RECEIVED
Aug 30, 2023
DEPARTMENT OF
WATER RESOURCES

Sarah A. Klahn, ISB #7928
Maximilian C. Bricker, ISB #12283
SOMACH SIMMONS & DUNN
1155 Canyon Blvd., Suite 110
Boulder, CO 80302
Telephone: (303) 449-2834
sklahn@somachlaw.com
mbricker@somachlaw.com

Attorneys for City of Pocatello

BEFORE THE DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF BIG WOOD RIVER GROUND WATER MANAGEMENT AREA	**AFFIDAVIT OF MAXIMILIAN C. BRICKER IN SUPPORT OF MUNICIPAL PROVIDERS' MOTION FOR PARTIAL SUMMARY JUDGMENT**
IN THE MATTER OF APPLICATIONS FOR PERMITS FOR THE DIVERSION AND USE OF SURFACE AND GROUND WATER WITHIN THE SNAKE RIVER BASIN	

I, MAXIMILIAN C. BRICKER, being first duly sworn upon oath, depose and say the following:

1. I am over the age of 18 and competent to testify. I have personal knowledge of the facts set forth herein and, if called upon as a witness, I could and would competently testify thereto. I am an attorney admitted to the bar of Idaho and am an attorney at Somach Simmons & Dunn, P.C.

2. I am an attorney of record for the City of Pocatello in the above-captioned matters.

3. Attached hereto as Exhibit 1 is a true and correct copy of the Transcript of the Deposition of James Cefalo, which took place on May 11, 2023.

4. Attached hereto as Exhibit 2 is a true and correct copy of the Municipal Providers' Expert Report, prepared by Gregory K. Sullivan, P.E., dated July 11, 2023.[1]

5. Attached hereto as Exhibit 3 is a true and correct copy of Veolia Water Idaho Inc.'s Expert Report, prepared by Terry Scanlan, P.E., P.G., dated July 11, 2023.

6. Attached hereto as Exhibit 4 is a true and correct copy of the Surface Water Coalition's Expert Report, prepared by David Shaw, P.E., and David Colvin, P.G., dated August 11, 2023.

I declare under penalty of perjury under the laws of the State of Idaho that the foregoing is true and correct.

DATED this 30th day of August, 2023.

SOMACH SIMMONS & DUNN, P.C.

Maximilian C. Bricker, ISB #12283

[1] The attached Ex. 2 excludes the appendices B-C thereto. The appendices can be located at https://somachlaw.sharefile.com/d-s2e479d34a3d241428592661e1932f209.

ACKNOWLEDGEMENT

STATE OF COLORADO)
)
COUNTY OF DENVER)

The foregoing Affidavit was sworn to before me by Maximilian C. Bricker who executed the above on August 30, 2023.

Witness my hand and official seal.

My commission expires: 2/7/2024

Kathy Casson
Notary Public

KATHY R CASSON
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 19954013469
MY COMMISSION EXPIRES FEBRUARY 07, 2024

CERTIFICATE OF SERVICE

I hereby certify that on this 30th day of August, 2023, a true and correct copy of the foregoing document was served by email and addressed to the following:

Gary Spackman, Director Mat Weaver, Acting Director IDAHO DEPARTMENT OF WATER RESOURCES PO Box 83720 Boise, ID 83720-0098 Gary.Spackman@idwr.idaho.gov Mathew.weaver@idwr.idaho.gov file@idwr.idaho.gov	Garrick L. Baxter Deputy Attorney General Idaho Department of Water Resources PO Box 83720 Boise, ID 83720-0098 Garrick.baxter@idwr.idaho.gov
Norman M. Semanko Payton G. Hampton PARSONS BEHLE LATIMER 800 W. Main Street, Suite 1300 Boise, ID 83702 nsemanko@parsonsbehle.com phampton@parsonsbehle.com ecf@parsonsbehle.com	Robert L. Harris HOLDEN, KIDWELL, HAHN & CRAPO, PLLC P.O. Box 50130 1000 Riverwalk Drive, Suite 200 Idaho Falls, ID 83405 rharris@holdenlegal.com
Candice McHugh Chris Bromley McHugh Bromley, PLLC 380 South 4th Street, Suite 103 Boise, ID 83702 cmchugh@mchughbromley.com cbromley@mchughbromley.com	James R. Laski Heather E. O'Leary LAWSON LASKI CLARK, PLLC PO Box 3310 Ketchum, ID 83340 jrl@lawsonlaski.com heo@lawsonlaski.com efiling@lawsonlaski.com
W. Kent Fletcher FLETCHER LAW OFFICE PO Box 248 Burley, ID 83318 wkf@pmt.org	Jerry R. Rigby Chase T. Hendricks RIGBY, ANDRUS & RIGBY, PLLC 25 North Second East Rexburg, ID 83440 jrigby@rex-law.com chendricks@rex-law.com

Albert P. Barker Travis L. Thompson MARTEN LAW LLP PO Box 63 Twin Falls, ID 83303-0063 abarker@martenlaw.com tthompson@martenlaw.com jnielsen@martenlaw.com	Thomas J. Budge Elisheva M. Patterson RACINE OLSON, PLLP PO Box 1391 Pocatello, ID 83204 tj@racineolson.com elisheva@racineolson.com
John K. Simpson MARTEN LAW LLP PO Box 2139 Boise, ID 83701-2139 jsimpson@martenlaw.com	Scott N. Pugrud IDAHO POWER COMPANY PO Box 70 Boise, ID 83707 Spugrud2@idahopower.com
Dylan B. Lawrence VARIN THOMAS LLC PO Box 1676 Boise, ID 83701-1676 dylan@varinthomas.com	Michael P. Lawrence Charlie S. Baser Givens Pursley LLP P O Box 2720 Boise, ID 83701-2720 mpl@givenspursley.com csb@givenspursley.com
Matthew A. Johnson Brian O'Bannon WHITE PETERSON GIGRAY & NICHOLS, P.A. 5700 E. Franklin Rd., Ste. #200 Nampa, ID 83687-7901 mjohnson@whitepeterson.com bobannon@whitepeterson.com	Evan Robertson ROBERTSON & SLETTE, PLLC PO Box 1906 Twin Falls, ID 83303-1906 erobertson@rsidaholaw.com

COURTESY COPIES VIA EMAIL TO BWRGWMA Advisory Committee Members:

Corey Allen callen@sunvalley.com	Cooper Brossy Cooper.brossy@gmail.com
Rod Hubsmith Kaysi10@live.com	Sharon Lee Slee247@mac.com

Pat McMahon pat@svwsd.com	Kristy Molyneux Jkmoly78@gmail.com
Carl Pendleton pendletonranch@hotmail.com	Pat Purdy pat@purdyent.com
William Simon Wasimon9@gmail.com	Michelle Stennett mstennett@senate.idaho.gov
Nick Westendorf nick@41farms.com	Brian Yeager Brian.yeager@haileycityhall.org

Maximilian C. Bricker, ISB #12283

.

EXHIBIT 1

Exhibit 1 to Bricker Affidavit

In The Matter Of:

BIG WOOD RIVER GROUND WATER MANAGEMENT AREA, et al.

JAMES CEFALO

May 11, 2023

T&T Reporting, LLC
477 Shoup Avenue, Suite 105
Idaho Falls, Idaho 83402
(208) 529-5491

BEFORE THE IDAHO DEPARTMENT OF WATER RESOURCES

OF THE STATE OF IDAHO

IN THE MATTER OF BIG WOOD RIVER GROUND WATER MANAGEMENT AREA,

IN THE MATTER OF APPLICATIONS FOR PERMIT FOR THE DIVERSION AND USE OF SURFACE AND GROUND WATER WITHIN THE SNAKE RIVER BASIN,

DEPOSITION OF JAMES CEFALO

Thursday, May 11, 2023, 9:00 a.m.

Idaho Falls, Idaho

BE IT REMEMBERED that the deposition of James Cefalo was taken by the attorney for the City of Idaho Falls, the City of Ammon, and Falls Water Co., Inc., at the offices of the Idaho Department of Water Resources, located at 900 North Skyline, Idaho Falls, Idaho, before Sandra D. Terrill, Court Reporter and Notary Public, in and for the State of Idaho, in the above-entitled matter.

A P P E A R A N C E S

For the City of Idaho Falls, the City of Ammon, and Falls Water Co., Inc.:
HOLDEN, KIDWELL, HAHN & CRAPO, PLLC
BY: ROBERT L. HARRIS
1000 Riverwalk Drive, Suite 200
Post Office Box 50130
Idaho Falls, Idaho 83405-0130
(208) 523-0620
rharris@holdenlegal.com

For Idaho Department of Water Resources:
DEPUTY ATTORNEY GENERAL
BY: LACEY RAMMELL-O'BRIEN
Post Office Box 83720
Boise, Idaho 83720-0098
lacey.rammell-obrien@idwr.idaho.gov

For the City of Pocatello:
SOMACH SIMMONS & DUNN
BY: SARAH A. KLAHN (Via Zoom)
AND: MAXIMILIAN C. BRICKER
1155 Canyon Blvd., Suite 110
Boulder, Colorado 80302
sklahn@somachlaw.com
mbricker@somachlaw.com

For Wellsprings Group, LLC:
MCHUGH BROMLEY, PLLC
BY: CHRIS BROMLEY (Via Zoom)
380 South 4th Street, Suite 103
Boise, Idaho 83702
(208) 287-0991
Cbromley@mchughbromley.com

For City of Bellevue and Coalition of Cities:
MCHUGH BROMLEY, PLLC
BY: CANDICE MCHUGH (Via Zoom)
380 South 4th Street, Suite 103
Boise, Idaho 83702
(208) 287-0991
cmchugh@mchughbromley.com

A P P E A R A N C E S (Continued)

For City of Hailey and Veolia Water Idaho, Inc.:
GIVENS PURSLEY LLP
BY: MICHAEL P. LAWRENCE (Via Zoom)
601 West Bannock Street
Boise, Idaho 83702
(208) 388-1200
mpl@givenspursley.com

For BWLWWUA, Henry's Fork Ground Water District, Madison Ground Water District, Jefferson Clark Ground Water District, Fremont Madison Irrigation District, and Idaho Irrigation District:
RIGBY, ANDRUS & RIGBY LAW, PLLC
BY: JERRY R. RIGBY (Via Zoom)
25 North 2nd East
Post Office Box 250
Rexburg, Idaho 83440
(208) 356-3633
jrrigby@rex-law.com

For Galena Ground Water District:
LAWSON LASKI CLARK, PLLC
BY: HEATHER E. O'LEARY (Via Zoom)
Post Office Box 3310
Ketchum, Idaho 83340
(208) 725-0055
heo@lawsonlaski.com

For the Surface Water Coalition:
MARTEN LAW LLP
BY: JOHN K. SIMPSON
AND: SARAH W. HIGER (Via Zoom)
Post Office Box 2139
Boise, Idaho 83701-2139
jsimpson@martenlaw.com

FLETCHER LAW OFFICE
BY: W. KENT FLETCHER
Post Office Box 248
Burley, Idaho 83318
wkf@pmt.org

E X A M I N A T I O N

E X H I B I T S

Page 5

(The deposition proceeded at 9:05 a.m. as follows:)
(Exhibits 1 through 5 premarked.)
James Cefalo,
produced as a witness at the instance of the City of Idaho Falls, the City of Ammon, and Falls Water Co., Inc., having been first duly sworn, was examined and testified as follows:

MR. HARRIS: Good morning. This is the deposition of James Cefalo being taken pursuant to a notice dated April 27, 2023. It is taken pursuant to the Idaho Rules of Civil Procedure.

EXAMINATION

BY MR. HARRIS:

Q. James, could you state your full name, address, and date of birth for the record?

A. You bet. James Ryan Cefalo. Do I need to spell that?

Q. No.

A. Okay. And I live at 320 Stillwater Circle in Idaho Falls.

And my date of birth, I was born January 11th, 1978.

Q. Do you have any health issues or

Page 6

concerns that would impair your ability to testify truthfully and honestly today?

A. No.

Q. Have you had your deposition taken previously?

A. I don't think so. No. I've testified in a couple civil cases as an employee of the department but not had a deposition taken before.

Q. Okay. What civil cases were those?

A. Oh, there was a case in Jefferson County. Jerry was an attorney on that. I can't remember what the gentleman's name was. It was a ditch dispute that I came and testified about water rights. And then most recently there was a Jay Fonnesbeck versus Boyd Campbell matter from Franklin County.

Q. Okay. As we take the deposition today, just make sure you understand my question. And if you don't understand it, just let me know and I can re-ask it. And then provide audible answers. And I'm sure these are things you're already familiar with. And then also, if you need to take a break at any time, just let me know.

A. Sure.

Q. The only thing I ask is if I ask a

Page 7

question, that you answer it before we take a break.

A. Uh-huh.

Q. Other than your attorneys or department attorneys, who have you met with to discuss your deposition today?

A. I haven't met with anyone outside of -- I met with Lacey yesterday.

Q. What have you done yourself to prepare for the deposition?

A. I've read through both orders, the amended Snake River basin moratorium order and the order establishing moratorium for the Big Wood River area, groundwater management area, and read through most of the petitions for hearing in this contested case.

Q. Other than in your role as an IDWR hearing officer -- because I know you fill that role -- are you presently involved in any other litigation?

A. I am not.

Q. Could you just give us a description of your educational background starting with high school?

A. Sure. I grew up in Brigham City, Utah. I graduated from Box Elder High School. Went from

Page 8

there to the University of Utah and graduated with a bachelor's degree in civil and environmental engineering, and then went on to law school at the University of Colorado in Boulder.

Q. What year did you receive your law degree?

A. 2006.

Q. Do you hold any professional licenses or professional certificates?

A. I do. I'm licensed as an attorney with the State of Idaho, although that's an inactive license because it's not required to be active in my current position. And I am a professional engineer with the State of Idaho too.

Q. Are there numbers assigned to both your bar membership and to your PE?

A. There are.

Q. Do you recall what those are?

A. In the bar membership it is 8048. I can't remember off the top of my head what the PE license is.

Q. And what year did you get your PE?

A. I would have been with the department, I think, four years. So I started working with the department in 2007, so it would have been maybe in

Page 9

the 2010, 2011 time period. I don't have that off the top of my head either. I apologize.

Q. That's okay. Could you just briefly describe the process to get your PE?

A. Sure. I mean, there's a time period that you have to work under a professional engineer, and I believe that's a four-year window where you're working under the supervision of a professional engineer. At the time I was working under the supervision of Lyle Swank, professional engineer in our office here. And then there is a test component. You go to Boise and take a multiday test. And if you can pass the test and meet the work requirements, then, yeah, you can become a professional engineer.

Q. Great. What is your current occupation?

A. I am the regional manager for the Department of Water Resources out of the eastern regional office here in Idaho Falls.

Q. Okay. And prior to your current occupation, could you describe your employment history after you graduated from either University of Utah or from law school?

A. I went straight from undergrad to law school and, you know, worked various part-time jobs during college. But after college I was hired at a

Page 10

medium-sized firm in Denver. So I worked for about a year as an attorney in Denver and then was hired on with the Department of Water Resources in 2007.

Q. And when you say "the Department of Water Resources," did you first begin working for the water district?

A. I did. I was an employee of the Department of Water Resources but was assigned work for Water District 1 as an engineer and worked in that capacity for three to four years tracking diversions on the Snake River and crunching numbers and running the accounting for Water District 1.

Q. So is it fair to say you're familiar with the Water District 1 accounting process?

A. I am.

Q. And what are your responsibilities as the eastern region manager of IDWR?

A. So really oversee all of the programs that we handle out of the regional office. We have people that work in the dam safety program. We have people that issue well drilling permits. We have a stream channel program that we administer out of our region.

But I would say primarily my role is overseeing the water allocations program, so that

Page 11

would be all applications for permit for new water rights and applications for transfer to make changes to existing water rights. I oversee the review of those applications and handle all of the contested cases that arise within that program.

So, as you know, a lot of those applications get protested. And we conduct, you know, informal settlement conferences first. So I conduct those for the region. And then if those cases progress to a point where they need an administrative hearing, I occasionally will serve as a hearing officer over those cases as well.

Q. And do you currently serve -- or did you serve as the hearing officer coordinator for the department?

A. I did. Yeah. Prior to being the regional manager, I was the hearing officer coordinator. And there was kind of a reorganization within the department that that position was then filled by Peter Anderson for a couple of years, and now I believe that position is vacant so I don't coordinate hearings statewide anymore at this point.

Q. And I believe you said that as part of your responsibilities you participate in the processing of water right permit applications,

Page 12

correct?

A. That's right.

Q. And would that include municipal water right applications?

A. I do, although those applications are fairly rare in the eastern region.

Q. Okay. In what ways are municipal water right applications different than other applications?

A. They can be quite different. Idaho Code is set up in a way where municipal applications for reasonably anticipated future needs kind of have -- those applications have their own unique set of code.

But, again, in the eastern region because so many of our administrative basins are closed to new appropriations, and have been for a long time, we don't see those type of applications here. So I'm not as familiar, say, with the reasonably anticipated future needs provisions just because we -- I don't have to apply those on a day-to-day basis.

So oftentimes municipal applications have had to be mitigated and we deal more with mitigation plans and modeling on the Eastern Snake Plain Aquifer.

Q. So is it fair to say that with your time

Page 13

in the department you haven't processed here at eastern a reasonably anticipated future needs application?

A. I haven't. I was involved as a hearing officer in a couple cases that I was assigned to in the western regional office. But as far as out of our region, we haven't had those applications.

Q. Do you recall the last -- or who the municipality was that was the last application you reviewed?

A. I think it would have been the City of Rexburg. And, to be honest, I wasn't directly involved in that processing. I believe that application was filed and was approved in the two thousand -- boy, 2010 to maybe 2012 time period, and I would have just been shifting into my role as a program manager at that time. And I believe that review was primarily being handled out of Boise.

Q. Okay. I'm going to hand you what has been premarked as Exhibit 1. So this is a document called notice of department witnesses for hearing in the two matters that we're involved in, the Big Wood groundwater management area matter and then the Snake River basin moratorium.

Have you seen this document before?

Page 14

A. I have.

Q. On the first page of the document under part one it identifies you as the person -- well, I'll just read it. "Mr. Cefalo will testify as to the director's conclusion that applications for municipal water use and for domestic use from community water systems shall be considered fully consumptive."

Do you see that language on that document?

A. I do.

Q. When were you made aware that you were designated as the department witness on this document?

A. It would have been one or two weeks prior to the document being issued.

Q. The document was issued on April 7th, so a couple weeks -- one to two weeks prior to that?

A. Correct.

Q. How were you notified of that?

A. I can't -- I can't recall.

Q. Okay.

A. I really can't. It may have been a conversation with Garrick, but I can't recall.

Q. As a general matter, could you -- so I'm

Page 15

talking specifically about the Big Wood groundwater management area. Are you familiar with what a groundwater management area is in the State of Idaho?

A. I am.

Q. Could you just describe your understanding of what that is.

A. The designation of groundwater management areas are governed by statute, and there are certain criteria that have to be met. But if those criteria are met, the director can designate an area as a groundwater management area. And then the statute provides that an advisory committee can be formed and then a management plan can be prepared to help -- to not only quantify what diversions or what depletions are occurring within that groundwater aquifer, but also to take steps necessary to maybe start to manage the aquifer to reduce any declines that may be happening.

Q. What typically precipitates the designation of a groundwater management area?

A. One that I've observed occurred in Malad Valley, so here in Eastern Idaho. And there were actually requests sent to the department from concerned water users within the valley saying that they were replacing domestic wells or seeing aquifer

Page 16

declines and asking the department to conduct a review. And at that point the department sent the matter to the hydrology team within the department to review whatever data we have and see if a groundwater management area was justified.

Q. Okay. Generally concerns about groundwater use is what can lead to that designation?

A. That's right.

Q. Okay. Turning now to the Snake River basin moratorium. What is your understanding about that particular order?

A. For many years out of our region we've been operating under the previous version of this Snake River moratorium order, one that extended to the trust water area. We would often refer to it as a trust water moratorium.

And so what this document does is it takes that moratorium and extends it across the entire upper Snake River basin and it applies to both surface and groundwater now, whereas the previous trust water moratorium -- I should take that back. That did apply to surface and groundwater too. It's just so we so rarely see surface water applications within those basins. Primarily for us it was a groundwater moratorium but it does apply -- that

Page 17

previous one applied to both too.
Q. Did your -- in your role as the eastern region manager, did you receive any complaints or concerns about municipal water use that may have led to issuance of either of those orders?
A. Can you ask that again?
Q. Yeah. And I'll get to this in a minute. There's language in both of these orders relating to municipal water use. Did your office receive any complaints or stated concerns about municipal water use that may have led to issuance of those orders?
A. Not that I recall.
Q. I'm going to hand you now premarked as Exhibit 2 and 3. These are copies of the orders. And you, I think, before even said you have reviewed those for today.
And here is 3. The 3 is big but that's because it's got a huge mailing list.
You indicated before that you had reviewed these documents before today, so I'm assuming that means you're familiar with them?
A. I am.
Q. Okay. And I should be more specific. Are you familiar with the content of the documents as well?

Page 18

A. So I read the entirety of the order related to the Big Wood River groundwater management area. I'm going to admit that I didn't necessarily read every technical paragraph in the Snake River basin moratorium order. I know there's a lot of technical data in there related to the Eastern Snake Plain Aquifer model. So I didn't read all of that.
Q. On Exhibit 2, which is the Big Wood, I'm going to have you turn to page 9. Who signed that order?
A. Mat Weaver on behalf of Gary Spackman.
Q. Okay. So you didn't sign the order, correct?
A. I did not.
Q. Now I'm going to have you look at Exhibit 3 and have you turn to page 29, which was also the signature page. Who signed that document?
A. The director, Gary Spackman.
Q. So, again, you didn't sign that order either?
A. I did not.
Q. And yet in this proceeding the department has identified you as the person who will testify as to language in both orders relating to municipal water use and for domestic water use from

Page 19

community water systems to be treated as fully consumptive, correct?
A. That's right.
Q. In a separate proceeding the director indicated that these sorts of orders are not drafted in a vacuum, that there's input from staff. Can you describe the process for drafting these sorts of documents?
A. Sure. These types of orders are often very technical and are based on a lot of technical information and data and so there would, of course, be a lot of work and communication and coordination with the hydrology section and the technical staff of the department. There would also be discussion and coordination with the attorneys, internal attorneys within the department.
Q. Okay. So how is that process initiated? Are you contacted? Is there an e-mail sent out that the director's intending to do a certain thing and that here's the assignments to different department staff?
A. I don't know, to be honest. Occasionally there might be a group discussion about a certain topic. But as far as initiating the order right off, I don't know. I mean, I'm not the

Page 20

director and so I don't know how he begins the process by making specific assignments or not.
Q. But at some point in both of these matters you were notified that the department wanted either your input or you to draft certain parts relative to the municipal issue, correct?
A. I was asked for input, yes.
Q. How was that request made? Was that by phone call? Was that by e-mail?
A. I was provided a draft of the Snake plain moratorium order prior to its issuance for feedback.
Q. Did that draft have the language about fully consumptive municipal use already in it?
A. It did.
Q. Okay. So you didn't draft that language?
A. I did not draft that language. But I did review it.
Q. Were you asked to review the entire moratorium order or just that specific language on municipal water use?
And I should be more specific. Page 28 of the moratorium order is the language that is of primary concern to my clients. So --

Page 21

MR. FLETCHER: You mean of Exhibit 3?
MR. HARRIS: Yeah, of Exhibit 3.
THE WITNESS: I was asked to review the entire order, but I focused primarily on the order section which would be pages 27 through 29. In my current role at the department, I really am not in a position to second guess or to give feedback on, say, how to run the model or the technical side of the order. So I could focus primarily on the effects of the order and how that would then be implemented.
Q. BY MR. HARRIS: Okay. And did you actually provide feedback on some of the language in the moratorium order?
A. I did.
Q. Okay. What sections did you provide input on? And I should be more specific. I'm talking about the Snake plain one. The Big Wood is also called a moratorium, so I'll try to be more specific on that.
But on the Snake River order, what sections did you provide input on?
A. Primarily paragraph 3, which extends from page 27 to page 28.
Q. And just for the record, paragraph 3, that's under the conclusions of law section, correct?

