BEFORE THE DEPARTMENT OF WATER RESOURCES
OF THE STATE OF IDAHO

Docket No. CM-DC-2010-001

ORDER REVISING APRIL 2019
FORECAST SUPPLY AND
AMENDING CURTAILMENT
ORDER

(METHODOLOGY STEPS 5 & 6)

The Director of the Idaho Department of Water Resources ("Department") finds, concludes, and orders as follows:

FINDINGS OF FACT

A. Background

1. On April 19, 2016, the Director issued the Fourth Amended Final Order Regarding Methodology for Determining Material Injury to Reasonable In-Season Demand and Reasonable Carryover ("Methodology Order"). The Methodology Order established nine steps for determining material injury to members of the Surface Water Coalition ("SWC"). This order applies Steps 5 and 6 to the 2019 irrigation season.

2. On November 30, 2018, the Director issued the Final Order Establishing 2018 Reasonable Carryover – Methodology Step 9 ("November Carryover Order") establishing no member of the SWC is owed reasonable carryover in 2018 for use in 2019. November Carryover Order at 5.

3. On April 11, 2019, the Director issued his Final Order Regarding April 2019 Forecast Supply (Methodology Steps 1 – 3) ("April Forecast Supply Order"). The April Forecast Supply Order predicted a demand shortfall to the SWC of 20,900 acre-feet for the 2019 irrigation season. April Forecast Supply Order at 3. At that time, the only member of the SWC predicted to experience material injury during the 2019 irrigation season was the Twin Falls Canal Company ("TFCC"). The Director ordered that, by May 1, 2019, ground water users with consumptive water rights "junior to August 25, 1991, within the Eastern Snake Plain Aquifer area of common ground water supply shall establish, to the satisfaction of the Director, that they can mitigate for their proportionate share of the predicted [demand shortfall] of 20,900 acre-feet.
in accordance with an approved mitigation plan . . . .” Id. at 5. The Director also ordered that, if a junior ground water user cannot establish they can mitigate for their proportionate share of the predicted demand shortfall in accordance with an approved mitigation plan, “the Director will issue an order curtailing the junior-priority ground water user.” Id.

4. Step 4 of the Methodology Order requires that the Director issue an order curtailing applicable junior ground water users in years in which application of Steps 1 and 2 results in a projected demand shortfall to one or more members of the SWC. Methodology Order at 36.

5. On June 7, 2019, the Director issued a Final Order Curtailing Non-Enlargement Ground Water Rights Junior to April 12, 1994, and Enlargement Ground Water Rights Junior to March 14, 1971 (“Curtailment Order”). The Director ordered that:

[A]t 12:01 a.m. on or before June 21, 2019, ground water users holding water rights bearing priority dates junior to April 12, 1994 and enlargement water rights bearing priority dates junior to March 14, 1971, within the [Eastern Snake Plain Aquifer area of common ground water supply] listed in Attachment A to this order shall curtail/refrain from diversion and use of ground water pursuant to those water rights unless notified by the Department that the order of curtailment has been modified or rescinded as to their water rights.

Curtailment Order at 4.

6. Step 5 of the Methodology Order addresses the final injury determination to reasonable carryover for members of the SWC. Because there was no reasonable carryover shortfall in 2018, the reasonable carryover provision of Step 5 is not applicable.

7. Step 6 states:

Approximately halfway through the irrigation season . . . the Director will, for each member of the SWC: (1) recalculate [Reasonable In-Season Demand (“RISD”)]; (2) issue a revised [Forecast Supply (“FS”)]; and (3) estimate the Time of Need date.

Id. at 37 (footnote omitted).

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1 On May 22, 2019, the Director received the Water District 01 Water Report (“Water Report”). The Water Report stated that the Twin Falls Canal Company TFCC leased 5,049.9 acre-feet to the Supplemental Pool according to Water District 01’s Rental Pool Procedure 8.2.a. As a result, the Director concluded the forecasted DS should be reduced by 5,049.9 acre-feet, the amount TFCC rented to the Supplemental Pool. Therefore, the predicted DS was revised to 15,850.1 acre-feet and the priority cutoff dates were revised to April 12, 1994, for non-enlargement water rights and March 14, 1971, for enlargement water rights.
B. April – June Climate

8. The April 2019 Joint Forecast prepared by the United States Army Corps of Engineers and the United States Bureau of Reclamation predicted 3,200,000 acre-feet of natural flow at the Heise gage for the period of April through July 2019. *April Forecast Supply Order* at 2. The Joint Forecast “is generally as accurate a forecast as is possible using current data gathering and forecasting techniques.” *Methodology Order* at 17.

