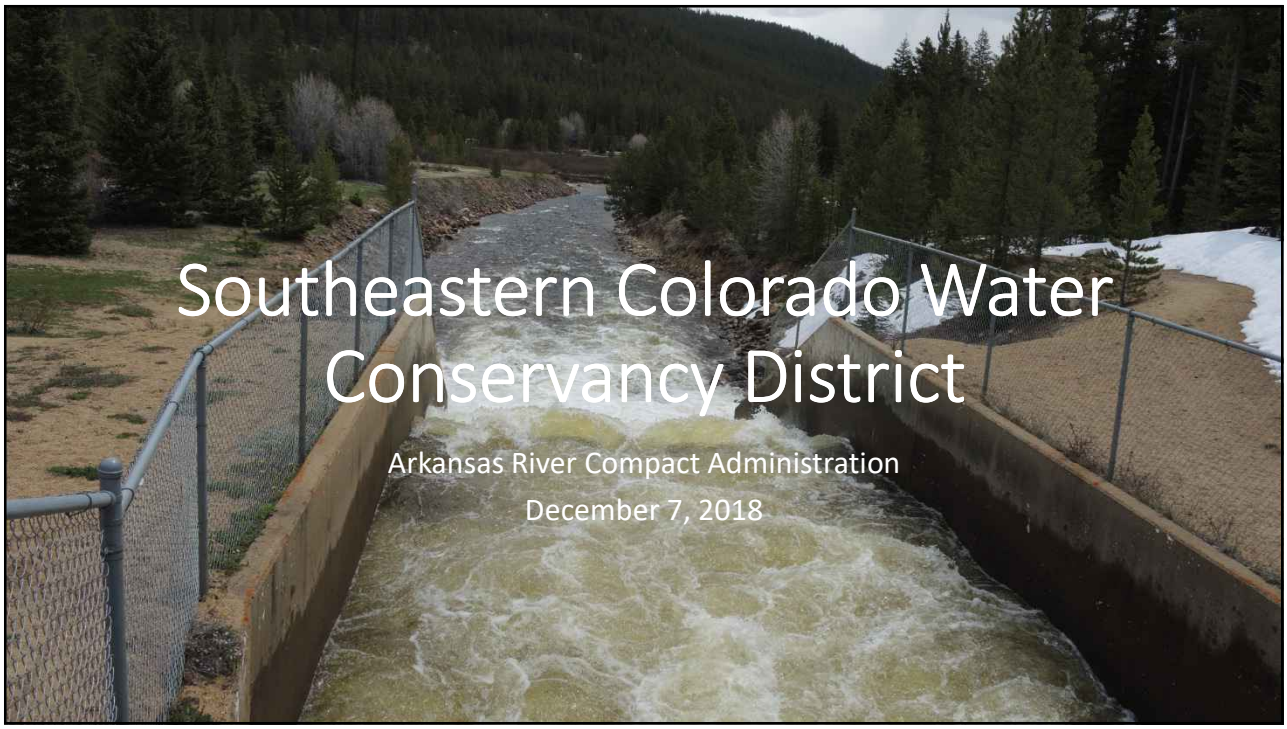

PRWCD Irrigated and Dried Up Acreages
Acres
16,000
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1,955
7,870
1,955
10,437
1,955
10,125
2,029
10,380
2,090
11,253
2013
2014
2015
2016
2017

4

Exhibit G

Annual Meeting

December 7, 2018

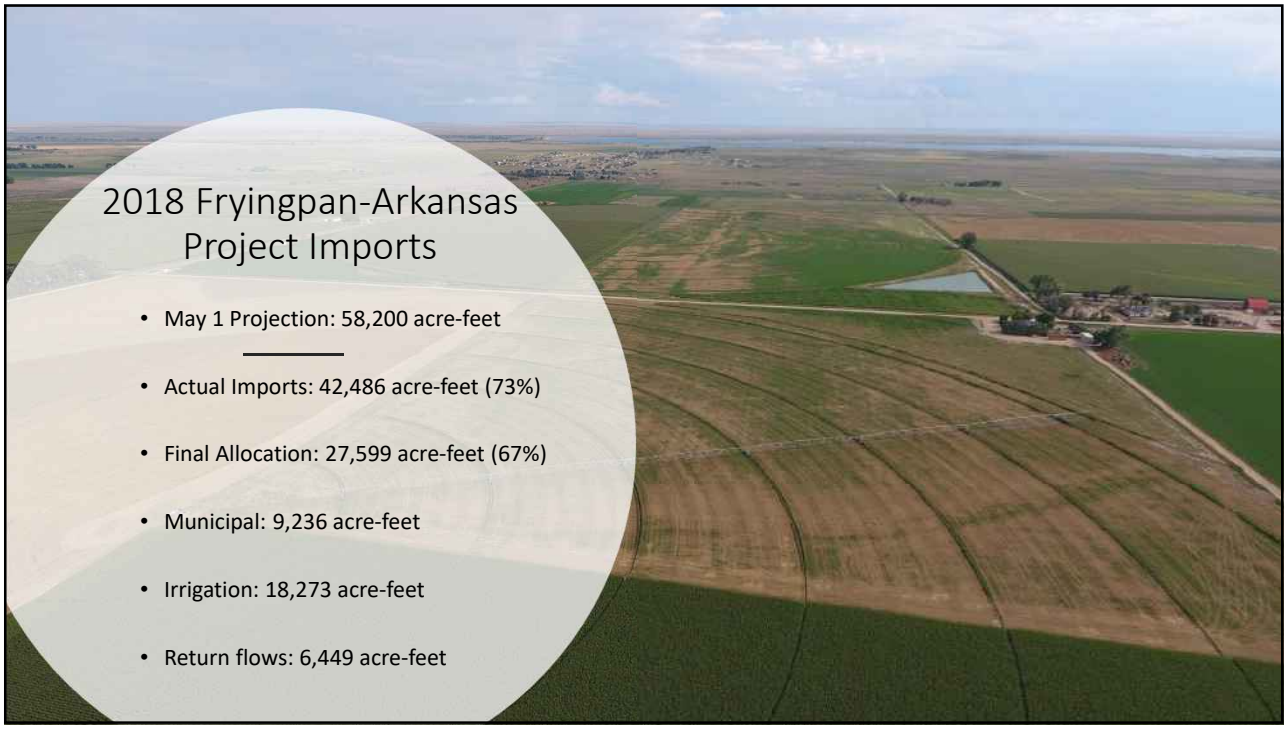


Southeastern Colorado Water Conservancy District

Arkansas River Compact Administration

December 7, 2018

1



2018 Fryingpan-Arkansas Project Imports

- May 1 Projection: 58,200 acre-feet
- Actual Imports: 42,486 acre-feet (73%)
- Final Allocation: 27,599 acre-feet (67%)
- Municipal: 9,236 acre-feet
- Irrigation: 18,273 acre-feet
- Return flows: 6,449 acre-feet

2

Exhibit G

Shortfall on forecast

- Based on historic data
- Dry, windy conditions in May, June
- May-August precipitation: 1.8 inches (8,235 AF)
- Average May-August precipitation: 6.5 inches (29,738 AF)
- Shortfall of moisture: 4.7 inches (21,502 AF)

Source: Bureau of Reclamation

3

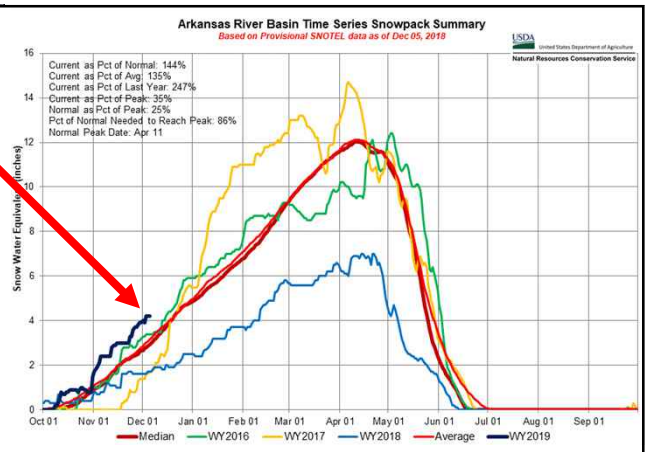
Winter Water

November 15-March 15

2017-18: 138,904 acre-feet – 104% of 20-year average
Stream flows remained strong from above average moisture in 2017.

November 30, 2018: 12,500 acre-feet – 54% of 20-year average
Too soon to tell, but could be below average unless precipitation increases; not as much soil moisture.

4



Snowpack for 2018-19 has started at 144% of normal in the Arkansas River basin as of December 5.

5

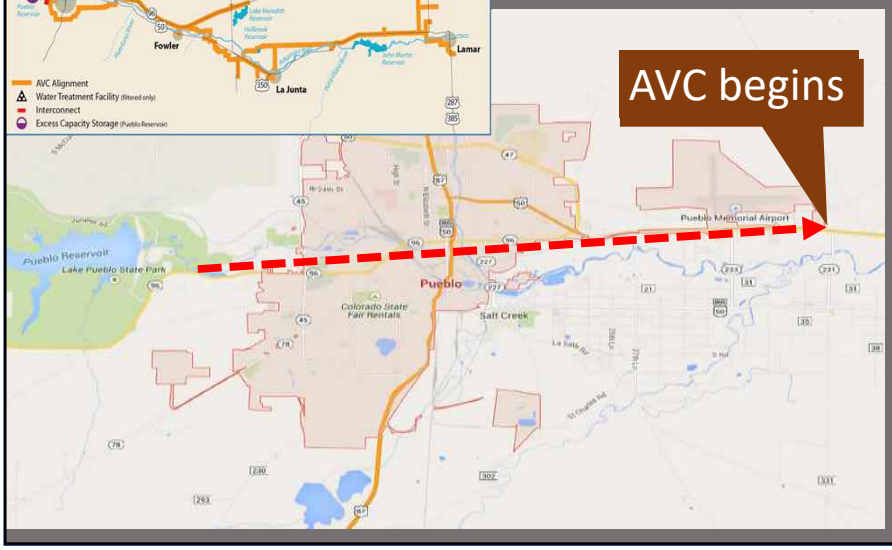
6

Arkansas Valley Conduit

- 130 miles Pueblo Reservoir to Lamar & Eads
- $640 million total cost
- 40 communities / 20,000 taps
- 50,000 people served
- 10,000 acre-feet / average annual deliveries

7

New plan for Arkansas Valley Conduit



- Uses capacity in Pueblo Water's system to get water to the AVC route more quickly.
- Uses a phased approach to deliver water from three points to the route of the AVC.
- Allows service to communities facing water quality issues several years sooner.
- Requires service contract between the U.S. Bureau of Reclamation, SECWCD and Pueblo Water.
- Technical challenges with deliveries of new source of water to water systems.

8

Water quality concerns

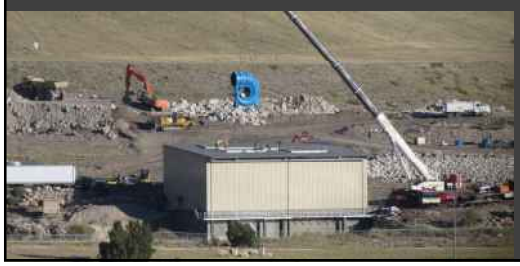
- 15 communities are facing enforcement actions for radionuclides, with 14 of those in Otero County.
- Boone and Fowler have immediate water quality issues that require action in the next five years.
- State remedies in the enforcement actions are predicated on AVC construction commencing within five years.

9

Regionalization

Connecting communities until AVC reaches their delivery points.

10



Hydroelectric Power Plant construction at Pueblo Dam

11

Pueblo Dam Hydro

- Construction began in September 2017
- $20.3 million project financed by CWCB, SECWCD Enterprise
- Working toward completion by end of 2018
- Three turbines, two generators and a combined capacity of 7.5 megawatts from flows in the 35-810 cfs range
- 28 million kilowatt-hours annually
- $1.4 million in revenue

- City of Fountain, Fort Carson (through Colorado Springs Utilities) will purchase the power

12


Contract negotiations
• Amended 1982 Repayment Contract
• Pay off Fry-Ark debt in 2031
• Establishing reserve fund for local cost share of Fry-Ark Project features such as Twin Lakes, Turquoise Lake
• New Contract by 2022

13

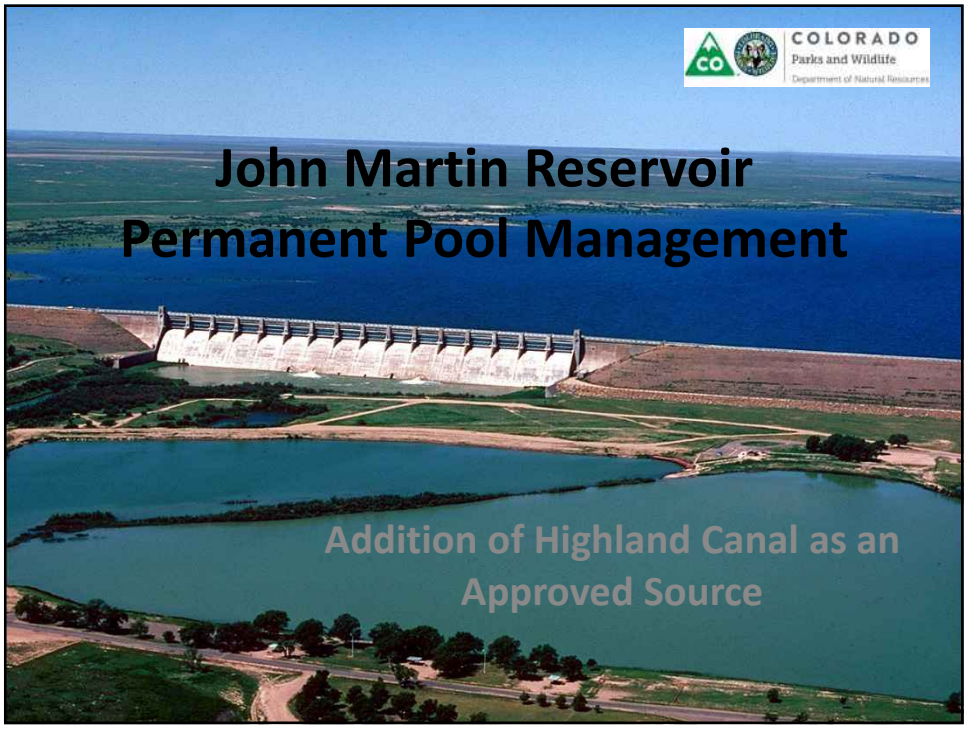

50th Anniversary of Ruedi Reservoir, statewide celebration

14

Exhibit H

Annual Meeting

December 7, 2018

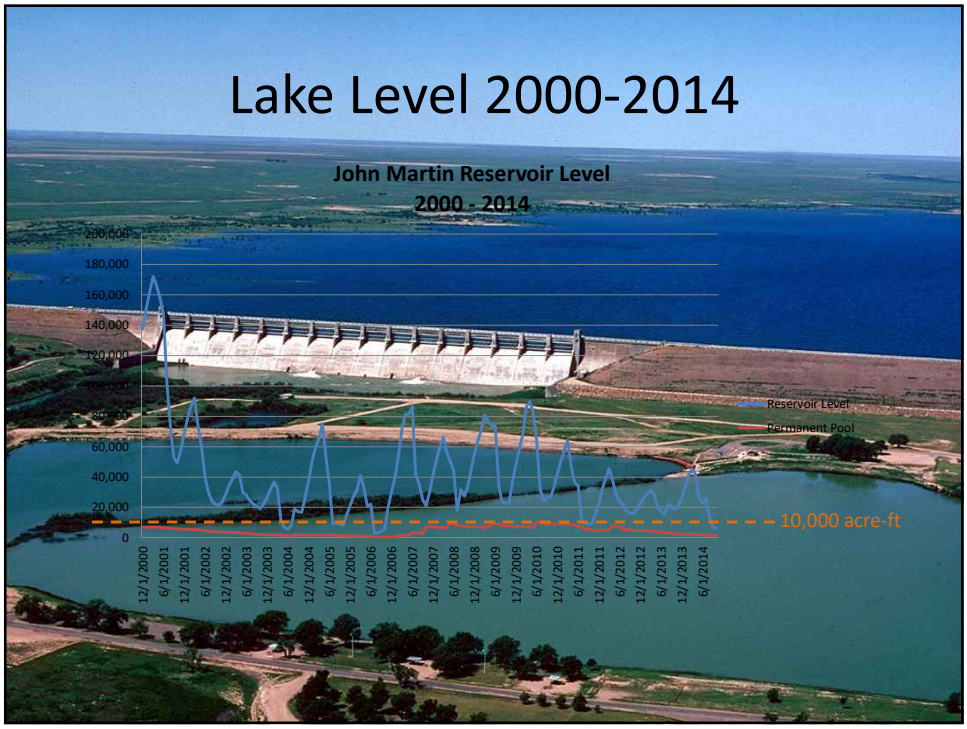

COLORADO
Parks and Wildlife
Department of Natural Resources
John Martin Reservoir
Permanent Pool Management
Addition of Highland Canal as an
Approved Source

1

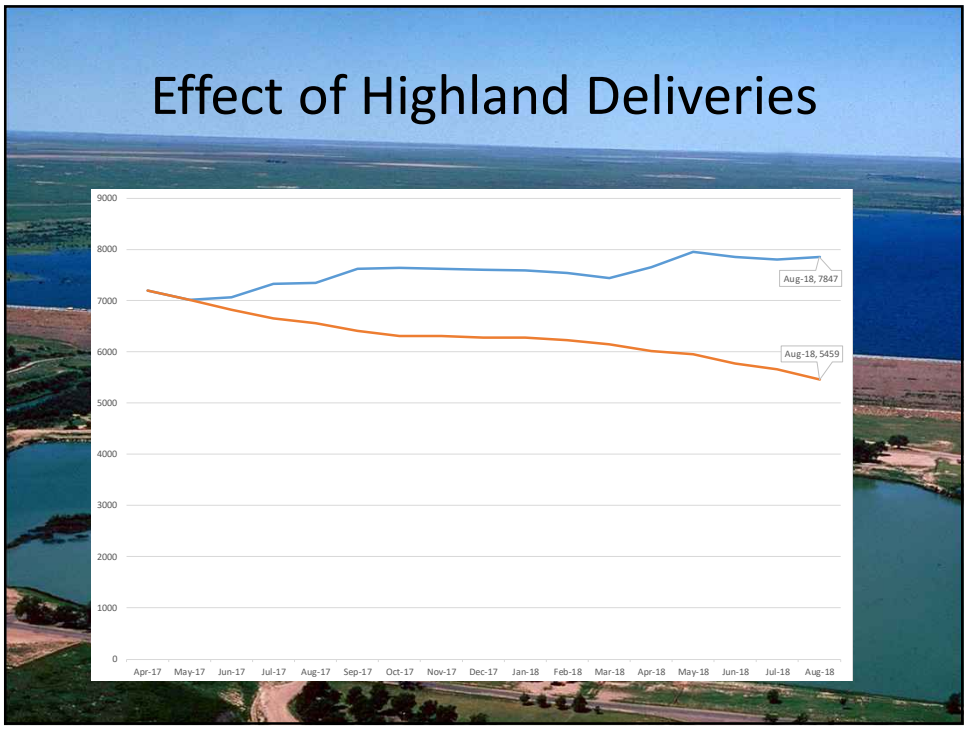

Ford
281 · ZNP
COLORADO

2

Exhibit H


Lake Level 2000-2014
John Martin Reservoir Level
2000 - 2014
200,000
180,000
160,000
140,000
120,000
60,000
40,000
20,000
0
Reservoir Level
Permanent Pool
10,000 acre-ft
12/1/2000
6/1/2001
12/1/2001
6/1/2002
12/1/2002
6/1/2003
12/1/2003
6/1/2004
12/1/2004
6/1/2005
12/1/2005
6/1/2006
12/1/2006
6/1/2007
12/1/2007
6/1/2008
12/1/2008
6/1/2009
12/1/2009
6/1/2010
12/1/2010
6/1/2011
12/1/2011
6/1/2012
12/1/2012
6/1/2013
12/1/2013
6/1/2014

3


Effect of Highland Deliveries
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Aug-18, 7847
Aug-18, 5459
Apr-17
May-17
Jun-17
Jul-17
Aug-17
Sep-17
Oct-17
Nov-17
Dec-17
Jan-18
Feb-18
Mar-18
Apr-18
May-18
Jun-18
Jul-18
Aug-18

4

5

Exhibit I

Annual Meeting

December 7, 2018

Exhibit H

Ten-year Accounting of Depletions and Accretions to Usable Stateline Flow
2008 - 2017

1	2	3	4	5	6	7	8	9
Year of Ten-year Cycle	Model Year	H-I Model Usable Depletion/ Accretion[1]	Offset Account Credits[2]					Remaining Usable Depletion/ Accretion[6]
			Stateline Delivery to Kansas	Evaporation Credit	Gross Credit[3]	Applied to Post-1985 Depletions[4]	Net Credit[5]	
1	2008	-2,198	11,617	0	11,617	1,288	10,329	-12,527
2	2009	-148	5,511	0	5,511	1,256	4,255	-4,403
3	2010	410	10,241	0	10,241	1,548	8,693	-8,283
4	2011	1,841	6,436	0	6,436	1,717	4,719	-2,878
5	2012	4,044	0	0	0	1,479	-1,479	5,523
6	2013	2,594	0	0	0	1,505	-1,505	4,099
7	2014	4,332	2,728	0	2,728	1,635	1,093	3,239
8	2015	2,779	2,695	0	2,695	2,337	358	2,421
9	2016	4,328	4,044	0	4,044	3,043	1,001	3,327
10	2017	-1,916	8,847	0	8,847	3,300	5,547	-7,463
Total		16,066	52,119	0	52,119	19,108	33,011	**-16,945**
	Shortfall for 2018							0

Water Quantities are in acre-feet.

1 Positive values in Columns 3 and 9 reflect depletions; negative values, accretions. H-I Model results in Column 3 for 2017 are based on input file UPDATE17_June18.dat.

[2] Positive values in Columns 4, 5, 6, and 8 reflect credits; negative values, debits.

[3] Column 6 is the sum of Columns 4 and 5.

[4] Column 7, a positive value, is the amount of Offset Credit applied to Post-1985 depletions, determined pursuant to Appendix A.3 of the 2009 Judgment and Decree in KS v CO.

[5] Column 8 is Column 6 minus Column 7.

[6] Column 9 is Column 3 minus Column 8.

Exhibit J

Annual Meeting

December 7, 2018

COLORADO
Division of Water Resources
Department of Natural Resources

1313 Sherman Street, Room 818
Denver, CO 80203

2018 Annual Presumptive Stream Depletion Factor (PDF) Evaluation Report Hydrologic Institutional (H-I) Model Area, Arkansas River Basin

August, 2018

Introduction and Summary

Presumptive depletion factors, or PDFs, are used by the Colorado Division of Water Resources Division 2 in the administration of water replacement plans in the Arkansas River Basin to relate amounts of groundwater pumping from a well to amounts of stream depletions. Colorado's 1996 Use Rules define groundwater-only PDFs for flood and sprinkler irrigation. However, Amended Appendix A.4 of the Kansas v. Colorado decree directs the state of Colorado to conduct an annual evaluation of the PDF for supplemental flood/furrow irrigation following the annual update of the Hydrologic Institutional Model (H-I Model).