Page 22

A. No. Paragraph 3 of the order.
Q. Got it.
A. In fact, I can't -- I can't recall as I read through the rest of the order, pages 27 through 29, that I provided feedback on any of those other sections.
Q. So to be clear, before you said you did review it and provide other input; now you're saying it was just only on this paragraph 3?
A. I reviewed -- I reviewed the -- like I said, the entire order section and -- but I can't recall having any concerns with the language in any of those other paragraphs.
Q. Okay. So just so I make sure I understand, you were asked to review and provide input, and really the only section of the Snake River order that you provided any input or suggested changes to is under the "order" section, paragraph 3 --
A. Correct.
Q. -- is that correct? Okay.
Were you asked to review the Big Wood order before it was issued?
A. I can recall having conversations about some of the ideas that are included in this order,

Page 23

but I cannot recall actually reviewing the order itself.
Q. Okay. What were the ideas that you had conversations about?
A. How domestic uses should be treated in moratorium orders.
Q. When you say "domestic," does that also include municipal or just domestic?
A. Just domestic.
Q. I'm going to have you turn to page 6 of that Big Wood order. There's a paragraph kind of right just below the middle of the page. It begins "When community systems."
A. Sure.
Q. Do you see that paragraph?
A. Yes.
Q. Is that the paragraph that you provided input on?
A. Again, I don't recall actually looking at any specific language but rather having conversations with the director about some of the larger concepts, how moratorium orders interface with domestic uses.
Q. So what specifically were those concepts? Did it include presumptions that municipal

Page 24

use is fully consumptive?
A. Truthfully I can't recall the substance of the conversations. I can recall that at times I had talked to Gary Spackman about domestic uses and moratorium orders, but I can't recall the details of those conversations.
Q. Just so I'm clear, when you use the word "domestic" in the water rights world, typically "domestic" generally refers to Idaho Code Section 42-111.
When you use the word "domestic," is that a broader term or are you referring specifically to 42 --
A. It's a broader term. It would include not only individual domestic wells but also subdivision domestic uses out of community -- out of community wells.
Q. Okay. And I'll get into some of the specific language here in a minute. But going back to the Snake River moratorium order, did others participate in the drafting of those orders -- other department staff, I should say, that you're aware of?
A. I would assume so but I don't know.
Q. So as far as you know, it was -- the only two that participated was the director and you.

Page 25

You don't know -- you're assuming other staff did, but you don't know who?
A. Yeah, I don't know how wide the net would have been cast within, say, the Boise office. I know that Shelley Keen as the water allocations bureau chief would have been involved in that and Mat Weaver would have been involved in those discussions too.
But beyond that, for example, on the technical side, I don't know who from the hydrology section would be involved. And I don't know if, say, other regional office employees, not only here but possibly in southern Oregon and western, would have been involved in those discussions.
Q. Okay. So same question for the Big Wood order. Do you know who within the department participated in drafting that document?
A. I don't.
Q. So was there a particular reason that you were selected to provide input into the director's conclusion that applications for municipal use and domestic use from community systems are fully consumptive, particularly where you didn't draft the language?
A. Again, I wasn't asked to review that

Page 26

paragraph specifically, but rather was asked to simply review the entire order.
But in my role as a hearing officer, I have served as a hearing officer particularly on applications for permit for subdivision uses. And while those are primarily -- the beneficial use on those applications is primarily identified as domestic, occasionally we'll see a subdivision who might be providing, say, water to a commercial or industrial uses and the subdivision and want to characterize that as a municipal application, although it wouldn't be necessarily like a city level type of a use.
But I have served as a hearing officer in those contested cases and have wrestled with the language in the 1993 amended trust water moratorium which is different -- as you guys all know, is different than the language that is in this order that is in front of us today.
Q. And could you just explain how it is different?
A. The 1993 moratorium included specific exceptions for subdivisions as long as each individual -- and I don't -- Rob, I apologize because I don't necessarily have that language perfectly in

Page 27

my brain. But there's one that says as long as each individual lot meets the domestic exemption, meaning less than a half an acre of irrigation and 13,000 gallons, there was a broader exception in that moratorium order that allowed the department to continue to process applications that met those terms.
Q. And there was no language in that order that you're referring to that said that that usage was considered fully consumptive?
A. There was no language addressing that question.
Q. I want to be clear too, I'm not trying to trick you, and clearly the document will speak for itself.
A. Uh-huh.
Q. These questions about documents we're referring to are just your understanding so, yeah, if I don't make that clear in my question, that's what I'm looking for. I don't expect you to be able to quote from them verbatim.
A. I appreciate that. Thanks.
Q. In any of your past employment have you worked for a water division of any municipality?
A. No.

Page 28

Q. In preparing or participating in the order, what sort of investigative work into municipal systems did you engage in?
A. None. Just my experience working with water rights with the department.
Q. Do you know if the department engaged other -- let me rephrase that.
Do you know if any other department staff engaged in any sort of investigative work in the municipal systems before those orders were issued?
A. I don't know.
Q. What non-department individuals, if any, did you consult with in review or drafting of the language in the orders?
A. In the drafting of the orders, I would say none. After the orders were issued, I've had conversations with various water users and consultants.
Q. Do you recall which water users and consultants that you've had conversations with?
A. Oh, it would be -- I know that I've had conversations with Rocky Mountain Environmental employees simply on what -- what effect the order will have on applications moving forward. I know

Page 29

that I've had other conversations, but that's the only one that I can recall specifically.

Q. Okay. And Rocky Mountain Environmental is a local consulting group here in Idaho Falls, right?

A. That often represents subdivisions and developers as applicants.

Q. Okay. With your work within the department, are you generally familiar with municipal wastewater systems? Do you know how they operate?

A. I'm familiar with them to the extent that I -- that was part of my education. As a civil and environmental engineer, we took classes on wastewater treatment. And so I'm kind of familiar with the structure of -- the physical structure of how water moves through a wastewater treatment plant.

We have dealt with certain water users on effluent over the years, but that's not something that I deal with on a day-to-day basis.

Q. But in your education, if I understand correctly, you did become familiar with some typical wastewater treatment methods from cities, right?

A. That's right.

Q. Could you briefly describe what some of those categorizations would be?

Page 30

A. Oh, it's really just ways to treat the water to make it so that they can meet the minimum thresholds for discharging that water back into the river. And in some cases municipalities have moved away from discharge -- seeking discharge permits and have gone to, say, land application. Yeah.

Q. And that's what I'm getting at. So No. 1 would be treat and then discharge back into a water source, correct?

A. That's right. As a very simple overview, yeah, it could be treat it and discharge it into the river; or treat it to some degree, to a lesser degree, and land apply that. And in some cases they can be -- it can be fully consumptive, meaning there is no discharge at all.

Q. So that would be, for example, like discharging to an evaporative facility?

A. Evaporation ponds, yeah.

Q. Are there any others that you're aware of other than those three main ones?

A. For some smaller. It wouldn't work for, say, a municipal level. But for, say, a subdivision you could have rapid infiltration which then kind of becomes more like a septic system, but a large scale septic system, you know, where you've got a field set

Page 31

aside or a green space where that's where all of the wastewater goes and infiltrates there instead of each, say, lot owner having their own septic system.

Q. Great. I'm going to have you turn to page 28 of the Snake River order.

A. Yep.

Q. What we've been talking about. There's a sentence near the top that begins with "Applications for municipal water use." Do you see that sentence?

A. Yes.

Q. Could you just read that sentence for me?

A. "Applications for municipal water use and for domestic use from community water systems shall be considered fully consumptive."

Q. The word "municipal" is used in that sentence but there's no citation to a definition for that term. Is there a specific definition of "municipal" that either you or the department is utilizing in that sentence?

A. Not that I'm aware of. I know that their -- their -- let me speak clearly.

I know that the statutes governing reasonably anticipated future needs includes some

Page 32

definitional sections. I don't know if "municipal water use" or "municipal use" is set forth as a definition in that code. But outside of maybe that, I don't know of any definition for that term "municipal water use."

Q. Okay. I'm going to hand you what's been premarked as Exhibit 4.

A. Either you're leading me on a good path or I know exactly where you're going. So good.

Q. So, James, what I've handed you is a printout of Idaho Code Section 42-202B.

A. Right.

Q. And I'm assuming you're familiar -- generally familiar with this code section?

A. I am.

Q. And if you look down under subparts 4, 5, and 6, there are definitions of "municipality," "municipal provider," and "municipal purposes." Are you generally familiar with those definitions?

A. I am. I've reviewed this section in the past, 42-202B.

Q. Okay. For someone reading these orders -- and I should say both the Snake River order and the Big Wood that refers to "municipal," are we to

Page 33

understand that these definitions in 202B are incorporated into those orders?

A. I don't see that the definition in subparagraph 6 for "municipal purposes," I don't see that that is limited to just applications or water rights for reasonably anticipated future needs. So I think that's a logical conclusion that at least that definition may apply, but I don't know that.

Q. So to your knowledge there was no specific intended meaning in the orders for the word "municipal"?

A. Or that phrase "municipal water use"?

Q. Correct.

A. I don't know that that phrase was meant to tie back to subsection 6. I can't say that was their intent there for sure.

Q. Okay. And, again, the department has designated you as the person to talk to about this. So what is your definition of "municipal" as it's used in the order -- I should say "municipal water use."

A. As I read through the definition in subsection 6 of Section 42-202B, I think that provides a pretty fair -- or maybe I should say it this way: That is consistent with my understanding

Page 34

of what municipal water use is, and I don't see that I would define municipal water use any differently than is in the code.

Municipal water use is pretty broad. It is meant to capture all of the uses that may exist within, say, a city or a municipality. And that could include industrial delivery, commercial delivery, residential uses, golf courses, parks. It's pretty broad. It's a broad umbrella use on those, so there are a lot of sub-uses that fall within the larger concept of municipal water use.

Q. Okay. Thank you. The sentence that we're talking about also uses the word "domestic." What definition of the word "domestic" is the department relying on there?

A. The term "domestic" in Idaho is a tricky term. And all the water attorneys that work in this area understand that just because "domestic purposes" is defined by code.

But the department and water users also use the term "domestic" to really refer to residential water use, whether it meets the strict definition of Section 42-111 or not. So that can be the tricky part of it is there's the domestic exception. But the term "domestic" as a beneficial

Page 35

use can be broader than that and can encompass, you know, residential use for, say, even subdivisions that may be delivering water to acres that are more than a half acre of outside water use per lot.

Q. And I agree with you there's kind of a statutory definition and then a broader one. What was the department's intent with the use of the word "domestic" in these orders?

A. "Domestic use" within these orders is the broader beneficial use of domestic. It's not meant to be just confined to domestic purposes as that term is defined in Section 42-111. It's meant to encompass -- maybe a better term would be "residential use," but that's not -- that hasn't been historically used within the State of Idaho, so it's meant to capture the broader beneficial use of "domestic."

Q. Continuing on in the sentence it uses the phrase "community water systems."

Do you see that language?

A. Right.

Q. I'm going to hand you what's been marked as Exhibit 5. And this is a -- just a selection -- this is the definition section under IDAPA 58.01.08, which is the rules for public drinking water systems

Page 36

in Idaho.

I recognize that you do not work for the Idaho Department of Environmental Quality, but I know there's some overlap with public drinking water systems. Are you generally familiar with this part of the IDAPA code?

A. I am familiar with this definition of community water system. As we work with water users to license water rights, there are times when we reach out to the Department of Environmental Quality for information about water systems in our -- an effort to collect as much information prior to licensing. And we know these thresholds because we know that when their systems are community water systems, DEQ will also have, you know, a trove of data that we can rely on too.

Q. And this is great because you're a step ahead of me. I just asked if you're familiar with them and you knew exactly where I was going to go. So you're referring on page 9 to definition 15 where it says community water system?

A. That's correct.

Q. And that definition says, "A public water system which serves at least 15 service connections used by year-round residents or regularly

Page 37

serves at least 25 year-round residents." Did --
A. We -- sorry.
Q. Did --
A. We are also familiar with this just water users sometimes want to stay below these thresholds to avoid falling under stricter regulations with DEQ.
Q. Right. So knowing your familiarity with this, the language from both orders uses the phrase "community water systems." Did the use of that specific phrase mean to incorporate this definition in IDAPA 58.01.08, 15?
A. I don't know.
Q. When you saw the language, did you ask whoever drafted the order for any clarification on what was intended or meant by "community water systems"?
A. I didn't. And as I reviewed the draft, that had not jumped out as a potential definitional issue. I know that after the orders came out, those questions were asked of us in our office by, say, Rocky Mountain Environmental as they're trying to represent constituents.
Q. So how would you define "community water systems" as used in both of these orders?

Page 38

A. I don't have a definition that I can provide. I can't think of how I would define that any differently than how DEQ has treated it, but I don't know specifically that that was meant to be the threshold either.
For the domestic exemption there's the phrase used multi-ownership subdivisions.
Q. Okay.
A. But I don't know that that was meant to be synonymous -- or that community water systems, that phrase, was meant to be synonymous with multi-ownership subdivisions either.
Community water systems, I guess at a minimum, would be where multiple residents are receiving water from a common system.
Q. And that's really the heart of my question because you would agree with me that this -- the Snake River order applies to applications for permit which is right in your wheelhouse in your role in the department, right?
A. That's right.
Q. So if you were to get an application for permit describing a specific use, have you decided what definition or what parameters you would employ to determine whether or not it was a community or noncommunity system? Because the order treats them differently.
A. That's correct. And as we have had applicants come into our office after the moratorium order was issued, I know those applicants are asking the same question. And we had -- at least from a regional office perspective, we need to know what that means too.
Q. And is it fair to say at this point you then don't know quite what that means?
A. I don't know what that means.
It can be -- you know, the spectrum can be anywhere from a 200-home subdivision that is all receiving water from one well. I think that pretty clearly is a community water system. To the other end of the spectrum where you have, say, a child who moves in next to their parents and connects to their existing domestic well. And at that point you have, say, two homes receiving water from a common well. And whether that term "community water system" applies to that extreme end of the spectrum, I don't know.
MR. HARRIS: We've been going for about an hour. Typically every hour I like to take a break to make sure you're okay.

Page 39

Page 40

THE REPORTER: I'm fine. Thanks.
THE WITNESS: You know me, I can go, like, five hours. I'm the worst hearing officer ever. I never take breaks.
MR. HARRIS: I'm happy to continue unless anyone wants to take a break.
THE WITNESS: Go ahead and continue.
Q. BY MR. HARRIS: We'll do that.
While we're on those definition sections, there is a definition of a community water system, but there's also a definition of a noncommunity water system. It's on page 15. It's under definition 85. And it simply provides a public water system that is not a community water system.
Do you know if it was intended with the use of noncommunity water systems in these orders to refer to this definition?
A. I don't. And I'm not as familiar with these two definitions set forth in the DEQ rules. That noncommunity water system definition is a real tricky one. Noncommunity, non-transient, and then you come down and can see what that -- how that's defined too.
I'm not as familiar with these, and I can't say for sure that that's -- that was -- those

Page 41

were tied together in any way.
Q. Okay. Well, I'm going to continue on with the definition -- or with the sentence you read before. So after community water systems it says, "Shall be considered fully consumptive."
Do you see that language?
A. I do.
Q. Okay. Referring now back to Exhibit 4, which is the statute 42-202B. The first definition under the section subpart 1 has a definition of consumptive use.
Are you familiar with that definition?
A. I am.
Q. Could you just read into the record that sentence, that definition, just the first sentence, not the whole provision.
A. "Consumptive use means that portion of the annual volume of water diverted under a water right that is transpired by growing vegetation, evaporated from soils, converted to nonrecoverable water vapor, incorporated into products, or otherwise does not return to the waters of the state."
Q. Okay. Are you familiar with this definition?
A. I am.

Page 42

Q. Does the use of the word "consumptive" in the orders incorporate that definition?
A. It would.
Q. And so "consumptive use" if water is -- otherwise does not return to the waters of the state, that would be considered consumptive, correct?
A. Correct.
Q. What is your understanding of the phrase "waters of the state"?
A. I believe that there are provisions in other sections of the water code that refer to what the waters of the state are. They are the waters that can be appropriated by water users within the state. There's some limits, of course. But primarily they're groundwater aquifers, creeks, streams, springs, ponds, lakes. Yeah, they -- kind of encompasses all of that.
Q. The Snake River would be considered waters of the state, correct?
A. It would.
Q. The Big Wood River would be considered waters of the state?
A. Yes.
Q. In the sentence that we just read, there is an adjective "fully" that's before "consumptive"

Page 43

and that's the only time in the moratorium order that it appears.
Do you -- can you explain why that adjective was included in that sentence and not elsewhere in the language in paragraph 3?
A. I don't know. And it may not be needed. If there is no difference between the idea of being consumptive or fully consumptive, it may be superfluous.
Q. You testified before that you are familiar with municipal water right applications, you've processed them, and you're familiar with the definition that's found in 202B and that it includes various types of water uses, including, for example, irrigation, correct?
A. Correct.
Q. When a city uses a municipal water right for irrigation purposes, is it fully consumptive?
A. It can be close to fully consumptive. We found that sprinkler irrigation can be fairly close to fully consumptive. There's very little water that actually returns to the aquifer.
Q. But there is some that would return?
A. Some and it can vary. It can vary depending on how that sprinkler application is

Page 44

occurring.
Q. On this consumptive use question I think there are others that may define it slightly differently so I just want to clarify that you're saying: As used in the order, you think that that definition fairly captures what was intended with the language in the order?
A. Correct.
Q. Sometimes I know consumptive use is diversions or pumping minus returns. Do you think that would be incorporated in the use of that term at all?
A. If I understand you correctly, you would just say mathematically the fraction of the water consumed would be what's pumped minus what returns?
Q. Yes.
A. I could agree with that.
Q. So, for example, a municipality would -- if they have records of what was pumped but also had records of what was discharged into the river, that would be a reasonable way to determine what was consumptively used in your view?
A. Sure. Sure. I know that with city systems it can be complicated just if you have multiple points of diversion or, say, are diverting

Page 45

water from multiple sources. Whether it be groundwater wells or springs, that can be a little bit trickier. But from a mass balance equation, yeah, you bet, if you were to look at all of the water diverted minus all of the water being discharged, the water lost can be considered consumptive.

Q. In your role within the water district, did you participate in or input data into what the department calls their WMIS system, W-M-I-S?

A. I have.

Q. In your role did you become familiar with how certain cities track their groundwater diversions?

A. In eastern Idaho a lot of the cities do their own measurement and reporting and we still track it within our systems. For some of the smaller cities, though, we would actually go out and measure the system directly or regularly visit the system and take flow meter readings. So it can vary, but I am familiar with how they measure water.

Q. Are you familiar with, for example, the City of Idaho Falls' SCADA system? Have you heard that before?

A. I know that they have one that they can

Page 46

in a central hub track what they're diverting at all of their wells at one time, yes.

Q. Turning back to the language in the moratorium order, the next sentence after the one you read several minutes ago provides, "Applications for domestic purposes from noncommunity water systems shall be evaluated on a case-by-case basis to determine whether the proposed use is nonconsumptive."

Do you see that language there?

A. I do.

Q. And there's no similar case-by-case language for municipal or community systems, correct?

A. That is correct.

Q. Was there a reason why no similar case-by-case evaluation standard was included for municipal and community water systems?

A. I don't know.

Q. Did you suggest in your review of the draft that it should include it?

A. I didn't.

Q. Was there a reason explained why they were treated differently? Why one has a case-by-case evaluation and the other does not?

A. Not that I can recall.

Page 47

Q. In your role as the eastern region manager, do you think there's a legitimate reason to treat them differently? If you're processing new municipal water right applications, is there a reason why one should be treated differently than the other in terms of what you have to do in processing those permits and licenses?

A. I don't know that I can answer that question without first understanding what a noncommunity water system is.

Q. Who within the department would know that?

A. What that phrase -- Rob, are you asking what that phrase "noncommunity water system" means?

Q. Yeah.

A. It may be Gary Spackman.

Q. Okay. The language in the orders -- and in a minute I'll -- the Big Wood order actually has some additional detail, but I just want to focus right now on the Snake River order.

But the language assumes full consumption of treated municipal effluent, correct?

A. Right.

Q. Was that the policy of IDWR before those orders were issued?

Page 48

A. No.

Q. Was there a change observed by IDWR with how municipalities treated their effluent that led to the policy change?

A. I don't know.

Q. Was there anything observed by IDWR where a city had changed its treatment methods that caused the department concern?

A. I don't know. I can say that municipalities do change their wastewater treatment methods.

Q. Do you have any specific examples?

A. I know that in Bear Lake there is now a regional-based water treatment plant. So instead of municipalities either discharging directly to the lake -- municipalities, I should say water users around the lake. Instead of discharging water directly into the lake, they now have what I believe is a fully consumptive system around the lake. I also know that in Island Park there's been a regional wastewater treatment plant put in to try to address some contamination issues in the Island Park aquifer.

Q. And those changes would have to be authorized through what is commonly referred to as an NPDES permit, correct?

Page 49

A. They may if they are -- if they include a discharge. I don't know whether a permit would be required if then they choose to go away from discharging into doing something else.

Q. How did you become aware of the Bear Lake regional wastewater facility and the Island Park regional facility?

A. The Island Park -- I know we've had some aquifer contamination concerns in the Island Park area for a number of years. And so that would be just in my conversations with our well drilling permitting staff. And I've actually met over the years with different consultants that have considered projects up there and I know that there is a current proposal actually to tie some additional subdivisions in the Island Park area into that regional wastewater treatment plant.

Q. When those proposals are made, is it required that the Department of Water Resources be contacted or involved in those conversations?

A. Not necessarily. No, not necessarily. Those changes often can be made without our input. It doesn't really change an element of the water right so there's not a, say, transfer application that's filed with us. We don't really have a

Page 50

review -- we don't have review authority over those changes.

Q. Okay. Do you know if the department engaged in any technical or scientific analysis to reach the conclusion that treated municipal effluent is fully consumptive?

A. I don't.

Q. Did you inspect any municipal systems -- or are you familiar with any municipal effluent systems here locally?

A. No. I drive past one every day but I don't think that counts.

Q. Well, which one do you drive by?

A. The Idaho Falls south one.

Q. Do you know how the City of Idaho Falls treats its municipal effluent?

A. I mean, it looks like a classical just clean the water to where it can discharge it into the river. Because the treatment plant is right there south of Sunnyside at the river.

Q. You got it. Are you also familiar with the Eastern Idaho Regional Sewer District facilities in the Shelley area?

A. I haven't been there, and I'm only familiar to the extent that we have applications for

Page 51

permit that note on the application that they will -- their wastewater will be sent to that regional treatment facility.

Q. So you're not familiar with the municipal entities like City of Ammon and Falls Water that have their effluent treated through --

A. I knew that City of Ammon sent their water there. I didn't know that Falls Water Company did, but I also know that that treatment plant does discharge water into the Snake River too.

Q. I apologize. I need to correct myself. Falls Water is actually treated through the City of Idaho Falls.

A. Okay.

Q. Not EIRSD -- is what they say, E-I-R-S-D.

But the City of Shelley also treats their municipal effluent at the EIRSD facility. Were you aware of that?

A. That makes sense.

Q. What happens to the treated effluent once it's treated from those facilities? I think you already answered it.

A. Discharged into the Snake River.

Q. Okay. If it's discharged into the Snake

Page 52

River, is it the department's position that this water does not return to the waters of the state?

A. No, that would return to the waters of the state. I know that in certain applications there can still be injury concerns because of -- and we don't need to get into this in this proceeding.

Q. Right.

A. But, you know, some technical accounting issues with the Snake River and pulling it out of one place and putting it into another, it may not necessarily mitigate for senior water rights. And so I don't know that it answers that question about injury, but as far as simply putting it back to waters of the state, yeah, I would agree with that.

Q. So if it returns to the waters of the state, and you previously testified that the use of the word "consumptive" in these orders essentially incorporates 42-202B(1), isn't it more accurate to say then that that discharged effluent is not fully consumptive?