9. Spring precipitation (April- June) was variable. According to Natural Resource Conservation Service, the Snake River Basin above Palisades received 133%, 141%, and 90% of average precipitation in April, May and June, respectively. The National Weather Service’s Twin Falls weather station reported 152%, 205%, 8% of normal precipitation in April, May and June, respectively. Twin Falls temperatures were 0.8 degrees above normal for April, 2.0 degrees below normal for May, and 1.5 degrees below normal for June.2

C. Reasonable In-Season Demand

10. RISD “is the projected annual diversion volume for each SWC entity during the year of evaluation that is attributable to the beneficial use of growing crops within the service area of the entity.” *Methodology Order* at 12. In April, the demand from the 06/08/12 BLY defines the RISD. *Id.* at 16. During the irrigation season, the RISD for the completed portion of the irrigation season is recalculated by dividing the actual crop water need (“CWN”) for each entity by the project efficiency for that entity. *Id.* at 16, 37. For the remainder of the irrigation season, the RISD is the demand defined by the July-October 06/08/12 BLY. *Id.* RISD is calculated on a monthly time step.

i. Crop Water Need

11. “CWN is the volume of irrigation water required for crop growth within a SWC entity boundary, such that crop growth is not limited by water availability.” *Methodology Order* at 14. CWN is the difference between the fully realized consumptive use associated with crop growth, or [evapotranspiration], and effective precipitation . . . .” *Id.*

12. CWN is an input variable for calculating RISD for the completed portion of the irrigation season. *Id.* at 16. Actual RISD for the completed portion of the irrigation season is combined with monthly predicted baseline demands for the remaining months of the irrigation season to calculate a season-total RISD volume. *Id.* at 16-17. Demand shortfall is then calculated as the difference between the adjusted FS and the RISD. *Id.* at 21.

13. As calculated from the beginning of the irrigation season (April 1), the SWC’s volumetric CWN for the current water year through the month of June is 378,632 acre-feet. This volume is 78% of the April 1 – June 30 ten-year average CWN (2009 – 2018) and 72% of the April 1 – June 30 CWN for the 06/08/12 BLY. The following graphs summarize monthly volumetric CWN values:

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2 Precipitation and temperature data obtained from the NOAA National Weather Service Preliminary Monthly Climate Data for the Twin Falls 3SE weather station (Twin Falls Airport).
ii. **Extension of BLY**

14. The RISD for the remaining portion of the irrigation season (July –October) is the July-October demand for 06/08/12 BLY. The numeric values are shown in the table in Finding of Fact 15 below.

iii. **Calculation of RISD**

15. As calculated from the beginning of the irrigation season (April 1), the SWC’s volumetric RISO for 2019 through the month of June is 991,056 acre-feet. This volume is 75% of the April 1 – June 30 ten-year average RISD (2009 – 2018) and 76% of the April-June demand for the 06/08/12 BLY. The recalculated RISO at this point of the 2019 irrigation season by entity is:

<table>
<thead>
<tr>
<th>Entity</th>
<th>April-June CWN (AF)</th>
<th>E_p(April - June)</th>
<th>April-June RISO (AF)</th>
<th>July-October Demand for 06/08/12 BLY (AF)</th>
<th>Recalculated RISO (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A&amp;B</td>
<td>10,217</td>
<td>0.47-0.92</td>
<td>16,427</td>
<td>36,126</td>
<td>52,554</td>
</tr>
<tr>
<td>AFRD2</td>
<td>43,349</td>
<td>0.22-0.40</td>
<td>133,820</td>
<td>261,723</td>
<td>395,542</td>
</tr>
<tr>
<td>BID</td>
<td>30,202</td>
<td>0.33-0.51</td>
<td>70,564</td>
<td>138,089</td>
<td>208,653</td>
</tr>
<tr>
<td>Milner</td>
<td>8,785</td>
<td>0.40-0.78</td>
<td>16,059</td>
<td>28,438</td>
<td>44,497</td>
</tr>
<tr>
<td>Minidoka</td>
<td>56,620</td>
<td>0.37-0.56</td>
<td>115,908</td>
<td>204,567</td>
<td>320,475</td>
</tr>
<tr>
<td>NSCC</td>
<td>94,347</td>
<td>0.23-0.41</td>
<td>298,845</td>
<td>588,735</td>
<td>887,580</td>
</tr>
<tr>
<td>TFCC</td>
<td>135,112</td>
<td>0.29-0.51</td>
<td>339,433</td>
<td>633,715</td>
<td>973,148</td>
</tr>
</tbody>
</table>
D. Forecast Supply