For the 2018 Annual PDF Evaluation, Colorado concludes that a supplemental flood/furrow irrigation PDF of **36.0%** is most appropriate and should be used by Division 2 for replacement plans in year 2019. PDFs for supplemental flood/furrow irrigation for recent water replacement plan years are shown in the following table.

Presumptive Depletion Factors for Water Replacement Plan Years

Replacement Plan Year	PDF for Supplemental Flood/Furrow Irrigation
2012	39.0%
2013	38.1%
2014	36.5%
2015	36.0%
2016	35.5%
2017	36.0%
2018	36.0%
2019	**36.0%**

Note: Other PDFs are 50% for sole-source flood/furrow, 75% for sprinkler, and 100% for drip irrigation

Methods and Results

Amended Appendix A.4 provides a methodology framework for the annual PDF evaluations, but the methodology is updated and more fully described in a report titled "Annual Presumptive Stream Depletion Factor (PDF) Evaluation Methodology for the Hydrologic Institutional Model Area, Arkansas River Basin, Colorado" (PDF Evaluation Methodology Document, 2015). The methodology incorporates updates to the H-I Model; primarily those acknowledging higher groundwater irrigation application efficiencies from sprinkler and drip systems.

The process described in the PDF Evaluation Methodology Document was followed to complete the 2018 PDF Evaluation. The GWAM model was used to determine idealized reach replacements given these PDF values which were provided to a modified version of the HI model with a revised update file. Annual depletions and accretions to usable stateline flow were estimated from historic (with actual pumping and ideal replacements represented) and compact (without pumping or replacements) runs of the modified HI model. Supplemental irrigation PDFs were tested until the minimum PDF was found which produced no cumulative shortfall to usable stateline flows over any 10-year period. Annual and ten-year sums of accretions and depletions for the limiting PDF values are shown in the following table.

2018 PDF Evaluation Results

Year of Review Period	Calendar Year	Annual Usable Stateline Depletions (+)/ Accretions (-) (acre-feet)		10-Year Period	10-year Sum of Usable Stateline Depletions (+) / Accretions (-) (acre-feet)	
		SF.PDF: 35.0%	SF.PDF: 36.0%		SF.PDF: 35.0%	SF.PDF: 36.0%
1	1998	-869	-955			
2	1999	-915	-1005			
3	2000	-692	-323			
4	2001	-525	-787			
5	2002	-808	-1004			
6	2003	1391	1215			
7	2004	-138	-217			
8	2005	-373	-457			
9	2006	-430	-546			
10	2007	-539	-615	1998-2007	-3898	-4694
11	2008	-1715	-1827	1999-2008	-4744	-5566
12	2009	-1511	-1646	2000-2009	-5340	-6207
13	2010	-78	-29	2001-2010	-4726	-5913
14	2011	264	166	2002-2011	-3937	-4960
15	2012	2205	2125	2003-2012	-924	-1831
16	2013	1161	1098	2004-2013	-1154	-1948
17	2014	1120	1058	2005-2014	**104**	-673
18	2015	-236	-280	2006-2015	**241**	-496
19	2016	-3059	-3224	2007-2016	-2388	-3174
20	2017	-14394	-14743	2008-2017	-16243	-17302

Note: indicated PDF is for supplemental flood/furrow irrigation
PDF of 50% sole-source flood/furrow, 75% for sprinkler, and 100% for drip irrigation used
PDF of 35.0% indicates shortfall in bold and is insufficient while PDF of 36.0% is sufficient

Exhibit K

Annual Meeting

December 7, 2018

Arkansas River Compact Administration
Engineering Committee
Meeting Summary and Action Items
December 6, 2018
Garden City, Kansas

The committee requested Rachel Duran and Andrew Rickert to produce a brief summary of presentations made and a list of recommendations for this committee meeting.

Meeting Summary

Kelley Thompson, Colorado Division of Water Resources (CDWR), provided an update on progress related to the Colorado Decision Support Systems.

Kevin Salter, Kansas Division of Water Resources (KDWR), mentioned that the Trinidad Operating Principles had been recently amended and that the meeting process for the annual Trinidad Issues Meetings will be changing in the upcoming year.

Brett Ackerman, Colorado Parks and Wildlife (CPW), provided an update on the use of Highland Canal water under the recent one-year Permanent Pool agreements and plans to adopt a long-term agreement early next year.

Mike Weber, Lower Arkansas Valley Water Conservancy District (LAVWCD), provided an overview of the proposed Colorado multipurpose account in John Martin Reservoir.

Kevin Salter, KDWR, provided a status update on efforts to replace the 50+ year old Frontier ditch flume.

Amy Louise, U.S. Army Corps of Engineers (USACE), provided updates on 2018 reservoir operations for Trinidad and John Martin Reservoirs, USGS gages downstream of Trinidad Lake, 2018 Bathymetric Survey of Trinidad Lake, 2017 Bathymetric Survey of John Martin Reservoir and other issues.

Jonathan Tague, USACE, provided an update on the status and schedule of the JMR Stilling Basin Project.

Chris Gnau, U.S. Bureau of Reclamation (BOR), reported on 2018 accomplishments, the cost associated with review of the Trinidad Project and the Bureau's proposal for the Ten-year Review process for the next review period for 2015-2024. The BOR submitted a proposed resolution to the committee and asked that either the resolution or a process of dialog between the states and Purgatoire River Water Conservancy District shall occur.

Exhibit K

Krystal Brown, U.S. Geological Survey (USGS), reported on predicted and actual flows through USGS gages, their precipitation network, precipitation events that contributed to flows in 2018, and the effect of 2018 beaver activity on the Apishapa River gage.

Kevin Salter, KDWR, provided an update on the states' review on the implementation process for the new Elevation Area Capacity (EAC) tables for Trinidad and John Martin Reservoirs.

Committee Recommendations to ARCA

1. Recommend to ARCA that a Special ARCA meeting be held prior to February 14, 2019 to work on finalizing a permanent agreement that allows the use of Highland Canal water for the John Martin Reservoir Permanent Pool.

2. Recommend to ARCA that the states take the lead on discussing the process to develop the next Trinidad Project Ten-Year Review for the period 2015-2024.

Scott Brazil, Chair

Date: 12/6/18

David Barfield, Member

Date: 12/6/2018

No. 3 of 4 originals

Arkansas River Compact Administration
Operations Committee
Meeting Summary and Action Items
December 6, 2018
Garden City, Kansas

The committee requested Rachel Duran and Andrew Rickert to produce a short summary of presentations made and a list of recommendations for this committee meeting.

Meeting Summary

The committee received the Compact Year (CY) 2018 reports of the Operations Secretary (Bill Tyner) and Assistant Operations Secretary (Kevin Salter).

The committee received the 2018 report for the Offset Account from Rachel Zancanella, CDWR.

Bill Tyner, CDWR, provided an update on the implementation of the Irrigation Improvement Rules.

Action items

1. The states were directed to work on resolving the issues holding up approval of the 2006-2018 Operations Secretary reports, specifically the issue regarding the Pueblo Winter Water Storage Program (PWWSP). The committee would like resolution or at the least significant progress towards resolution by the 2019 annual meeting of ARCA

Committee Recommendations to ARCA

1. Recommend to ARCA referring the 2006-2018 Operations Secretary reports to the Special Engineering Committee to work towards resolution of issues that are holding up approval of the reports.

2. The committee recommends that the letters between the Corps of Engineers and Hal Scheuerman regarding the Water Control Manual for John Martin Reservoir be made an exhibit to the 2018 ARCA annual meeting transcript.

Hal Scheuerman, Chair

Lane Malone, Member

Date: 12-6-2018

Date: 12-6-2018

No. 3 of 4 originals

Arkansas River Compact Administration
Administrative & Legal Committee
Meeting Summary and Action Items
December 6, 2018
Garden City, Kansas

The committee requested Rachel Duran and Andrew Rickert to produce a short summary of presentations made and a list of recommendations for this committee meeting.

Meeting Summary

Kevin Salter, Kansas Division of Water Resources (KDWR), provided an update on the status of transcripts from prior annual meetings (1998, 1999 and 2017)

Brent Newman, Colorado Water Conservation Board (CWCB), provided an update on the status of the ARCA annual reports noting the status of the reviews and publishing of the annual reports. Once a draft template of the 1997 report is agreed to between the states, then would be provided to the committee for review.

The committee heard a report from Stephanie Gonzales, Recording Secretary and Treasurer.

Kevin Salter, KDWR, mentioned the states would review past resolution 2012-01 for Trinidad Operating Principles to determine if there was an open ended ARCA approval that needs to be addressed.

Action Items

1. The committee reviewed the 2018 annual meeting agenda and would strike item 4d from the annual agenda.

Committee Recommendations to ARCA (will be deferred to annual meeting agenda item 12)

1. Recommend approval of the March 2018 Special meeting written summary.

2. Recommend approving the following in regards to the website: renewal of the domain name for ten years, moving from the Go Daddy builder website platform to a Word Press platform and renewing that platform for a 2 year period and permission for obtaining a debit card for ARCA's account that can be used for renewals.

3. Recommend approval of the Fiscal Year (FY) 2017-18 Auditor's Report and recommend signing the engagement letter for the auditor's services.

4. Recommend that Stephanie Gonzales be directed to sign both the Colorado and

Kansas USGS Joint Funding Agreements (JFA).

5. Recommend adoption of the Fiscal Year (FY) 2019-2020 Budget and Assessment.

6. Recommend adoption of the resolution titled *"Regarding Steven J. Witte Recognition"*.

7. Recommend the following slate of officers and committee chairs for CY 2019:

   a. ARCA officers:
   Vice-chair..... Randy Hayzlett
   Recording/Secretary- Treasurer..... Stephanie Gonzales
   Operations Secretary.....Bill Tyner
   Assistant Operations Secretary.....Kevin Salter

   b. Committee Chairs:
   Administrative & Legal..... Rebecca Mitchell as Chair, Randy Hayzlett as member
   Operations..... Lane Malone as Chair, Hal Scheuerman as member
   Engineering..... David Barfield as Chair, Scott Brazil as member

8. Recommend the dates of December 04, 2019 for the committee meetings and December 05, 2019 for the annual meeting. Both meetings to be held in Lamar, Colorado.

Randy Hayzlett

Randy Hayzlett, Chair

Date: 12/06/2018

Rebecca Mitchell

Rebecca Mitchell, Member

Date: 12-06-18

No. 3 of 4 originals

Exhibit L

Annual Meeting

December 7, 2018

ANNUAL REPORT
OF THE
OPERATIONS SECRETARY

CONCERNING THE OPERATION
OF
JOHN MARTIN RESERVOIR

COMPACT YEAR 2018

SUBMITTED TO THE

OPERATIONS COMMITTEE

ARKANSAS RIVER COMPACT ADMINISTRATION

Exhibit L

INDEX

ARKANSAS RIVER COMPACT ADMINISTRATION

307 South Fifth Street, Lamar, Colorado 81052

719-336-9696

For Colorado

Chairman and Federal Representative
James T. Rizzuto, Swink

For Kansas

Rebecca Mitchell, Denver

David Barfield , Topeka

Scott Brazil, Pueblo

Hal Scheuerman, Deerfield

Lane Malone, Holly

Randy Hayzlett, Lakin

December 1, 2018

Mr. Hal Scheuerman, Chairman
Arkansas River Compact Administration – Operations Committee, 2017-2018

Dear Sir,

The purposes of this report is to provide you with an accounting summary of the operation of John Martin Reservoir for the (2018) compact year, which is incorporated and made a part hereof and to document certain activities and accomplishments that occurred within the year in concert with the directions of the Operations Committee.

Summary of Operations
November 1, 2017 to October 31, 2018

The 2018 compact year started with a balance for all accounts totaling 243.935.34 acre-feet (acre-feet). The compact year closed on October 31, 2018 with an ending balance for all accounts in John Martin Reservoir totaling, 132,945.80 acre-feet. See Section 2 – Accounting Supplements - Daily Status Report for 11012017 and Daily Status Report for 10312018.

CONSERVATION STORAGE

In accordance with the revised 1980 Operating Plan, the 2018 compact year began at 00:00 hours on November 1, 2017 with a period of "winter storage" in which all inflow into John Martin Reservoir accrued to conservation storage.

During the period of Winter Compact storage from November 1, 2017 through March 31, 2018, 56,472.54 acre-feet (net) was stored as Compact Water. An additional 2,606.92 acre-feet (2,005.45 acre-feet - LA Consolidated Section III account) and (601.47 acre-feet - Offset Accounts transfers) was added to Conservation Storage prior to the end of winter storage. The Lamar Canal and Amity Canal each called for a release of water prior to April 1, 2018. Distribution began on April 1, 2018, in accordance with Subsection II A of the revised 1980 Operating Plan and continued at the prescribed rates until exhausted on April 30, 2018, resulting in the transfer of 65,681.55 acre-feet (That included 8,273.65 acre-feet of Summer stored water from April 1, 2018 through April 30, 2018 and 22.89 acre-feet of Offset Account

transfers) as prescribed by Section II D of the 1980 Operating Plan. See Section 2 – Table I and Accounting Supplement - Distribution of Compact Stored Water April 2018

In contrast, the previous year's storage totaled 27,155.32 acre-feet (net). The 1950 to 1975 historical average winter storage amount is 22,209 acre-feet.

During the 2018 Summer Compact Storage season there were three storage events that resulted in additions to Conservation Storage of 16,916.53 acre-feet. The first storage event was from April 1, 2018 and concluded on April 30, 2018 (as listed above). The second storage event began on July 26, 2018 and concluded on July 29, 2018 totaling 6,113.39 acre-feet. The third storage event began on August 8, 2018 and concluded on August 9, 2018 totaling 2,506.60. See Section 2 Accounting Supplement - John Martin Reservoir Summer Storage Inflows for details.

During the year, the maximum end of day content of 316,347.00 acre-feet was reached on March 18, 2018.

As a result of the Las Animas Consolidated Ditch not utilizing all of its Section III water by the end of the 2017 compact year, 2,005.45 acre-feet of water was transferred to Conservation Storage on November 1, 2017, pursuant to Subsection III C. of the 1980 Operating Plan. Las Animas Consolidated Ditch also ended up with 88.86 acre-feet of water not used by October 31, 2018 that is subject to transfer to Conservation Storage on November 1, 2018.

"OTHER WATER", INCLUDING PUEBLO WINTER WATER PROGRAM

The base flow at the Arkansas River at Las Animas gage was determined during the period November 1st through November 14th based on worked records by the Colorado USGS and the Colorado Division of Water Resources (CDWR). There were two separate measurements prior to November 14th at the Arkansas River at Las Animas (225 cfs was measured on November 9, 2017 by CDWR and 229 cfs was measured on November 13, 2017) by the USGS. The base flow was determined to be 113.24 cfs per cooperative agreement between (CDWR) and Kansas Division of Water Resources (KDWR). For documentation purposes, CDWR had conducted an inspection of the Las Animas Consolidated Ditch and had determined that the Las Animas Consolidated Ditch was not bypassing any flows around the ARKLASCO gauge. KDWR did not attend this inspection but agreed with the CDWR assessment of this inspection. Measurements were also conducted by the USGS on November 29, 2017 (177 cfs) and by the CDWR on November 20, 2017 (121 cfs) which assisted in USGS working the records. The Compact Storage/Pueblo Winter Water Program (PWWP) split percentages were calculated daily from November 15, 2017 through December 5, 2017 using current day enhanced flows to base line flows. After flow rates stabilized on December 5, 2017, computations were made and the Compact/PWWP split percentages were 63.62% for Compact Water and 36.38% for Winter Water. The methodology for determining the conservation storage to winter water ratio was consistent with the method utilized in prior years and a worksheet summarizing the determinations made was provided to the Assistant Operations Secretary's staff.

Beginning on November 16, 2017, and pursuant to the provisions of Section III of the 1980 Operating Plan the storage of certain "other" inflow was credited to a winter water holding account. See Section 2 – Table II for details.

Thirty-five percent of the water initially placed into the winter water holding account was transferred out of the holding account each day and distributed as prescribed by Section III D of the 1980 Operating Plan.

- There was no deficit to pay back to Kansas for the delivery between June 15, 2017 and August 3, 2017.
- Starting November 16, 2017 water was allocated to filling the Transit Loss account. A total of 84.95 acre-feet was transferred into this account and filled on November 17, 2017. From November 18, 2017 through March 15, 2018 the Transit Loss account evaporation was refilled from the storage charge.
- Between November 17, 2017 and March 15, 2018, 2,307.46 acre-feet of water was transferred into the Kansas Section II account (See Section 2 – Table IX) and 5,034.36 acre-feet of water was transferred into the Water District 67 winter water storage charge account (See Section 2 – Table XI) and thereafter to Colorado Section II accounts (less evaporation).

Sixty-five percent of the total amount initially placed into the winter water holding account was detained in the winter water holding account. This detention in the winter water holding account continued through March 15, 2018, when the distribution of 13,634.17 acre-feet occurred to the appropriate accounts pursuant to Section III D of the 1980 Operating Plan. See Section 2 - Tables VI, VII and VIII.

From July 25, 2018 through July 26, 2018, Amity was entitled to store water under the Great Plains Storage right and 382.18 acre-feet (gross) was added to their Section III account from which 133.77 acre-feet was storage charge (35%).

OFFSET

The following is a brief description of deliveries to the Offset Account during the 2018 Compact Year. From November 1, 2017 through October 31, 2018, there were six deliveries/transfers of water to the Offset Account in addition to the transfer for the storage charge. The transfer and six deliveries/transfers are summarized in the following table.

Source	Delivery Start Date	Delivery End Date	Amount to Offset Account (ac-ft)	Net Consumable Water (ac-ft)	Net Return Flow Water (ac-ft)
LAWMA (CS-U Delivery)	November 3, 2017	November 16, 2017	3640	3640	0
LAWMA (Article II Transfer)	March 31, 2018	March 31, 2018	575.43	500	75.43
LAWMA (Article II Transfer)	April 4, 2018	April 4, 2018	0.63	0	0.63
CWPDA (Municipal Fully Consumable)	April 7, 2018	April 10, 2018	1102.16	1102.16	0
LAWMA (CS-U Delivery)	October 13, 2018	October 18, 2018	395.66	395.66	0
LAWMA (Fort Lyon)	November 1, 2017	October 31, 2018	1729.96	1729.96	0
LAWMA (Highland)	April 2, 2018	October 31, 2018	1599.34	1599.34	0
LAWMA (Keesee)	May 1, 2018	October 31, 2018	1617.52	1617.52	0
TOTALS			**10660.70**	**10584.64**	**76.06**

There were also two releases from the Offset Account for a total release of 8,318.14 acre-feet. The total consumable portion released was 7027.51acre-feet. Finally, the net consumable credit at the Stateline for both releases was of the 4543.5 acre-feet.

PERMANENT POOL

The permanent recreation pool increased by 209.49 acre-feet (net) during compact year 2018. There was 1,876.95 acre-feet stored in the Permanent Pool from the Highland Canal per ARCA Resolution 2018-01 and deliveries by Colorado Parks & Wildlife. There were two storage events from the Muddy Creek storage right in 2018 totaling 202.00 acre-feet. See documentation of the sources delivered to the Permanent Pool in Section 1 as well as Section 2, Table IV

KANSAS RELEASES

Kansas placed a call for release of water available to them from the Kansas Section II account which began on June 11, 2018 and continued through July 27, 2018 when the release was stopped. Kansas supplemented this release with a release from the Offset Account, which began on July 6, 2018 and continued through July 26, 2018. A total of 57,758.98 acre-feet was released, composed of 53,068.80 acre-feet of Article II water and 4,690.18 acre-feet of Offset water. 1,588.06 acre-feet was released from the Transit Loss Account during this delivery. See Section 2 – Tables III, IX and X.

The Section II release of 57,758.98 acre-feet resulted in a deficit of 3,123 acre-feet. This determination of deficits or transit losses were made in accordance with the Agreement on Determination of Transit Loss under the provisions of Section II E (4) of the Resolution Concerning an Operation Plan for John Martin reservoir, revised December 2006 and the Agreement concerning the Offset Account in John Martin Reservoir for Colorado Pumping, Determination of Credits for Delivery of Water Released for Colorado Pumping, and Related Matters dated September 29, 2005. The release of water from the Offset Account during this delivery amounted to 4,690.18 acre-feet that resulted in the delivery of 3,803 acre-feet of consumable water. The computational worksheets pursuant to these agreements, are included herein as: Section 2 Accounting Supplement_KSRelease_Section2&Offset_06112018-07272018.

A second release of water from the Offset Account amounted to 3,627.96 acre-feet that resulted in the delivery of 1,787.00 acre-feet of consumable water. The computational worksheets are included herein as: Section 2 Accounting Supplement_ KSRelease_Offset_08182018-09042018.

COLORADO ART II RELEASES

A total of 55,955.51 acre-feet were released out of the Colorado Section II accounts. A summary of combined operations of the Colorado Section II accounts is included in Section 2 – Table XII.

ADDITIONAL OPERATIONAL DETAILS

Section 3 of this report contains the daily accounting for the compact year.

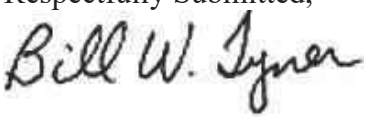
Section 4 contains information provided by and included at the request of the Assistant Operations Secretary that documents operations related to efforts to bypass inflows as required by Section II C (1) of the 1980 Operating Plan and other pass through operations.

Summary of Activities Coordinated through Operations Committee

The Operations Secretary and the Assistant Operations Secretary were unable to coordinate a meeting during the 2018 Compact year but were able to meet on November 14, 2018. Additionally, there were numerous interactions throughout the year which included advisories, inquiries and explanations on various topics related to the operation of John Martin Reservoir and the Arkansas River Compact.

The Special Engineering Committee (SEC) met on four occasions in 2018. These meetings included conference calls on January 29, 2018, February 15, 2018 and May14, 2018 and a meeting on October 8, 2018 in Broomfield, Colorado. There were also numerous occasions when the SEC or the SEC Staff communicated telephonically. The primary focus for the SEC during 2018 was related to the Highland Canal Permanent Pool source discussion and the proposed Colorado Multi-Purpose Account in John Martin Reservoir.

Respectfully Submitted,



Bill W. Tyner
Arkansas River Compact Administration
Operations Secretary

SECTION 1

COLORADO
Division of Water Resources
Department of Natural Resources

March 30, 2018

Randy Hendrix
Hendrix Wai Engineering, Inc.
PO Box 4487
Parker, CO 80134

RE: JMR Permanent Pool Substitute Water Supply Plan
John Martin Reservoir, Bent County, 6th PM
Division 2, Water District 67
SWSP ID 5919, WDID 6707869

Approval period: April 1, 2018 through March 31, 2019
Contact Phone Number for Mr. Hendrix: 720-934-4360; randy@hendrix-wai.com

Dear Mr. Hendrix:

We have reviewed your February 22, 2018 letter requesting a substitute water supply plan ("SWSP") pursuant to § 37-92-308(5), C.R.S., for a temporary change of water right for the use of the Highland Canal water rights owned by the Lower Arkansas Water Management Association ("LAWMA"). Notice was served to all subscribers to the Division 2 SWSP notification list on February 22, 2018, and no comments were received during the 35-day comment period. The $300 filing fee has been received and given receipt no. 3684944.