A. You know, at that time it may not be, but in the future it may become fully consumptive.

Q. Right. And there's no qualifying language in the moratorium order that addresses that. It just says it's assumed when it's pumped it is

Page 53

fully consumptive, correct?
A. Yeah, that's right, but I think that's consistent with how the department handles other applications.
Q. What do you mean by that? What other applications?
A. Well, when an applicant -- if an applicant, for example, were to come in and apply for an irrigation water right, the department doesn't make some inquiry into what crops that farmer may want to grow. The permit would be issued to the full state-recognized consumptive demand of crop for that area. Right? So that allows that farmer to grow grain one year and sugar beets another year and corn another year, right, and can bump up against that maximum consumptive use.
And I think that for a municipal -- a municipal water right, especially if we're just going to talk about city water right, that would be the same way, right? That recognizes -- the city could at some point in the future change its wastewater treatment plant and start bumping up against the full anticipated maximum consumptive use.
Q. And when you use the word "could," and I'll get into this in a minute, that sounds to me

Page 54

more like a policy determination. I'm focussed right now on the technical side, which is that -- as I read this definition, it defines consumptive use as waters that does not return to waters of the state. Using the Idaho Falls example, their treated effluent does return to waters of the state.
A. But what we're dealing with in a moratorium order are applications for permit. And an application for permit is a request for a maximum amount of authority, not only to divert water but also to use that water. And so the department in reviewing an application has to look at what that maximum authority that's being granted is.
Q. So how is that any different than an irrigation right? How is a municipal right different than an irrigation right in terms of your review?
A. That's what I'm saying is I think that when we're looking at consumptive use, I think there's a real strong analogy there, right?
When an irrigator comes in looking for a new water right, they're looking for a maximum authority to beneficially use that water. And it could be corn. It could be sugar beets. Right? So the permit is issued in a way that recognizes a 4 acre-foot per acre diversion rate -- a diversion

Page 55

volume, annual diversion volume, 4 acre-feet per acre. And certain areas are 3.5 acre-feet per acre. And that's the maximum diversion volume that can be taken.
Q. But to be clear, in the application document itself, the water user doesn't have to designate what type of crop the person is going to irrigate. The department has standard acre foot per acre allotments for different parts of the state that it just automatically includes?
A. That's right.
Q. Okay. And at least here there's an assumption that the city -- as I understand your testimony, that because the city could fully consume it, that's the reason for treating it as such right at the application phase?
A. I might not be clear. I'm kind of stumbling over my words. I'll see if I can say it a little bit different.
But when an irrigator -- if somebody came in a moratorium area and were proposing an irrigation water right, the department would expect them to mitigate for that full expected consumptive use.
So, for example, an irrigator could come

Page 56

in and say: Well, I promised to just grow grain. Trust me. From here on out, I'm just going to be just grain. But we would say: No. We have to -- you have to mitigate for the full anticipated consumptive use associated with that irrigation at the maximum level, right? That it could be corn or sugar beets or three cuttings of alfalfa or four cuttings of alfalfa, whatever that maximum amount is.
Q. But isn't that also true with the noncommunity systems in this moratorium order and yet there's a case-by-case evaluation for that one?
A. Again, I just don't know enough about what that phrase "noncommunity water systems" is referring to.
Q. Would you also agree -- actually, I apologize. Let me strike that and ask it this way: You had testified earlier that you had worked for Water District 01 and became familiar with its accounting system, correct?
A. That's right.
Q. How does the Water District 1 accounting system treat discharged effluent, for example, from the City of Idaho Falls?
A. Water District 1 does not track or measure that return flow. And, in fact, doesn't

Page 57

measure return flow from any water user that I'm aware of. There might be some exceptions out there. But rather that water comes into that reach of the river and it simply becomes a gain to that reach.

Q. I was going to ask that very question. So essentially it's not tracked specifically, but it will show up in the water measurements and effectively be treated like a natural reach gain to the river?

A. It will.

Q. Okay. If a city were to treat its water and then recharge that effluent, wouldn't that also return to the waters of the state?

A. It would. Again, there could still be injury concerns depending on who is receiving the benefit of -- in a fully appropriated basin --

Q. Sure.

A. -- you know, who you might be impacting and who might be receiving the benefit may not line up quite right.

Q. And I should say this proceeding doesn't deal with an injury evaluation.

A. Right.

Q. I appreciate -- I promise I'm not going to use this deposition against you in future

Page 58

applications to say that you said there would never be injury. We're just talking about the appropriation phase.

But if they were to recharge it, that water would then go back into the aquifer to be made available for the water supply?

A. It would.

Q. Are you aware of any municipal systems in the state that fully consume all the water that it diverts? I think you mentioned the Bear Lake one. Are there any others?

A. I don't know. I know that there are some of the smaller community systems that have gone to land applying. And, again, as you put water through a pivot, that is -- that's mostly consumptive. There's only a small fraction of water that returns to the aquifer through a pivot system.

Q. And you had testified before that -- you have an engineering background and you currently have a PE. In your experience are professional engineers or consultants able to calculate consumptive use rates for water right permit applications?

A. Again, they can calculate what the theoretical consumptive use is for that time and for that system, but as we've seen, those wastewater

Page 59

treatment systems change over time --

(Sarah Klahn joined the deposition through Zoom.)

MR. HARRIS: Does that mean we're due for a break?

MS. RAMMELL-O'BRIEN: Sarah Klahn just joined.

MR. HARRIS: This actually is probably a good time for a break. Let's go ahead and take a ten-minute break.

(A recess was taken from 10:22 a.m. to 10:38 a.m.)

Q. BY MR. HARRIS: We're back on the record.

Before the break we were having a conversation about irrigation municipal water rights, James.

A. Uh-huh.

Q. Are you aware of any irrigation right that is nonconsumptive, or are most irrigation rights or all irrigation rights have some element of consumptive use?

A. They would have to have some element of consumptive use. It's the beneficial use of the plants actually transpiring and consuming the water

Page 60

right that constitutes irrigation.

Q. But a municipal right if it was only used for inside residential use, that could actually been nonconsumptive; would you agree with that?

A. Mostly nonconsumptive. I think that there have been studies done that even, you know, in-house culinary uses have some fractional element of consumption. But I think as a broad statement, yeah, generally nonconsumptive.

MS. McHUGH: This is Candice. I'm having a harder time hearing James. He was clearer before but now I can't hear him.

MR. HARRIS: Is that better, Candice?

MS. RAMMELL-O'BRIEN: Candice, how is it now?

THE WITNESS: If I talk, how is it now?

MS. McHUGH: Much better.

THE WITNESS: Great.

Q. BY MR. HARRIS: Okay. I'm going to have you turn to Exhibit 2. We're going to move now to the Big Wood moratorium order.

A. Okay.

Q. And I'll have you turn to page 6. And there's a paragraph kind of just below the middle of the page. It says, "When community systems supply water for outside use." Do you see that?

Page 61

A. I do.
Q. Do you want to take just a minute and review that, familiarize yourself with that.
A. Just that one paragraph?
Q. Correct.
A. Sure. Done.
Q. The language in that paragraph uses the same -- similar terms as the Snake River order, municipal community systems consumptive use. Are the definition of these terms in the Big Wood order, in your view, the same as the definitions we've talked about in the Snake River order?
A. Yes, to the extent that those terms have been defined. But these orders came out close enough in proximity to each other that those -- whatever those meanings are would be consistent between the two orders.
Q. Okay. And if I recall your prior testimony, you did not draft this paragraph?
A. I did not.
Q. There's additional detail here that is not in the Snake River order. Do you know why that is?
A. I don't. And this order has a little bit different format than the Snake River moratorium

Page 62

order. Whereas that has findings of fact broken out in enumerated paragraphs, this one is more kind of free flowing narrative.
Q. Okay. And in this paragraph it says, "Sewage disposal methods may include evaporation from the retention facility, land application, or treatment and re-use."
Do you see that sentence?
A. I do.
Q. So it uses the word "may." Do you agree that that acknowledges that some municipal effluent may be nonconsumptive because they're not treated that way?
A. At any one time it could be, right. But, then again, it's hard to predict what the future may bring for municipal water uses.
Q. So based on this language, the language in the Snake River order, was the decision to assume that all municipal effluent is fully consumptive, was that more of a policy-based decision or was that a technical-based decision in your view?
A. It seems like a policy-based decision.
Q. Do you have any concerns in your role as the eastern region manager if there was a determination of consumptive use of the effluent from

Page 63

a municipal or community water system if it was treated on a case-by-case basis like the noncommunity systems?
A. I would. I think that this -- I think that this policy as it's been set forth in these two orders is fair and consistent mainly to the extent there are so many factors involved with municipal water use that are hard to predict because ultimately discharging waters, whether that be to the aquifer or to the river, are governed by clean water act standards. And if all of a sudden there's a contaminant that is -- that the thresholds are changed in some way, the City of Idaho Falls may no longer be able to send that water to the Snake River, right? I know there are a lot of things that municipalities have to weigh out as far as costs, costs of treatment in one way versus the other.
But it's so hard to predict what the future may hold, and this paragraph in particular kind of touches on this, that changes may come in the future that would cause that ratio of what is being consumed to change and could change significantly.
Q. But if, for example, the City of Idaho Falls had to do that, they would have to change their NPDES permit requirements and get other

Page 64

authorizations, correct?
A. I don't know what they would have to do on the DEQ or the federal side as far as NPDES. But they would not have to come in front of us to change anything with the water right.
Q. Okay. But it's also true that those changes could be made by a noncommunity system, correct?
A. Again, I just don't know enough of what that term is referring to, a noncommunity system. So if a noncommunity system is intended to be people on their own individual septic systems, then those -- those type of changes would have no effect on that type of use.
Q. So you're saying it's not possible for someone who is on a septic to treat it and land apply it, or if it was a bigger collection like you mentioned before, a bigger infiltration basin --
A. Right. Again, I just don't know on that term, the noncommunity system, what that term is intended to mean. If it's meant to just be one home to one septic system, it's unlikely that any changes in, say, national water quality standards or thresholds would have any impact on an individual homeowner that just has a septic system in the back

Page 65

yard.
Q. Gotcha. Now, you had testified before that you're both an IDWR employee and then a designated hearing officer for water right contested cases, correct?
A. Correct.
Q. And in both capacities you've issued water right permits and licenses?
A. I have.
Q. Do you want to take a crack at how many you've issued since you've been employed with the department?
A. I know that we approve maybe a hundred -- 130, 140 transfers, water right transfers, on average out of our region and I have been doing that for 13 years. So a lot of transfer applications reviewed and approved. In our eastern region we don't get nearly as many permit applications. On average we maybe approve seven to ten per month.
Q. And you're the one that signs those though, correct?
A. I am.
Q. And you're the one that reviews them?
A. As a final review.
Q. When the department receives an

Page 66

application for permit, what are the three options for the processing of that permit? I think there's generally three. Or if you sit through a contested case, what are your options as the hearing officer?
A. Oh, I'm understanding. So either to approve the permit as proposed with no limitations, deny the application altogether, or to approve the application with some sort of limiting conditions. I mean, the department has or as a hearing officer if we were in a contested case kind of have the full power to reduce the proposed volume, for example, reduce the proposed rate or proposed acres or put some other limiting conditions on the water right.
Q. And is it fair to say that's actually fairly common place, that there are a series of conditions that are attached to permits that are issued these days?
A. There are. Especially in Eastern Idaho where, again, we have closed basins and injury concerns, that there are often conditions added to protect existing water rights.
Q. And you can impose conditions based on evidence presented even at a hearing, correct?
A. I can.
Q. Okay. And have you included conditions

Page 67

relating to mitigation plans or consumptive use in permits and licenses?
A. I have.
Q. For the consumptive use ones, what do you recall? What type of condition did you impose there?
A. Oh, you tied two things together there. I apologize.
Q. I apologize for that. So I'll break that out because that's fair.
So you've included conditions on mitigation plans?
A. Correct.
Q. And so those are handcrafted, right, not standard conditions? You would just have to draft a condition based on what is being proposed?
A. The department does have some standard conditions. For example, if the mitigation is proposing to hold a water right unused, some existing water right unused, there is a standard condition that kind of just talks through what is the water right that is being held unused, where is it located? Notes that if that water right is ever, say, curtailed, then the new water right that is relying on that water -- that mitigation right would also be

Page 68

curtailed. So there are some standard mitigation conditions.
Q. Have you ever issued a water right permit or approved a transfer that limited the consumptive use of the water right?
A. Not that I can recall.
Q. Do you know if those exist within the department?
A. I don't know that I've ever seen one. I know that there are annual volume limits, overall pumping limits that we've placed. But I don't know that I've ever seen one.
Q. But you're generally familiar with what we call the transfer memo, correct?
A. Yes.
Q. Maybe more than you want to be.
Because there is reference in here -- this is on page 4. It says, "Unless there is a specific condition of the water right limiting the amount of consumptive use, changes in water use under a water right" -- it goes on to say -- "don't require a transfer."
That appears to acknowledge that there are some water rights that may have a consumptive use limit.

Page 69

A. I've never seen one.
Q. Do you think you would have the authority or the ability to limit the consumptive use in a municipal water right permit?
A. The department's condition authority is pretty broad.
Q. Right.
A. Especially in the permit in Idaho Code 42-203A. It's a very broad conditioning authority. But I have never seen it done. I think it would be very difficult to enforce.
Q. Okay. Those are two separate things. One is actually including the condition -- as I understand your testimony, the department has pretty broad authority. Do you think you would have the ability or authority to limit the consumptive use or require a certain sort of effluent methodology for municipal water rights?
A. In the statute I don't see that there is a prohibition on that.
Q. Have you also included conditions that require reporting requirements?
A. Yes.
Q. What type of reporting, just generally speaking, would that include?

Page 70

A. Often it's simply an annual report. And it helps track -- especially with mitigation where a certain water right is retired incrementally, if you will, as, say, cabins are added.
I'm thinking most specifically some of the mitigation plans in the Bear Lake area are set up that way where as additional homes are brought on to the drinking water system, additional portions of mitigation rights are taken out of production incrementally. So they provide an annual report balancing those two factors.
Q. Right. And I've seen the department include requirement to have flow meters, correct?
A. Often.
Q. And so if a city was required -- if you included a condition to report its effluent returns or diversion data, that would not be unusual or do you think that would be unusual?
A. That would be unusual. I have not -- I have not seen conditions requiring municipalities to track and report effluent.
Q. So you've correctly noted that this order, the Snake River order is a moratorium order on the processing of new permit applications by presuming that all municipal pumping is fully

Page 71

consumptive. What then is the practical effect on a municipal water right applicant? What do they have to do to even get that application processed?
A. In Eastern Idaho -- and, again, it's been this way for a number of years -- that application for permit would be fully mitigated. And that can be done by purchasing and retiring, say, a groundwater -- if the source was groundwater, a groundwater irrigation right.
Q. And it would have to be fully mitigated even if they included some sort of a plan to recharge the effluent or somehow return the water that they're using to the aquifer, correct?
A. Under the language of the order that we're reviewing, that's correct.
Q. And I believe you testified you think that's a good policy or the correct policy?
A. I do.
Q. As opposed to evaluating it on a case-by-case basis?
A. That's right.
Q. Is that because of department staff or follow-up or enforcement that you mentioned before, would that be difficult?
A. It would be very difficult, yes. Yes,

Page 72

to track the consumptive fraction of water uses for municipalities or even subdivisions throughout the state.
Q. Do you think it would be -- if a condition were included, for example, to require notification to the department if they change their effluent treatment method, do you think that would be burdensome on the department?
A. It would be, and it would be burdensome because the department's enforcement options at that point would be very limited.
Right? If you have a subdivision that says, well, our drinking -- this is our drinking water so we're going to consider it mostly nonconsumptive, and we are recharging it through a rapid infiltration. And then all of a sudden that is not a viable option anymore and they have to land apply it and go to a mostly consumptive treatment, the department really has no enforcement ability to curtail that water use. Right? Because then you have a public health emergency. We can't shut people's drinking water off without creating problems.
Q. Are you saying the department then can't administer those types of water rights?

Page 73

A. I would say that our enforcement options become quite limited when we're starting to deal with drinking water for subdivisions that are already in existence, right? All of these homes have been built, all these people are drinking and using that water in their homes every day, it becomes very difficult to then say, well, your mitigation is -- you have not mitigated for now this consumptive use because you're land applying, but we don't really have the power to shut off your drinking water.

Q. But that gets back to this question about -- you referenced a subdivision. We don't know whether that would be a community or a noncommunity. Are you saying like a bigger subdivision --

A. Right.

Q. -- community system?

A. You could imagine, yeah, a subdivision of 200 homes that at one point was doing rapid infiltration and now has decided that they have shifted to land ap, which is mostly consumptive, and we have very -- you know, very little power at that point to curtail that water use.

Q. What about a municipality, though, like a big city? They would certainly have the ability to, you know, still provide drinking water and yet if

Page 74

they were to change their effluent methods, they could report to you what they're going to do and how they're going to change it?

A. Yeah, in theory. But I think the problem remains the same that shutting off people's drinking water to large communities of people creates a public health emergency, and I don't know that we've got that option.

Q. Okay. And you had mentioned before you don't see very many municipal applications here in your office?

A. No. In Eastern Idaho the municipalities -- as you know, Rob, you've represented some even recently -- have generally used the transfer application or transferring water rights as a mechanism of covering new growth. They buy an existing water right and transfer it into the city, convert it from irrigation to municipal use.

Q. And this just kind of brings this all home. That's the difficult part we're trying to understand is knowing that or knowing that typically they're buying existing water rights, why in the moratorium order there would have been this language that assumes it's fully consumptive for new applications that could be conditioned because you're

Page 75

not going to see very many of them. And as I understand your testimony, it is more of a policy-based concern based on enforceability. Is that fair?

A. And change to wastewater treatment, that there are changes that are made. And that permits -- like we discussed with irrigation permits -- permits are issued to represent the maximum authorized beneficial use. In the case of a municipality, that would be fully consumptive.

Q. Okay.

A. And we haven't really even touched on -- because at least in Eastern Idaho communities haven't gone that direction. I know that nationally communities will. But to treat and reuse wastewater whether that be, you know, gray water used for irrigation of parks or for drinking water again, we aren't quite at that level. We're blessed to have a plentiful aquifer and a lot of groundwater irrigation rights around. But, you know, that could come in the future too.

Q. We've worked together a long time so I've seen very complicated conditions included in permits for reporting for mitigation where the consequence is that the water would not be authorized

Page 76

for diversion. You don't think that for a municipality that same model could be used?

A. I don't.

Q. Just because of the difficulty of enforcement?

A. Correct.

Q. Because it involves a public water system?

A. Again, public water system and constant monitoring. And I think that it would be very difficult to track those consumptive fractions across a city.

Q. Was that the input that you provided the director before he drafted -- either drafted the language or during the preparation of these documents?

A. No.

Q. Okay. You were identified by the director as the person to explain the director's position. Is there anyone else within the department that you feel would be qualified or experienced to testify about this issue?

A. More qualified than me? There are a number of --

Q. No. Not more qualified. Just

Page 77

qualified.
A. I mean, there are lots of experienced employees within the water allocation group that have years of experience dealing with permits and transfers and moratorium orders. So, yes, there would be other people.
Q. Who would that be specifically?
A. And, again, I think that their qualification would be just a general qualification. That they would be familiar with, again, applications for permit and moratorium orders, and previous practices of the department, current practices of the department.
So that would be Corey Skinner. I mean, he's a regional manager out of the Twin Falls office and deals with -- has dealt with the original trust water moratorium too so is pretty familiar with how those are applied. Angie Hansen would be somebody who has a lot of longevity with the department. And Shelley Keen too.
Q. Okay. Are you aware of a similar policy of this assumption of 100 percent fully consumptive municipal use in other states?
A. I am not.
Q. And you haven't been asked to look into

Page 78

that, or have you?
A. No. No, I have not.
Q. I do just have a couple follow-ups. Well, no, there's actually one more matter.
I'll have you look back at Exhibit 1. Just the very first page. Under your identification number it says, "In addition to the orders, Mr. Cefalo will rely on ET Idaho."
I'm generally familiar with the ET Idaho site. Everyone here may not be, so could you just briefly describe what that is?
A. Sure. The University of Idaho has -- for a number of years has maintained a website where they take evaporation -- or they assemble and make public evapotranspiration data for the entire state based on localities. And some of it, you know, they take in the fact metrological factors and can provide an average expected ET for different uses in different crops.
So as we in the department are dealing with somebody who, say, wants to convert an irrigation water right to a recreation pond, we'll often say, well, what have you grown in the last five to ten years. Go and use the ET Idaho website to then estimate what the consumptive use has been on

Page 79

that crop, and that's what they then can convert to the new beneficial use of recreation storage. So we in the department rely on ET Idaho fairly frequently.
Q. And I think that's a really good explanation. And I'm familiar with it because I've worked on these applications, but I don't -- I have not seen within the website any sort of data that relates to municipal use. Is there any municipal -- can you identify --
A. No. And this reference was only meant to refer to or be a reference point for, say, land application.
Q. Okay.
A. So that wasn't intended to say ET Idaho has gone in to try to quantify consumptive use within municipalities. It's just I knew that that's kind of a subcomponent of our larger discussion today would be land application is consumptive and that points to that.
Q. So just to be clear, there's no data that you're aware of tracked on that website related to municipal use or how consumptive municipal use is?
A. No. And there would be data there that would probably -- on evaporation rates from small retention ponds. So if you have a wastewater lagoon,

Page 80

you could also use that to determine and say what the annual or monthly evaporation rates would be from that facility too.
Q. Okay. You had mentioned before that prior to today you had reviewed or mostly reviewed the Snake River order and the Big Wood order. To your knowledge are there any specific findings of fact that were included before the order that related to the fully consumptive treatment of municipal use, or is it only found in the order section?
A. I could not find any findings of fact that speak specifically to -- in the Snake River order that speak specifically to consumptive use with regards to community systems and municipalities.
The Big Wood order, as we've reviewed, have paragraphs that provide a little more analysis. Because it's formatted a little bit differently, I don't know that those -- having been a hearing officer, that those are pure findings of fact, but they do contain some analysis as far as municipal and consumptive uses.
Q. But none in the Snake River order?
A. Not that I had seen.
MR. HARRIS: Can we go ahead and take a couple-minute break? I believe I'm done, but I just

Page 81

want to review my notes. So maybe just five minutes?
THE WITNESS: Sure.
(A recess was taken from 11:06 a.m. to 11:11 a.m.)
Q. BY MR. HARRIS: We're back from a break. James, I just had a couple follow-up questions. Just as a general matter, when a water right application is submitted to the department, can you just generally describe how -- what the internal process is to process and evaluate them?
A. Sure. As an application comes in the door initially, we conduct a deficiency review to make sure that the application is filled out correctly. And it's amazing how high of a percentage it is of applications that come in the door that just aren't quite filled out right. So, you know, there may be a little bit of interaction back and forth with the applicant just to get it to where everything is complete.
Once we have a complete application, an agent will prepare that for public notice. All applications for new water right by law go through the public notice phase. Sometimes that's local notice. Sometimes it's state-wide notice depending on size of the application. And then, of course,

Page 82

that application is open for protest. And that's about a month period that somebody could file a protest.
If it's protested, then it goes through kind of a contested-case process. And I often will walk applicants and protestants through that. It could go to a hearing and then a decision made after an administrative hearing.
If it's not protested, though, the agent will go through and review the application against the standards set forth in Idaho Code 42-203A(5). There's certain things the department looks at: Injury, sufficiency of water supply, financial resources, and some other things. I don't need to list them to all, but we do that review.
And then if it's something that we can approve, we will approve it. The agent will, based on those review criteria, possibly add conditions. Maybe not. But then it comes to me for a final review, and I may make some adjustments even to conditions at that point. And then, yeah, the permit is sent to the water user and then they have an appeals process there too.
Q. So would you agree that every application is different?

Page 83

A. It is.
Q. And each one is evaluated on its own merits?
A. They are.
MR. HARRIS: That's all the questions I have. Thank you. Appreciate it today.
THE WITNESS: You bet.
MR. HARRIS: So I think Max is going to ask some questions and then we'll open it up to any others who want to ask questions.
MR. BRICKER: Stay in the same spot?
THE WITNESS: Stay in the same spot. You're fine, yeah. We're close enough I think we can hear you.
MR. BRICKER: Very good.

EXAMINATION
BY MR. BRICKER:
Q. Good morning, Mr. Cefalo. I'm Max Bricker representing the City of Pocatello.
A. Uh-huh.
Q. Thank you for being here today.
I want to confirm a few questions I have based on your responses to Mr. Harris.
So is it your testimony that this policy

Page 84

requires all -- a community water system's diversions to be mitigated even if some portion is not consumed?
A. That's right.
Q. And you think that's a fair burden on the water user?
A. I do.
Q. Okay. So with this moratorium in place, how does a -- say a municipality acquire a new water right permit?
A. Again, it would be filing an application for permit and then mitigating for that new permit.
Q. Okay. Are there any requirements that the applicant must show for the application to even be considered? I can point you to Exhibit 1 if you would like -- excuse me. Exhibit --
A. So if we -- yeah, and if we look at the Snake River moratorium.
Q. Yes.
A. It actually -- it comes to paragraph 8 which is found on --
Q. This is Exhibit 3, by the way?
A. It is. It is Exhibit 3, page 29. And this paragraph is actually fairly similar to the existing moratorium. And it's paragraph 8, sub B, that talks about that even with this moratorium in

Page 85

place, the department can continue to process applications. "It will have no effect on prior surface and groundwater rights because of its timing, location, insignificant consumption of water, or mitigation provided by the applicant to offset injury to other water rights."

Q. Okay. And because there's that "or" at the end of subparagraph A, they just have to prove either one, the applicant or the director?

A. Sure. Of that list of things in that -- or are you saying as between A and B? I apologize.

Q. It could be either one, A or B?

A. It can. It can.

Q. Got it. Are there any ways that municipal or domestic diversions can return to the waters of the state other than through direct recharge -- excuse me -- direct return to a stream or land application?

A. These rapid infiltration or an injection well, I guess, would be possible to where they're putting the water directly back into an aquifer.

Q. Any other ways that that can be done?

A. Not that I can think of.

Q. Okay. And so same thing in an injection well or rapid infiltration, those waters are returned

Page 86

to the waters of the state?

A. I would say for the most part, yes, as we're dealing with Eastern Idaho and the vast Snake Plain Aquifer that would be true.

It may not be true in all circumstances. I guess you could imagine some sort of strange disconnected perched aquifer system where you inject water and it never really does return. But I think for the most part that would be a true statement.

Q. Now, you mentioned that part of the reason this is a fair policy is because it would be very difficult for IDWR to track the fractional consumptive use rates of all of these diversions, correct?

A. Correct.

Q. Is it possible for professional engineers to make such calculations?

A. Oh, it would. It would be. Sure.

Q. How do engineers do that?

A. Collecting data. Measurement. Measurement at a lot of locations. Yeah.

Q. And I think the general equation we looked at or discussed earlier was just diversions, and the consumption would be whatever is not returned to the waters of the state, correct?

Page 87

A. Correct.

Q. Okay. And would it be possible for IDWR to decrease the burden in tracking by delegating that task, say, to the water users?

A. It could. It would be possible.

Q. Could that be a condition on a new water right permit?

A. It could. Sure.

Q. So at that point if the water users are reporting their consumptive use rates, what would be the biggest burden on the department?

A. If it changes and consumptive use is not defined as an element on the water right and if that changes significantly over the life span of a water right, which could be hundreds of years, like I was pointing out, it becomes very difficult to curtail someone who then changes their consumptive use and doesn't mitigate. Because that water is primarily being used for drinking water initially.

Q. Do you know how quickly community water systems change their method of treatment in disposal of effluent?

A. I don't. And some of it is -- I mean, it is case by case. If all of a sudden a pipeline that never existed is being -- a trunk line is being

Page 88

brought past a subdivision, at some point they may say it's easier for us to connect to this new trunk line that heads to the regional treatment facility rather than continue to maintain our rapid infiltration.

I mean, it can change just based on circumstances that are outside of the control of even the water user, right? Meaning larger things happening, like a trunk line being constructed past a subdivision, that isn't really their project.

Q. And they may have to acquire other permits from entities other than the department?

A. True.

MR. BRICKER: I think that's all the questions I have.

THE WITNESS: Okay.

MR. BRICKER: Thank you.

EXAMINATION

BY MR. BROMLEY:

Q. Hey, James. How are you?

A. Good.

Q. Can you hear me okay?

A. Yes.

Q. Excellent. I just have a few minor

Page 89

questions. It won't take very long.
When you were giving testimony with Rob Harris, you had talked about three ways for wastewater to be treated, and what I wrote down: Discharge back to the source was one; land application was the second; rapid infiltration was the third.
And so the question I had is: How does septic fit into that? Is that its own category or is it a form of rapid infiltration in your mind?
A. No. I don't know that they would be characterized as rapid infiltration, but I do think that septics and rapid infiltration systems can be lumped together in the effect, right, that they are essentially discharging subsurface and letting that water make its way back to -- back to the aquifer.
Rapid infiltration is just required because of the volume of water coming onto the system, that it needs to be able to spread that water out quickly. Whereas an individual septic for, say, one home can operate much more slowly.
Q. Okay. And in both cases that's water that's returning back to the waters of the state?
A. Correct. Subsurface.
Q. Okay. Thanks. Exhibit 2, which I

Page 90

understand is the Big Wood moratorium order. Am I correct on that?
A. It is.
Q. I don't have it in front of me.
Do you know why Mat Weaver signed that order?
A. I don't. I don't know the timing of it. If it was something where Gary was out of town and Mat Weaver signed it on his behalf. I don't know.
Q. Do you know if that has any sort of legal effect on if it's a final order or preliminary order because it wasn't signed by the director?
A. I don't. I'm not going to weigh in on that question. I don't.
Q. That's fair. Page 6 of that order there was a paragraph that you were looking at with Mr. Harris and it's the second to last full paragraph that starts "when community systems supply."
A. Correct. Yeah, I see it.
Q. Do you see that?
A. I'm there. Yeah.
Q. The third sentence that starts with "furthermore," do you see that in that paragraph?
A. I do.
Q. It says, "Furthermore, a community

Page 91

system often discharges its unconsumed water into a municipal sewer treatment facility operated by a municipality."
James, do you know if there was any -- if there's anything to back up the "often discharges" statement that's in that order, or if that's just -- I think in your words, it was more of a flowing, almost, narrative.
A. I don't know. So I don't know whether there was any studies done or if that term "often" is accurate.
Q. Thank you.
A. Yeah.
Q. There was a line of testimony, James, that you had with Mr. Harris, and I think it really was talking more about public health concerns with curtailment of municipal water rights. Do you recall that?
A. I do.
Q. And what I was hearing was that you -- in your opinion there were -- there are possible difficulties in the future of curtailing municipal rights because you're unclear if you can turn off drinking water; is that correct?
A. That's correct.

Page 92

Q. Isn't it true, though, that cities on the Eastern Snake plain are routinely subject to curtailment unless they're providing mitigation?
A. Sure. Right. And I mean even now with the recent curtailment orders, there are subdivisions that are included in those curtailment orders. All I'm saying is that the actual physical curtailment, the implementation of that curtailment gets tricky.
Q. Are you aware of anything in Idaho Code that prevents the department from curtailing a city for not meeting the terms of its water rights?
A. I'm not.
Q. James, I have just one last line of questions and it's not very long. It's not probably more than a minute or so, but we've been talking about irrigation water rights and municipal water rights and I've heard you testify that there are some comparisons that can be drawn between the two, if I remember that correctly?
A. Yes.
Q. So when an irrigation water right -- my understanding is irrigation water rights are considered consumptive. Is that your understanding?
A. Yes, they are. I mean, the plants are consuming water. Yes.

Page 93

Q. And when I've looked at these orders, in the past they've differentiated between irrigation rights as consumptive and municipal and domestic as nonconsumptive. But now we're seeing that municipal and domestic are now being looked at as consumptive; is that your understanding?

A. Correct.

Q. So in closed basins like the Snake plain in eastern, for example, or in the Big Wood, when an irrigation water right is applied for, does the department require up-front mitigation for the entire diversion volume or just the consumptive use that's associated with the application?

A. The maximum consumptive use fraction. So regionally there are calculations that have already been conducted that estimate what the maximum amount of consumptive use that could occur regardless of the crop that is planted, if that makes sense. And they can vary region by region. As you get into some of the higher valleys, say, in Eastern Idaho, that fraction is a little different than what it would be in American Falls, kind of the lowest elevation portion of our region.

Q. Okay. And then department staff uses ET Idaho to determine the consumptive rate?

Page 94

A. No. We wouldn't, no. It's rather kind of regionally there are numbers that are already assigned for what that expected maximum consumptive use is. So, for example, in the Idaho Falls area, I believe that it's 3 acre-feet per acre. So we may for an irrigation right issue a permit for 4 acre-feet per acre, but the consumptive element of that or the consumptive -- recognized maximum consumptive use for this area is 3 acre-feet per acre.

Q. Okay. So in that example -- and what you said is the department won't require that extra acre foot of mitigation because the consumptive use is 3 acre-feet per acre?

A. That's the maximum recognized, yeah, in that. And, again, it varies by region.

Q. Okay. Are you aware, James, of any water rights where the department is requiring one-to-one mitigation or diversion volume? And I'm saying what is diverted; not consumed, but what is diverted one-to-one mitigation and --

A. Well, for -- I apologize, Chris.

For those irrigation rights if they are using sprinkler irrigation, it is -- I mean, it is, in effect, a one-to-one, right, because there really

Page 95

isn't any opportunity to ever get up to the 4 acre-feet per acre. In fact, what you would find is most of those irrigation systems are actually diverting 2 to 3 acre-feet per acre, and as I noted, a pivot irrigation system is mostly consumptive.

Q. But not fully consumptive?

A. Say that again, Chris. I didn't hear you.

Q. Sure. But not fully consumptive?

A. The fraction on a pivot system that isn't consumptive is very small. Right.

Q. But, again, not fully consumptive?

A. Right. But the actual diversions that are occurring, like I said, are less than ultimately what is being mitigated for.

MR. BROMLEY: I have nothing further. Thank you.

THE WITNESS: Okay.

Should we continue around with the folks on the screen?

MR. HARRIS: I think so. So it is either Candice or Jerry or Mike or Sarah.

MR. RIGBY: I have nothing. This is Jerry.

MS. KLAHN: I don't have anything. Max was asking Pocatello's questions.

Page 96

MS. McHUGH: And Chris asked the couple of questions that I wanted to ask so I think I'm good too at this point. Thank you.

MR. LAWRENCE: Hi, James. This is Mike Lawrence.

THE WITNESS: Okay.

EXAMINATION

BY MR. LAWRENCE:

Q. I just have a couple of questions. I'm going to jump around a little bit.

A. Okay.

Q. I apologize in advance for that.

Am I correct to -- is my understanding correct that an industrial or commercial water right could also be fully consumptive?

A. They can be.

Q. And it's also my understanding that the moratorium orders we've been discussing do not treat industrial or commercial applications as fully consumptive as the orders treat municipal use; is that right?

A. Mike, it's my recollection that -- I can't recall that there are paragraphs specifically addressing industrial uses or commercial uses

Page 97

independently. There is a final sentence. So on page 28 of the Snake River moratorium in that first paragraph, there is that sentence that talks about domestic, commercial, industrial that discharge wastewater into one of these regional or publicly-owned treatment facilities will be considered consumptive.

So it's pointing back to that idea of changes in how that wastewater is being handled.

Q. In that sentence you just noted it says that the -- those uses will be considered consumptive. Does that mean fully consumptive or just some portion of that will be recognized as consumptive?

A. Yeah, that comes back to Rob's question is there some difference between consumptive or fully consumptive. I don't see that there is a difference. I don't know that that phrase -- that qualifier "fully" is needed. As I read through this paragraph, that is implied that it is fully consumptive.

Q. The Big Wood moratorium order does not contain that -- similar language to what you just read, I don't believe; is that correct?

A. It doesn't contain that same language. If we go to page 8, paragraph 4, the same idea,

Page 98

though, is encapsulated in maybe the very last phrase as will -- it's talking about irrigation proposed with a domestic use will be considered consumptive, comma, as will discharge of wastewater to a municipal or regional sewer system.

So that's a broad enough phrase to encompass then industrial/commercial uses that send their wastewater to a regional treatment plant.

Q. But that's not the same as an industrial use that begins as perhaps not fully consumptive but could grow into being fully consumptive, say, by, you know, treating its own effluent and taking it off site and not discharging it to a treatment works?

A. Right. Or, you know, we have industrial uses where they for water quality reasons have to evaporate all of their wastewater, you know, put it out through evaporation ponds.

Q. But the moratorium orders do not treat industrial uses as automatically fully consumptive, although they could be fully consumptive like municipal use; is that correct?

A. That's correct.

Q. Do you know why there's that distinction between how municipal uses are treated versus industrial or commercial uses that could also be -- also could be fully consumptive?

A. I don't. Mike, I don't know why there's a difference for industrial uses. If -- there is, I think, less of a risk that the treatment will change over time. So if there's water quality concerns that already exist with an industrial facility, they will already be operating under kind of the stricter parameters anyway.

But coming back to your question, I don't know.

Q. Thanks. Shifting a little bit here. This policy, as it's been described, as treating municipal applications as fully consumptive, as far as I know, has been applied only in these two basins, the Big Wood and the Snake River basin; is that correct, or are there others where this policy has been applied?

A. I think there might be one other basin. The department issued a moratorium order in Basin 15, which is coming back. It's the Malad valley. It's a small basin, primarily Oneida County. It's a basin that is tributary to the Bear River.

The department issued a moratorium order in that basin, I think, in 2015 that was just a temporary moratorium and was renewed in 2017 and then

Page 100

renewed again in 2022. And I can't -- I didn't review that moratorium prior to this deposition so I can't say for sure, but my guess is because that was -- especially that most recent moratorium was renewed in 2022, I wouldn't be surprised if the language in there is fairly similar to the language in these two orders also.

But beyond that I am not aware of any others.

Q. Do you know whether the department intends to apply this policy statewide or in other basins around the state?

A. I don't know.

Q. Do you know whether the department intends to apply this policy in other contexts aside from a moratorium on new applications?

A. I don't.

MR. LAWRENCE: I think that's all the questions I have, James. Thank you very much.

THE WITNESS: You bet.

MR. HARRIS: Has everybody that's by Zoom, have they been able to ask their questions?

THE WITNESS: It looks like yes.

MR. HARRIS: Could we take just a quick break.

(A recess was taken from 11:40 a.m. to 11:43 a.m.)

MR. SIMPSON: I don't have any questions.

MR. FLETCHER: None here either.

MR. HARRIS: Okay. I don't have any follow-up questions.

So I don't know if you're wanting him to review and sign once the deposition transcript is prepared? I typically ask that.

MS. RAMMELL-O'BRIEN: Yeah, we do not waive. We would like to review and sign.

(The deposition concluded at 11:45 a.m.)

REPORTER'S CERTIFICATE

STATE OF IDAHO)
) ss.
COUNTY OF BONNEVILLE)

I, Sandra D. Terrill, CSR, RPR, and Notary Public in and for the State of Idaho, do hereby certify:

That prior to being examined James Cefalo, the witness named in the foregoing deposition, was by me duly sworn to testify to the truth, the whole truth, and nothing but the truth;

That said deposition was taken down by me in shorthand at the time and place therein named and thereafter reduced to typewriting under my direction, and that the foregoing transcript contains a full, true, and verbatim record of said deposition.

I further certify that I have no interest in the event of the action.

WITNESS my hand and seal this 15th day of May 2023.

Sandra D. Terrill
Idaho CSR No. 702,
Notary Public in and for
the State of Idaho

E

F

G

N

O

S

T

EXHIBIT 2

Exhibit 2 to Bricker Affidavit

Expert Report

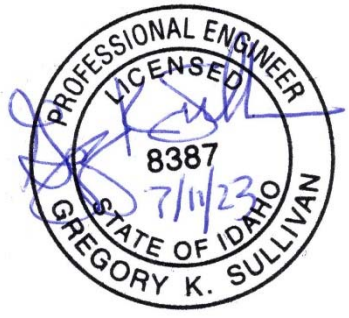
Snake River Moratorium
and
Big Wood River Moratorium

Prepared for:

City of Ammon
City of Bellevue
City of Hailey
City of Idaho Falls
City of Pocatello
Coalition of Cities
Falls Water Co. Inc.
Wellsprings Group, LLC

Prepared by:

Gregory K. Sullivan, P.E.



July 11, 2023

SWE EST.1984 Spronk Water Engineers, Inc.

TABLE OF CONTENTS

FIGURE

TABLES

APPENDICES

1.0 INTRODUCTION

On May 17, 2022, the Director of the Idaho Department of Water Resources ("IDWR") issued an *Order Establishing Moratorium* in the Big Wood River Ground Water Management Area ("Big Wood Moratorium"). The Big Wood Order establishes a moratorium on the approval of new and pending applications for permits to appropriate water from surface water and groundwater sources within the BWGWMA.

On October 21, 2022, the IDWR Director issued an *Amended Snake River Basin Moratorium Order* ("Snake Moratorium"). The Snake Moratorium expands the existing *Amended Moratorium Order: In the Matter of Applications for Permits for the Diversion and Use of Surface and Ground Water within the Eastern Snake River Plain Area and the Boise River Drainage Area* (April 30, 1993) to include the reach of the Snake River from King Hill to Swan Falls Dam and re-establishes the moratorium on the issuance of permits for new consumptive uses from surface and ground water tributary to the Snake River upstream from Milner Dam.

Both the Big Wood Moratorium and the Snake Moratorium include very similar language dictating that applications for municipal water use and for domestic use from community water systems shall be considered fully consumptive. The following are the specific provisions from each order:

> *Applications for municipal water use and for domestic use from community water systems shall be considered fully consumptive. Applications for domestic purposes from non-community water systems shall be evaluated on a case-by-case basis to determine whether the proposed use is non-consumptive. Irrigation proposed in connection with a domestic use will be considered consumptive, as will discharge of wastewater to a municipal or regional sewer system.*
> (Big Wood Moratorium at 8; emphasis added)

> *Applications for municipal water use and for domestic use from community water systems shall be considered fully consumptive. Applications for domestic purposes from non-community water systems shall be evaluated on a case-by-case basis to determine whether the proposed use is non-consumptive. Irrigation proposed in connection with a domestic use will be considered consumptive. Domestic, commercial, industrial, or other water uses that result in the discharge of wastewater to a municipal or publicly owned treatment works will be considered consumptive.*
> (Snake Moratorium at 28; emphasis added)

On March 31, 2023, the Director entered an order that the contested proceedings for the Big Wood Moratorium and the Snake Moratorium are consolidated for the hearing to be held on October 16-19, 2023.

This expert report was prepared on behalf of the following entities who intervened in either the Big Wood Moratorium or Snake Moratorium proceedings ("City Intervenors"):

- City of Ammon
- City of Bellevue
- City of Hailey
- City of Idaho Falls
- City of Pocatello
- Coalition of Cities[1]
- Falls Water Co. Inc.
- Wellsprings Group, LLC

A map showing the locations of the City Intervenors and the boundaries for the Moratorium Orders is attached as **Figure 1-1**.

The City Intervenors take exception with IDWR's position in the Moratorium Orders that "[a]pplications for municipal water use and for domestic use from community water systems shall be considered fully consumptive."

In the deposition of James Cefalo on May 11, 2023, Mr. Cefalo indicated that IDWR's reasoning behind this new position is that municipalities/community water systems may in the future become fully consumptive, meaning there potentially would be no return flows to the "waters of the state" (e.g., treated wastewater effluent disposed of using evaporation ponds). *See* Dep. Tr. at 30:7-18; 41:8-42:23; 48:6-11; 52:15-22; 62:4-16. But Mr. Cefalo further testified that the three other ways that treated effluent is typically disposed of (discharge to a surface water source, land application, and rapid infiltration) return treated wastewater back to the waters of the state. *See* Dep. Tr. at 89:2-24. Mr. Cefalo felt the new position is justified, despite the burden it imposes on municipalities/community water systems to over-mitigate for new uses, due to the alleged difficulty in determining actual consumption rates, and the controversy that could ensue if IDWR were to curtail a municipality/community water system because it suddenly changed to a mostly consumptive treatment and did not mitigate for the

[1] The Coalition of Cities includes the Cities of Bliss, Burley, Carey, Declo, Dietrich, Gooding, Hazelton, Heyburn, Jerome, Paul, Richfield, Rupert, Shoshone, and Wendell

increased consumptive use. *Id*. at 72:4-23, 73:23-74:8, 83:25-84:6, 86:10-15; 87:9-19; 92:1-12.

This expert report presents evidence and expert opinion that even though any water use can theoretically be fully consumptive (a) municipal water use is typically not fully consumptive, and (b) municipal consumptive use and municipal return flows can be determined using well-established procedures. In addition, information is presented regarding the water uses and return flows for each of the City Intervenors, along with example analyses of the municipal consumptive use.

2.0 WATER USE OF CITY INTERVENORS

The water supplies of the City Intervenors are derived primarily from groundwater wells although some cities also have surface water sources. Wastewater treatment is typically provided by central wastewater collection and treatment systems. Treated effluent may be discharged directly to a receiving surface water body (e.g., river or creek), used for non-potable irrigation (land application) or some combination of both. Wastewater treatment in some cities is provided by individual sewage disposal systems ("ISDS"). Municipal return flows also may occur from deep percolation and surface runoff from municipal irrigation and from distribution system losses.

Water use information and data were compiled for each of the City Intervenors for a recent five-year period. The compiled information included the following:

- Water Sources and Usage
  - Groundwater sources
  - Surface water sources
  - Annual usage from each source for a recent 5-year period
- Method of Treated Wastewater Effluent Disposal
  - Discharge to river
  - Land application
  - Rapid infiltration basins
  - Evaporation ponds

Table 2-1 summarizes the average annual water use, method of treated wastewater effluent disposal, and estimated consumptive use for each City Intervenor. A narrative description of the water sources and method of wastewater disposal is provided in **Appendix A**.

3.0 MUNICIPAL CONSUMPTIVE USE AND RETURN FLOWS

Both the Big Wood Moratorium and the Snake Moratorium provide that applications for municipal water use and for domestic use from community water systems (collectively "municipal uses") shall be considered fully consumptive. The basis for assuming that municipal uses are fully consumptive appears to be based on four factors.

1. Idaho courts have acknowledged that a water right for municipal purposes may be fully consumed without exceeding the authorized beneficial use.
2. The consumptive use of municipal uses can vary and change over time based on various factors (e.g., treated wastewater effluent disposal process),
3. The perceived difficulty in analyzing municipal water use.
4. The practical difficulties of curtailing municipal water use.

In my opinion, assuming that municipal uses are fully consumptive, and therefore requiring new municipal uses to be mitigated in the amount of 100% of the gross diversions with no credit for the water that is not consumed and returns either to surface water or groundwater systems (i.e., waters of the state) is unreasonable and arbitrary and forces municipalities to mitigate for depletions that are not occurring, thus creating a windfall for senior water rights that benefit from the mitigation activities.

In my experience, the consumptive use of municipal water uses is typically much less than 100%. While I agree that municipal consumptive use can vary based on a number of factors, municipal consumptive use can be reasonably and reliably determined using procedures that are common and routine, consistent with industry standards in the scientific community. Determining municipal consumptive use is no more uncertain than determining the consumptive use of agricultural irrigation.

Municipal consumptive use is commonly determined based on measured or estimated diversions minus measured or estimated return flows. Return flows from municipal uses occur through the following processes:

- System losses
  - Distribution system losses
  - Hydrant flushing
- Unconsumed wastewater treatment returns
  - WWTP discharges to receiving surface or groundwater systems
  - Returns from land application of treated wastewater
  - Unconsumed ISDS returns
- Municipal irrigation returns
  - Surface runoff
  - Deep percolation

4.0 PROCEDURES FOR COMPUTING MUNICIPAL CONSUMPTIVE USE

As stated in Section 3.0, municipal consumptive use is determined based on measured or estimated diversions minus measured or estimated return flows. IDWR requires that municipal water users measure and report surface water diversions and groundwater pumping (IDWR, 2016). Groundwater pumping is typically measured with totalizing flow meters that are calibrated periodically. In my experience, municipalities are typically careful in their water measurement because accurate records of water use and customer deliveries are useful in evaluating system performance and system losses.

There are well-established industry standard procedures for measuring or estimating municipal return flows. I have used these procedures to quantify municipal return flows for numerous municipal water users, and these procedures are routinely accepted and approved in administrative and judicial water rights matters in Colorado and other states. The following is an overview of these well-established procedures:

WWTP Discharge Returns

Cities are generally required under their National Pollutant Discharge Elimination System ("NPDES") discharge permits to measure treated effluent discharges to receiving surface water bodies, and these measurements are typically made with industry standard measuring devices equipped with continuous recorders.

In some instances, WWTP discharges are made to infiltration ponds. Seepage from the ponds into groundwater systems can be computed based on the measured discharge minus estimated evaporation losses.

It is also common for treated effluent to be reused for irrigation of agricultural fields, parks, and golf courses. This is sometimes referred to as land application of treated effluent. Deep percolation return flows from land application of treated effluent can be computed using the same procedures described below for computing irrigation return flows.

Irrigation Return Flows

Irrigation returns flows occur when applied irrigation water is not consumed by the irrigated vegetation and either percolates into groundwater systems or returns as surface runoff. Municipal irrigation return flows are no different than agricultural return flows and can be computed by similar procedures, with returns to the waters of the state.

Common procedures for computing irrigation return flows include the following:

1. Irrigation application minus crop irrigation requirement ("CIR") volume
2. Irrigation application x (1 – irrigation efficiency)

Irrigation application volumes can be metered directly for irrigation of parks, golf courses, and other open spaces.

Monthly or seasonal municipal irrigation application volumes can also be estimated by computing the total metered water use in excess of the average metered use during the preceding December through February period. This commonly used procedure is based on the reasonable assumptions that (a) indoor water uses are relatively steady year around and are represented by the average metered use during the winter months and (b) increases in metered water use over the winter base use represent primarily irrigation water use.

If the irrigated area and crops are known, then the CIR volume can be computed based on the irrigated area multiplied by the crop CIR in inches obtained from ETIdaho or nearby Agrimet stations. Use of Equation 1 above will provide a conservatively low estimate of irrigation returns because it implicitly presumes a 100% irrigation efficiency.

Irrigation application efficiency for agricultural or municipal irrigation uses can be reasonably estimated based on industry-standard figures based on the irrigation application method. Typical municipal irrigation efficiencies range from 75% to 85%. Use of Equation 2 above will provide a conservatively low estimate of irrigation returns when irrigation water is overapplied because it does not consider that overapplied water will not increase consumptive use and will result in return flow. A more complex form of Equation 2 can be specified that considers the full return of any excess irrigation application.