An application for approval of a change of water right or plan for augmentation has not been filed with the water court and the depletions associated with the proposed water uses will not exceed five years, therefore this request has been submitted pursuant to § 37-92-308(5), C.R.S. In accordance with § 37-92-308(5), C.R.S., SWSPs may be approved for new water use plans involving out-of-priority diversions or a change of water right, if no application for approval of a plan for augmentation or a change of water right has been filed with the water court and the depletions associated with such water use plan or change will be for a limited duration not to exceed five years. **This plan is the second year of operation for this SWSP.**

SWSP OPERATION

The purpose of this SWSP is to approve a temporary change in the use of Highland Canal water rights owned by LAWMA, that were previously changed and quantified by LAWMA in Case Nos. 02CW181 and 10CW85, in order to fill the Permanent Pool in John Martin Reservoir (" JMR") and thereafter replace evaporation from the Permanent Pool. Pursuant to the

decrees entered in Case Nos. 02CW181 and 10CW85, the Highland Canal water rights may be used for augmentation or replacement of depletions in the Arkansas River or its tributaries by LAWMA. The Highland Canal water rights changed in Case Nos. 02CW161 and 10CW65 are currently decreed to be diverted and stored only in the JMR Offset Account. Subject to the terms and conditions included in the agreement entered into between the states of Colorado and Kansas ("Permanent Pool Agreement") dated February 28, 2018, LAWMA has agreed to provide fully-consumable water from its Highland Canal water rights for use by the Colorado Division of Parks and Wildlife ("CPW") in the Permanent Pool. Both the Permanent Pool and the Offset Account are storage accounts located within JMR. Therefore, there is no physical change in the place of storage of the Highland Canal water rights when the water rights are stored in JMR's Permanent Pool account or the Offset Account. However, because all or a portion of the Highland Canal water rights changed in Case Nos. 02CW161 and 10CW65 will no longer be delivered to the Offset Account, the use of the Highland Canal water rights changed in Case Nos. 02CW161 and 10CW65 need to be temporarily changed to allow storage in the Permanent Pool in JMR. For the Highland Canal water rights changed in Case Nos. 02CW161 and 10CW65, the allowable uses will also be temporarily changed by this SWSP to include, in addition to the currently decreed augmentation and replacement uses, fish, wildlife, and recreational purposes in JMR and replacement of evaporation from the Permanent Pool in JMR.

Arkansas River Compact Administration ("ARCA") established a Permanent Pool in JMR for fish, wildlife and recreational purposes not to exceed 15,000 acre-feet. This Pool is protected from spill when its volume is 10,000 acre-feet or less. The Pool is normally filled and maintained by CPW using either water from Muddy Creek (decreed in CA-1434) or purchased transmountain water. Muddy Creek does not produce sufficient flow to fill the Pool, or to cover evaporation losses (JMR apportions evaporative losses through the accounts in the reservoir). Transmountain water supplies are prohibitively expensive for CPW. Therefore, the agency is seeking a more permanent and reliable source to cover evaporative losses and fill the Permanent Pool.

A special ARCA meeting was held by telephone on March 20, 2018, during which Resolution No. 2018-01 was approved to authorize the temporary use of the Highland Canal for delivery to the JMR pool. This temporary agreement terminates on March 31, 2019.

DEPLETIONS

Depletions to the Permanent Pool consist primarily of evaporative losses. The evaporative losses from the Permanent Pool depend on the volumes of water in storage in the Permanent Pool. Based on the water surface, the average evaporative losses are 26,478acre feet over all the storage accounts. Evaporative losses on the water stored in the Permanent Pool have averaged 1,960 acre-feet annually (see Table 1). The consumptive use credits available to LAWMA's Highland Canal water rights average 3,811 acre-feet per year, which would be sufficient to cover the losses sustained by CPW's Permanent Pool apportionment. These are given in the attached Table 2 for the Operational Scenario presented in this SWSP request.

Conditions of Approval

This SWSP is hereby approved pursuant to § 37-92-308(5), C.R.S., subject to the following conditions:

1. This SWSP shall be valid for the period of **April 1, 2018 through March 31, 2019**, unless otherwise revoked, or superseded by decree. Should an additional SWSP be requested, the provisions of § 37-92-308(5)(b), C.R.S., shall apply. The statutory fee of $300 will be required pursuant to § 37-92-308(8), C.R.S. Any request for an additional SWSP must be submitted to this office no later than January 2, 2019.
2. In accordance with to § 37-92-308(5), C.R.S., this SWSP cannot be renewed or approved for more than five years. **This approval is for the second year of operation.**
3. Approval of this SWSP is for the purposes stated herein. ARCA Resolution No. 2018-01 and the Permanent Pool Agreement for 2018 (dated February 28, 2018) which permit the operation as described herein are temporary agreements terminating on March 31, 2019. Operations approved under this SWSP shall comply with these agreements. Any renewal of this SWSP MUST have prior approval by all entities involved.
4. A signed copy of ARCA Resolution No. 2018-01 must be submitted to the Division Engineer and the State Engineer as soon as it is available.
5. Accounting of water in this plan, including evaporation calculations, stream depletions, and replacement water deliveries must be provided to the Water Commissioner (Lonnie.Spady@state.co.us), (Rebecca.Nichols@state.co.us) and the Division Engineer (Augmentation.Coordinator@state.co.us) on forms and at times acceptable to them. Said accounting must be received by the 10"" of the month following the month being reported. The name, mailing address, and phone number of the contact person who is responsible for operation and accounting of this SWSP must be provided on the accounting forms.
6. Maintenance of return flows for the Highland Canal water rights and volumetric limits shall comply with the requirements of the decrees in Case Nos. 02CW181 and 10CW085 when the water rights are used for the Permanent Pool uses approved under this SWSP.
7. The State Engineer may revoke this SWSP or add additional restrictions to its operation if at any time the State Engineer determines that injury to other vested water rights has or will occur as a result of the operation of this SWSP. Should this SWSP expire without renewal or be revoked prior to adjudication of a permanent plan for augmentation, all use of water under this plan must cease immediately.
8. The decision of the State Engineer shall have no precedential or evidentiary force, shall not create any presumptions, shift the burden of proof, or serve as a defense in any pending water court case or any other legal action that may be initiated concerning the SWSP. This decision shall not bind the State Engineer to act in a similar manner in any

other applications involving other SWSPs or in any proposed renewal of this SWSP, and shall not imply concurrence with any findings of fact or conclusions of law contained herein, or with the engineering methodologies used by the Applicant. Any appeal of a decision made by the State Engineer concerning an SWSP pursuant to § 37-92-308(5), C.R.S., shall be to the Division 2 Water Judge within thirty days of the date of this decision.

Should you have any questions, please contact Melissa van der Poel of this office or Charlie DiDomenico, in our Division 2 office in Pueblo at (719) 542-3368.

Sincerely,

Jeff Deatherage, P.E.
Chief of Water Supply

Attachments: Permanent Pool Agreement for 2018
Tables 1, 2

cc: Steve Witte, Division Engineer
Kevin Salter, Kansas Department of Agriculture
Dale Book, Spronk Water Engineers
Brett Ackerman, CPW
Katie Wildor, AG's Office
Richard Mehren, MWHW
Division 2 SWSP Review Team
Lonnie Spady, East Regional Team Leader, District 17
Rebecca Nichols, Water Commissioner Districts 66 & 67

Arkansas River Compact Administration
Resolution No. 2018-01

Regarding John Martin Reservoir Permanent Pool

WHEREAS, Section 204 of the Flood Control Act of 1965 authorized a "permanent pool for fish and wildlife and recreational purposes" at John Martin Reservoir ("JMR"); and

WHEREAS, Section 204 of the Flood Control Act of 1965 required that the State of Colorado "purchase and make available any water rights necessary under State law to establish and thereafter maintain the permanent pool"; and

WHEREAS, Section 204 of the Flood Control Act of 1965 required that the Arkansas River Compact Administration ("ARCA") approve "written terms and conditions . . . [for] establishing, maintaining, and operating the permanent pool"; and

WHEREAS, by the Resolution Concerning John Martin Reservoir Permanent Pool ("1976 Resolution") adopted on August 14, 1976, ARCA "approve[d] the creation in [JMR] of a permanent pool . . . and adopt[ed] the criteria . . . as procedures for the operation of [JMR]"; and

WHEREAS, the 1976 Resolution further provided that "water deliveries from other valid water rights owned or controlled by the State of Colorado may be added to the permanent pool water supply subject to the approval of [ARCA]"; and

WHEREAS, The Resolution Concerning an Operating Plan for John Martin Reservoir (Apr. 24, 1980, as amended) ("1980 Operating Plan") recognizes the permanent pool authorized by the 1976 Resolution and makes the operation of the permanent pool subject to the terms of the 1980 Operating Plan; and

WHEREAS, pursuant to a Water Management Agreement between the Colorado Division of Parks and Wildlife and the Lower Arkansas Water Management Association ("LAWMA"), LAWMA will allow use of its Highland Canal water rights located in District 17 upstream of JMR and diverting from the Purgatoire River as a source of water supply for the permanent pool; and

WHEREAS, the States of Colorado and Kansas have agreed to the delivery of fully consumable water from LAWMA's Highland Canal water rights under conditions provided by the document entitled "**Permanent Pool Agreement for 2018,**" attached to this Resolution as Exhibit 1; and

WHEREAS, a clerical error in the Permanent Pool Agreement for 2018, paragraph no. 5 has been found. ARCA acknowledges that the reference to *paragraph no. 3)* should be a reference to *paragraph no. 4),* and both Kansas and Colorado agree to such.

NOW THEREFORE, BE IT RESOLVED that pursuant to the terms of its 1976 Resolution the Arkansas River Compact Administration hereby approves the use of the Highland Canal water rights, formerly diverted from the Purgatoire River in District 17, as an additional source of water supply for the permanent pool at JMR through March 31, 2019, subject to the terms and conditions as described in the "**Permanent Pool Agreement for 2018.**"

ADOPTED by the Arkansas River Compact Administration at the Special Meeting held telephonically on March 20, 2018.

The effective date of this Resolution shall be the date on which the Chief of Engineers of the Corps of Engineers, or his duly authorized representative, concurs with this Resolution by signing and dating below in the space provided.

_____ _____

Jim Rizzuto, Chairman
Arkansas River Compact Administration

Date

_____ _____

Stephanie Gonzales, Recording Secretary,
Arkansas River Compact Administration

Date

Concurrence

_____ _____

Lt. Col. James L. Booth,
Commander and District Engineer,
Albuquerque District, U.S. Army Corps of Engineers
Duly Authorized Representative of the Chief of Engineers,
U.S. Army Corps of Engineers

Date

Copy __ of 4

Permanent Pool Agreement
for 2018

The States of Colorado and Kansas ("States") agree to the delivery of fully consumable water from the Lower Arkansas Water Management Association's ("LAWMA") Highland Canal water rights ("Highland Canal Water") to the Permanent Pool Account in John Martin Reservoir ("Permanent Pool") under the following conditions:

1) The Highland Canal Water may not be delivered to the Permanent Pool pursuant to this agreement until the Arkansas River Compact Administration ("ARCA") approves the temporary use of the Highland Canal Water as a source of water for the Permanent Pool.

2) The State of Colorado and LAWMA shall deliver at least 4,700 acre-feet of fully consumable water to the Offset Account in John Martin Reservoir between April 1, 2018 and November 15, 2018, at least 3,133 acre-feet of which shall be delivered by August 1, 2018. This amount does not include the 500 acre-foot storage charge.

3) In the case of a spill of the Offset Account, or if a spill of the Offset Account appears likely, any quantity of water required to be delivered to the Offset Account prior to August 1, 2018, may be delayed for the purpose of avoiding a spill of such deliveries. The terms and conditions of any such delay shall be first proposed by LAWMA and set forth in writing. There shall be no allowable delay in delivery until such terms and conditions are approved in writing by the Chief Engineer of the State of Kansas. In writing may include email communications and other electronic documents.

4) LAWMA and Colorado Parks and Wildlife must obtain approval for a Substitute Water Supply Plan (SWSP) pursuant to Colorado Revised Statutes §37-92-308(5) prior to delivery of the Highland Canal Water to the Permanent Pool.

5) Upon ARCA approval to use the Highland Canal Water as a source of water for the Permanent Pool as described in paragraph 1), above, and SWSP approval in paragraph 3), above, the Highland Canal Water may be delivered to the Permanent Pool on a daily basis to the extent it is not needed to fulfill the commitment made in paragraph 2), above.

6) The Highland Canal Water shall not be delivered to the Permanent Pool in months when any portion of the Highland Canal Water is used for in-state replacement.

7) Replacement credit will not be claimed as special water input to the H-I Model for the transit losses incurred when the Highland Canal Water is being delivered to the Permanent Pool. LAWMA may claim in-state replacement credit in the monthly accounting maintained by Colorado for unconsumed transit losses allowed by the LAWMA decree or approved Substitute Water Supply Plan.

8) The States will continue to work together to:

   a. Establish a methodology to annually determine LAWMA's projected depletions, projected replacements, and the amount and sources of water committed to the Offset Account

b. Allow the use of the Highland Canal Water as a source of water for the Permanent Pool when the Offset Account is full. When the Offset Account is full, paragraph 2.a of Appendix A.4 of the decree entered in *Kansas v. Colorado*, No. 105, Original provides that there is no obligation to deliver replacement water to the Offset Account under Appendix A.4.

c. Determine what replacement credit is allowed for transit losses on Highland Canal Water deliveries to the Offset Account and Permanent Pool.

d. Examine the potential for exchange from Fort Lyon and Lamar Canal augmentation stations to the Offset Account in lieu of direct delivery to the Stateline, including how the evaporative losses on those exchanged credits are charged.

e. Explore how augmentation station deliveries of Granada Irrigation Company shares could be managed to facilitate replacement of in-state and Stateline depletions.

9) LAWMA or Colorado Parks and Wildlife, through Colorado Division of Water Resources staff, shall notify the State of Kansas and the ARCA Operations Secretary prior to beginning delivery of the Highland Canal Water to the Permanent Pool.

10) The ARCA Operations Secretary shall keep accurate records of all deliveries into the Permanent Pool, provide such information to the State of Kansas upon request, and include an annual summary of all Permanent Pool operations in his annual report to the Administration.

11) Nothing in this agreement shall be construed to alter in any way the State of Colorado's obligation to maintain compliance with the Colorado-Kansas Arkansas River Compact.

12) This agreement shall not be binding on any future agreements related to the delivery of the Highland Canal Water to the Permanent Pool or to the Offset Account.

13) Approval of this agreement does not waive either State's position on allowable uses of the Highland Canal Water.

14) Approval of this agreement does not waive either State's position concerning the interpretation of Appendix A.4 of the decree entered in *Kansas v. Colorado*, No. 105, Orig.

15) The States agree to review the performance of this agreement at the 2018 ARCA Annual Meeting and to discuss renewal or modifications of an agreement to allow for continued delivery of the Highland Canal Water to the Permanent Pool on a temporary or permanent basis beyond the term of this agreement.

16) This agreement will expire on March 31, 2019.

Kevin Rein, P.E.
Colorado State Engineer

David W. Barfield, P.E.
Kansas Chief Engineer

Date: 2/28/2018

2 of 2 originals

TABLE 1

PERTINENT DATA FOR JOHN MARTIN RESERVOIR AND THE HIGHLAND CANAL WATER RIGHTS

(values in ac-ft)

		Historical Data									
		Permanent Pool				JMR					
Year		Inflows	Evap	Spills	EOY Contents	Evap	EOY Contents	02CW181 Highland Direct Flow Div.	10CW85 Highland Direct Flow Div	Days in Cons. Storage	Days JMR Spill
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1980		10,397	1,768	394	8,235	20,564	35,395	6,839	336	271	0
1981		31	2,705	0	5,561	14,958	13,713	7,889	387	201	0
1982		126	2,313	0	3,374	11,516	12,241	7,337	360	195	0
1983		11,527	1,524	0	13,377	26,457	67,444	10,775	529	286	0
1984		2,201	2,367	0	13,210	32,303	204,908	7,636	375	283	0
1985		46	1,664	2,432	9,160	49,891	280,952	8,824	433	310	7
1986		198	1,540	0	7,818	44,881	226,308	7,084	348	206	0
1987		2,588	1,028	0	9,377	55,787	246,368	10,448	513	365	94
1988		0	1,740	205	7,433	40,127	78,984	8,284	407	189	0
1989		0	1,980	0	5,453	20,733	27,407	2,465	121	172	0
1990		1,198	1,842	0	4,808	15,457	17,589	4,490	220	174	0
1991		79	2,119	0	2,768	12,654	8,387	4,495	221	168	0
1992		0	1,017	0	1,751	13,327	13,285	6,920	340	172	0
1993		8,031	1,319	0	8,462	17,895	41,275	7,565	371	178	0
1994		7,747	3,018	0	13,191	25,358	65,255	8,137	399	188	0
1995		131	2,013	1,840	9,469	40,842	257,884	7,768	381	336	36
1996		884	1,633	0	8,721	45,491	230,535	6,297	309	231	0
1997		258	1,416	0	7,562	48,626	296,088	9,016	443	280	0
1998		2,796	1,318	0	9,040	54,700	242,531	9,004	442	310	134
1999		834	948	0	8,925	54,721	326,210	577	28	363	84
2000		-48	1,663	0	7,215	50,873	110,993	5,339	262	211	43
2001		200	1,644	0	5,770	29,802	49,461	4,120	202	179	0
2002		0	2,082	0	3,688	20,345	21,396	2,910	143	162	0
2003		0	1,594	0	2,093	15,962	19,250	5,323	261	163	0
2004		1,040	1,261	0	1,873	9,600	16,632	5,517	271	165	0
2005		498	1,074	4	1,293	14,544	8,464	14,105	692	183	0
2006		0	724	0	569	10,262	5,701	4,585	225	167	0
2007		7,683	993	0	7,983	16,909	23,888	15,665	769	186	0
2008		3,876	3,777	0	8,082	17,387	35,418	8,042	395	175	0
2009		2,956	2,664	0	8,374	16,168	25,614	8,297	407	173	0
2010		4,608	3,256	0	9,002	18,239	26,584	10,912	536	181	0
2011		764	4,731	0	5,035	15,349	9,449	2,258	111	167	0
2012		3,641	3,824	0	4,851	15,325	15,995	2,255	111	164	0
2013		474	2,478	0	2,847	14,341	19,014	5,081	249	167	0
2014		197	1,544	0	1,515	15,353	6,193	5,885	289	169	0
Average		2,142	1,960	139	6,511	26,478	88,195	6,918	340	214	11
Maximum		11,527	4,731	2,432	13,377	55,787	326,210	15,665	769	365	134
Minimum		-48	724	0	569	9,600	5,701	577	28	162	0

Note: Negative value in 2000 due to recalibration of the storage area capacity table. All accounts were adjusted.

Column Explanations:

1) November to October Water Year
2) Intentionally left blank.
3) Historical inflows to permanent pool which includes purchased trans-mountain water and water stored from Muddy Creek water right.
4) Historical evaporation from the permanent pool.
5) Historical spills from the permanent pool.
6) Historical end of the year, October 31contents of the permanent pool. Permanent pool was empty entering water year 1980.
7) Historical evaporation on the entire contents of John Martin Reservoir.
8) Historical end of the year, October 31 contents of John Martin Reservoir.
9) Historical direct flow diversions for the 02CW181 Highland Canal Water Rights as compiled by the Division 2 Engineer's staff.
10) Historical direct flow diversions for the 10CW85 Highland Canal Water Rights as compiled by the Division 2 Engineer's staff.
11) The number days water was stored in the Summer or Winter Conservation Storage Accounts.
12) Number of days water was transferred into the Flood Pool account to be released for spills.

Sources:

a) The historical data were taken from the John Martin Reservoir Daily Operations databases: Files - JM_Archive7901.mdb and JohnMartinArchive2001-2003.mdb and annual tbldata.mdb as provided by the Colorado Division of Water Resources - Division 2.
b) Highland Direct Flow Diversions: CDSS data and LAWMA monthly accounting

Table 2
PROPOSED OPERATION OF THE PERMANENT POOL IN JOHN MARTIN RESERVOIR USING THE 02CW181 HIGHLAND WATER RIGHTS TO REPLACE EVAPORATION
(values in ac-ft)

	Operational Scenario					Permanent Pool			
Year	Total Highland CU Water	CPW Center Farm CU Delivered	2015 CPW Structures Augmented	Water Management Fee (15%)	Maximum available to CPW	Evap Loss	Spill	Highland CU Water Inflow	EOY Contents
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1980	3,576	3,350	227	502	2,621	1,814	0	1,317	14,249
1981	4,574	4,317	257	648	3,413	2,369	0	2,094	11,300
1982	4,389	4,143	245	621	3,276	2,881	0	1,964	8,197
1983	5,680	5,319	362	798	4,159	1,404	0	2,245	15,000
1984	4,037	3,775	263	566	2,946	998	0	0	15,000
1985	4,623	4,340	282	651	3,407	793	0	1,958	14,989
1986	4,510	4,272	238	641	3,393	1,164	0	2,459	14,943
1987	5,443	5,095	348	764	3,982	1,196	0	713	15,000
1988	4,141	3,879	262	582	3,034	1,430	0	2,245	14,890
1989	1,106	1,027	79	154	794	2,143	0	1,017	11,784
1990	2,607	2,465	142	370	1,952	2,341	0	2,199	10,997
1991	2,546	2,393	152	359	1,882	3,269	0	2,254	7,941
1992	4,198	3,975	223	596	3,155	2,581	0	3,081	7,425
1993	4,966	4,717	249	708	3,761	1,809	0	2,883	15,000
1994	4,972	4,713	259	707	3,747	1,807	0	1,302	15,000
1995	3,464	3,216	247	482	2,487	1,130	0	407	14,989
1996	4,205	3,997	208	600	3,189	1,094	0	1,792	14,938
1997	4,258	3,971	287	596	3,089	1,184	0	2,392	14,988
1998	5,991	5,705	286	856	4,564	1,238	0	0	15,000
1999	430	408	22	61	325	946	0	394	14,561
2000	3,282	3,120	162	468	2,490	1,431	0	3,120	14,539
2001	2,781	2,645	136	397	2,112	1,758	0	706	12,042
2002	1,878	1,784	94	268	1,422	2,392	0	525	8,092
2003	3,391	3,223	169	483	2,571	2,281	0	1,006	5,223
2004	3,803	3,617	186	543	2,889	2,397	0	2,054	4,660
2005	9,395	8,944	451	1,342	7,151	2,275	0	2,252	4,058
2006	2,909	2,767	143	415	2,209	2,209	0	2,752	3,877
2007	10,697	10,185	512	1,528	8,145	1,538	0	2,646	12,399
2008	5,062	4,813	249	722	3,843	2,021	0	2,171	12,647
2009	5,172	4,920	252	738	3,930	1,582	0	2,433	13,790
2010	7,765	7,395	370	1,109	5,916	2,181	0	2,331	14,568
2011	1,522	1,442	80	216	1,146	3,234	0	1,437	8,804
2012	1,196	1,133	63	170	900	1,967	0	555	7,209
2013	3,432	3,262	171	489	2,602	1,414	0	1,345	5,136
2014	3,788	3,597	191	540	2,866	1,845	0	2,014	3,972
Average	3,811	3,592	219	539	2,835	1,703	0	1,612	13,081
Maximum	5,991	5,705	362	856	4,564	3,269	0	3,120	15,000
Minimum	430	408	22	61	325	793	0	0	7,425

Note: The operation study was performed on a daily time step and the results summarized annually. This operation study does not include temporary leases of Colorado Parks and Wildlife Lamar Canal shares to non-CPW structures within the LAWMA Augmentation plan.