System Loss Returns

Total system losses represent the difference between diversions (pumping) and metered customer deliveries. System losses (also referred to as unaccounted for water) include unbilled water use, measurement errors, and real losses. Real losses represent "wet-water" losses that can be a significant component of municipal return flows, particularly in older leaky water distribution systems. Real losses can include distribution system leakage, storage tank overflows, hydrant flushing, filter backwashing, and other mechanisms. System losses, including the real loss component, can be computed based on standard water auditing procedures (AWWA, 2018). The results of a system loss audit can be used to derive a system loss return flow factor that can be used in municipal water accounting to estimate system loss return flows. Typical system loss return flows can

range from near 0% for new and well-maintained distribution systems to 20% or more for older leaky distribution systems.

Estimated Consumptive Use for City Intervenors

The average annual consumptive use consumptive use for each City Intervenor was estimated based on the water use records, method of treated wastewater effluent disposal, and typical consumptive use fractions as shown in **Table 2-1**. The analysis procedures are listed in the table footnotes. The results show that the annual municipal consumptive use for the City Intervenors averages 46% of diversions (weighted average), and ranges from 41% to 87%. More detailed illustrative analyses of municipal consumptive use are provided in Section 5.0.

Conclusion

That municipal consumptive use can change (e.g., because of a change in method of treated wastewater effluent disposal) should not be a basis to treat all new municipal uses as fully consumptive. The same can be said for the consumptive use of irrigation uses (e.g., because of a change in irrigation application method) or industrial uses (e.g., because of a change in manufacturing process). In each case, water use processes and practices can be monitored and changes in return flows and consumptive uses can be determined using reasonable standard procedures. It is unreasonable and arbitrary to hold municipal users to a 100% consumptive use standard when other water users, whose consumptive uses can also increase, are allowed to receive the benefit of their return flows in determining mitigation requirements for new water uses.

5.0 ILLUSTRATIVE ANALYSES OF MUNICIPAL CONSUMPTIVE USE

Two analyses were prepared to illustrate computation of municipal consumptive use using simple industry standard procedures. The first example is for the City of Pocatello, who discharges treated effluent to the Portneuf River. The second example is for the City of Bellevue, who land applies its treated effluent for park and golf course irrigation in the irrigation season and delivers its treated effluent to rapid infiltration basins in the non-irrigation season.

5.1 City of Pocatello (Effluent Discharge to River)

The City of Pocatello is located along the Portneuf River approximately ten miles upstream of the confluence with the Snake River at American Falls Reservoir. Pocatello's water supply is derived from wells constructed in the Lower Portneuf River Valley Aquifer ("LPRVA") and the Eastern Snake Plain Aquifer ("ESPA"). Pumped groundwater is treated and distributed through a central distribution system. Municipal water uses in and around the Pocatello Airport are supplied through a separate distribution system. Wastewater is treated at the Water Pollution and Control Plant ("WPC Plant") and discharged to the Portneuf River north of the city. The City also owns and operates irrigation wells that are used for agricultural irrigation near the airport as part of its Biosolids Disposal Program.

A simple analysis of recent municipal groundwater use by the City of Pocatello based on monthly water use records for 2018 - 2022 is attached as **Table 5-1**. This analysis does not include the Biosolids Disposal Program irrigation uses. The following is a summary of the analysis procedure:

- System Loss – Assumed to be 10% of water pumped.
- Indoor Use and Returns - All customer deliveries (pumping minus system loss) during November through March are assumed to be used indoor, and indoor uses during the other months are estimated as the average of the November – March use. The consumptive use of water used indoors is conservatively assumed at 10% of the indoor usage. The remaining 90% is assumed to be treated and discharged to the river (IDWR, 2011; LRE, 2007; and Petrich, 2010).
- WWTP Returns – The WPC Plant treats wastewater from Pocatello and from the City of Chubbuck. Measured wastewater discharges to the Portneuf River were apportioned between Pocatello and Chubbuck based on measured effluent. WWTP returns can be used to verify the estimated returns to the river.

- Irrigation Use and Returns – Customer deliveries during April – October above the estimated base indoor use are assumed to be applied to irrigation. Irrigation return flows to the aquifer are estimated at 20% of irrigation use based on the typical municipal sprinkler application efficiency (IDEQ, 2007 and IDEQ, 2022).

Pocatello's annual municipal well pumping during the five-year analysis period averaged 14,859 acre-feet per year ("AF/y") and, based on return flows calculated as described above, the average annual consumptive use averaged 6,356 AF/y, or 43% of the average annual pumping.

5.2 City of Bellevue (Land Application of Treated Effluent)

The City of Bellevue is located adjacent to the Big Wood River at the northern apex of the Bellevue Triangle. The water supply for the City is provided from groundwater pumped from wells constructed in the Wood River alluvial aquifer and surface water diversions from springs. Pumped water is treated and distributed through a central distribution system. There are several wells that pump untreated groundwater for irrigation. Wastewater is treated at the Bellevue Reuse Treatment Plant and land applied in the irrigation season and discharged to rapid infiltration basins in the non-irrigation season.

A simple analysis of recent groundwater use by the City of Bellevue based on monthly water use records for 2016 - 2020 is attached as **Table 5-2**. The following is a summary of the analysis procedure:

- System Loss – Assumed to be 10% of water pumped.
- Indoor Use - All customer deliveries (pumping minus system loss) during November through March are assumed to be used indoor, and indoor use during the other months is estimated as the average of the November – March use.
- WWTP Returns – The consumptive use of water used indoors is conservatively assumed at 10% of the indoor usage. The remaining 90% is assumed to be treated with the treated effluent disposed of through land application in the irrigation season with an estimated 20% of the application returning to the aquifer. It is assumed that 95% of the discharges to the rapid infiltration basins during the non-irrigation season return to the aquifer with 5% lost to evaporation (IDWR, 2004).
- Irrigation Use and Returns – Customer deliveries during April – October above the estimated base indoor use are assumed to be applied to irrigation. Irrigation return flows to the aquifer are estimated at 20% of irrigation use.

Bellevue's annual pumping during the five-year analysis period averaged 376 AF/y and the average annual consumptive use averaged 236 AF/y, or an average of 63% of the amount pumped.

5.3 Summary of Municipal Consumptive Use Analysis

The examples presented in this section for determining municipal consumptive use represent the straight-forward checkbook-type water use accounting that has become common place in areas of scarce water supplies. The illustrated procedures for computing municipal consumptive use are no more complex than procedures used to compute irrigation consumptive use which commonly involve compilation and analysis of the following:

- Diversions or pumping
- Irrigated area
- Cropping pattern
- Crop irrigation requirements
- Canal conveyance losses
- Irrigation application methods
- Irrigation application efficiencies

The portion of municipal water use that is consumed can range from much less than 50% for cities that have relatively little irrigation and discharge treated effluent to the river to 80% or more for cites that dispose of treated effluent through land application or evaporation ponds.

By comparison the portion of irrigation water use that is consumed can vary as much or even more than municipal consumptive use. Irrigation consumptive use can range from much less than 50% for irrigation systems with long unlined distribution systems and gravity field application processes to over 90% for systems with short or piped water distribution facilities and drip-irrigation application to fields.

6.0 ADMINISTRATION OF MUNICIPAL WATER RIGHTS

Western water rights administration under prior appropriation is evolving as use increases and strains the available supplies. A natural part of this evolution is increasing sophistication in water accounting to ensure that water users are operating within the terms and conditions of their water rights. Also evolving are more detailed terms and conditions on new water rights and transfers involving existing water rights as water users seek to make increased use of limited supplies while preventing injury to senior water rights. The following is a summary of my opinions on the industry standards for administration of municipal water rights in the west under prior appropriation.

1. In my experience in Colorado, New Mexico, and Idaho, review of water accounting by all water users, including municipal water users, is a routine part of the work of state agencies tasked with water rights administration.

2. I have extensive experience over my 38-year career as a water resources engineer in performing and guiding municipal water use accounting in Colorado and in interacting with the Colorado Division of Water Resources ("CDWR") which is the state agency tasked with water rights administration in Colorado. Municipal water rights accounting in Colorado has become increasingly detailed over the years as competition for limited water supplies increases. The increased in detail has generally resulted from an increase in terms and conditions on changes of irrigation water rights to municipal use, as well as development and implementation of augmentation plans (statutory term equivalent to "mitigation plans" in Idaho) that allow out-of-priority diversions or pumping under junior water rights provided that stream depletions are replaced to prevent injury to senior water rights.

3. It is accepted to be the duty and obligation of CDWR to oversee and review municipal water rights accounting to ensure that the accounting complies with the terms of Water Court decrees for changes of water rights and augmentation plans. In my experience, CDWR does not shy away from this obligation but embraces it to ensure that scarce water supplies are equitably administered under the prior appropriation system in compliance with applicable decrees and administrative rulings.

4. Over the years, CDWR has developed procedures for municipal water rights accounting that require conformance with certain measurement, accounting, and reporting standards. This facilitates the agency staff's ongoing routine review of the accounting because it is presented in a familiar and relatively uniform manner by all municipal water users. Some time ago, CWDR instituted a multi-year process to review and audit the accounting of all municipal water users. This

process involved review of the conformance of each city's current accounting with the terms and conditions of its water right decrees. This review typically included meetings with city staff and collaborative improvement of the accounting to ensure that the accounting (a) complied with the decree terms, (b) contained certain standard information (e.g., water right names and IDs, well permit nos., location information, accounting of diversions, return flows, depletions, etc.) at the appropriate time scales. Collaboration between the agency staff and city staff clarified and emphasized the necessity of the accounting requirements and the expectations of the agency.

5. Implementation of accounting standards in Colorado has eased the burden on CDWR staff by making it easy and routine to review the accounting when it is periodically submitted (typically monthly or annually). The majority of the accounting burden falls on the municipal staff where it belongs.
6. Detailed terms and conditions for municipal water rights, including detailed accounting, are becoming increasingly common in Idaho and other western states for mitigation of impacts due to new water rights approved in over-appropriated basins and for resolution of contested water right transfers and other matters. Examples of permits, licenses, and decrees with detailed terms and conditions on municipal water use are listed in **Appendix B**. Several examples of detailed municipal water rights accounting are listed in **Appendix C**.

7.0 SUMMARY OF OPINIONS

Based on my 37 years of professional experience in analyzing municipal water usage for water supply planning and water rights matters and the information and analyses presented in this report, the following is a summary of my opinions related to municipal consumptive use for the City Intervenors and how IDWR should treat new municipal uses for purposes of the Snake Moratorium and Big Wood Moratorium.

1. Municipal consumptive use varies based on a number of factors including system losses, irrigation usage, and method of treated wastewater effluent disposal. As a result, the municipal consumptive use percentage of total water use will vary from city to city.
2. Municipal consumptive use is typically much less than 100% of total water use.
3. Municipal consumptive use can be reasonably computed using accepted industry-standard methods.
4. Conservative rule-of-thumb municipal consumptive use factors can be developed for administration based on wastewater treatment type and the irrigation percentage of total municipal use.
5. Cities can present site-specific data to use values other than the presumptive consumptive use factors, with the cities needing to demonstrate the validity of the alternative factors.
6. Municipal water use accounting can reasonably include near real-time consumptive use accounting as necessary (e.g., monthly or seasonal accounting).
7. Because determining the consumptive use rate for municipal water uses is no more difficult than it is for other water uses, it is arbitrary and unreasonable for IDWR to treat new municipal uses as fully consumptive as a default while reviewing applications for other uses on a case-by-case basis.
8. Rather than forcing municipalities to over-mitigate, IDWR should also review new municipal water use applications on a case-by-case basis. IDWR can impose appropriate terms and conditions on the water user to ensure sufficient mitigation is provided to prevent injury resulting from actual municipal consumptive use and to minimize the accounting and administration burden on IDWR.

8.0 INFORMATION RELIED ON

The following information was relied upon in preparing this report.

AWWA. 2018. American Water Works Association. M36 Water Audits Software. (5). Retrieved June 13, 2018.

CDWR. 2023. List of Municipal Accounting Forms and Links to Accounting Spreadsheets Submitted between March 31, 2023- May 1, 2023. Colorado Department of Water Resources. Water Division 1. South Platte River Basin. Available from: https://dnrweblink.state.co.us/dwr/search.aspx?dbid=0 Last Accessed: May 26, 2023.

City of Rexburg. 2022. City of Rexburg Report to IDWR on Groundwater Pumping and Recharge. Water Right No. 22-13888. February 18, 2022.

District Court of Canyon County, Idaho. 2021a. Municipal Intervenors' Response to Riverside Irrigation District's Opening Brief. Riverside Irrigation District (Petitioner) v. The IDWR (Respondents) and City of Pocatello, Pioneers Irrigation District, Association of Idaho Cities, City of Boise, City of Jerome, City of Post Falls, City of Rupert, City of Nampa, City of Meridian, City of Caldwell, and City of Idaho Falls (Intervenors) In the Matter of Riverside's Petition for Declaratory Ruling Regarding Need for a Water Right to Divert Water Under Reuse Permit No. M-255-01. Case No. CV14-21-05008. October 4, 2021.

District Court of Canyon County, Idaho. 2021b. Memorandum Decision and Order. Riverside Irrigation District (Petitioner) v. The IDWR (Respondents) and City of Pocatello, Pioneers Irrigation District, Association of Idaho Cities, City of Boise, City of Jerome, City of Post Falls, City of Rupert, City of Nampa, City of Meridian, City of Caldwell, and City of Idaho Falls (Intervenors) In the Matter of Riverside's Petition for Declaratory Ruling Regarding Need for a Water Right to Divert Water Under Reuse Permit No. M-255-01. Case No. CV14-21-05008. December 28, 2021.

District Court, Water Division 1, State of Colorado. 2007. Exhibit A – Illustrative Accounting Sheets, Upper Cherry Creek Water Association. Findings of Fact, Conclusions of Law, Judgement, and Decree. Concerning the Application for Water Rights. Case No. 01CW0284.

District Court, Water Division 1, State of Colorado. 2012. Findings of Fact, Conclusions of Law, Judgement, and Decree. Concerning the Application for Water Rights of the Town of LaSalle. Case No. 04CW130.

District Court, Water Division 1, State of Colorado. 2022. Findings of Fact, Conclusions of Law, Judgement, and Decree. Concerning the Application for Water Rights of the City of Loveland, Colorado. Case No. 18CW3193.

District Court, Water Division 1, State of Colorado. 2021. Findings of Fact, Conclusions of Law, Judgement, and Decree. Concerning the Application for Water Rights of Fort Collins – Loveland Water District. Case No. 19CW3019.

Goodell, S.A. 1988. Water Use on the Snake River Plain, Idaho and Eastern Oregon. Professional Paper 1408-E. U.S. Geological Survey. Idaho Water Science Center.

Hansen, Allen & Luce, Inc. 2019. Utah's Regional M&I Water Conservation Goals. Prepared for: Utah Division of Water Resources. Prepared by: Hansen, Allen & Luce, Inc. and Bowen Collins & Associates, Inc. November 2019.

Huber, L.A. et al. 1982. Consumptive Use and Water Requirements for Utah. A. Leon Huber, Frank W. Haws, Trevor C. Hughes, and Jay M. Bagley. Utah Water Research Laboratory. January 1982.

Jay M. Bagley IDWR. 1992. Moratorium Order. In the Matter of Applications for Permits for the Diversion and Use of Surface and Ground Water within the Eastern Snake River Plain Area and the Boise River Drainage Area. May 15, 1992.

IDEQ, 2007. Idaho Department of Environmental Quality Guidance for Reclamation and Reuse of Municipal and Industrial Wastewater. September 2007. Available from: https://www2.deq.idaho.gov/admin/LEIA/api/document/download/5940. Last Accessed: July 6, 2023.

IDEQ, 2022. Idaho Department of Environmental Quality Memorandum. Re: DMI-267-01 City of Boise – Molenaar Park Splash Pad, Staff Analysis Supporting Reuse Permit Issuance. April 8, 2022. Available from: https://www2.deq.idaho.gov/admin/LEIA/api/document/download/16755. Last Accessed: July 6, 2023.

IDWR. 1993. Amended Moratorium Order. In the Matter of Applications for Permits for the Diversion and Use of Surface and Ground Water within the Eastern Snake River Plain Area and the Boise River Drainage Area. April 30, 1993.

IDWR. 2004. Administrators Memorandum. Consumptive Use for Ponds. Transfer Processing Memo No. 26. February 23. 2004.

IDWR. 2010. Permit to Appropriate Water, No. 63-32423. March 3, 2010.

IDWR. 2011. Preliminary Order Approving Application. In the Matter of Application for Permit to Appropriate Water No. 61-12239 in the Name of Clear Springs Ranch LLC. April 20, 2011.

IDWR, 2013. Enhanced Snake Plain Aquifer Model Version 2.1. Report. January 2013.

IDWR. 2016. Final Order on reconsideration. In the Matter of Requiring Measurement Devices for Ground water Diversions in Water Districts Nos. 31, 34, 100, 110, 120, 130, and 140.

IDWR. 2021a. Recommendations for the Processing of Reasonably Anticipated Future Needs (RAFN), Municipal Water Rights at the Time of Application, Licensing, and Transfer. From: Shelley W. Keen. To: Regional Offices, Water Allocation Bureau.

IDWR. 2021b. Order on Petition for Declaratory Ruling. In the Matter of Riverside's Petition for Declaratory Ruling Regarding Need for a Water Right to Divert Water Under Reuse Permit No. M-255-01. May 3, 2021.

IDWR. 2021c. Amended Permit to Appropriate Water, No. 22-13888. August 3, 2021.

IDWR. 2022a. Order Establishing Moratorium. In the Matter of the Big Wood River Ground Water Management Area. May 17, 2022.

IDWR. 2022b. Amended Snake River Moratorium Order. In the Matter of Applications for Permits for the Diversion and Use of Surface and Ground Water within the Snake River Basin. October 21, 2022.

IDWR. 2022c. 37.03.11 – Rule for Conjunctive Manage of Surface and Ground Water Resources. IDAPA 37 – Department of Water Resources. Water Compliance Bureau. March 31, 2022.

IDWR. 2023a. Water Right & Adjudication Search. Available from: https://research.idwr.idaho.gov/apps/waterrights/wrajsearch/wradjsearch.aspx Last Accessed: May 22, 2023.

IDWR. 2023b. Water Management Information System ("WMIS") Database. Available from: https://research.idwr.idaho.gov/apps/watermanagement/wmis/ Last Accessed: May 22, 2023.

IDWR, 2023d. GIS shapefiles. Idaho Geographic Information Systems Data. Available from: https://idwr.idaho.gov/gis/ Last Accessed: June 27, 2023.

LRE. 2007. Task 66.2 - Collect and Develop Municipal and Industrial Consumptive Use Estimates. From Leaonard Rice Engineers, Inc. Parsons, R. Sobieski, K., and Wilson, E. To Ray Alvarado and Ray Bennett. CWDR. South Platte Decision Support Systems ("SPDSS") Memorandum, Final. November 14, 2007.

NMOSE. 2003. Application to Change Point of Diversion and Place and/or Place of Use from Surface to Ground Water. City of Albuquerque. Transfer No. 265490. Change from SD-04969 to RG-00960. New Mexico Office of the State Engineer.

NMOSE. 2013. 2012 Accounting of Albuquerque Bernalillo County Water Utility Authority ("ABCWUA") Permits SP-4830, SP-4819, RG-960, RG-4462, and USR-2. October 25,2013. New Mexico Office of the State Engineer.

Petrich, C. 2010. Rathdrum Prairie Aquifer Water Demand Projections. Treasure Valley Prepared for the Idaho Water Resource Board and IDWR. Prepared by Christian R. Petrich, P.E., P.G. SPF Water Engineering, LLC; AMEC Earth and Environmental; John Church, Idaho Economic' and, Taunton Consulting. July 2010.

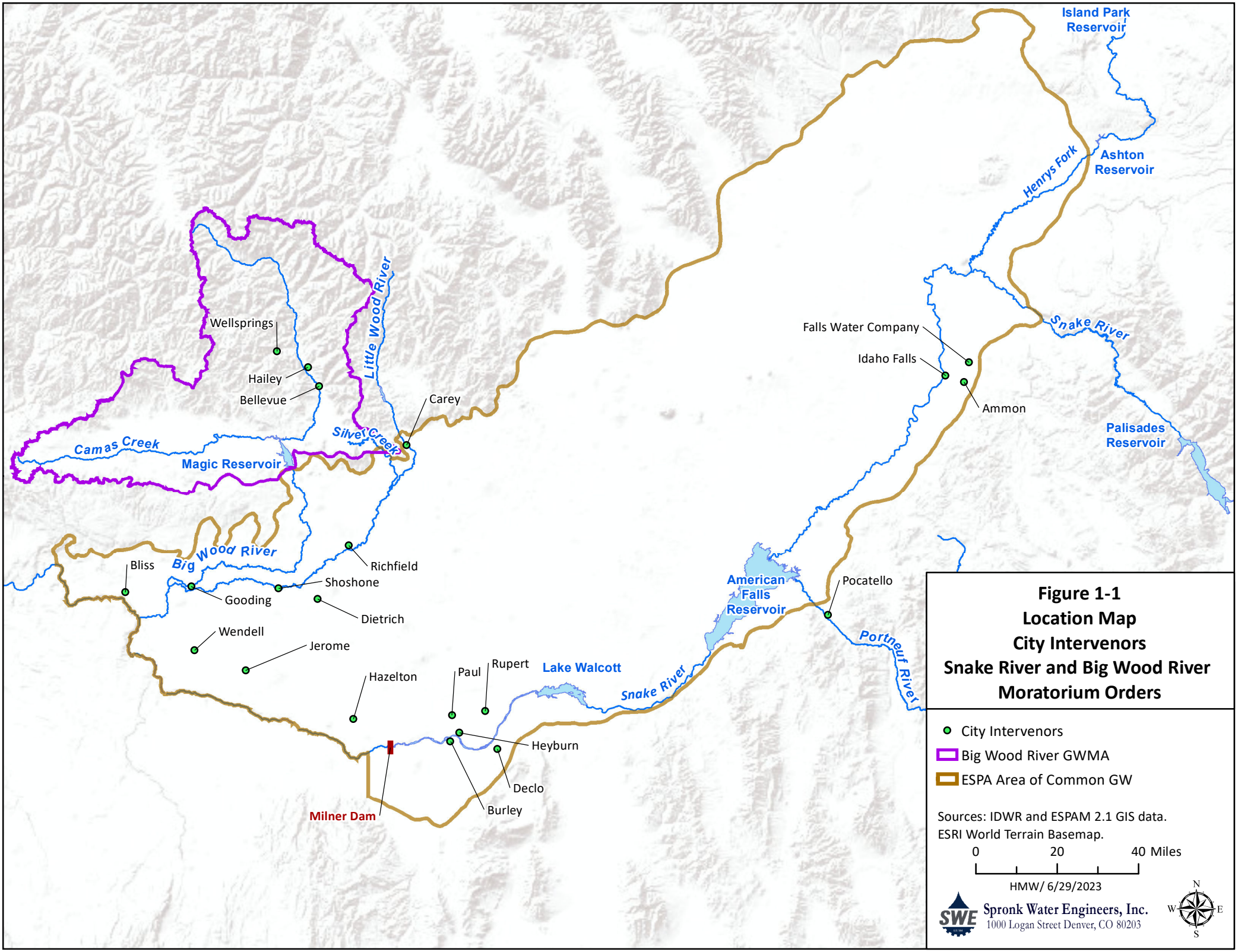
Petrich, C. 2016. Treasure Valley DCMI Water-Demand Projections (2015-2065). Prepared for the Idaho Water Resource Board and IDWR. Christian R. Petrich, P.E., P.G. SPF Water Engineering, LLC. August 8, 2016.

Sukow, J. 2020. Municipal Water System Service Areas and Irrigation Water Sources. Presentation to the Treasure Valley Modeling Technical Advisory Committee. June 4, 2020.

Sullivan, G. 2022. Comment on Municipal Consumptive Use Provisions of 2022 IDWR BWGWMA Moratorium Order. Prepared by Gregory K. Sullivan, P.E. Spronk Water Engineers, Inc. September 14, 2022.

Various Cities. 2023. Records of monthly water use and well pumping, information on water systems and methods of wastewater treatment and effluent disposal, and other information.

FIGURE


Island Park Reservoir
Henrys Fork
Ashton Reservoir
Snake River
Falls Water Company
Idaho Falls
Ammon
Palisades Reservoir
Little Wood River
Wellsprings
Hailey
Bellevue
Carey
Silver Creek
Camas Creek
Magic Reservoir
Big Wood River
Bliss
Gooding
Shoshone
Richfield
Dietrich
Wendell
Jerome
Hazelton
Paul
Rupert
Lake Walcott
Snake River
American Falls Reservoir
Pocatello
Portneuf River
Heyburn
Declo
Burley
Milner Dam
Figure 1-1
Location Map
City Intervenors
Snake River and Big Wood River
Moratorium Orders
City Intervenors
Big Wood River GWMA
ESPA Area of Common GW
Sources: IDWR and ESPAM 2.1 GIS data.
ESRI World Terrain Basemap.
0
20
40 Miles
HMW/ 6/29/2023
Spronk Water Engineers, Inc.
1000 Logan Street Denver, CO 80203
N
W
E
S

TABLES

Table 2-1
Preliminary Summary of Average Annual Water Use and Consumptive Use
City Intervenors
Five-Year Average (AF)

		(1)	(2)	(3)	(4)	(5)		(6)	(7)	(8)	(6)+(7)+(8)	((6)+(7)+(8))/(1)
	City	Five-Year Average Diversion	System Loss	Total Delivery	Indoor Use	Outdoor Use	Type of Wastewater Returns	Indoor Use CU	Outdoor Use CU	Treated Effluent CU	Total CU	Total CU/ Diversion
(9)	Ammon	5,633	563	5,070	2,351	2,718	Outfall to Stream	235	2,174	0	2,410	43%
	Bellevue	376	38	338	133	205	Land App & Basins	13	164	58	236	63%
(9)	Bliss	45	5	41	34	7	Evap Ponds	3	6	30	39	87%
(9)	Burley	6,723	672	6,051	2,849	3,202	Outfall to Stream	285	2,561	0	2,846	42%
(9)	Carey	156	16	140	62	78	Land App & Outfall	6	62	26	95	61%
(9)	Declo	135	14	122	56	66	Evap Ponds	6	53	50	109	80%
(9)	Dietrich	84	8	76	32	43	Evap Ponds	3	35	29	67	80%
	Falls Water	4,860	486	4,374	2,029	2,345	Outfall to Stream	203	1,876	0	2,079	43%
	Gooding	1,196	120	1,076	433	643	Outfall to Stream	43	514	0	558	47%
	Hailey	2,706	271	2,435	978	1,458	Outfall to Stream	98	1,166	0	1,264	47%
(9)	Hazelton	79	8	71	57	14	Evap Ponds	6	11	52	69	86%
	Heyburn	501	50	451	218	232	Outfall to Stream	22	186	0	208	41%
(9)	Idaho Falls	26,053	2,605	23,448	10,876	12,572	Outfall to Stream	1,088	10,057	0	11,145	43%
(10)	Jerome	2,852	285	2,567	1,524	1,043	Land App & Outfall	152	835	640	1,627	57%
	Paul	381	38	343	175	167	To Land App	18	134	126	278	73%
(11)	Pocatello	14,859	1,486	13,373	6,203	7,170	Outfall to Stream	620	5,736	0	6,356	43%
(9)	Richfield	895	89	805	766	39	Land App & Outfall	77	31	321	429	48%
(9)	Rupert	4,676	468	4,209	1,209	2,999	To Land App	121	2,400	871	3,391	73%
(11)	Shoshone	773	77	696	314	381	Outfall to Stream	31	305	0	336	44%
	Wendell	709	71	638	279	359	To Land App	28	287	201	516	73%
	Total	73,691	7,369	66,322	30,579	35,743		3,058	28,594	2,405	34,057	46%

Notes:

(1) Five-Year Average Diversion based on 2018-2022 data, except for Hailey and Bellevue (2016-2020). Pumping data provided by cities, or WMIS in the absence of city data.

(2) System Loss assumed at 10% of Five-Year Average Diversion.

(3) Total Delivery computed as Five-Year Average Diversion minus System Loss.

(4) Indoor Use computed as Total Delivery in Nov - Mar and the minimum of Total Delivery or Nov - Mar average Total Delivery in the other months.

(5) Outdoor Use is computed as Total Delivery minus Indoor Use.

(6) Indoor Use CU computed as 10% of Indoor Use.

(7) Outdoor Use CU computed as 80% of Outdoor Use.

(8) Treated Effluent CU is computed as % of unconsumed Indoor Use; Outfall to Stream (0%), Land App (80%), Basins (5%), Evap Ponds (100%).

(9) Five-Year Average Diversion from WMIS database. 2021 data used in 2022 for cities that did not have posted 2022 data on WMIS.

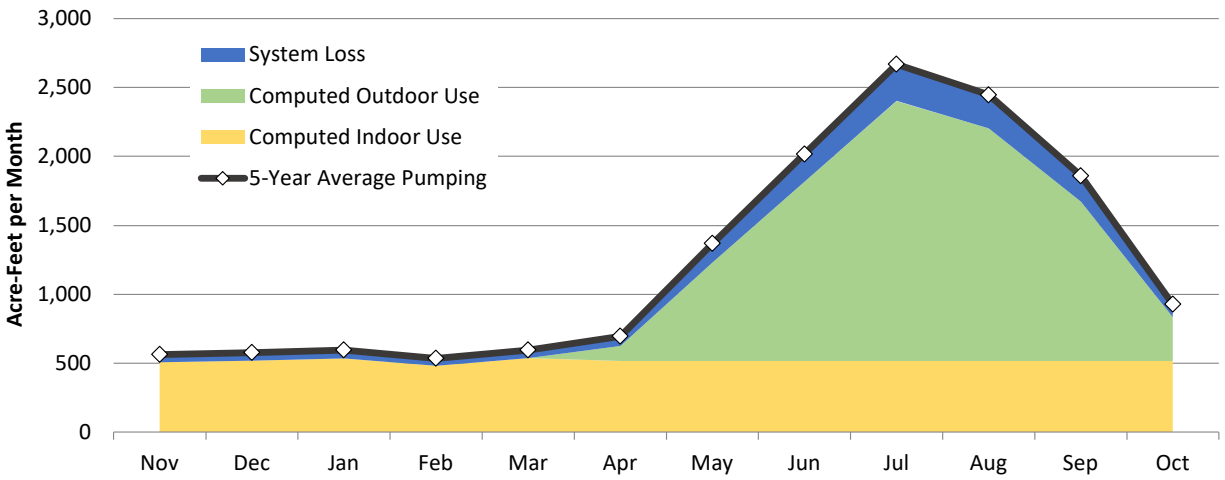
(10) Jerome's treated effluent is discharged to the NSCC J8 Canal and assumed to be land applied during irrigation season and return to stream at other times.

(11) City's irrigation only surface water uses excluded.

Table 5-1

Illustrative Summary of Ground Water Use
City of Pocatello

Averaging Period	**2018 - 2022**
WWTP Discharge	Outfall to Stream
System Loss (% of pumping)	10%



Summary of Annual Pumping and Consumptive Use

5-Year Average Pumping:	14,859
Total Consumptive Use:	6,356
Total CU (% Pumping)	43%

(values in acre-feet, except where noted)

Total Pumping	**Calc**	**Annual**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**
(1) 5-Year Average Pumping	City	**14,859**	565	578	596	536	597	697	1,369	2,017	2,669	2,446	1,860	929
(2) System Loss	(1) x 10%	**1,486**	56	58	60	54	60	70	137	202	267	245	186	93
(3) Delivery to Customers	(1) - (2)	**13,373**	508	520	536	482	538	628	1,232	1,815	2,402	2,202	1,674	836
(4) Computed Indoor Use	Nov - Mar Avg	**6,203**	508	520	536	482	538	517	517	517	517	517	517	517
(5) Computed Outdoor Use	(3) - (4)	**7,170**	0	0	0	0	0	111	715	1,298	1,885	1,685	1,157	319
Consumptive Use														
(6) Indoor Consumptive Use	(4) x 10%	**620**	51	52	54	48	54	52	52	52	52	52	52	52
(7) Outdoor Consumptive Use	(5) x 80%	**5,736**	0	0	0	0	0	88	572	1,039	1,508	1,348	925	256
(8) **Total Consumptive Use**	**(6) + (7)**	**6,356**	**51**	**52**	**54**	**48**	**54**	**140**	**624**	**1,090**	**1,559**	**1,400**	**977**	**307**
(9) Total CU (% Pumping)	(8) / (1)	**43%**	9%	9%	9%	9%	9%	20%	46%	54%	58%	57%	53%	33%

Notes:

Analysis includes pumping from city's interconnected wells including the airport wells and WPC well.

Analysis does not include City's water use for irrigation purposes only (i.e., biosolids irrigation pumping).

Treated effluent discharged to Portnuef River.

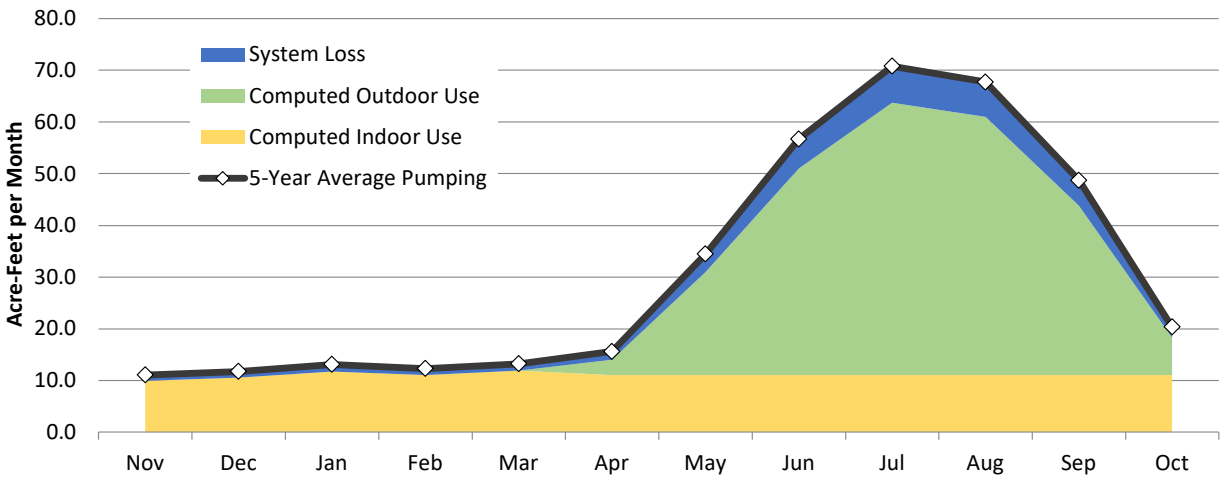
Table 5-2

Illustrative Summary of Ground Water Use
City of Bellevue

Averaging Period	**2016 - 2020**
WWTP Discharge	Land Application & Basins
System Loss (% of pumping)	10%

Summary of Annual Pumping and Consumptive Use

5-Year Average Pumping:	376
Total Consumptive Use:	236
Total CU (% Pumping)	63%



(values in acre-feet, except where noted)

	Total Pumping	**Calc**	**Annual**	**Nov**	**Dec**	**Jan**	**Feb**	**Mar**	**Apr**	**May**	**Jun**	**Jul**	**Aug**	**Sep**	**Oct**
(1)	5-Year Average Pumping	City	**376**	11.1	11.8	13.1	12.3	13.3	15.6	34.5	56.7	70.8	67.7	48.7	20.3
(2)	System Loss	(1) x 10%	**38**	1.1	1.2	1.3	1.2	1.3	1.6	3.4	5.7	7.1	6.8	4.9	2.0
(3)	Delivery to Customers	(1) - (2)	**338**	10.0	10.6	11.8	11.1	11.9	14.1	31.0	51.0	63.7	60.9	43.8	18.3
(4)	Computed Indoor Use	Nov - Mar Avg	**133**	10.0	10.6	11.8	11.1	11.9	11.1	11.1	11.1	11.1	11.1	11.1	11.1
(5)	Computed Outdoor Use	(3) - (4)	**205**	0.0	0.0	0.0	0.0	0.0	3.0	20.0	39.9	52.6	49.9	32.8	7.2
	Consumptive Use														
(6)	Indoor Consumptive Use	(4) x 10%	**13**	1.0	1.1	1.2	1.1	1.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1
(7)	Irrigation Season Land Applicati	((4) - (6)) x 80%	**56**						8.0	8.0	8.0	8.0	8.0	8.0	8.0
(8)	Non-Irrigation Season RIB CU	((4) - (6)) x 5%	**2**	0.4	0.5	0.5	0.5	0.5							
(9)	Outdoor Consumptive Use	(5) x 80%	**164**	0.0	0.0	0.0	0.0	0.0	2.4	16.0	31.9	42.1	39.9	26.2	5.8
(10)	**Total Consumptive Use**	**(6) + (7) + (8) + (9)**	**236**	**1**	**2**	**2**	**2**	**2**	**11**	**25**	**41**	**51**	**49**	**35**	**15**
(11)	Total CU (% Pumping)	(10) / (1)	**63%**	13%	13%	13%	13%	13%	73%	73%	72%	72%	72%	72%	73%

Notes:

Analysis does not include water supply from Seaman's Canyon Spring (no records).

Assume treated wastewater effluent is disposed through land application in the irrigation season April - October.

Assume treated wastewater effluent is disposed through rapid infiltration basins in the non-irrigation season November - March.

APPENDIX A

Preliminary Summary of Water Use and Treated Effluent Disposal
City Intervenors

Appendix A

Preliminary Summary of Water Use and Treated Wastewater Effluent Disposal City Intervenors

Bellevue

Municipal water supply for the City of Bellevue ("Bellevue") is provided from wells constructed in the Big Wood River Valley Aquifer ("BWRVA") and surface diversions from Seaman's Canyon Springs. The ground water supply is roughly one-half of the City's supply. Municipal wastewater is treated at the Bellevue Wastewater Treatment Facility, and treated effluent is land-applied to fields in the irrigation season and discharged to rapid infiltration basins in the non-irrigation season. Return flows from system losses, municipal irrigation, and treated effluent return flows accrue to the BWRVA.

Hailey

Municipal water supply for the City of Hailey ("Hailey") is provided from wells constructed in the BWRVA and surface diversions from Indian Springs Creek. Hailey also has a non-potable irrigation water supply for some parks derived from Hiawatha Canal water rights on the Big Wood River. Municipal wastewater is treated at the Hailey Woodside Wastewater Treatment Plant, and treated effluent is discharged to the Big Wood River. Return flows from system losses and municipal irrigation accrue to the BWRVA. Return flows from municipal indoor use return directly to the Big Wood River.

Wellsprings

Wellsprings Group LLC ("Wellsprings") is a proposed residential development to be located in the Deer Creek drainage, tributary to the Big Wood River. Wellsprings owns several decreed water rights from Deer Creek, Jimmie Creek, Clarendon Hot Springs, springs, and ground water.

Ammon

Municipal water supply for the City of Ammon ("Ammon") is provided from wells constructed in the Eastern Snake Plain Aquifer ("ESPA"). Municipal wastewater is treated at the Eastern Idaho Regional Waste Water Authority's ("EIRWWA") Oxbow Treatment Plant located west of Shelley. The EIRWWA plant is jointly operated by Ammon, Shelley, Bonneville County, and Bingham County. Treated effluent from the EIRWWA plant is discharged to the Snake River. Return flows from system losses and municipal irrigation accrue to the ESPA.

Idaho Falls

Municipal water supply for the City of Idaho Falls ("Idaho Falls") is provided from wells constructed in the ESPA. Municipal wastewater is treated at the Idaho Falls Wastewater Treatment Plant ("IFWWTP") and treated effluent is discharged to the Snake River. The IFWWTP also treats wastewater from the nearby cities. Return flows from system losses and municipal irrigation accrue to the ESPA.

Pocatello

Municipal water supply for the City of Pocatello ("Pocatello") is provided from wells constructed in the Lower Portneuf River Valley Aquifer ("LPRVA") and the ESPA. Pocatello has other surface water and ground water rights that are used for irrigation and not part of its interconnected municipal water system. Municipal wastewater is treated at the city's Water Pollution Control Plant along with wastewater from the City of Chubbuck, and treated effluent is discharged to the Portneuf River. Return flows from system losses and municipal irrigation accrue to the LRPVA and the ESPA.

Falls Water

Municipal water supply for the Falls Water Company, Inc. ("Falls Water") is provided from wells constructed in the ESPA. Falls Water provides service to three developments in Bonneville County north of Idaho Falls. Wastewater from Falls Water's Main Falls Water System and Taylor Mountain Water System is part of the IBSD and treated at the IFWWTP and treated effluent is discharged to the Snake River. Wastewater from Falls Water's Morningview Water System is processed by septic systems. Return flows from system losses and municipal irrigation accrue to the ESPA.

Bliss

Municipal water supply for the City of Bliss ("Bliss") is provided from wells constructed in the ESPA. Municipal wastewater is treated and disposed of through evaporation ponds. Return flows from system losses and municipal irrigation accrue to the ESPA.

Burley

Municipal water supply for the City of Burley ("Burley") is provided from wells constructed in the ESPA. Municipal wastewater is treated at City of Burley Municipal Wastewater Treatment Plant and treated effluent is discharged to the Snake River. Return flows from system losses and municipal irrigation accrue to the ESPA.

Carey

Municipal water supply for the City of Carey ("Carey") is provided from wells constructed in the ESPA. Municipal wastewater is treated at the Carey Wastewater Treatment Facility. Treated effluent is land applied for irrigation can be discharged to the Little Wood River in the non-irrigation season. Return flows from system losses and municipal irrigation accrue to the ESPA.

Declo

Municipal water supply for the City of Declo ("Declo") is provided from wells constructed in the ESPA. Municipal wastewater is treated and disposed of through evaporation ponds. Return flows from system losses and municipal irrigation accrue to the ESPA.

Dietrich

Municipal water supply for the City of Dietrich ("Dietrich") is provided from wells constructed in the ESPA. Municipal wastewater is treated and disposed of through evaporation ponds. Return flows from system losses and municipal irrigation accrue to the ESPA.

Gooding

Municipal water supply for the City of Gooding ("Gooding") is provided from wells constructed in the ESPA. Municipal wastewater is treated at the Gooding Wastewater Treatment Plant, and treated effluent is discharged to the Little Wood River. Return flows from system losses and municipal irrigation accrue to the ESPA.

Heyburn

Municipal water supply for the City of Heyburn ("Heyburn") is provided from wells constructed in the ESPA. Municipal wastewater is treated at the Heyburn Wastewater Treatment Plant, and treated effluent is discharged to the Milner Pool on the Snake River. Return flows from system losses and municipal irrigation accrue to the ESPA.

Hazelton

Municipal water supply for the City of Hazelton ("Hazelton") is provided from wells constructed in the ESPA. Municipal wastewater is treated and disposed of through evaporation ponds. Return flows from system losses and municipal irrigation accrue to the ESPA.

Jerome

Municipal water supply for the City of Jerome ("Jerome") is provided from wells constructed in the ESPA. Municipal wastewater is treated at the Jerome Wastewater Treatment Plant, and treated effluent is discharged to the North Side Canal Company's ("NSCC") J8 Canal that flows to the Snake River. The surface returns can return to the ESPA through canal seepage or be used for irrigation by NSCC. Return flows from system losses and municipal irrigation accrue to the ESPA.

Paul

Municipal water supply for the City of Paul ("Paul") is provided from wells constructed in the ESPA. Municipal wastewater is treated at the Paul wastewater treatment plant, and treated effluent is land applied for irrigation. Return flows from system losses and municipal irrigation accrue to the ESPA.

Richfield

Municipal water supply for the City of Richfield ("Richfield") is provided from wells constructed in the ESPA. Municipal wastewater is treated at the Richfield Wastewater Treatment Plant, and treated effluent is land applied during the irrigation season and discharged to the Little Wood River during the non-irrigation season. Return flows from system losses and municipal irrigation accrue to the ESPA.

Rupert

Municipal water supply for the City of Rupert ("Rupert") is provided from wells constructed in the ESPA. Municipal wastewater is treated at the Rupert wastewater treatment plant, and treated effluent is land applied for irrigation. Return flows from system losses and municipal irrigation accrue to the ESPA.

Shoshone

Municipal water supply for the City of Shoshone ("Shoshone") is provided from wells constructed in the ESPA. Municipal wastewater is treated at the Richfield Wastewater Treatment Plant, and treated effluent is discharged to the Little Wood River. Return flows from system losses and municipal irrigation accrue to the ESPA.

Wendell

Municipal water supply for the City of Wendell ("Wendell") is provided from wells constructed in the ESPA. Municipal wastewater is treated at the Wendell wastewater treatment plant. The treated effluent is land applied for irrigation. Return flows from system losses and municipal irrigation accrue to the ESPA.

APPENDIX B

Examples of
Detailed Terms and Conditions for Municipal Water Rights

Appendix B

Examples of Detailed Terms and Conditions for Municipal Water Rights

1. Amended Permit to Appropriate Water, 22-13888, City of Rexburg, Idaho
2. Amendment of Permit, 63-32423, Deer Creek Water Company LLC, Idaho
3. Preliminary Order Approving Application, 61-12239, Clear Springs Ranch LLC, Idaho
4. Decree, Case No. 19CW3019, Fort Collins - Loveland Water District, Colorado
5. Decree, Case No. 18CW3193, City of Loveland, Colorado
6. Decree, Case No. 04CW130, Town of Lasalle, Colorado
7. Change of Water Right, SD-04969 into RG-960, City of Albuquerque, New Mexico

APPENDIX C

Examples of
Detailed Municipal Water Rights Accounting

Appendix C

Examples of Detailed Municipal Rights Accounting

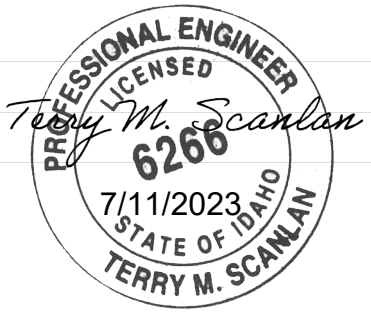
1. Annual Groundwater Pumping and Recharge, City of Rexburg, Idaho (2021 example)
2. Accounting Sheets, Upper Cherry Creek Water Association, Colorado (2007 example)
3. Accounting Sheets, Town of LaSalle, Colorado (2012 example)
4. Annual Accounting, Albuquerque Bernalillo County Water Authority, New Mexico (2012 example)

EXHIBIT 3

EXHIBIT 3 to Bricker Affidavit

Memo

Date:	Tuesday, July 11, 2023
Project:	Veolia – Snake River Moratorium Order
To:	Michael Lawrence – Givens Pursley LLP
From:	Terry Scanlan, P.E., P.G.
Subject:	Municipal Water Right Consumptive Use Policy



Background

The May 17, 2022, Order Establishing Moratorium for the Big Wood River Ground Water Management Area (Big Wood Moratorium Order) and the October 21, 2022, Amended Snake River Basin Moratorium Order (Amended Snake River Moratorium Order) both declare that new applications for municipal water use will be treated as fully consumptive. A policy treating all municipal water uses to be fully consumptive is not factually accurate. Moreover, this policy is not consistent with the definition of consumptive use in Idaho Code § 42-202B(1), which in part defines "consumptive use" to mean "*that portion of the annual volume of water diverted under a water right that is transpired by growing vegetation, evaporated from soils, converted to nonrecoverable water vapor, incorporated into products, or otherwise does not return to the waters of the state*." As the definition provides, consumptive use results from when the diverted water does not return to waters of the state. In reality, a large portion of water diverted for municipal purposes does return to waters of the state albeit not necessarily or entirely to the same source. This distinction is developed further below.

Big Wood Moratorium Order

Consumption for municipal purposes and for non-municipal community water systems is discussed in the Big Wood Moratorium Order. The order states the following:

1. "a water right for municipal purposes may be fully consumed without exceeding the authorized beneficial use," and "any new water right for municipal purposes has the potential to be fully consumptive".
2. "When community systems supply water for outside use, the water used for irrigation of lawns and landscaping is largely consumed, while the indoor water use is largely non-consumptive".
3. "Sewage disposal methods can include evaporation from the retention facility, land application, or treatment and re-use", and "Mingling sewage from a community

HDR, River Quarry at Parkcenter, 412 E Parkcenter Blvd Suite 100, Boise, ID 83706
(208) 872-9500

system into a municipal sewage facility may render the community use fully consumptive."

4. "Applications for municipal water use and for domestic use from community water systems shall be considered fully consumptive."

Considering all municipal uses and community water system domestic uses to be fully consumptive might be an easy approach for water right administration, but it does not reflect reality. Water lost to evaporation or water exported from the basin through crops or other means clearly meets the definition of consumptive use, but (as noted in the order) indoor water use is largely non-consumptive. The result is that substantial portions of municipal or community water system uses can be largely non-consumptive and the water can be (and often is) returned to the waters of the state through effluent discharge to surface water from a wastewater treatment plant or by effluent discharge to groundwater through infiltration. This is particularly true seasonally, when there is no irrigation, or in instances where irrigation water is supplied under non-municipal water rights.