Column Explanations:

1) November to October Water Year
2) Highland Canal consumptive use water from the Highland Canal water rights changed in 02CW181 & 10CW85 limited to 1) April through October and 2) to maximum monthly, maximum annual, and 20-year cumulative total volumetric limits.
3) Lamar Canal consumptive use deliveries through the Center Farm augmentation station for the Colorado Parks and Wildlife's 4,720 Lamar Canal shares changed in Case No. 02CW181.
4) Colorado Parks and Wildlife structures currently being augmented in LAWMA augmentation plan.
5) Water management fee calculated as Column 6 x 15%.
6) Maximum consumptive use water available to Colorado Parks and Wildlife. Calculated as the minimum of Column 2 and Column 4 minus the sum of Columns 4 through 5.
7) Calculated on a daily basis as previous end of day's contents multiplied by total John Martin Reservoir evaporation divided by end of day's John Martin Reservoir contents.
8) If John Martin Reservoir spills then Permanent Pool account spills when the account is over 10,000 acre-feet. The account doesn't spill if the Permanent Pool is less than 10,000 acre-feet.
9) Consumptive use credits delivered to the Permanent Pool when the reservoir is not spilling and the contents of the Permanent Pool have not exceeded 15,000 acre-feet. This does not include trans-mountain water right.
10) End of year contents of the Permanent Pool calculated as Previous Column 10 - Column 7 - Column 8 + Column 9.

Highland Accounting Summary

(values in ac-ft)

	Direct Flow Consumptive Use Credits			Delivery To		
	02CW181	10CW85	Total	Bypassed for In-State Replacement	Delivered to the Permanent Pool	Delivered to the Offset Account
April	624.86	30.67	655.54	0.00	348.92	306.62
May	604.78	29.69	634.47	0.00	316.92	317.55
June	82.06	4.03	86.08	0.00	86.08	0.00
July	217.94	10.70	228.64	0.00	92.69	135.95
August	884.06	43.40	927.46	0.00	271.35	656.11
September	392.20	19.25	411.46	0.00	268.13	143.33
October	136.32	6.69	143.01	0.00	92.99	50.01
	2,942.23	144.43	3,086.66	0.00	1,477.09	1,609.57

Date	Muddy Creek Flows (cfs)	Rule Creek Flows (cfs)	DOW Percent of Muddy Creek Flows (5000/13425)	Is Rule Creek Flow < 70% of Muddy Creek	Transit Loss Percent Calcs	DOW Credit to Permanent Pool (cfs)	DOW Credit to Permanent Pool (af)	Accounting Date
7/25/2018	24.00	11.00	8.9	Yes	54%	4.1	**8.1**	7/26/2018
7/26/2018	279.00	467.00	103.9	No	30%	72.7	**144.3**	7/27/2018
7/27/2018	81.00	346.00	30.2	No	30%	21.1	**41.9**	7/28/2018
7/28/2018	7.50	30.00	2.8	No	30%	2.0	**3.9**	7/29/2018
7/29/2018	4.20	8.90	1.6	No	30%	1.1	2.2	7/30/2018
7/30/2018	1.00	1.50	0.4	No	30%	0.3	0.5	7/31/2018
7/31/2018	0.00	0.00	0.0	NA	NA	0.0	0.0	8/1/2018
8/1/2018			0.0	NA	NA	0.0	0.0	
							200.9	

Note: Credits to Permanent Pool computed pursuant to the decree in Colorado CA 1434 and as approved in the Resolution Concerning a John Martin Reservoir Permantent Pool (1976). Rule Creek gage was ice-effected until approximately

Date	Muddy Creek Flows (cfs)	Rule Creek Flows (cfs)	DOW Percent of Muddy Creek Flows (5000/13425)	Is Rule Creek Flow < 70% of Muddy Creek	Transit Loss Percent Calcs	DOW Credit to Permanent Pool (cfs)	DOW Credit to Permanent Pool (af)	Accounting Date
8/7/2018	1.79	0.00	0.7	Yes	100%	0.0	**0.0**	8/8/2018
8/8/2018	2.09	1.83	0.8	No	30%	0.5	**1.1**	8/9/2018
			0.0	NA	NA	0.0	**0.0**	1/1/1900
			0.0	NA	NA	0.0	**0.0**	1/1/1900
			0.0	NA	NA	0.0	0.0	1/1/1900
			0.0	NA	NA	0.0	0.0	1/1/1900
			0.0	NA	NA	0.0	0.0	1/1/1900
			0.0	NA	NA	0.0	0.0	
							1.1	

Note: Credits to Permanent Pool computed pursuant to the decree in Colorado CA 1434 and as approved in the Resolution Concerning a John Martin Reservoir Permantent Pool (1976). Rule Creek gage was ice-effected until approximately

SECTION 2

JOHN MARTIN RESERVOIR

Water Year 2018

TABLE: I **COMPACT WATER**

Month	Contents Beg. of Month A.F.	Inflow A.F.	Transfers In A.F.	Transfers Out A.F.	Evap. A.F.	Release A.F.	Contents End Of Month A.F.
November	2912.53	8698.85	2005.45	0.00	7.22	0.00	10697.08
December	13605.46	7212.14	0.00	0.00	55.59	0.00	17853.63
January	18355.75	16773.23	0.00	0.00	40.87	0.00	34585.99
February	35147.19	14503.82	536.86	0.00	248.77	0.00	49377.90
March	49859.04	9284.49	66.44	0.00	730.23	0.00	57998.60
April	55685.90	8273.65	22.89	65861.55	433.59	0.00	525.98
May	0.00	0.00	0.00	0.00	0.00	0.00	0.00
June	0.00	0.00	0.00	0.00	0.00	0.00	0.00
July	0.00	6033.84	79.55	6106.99	6.40	0.00	0.00
August	0.00	2506.60	0.00	2506.60	0.00	0.00	0.00
September	0.00	0.00	0.00	0.00	0.00	0.00	0.00
October	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals:		73286.62	2711.19	74475.14	1522.67	0.00	

TABLE: II **WINTER WATER HOLDING ACCOUNT**

Month	Contents Beg. of Month A.F.	Inflow A.F.	Transfers In A.F.	Transfers Out A.F.	Evap. A.F.	Release A.F.	Contents End Of Month A.F.
November	0.00	2825.76	0.00	989.03	0.61	0.00	1756.74
December	1836.12	3355.80	0.00	1174.82	11.94	0.00	4005.16
January	4117.71	7112.27	0.00	2506.58	9.26	0.00	8601.59
February	8800.69	6245.52	0.00	2185.95	63.28	0.00	12597.88
March	12783.39	1725.91	0.00	14238.20	85.59	0.00	0.00
April	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May	0.00	0.00	0.00	0.00	0.00	0.00	0.00
June	0.00	0.00	0.00	0.00	0.00	0.00	0.00
July	0.00	0.00	0.00	0.00	0.00	0.00	0.00
August	0.00	0.00	0.00	0.00	0.00	0.00	0.00
September	0.00	0.00	0.00	0.00	0.00	0.00	0.00
October	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals:		21265.26	0.00	21094.58	170.68	0.00	

JOHN MARTIN RESERVOIR

Water Year 2018

TABLE: III **OFFSET ACCOUNT**

Month	Contents Beg. of Month A.F.	Inflow A.F.	Transfers In A.F.	Transfers Out A.F.	Evap. A.F.	Release A.F.	Contents End Of Month A.F.
November	8545.40	4138.40	206.94	206.94	13.62	0.00	8545.40
December	12636.35	0.00	0.00	0.00	46.07	0.00	12596.64
January	12594.62	0.00	0.00	0.00	24.06	0.00	12572.58
February	12569.78	0.00	0.00	535.03	66.87	0.00	11970.68
March	11955.03	54.60	575.43	66.44	161.59	0.00	12372.68
April	12372.68	489.89	1102.79	22.89	231.78	0.00	13717.05
May	13867.93	815.10	0.00	0.00	353.65	0.00	14172.14
June	14163.74	492.50	0.00	0.00	486.15	0.00	14185.72
July	9495.15	552.03	0.00	79.55	429.42	4690.18	9495.15
August	9531.37	1085.97	0.00	66.22	247.53	2804.81	7719.96
September	6800.80	588.95	0.00	0.00	220.21	823.15	7044.37
October	7048.97	765.04	0.00	0.00	129.48	0.00	7648.62
Totals:		8982.48	1885.16	977.07	2410.43	8318.14	

TABLE: IV **PERMANENT POOL**

Month	Contents Beg. of Month A.F.	Inflow A.F.	Transfers In A.F.	Transfers Out A.F.	Evap. A.F.	Release A.F.	Contents End Of Month A.F.
November	7636.52	0.00	0.00	0.00	9.40	0.00	7628.72
December	7624.46	0.00	0.00	0.00	27.77	0.00	7600.95
January	7598.46	0.00	0.00	0.00	14.63	0.00	7586.32
February	7585.90	0.00	0.00	0.00	41.98	0.00	7544.34
March	7531.19	0.00	0.00	0.00	101.84	0.00	7442.50
April	7438.33	348.92	0.00	0.00	131.29	0.00	7668.45
May	7760.41	494.86	0.00	0.00	196.64	0.00	7958.35
June	7978.80	162.67	0.00	0.00	273.19	0.00	7847.83
July	7847.83	226.01	0.00	0.00	275.73	0.00	7798.11
August	7798.11	265.20	0.00	0.00	209.03	0.00	7846.08
September	7897.86	284.72	0.00	0.00	251.74	0.00	7887.26
October	7887.26	94.57	0.00	0.00	139.92	0.00	7846.01
Totals:		1876.95	0.00	0.00	1673.16	0.00	

JOHN MARTIN RESERVOIR

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TABLE: V **FLOOD POOL**

Month	Contents Beg. of Month A.F.	Inflow A.F.	Transfers In A.F.	Transfers Out A.F.	Evap. A.F.	Release A.F.	Contents End Of Month A.F.
November	0.00	0.00	0.00	0.00	0.00	0.00	0.00
December	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January	0.00	0.00	0.00	0.00	0.00	0.00	0.00
February	0.00	0.00	0.00	0.00	0.00	0.00	0.00
March	0.00	0.00	0.00	0.00	0.00	0.00	0.00
April	0.00	0.00	0.00	0.00	0.00	0.00	0.00
May	0.00	0.00	0.00	0.00	0.00	0.00	0.00
June	0.00	0.00	0.00	0.00	0.00	0.00	0.00
July	0.00	0.00	0.00	0.00	0.00	0.00	0.00
August	0.00	0.00	0.00	0.00	0.00	0.00	0.00
September	0.00	0.00	0.00	0.00	0.00	0.00	0.00
October	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals:		0.00	0.00	0.00	0.00	0.00	

TABLE: VI **FT. LYON CANAL**

Section III Water

Month	Contents Beg. of Month A.F.	Inflow A.F.	Transfers In A.F.	Transfers Out A.F.	Evap. A.F.	Release A.F.	Contents End Of Month A.F.
November	0.00	0.00	0.00	0.00	0.00	0.00	0.00
December	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January	0.00	0.00	0.00	0.00	0.00	0.00	0.00
February	0.00	0.00	0.00	0.00	0.00	0.00	0.00
March	0.00	0.00	10021.52	0.00	70.52	0.00	9951.00
April	9951.00	0.00	0.00	887.56	159.48	0.00	8922.92
May	7030.36	0.00	0.00	0.00	175.85	4109.24	4618.87
June	0.00	0.00	0.00	0.00	38.98	4579.89	0.00
July	0.00	0.00	0.00	0.00	0.00	0.00	0.00
August	0.00	0.00	0.00	0.00	0.00	0.00	0.00
September	0.00	0.00	0.00	0.00	0.00	0.00	0.00
October	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Totals:		0.00	10021.52	887.56	444.83	8689.13	

JOHN MARTIN RESERVOIR

Water Year 2018

TABLE: VII **LAS ANIMAS CONSOLIDATED CANAL**
Section III Water

Month	Contents Beg. of Month A.F.	Inflow A.F.	Transfers In A.F.	Transfers Out A.F.	Evap. A.F.	Release A.F.	Contents End Of Month A.F.
November	0.00	0.00	0.00	2005.45	0.22	0.00	0.00
December	0.00	0.00	0.00	0.00	0.00	0.00	0.00
January	0.00	0.00	0.00	0.00	0.00	0.00	0.00
February	0.00	0.00	0.00	0.00	0.00	0.00	0.00
March	0.00	0.00	3612.65	0.00	25.42	0.00	3587.23
April	3587.23	0.00	0.00	214.60	58.88	0.00	3320.81
May	3216.95	0.00	0.00	0.00	69.35	1712.73	1531.67
June	1018.01	0.00	0.00	0.00	34.85	925.06	572.45
July	475.93	0.00	0.00	0.00	18.61	113.39	475.93
August	439.76	0.00	0.00	0.00	9.08	119.21	311.73
September	310.69	0.00	0.00	0.00	4.82	216.20	90.45
October	88.95	0.00	0.00	0.00	1.59	0.00	88.95
Totals:		0.00	3612.65	2220.05	222.82	3086.59	

TABLE: VIII **AMITY CANAL**
Section III Water

Month	Contents Beg. of Month A.F.	Inflow A.F.	Transfers In A.F.	Transfers Out A.F.	Evap. A.F.	Release A.F.	Contents End Of Month A.F.
November	47204.09	0.00	0.00	0.00	58.10	0.00	47206.59
December	47129.87	0.00	0.00	0.00	171.89	0.00	46981.79
January	46974.29	0.00	0.00	0.00	90.03	0.00	46891.76
February	46881.39	0.00	0.00	0.00	259.54	0.00	46632.22
March	46571.24	0.00	0.00	0.00	627.44	2418.86	43585.92
April	43585.92	0.00	0.00	0.00	592.71	13947.09	29107.98
May	28715.74	0.00	0.00	0.00	728.94	0.00	28317.18
June	27857.78	0.00	0.00	0.00	954.81	0.00	27395.62
July	23676.54	382.18	0.00	133.77	917.91	3607.88	23676.54
August	23084.99	0.00	0.00	0.00	512.43	8455.94	14959.22
September	12932.77	0.00	0.00	0.00	274.91	10863.42	2978.29
October	2928.61	0.00	0.00	0.00	52.66	0.00	2928.61
Totals:		382.18	0.00	133.77	5241.37	39293.19	

JOHN MARTIN RESERVOIR

Water Year 2018

TABLE: IX **KANSAS SECTION II**

Month	Contents Beg. of Month A.F.	Inflow A.F.	Transfers In A.F.	Transfers Out A.F.	Evap. A.F.	Release A.F.	Contents End Of Month A.F.
November	86623.35	0.00	283.55	0.00	106.77	0.00	86627.92
December	86917.50	0.00	367.29	0.00	317.50	0.00	86864.04
January	86864.04	0.00	786.21	0.00	166.97	0.00	87483.28
February	87599.36	0.00	684.07	0.00	486.76	0.00	87680.59
March	87376.87	0.00	186.34	0.00	1185.23	0.00	86681.70
April	86681.70	0.00	26344.59	0.00	1744.61	0.00	109720.21
May	110015.96	0.00	0.00	0.00	2792.74	0.00	108488.94
June	104401.67	0.00	0.00	0.00	3435.13	23148.92	83195.94
July	52139.89	0.00	2442.80	0.00	2298.75	29919.89	52139.89
August	52129.05	0.00	1029.13	0.00	1396.12	0.00	51874.03
September	51632.18	0.00	0.00	0.00	1620.08	0.00	50141.98
October	49305.21	0.00	0.00	0.00	886.92	0.00	49305.21
Totals:		0.00	32123.98	0.00	16437.58	53068.81	

TABLE: X **TRANSIT LOSS**

Month	Contents Beg. of Month A.F.	Inflow A.F.	Transfers In A.F.	Transfers Out A.F.	Evap. A.F.	Release A.F.	Contents End Of Month A.F.
November	1614.96	0.00	86.82	0.00	2.05	0.00	1615.05
December	1700.00	0.00	6.22	0.00	6.22	0.00	1700.00
January	1700.00	0.00	5.06	0.00	3.24	0.00	1701.82
February	1702.58	0.00	9.39	1.83	9.38	0.00	1700.00
March	1700.00	0.00	11.10	0.00	23.02	0.00	1688.08
April	1688.08	0.00	0.00	0.00	29.00	0.00	1662.61
May	1640.21	0.00	0.00	0.00	41.64	0.00	1617.44
June	1203.30	0.00	0.00	0.00	29.36	1588.08	0.00
July	133.32	0.00	133.77	0.00	0.64	0.00	133.32
August	133.13	0.00	0.00	0.00	3.52	0.00	129.72
September	129.28	0.00	0.00	0.00	4.07	0.00	125.54
October	123.42	0.00	0.00	0.00	2.24	0.00	123.42
Totals:		0.00	252.36	1.83	154.38	1588.08	

JOHN MARTIN RESERVOIR

Water Year 2018

TABLE: XI **D67 WINTER WATER STORAGE CHARGE**

Month	Contents Beg. of Month A.F.	Inflow A.F.	Transfers In A.F.	Transfers Out A.F.	Evap. A.F.	Release A.F.	Contents End Of Month A.F.
November	0.00	0.00	618.66	0.00	0.19	0.00	618.47
December	618.47	0.00	801.31	0.00	4.19	0.00	1415.59
January	1456.79	0.00	1715.31	0.00	3.31	0.00	3127.59
February	3201.05	0.00	1492.49	0.00	23.10	0.00	4596.98
March	4664.51	0.00	406.59	4972.37	31.20	0.00	0.00
April	0.00	0.00	0.00	0.00	0.00	0.00	
May		0.00	0.00	0.00	0.00	0.00	
June		0.00	0.00	0.00	0.00	0.00	
July		0.00	0.00	0.00	0.00	0.00	
August		0.00	0.00	0.00	0.00	0.00	
September		0.00	0.00	0.00	0.00	0.00	
October		0.00	0.00	0.00	0.00	0.00	
Totals:		0.00	5034.36	4972.37	61.99	0.00	

TABLE: XII **COLORADO SECTION II**

Month	Contents Beg. of Month A.F.	Inflow A.F.	Transfers In A.F.	Transfers Out A.F.	Evap. A.F.	Release A.F.	Contents End Of Month A.F.
November	90299.21	0.00	9889.52	9889.52	111.17	0.00	90197.97
December	90111.99	0.00	0.00	0.00	328.77	0.00	89869.20
January	89839.76	0.00	0.00	0.00	172.13	0.00	89697.07
February	89637.67	0.00	0.00	0.00	496.66	0.00	89200.41
March	89122.65	0.00	5174.55	777.61	1228.45	3931.61	88437.29
April	89657.22	0.00	39522.86	6.53	1810.67	12547.36	113639.49
May	103559.32	0.00	8597.13	8597.13	2681.20	9126.98	101787.41
June	100724.82	0.00	0.00	0.00	3279.66	10878.81	87628.94
July	84404.60	0.00	3664.19	0.00	2890.54	10300.09	78102.50
August	78102.50	0.00	1543.69	0.00	2038.78	3749.76	74150.87
September	72686.34	0.00	0.00	0.00	2229.23	4349.33	67279.09
October	65747.68	0.00	0.00	0.00	1176.42	1071.57	65065.12
Totals:		0.00	68391.94	19270.79	18443.68	55955.51	