Amended Snake River Moratorium Order

The Amended Snake River Moratorium Order states:

> "Applications for municipal water use and for domestic use from community water systems shall be considered fully consumptive" and "Domestic, commercial, industrial, or other water uses that result in the discharge of wastewater to a municipal or publicly owned treatment works will be considered consumptive."

This order does not contain any explanation as to why municipal water uses should be considered fully consumptive. Once again, this approach is not reflective of reality. In situations where wastewater flows to a publicly owned treatment works, the use can be largely non-consumptive when the effluent is discharged to a stream or groundwater.

Veolia Water Idaho

Veolia Water Idaho, Inc. (Veolia) owns and operates the municipal water utility serving the City of Boise and some adjacent portions Ada County[1]. The municipal water is supplied for any lawful use Veolia's customers might choose, including domestic, irrigation, commercial, and industrial uses. In 2019, the population served by the municipal water utility was estimated to be 251,730. An additional population of 26,070 within the Veolia

[1] Data in this memo regarding Veolia Water Idaho water facilities is drawn from the Suez Water Idaho Inc. Master Facilities Plan dated May 2022. Veolia now serves additional portions of the City of Eagle through a recent acquisition of Eagle Water Company, but this is not reflected in the 2022 Master Facilities Plan.

planning boundary is served by separate community systems or private wells. Veolia's estimated non-irrigation demand (based on winter day demand (WDD), which is assumed to exclude all irrigation) is approximately 14,500 gpm (32 cfs).

Most of the wastewater from non-irrigation uses of Veolia municipal water is discharged to the City of Boise water renewal facilities[2]. These facilities also receive water from Garden City and Eagle Sewer District. Population estimates (2015) served by Boise water renewal facilities total approximately 300,000, including 261,123 (87%) for City of Boise planning areas, 26,690 (9%) for Garden City, and 12,325 (4%) for Eagle Sewer District (ESD). An approximate population of 14,622 within the City of Boise planning area is served by septic systems. The City of Boise water renewal facilities have an average annual flow of 27.6 million gallons per day (mgd) (42.7 cfs) that is discharged to the Boise River. The flow includes 2.3 mgd (8%) from ESD and up to 5.5 mgd (20%) from industrial customers based on permitted discharge capacities. The permitted industrial users include 4.755 mgd for "technology industries" (assumed to be primarily Micron Technology which is largely self-supplied from groundwater and the Boise River). After subtracting 2.3 mgd for ESD and an assumed 4 mgd for Micron, and assuming a proportional Garden City flow of 2.5 mgd, the wastewater flow from the City of Boise planning area is approximately 18.8 mgd (29.1 cfs). Review of monthly flow data for the 2020 Boise sewer discharge[3] confirms the approximately average annual flow of 42.7 cfs (27.6 mgd) and shows relatively consistent monthly average flows for the non-irrigation season (November through March) ranging from 41.1 to 42.5 cfs, with higher flow range of 40.9 to 46.0 cfs during the irrigation season.

The populations served by the Veolia municipal water supply and the City of Boise water renewal facilities (excluding Garden City and Eagle Sewer District) are similar at approximately 250,000 each. These population estimates can be further refined, but such precision is not necessary for the purpose of this memo. Specifically, it is apparent that most of the Veolia non-irrigation diversions of approximately 32 cfs returns to the river in the estimated 29.1 cfs of City of Boise water renewal facility discharge from the City of Boise planning area, suggesting that consumption of Veolia supplied water for non-irrigation purposes is approximately 9%.

During summer, however, maximum day demand (MDD) in the Veolia water system is approximately four times WDD. Annual average day demand (ADD) in the Veolia water

[2] Data in this memo regarding City of Boise water renewal facilities is drawn from City of Boise Water Renewal Utility Plan dated September 1, 2020.
[3] Report on Canal Deliveries from Boise River and Different Features Affecting these Deliveries for the Irrigation Season 2020, by Rex R. Barrie, Watermaster, Boise River.

system is twice the WDD, suggesting that half of the average annual volume of Veolia-supplied water is for irrigation (and assumed to be largely consumed). Thus, the consumption rate of Veolia municipal water varies by season.

Annually, assuming 10% consumption of non-irrigation flows and 90% consumption of irrigation water, average annual consumption could be approximately 50%. Whether a more precise number is closer to 45% or 55% could be determined with a more rigorous analysis, but the point is that consumption is not 100%.

The impact of a policy that treats municipal use as 100% consumptive could be significant. For example, if groundwater pumping is determined to be consumptive to the Boise River, and Veolia is required to mitigate for 100% of their calculated depletions based on pumping volume rather than consumptive volume, then Veolia could be required to provide approximately twice the amount of mitigation water as their actual depletion.

Case-by-Case Application Processing

Rather than a blanket policy that treats municipal water use as fully consumptive, municipal uses should be processed case-by-case, based on the specifics of each water and wastewater system. Municipal diversions and discharges can be monitored and conditioned appropriately to protect senior water rights. For example, if municipal consumption is approximately 30% in a fully appropriated basin, then mitigation should be provided for the 30% of the water supply that is consumed rather than the 100% that is diverted.

Discharge of wastewater effluent back to surface water or groundwater should be considered as an acceptable form of full or partial mitigation when it can be shown that development of a new water right will result in an increase in effluent discharge to the appropriate water source (i.e., mitigation in the right place at the right time), offsetting potential injury to senior water rights. This is true even when multiple entities (i.e., water company, consumer, municipal wastewater utility) are handling the water through the cycle from diversion to return. The burden for demonstrating either non-consumption or effective mitigation should be placed on the municipal user, just like any other water right applicant. As with any water administration challenge, a determination of consumption can be accomplished by proper characterization of water use and through careful monitoring and reporting of diversions and return flows or discharges.

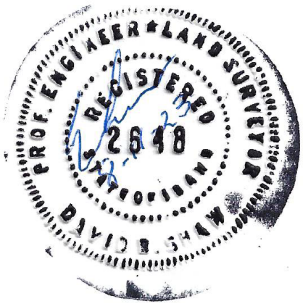
EXHIBIT 4

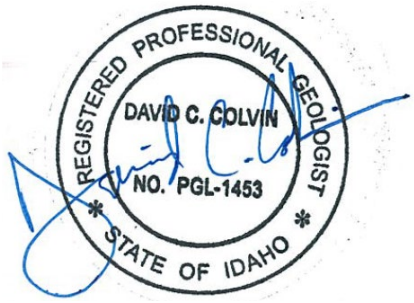
Exhibit 4 to Bricker Affidavit

AMENDED SNAKE RIVER BASIN MORATORIUM ORDER

Surface Water Coalition Expert Report

August 11, 2023





Authors
David Shaw, P.E. - ERO Resources Corporation
David C. Colvin, P.G. - LRE Water

1. Introduction

This report presents the opinions of David Shaw and David Colvin. We are water resource experts who have been retained by the Surface Water Coalition (SWC) for issues being addressed in the 2022 Amended Snake River Moratorium Order (Moratorium). David Shaw has more than 45 years of experience and is licensed in Idaho as a Professional Engineer. David Colvin has 27 years of experience and is licensed by the State as a Professional Geologist. Our resumes are included in Attachment A and B, respectively. We are basing our opinions on the information available at this time and reserve the right to alter our opinions should new or different information become available in the future.

On October 21, 2022, the Director of the Idaho Department of Water Resources (IDWR) issued the amended Moratorium with a description of the administrative treatment of new municipal water rights as follows:

> "*Applications for municipal water use and for domestic use from community water systems shall be considered fully consumptive. Applications for domestic purposes from non-community water systems shall be evaluated on a case-by-case basis to determine whether the proposed use is non-consumptive. Irrigation proposed in connection with a domestic use will be considered consumptive. Domestic, commercial, industrial, or other water uses that result in the discharge of wastewater to a municipal or publicly owned treatment works will be considered consumptive.*" (IDWR, 2022)

We are limiting our opinions to the fully consumptive municipal water use topic of the Moratorium. A summary of our opinions is below.

Opinion 1. Section 42-201(8), Idaho Code, authorizes municipal water rights to be used to extinction.

Opinion 2. Section 42-201(8), Idaho Code, has been interpreted to allow waste water (return flow) from a municipal water right, if any, to be relocated or removed from historical discharge locations.

Opinion 3. Comparison to Colorado Municipal Water Rights Administration Is Irrelevant

Opinion 4. Water Reuse is Increasing in Idaho and Across the World

2. Discussion of Opinions

2.1. Cities objecting to the Moratorium Order intervened in support of Nampa in the Riverside Case." (Opinions 1 & 2)

As part of their opening statement in the Riverside case the Cities stated, "*Each of the Municipal Intervenors either currently discharges their own treated wastewater to facilities owned by outside parties,* ***or may desire to do so in the future****.*" *(Emphasis added)*. The City of Boise treats water provided by Veolia and added "*The City of Boise is interested in the ability to explore alternatives to discharging its treated effluent to the Boise River, one such alternative being reuse of its treated effluent.*" The City of Rupert currently treats water at its WWTP but "*In the future, Rupert may want to discharge all or some of the water it treats into an irrigation canal.*" Idaho Falls currently discharges treated water from its WWTP to the Snake River "*… but is continuously seeking ways to best manage this resource.*" The City of Pocatello currently discharges wastewater from its WPC to the Portneuf River but has represented "*the City anticipates that it will be faced with additional expensive treatment requirements in the future and has begun to consider land application or other arrangements with nearby water users that would allow it to avoid expensive new treatment technologies.*" For compete statements by the cities and the Association of Idaho Cities regarding this issue see Attachment C.

As wastewater treatment requirements become more stringent and expensive it becomes less likely a new municipal use will discharge wastewater back to any natural water source. Since the order applies to a moratorium area, new municipal water rights will need to be fully mitigated and without return flows to the original source, the impact on the water source will be the depletion of the entire diversion. Further, even if the discharge is returned to the source at some distant location, the impacts locally will be the same as if the diversions were fully consumed. As an example, if ground water were diverted for municipal use within the Big Lost River basin and treated wastewater is then returned to the river and allowed to sink into the Eastern Snake Plain Aquifer (ESPA) the depletion to the ground water within the Big Lost River basin is the total amount of the diversion.

The scope of the Moratorium Order further complicates water management because the area includes both Trust Water and Non-Trust Water areas. A diversion of Trust Water for municipal purposes with treated return flow, if any, returning to the Non-Trust Water area results in full depletion of the Trust Water source by the total amount of the diversion. An example would be a new municipal ground water right for the City of Jerome with treated wastewater returned to the NSCC J8 Canal. Ground water in the vicinity of Jerome is Trust Water but the water in the J8 Canal is treated as Non-Trust Water making the Trust Water be depleted by the total quantity of ground water diverted. Such an example would also show how consuming ground water could impact area springs where the treated wastewater would not return to the ground water (and connected springs) source.

Section 42-201(8), Idaho Code, gives municipal water right holders the right to use their municipal water supply to extinction. To protect other current water right holders, mitigation of the full amount of a new municipal water right must be required since the municipal water user is not under any requirement, and may not realistically be able, to return the non-consumptive portion of the water right, if any, to the original water source where it would be available for diversion by other water users with existing water rights. Without return flows, a municipal diversion depletes the original water source by the full amount of the municipal diversion as described in the examples above.

Municipal water providers, cities in this document, are provided with unique flexibility under the provisions of § 42-201(8), Idaho Code, acknowledging their need for addressing wastewater treatment requirements. As addressed in the Riverside Matter, wastewater treatment needs may change over time potentially resulting in the loss of water supply by existing nonmunicipal water users. In other examples, a municipal water user may elect to treat and reuse all the water diverted under a new water right making the new use be fully consumptive to meet the municipal provider's own needs. In either case, the depletion to the source of water for a new municipal water right can be the full amount of the diversion under a new water right.

2.2. Comparison to Colorado Municipal Water Rights Administration Is Irrelevant (Opinion 3)

The Moratorium Order states that, "*Applications for municipal water use and for domestic use from community water systems shall be considered fully consumptive.*" (IDWR, 2022) In his expert report, Greg Sullivan states that this is "*unreasonable and arbitrary*" (Sullivan, 2022). Throughout his report, Sullivan references municipal water resource management practices in Colorado as a template for Idaho's administration of municipal water rights. He states that Idaho courts have upheld that, "...a *water right for municipal purposes may be fully consumed without exceeding the authorized beneficial use*". However, he fails to recognize fundamental differences between Idaho and Colorado administration of municipal water rights.

All Colorado water rights are subject to single use, with return flow requirements, as set forth in the 1913 Colorado Supreme Court's Comstock vs. Ramsay decision. Single use exceptions are made for fully consumable water rights including nontributary groundwater, changed historic consumptive use credits, or non-native water imported into an administrative basin. In Colorado, these fully consumable water rights are regarded as highly valuable because they do not require in-basin augmentation (mitigation), have flexible water use conditions, and can be reused to extinction. Many municipalities are adapting their water management to capitalize on their fully consumable water rights by developing water reuse systems that maximize consumptive use.

Sullivan postulates that Colorado demonstrates that return flow quantification and administration is routine, which is true in Colorado. However, Colorado's water administration and accounting practices have developed over many decades and have resulted in the precise monitoring and

reporting systems Sullivan describes. (Sullivan, 2023) The Colorado methods are indeed well-established and reliable for planning at state, regional, and local scales.

Colorado's monthly water rights resume exemplifies the complexity of the state's administration and communications system. Through the monthly water rights resume, water users can track applications and changes to existing water rights that may affect their assets (Colorado Water Division 1 District Court, 2023). Idaho does not have an existing system that can support the frequency, volume, and complexity of this type of communication.

The Prairie Waters System is owned and operated by the City of Aurora, Colorado, and serves as a good example of how complex accounting can be, especially when reuse and fully consumable municipal water rights are involved. The Prairie Waters System allows Aurora to utilize their fully consumable water rights through an indirect reusable effluent system. The water rights accounting for this system (Colorado Water Division 1 District Court, 2009) is complex and cannot reasonably be accomplished with Idaho's existing water rights measurement, reporting, and administration.

When asked about Water District 1 accounting of effluent discharge from the City of Idaho Falls, James Cefalo testified that "*Water District 1 does not track or measure that return flow. And, in fact, doesn't measure return flow from any water user that I'm aware of.*" (Cefalo dep. 56:24 - 57:2). Without well-established and reliable return flow data available in Idaho, it is reasonable for IDWR to administer new municipal water rights as fully consumable.

Furthermore, the Director has designated the Moratorium area to protect stressed water resources. The moratorium area includes eight Critical Ground Water Areas, and the ESPA Ground Water Management Area. IDWR treating new municipal water rights as fully consumable within the Moratorium area is a conservative and protective assumption since municipalities have the right to use their water rights to extinction.

2.3. Water Reuse is Increasing in Idaho and Across the World (Opinion 4)

Sullivan describes the water management practices for many of the cities he represents. He failed to mention that the cities of Bellevue, Carey, Hazelton, Paul, Richfield, Rupert, and Wendell all have Idaho Department of Environmental Quality (IDEQ) permits that allow for reuse of their treated municipal wastewater effluent. Changes in wastewater management and increases in water reuse further justify IDWR treating municipal use as fully consumptive.

According to the Water Reuse Association, recycled water in the US is estimated to increase 37% by 2027. (Water Reuse Association, 2023) Indirect potable reuse is becoming increasingly common in the Western US where municipal systems are being designed to recover wastewater effluent after it passes through an environmental buffer such as a wetland, aquifer, or surface water channel. Such systems already exist in many states including Colorado, Arizona, and

California. Direct potable reuse (DPR) systems return treated wastewater effluent directly to a water treatment plant for treatment and redelivery for municipal water use. Colorado recently passed DPR rules and rulemaking is currently underway in several states including California, Arizona, and Florida.

References

Cefelo, 2023. *In the Matter Of: Big Wood River Ground Water Management Area, et al., deposition of James Cefalo,* May 11, 2023, T&T Reporting LLC, Idaho Falls, ID.

Colorado Water Division 1 District Court, 2023. *June 2023 Water Resume*, accessed August 7, 2023, <https://www.courts.state.co.us/Courts/Water/Resumes/Div1/June%202023%20Resume.pdf>

Colorado Water Division 1 District Court, 2009. *Application for Water Rights of The City of Aurora, Case No. 06CW104 Corrected Findings of Fact, Conclusions of Law, Judgement, and Decree of the Water Court*, accessed August 7, 2023, <https://dnrweblink.state.co.us/dwr/DocView.aspx?id=1939142&page=1>.

IDWR, 2022. *Amended Snake River Moratorium Order, Idaho Department of Water Resources,* accessed July 20, 2023, <https://idwr.idaho.gov/wp-content/uploads/sites/2/legal/SRB-Moratorium/SRB-Moratorium-20221021-Amended-Snake-River-Basin-Moratorium-Order.pdf>.

IDWR, 2023a. *Critical Groundwater Areas, Idaho Department of Water Resources,* accessed July 20, 2023, <https://idwr.idaho.gov/water-rights/critical-groundwater-areas/designated/>.

IDWR, 2023b. *Designated Groundwater Management Areas, Idaho Department of Water Resources,* accessed July 20, 2023, https://idwr.idaho.gov/water-rights/groundwater-management-areas/designated/.

Sullivan, 2023. *Expert Report, Snake River Moratorium and Big Wood River Moratorium*, Spronk Water Engineers, Inc., July 11, 2023.

Water Reuse Association, 2023. *Water Reuse 101*, accessed July 31, 2023, <https://watereuse.org/educate/>

Attachment A - Resume for David Shaw, P.E.

RESUME

David Shaw, Engineer

EDUCATION
M.S. 1972, Agricultural Engineering, University of Idaho
B.S. 1966, Agricultural Engineering, University of Idaho

CERTIFICATIONS AND AFFILIATIONS
National Council of Examiners for Engineering and Surveying, NCEES #16269
American Society of Agricultural and Biological Engineers
Idaho Society of Professional Land Surveyors
Idaho Certified Water Right Examiner
Oregon Certified Water Right Examiner, #74051WRE

LICENSURE
Professional Engineer and Land Surveyor, Idaho, #2648
Professional Engineer, Oregon, #74051PE
Professional Engineer, Arizona, #40134
Professional Engineer, Colorado, #415169

BACKGROUND

David is an engineer in the Denver-based natural resources consulting firm of ERO Resources Corporation (ERO). For over 25 years, David has managed ERO's Idaho office. He specializes in the identification, analysis, and resolution of water issues including coordination with other professionals in multidisciplinary projects. David has more than 45 years of experience and expertise in water resources and management, covering a broad spectrum of disciplines including surface and ground water supply and use studies, water right evaluations, water quality evaluation and monitoring, project management, alternative dispute resolution, litigation support and expert witness testimony, and technical input on legislative and administrative matters.

SUMMARY OF EXPERIENCE

Water Right Investigations
For 11 years, acted as project manager for IDWR's role in the SRBA. An understanding of water rights and management ability were essential for the successful development of the criteria and process for the identification and evaluation of 150,000 claims to water rights. David continues to assist clients with water right investigations including adjudication and administrative processing, evaluation and transfer, and the development of new rights and protection of senior rights.

Litigation Support and Alternative Dispute Resolution
Designated as an expert in water right adjudications by the SRBA court. Provides expert testimony before the court on all aspects of water right adjudications as well as hydrology and water right administration issues. Provides expert testimony and settlement support for storm water conflicts and right-of-way issues between water users and nonwater users.

Water Supply Evaluations, Development, and Permitting
Assists clients with the permitting and development of water uses. A water supply evaluation is required for most new water right filings and for many filings for changes. Delivery system designs are sometimes included with the development and supply evaluations.

Water Quality Evaluation, Monitoring, and Management
Experienced in designing and implementing water quality monitoring programs for various water users. This includes knowledge of state standards and Total Maximum Daily Load requirements, and how water users can help protect their water uses with water quality data.

Project Experience:
Water Right Investigations

Surface Water Coalition, ID
Provided analysis and recommendations for resolution of water delivery call by senior surface water users against junior ground water users. Analyzed historical water distribution practices for delivery of storage and natural flow water to preserve historical enjoyment of the water resource.

Snake River Basin Adjudication, ID
Developed criteria and procedures to investigate the existence and extent of tens of thousands of water rights.

Little Land and Livestock, Inc., ID
Evaluated water rights for a potential land purchase. Secured new water rights for development of additional land for irrigated agriculture. Provided technical analysis to resolve conflicts between potential new water use and existing water uses.

Modoc Point Irrigation District, OR
Determined the extent of water use for irrigation in support of water right claims in the Klamath River Adjudication.

Litigation Support and Alternative Dispute Resolution

Office of the Idaho Attorney General, ID
Designated by the SRBA court as an expert in water right adjudications. Provided mediation support for resolution of federal reserved water rights. Acted as hydrology expert for litigation of federal reserved water right claims.

Surface Water Coalition, ID
Provided mediation support and expert testimony in support of water delivery call by senior surface water users.

Settlers Irrigation District, ID
Provided mediation support and expert testimony to resolve conflict over irrigation district rights-of-way and encroachment from storm water discharge.

Middle Fork Lodge, ID
Provided expert testimony to establish right-of-way for water delivery prior to creation of a wilderness area and designation of the forest.

Shoshone-Bannock Reserved Water Right Negotiations, ID
Acted as co-chair of the state, Indian, federal, and private technical advisory committee.

Riddle Ranch, ID
Served as technical expert/negotiator for resolution of federal reserved water rights of the Duck Valley Indian Reservation.

Methow Valley Ditch Users Association, WA
Analyzed ground water/surface water interaction and supply.

Federal Instream Flow Coalition, ID
Provided mediation support for resolution of federal reserved water rights and Endangered Species Act water demands.

Idaho Office of the Attorney General, ID
Acted as hydrology expert for litigation of federal reserved water rights.

Water Supply Evaluations, Development, and Permitting

Idaho Office of the Attorney General, ID
Evaluated the surface water supply of a river drainage basin for equitable allocation among state law-based water right water users and federal reserved-based water right water users.

Surface Water Coalition, ID
Evaluated the impact of surface water supply by the diversion and use of ground water.

Idaho Power Co., ID
Evaluated the impact of the proposed development on the company's water supply for power generation.

Big Lost River Basin, ID
Provided expertise regarding the surface and ground water hydrology and the administration requirements for a ground water recharge project.

District Water Supply, Boise River, ID
Evaluated the impact of a proposed water right transfer on irrigation. Identified and quantified changes to ground and surface water supply if the transfer was approved.

City of Coeur d' Alene, ID
Prepared an application for consolidation of all city water rights to allow for full use of the water rights and development of a new well.

Federal Instream Flow Coalition, ID
Evaluated the hydrologic impact of the historical water development in southern Idaho on river flows for Endangered Species Act-listed salmonids.

Water Quality Evaluation, Monitoring, and Management

Pioneer Irrigation District, ID
Provided project design, implementation, and management for their water quality sampling program.

Wilder Irrigation District, ID
Provided project design, implementation, and management for their water quality sampling program.

Water Users in Owyhee County, ID
Provided project design, implementation, and management for their water quality sampling program.

Attachment B - Resume for David Colvin, P.G.

DAVE COLVIN, PG, PMP

Groundwater Team Leader | Senior Project Manager | Principal

EDUCATION

M.S. Environmental Science and Engineering, Colorado School of Mines, 2002

B.S. Geology, Syracuse University, 1996

PROFESSIONAL REGISTRATION

Professional Geoscientist
- AZ RG#68926
- ID #PGL-1453
- TX #11440
- WY #PG-3602
- KS #958

Project Management Professional (PMP) #1749472

PROFESSIONAL ACTIVITIES

AWRA Colorado
- 2017/2018 Past President

Water Education Colorado
- 2012 Water Leaders Program

Colorado Groundwater Association

National Groundwater Association

Dave is a Principal Hydrogeologist and Senior Project Manager with over 25 years of experience in groundwater hydrology, water resources, and environmental sciences. He supervises teams of diverse subject matter experts and provides technical leadership to solve today's water resource challenges. Dave serves as the Groundwater Team Leader responsible for managing staff, resources, projects and clients for a group of hydrogeologists. His technical expertise subject areas include water supply development, groundwater management, groundwater governance/administration, surface water/groundwater interaction, riverbank filtration (RBF), soil aquifer treatment (SAT), managed aquifer recharge (MAR), aquifer storage and recovery (ASR), aquifer characterization, groundwater modeling, and subsidence caused by groundwater pumping.

FEATURED PROGRAM & PROJECT EXPERIENCE

Surface Water Coalition, Idaho (2019-ongoing)

Lead Hydrogeologist and Project Manager providing litigation support related to water management of the Eastern Snake Plain Aquifer. Provides protection of surface water flows and senior surface water rights from negative impacts due to junior groundwater pumping. Serves on the Eastern Snake Plain Hydrologic Modeling Committee supporting MODFLOW modeling activities related to complex surface water/groundwater management and water rights administration. Also serves as the SWC representative on technical working groups guiding the implementation and adaptation of a settlement agreement between the SWC and Idaho Ground Water Appropriators including monitoring/evaluation of hydrology, pumping reductions, consumptive use and planning for managed aquifer recharge.

Salt River Project – Gila River Basin Adjudication, Arizona Superior Court Case W1-103, San Pedro Basin, AZ (2018 – ongoing)

Hydrogeologist providing groundwater analysis and modeling supporting adjudication of water rights in the San Pedro Basin. Tasks include oversight of groundwater model development, calibration and uncertainty analysis, and trial/litigation support. Provides protection of surface water flows, riparian habitat, and water rights from negative impacts due to groundwater pumping.

City of Aurora – Horizontal Well Project; Weld County, CO (2019 – ongoing)
Project Manager for feasibility evaluation and planning of two radial collector wells for the City's Prairie Waters System. The project targets increasing system yield while maximizing riverbank filtration water quality improvements. Investigation included hydrogeophysical surveys, exploratory drilling, aquifer testing, and groundwater modeling. Results included design of horizontal wells that maintain the existing system water quality while providing adaptable system operations that can increase yield during drought demands. Currently the Lead Hydrogeologist providing design phase services.

City of Northglenn – ASR Feasibility Evaluation and Pilot Testing (2020 – ongoing)
Lead hydrogeologist and Project Manager for feasibility investigation and pilot test system design services. Support includes ASR feasibility data analysis, water quality evaluation, DWR and EPA UIC permitting, pilot system design and test planning. The project will provide pilot storage of the City's fully consumable water rights, providing more surface storage space for other supplies. If recovered water quality is compatible, the pilot system will be converted into permanent infrastructure as the first phase of a larger ASR system.

Riverence Holdings LLC – Snake River Spring Supply Support (2022-ongoing)
Project Manager and lead hydrogeologist supporting multiple fish hatcheries throughout Idaho's Magic Valley. Provides hydrogeologic planning of spring fed aquaculture focusing on upgradient aquifer pumping and recharge impacts on water rights, water quality, and water supply reliability.

City of Aurora – Box Elder Basin Aquifer Storage and Recover (ASR) Feasibility Investigation and Pilot Testing (2018 – Ongoing)
Project Manager and lead hydrogeologist investigating the feasibility of recharging and storing water in the Box Elder alluvial aquifer at the Aurora Center for Renewable Energy (ACRE). Tasks included hydrogeophysical surveys, exploratory drilling/test pits, and infiltration testing. The project identified recharge as a viable option for innovative storage opportunities and has moved into a pilot test planning phase. Current services include recharge source water characterization, water rights and permitting planning, water quality evaluation, groundwater modeling, and pilot system design.

Dominion Water and Sanitation District – Groundwater Support; Douglas County, CO (2015-ongoing)
Lead Hydrogeologist providing Denver Basin and South Platte alluvial aquifer groundwater resources planning services including water rights evaluation, water quality assessment, well field yield estimation and project planning. Provided hydrogeologic and contractor management support during Denver Basin well site design, construction, testing, aquifer characterization, and sampling. Additional technical support included documentation for County hearings, interactions with local water agencies, and groundwater transaction due diligence.

Town of Erie – Water Supply Planning Support (2018 – ongoing)
Lead hydrogeologist and Project Manager providing groundwater support related to water supply planning. Services include aquifer characterization, water quality studies, horizontal directionally drilled well field design, ASR feasibility analysis, and water rights. Prepared Colorado Water Conservation Board and Division of Local Affairs grant applications to obtain project funding. The project will provide a 3,000 GPM expansion of the Town's water supplies.

Town of Castle Rock – Groundwater Support; Douglas County, CO (2015-ongoing)

Project Manager providing comprehensive groundwater support. Projects have included:

- Denver Basin Well Drilling, Testing, and Aquifer Storage and Recovery (ASR) – Support includes Denver Basin ASR planning/permitting, bidding services, contractor management, construction oversight, well/pump design, aquifer testing, and groundwater regulatory support.
- Alluvial Well Field Expansion and Rehabilitation – Project Manager for two projects aimed at improving yields in well fields affected by biofouling and performance issues. Oversaw construction and testing of six horizontal directional drilled (HDD) wells installed to increase yield, performance, and sustainability.
- City of Aurora and Town of Castle Rock – Lost Creek Underground Storage Pilot Project; Lost Creek Designated Basin, CO (2017-2018)
- Project Manager for aquifer characterization and evaluation of recharge potential for underground water storage pilot project. Obtained grant funding and facilitated multiple stakeholder project planning and implementation. The project identified important field investigation methods and results for storage related aquifer characteristics previously overlooked in desktop studies.

City of Aurora – Prairie Waters North Campus Master Plan; Adams and Weld Counties, CO (2017-2019)

Lead hydrogeologist providing master planning services for approximately 20 MGD expansion of the Prairie Waters Project – North Campus over the next 20 years. Facility expansion included riverbank filtration well field, pipelines, and storage reservoirs. Led facilities operational planning, supported water resource planning, gap analysis, and capital improvements planning.

Denver Water – Aquifer Storage and Recovery (ASR) Pilot Project, City and County of Denver, CO (2016-current)

Groundwater technical support and project management for ASR feasibility investigation. Provided Denver Basin aquifer characterization including exploratory borehole drilling, hydrogeophysical investigation (Nuclear Magnetic Resonance and conventional methods), and 3-D geologic modeling. Current services include an advisory role for installation of a multi-aquifer Westbay Denver Basin monitoring well.

City of Greeley – ASR Feasibility Evaluation (2019-2021)

Senior Technical Advisor for a project evaluating the feasibility of new and existing ASR projects in multiple bedrock aquifers. Includes evaluation of water quality, aquifer characteristics, well construction/testing, project planning, and regulatory support, including negotiating an EPA UIC Rule Authorization in less than two months.

Colorado Water Conservation Board - HB16-1256 South Platte Storage Study; CO (2018)

Lead hydrogeologist providing evaluation of underground water storage options for the Lower South Platte alluvial aquifer. Provided alluvial storage site evaluation, conceptual design, cost estimates, and comparison to surface storage options.

Aurora Prairie Waters Project – North Campus; Weld County, CO (2008)

Supported City of Aurora's Prairie Waters project near the South Platte River, CO. Acted as team liaison for multi-consultant, multi-disciplinary project team. Field investigation and construction tasks included field oversight of drilling, well construction, pump/motor installation, aquifer testing, system start up testing, well

field yield optimization, and geotechnical investigations. Support also included the design, construction, and operation of alluvial recharge and riverbank filtration pilot test facilities. Developed and implemented pilot test procedures, including tracer studies to assess flow paths, travel times, and stream/aquifer interaction. MODFLOW modeling support for the Prairie Waters Project included development of regional groundwater model for Colorado Division 1 case 2006CW104. Performed parallel processing model calibration using UCODE. Prepared expert and rebuttal reports, exhibits and materials used in settlement negotiations.

Eagle River Water and Sanitation District and Upper Eagle Regional Water Authority – Groundwater Support; Eagle County, CO (2010-ongoing)

Project Manager and lead Hydrogeologist for alluvial well field groundwater support. Projects have included:

- GWUDI Evaluation – Regulatory support, groundwater modeling and operational monitoring of alluvial well fields in support of CDPHE GWUDI evaluation
- Lake Creek Well Field Planning – Services included groundwater modeling, well drilling, aquifer testing, source water quality characterization, regulatory support for Eagle County 1041, CDPHE, and DWR permitting
- Well field maintenance and rehabilitation support – well rehabilitation in response to well issues including pump issues, casing holes, and water quality contamination

Dominion Water and Sanitation District – Groundwater Support; Douglas County, CO (2015-ongoing)

Denver Basin groundwater supply planning services including water rights evaluation, water quality assessment, well field yield estimation and project planning. Technical support included documentation for County hearings, interactions with local water agencies, and groundwater sale transactions.

City of Steamboat Springs – Infiltration Gallery System Expansion; Routt County, CO (2018-ongoing)

Project Manager for feasibility evaluation of alluvial groundwater supply expansion alternatives. Expansion options being considered include vertical and horizontal well options. Tasks included exploratory drilling, aquifer testing, groundwater modeling and conceptual expansion system design. Modeling was performed to optimize well siting to maximize yield, maintain water quality, and to minimize pipeline costs.

City of Phoenix – ASR Tracer Test Design; Maricopa County, AZ (2017)

Provided MT3D groundwater modeling to assist in aquifer characterization, travel time estimates, and the design of an ASR tracer injection test for feasibility. The testing was in support of the Northeast Phoenix Reclaimed Water Recharge and Recovery Study. The system is intended to create a potable water resource through Indirect Potable Reuse (IPR), provide additional non-potable supplies, and to mitigate land subsidence issues.

Groundwater Relief – Kutupalong Refugee Camp Groundwater Supplies; Cox's Bazaar, Bangladesh (2019)

Volunteer hydrogeologist providing well testing and water quality support to field geologists. The project is developing emergency water supplies for nearly 1 million Rohingya refugees who have fled religious persecution in Myanamar.

City of San Angelo – Riverbank Filtration Feasibility Evaluation; Tom Green County, TX (2018)
Provided feasibility evaluation, preliminary siting, design and costs for a potential riverbank filtration (RBF) well field near the Concho River. This information was used to evaluate RBF as an alternative for expansion of the City's water supply.

Tarrant Regional Water District – Cedar Creek Wetlands; Kaufman County, TX (2013)
Project manager and lead Hydrogeologist for riverbank filtration feasibility investigation along the Trinity River. Project tasks include geotechnical, hydrogeologic, and surface geophysical surveys, groundwater modeling, and design, construction and testing of riverbank filtration pilot test sites.

Rangen, Inc. – Water Rights Support; Gooding County, ID (2010-2016)
Expert witness providing testimony and trial support for a water rights hearing (IDWR Case No. CM-DC-2011-004) involving springs and complex surface water/groundwater interaction of the Eastern Snake Plain Aquifer. Represented a fish hatchery reliant on spring flow that was being impacted by groundwater pumping. Served on the Eastern Snake Plain Hydrologic Modeling Committee supporting MODFLOW modeling activities in the Eastern Snake Plain of Idaho.

Overturf, McGath, and Hull, P.C. – Stewart No. 1 Ditch Company; Pitkin County, CO (2017)
Expert witness support including expert and rebuttal reports, depositions, and settlement negotiations for a civil case involving alleged roadway water damage from ditch operations.

Fredrickson Law Offices – In-Play Golf; Weld County, CO (2017)
Expert witness providing expert and rebuttal reports, depositions, and trial support for a civil case involving alleged water damages from golf course irrigation.

Boulder Valley School District – Douglass Elementary Non-Tributary Well Support; Boulder County, CO (2018)
Project Manager for a non-tributary well application in the Boulder Complex Area of the Denver Basin Aquifers. Provided aquifer characterization and regulatory support leading to a non-tributary determination and permit approval.

Boulder County Parks and Recreation – Kenosha Ponds Groundwater Evaluation; Boulder County, CO (2016)
Expert witness providing hydrogeology water rights support for a Boulder County Parks and Recreation augmentation pond. Technical support included expert report writing and trial exhibit preparation for the hydrologic characterization of a recharge pond between two streams where the pond bottom was below the water table.

Salt River Project – New River Agua Fria Underground Storage Project; Phoenix, AZ (2013)
Project involved optimization and in-channel expansion design for an existing recharge facility. Support included evaluation of operational data and adaptation of an existing MODFLOW model for operational optimization and feasibility testing.

Donala Water and Sanitation District – Reuse Evaluation; El Paso County, CO (2015)
Preliminary feasibility investigation into riverbank filtration alternatives for indirect potable reuse. Evaluated hydrogeologic conditions for permitting, cost, and performance feasibility considerations.

Colorado Haiti Project (Volunteer Position); Petit Trou de Nippes, Haiti (2013)
Technical advisor for groundwater development, management, and protection in a rural, developing area of Haiti.

Water For People Groundwater Management Project (Volunteer Position); San Pedro Sula, Honduras (2008)
Technical advisor for development of a scope of work for a participatory groundwater management plan aimed at restoring and protecting an over utilized alluvial aquifer in a developing region.

PRESENTATIONS & PUBLICATIONS

Colvin, Dave, 2020. "Moving from Conflict to Collaboration: The Role of MAR in Mitigating Groundwater Pumping Impacts to Surface Water" 17th Biennial Symposium on Managed Aquifer Recharge*. Tempe, AZ.*

Colvin, Dave, 2020. "Drawing the Line in the Sand between Underground Water Storage and Augmentation Recharge." American Water Resources Association – Colorado Chapter & Colorado Groundwater Association Joi*nt Annual Symposium. Denver, CO*

Colvin, Dave, 2019. "The Evolution of Colorado Underground Water Storage Administration". American Water Resource Association / Colorado Groundwater Association 2019 Joint Annua*l Symposium. Denver, CO.*

Colvin, Dave, 2018. "Technical Considerations for ASR Planning in Colorado's Front Range". American Groundwater Trust Annual Colorado Grou*ndwater Conference. Denver, CO.*

Colvin, Dave, 2018. "ASR Panel Discussion: The Revolution of Subsurface Water Storage". American Water Works Association ACE18 *Conference. Las Vegas, Nevada.*

Colvin, Dave and Loopesko, William, 2014. "Advantages of Alluvial Aquifer Storage Alternatives for Managing Hydrologic Extremes and Future Water Supply Risks." 2014 Upper Colorado River Basin Water Forum, Grand Junction, CO.

Colvin, Dave, 2014. "Groundwater Solutions for Indirect Potable Reuse." 2014 Rocky Mountain Wa*ter Reuse Workshop, Golden, CO.*

Colvin, Dave, and Bauer, Jacob, 2013. "Cost Effective Feasibility Investigation of Natural Subsurface Reuse Treatment Systems." Poster session at the 2013 National Wat*er Reuse Symposium, Denver, CO.*

Colvin, Dave, Bauer, Jacob, and Neupauer, Roseanna, 2013. "Riverbank Filtration Feasibility Modeling." MODFLOW and More 2013. Integrated Groundwat*er Modeling Center. Golden, CO.*

EXPERT TESTIMONY

Dave has provided expert testimony in trial or depositions in the following cases:

Idaho Surface Water Coalition; Idaho Department of Water Resources Docket No. AA-GWMA-2016-001, Order Designating the Eastern Snake Plain Aquifer Groundwater Management Area, February 2020

Stewart No. 1 Ditch Company; Pitkin County Case No: 2014CV30084, Pitkin County Board of County Commissioners v. Brothers, et. al., September, 2015.

In-Play Golf, Inc; Weld County Case 12CV727, Helen Hawkins et. al. v. Vista Ridge Development Corporation et. al., August, 2015.

Rangen, Inc.; In the Matter of Application for Water Rights Permit No., 36-17011, February, 2015.

Rangen, Inc.; Idaho Department of Water Resources Case No. CM-DC-2011-004, Distribution of Water To Water Right Nos. 36-02551 and 36-07694, May, 2013.

EXPERT REPORTS

Dave has performed groundwater analysis, provided assistance in settlement negotiations, and authored or contributed to reports in the following cases.

Idaho Surface Water Coalition; Idaho Department of Water Resources Docket No. AA-GWMA-2016-001, Order Designating the Eastern Snake Plain Aquifer Groundwater Management Area, February 2020

Town of Erie; CO Division 1 Case Nos. 2019CW3063 and 2019CW3064, Application for Underground Water Rights and Plan for Augmentation, 2020.

Salt River Project; AZ Big Chino Cooperative Agreement #1, Evaluation of Big Chino Water Ranch impacts on Upper Verde Springs discharge, 2016 - ongoing.

Salt River Project; AZ Gila River Adjudication Contested Case No. W1-103, Groundwater adjudication and subflow depletion evaluation, 2017 – ongoing.

In-Play Golf, Inc; Weld County Case 12CV727, Helen Hawkins et. al. v. Vista Ridge Development Corporation et. al., August, 2015.

Stewart No. 1 Ditch Company; Pitkin County Case No: 2014CV30084, Pitkin County Board of County Commissioners v. Brothers, et. al., September, 2015.

Rangen, Inc.; In the Matter of Application for Permit No., 36-17011, February, 2015.

Rangen, Inc.; Idaho Department of Water Resources Case No. CM-DC-2011-004, Distribution of Water To Water Right Nos. 36-02551 and 36-07694, May, 2013.

Boulder County Parks and Open Space; CO Division 1 Case No. 2010CW320, Change of Use and Plan for Augmentation for Kenosha Ponds Open Space, 2013.

City of Aurora; CO Division 1 Case No. 2006CW104, Aurora's Prairie Waters Project, 2007.

Attachment C - Statements by the Cities and the Association of Idaho Cities in the “Riverside Matter”

Statements by Municipalities RE: Reuse in *Riverside v. IDWR*

Administrative Action Before the Director:

City of Nampa

· Under the Reuse Permit, the City is authorized to direct its wastewater stream to the Phyllis Canal, owned operated by Pioneer Irrigation District ("Pioneer") for irrigation use when the temperature of treated wastewater may adversely impact Indian Creek. Seasonal (i.e., during the irrigation season) City wastewater discharge to the Phyllis Canal also yields phosphorus limit flexibility (discharge to the canal can occur at higher numeric limits than would be the case with discharges to Indian Creek), also saving City ratepayer money through avoided additional treatment costs. Because higher water temperatures and higher nutrient limits are allowed under the Reuse Permit for irrigation water flowing in the Phyllis Canal, the final wastewater upgrade, among other operational requirements, is no longer necessary. Consequently, the City and Pioneer partnership effectively achieves water quality objectives more efficiently and at substantially lower cost.

City of Boise

· These proceedings may have a precedential effect on the interpretation of Idaho Code § 42-201(8) and future reuse permits within the State of Idaho. Boise City itself has proposed a reuse project similar to that of Nampa's and the outcome of this case may dictate Boise City's ability to pursue this reuse project in the future.

· The City of Boise is interested in the ability to explore alternatives to discharging its treated effluent to the Boise River, one such alternative being reuse of its treated effluent.

Cities of Meridian and Caldwell

· No mention of plans to reuse water in the future.

· Caldwell currently does not deliver treated effluent to any end user. It has, however, engaged in discussions with other entities, including Riverside Irrigation District, to find ways in which it can deliver such effluent for use by those entities.

Hayden Area Regional Sewer Board

· Treated effluent is applied to land owned by HARSB on which farm crops and trees are grown. HARSB makes a concerted effort to avoid wasting the treated effluent and to find opportunities to use the treated effluent in ways that would be beneficial to its users and reduce its costs.

· HARSB is looking at future options to use the effluent year-round and discontinue delivering it to the river.

Association of Idaho Cities

· AIC's interest is in safeguarding and representing the rights of all cities, large or small to have the utmost flexibility of their water rights, while individual cities may have specific facts and circumstances that are also directly impacted by Riverside's petition.

City of Pocatello

· The City of Pocatello, like the City of Nampa, is eligible to apply for a reuse permit with the Idaho Department of Environmental Quality.

· The City of Pocatello has a direct and substantial interest in whether or not the wastewater effluent associated with the discharge under the City's NPDES permit can be reused without obtaining a water right, as alleged by Riverside Irrigation District.

· The City anticipates that it will be faced with additional and expensive treatment requirements in the future and has begun to consider land application or other arrangements with nearby water users that would allow it to avoid expensive new treatment technologies.

City of Idaho Falls

· Idaho Falls holds NPDES Pem1it No. ID0021 26 I for wastewater discharge into the Snake River. Idaho Falls, like Nampa, is eligible to apply for a reuse permit with DEQ. Idaho Falls therefore has a direct and substantial interest in the issue of whether or not the wastewater effluent associated with the wastewater discharge under Idaho Falls' NPDES permit can be reused without obtaining a water right. Idaho Falls also has a direct and substantial interest in whether or not reuse of wastewater in the manner allowed by Reuse Permit No. M-255-01 results in injury to senior water rights that would have otherwise received the effluent discharged to the Snake River as part of downstream water diversions. As such, Idaho Falls has a direct and substantial interest in the outcome of the above-entitled proceeding.

· The Director's decision could impact Idaho Falls' ability to pursue reuse projects.

· Idaho Falls does not currently provide treated effluent to any end user, but is continuously seeking ways to best manage this resource.

City of Rupert

· Rupert has a direct and substantial interest in the outcome of this matter. Rupert is located in the Magic Valley and pumps ground water from the regional Eastern Snake Plain Aquifer, as

well as ground water from a shallow perched aquifer to meet the city's needs. Rupert holds DEQ Reuse Permit No. M-001-04 that allows it to safely treat and reuse waste water. Upon treatment, Rupert pipes the water approximately seven miles north of the city where the water is stored in lagoons during the winter and land applied during the growing season. In an emergency and pursuant to Consent No. 17-07-14-L0950, Rupert is authorized by the United States Bureau of Reclamation to temporarily discharge Class B reuse water into a federal facility in Minidoka County. In the future, Rupert may want to exercise the flexibility that is provided to cities under Idaho law for discharge of treated waste water into a canal system. Given its location, the terms of its Reuse Permit, its consent agreement, and its interest in maintaining the flexibility provided by Idaho law, only Rupert can represent its interests.

City of Post Falls

· In the future, Post Falls plans to recycle more water than it discharges into the Spokane River.

City of Jerome

· Jerome is located in the Magic Valley and pumps ground water from the Eastern Snake Plain Aquifer to meet the needs the city's needs. Jerome holds National Pollutant Discharge Elimination System ("NPDES") Permit No. ID-0020168 for waste water discharge into the Northside Canal Company's J8 Canal. Jerome relies on the NPDES Permit to safely treat and dispose its waste water. Given its location and the terms of its NPDES Permit, only Jerome can represent its interests that allow it to discharge into the J8 Canal.

City of Bellevue

· Bellevue is located in the Wood River Valley and uses surface water and groundwater to meet the needs of the City. Bellevue's groundwater pumping is located within the Big Wood River Ground Water Management Area and Bellevue's groundwater pumping has been included in delivery calls from downstream senior users in the past few years. The City also land-applies treated municipal wastewater on lands south of the City. The City's use of its treated municipal wastewater is critical to its operations and will likely only increase in importance when environmental concerns increase or if groundwater levels decline. [Bellevue withdrew its Petition to Intervene the following month]

Appeal to the District Court:

City of Jerome

· Since the end of World War II, the City has discharged treated water into the North Side Canal Company's ("NSCC") J8 Canal for beneficial use by NSCC. This is done pursuant to an NPDES permit and a written Agreement for Discharge of Treated Wastewater between Jerome and NSCC.

City of Boise

· The City of Boise is interested in the ability to explore alternatives to discharging its treated effluent to the Boise River, one such alternative being reuse of its treated effluent.

City of Meridian

· The City of Meridian discharges most of the effluent treated at its WWTP to Fivemile Creek pursuant to its NPDES permit. Some of that treated effluent is delivered (prior to discharge into Fivemile Creek) to various users, including a park, commercial landscaping, a car wash, and others. While the delivery of effluent to other users is a fraction of the total effluent produced by the City, it intends to continue searching for ways in which to use its treated effluent. The City's NPDES permit also allows discharge to the Boise River, and the City maintains infrastructure to do the same if desired.

City of Caldwell

· The City of Caldwell discharges effluent treated at its WWTP to the Boise River just upstream of the mouth of Indian Creek pursuant to an NPDES permit. Caldwell is interested in finding ways to deliver its treated effluent for use by other entities, including irrigation districts.

City of Post Falls

· In the future, Post Falls plans to recycle more water than it discharges into the Spokane River.

City of Rupert

· The City of Rupert treats water appropriated by the City and other users, including industry, at its WWTP, then land applies the same water onto fields owned and operated by the City during the irrigation season pursuant to an IDEQ Reuse Permit and stores treated water in lagoons during the non-irrigation season pursuant to the same Reuse Permit. Rupert has an agreement with the United States to discharge treated water into the Minidoka Irrigation District canal in the event of an emergency. In the future, Rupert may want to discharge all or some of the water it treats into an irrigation canal.

City of Idaho Falls

· Idaho Falls does not currently provide treated effluent to any end user but is continuously seeking ways to best manage this resource.

City of Pocatello

· The City anticipates that it will be faced with additional and expensive treatment requirements in the future and has begun to consider land application or other arrangements with nearby water users that would allow it to avoid expensive new treatment technologies.

Association of Idaho Cities

· AIC is a non-partisan organization founded in 1947 that represents its city members, both large and small in order to safeguard cities' ability to manage their water rights, water use, and wastewater discharge as necessary to meet the needs of their residents and any applicable laws and regulations. Riverside's arguments here implicate cities' management and use of water rights, water use, and wastewater discharge. Thus, AIC endorses the arguments made in this brief to allow cities to operate as they have historically under applicable Idaho state law.