Other Water									
Winter Water Holding Acc		11/1/2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D67 Winter Water Storage Pool		11/1/2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Permanent Pool		11/1/2017	7,638.12	0.00	0.00	0.00	0.00	0.84	7,637.28
Flood Pool		11/1/2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Storage		**Totals:**	**7,638.12**	**498.10**	**2,005.45**	**0.00**	**0.00**	**0.84**	**10,140.83**
Agreement									
InterState									
Kansas	Kansas	11/1/2017	86,637.47	0.00	0.00	0.00	0.00	9.55	86,627.92
Transit Loss		11/1/2017	1,615.23	0.00	0.00	0.00	0.00	0.18	1,615.05
Section III									
Amity		11/1/2017	47,211.78	0.00	0.00	0.00	0.00	5.19	47,206.59
Ft. Lyon		11/1/2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Las Animas		11/1/2017	2,005.67	0.00	0.00	2,005.45	0.00	0.22	0.00
CO Sec II									
Prev Winter Stored	Keesee	11/1/2017	0.00	0.00	399.12	0.00	0.00	0.00	399.12
Prev Winter Stored	Ft Bent	11/1/2017	0.00	0.00	1,737.99	0.00	0.00	0.00	1,737.99
Prev Winter Stored	Amity	11/1/2017	0.00	0.00	682.09	0.00	0.00	0.00	682.09
Prev Winter Stored	Lamar	11/1/2017	0.00	0.00	3,490.88	0.00	0.00	0.00	3,490.88
Prev Winter Stored	Hyde	11/1/2017	0.00	0.00	225.56	0.00	0.00	0.00	225.56
Prev Winter Stored	X-Y	11/1/2017	0.00	0.00	885.11	0.00	0.00	0.00	885.11
Prev Winter Stored	Buffalo	11/1/2017	0.00	0.00	1,489.83	0.00	0.00	0.00	1,489.83
Prev Winter Stored	Sisson	11/1/2017	0.00	0.00	208.30	0.00	0.00	0.00	208.30
Prev Winter Stored	Stubbs	11/1/2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prev Winter Stored	Manvel	11/1/2017	0.00	0.00	435.29	0.00	0.00	0.00	435.29
Prev Winter Stored	Manvel	11/1/2017	0.00	0.00	335.35	0.00	0.00	0.00	335.35
CO Sec II									
Cmt Winter Stored	Keesee	11/1/2017	399.16	0.00	0.00	399.12	0.00	0.04	0.00
Cmt Winter Stored	Ft Bent	11/1/2017	1,738.18	0.00	0.00	1,737.99	0.00	0.19	0.00
Cmt Winter Stored	Amity	11/1/2017	682.17	0.00	0.00	682.09	0.00	0.08	0.00
Cmt Winter Stored	Lamar	11/1/2017	3,491.26	0.00	0.00	3,490.88	0.00	0.38	0.00
Cmt Winter Stored	Hyde	11/1/2017	225.58	0.00	0.00	225.56	0.00	0.02	0.00
Cmt Winter Stored	X-Y	11/1/2017	885.21	0.00	0.00	885.11	0.00	0.10	0.00
Cmt Winter Stored	Buffalo	11/1/2017	1,489.99	0.00	0.00	1,489.83	0.00	0.16	0.00
Cmt Winter Stored	Sisson	11/1/2017	208.32	0.00	0.00	208.30	0.00	0.02	0.00
Cmt Winter Stored	Stubbs	11/1/2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cmt Winter Stored	Manvel	11/1/2017	435.34	0.00	0.00	435.29	0.00	0.05	0.00
Cmt Winter Stored	Manvel	11/1/2017	335.39	0.00	0.00	335.35	0.00	0.04	0.00
CO Sec II									
Summer Stored	Keesee	11/1/2017	6,180.65	0.00	0.00	0.00	0.00	0.68	6,179.97
Summer Stored	Ft Bent	11/1/2017	4,710.65	0.00	0.00	0.00	0.00	0.52	4,710.13
Summer Stored	Amity	11/1/2017	284.56	0.00	0.00	0.00	0.00	0.03	284.53
Summer Stored	Lamar	11/1/2017	16,333.53	0.00	0.00	0.00	0.00	1.80	16,331.73
Summer Stored	Hyde	11/1/2017	3,994.11	0.00	0.00	0.00	0.00	0.44	3,993.67
Summer Stored	X-Y	11/1/2017	15,616.24	0.00	0.00	0.00	0.00	1.72	15,614.52
Summer Stored	Buffalo	11/1/2017	21,802.58	0.00	0.00	0.00	0.00	2.40	21,800.18
Summer Stored	Sisson	11/1/2017	3,396.74	0.00	0.00	0.00	0.00	0.37	3,396.37
Summer Stored	Stubbs	11/1/2017	551.85	0.00	0.00	0.00	0.00	0.06	551.79
Summer Stored	Manvel	11/1/2017	3,833.32	0.00	0.00	0.00	0.00	0.42	3,832.90
Summer Stored	Manvel	11/1/2017	3,714.32	0.00	0.00	0.00	0.00	0.41	3,713.91
Agreement		**Totals:**	**227,779.29**	**0.00**	**9,889.52**	**11,894.97**	**0.00**	**25.07**	**225,748.77**
OffsetAccount									
Consumable									
Upstream		11/1/2017	1,091.86	0.00	0.00	0.00	0.00	0.12	1,091.74
Downstream		11/1/2017	6,739.55	28.40	0.00	1.42	0.00	0.74	6,765.79
Kansas		11/1/2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kansas Charge		11/1/2017	283.38	0.00	1.42	0.00	0.00	0.03	284.77
ReturnFlow									
Return Flow		11/1/2017	368.90	0.00	0.00	0.00	0.00	0.04	368.86
RF Transit Loss		11/1/2017	34.24	0.00	0.00	0.00	0.00	0.00	34.24
Keesee Winter		11/1/2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OffsetAccount		**Totals:**	**8,517.93**	**28.40**	**1.42**	**1.42**	**0.00**	**0.93**	**8,545.40**
Reservoir		**Totals:**	**243,935.34**	**526.50**	**11,896.39**	**11,896.39**	**0.00**	**26.84**	**244,435.00**
Colorado Article II Summary									
Keesee		11/1/2017	6,579.81	0.00	399.12	399.12	0.00	0.72	6,579.09
Lamar		11/1/2017	19,824.79	0.00	3,490.88	3,490.88	0.00	2.18	19,822.61
Hyde		11/1/2017	4,219.69	0.00	225.56	225.56	0.00	0.46	4,219.23
Amity		11/1/2017	966.73	0.00	682.09	682.09	0.00	0.11	966.62
X-Y		11/1/2017	16,501.45	0.00	885.11	885.11	0.00	1.82	16,499.63
Buffalo		11/1/2017	23,292.57	0.00	1,489.83	1,489.83	0.00	2.56	23,290.01
Sisson		11/1/2017	3,605.06	0.00	208.30	208.30	0.00	0.39	3,604.67
Ft Bent		11/1/2017	6,448.83	0.00	1,737.99	1,737.99	0.00	0.71	6,448.12
Stubbs		11/1/2017	551.85	0.00	0.00	0.00	0.00	0.06	551.79
Manvel		11/1/2017	8,318.37	0.00	770.64	770.64	0.00	0.92	8,317.45

Other Water									
Winter Water Holding Acc		10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
D67 Winter Water Storage Pool		10/31/2018		0.00	0.00	0.00	0.00	0.00	
Permanent Pool		10/31/2018	7,846.01	0.00	0.00	0.00	0.00	4.10	7,841.91
Flood Pool		10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Storage		**Totals:**	**7,846.01**	**0.00**	**0.00**	**0.00**	**0.00**	**4.10**	**7,841.91**
Agreement									
InterState									
Kansas	Kansas	10/31/2018	49,280.83	0.00	0.00	0.00	0.00	25.77	49,255.06
Transit Loss		10/31/2018	123.36	0.00	0.00	0.00	0.00	0.06	123.30
Section III									
Amity		10/31/2018	2,927.16	0.00	0.00	0.00	0.00	1.53	2,925.63
Ft. Lyon		10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Las Animas		10/31/2018	88.91	0.00	0.00	0.00	0.00	0.05	88.86
CO Sec II									
Prev Winter Stored	Keesee	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prev Winter Stored	Ft Bent	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prev Winter Stored	Amity	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prev Winter Stored	Lamar	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prev Winter Stored	Hyde	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prev Winter Stored	X-Y	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prev Winter Stored	Buffalo	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prev Winter Stored	Sisson	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prev Winter Stored	Stubbs	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prev Winter Stored	Manvel	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prev Winter Stored	Manvel	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
CO Sec II									
Cmt Winter Stored	Keesee	10/31/2018	843.66	0.00	0.00	0.00	0.00	0.44	843.22
Cmt Winter Stored	Ft Bent	10/31/2018	609.03	0.00	0.00	0.00	0.00	0.32	608.71
Cmt Winter Stored	Amity	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cmt Winter Stored	Lamar	10/31/2018	6,167.09	0.00	0.00	0.00	0.00	3.23	6,163.86
Cmt Winter Stored	Hyde	10/31/2018	479.87	0.00	0.00	0.00	0.00	0.25	479.62
Cmt Winter Stored	X-Y	10/31/2018	1,882.62	0.00	0.00	0.00	0.00	0.98	1,881.64
Cmt Winter Stored	Buffalo	10/31/2018	3,101.69	0.00	0.00	0.00	0.00	1.62	3,100.07
Cmt Winter Stored	Sisson	10/31/2018	443.05	0.00	0.00	0.00	0.00	0.23	442.82
Cmt Winter Stored	Stubbs	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cmt Winter Stored	Manvel	10/31/2018	540.06	0.00	0.00	0.00	0.00	0.28	539.78
Cmt Winter Stored	Manvel	10/31/2018	345.82	0.00	0.00	0.00	0.00	0.18	345.64
CO Sec II									
Summer Stored	Keesee	10/31/2018	4,872.02	0.00	0.00	0.00	0.00	2.55	4,869.47
Summer Stored	Ft Bent	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Summer Stored	Amity	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Summer Stored	Lamar	10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Summer Stored	Hyde	10/31/2018	3,521.71	0.00	0.00	0.00	0.00	1.84	3,519.87
Summer Stored	X-Y	10/31/2018	13,773.58	0.00	0.00	0.00	0.00	7.20	13,766.38
Summer Stored	Buffalo	10/31/2018	18,094.75	0.00	0.00	0.00	0.00	9.46	18,085.29
Summer Stored	Sisson	10/31/2018	3,000.27	0.00	0.00	0.00	0.00	1.57	2,998.70
Summer Stored	Stubbs	10/31/2018	461.79	0.00	0.00	0.00	0.00	0.24	461.55
Summer Stored	Manvel	10/31/2018	3,552.34	0.00	0.00	0.00	0.00	1.86	3,550.48
Summer Stored	Manvel	10/31/2018	3,375.79	0.00	0.00	0.00	0.00	1.77	3,374.02
Agreement		**Totals:**	**117,485.39**	**0.00**	**0.00**	**0.00**	**0.00**	**61.43**	**117,423.96**
OffsetAccount									
Consumable									
Upstream		10/31/2018	1,485.82	0.00	0.00	0.00	0.00	0.78	1,485.04
Downstream		10/31/2018	6,150.05	17.10	0.00	0.00	0.00	3.22	6,163.93
Kansas		10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Kansas Charge		10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
ReturnFlow									
Return Flow		10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
RF Transit Loss		10/31/2018	30.98	0.00	0.00	0.00	0.00	0.02	30.96
Keesee Winter		10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OffsetAccount		**Totals:**	**7,666.85**	**17.10**	**0.00**	**0.00**	**0.00**	**4.02**	**7,679.93**
Reservoir		**Totals:**	**132,998.25**	**17.10**	**0.00**	**0.00**	**0.00**	**69.55**	**132,945.80**

Colorado Article II Summary

Keesee		10/31/2018	5,715.68	0.00	0.00	0.00	0.00	2.99	5,712.69
Ft Bent		10/31/2018	609.03	0.00	0.00	0.00	0.00	0.32	608.71
Amity		10/31/2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Lamar		10/31/2018	6,167.09	0.00	0.00	0.00	0.00	3.23	6,163.86
Hyde		10/31/2018	4,001.58	0.00	0.00	0.00	0.00	2.09	3,999.49
X-Y		10/31/2018	15,656.20	0.00	0.00	0.00	0.00	8.18	15,648.02
Buffalo		10/31/2018	21,196.44	0.00	0.00	0.00	0.00	11.08	21,185.36
Sisson		10/31/2018	3,443.32	0.00	0.00	0.00	0.00	1.80	3,441.52
Stubbs		10/31/2018	461.79	0.00	0.00	0.00	0.00	0.24	461.55
Manvel		10/31/2018	7,814.01	0.00	0.00	0.00	0.00	4.09	7,809.92

Distribution of Compact Stored Water April 2018

	A	B	C	D	A-B-C-D		M	N	O	P	Q	R	M-N+O+P-Q-R
	Winter Compact	Evap on Winter Compact	Distribute 40% to Kansas	Distribute 60% to Colorado	Balance		Summer Compact	Evap on Summer Compact	Summer Compact Inflow	Rule 10 Transfers	Distribute 40% to Kansas	Distribute 60% to Colorado	Balance
	0:00 hrs				24:00 hrs		0:00 hrs						24:00 hrs
Date	(af)	(af)	(af)	(af)			(af)	(af)	(af)	(af)	(af)	(af)	
3/31/2018					57998.60								
4/1/2018	57,998.60	32.48	991.75	1,487.63	55,486.74								199.16
4/2/2018	55,486.74	36.12	991.75	1,487.63	52,971.24		199.16	0.12	306.68				505.72
4/3/2018	52,971.24	36.34	991.75	1,487.63	50,455.52		505.72	0.34	255.24				760.62
4/4/2018	50,455.52	18.91	991.75	1,487.63	47,957.23		760.62	0.29	272.86				1,033.19
4/5/2018	47,957.23	45.95	991.75	1,487.63	45,431.90		1033.19	0.99	19.89				1,052.09
4/6/2018	45,431.90	12.34	991.75	1,487.63	42,940.18		1052.09	0.27	132.08				1,183.90
4/7/2018	42,940.18	11.67	991.75	1,487.63	40,449.13		1183.90	0.31	25.15				1,208.74
4/8/2018	40,449.13	11.01	991.75	1,487.63	37,958.74		1208.74	0.33	700.70				1,909.11
4/9/2018	37,958.74	21.46	991.75	1,487.63	35,457.90		1909.11	1.08	539.11				2,447.14
4/10/2018	35,457.90	13.37	991.75	1,487.63	32,965.15		2447.14	0.92	194.89				2,641.11
4/11/2018	32,965.15	20.06	991.75	1,487.63	30,465.71		2641.11	1.61	399.39				3,038.89
4/12/2018	30,465.71	34.57	991.75	1,487.63	27,951.76		3038.89	3.45	560.10				3,595.54
4/13/2018	27,951.76	8.82	991.75	1,487.63	25,463.56		3595.54	1.13	204.63				3,799.04
4/14/2018	25,463.56	8.04	991.75	1,487.63	22,976.14		3799.04	1.20	100.67				3,898.51
4/15/2018	22,976.14	7.75	991.75	1,487.63	20,489.01		3898.51	1.32	105.74				4,002.93
4/16/2018	20,489.01	12.98	831.98	1,247.96	18,396.09		4002.93	2.54	177.78				4,178.17
4/17/2018	18,396.09	9.72	793.40	1,190.10	16,402.87		4178.17	2.21	116.33				4,292.29
4/18/2018	16,402.87	7.29	793.40	1,190.10	14,412.08		4292.29	1.91	73.42				4,363.80
4/19/2018	14,412.08	5.50	793.40	1,190.10	12,423.08		4363.80	1.66	164.95				4,527.09
4/20/2018	12,423.08	6.85	793.40	1,190.10	10,432.73		4527.09	2.50	752.77				5,277.36
4/21/2018	10,432.73	5.75	793.40	1,190.10	8,443.48		5277.36	2.91	434.84				5,709.29
4/22/2018	8,443.48	4.66	793.40	1,190.10	6,455.32		5709.29	3.15	205.79				5,911.93
4/23/2018	6,455.32	4.52	793.40	1,190.10	4,467.30		5911.93	4.14	295.43				6,203.22
4/24/2018	4,467.30	0.76	793.40	1,190.10	2,483.04		6203.22	1.05	658.78	22.89			6,883.84
4/25/2018	2,483.04	1.37	793.40	1,190.10	498.17		6883.84	3.80	10.41				6,890.45
4/26/2018	498.17	0.21	199.18	298.78	0.00		6890.45	2.93	264.33		594.22	891.32	5,666.31
4/27/2018	0.00						5666.31	5.78	202.24		793.40	1190.10	3,879.27
4/28/2018	-						3879.27	3.96	620.29		793.40	1190.10	2,512.10
4/29/2018	-						2512.10	2.62	0.00		793.40	1190.10	525.98
4/30/2018	-						525.98	0.57	280.00		322.16	483.25	-
5/1/2018													
5/2/2018													
Total		346.02	22,056.26	33,084.46				55.09	8,273.65		3,296.58	4,944.87	

Distribution of Compact Stored Water Starting Aug 26 2018

	A	B	C	D	A-B-C-D		M	N	O	P	Q	R	M-N+O+P-Q-R
	Winter Compact	Evap on Winter Compact	Distribute 40% to Kansas	Distribute 60% to Colorado	Balance		Summer Compact	Evap on Summer Compact	Summer Compact Inflow	Rule 10 Transfers	Distribute 40% to Kansas	Distribute 60% to Colorado	Balance
	0:00 hrs				24:00 hrs		0:00 hrs						24:00 hrs
Date	(af)	(af)	(af)	(af)			(af)	(af)	(af)	(af)	(af)	(af)	
7/25/2018													
7/26/2018							0.00						2,944.77
7/27/2018							2944.77	2.61	1679.29		793.40	1,190.11	2,637.94
7/28/2018	-				-		2637.94	2.32	870.86		793.40	1,190.11	1,522.97
7/29/2018	-				-		1522.97	1.38	538.92	79.55	793.40	1,190.11	156.55
7/30/2018	-				-		156.55	0.06			62.60	93.89	(0.00)
7/31/2018	-				-		0.00				-	-	(0.00)
8/1/2018	-				-		0.00				-	-	(0.00)
8/2/2018	-				-		0.00				-	-	(0.00)
8/3/2018	-				-		0.00				-	-	(0.00)
Total		0.00	-	-							1,649.40	2,474.11	

Distribution of Compact Stored Water Starting Aug 08 2018

	A	B	C	D	A-B-C-D		M	N	O	P	Q	R	M-N+O+P-Q-R
	Winter Compact	Evap on Winter Compact	Distribute 40% to Kansas	Distribute 60% to Colorado	Balance		Summer Compact	Evap on Summer Compact	Summer Compact Inflow	Rule 10 Transfers	Distribute 40% to Kansas	Distribute 60% to Colorado	Balance
	0:00 hrs				24:00 hrs		0:00 hrs						24:00 hrs
Date	(af)	(af)	(af)	(af)			(af)	(af)	(af)	(af)	(af)	(af)	
8/7/2018													
8/8/2018									1494.89		597.96	896.93	-
8/9/2018							0.00		1011.71		404.68	607.03	-
8/10/2018	-				-		0.00						-
8/11/2018	-				-		0.00						-
8/12/2018	-				-		0.00						-
Total		0.00	-	-							1,002.64	1,503.96	

Summary of Key Information for Section II - Offset Delivery June-July 2017

11/27/2018

Date	Flow Data			Release Data				Muskingum routing				Antecedent Flow Calculations			Delivery Calculations	
	Mean Daily Stateline (SL) Flow	Mean Daily Stateline (SL) Flow	SL flow less antecedent flow	Offset Consumable Release	Offset Non-Consumable Release	Section 2 Release	Transit Loss Release	Total Release	Total Release Times 1.05	Routed release	Routed release, lagged one day				Stateline Delivery Hydrograph	Equivalent Stateline Flow Hydrograph
			189.7													
	CFS	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF				AF	AF
5/23/2018	168	332	143	0	0	0	0	0	0	0	0	Initial Average=	190.52		0	0
5/24/2018	166	329	139	0	0	0	0	0	0	0	0				0	0
5/25/2018	155	308	119	0	0	0	0	0	0	0	0				0	0
5/26/2018	141	280	90	0	0	0	0	0	0	0	0				0	0
5/27/2018	131	261	71	0	0	0	0	0	0	0	0				0	0
5/28/2018	123	245	55	0	0	0	0	0	0	0	0				0	0
5/29/2018	126	250	60	0	0	0	0	0	0	0	0				0	0
5/30/2018	119	236	46	0	0	0	0	0	0	0	0				0	0
5/31/2018	107	212	22	0	0	0	0	0	0	0	0				0	0
6/1/2018	96	191	1	0	0	0	0	0	0	0	0				0	0
6/2/2018	90	179	0	0	0	0	0	0	0	0	0	YES	10		0	0
6/3/2018	91	181	0	0	0	0	0	0	0	0	0	YES	1		0	0
6/4/2018	101	200	11	0	0	0	0	0	0	0	0	YES	3		0	0
6/5/2018	100	198	8	0	0	0	0	0	0	0	0	YES	9		0	0
6/6/2018	92	183	0	0	0	0	0	0	0	0	0	YES	6		0	0
6/7/2018	95	188	0	0	0	0	0	0	0	0	0	YES	5		0	0
6/8/2018	96	191	1	0	0	0	0	0	0	0	0	YES	8		0	0
6/9/2018	93	184	0	0	0	0	0	0	0	0	0	YES	4		0	0
6/10/2018	98	195	5	0	0	0	0	0	0	0	0	YES	2		0	0
6/11/2018	100	199	9	0	0	248	41	248	260	12	0	YES	7		0	0
6/12/2018	94	187	0	0	0	595	99	595	625	124	12	Adjusted Average	189.75	1897.50	0	12
6/13/2018	116	229	40	0	0	595	99	595	625	315	124	YES		10.00	40	124
6/14/2018	177	352	162	0	0	893	149	893	937	448	315	YES			162	315
6/15/2018	214	424	234	0	0	1190	256	1190	1250	649	448	YES			234	424
6/16/2018	283	562	372	0	0	1190	298	1190	1250	878	649	YES			372	562
6/17/2018	372	739	549	0	0	1190	298	1190	1250	1019	878	YES			549	739
6/18/2018	433	858	668	0	0	1190	298	1190	1250	1107	1019	YES			668	858
6/19/2018	464	921	731	0	0	1190	51	1190	1250	1161	1107	YES			731	921
6/20/2018	498	987	797	0	0	1190	0	1190	1250	1195	1161	YES			797	987
6/21/2018	474	940	751	0	0	1422	0	1422	1493	1227	1195	YES			751	940
6/22/2018	478	949	759	0	0	1587	0	1587	1666	1337	1227	YES			759	949
6/23/2018	571	1132	942	0	0	1587	0	1587	1666	1462	1337	Adjusted Average	189.75	1897.50	942	1132
6/24/2018	694	1377	1187	0	0	1587	0	1587	1666	1540	1462	Final Baseflow	95.66	10.00	1187	1377
6/25/2018	1124	2228	2039	0	0	1463	0	1463	1536	1582	1540	Computations for < 6 days			1540	1540
6/26/2018	810	1606	1416	0	0	1273	0	1273	1336	1555	1582	Enter date of 6th day		0.00	1416	1582
6/27/2018	761	1510	1320	0	0	1190	0	1190	1250	1467	1555	Enter date of 5th day		0.00	1320	1510
6/28/2018	641	1272	1083	0	0	1190	0	1190	1250	1384	1467	Enter date of 4th day		0.00	1083	1272
6/29/2018	608	1207	1017	0	0	1190	0	1190	1250	1333	1384	Average with 6 days	189.75		1017	1207
6/30/2018	602	1194	1004	0	0	1190	0	1190	1250	1301	1333				1004	1194
7/1/2018	569	1128	939	0	0	1190	0	1190	1250	1282	1301				939	1128
7/2/2018	543	1077	887	0	0	1190	0	1190	1250	1269	1282				887	1077
7/3/2018	531	1053	863	0	0	1190	0	1190	1250	1262	1269				863	1053
7/4/2018	520	1032	842	0	0	1190	0	1190	1250	1257	1262				842	1032
7/5/2018	570	1130	941	0	0	1190	0	1190	1250	1254	1257				941	1130
7/6/2018	530	1051	861	0	116	1132	0	1248	1310	1255	1254				861	1051
7/7/2018	537	1064	874	0	198	1091	0	1289	1354	1278	1255				874	1064
7/8/2018	544	1080	890	0	198	1091	0	1289	1354	1307	1278				890	1080
7/9/2018	536	1063	873	0	198	1091	0	1289	1354	1325	1307				873	1063
7/10/2018	542	1074	884	0	219	1132	0	1351	1419	1339	1325				884	1074
7/11/2018	562	1115	925	0	225	1145	0	1370	1438	1370	1339				925	1115
7/12/2018	591	1172	982	83	136	1132	0	1351	1419	1395	1370				982	1172
7/13/2018	593	1176	987	248	0	1190	0	1438	1510	1409	1395				987	1176
7/14/2018	602	1194	1005	248	0	1190	0	1438	1510	1447	1409				1005	1194
7/15/2018	725	1439	1249	248	0	1190	0	1438	1510	1471	1447				1249	1439
7/16/2018	789	1565	1376	248	0	1190	0	1438	1510	1486	1471				1376	1471
7/17/2018	667	1323	1133	248	0	1190	0	1438	1510	1495	1486				1133	1323
7/18/2018	685	1359	1170	248	0	1190	0	1438	1510	1501	1495				1170	1359
7/19/2018	692	1372	1183	248	0	1190	0	1438	1510	1504	1501				1183	1372
7/20/2018	694	1377	1187	248	0	1190	0	1438	1510	1506	1504				1187	1377
7/21/2018	693	1374	1184	248	0	1190	0	1438	1510	1508	1506				1184	1374
7/22/2018	686	1360	1171	248	0	1190	0	1438	1510	1509	1508				1171	1360
7/23/2018	692	1373	1183	248	0	1190	0	1438	1510	1509	1509				1183	1373
7/24/2018	748	1483	1293	248	0	1130	0	1378	1447	1506	1509				1293	1483
7/25/2018	871	1727	1538	248	0	1091	0	1339	1406	1482	1506				1506	1506
7/26/2018	944	1872	1683	93	0	626	0	719	755	1422	1482				1482	1482
7/27/2018	1322	2622	2432	0	0	217	0	217	228	1143	1422				1422	1422
7/28/2018	1517	3009	2820	0	0	0	0	0	0	783	1143				1143	1143
7/29/2018	822	1630	1441	0	0	0	0	0	0	485	783				783	783
7/30/2018	717	1422	1232	0	0	0	0	0	0	300	485				485	485
7/31/2018	587	1164	974	0	0	0	0	0	0	186	300				300	300
8/1/2018	474	941	751	0	0	0	0	0	0	115	186				186	186
8/2/2018	391	776	586	0	0	0	0	0	0	0	67				67	67
8/3/2018	315	625	436	0	0	0	0	0	0	0	0				0	0
8/4/2018	279	553	363	0	0	0	0	0	0	0	0				0	0
8/5/2018	263	521	332	0	0	0	0	0	0	0	0				0	0
8/6/2018	242	480	291	0	0	0	0	0	0	0	0				0	0
1/13/2019	0	0	0	0	0	0	0	0	0	0	0				0	0
1/14/2019	0	0	0	0	0	0	0	0	0	0	0				0	0
1/15/2019	0	0	0	0	0	0	0	0	0	0	0				0	0
			Totals	3400	1291	53069	1588	57759	60647	60460	60412				46828	54360

Paragraph 3.b.iii check	
Average for prior days 11-20	249.04
Is value twice the computed Antecedent Flow Value?	No
Muskingum Day 6 =	#N/A
Para. 3.b.iii AF Value	#N/A

Total Offset =	4690
Transit Loss on Consumable =	643
Granada Transit Loss Credit Percentage =	100.0%
Transit Loss Model Input JMR to Lamar =	53
Transit Loss Model Input Lamar to Granada =	286
Transit Loss Model Input Granada to Stateline =	144
Total Transit Loss Model Input =	483

Muskingum
Derivation of factors

K (hr)=	60	cO=	0.048
x =	0.15	c1 =	0.333
t (hr) =	24	c2 =	0.619
		c0+c1+c2 =	1.00

K t ratio check

2Kx <	t	<	2K(1-x)
18	24		102

Offset Delivery Efficiency =	81.07%
Offset Net Delivery =	3803
Offset Consumable Delivery =	2756
ESF Delivery Efficiency =	94.1%
Section II Delivery =	49946
Section II Delivery Transit Loss =	3123
Evaporation Delivery Credit	0

Summary of Key Information for Section II - Offset Delivery June-July 2010

11/27/2018

Date	Flow Data: Mean Daily Stateline (SL) Flow	Flow Data: Mean Daily Stateline (SL) Flow	Flow Data: SL flow less antecedent flow	Release Data: Offset Consumable Release	Release Data: Offset Non-Consumable Release	Release Data: Section 2 Release	Release Data: Transit Loss Release	Muskingum routing: Total Release	Muskingum routing: Total Release Times 1.05	Muskingum routing: Routed release	Muskingum routing: Routed release, lagged one day	Delivery Calculations: Stateline Delivery Hydrograph	Delivery Calculations: Equivalent Stateline Flow Hydrograph
			339.8										
	CFS	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF	AF
7/30/2018	717	1422	1082	0	0	0	0	0	0	0	0	0	0
7/31/2018	587	1164	824	0	0	0	0	0	0	0	0	0	0
8/1/2018	474	941	601	0	0	0	0	0	0	0	0	0	0
8/2/2018	391	776	436	0	0	0	0	0	0	0	0	0	0
8/3/2018	315	625	285	0	0	0	0	0	0	0	0	0	0
8/4/2018	279	553	213	0	0	0	0	0	0	0	0	0	0
8/5/2018	263	521	182	0	0	0	0	0	0	0	0	0	0
8/6/2018	240	475	136	0	0	0	0	0	0	0	0	0	0
8/7/2018	222	440	100	0	0	0	0	0	0	0	0	0	0
8/8/2018	212	421	81	0	0	0	0	0	0	0	0	0	0
8/9/2018	219	434	94	0	0	0	0	0	0	0	0	0	0
8/10/2018	203	402	62	0	0	0	0	0	0	0	0	0	0
8/11/2018	193	384	44	0	0	0	0	0	0	0	0	0	0
8/12/2018	186	370	30	0	0	0	0	0	0	0	0	0	0
8/13/2018	174	345	5	0	0	0	0	0	0	0	0	0	0
8/14/2018	169	335	0	0	0	0	0	0	0	0	0	0	0
8/15/2018	159	315	0	0	0	0	0	0	0	0	0	0	0
8/16/2018	162	321	0	0	0	0	0	0	0	0	0	0	0
8/17/2018	156	309	0	0	0	0	0	0	0	0	0	0	0
8/18/2018	156	309	0	174	0	0	0	174	182	9	0	0	0
8/19/2018	237	471	131	278	0	0	0	278	292	80	9	9	9
8/20/2018	199	394	54	278	0	0	0	278	292	161	80	54	80
8/21/2018	209	414	74	278	0	0	0	278	292	210	161	74	161
8/22/2018	230	457	117	189	0	0	0	189	198	237	210	117	210
8/23/2018	246	489	149	139	0	0	0	139	146	220	237	149	237
8/24/2018	217	431	91	139	0	0	0	139	146	192	220	91	220
8/25/2018	195	386	46	139	0	0	0	139	146	174	192	46	192
8/26/2018	192	381	42	139	0	0	0	139	146	163	174	42	174
8/27/2018	174	346	6	139	0	0	0	139	146	157	163	6	163
8/28/2018	177	351	11	201	0	0	0	201	211	156	157	11	157
8/29/2018	178	352	13	238	0	0	0	238	250	179	156	13	156
8/30/2018	185	366	27	238	0	0	0	238	250	206	179	27	179
8/31/2018	193	382	42	238	0	0	0	238	250	223	206	42	206
9/1/2018	193	384	44	238	0	0	0	238	250	233	223	44	223
9/2/2018	200	396	56	238	0	0	0	238	250	239	233	56	233
9/3/2018	229	455	115	238	0	0	0	238	250	243	239	115	239
9/4/2018	323	640	301	109	0	0	0	109	115	239	243	243	243
9/5/2018	299	594	254	0	0	0	0	0	0	186	239	239	239
9/6/2018	255	505	165	0	0	0	0	0	0	115	186	165	186
9/7/2018	242	480	140	0	0	0	0	0	0	71	115	115	115
9/8/2018	229	455	115	0	0	0	0	0	0	44	71	71	71
9/9/2018	220	436	96	0	0	0	0	0	0	27	44	44	44
9/10/2018	218	432	93	0	0	0	0	0	0	0	13	13	13
9/11/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/12/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/13/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/14/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/15/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/16/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/17/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/18/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/19/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/20/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/21/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/22/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/23/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/24/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/25/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
9/26/2018	0	0	0	0	0	0	0	0	0	0	0	0	0
			Totals	3628	0	0	0	3628	3809	3765	3750	1787	3750

Antecedent Flow Calculations

Initial Average=	356.09	
NO	2	
YES	3	
YES	4	
YES	5	
YES	6	
YES	8	
YES	7	
YES	10	
YES	9	
NO	1	
Adjusted Average	347.57	2780.59
NO		8.00
NO		
YES		
YES		
YES		
YES		
YES		
YES		
YES		
NO		
Adjusted Average	339.78	2378.47
Final Baseflow	171.30	7.00
Computations for < 6 days		
Enter date of 6th day		0.00
Enter date of 5th day		0.00
Enter date of 4th day		0.00
Average with 6 days	339.78	

Paragraph 3.b.iii check	
Average for prior days 11-20	634.94
Is value twice the computed Antecedent Flow Value?	No
Muskingum Day 6 =	#N/A
Para. 3.b.iii AF Value	#N/A

Total Offset =	3628
Transit Loss on Consumable =	1841
Granada Transit Loss Credit Percentage =	12.1%
Transit Loss Model Input JMR to Lamar =	25
Transit Loss Model Input Lamar to Granada =	91
Transit Loss Model Input Granada to Stateline =	430
Total Transit Loss Model Input =	545

Muskingum
Derivation of factors

K (hr)=	60	cO=	0.048
x =	0.15	c1 =	0.333
t (hr) =	24	c2 =	0.619
		c0+c1+c2 =	1.00

K t ratio check

2Kx <	t	< 2K(1-x)
18	24	102

Offset Delivery Efficiency =	49.27%
Offset Net Delivery =	1787
Offset Consumable Delivery =	1787
ESF Delivery Efficiency =	#N/A
Section II Delivery =	#N/A
Section II Delivery Transit Loss =	#N/A
Evaporation Delivery Credit	0

FULL REPORT CAN BE DOWNLOADED ELECTRONICALLY ON THE ARKANSAS RIVER COMPACT ADMINISTRATION WEBSITE

Exhibit M

Annual Meeting

December 7, 2018

December 1, 2018

Mr. Hal Scheuerman, Chairman
Mr. Lane Malone, Member
Operations Committee
Arkansas River Compact Administration

Re: Compact Year 2018 Summary
Assistant Operations Secretary Report

Gentlemen,

In this report, I will provide my perspective as Assistant Operations Secretary on operations that have occurred over the past Compact Year (CY), including Communications, Deliveries to Kansas, the Pueblo Winter Water Storage Program (PWWSP), Pass-thru & Status Accounting, and Water Issues Matrix.

Communications

The Operations Secretary, Assistant Operations Secretary, and their respective staff have set a goal of open and frequent communications regarding Arkansas River operational issues to foster a positive, collaborative, and productive working relationship. We continue to work on achieving this goal.

The Operations and Assistant Operation Secretaries met once, on November 14th. We discussed several topics at this meeting.

We were also involved in a number of ARCA Special Engineering Committee meetings this year. This committee was focused on two issues: use of the Highland Canal water rights as an evaporation replacement source for the John Martin Reservoir (JMR) permanent pool and a proposed multi-purpose account. More recently, the focus has been on JMR permanent pool.

Exhibit M

There was a tour of the Arkansas River between Las Animas, Colorado and Coolidge, Kansas that included Colorado & Kansas DWR staff, USGS, and Corps staff. The tour included stops at USGS gage locations, JMR, ditch headgates, augmentation stations, recharge and head stabilization ponds. This tour allowed for networking between the participants.

The States have communicated on a regular basis on a variety of topics including John Martin Accounting System (JMAS) data updates, PWWSP operational issues, Offset Account operations, Kansas releases, and runoff conditions within the Arkansas River Basin.

John Martin Reservoir

Figure 1 below provides a graphical representation of JMR and the accounts contained within for CY2018. The maximum end of day content occurred on March 18th with 316,647 AF in storage. The minimum end of day content occurred on October 31st with 132,946 AF in storage.

The JMR stilling basin is being examined for the first time since the reservoir was built. Both States are staying in communication with the Corps with regularly scheduled monthly conference calls.

Deliveries to Kansas

Kansas entered the irrigation season (April 1st) with approximately 87,625 AF in its Section II account and ended (October 31st) with 49,255 AF. During CY2018, Kansas made two releases that will be briefly described below.

The first release from the Kansas Section II Account was started on June 11th. Kansas also made a concurrent release from the Offset Account from July 6th to July 26th. The release rates from the Kansas Section II and Offset Account varied throughout this run as irrigation demand changed and precipitation occurred. Figure 2 below is a graphical summary of this release. The release to Kansas ended July 27th, or a run of approximately 47 days. The release spreadsheet was reviewed by both offices and modifications made as the result of those reviews.

The second release from the Offset Account was from August 18th to September 4th. The release rates varied throughout this run as irrigation demand changed and precipitation occurred. See Figure 3 for a graphic of this release at the end of this report. The release to Kansas ended September 4th, or a run of approximately 18 days. The release spreadsheet accounting was reviewed by both offices and no modifications were made as the result.

On an issue brought up last year related to the Frontier Ditch Parshall flume (flume) there were no days or times during CY2018 that the flume was in submergence. By comparison in CY2017, there was an issue of the flume being in submergence (21 of the 95 days they diverted). This improvement is due in part to Frontier Ditch cleaning a stretch of the ditch below the flume prior to their diversions in CY2018.

Pueblo Winter Water Storage Program

The States have committed to continue to work on this issue and will build upon the work that has already been done. Pueblo Winter Water Storage Program (PWWSP) issues have held up approval of the Operations Secretary's annual reports since 2006.

Colorado and Kansas have tried to visit the Consolidated Ditch to review water being returned to either the Purgatoire River above the Purgatoire River near Las Animas gage or at the tail end of the ditch to the Arkansas River below the USGS Arkansas River at Las Animas gage since November 2010. These visits have generally occurred in the days ahead of November 15th which is the beginning of the PWWSP.

In CY2018 I did not visit the Consolidated Ditch to review returns. However, during the November 14, 2017, OS-AOS meeting, Lonnie Spady, Division 2, showed pictures taken of the Consolidated Ditch. There were no concerns noted. Figure 4 below shows flows, storage, and changes to the ratio used to determine the split between the Compact and PWWSP at Arkansas River at Las Animas.

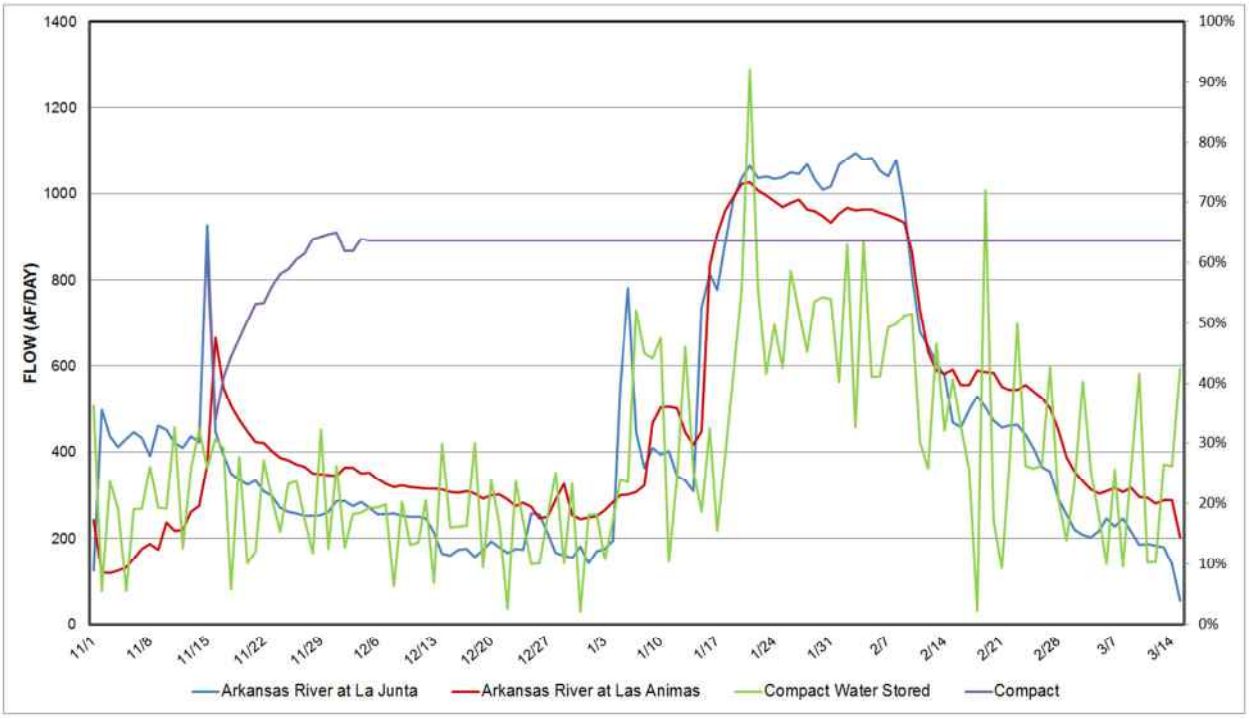


Figure 4. Flows of the Arkansas River at La Junta and Las Animas, Compact storage, and Compact Conservation storage for the period of November 1, 2017 to March 15, 2018 and the Compact ratio of the Arkansas River at Las Animas flows for the period of November 15, 2017 to March 14, 2018.

CY2018 saw two new operations occurring PWWSP period. I'm expecting that these operations will be detailed the OS report. The first was the delivery of water through the Arkansas River at Las Animas gage to the Offset Account during the first two weeks of November. This water was delivered from Lake Meredith and an augmentation station with both being located above the Arkansas River at Las Animas gage. Transit losses were applied from those delivery points to the Arkansas River at Las Animas gage to remove that water from that gage.

The second operation was a pass-thru operation where consumable water was delivered to gravel pit storage below JMR. Again, the Arkansas River at Las Animas flows were adjusted to remove this water from the Arkansas River at Las Animas gage.

CY2019 PWWSP: The Consolidated Ditch was not visited this year. However, during our November 14th meeting, Lonnie Spady, Division 2, reported on his recent visit to the Consolidated Ditch. He noted that there were only small amounts of water returning to the Arkansas River at the tail end of the Consolidated.

Pass-thru and Status Accounting

A spreadsheet is used to track: river flows; JMAS (John Martin Accounting System) inflows and releases; Corps JMR evaporation, storage, and releases. The spreadsheet calculates:

(a) gaged and ungaged inflows, (b) pass-thru, and (c) the reservoir "status." The pass-thru represents that amount of JMR inflows which are not stored in any account and are released downstream. The reservoir "status" represents the difference between the amount considered stored in JMAS and the amount shown as stored in JMR by the Corps. This spreadsheet was updated by Garden City Field Office staff.

In reviewing the CY2018 spreadsheet before providing to the OS, it was recognized that augmentation stations that divert directly into JMR were not included. The spreadsheet was modified to include these augmentation flows into JMR reduced by the estimated transit loss. The modified pass-thru spreadsheet was provided to the OS on November 21st for inclusion in the Operations Secretary's report.

Water Issues Matrix

As previously reported, this matrix is a joint work product of the States which is designed to track various disputed issues. These disputed issues are primarily concerned with JMR related operations and accounting, of which approximately half have been resolved through the efforts of this Committee and others. An updated Water Issues Matrix was not produced for this report.

Summary

I look forward to working with the Operations Secretary and his staff on these issues and the day-to-day operations of the Arkansas River.

Sincerely,

Kevin L. Salter, P.E.
Assistant Operations Secretary

Figure 1 Graphical representation of John Martin Accounts over CY2018

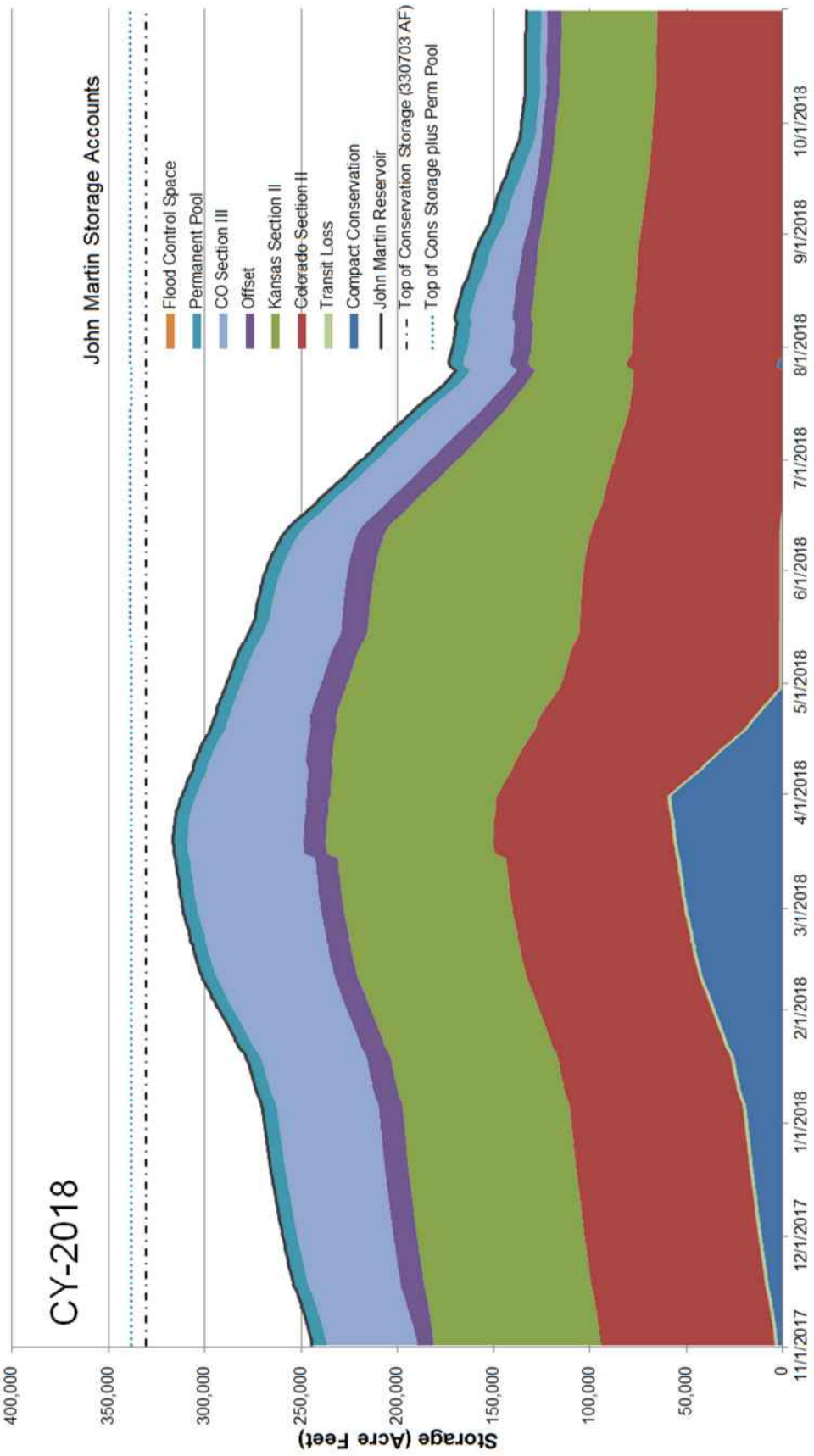


Figure 2 Hydrograph of the Kansas Run #1 at the Stateline

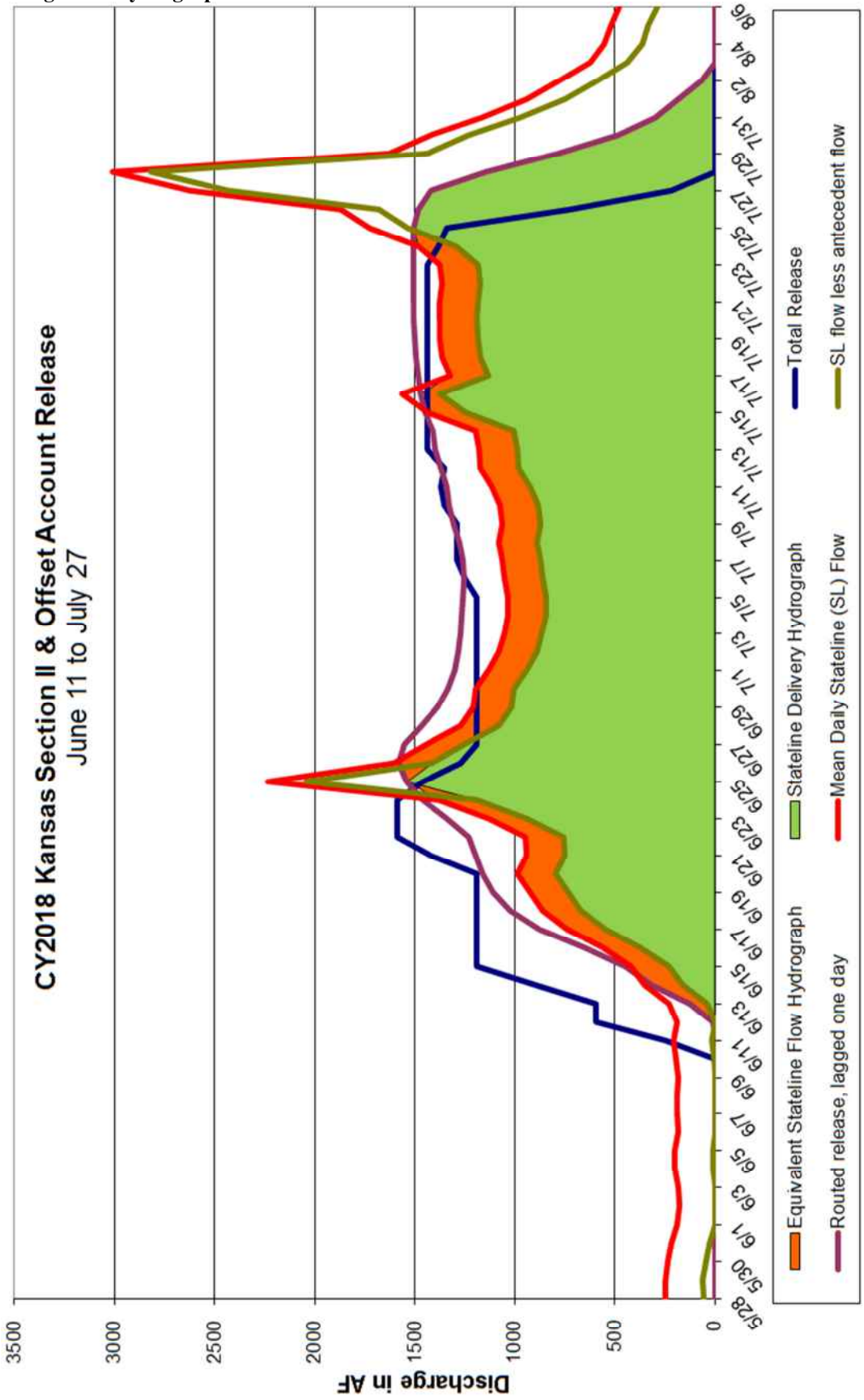


Figure 3 Hydrograph of the Kansas Run #2 at the Stateline

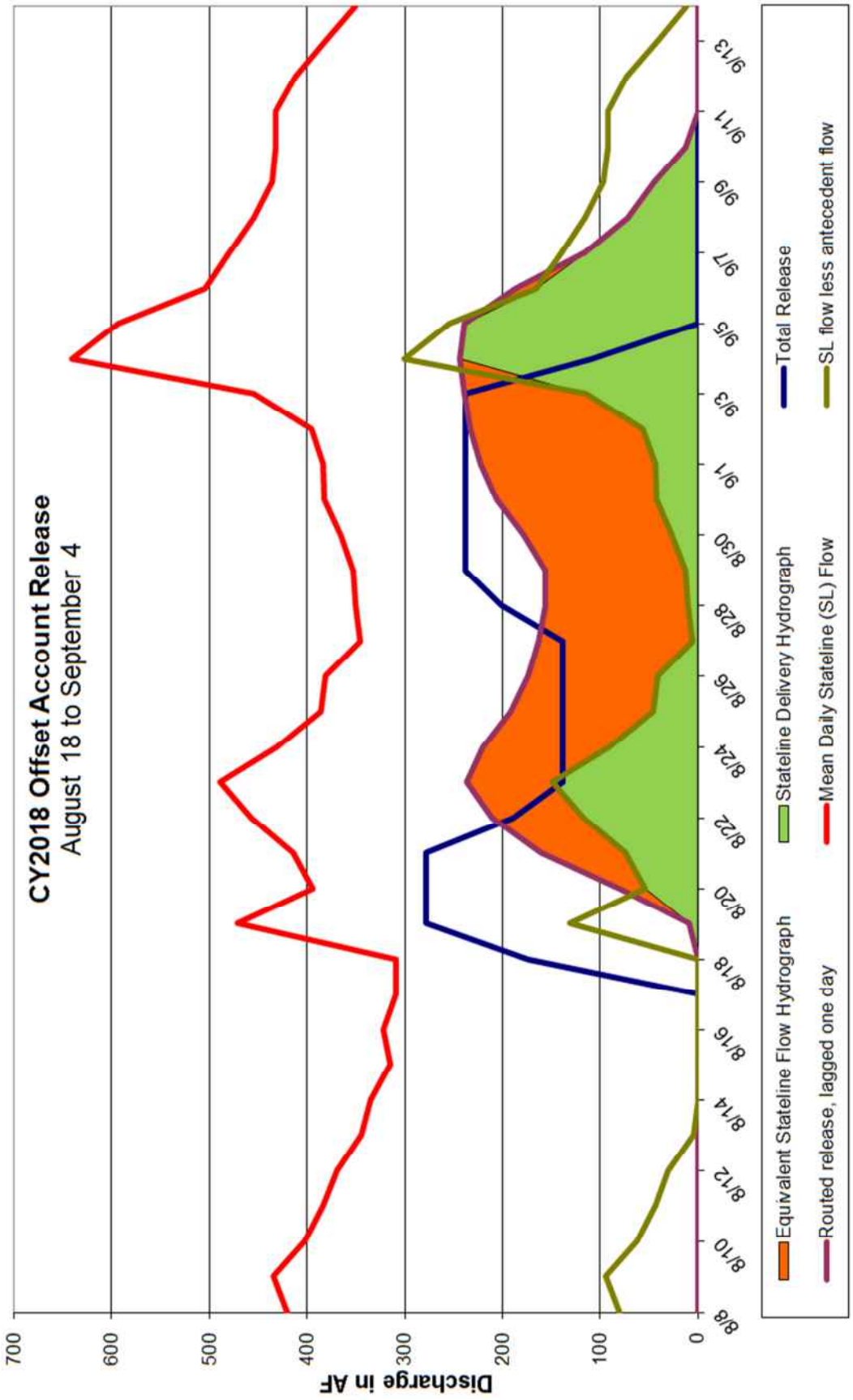


Exhibit N

Annual Meeting

December 7, 2018

Report of the Colorado State Engineer Concerning Accounting of the Operations of an Offset Account in John Martin Reservoir for Colorado Pumping 2018

COLORADO
Department of Natural Resources

Submitted to the
Engineering and Operations Committees
Arkansas River Compact Administration

Exhibit N

December 1, 2018
Report of the Colorado State Engineer
Offset Account Operations
November 1, 2017 to October 31, 2018

An Offset Account in John Martin Reservoir was authorized by the **Resolution Concerning an Offset Account in John Martin Reservoir for Colorado Pumping** dated March 17, 1997 ("Resolution") and by the **Resolution Concerning an Offset Account in John Martin Reservoir for Colorado Pumping as Amended March 30, 1998** ("Amended Resolution").

This report summarizes the operations conducted using the Offset Account for the period November 1, 2017 through October 31, 2018 and has been prepared pursuant to paragraph 11 of the Amended Resolution.

At 0000 hours, November 1, 2017 the Offset Account contained 8517.93 acre-feet. From November 1, 2017 through October 31, 2018 there were deliveries to and transfers to the Offset Account as summarized below. There were two releases from the Offset Account for delivery to Kansas during this period. The Lower Arkansas Water Management Association transferred fully consumable water to satisfy the 500 acre-feet Storage Charge prerequisite for using the account for another year on March 31, 2018. The correspondence describing this transfer and the other deliveries is included in Section 3.

In Section 1, a monthly summary of the contents of the Offset Account is provided in Table 1. A summary of the subaccounts of the Offset Account is provided in Tables A through B.2. The outline preceding the tables in Section 1 provides an explanation of the purpose of each subaccount.

Section 2 of this report contains the daily accounting records, by month, for all subaccounts in the Offset Account.

From November 1, 2017 through October 31, 2018, there were six deliveries/transfers of water to the Offset Account in addition to the transfer for the storage charge. The transfer and six deliveries/transfers are summarized in the following table.

Source	Delivery Start Date	Delivery End Date	Amount to Offset Account (ac-ft)	Net Consumable Water (ac-ft)	Net Return Flow Water (ac-ft)
LAWMA (CS-U Delivery)	November 3, 2017	November 16, 2017	3640	3640	0
LAWMA (Article II Transfer)	March 31, 2018	March 31, 2018	575.43	500	75.43
LAWMA (Article II Transfer)	April 4, 2018	April 4, 2018	0.63	0	0.63
CWPDA (Municipal Fully Consumable)	April 7, 2018	April 10, 2018	1102.16	1102.16	0
LAWMA (CS-U Delivery)	October 13, 2018	October 18, 2018	395.66	395.66	0
LAWMA (Fort Lyon)	November 1, 2017	October 31, 2018	1729.96	1729.96	0
LAWMA (Highland)	April 2, 2018	October 31, 2018	1599.34	1599.34	0
LAWMA (Keesee)	May 1, 2018	October 31, 2018	1617.52	1617.52	0
TOTALS			**10660.70**	**10584.64**	**76.06**

During the period referred to above, there were two releases of water from the Offset Account requested by the Kansas Chief Engineer.

Offset Account water was released from July 6, 2018 through July 26, 2018 and is summarized as follows:

Summary of Release (July 6, 2018 – July 26, 2018)
(From Calculations per Offset Agreement)

Release from Kansas Storage Charge subaccount = 896.54 acre-feet

Release from Kansas Consumable Water subaccount = 0.00 acre-feet

Release from Colorado Upstream/Downstream Consumable Water subaccounts = 3399.55 acre-feet

Release from Return Flow/Return Flow Transit Loss subaccounts = 394.09 acre-feet

Total quantity released = 4690.18 acre-feet

Credit for Colorado Consumptive Use Water

0.8107 x 3399.55 (Consumptive Use Water) = 2756 acre-feet credit

Offset Account water was also released from August 18, 2018 through September 4, 2018 and is summarized as follows:

Summary of Release (August 18, 2018 – September 4, 2018)
(From Calculations per Offset Agreement)

Release from Kansas Storage Charge subaccount = 0 acre-feet

Release from Kansas Consumable Water subaccount = 0.00 acre-feet

Release from Colorado Upstream/Downstream Consumable Water subaccounts = 3627.96 acre-feet

Release from Return Flow/Return Flow Transit Loss subaccounts = 0 acre-feet

Total quantity released = 3627.96 acre-feet

Credit for Colorado Consumptive Use Water

0.4927 x 3627.96 (Consumptive Use Water) = 1,787.5 acre-feet credit

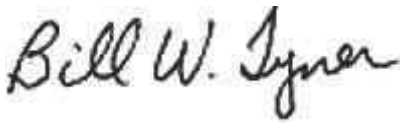
Credits were determined using the Muskingum routing method pursuant to the Agreement Concerning the Offset Account in John Martin Reservoir for Colorado Pumping, Determination of Credits for Delivery of Water Released for Colorado Pumping, and Related Matters, September 29, 2005.

Section 3 of this report provides copies of the letters reporting each delivery of water to the Offset Account as required by paragraph 3 of the Amended Resolution and copies of the letters reporting each release of water from the Offset Account.

Section 4 of this report provides copies of the monthly letters reporting Colorado pumping and Offset Account operations that were prepared and submitted in accordance with paragraph 12 of the Amended Resolution.

At 2400 hours, October 31, 2018 the Offset Account contained 7679.93 acre-feet.

The Colorado State Engineer and the Kansas Chief Engineer have coordinated Offset Account operations successfully through their respective delegates throughout the year.



Bill W. Tyner for
Colorado State Engineer

December 1, 2018

INDEX

- November 28, 2018 letter to David Barfield regarding accounting summary for delivery of LAWMA's Fort Lyon Canal consumptive use water to the Offset Account for April – October 2018.

Section 4

Monthly Reports of Colorado Pumping and Offset Account Operations

- March 8, 2018 letter to David Barfield and Stephanie Gonzales- November 2017 Report
- March 8, 2018 letter to David Barfield and Stephanie Gonzales- December 2017 Report
- March 8, 2018 letter to David Barfield and Stephanie Gonzales- January 2018 Report
- May 10, 2018, letter to David Barfield and Stephanie Gonzales- February 2018 Report
- September 14, 2018 letter to David Barfield and Stephanie Gonzales – March 2018 Report
- September 14, 2018 letter to David Barfield and Stephanie Gonzales – April 2018 Report
- September 14, 2018 letter to David Barfield and Stephanie Gonzales – May 2018 Report
- September 14, 2018 letter to David Barfield and Stephanie Gonzales – June 2018 Report
- September 14, 2018 letter to David Barfield and Stephanie Gonzales – July 2018 Report
- November 28, 2018 letter to David Barfield and Stephanie Gonzales – August 2018 Report
- November 28, 2018 letter to David Barfield and Stephanie Gonzales – September 2018 Report
- November 29, 2018 letter to David Barfield and Stephanie Gonzales – October 2018 Report

Section 1

Outline of Tables

Offset Account (Table 1)
Contains a monthly summary of the total contents of the Offset Account.

A. Consumable Water (Table A)

1. Colorado Upstream Consumable Water (Table A.1.)
Contains a monthly summary of the water stored under the provisions of paragraph 6 of the Amended Resolution.

2. Colorado Downstream Consumable Water (Table A.2.)
Contains a monthly summary of the consumptive use water stored by Colorado users which has not yet been made available to replace depletions to usable stateline flow and therefore has not been transferred to Kansas as provided for in paragraph 5.B. of the Amended Resolution.

3. Kansas Consumable Water (Table A.3.)
Contains a monthly summary of the consumptive use water that has been made available to replace depletions to usable stateline flow and has therefore been transferred as provided for in paragraph 5.B. of the Amended Resolution.

4. Kansas Storage Charge (Table A.4.)
Contains a monthly summary of the consumptive use water delivered to the Offset Account under the provisions of paragraph 9 of the Amended Resolution.

B. Return Flow Water (Table B)

1. Return Flow Water (Table B.1.)
Contains a monthly summary of the return flow water which must be either released to the river or transferred to the Kansas Consumable Water account to maintain the return flows to Colorado water users and stateline flows because of deliveries of water historically used for irrigation to the offset account.

2. Return Flow Transit Loss Water (Table B.2)
Contains a monthly summary of transit loss water necessary to deliver return flow water to Colorado water users or the stateline which must either be released with return flows or transferred to the Kansas Consumable Water account to maintain historic return flows.

JOHN MARTIN RESERVOIR

TABLE 1
OFFSET ACCOUNT

WATER YEAR	CONTENTS	PHYSICAL	ACCOUNT	ACCOUNT		ACCOUNT	ACCOUNT	PHYSICAL	CONTENTS
2018	BEGINNING OF	INFLOW	TRANSFER-IN	TRANSFER-IN	EVAPORATION	TRANSFER-OUT	TRANSFER-OUT	RELEASE	END OF
			(Non-Offset)	(Internal-Offset)		(Internal-Offset)			
MONTH	MONTH A.F.	A.F.	A.F.	A.F.	A.F.	A.F.	A.F.	A.F.	MONTH A.F.
NOVEMBER	8517.93	4138.40		206.94	13.62	206.94			12642.71
DECEMBER	12642.71				46.07				12596.64
JANUARY	12596.64				24.06				12572.58
FEBRUARY	12572.58				66.87		535.03		11970.68
MARCH	11970.68	54.60	575.43		161.59		66.44		12372.68
APRIL	12372.68	489.89	1102.79		231.78		22.89		13710.69
MAY	13710.69	815.10			353.65				14172.14
JUNE	14172.14	492.50			486.15				14178.49
JULY	14178.49	552.03			429.42		79.55	4690.18	9531.37
AUGUST	9531.37	1085.97			247.53		66.22	2804.81	7498.78
SEPTEMBER	7498.78	588.95			220.21			823.15	7044.37
OCTOBER	7044.37	765.04			129.48				7679.93
TOTALS		8982.48	1678.22	206.94	2410.43	206.94	770.13	8318.14	

OFFSET ACCOUNT

TABLE A
CONSUMABLE WATER

WATER YEAR 2018	CONTENTS BEGINNING OF MONTH A.F.	PHYSICAL INFLOW A.F.	ACCOUNT TRANSFER-IN A.F.	EVAPORATION A.F.	ACCOUNT TRANSFER-OUT A.F.	PHYSICAL RELEASE A.F.	CONTENTS END OF MONTH A.F.
NOVEMBER	8142.30	4110.00	205.52	12.33	205.52		12239.97
DECEMBER	12239.97			44.58			12195.39
JANUARY	12195.39			23.36			12172.03
FEBRUARY	12172.03			64.66	535.03		11572.34
MARCH	11572.34	54.60	500.00	156.27	66.44		11904.23
APRIL	11904.23	489.89	1102.16	223.71	22.89		13249.68
MAY	13249.68	815.10		342.04			13722.74
JUNE	13722.74	492.50		470.99			13744.25
JULY	13744.25	552.03		422.69	79.55	4296.09	9497.95
AUGUST	9497.95	1085.97		246.69	66.22	2804.81	7466.20
SEPTEMBER	7466.20	588.95		219.19		823.15	7012.81
OCTOBER	7012.81	765.04		128.88			7648.97
TOTALS		8954.08	1807.68	2355.39	975.65	7924.05	

TABLE B
RETURN FLOW WATER WITH TRANSIT LOSS

WATER YEAR 2018 MONTH	CONTENTS BEGINNING OF MONTH A.F.	PHYSICAL INFLOW A.F.	ACCOUNT TRANSFER-IN A.F.	EVAPORATION A.F.	ACCOUNT TRANSFER-OUT A.F.	PHYSICAL RELEASE A.F.	CONTENTS END OF MONTH A.F.
NOVEMBER	403.14			0.40			402.74
DECEMBER	402.74			1.49			401.25
JANUARY	401.25			0.70			400.55
FEBRUARY	400.55			2.21			398.34
MARCH	398.34		75.43	5.32			468.45
APRIL	468.45		0.63	8.07			461.01
MAY	461.01			11.61			449.40
JUNE	449.40			15.16			434.24
JULY	434.24			6.73		394.09	33.42
AUGUST	33.42			0.84			32.58
SEPTEMBER	32.58			1.02			31.56
OCTOBER	31.56			0.60			30.96
TOTALS		0.00	76.06	54.15	0.00	394.09	

OFFSET ACCOUNT

TABLE A.1.
CONSUMABLE WATER
COLORADO UPSTREAM

WATER YEAR 2018	CONTENTS BEGINNING OF MONTH A.F.	PHYSICAL INFLOW A.F.	ACCOUNT TRANSFER-IN A.F.	EVAPORATION A.F.	ACCOUNT TRANSFER-OUT A.F.	PHYSICAL RELEASE A.F.	CONTENTS END OF MONTH A.F.
NOVEMBER	1091.86	300.00		1.61	1.47		1388.78
DECEMBER	1388.78			5.11			1383.67
JANUARY	1383.67			2.63			1381.04
FEBRUARY	1381.04			4.95	535.03		841.06
MARCH	841.06	54.60		11.39	66.44		817.83
APRIL	817.83	44.71	1102.16	28.83	22.89		1912.98
MAY	1912.98			48.01			1864.97
JUNE	1864.97			62.89			1802.08
JULY	1802.08			63.06	79.55		1659.47
AUGUST	1659.47			43.60	66.22		1549.65
SEPTEMBER	1549.65			48.51			1501.14
OCTOBER	1501.14	10.49		26.59			1485.04
TOTALS		409.80	1102.16	347.18	771.60	0.00	

TABLE A.2.
CONSUMABLE WATER
COLORADO DOWNSTREAM

WATER YEAR 2018	CONTENTS BEGINNING OF	PHYSICAL INFLOW	ACCOUNT TRANSFER-IN	EVAPORATION	ACCOUNT TRANSFER-OUT	PHYSICAL RELEASE	CONTENTS END OF
MONTH	MONTH A.F.	A.F.	A.F.	A.F.	A.F.	A.F.	MONTH A.F.
NOVEMBER	6739.55	3838.40		11.11	205.47		10361.37
DECEMBER	10361.37			37.73			10323.64
JANUARY	10323.64			19.80			10303.84
FEBRUARY	10303.84			57.02			10246.82
MARCH	10246.82			138.31			10108.51
APRIL	10108.51	445.18		178.11			10375.58
MAY	10375.58	815.10		269.94			10920.74
JUNE	10920.74	492.50		376.50			11036.74
JULY	11036.74	552.03		350.74		3399.55	7838.48
AUGUST	7838.48	1085.97		203.09		2804.81	5916.55
SEPTEMBER	5916.55	588.95		170.68		823.15	5511.67
OCTOBER	5511.67	754.55		102.29			6163.93
TOTALS		8572.68	0.00	1915.32	205.47	7027.51	

OFFSET ACCOUNT

TABLE A.3.
CONSUMABLE WATER
KANSAS

WATER YEAR 2018	CONTENTS BEGINNING OF MONTH	PHYSICAL INFLOW	ACCOUNT TRANSFER-IN Consumptive	EVAPORATION	ACCOUNT TRANSFER-OUT Consumptive	PHYSICAL RELEASE	CONTENTS END OF
MONTH	A.F.	A.F.	A.F.	A.F.	A.F.	A.F.	MONTH A.F.
NOVEMBER	0.00			0.00			0.00
DECEMBER	0.00			0.00			0.00
JANUARY	0.00			0.00			0.00
FEBRUARY	0.00			0.00			0.00
MARCH*	0.00			0.00			0.00
APRIL	0.00			0.00			0.00
MAY	0.00			0.00			0.00
JUNE	0.00			0.00			0.00
JULY	0.00			0.00			0.00
AUGUST	0.00			0.00			0.00
SEPTEMBER	0.00			0.00			0.00
OCTOBER	0.00			0.00			0.00
TOTALS		0.00	0.00	0.00	0.00	0.00	

TABLE A.4.
CONSUMABLE WATER
KANSAS STORAGE CHARGE

WATER YEAR 2018	CONTENTS BEGINNING OF	PHYSICAL INFLOW	ACCOUNT TRANSFER-IN Consumptive	EVAPORATION	ACCOUNT TRANSFER-OUT Consumptive	PHYSICAL RELEASE	CONTENTS END OF
MONTH	MONTH A.F.	A.F.	A.F.	A.F.	A.F.	A.F.	MONTH A.F.
NOVEMBER	283.38		206.94	0.50			489.82
DECEMBER	489.82			1.74			488.08
JANUARY	488.08			0.93			487.15
FEBRUARY	487.15			2.69			484.46
MARCH	484.46		500.00	6.57			977.89
APRIL	977.89			16.77			961.12
MAY	961.12			24.09			937.03
JUNE	937.03			31.60			905.43
JULY	905.43			8.89		896.54	0.00
AUGUST	0.00			0.00			0.00
SEPTEMBER	0.00			0.00			0.00
OCTOBER	0.00			0.00			0.00
TOTALS		0.00	706.94	93.78	0.00	896.54	

OFFSET ACCOUNT

TABLE B.1
RETURN FLOW

WATER YEAR 2018	CONTENTS BEGINNING OF MONTH A.F.	PHYSICAL INFLOW A.F.	ACCOUNT TRANSFER-IN A.F.	EVAPORATION A.F.	ACCOUNT TRANSFER-OUT A.F.	PHYSICAL RELEASE A.F.	CONTENTS END OF MONTH A.F.
NOVEMBER	368.90			0.40			368.50
DECEMBER	368.50			1.31			367.19
JANUARY	367.19			0.67			366.52
FEBRUARY	366.52			2.05			364.47
MARCH	364.47		71.54	5.00			431.01
APRIL	431.01		0.60	7.43			424.18
MAY	424.18			10.66			413.52
JUNE	413.52			13.95			399.57
JULY	399.57			5.48		394.09	0.00
AUGUST	0.00			0.00			0.00
SEPTEMBER	0.00			0.00			0.00
OCTOBER	0.00			0.00			0.00
TOTALS		0.00	72.14	46.95	0.00	394.09	

TABLE B.2
RETURN FLOW
TRANSIT LOSS

WATER YEAR 2018 MONTH	CONTENTS BEGINNING OF MONTH A.F.	PHYSICAL INFLOW A.F.	ACCOUNT TRANSFER-IN A.F.	EVAPORATION A.F.	ACCOUNT TRANSFER-OUT A.F.	PHYSICAL RELEASE A.F.	CONTENTS END OF MONTH A.F.
NOVEMBER	34.24			0.00			34.24
DECEMBER	34.24			0.18			34.06
JANUARY	34.06			0.03			34.03
FEBRUARY	34.03			0.16			33.87
MARCH	33.87		3.89	0.32			37.44
APRIL	37.44		0.03	0.64			36.83
MAY	36.83			0.95			35.88
JUNE	35.88			1.21			34.67
JULY	34.67			1.25			33.42
AUGUST	33.42			0.84			32.58
SEPTEMBER	32.58			1.02			31.56
OCTOBER	31.56			0.60			30.96
TOTALS		0.00	3.92	7.20	0.00	0.00	

FULL REPORT CAN BE DOWNLOADED ELECTRONICALLY ON THE ARKANSAS RIVER COMPACT ADMINISTRATION WEBSITE

Exhibit O

Annual Meeting

December 7, 2018

ARKANSAS RIVER COMPACT ADMINISTRATION

Lamar, Colorado 81052

For Colorado	Chair and Federal Representative	For Kansas
Rebecca Mitchell, Denver	James Rizzuto, Swink, CO	David Barfield, Topeka
Lane Malone, Holly		Randy Hayzlett, Lakin
Scott Brazil, Vineland		Hal Scheuerman, Deerfield

April 20, 2018

Nabil G. Shafike, P.E., Ph.D.
Chief, Reservoir Control Branch
Army Corps of Engineers
4101 Jefferson Plaza NE
Albuquerque, NM 87109

Dear Sir,

Steve Witte has brought to our attention that the most recent version of the Water Control Manual – John Martin Reservoir, dated February 1983, contains no provisions to accommodate up to 10,000 acre-feet of permanent pool water within the flood control capacity of John Martin Reservoir as authorized by Public Law 89-298 (October 27, 1965). The Arkansas River Compact Administration has acted in reliance upon P.L. 89-298 in passing the Administration's Resolution Concerning John Martin Reservoir Permanent Pool dated August 14, 1976 and their Resolution Concerning an Operating Plan for John Martin Reservoir approved April 24, 1980.

We understand that your office intends to undertake a revision of the Water Control Manual at some point later this year and we request that the revisions include the changes necessary to reflect P.L. 89-298. A copy of this document is enclosed for your convenience.

Thanks for your time and consideration.

Sincerely,

Hal Scheuerman

Hal Scheuerman, Chairman
Operations Committee
Arkansas River Compact Administration

Enclosure

Cc: Steve Witte, Division 2 Engineer, w/o encl.
Jim Rizzuto, Operations Committee Member, w/o encl.
Lane Malone, Operations Committee Member, w/o encl.
Bill Tyner, Operations Secretary, w/o encl.
Kevin Salter, Asst. Operations Secretary, w/o encl.

Exhibit O

DEPARTMENT OF THE ARMY
ALBUQUERQUE DISTRICT, U.S. ARMY CORPS OF ENGINEERS
4101 JEFFERSON PLAZA NE
ALBUQUERQUE, NM 87109-3435

May 18, 2018

Mr. Hal Scheurman, Chairman
Operation Committee
Arkansas River Compact Administration
Lamar, Colorado 81052

RE: John Martin Water Control Manual Updates

Dear Mr. Scheuerman,

Thank you for your letter regarding updates to the Water Control Manual (WCM) for John Martin Reservoir. Our plan is to update the WCM for John Martin Reservoir during Fiscal Year 2019 pending the availability of funding. The provisions of P.L.89-298 make 10,000 acre-feet of storage space available for establishing a permanent pool for fish, wildlife and recreation purposes at such times as storage space may not be available within the conservation pool. At the same time, the statute recognizes that the State of Colorado must make water rights available to maintain such a pool. Finally, that water will be the first to spill if the space is needed for flood control purposes, and the storage cannot impair the rights of irrigators in Colorado and Kansas. These provisions are not explicitly incorporated in the current John Martin Reservoir WCM. It is our intention to include these provisions when we update the WCM.

I hope this is helpful to you and your committee. Please do not hesitate to contact me if you have any questions at (505) 342-3608.

Mark Yuska

Sincerely,
Mark Yuska
Chief, Operation Division

cc:
Steve Witte, Division 2 Engineer
Jim Rizzuto, Operation Committee Member
Lane Malone, Operation Committee Member
Bill Tyner, Operation Committee Member
Kevin Salter, Operation Committee Member

Exhibit P

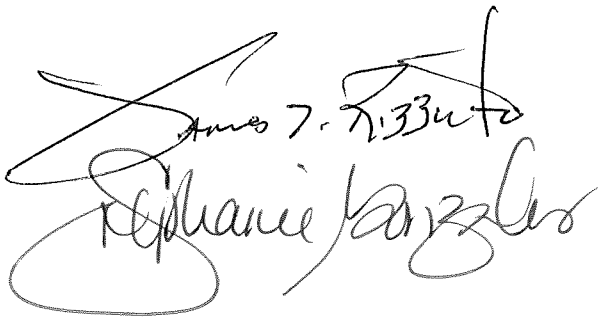
Annual Meeting

December 7, 2018

Arkansas River Compact Administration

Financial Statements

June 30, 2018



4 of 4

Exhibit P

Arkansas River Compact Administration
Annual Financial Report
For the Year Ended June 30, 2018

Table of Contents

Independent Auditor's Report

The Governing Body
Arkansas River Compact Administration

We have audited the accompanying financial statements of the governmental activities and each major fund of Arkansas River Compact Administration, as of and for the year ended June 30, 2018, and the related notes to the financial statements, which collectively comprise Arkansas River Compact Administration's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Arkansas River Compact Administration's management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, based on our audit, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and each major fund of Arkansas River Compact Administration as of June 30, 2018, and the respective changes in financial position thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

p o box 1173 203 east oak st. lamar, colorado 81052 (719) 336-7428 (719) 336-2982

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the budget to actual information be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Management has omitted the Management's Discussion and Analysis that accounting principles generally accepted in the United States of America require to be present to supplement the basic financial statements. Such missing information, although not a required part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of the financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. Our opinion on the basic financial statements is not affected by this missing information.

rfarmer, llc

November 27, 2018

Arkansas River Compact Administration
Statement of Net Position
June 30, 2018

	Governmental Activities	Total
ASSETS		
Cash and Equivalents	$ 194,248	$ 194,248
Total Assets	194,248	194,248
LIABILITIES		
Total liabilities	-	-
NET POSITION		
Unrestricted	194,248	194,248
Total net position	$ 194,248	$ 194,248

The accompanying notes to financial statements
are an integral part of these statements.

Arkansas River Compact Administration
Statement of Activities
For the Year Ended June 30, 2018

Functions/Programs	Expenses	Program Revenue Charges for Services	Net (Expense) Revenue and Changes in Net Position Primary Government Governmental Activities	Total
Primary government				
Governmental Activities				
General Government	$ 90,097	$ 90,000	$ (97)	$ (97)
Total governmental activities	90,097	90,000	(97)	(97)
Total primary government	90,097	90,000	(97)	(97)
General revenues:				
Unrestricted interest income			1,833	1,833
Total general revenues, special items, and tr			1,833	1,833
Change in net assets			1,736	1,736
Net position - beginning			192,512	192,512
Net position - ending			$ 194,248	$ 194,248

The accompanying notes to the financial statements
are an integral part of these statements.

Arkansas River Compact Administration
Balance Sheet
Governmental Fund
June 30, 2018

	General	Total Governmental Funds
ASSETS		
Cash and cash equivalents	$ 194,248	$ 194,248
Total assets	194,248	194,248
LIABILITIES AND FUND BALANCES		
Liabilities:		
Total liabilities	-	-
Fund balances:		
Unassigned	194,248	194,248
Total fund balances	194,248	194,248
Total liabilities and fund balances	$ 194,248	$ 194,248

The accompanying notes to financial statements
are an integral part of these statements.

Arkansas River Compact Administration

Reconciliation of the Governmental Fund Balance Sheet to the Statement of Net Position
June 30, 2018

Total fund balance, governmental funds	$	194,248
Net Assets of Governmental Activities in the Statement of Net Position	$	194,248

The accompanying notes to financial statements
are an integral part of these statements.

Arkansas River Compact Administration
Statement of Revenues, Expenditures and Changes in Fund Balances
Governmental Fund
For the Year Ended June 30, 2018

	General	Total Governmental Funds
REVENUES		
State Assessments	$ 90,000	$ 90,000
Interest Income	1,833	1,833
Total revenues	91,833	91,833
EXPENDITURES		
Gauging Stations and Studies	69,915	69,915
Professional Services	13,894	13,894
Operating Expenses	6,287	6,287
Total Expenditures	90,096	90,096
Excess (deficiency) of revenues over expenditures	1,737	1,737
Net change in fund balances	1,737	1,737
Fund balances - beginning	192,511	192,511
Fund balances - ending	$ 194,248	$ 194,248

The accompanying notes to financial statements
are an integral part of these statements.

Arkansas River Compact Administration
Reconciliation of the Statement of Revenues, Expenditures, and Changes in Fund Balance of Governmental Funds to the Statement of Activities
For the Year Ended June 30, 2018

Net change in fund balances - total governmental funds:	$	1,737
Change in net position of governmental activities	$	1,737

The accompanying notes to financial statements
are an integral part of these statements.

Arkansas River Compact Administration
Notes to Financial Statements
June 30, 2018

Note 1 Reporting Entity

Arkansas River Compact Administration (the Compact), a quasi-governmental entity, was created in 1948 and approved by Congress 63 Stat.145 (1949).

The major purposes of the Compact are to:

A. Settle existing disputes and remove causes of future controversy between the States of Colorado and Kansas, and between citizens of one and citizens of the other State, concerning the water of the Arkansas River and their control, conservation and utilization for irrigation and other beneficial purposes.

B. Equitably divide and apportion between the States of Colorado and Kansas the waters of the Arkansas River and their utilization as well as the benefits arising from the construction, operation, and maintenance by the United States of John Martin Reservoir Project for water conservation purposes.

All financial transactions of the Compact are included in the General Fund of the basic financial statements. The Board of the Compact is accountable for all fiscal matters.

The financial statements present the financial position of Compact in accordance with Statement 14, as amended, of the Governmental Accounting Standards Board, "The Financial Reporting Entity." The Compact has no component units.

Note 2 Summary of Significant Accounting Policies

The accounting and reporting policies of the Compact conform to accounting principles generally accepted in the United States of America (USGAAP) as applicable to government units. The Governmental Accounting Standards Board (GASB) is the accepted standard-setting body for establishing governmental accounting and financial reporting principles. The following summary of significant accounting policies is presented to assist the reader in evaluating the County's financial statements.

Measurement Focus, Basis of Accounting and Financial Statement Presentation

Government-Wide and Fund Financial Statements The Compact government-wide financial statements include a Statement of Net Position and a Statement of Activities. These statements present summaries of Governmental Type Activities for the Compact accompanied by a total column.

The Statement of Activities demonstrates the degree to which the direct expenses of a given function or segment are offset by program revenues. *Direct expenses* are those that are clearly identifiable with a specific function or segment. *Program revenues* include (1) charges to customers or applicants who purchase, use or directly benefit from goods, services or privileges provided by a given function or segment and (2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment.

Separate financial statements are provided for the governmental fund.

The government-wide financial statements are presented on an *economic resource's measurement focus* and the *accrual basis of accounting*. Accordingly, all the Compact's assets and liabilities, including capital assets, as well as infrastructure assets, and long-term liabilities, are included in the accompanying Statement of Net Assets. The Statement of Activities presents changes in net assets. Under the accrual basis of accounting, revenues are recognized in the period in which they are earned while expenses are recognized in the period in which the liability in incurred.

Governmental fund financial statements are reported using the current financial resources measurement focus and the modified accrual basis of accounting. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the Compact considers revenues to be available if they are collected within a reasonable period of time after the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting.

The primary revenue sources, which have been treated as susceptible to accrual by the Compact, are the state assessments.

The Compact reports the following major governmental funds:

General Fund This is the Compact's primary operating fund. It accounts for all activities of the Compact.

Certain eliminations have been made as prescribed by GASB Statement No. 34 in regards to interfund activities, payables, and receivables. All internal balances in the Statement of Net Position have been eliminated except those representing balances between the governmental activities and any business-type activities, which are presented as internal balances and eliminated in the total primary government column. In the Statement of Activities, internal service fund transactions, if any, have been eliminated; however, those transactions between governmental and business-type activities, if any, have not been eliminated.

Reconciliation of the Fund financial statements to the Government-Wide financial statements is provided in the financial statements to explain the differences created by the integrated approach of GASB Statement No. 34.

The Compact does not have any general fixed assets or infrastructure.

Fund Equity

In the fund financial statements, governmental funds report reservations of fund balance for amounts that are not available for appropriation or are legally restricted by outside parties for use for a specific purpose. Designations of fund balance represent tentative management plans that are subject to change.

Net Position

Net position represents the difference between assets and liabilities. Net investment in capital assets consists of capital assets, net of accumulated depreciation, reduced by the outstanding balances of any borrowing used for the acquisition or construction of improvements of those assets.

Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results may differ from those estimates.

Budgets and Budgetary Accounting

Annual budgets are adopted as required by the Compact and by-laws, as amended.

Budgets are adopted on a basis consistent with generally accepted accounting principles (GAAP). Budgetary comparisons in this report are presented on the GAAP basis of accounting.

Note 3 Deposits and Investments

Deposits

Colorado State Statutes, specifically the Public Depository Protection Act (PDPA) of 1989, require all public monies to be deposited in financial institutions that have been designated as eligible public depositories. Eligible public depositories must pledge eligible collateral, as promulgated by the State banking board, having a market value in excess of 102% of the aggregate uninsured public deposits. Eligible collateral must be held in the custody of any federal reserve bank or any branch thereof or of any depository trust company

which is a member of the Federal Reserve System, and which is supervised by the State banking board. The Statutes further restrict such deposits to eligible public depositories having their principal offices within the State of Colorado.

Custodial Credit Risk

Deposits are exposed to custodial credit risk if they are not covered by depository insurance or PDPA and the deposits are:

a. Uncollateralized,
b. Collateralized with securities held by the pledging financial institution, or
c. Collateralized with securities held by the pledging financial institution's trust department or agent but not in the depositor-government's name.

The Compact was not exposed to custodial credit risk in that all cash is deposited in one local financial institution that is covered by FDIC insurance and the Public Depository Protection Act (PDPA).

The Compact is not exposed to any other investment risks as defined in GASB 40.

Note 4 **Fund Balances**

The Compact has implemented GASB Statement No. 54, "Fund Balance Reporting and Governmental Fund Type Definitions." In the fund financial statements, the following classifications describe the relative strength of spending constraints.

Non-Spendable Fund Balance

This is the portion of fund balance that cannot be spent because it is either not in spendable form (such as inventory and prepaid amounts) or is legally or contractually required to be maintained intact.

Restricted Fund Balance

This is the portion of fund balance constrained to being used for a specific purpose by external parties (such as grantors or bondholders), constitutional provisions, or enabling legislation.

Committed Fund Balance

This is the portion of fund balance constrained for specific purposes according to the limitations imposed by the Compact's highest level of decision-making authority, which is the Board.

Assigned Fund Balance

This is the portion of fund balance set aside for planned or intended purposes but is neither restricted nor committed. The intended use may be expressed by the Compact or their designee authorized to assign funds to be used for a specific purpose. Assigned fund balances in special revenue funds will also include any remaining fund balance that is not restricted or committed. This classification is necessary to indicate that those funds are, at a minimum, intended to be used for the purpose of that particular fund.

Unassigned Fund Balance

This is the residual portion of fund balance that does not meet any of the above criteria. The Compact will only report a positive unassigned fund balance in the General Fund.

When both restricted and unrestricted fund balance are available for use, it is the Compact's policy to use restricted amounts first. Unrestricted fund balance will be used in the following order: committed, assigned and unassigned.

Arkansas River Compact Administration
Budget and Actual
General
For the year ended June 30, 2018

	Budgeted Amounts		Actual Amounts, Budgetary Basis
	Original	Final	
REVENUES			
State Assessments	$ 90,000	$ 90,000	$ 90,000
Interest Income	200	200	1,833
Total revenues	90,200	90,200	91,833
EXPENDITURES			
Current:			
Gauging Stations and Studies	62,400	62,400	69,915
Professional Services	15,400	15,400	13,894
Operating Expenses	6,600	6,600	6,287
Contingency	2,000	2,000	-
Total Expenditures	86,400	86,400	90,096
Excess (deficiency) of revenues over expenditures	3,800	3,800	1,737
Net change in fund balances	3,800	3,800	1,737
Fund balances - beginning	187,676	187,676	192,511
Fund balances - ending	$ 191,476	$ 191,476	$ 194,248

Exhibit Q

Annual Meeting

December 7, 2018

ARKANSAS RIVER COMPACT ADMINISTRATION

Lamar, Colorado 81052

For Colorado	Chairman and Federal Representative	For Kansas
Rebecca Mitchell, Denver	James Rizzuto, La Junta	David Barfield, Manhattan
Lane Malone, Holly		Randy Hayzlett, Lakin
Scott Brazil, Vineland		Hal Scheuerman, Deerfield

FY 2019 - 2020 BUDGET

(July 1, 2019 - June 30, 2020)

I. EXPENDITURES		
A. PROFESSIONAL SERVICE CONTRACTS		
1. Treasurer		$2,000
2. Recording Secretary		$2,000
3. Operations Secretary		$6,100
4. Auditor Fee		$3,000
5. Court Reporter Fee		$2,000
6. Treasurer Bond		$100
	subtotal services	**$15,200**
B. GAGING STATIONS, STUDIES, & DATA COLLECTION		
1. U.S.G.S. Colorado District Joint Funding [calendar year 2019]		$37,000
2. U.S.G.S. Kansas District Joint Funding [calendar year 2019]		$13,000
3. State of Colorado Satellite System [7/1/19 - 6/30/20]		$12,400
4. CoAgMet Weather Station O&M Cost-share [7/1/19 - 6/30/20]		$5,000
	subtotal gaging	**$67,400**
C. OPERATING EXPENSES		
1. Website Hosting		$200
2. Telephone		$100
3. Miscellaneous Office Expense		$100
4. Postage/Copying/Supplies		$100
5. Meetings		$500
6. Travel		$100
7. Rent		$600
	subtotal operating	**$1,800**
D. OTHER		
1. Equipment		$0
2. Contingency		$2,000
3. Litigation		$0
4. Special Projects and Studies		$0
	subtotal other	**$2,000**
	TOTAL ALL EXPENDITURES	**$86,400**
II. INCOME		
A. ASSESSMENTS		
1. Colorado (60%)		$54,000
2. Kansas (40%)		$36,000
	subtotal assessments	**$90,000**
B. OTHER		
1. Interest Earnings		$200
2. Miscellaneous		$0
	subtotal other	**$0**
	TOTAL ALL INCOME	**$90,200**
III. CASH RESERVE BALANCE		
A. ESTIMATED CASH BALANCE JULY 1, 2019 [from FY17-18 budget rev.1]		**$195,276**
B. DECREASE FROM RESERVE		
C. ADDITION TO BALANCE		$3,800
D. PROJECTED BALANCE JUNE 30, 2020		**$199,076**

Adopted by the Arkansas River Compact Administration at its Dec. 7, 2018 Annual Meeting.

Stephanie Gonzales, Recording Secretary and Treasurer Date 12-7-18

Exhibit Q

ARCA 2018 ANNUAL MEETING
RESOLUTIONS

NUMBER	Description	Offered By
2018-02	Regarding Steven J. Witte Recognition	Rebecca Mitchell

*Note: ARCA Resolution No. 2018-01 *Regarding John Martin Reservoir Permanent Pool* was adopted at the Special meeting held on March 20, 2018 and can be located within that meeting summary or on ARCA's website

ARKANSAS RIVER COMPACT ADMINISTRATION

Lamar, Colorado 81052

For Colorado	Chair and Federal Representative	For Kansas
Rebecca Mitchell, Denver	James T. Rizzuto, Swink	David Barfield, Manhattan
Lane Malone, Holly		Randy Hayzlett, Lakin
Scott Brazil, Vineland		Hal Scheuerman, Deerfield

Resolution No. 2018-02

Regarding Steven J. Witte Recognition

WHEREAS, Steven J. Witte was an outstanding employee of the Colorado Division of Water Resources for 40 years; and

WHEREAS, Mr. Witte served as the Colorado Division Engineer for the Arkansas River Basin from 1988 until his retirement from state government in 2018; and

WHEREAS, Mr. Witte assisted the Arkansas River Compact Administration in numerous ways throughout his tenure as the Colorado Division Engineer; and

WHEREAS, Mr. Witte served as the Administration's Operations Secretary from 1989 until his retirement from state government; and

WHEREAS, Mr. Witte performed with distinction his responsibilities as an officer of the Administration; and

WHEREAS, he conducted himself at all times with the utmost professionalism and sense of public duty, despite the fact that Kansas and Colorado were at odds on disputed issues throughout much of his tenure.

NOW THEREFORE, BE IT RESOLVED by the Arkansas River Compact Administration that it does hereby acknowledge with gratitude the outstanding service of Steven J. Witte to the Administration and to the states of Colorado and Kansas, express its appreciation to Mr. Witte for his dedication, and extend to him its best wishes for continued good health and happiness in all of his future endeavors.

BE IT FURTHER RESOLVED that this Resolution be entered into the records of the Administration and that the recording secretary be instructed to send a copy to Mr. Witte.

BE IT FURTHER RESOLVED that the Administration honor Mr. Witte for his many years of service by including his picture and appropriate dedicatory remarks in the Administration's annual report for Compact Year 2018.

ADOPTED by the Arkansas River Compact Administration at its 2018 Annual Meeting on December 7, 2018 in Garden City, Kansas.

James T. Rizzuto, Chair
Arkansas River Compact Administration

Stephanie Gonzales, Recording Secretary
Arkansas River Compact Administration