16. When determined during the irrigation season, the FS is the sum of the actual natural flow supply from April through June, the predicted natural flow supply from July through October, and the actual storage allocations. Methodology Order at 37. Actual natural flow diversions for the completed portion of the irrigation season are extracted from the Department’s water rights accounting program. The natural flow diversions for the remainder of the irrigation season are estimated by a regression analysis. Id. at 18, 37. Storage allocations are determined by Water District 01 on the Day of Allocation. Id. at 37.

i. Sum of Actual Natural Flow Diverted

17. Actual natural flow diverted in April through June for each SWC member is shown in the table contained in Finding of Fact 25 below, within the “Summary of Forecast Supply” section.

ii. Regression Models to Predict Natural Flow (July – October)

18. Natural flow diversions were predicted for the remainder of the irrigation season by regression analysis. The Methodology Order established the following variables as predictor variables in the regression models: natural flow in the Snake River near Heise as reported by the U.S. Bureau of Reclamation, snow water equivalent (“SWE”) data at Two Oceans Plateau SNOTEL site, Spring Creek discharge, and groundwater levels near American Falls Reservoir. Methodology Order at 19. Unique regression models with unique predictor variable groups are established in the Methodology Order for each SWC member.

19. Either June 15 or July 1 SWE values for the Two Oceans Plateau SNOTEL site are used as input variables in each of the regression models developed in the Methodology Order. Two Oceans Plateau SWE data was selected as a predictor variable in the Methodology Order based upon step-wise statistical analysis carried out in the development of each regression model. The Two Oceans Plateau SWE data is an optimum predictor variable for several reasons including: its elevation (the site is located above 9,000 feet and typically still has snow late in the runoff season (June 15 and July 1); its location (the site is in the headwaters of the Snake River above Jackson Reservoir); and its period of record, which is sufficiently long enough to support model development.

20. The predictor variable for A&B, AFRD2, and Milner in 2019 included 0.2 inches of the SWE on July 1, 2019, at Two Oceans Plateau.

21. The predictor variables for BID, Minidoka, and NSCC in 2019 included: (1) 14.5 inches of the SWE on June 15, 2019, at Two Oceans Plateau; (2) 2,738,000 acre-feet of natural flow runoff at the Snake River near Heise (April – June); and (3) 24.97 feet depth to water at well 5S31E27ABA1 on March 23, 2019.

22. The multiple linear regression equation for TFCC was based on the following predictor variables: (1) the June 15, 2019, SWE value (inches) at the Two Ocean Plateau
SNOTEL site, (2) the Snake River near Heise natural flow (April – June), and (3) Spring Creek total discharge (January – May). The predictor variables for TFCC in 2019 included: (1) 14.5 inches of the SWE on June 15 at Two Oceans Plateau, (2) 2,738,000 acre-feet of natural flow runoff at the Snake River near Heise (April – June), and (3) 89,242 acre-feet total discharge at Spring Creek (January – May).

### iii. Storage Allocations

23. Preliminary storage allocation values for each member of the SWC were published in Water District 01’s *Initial Storage Report* on July 2, 2019. Preliminary storage allocations for each of the SWC members are reported in the table in Finding of Fact 25 below.

### iv. Adjustments to Total Supply

24. The natural flow and storage water supplies were both adjusted as shown in the table in Finding of Fact 25 below. Adjustments to natural flow include wheeled water to Southwest Irrigation District through BID and Milner, 1,626 acre-feet and 1,310 acre-feet, respectively. Adjustments to natural flow also included 62,057 acre-feet of wheeled water as a part of the Idaho Water Resource Board’s water right to AFRD2. The only adjustments to the stored water supply in the table below were for the Minidoka Credit. Water supplied to or from the rental pool was not included in the adjustments because such adjustments would artificially increase or decrease the shortfall obligation.

### v. Summary of Forecast Supply

25. The following table contains the individual components of the FS for each of the SWC members:

<table>
<thead>
<tr>
<th></th>
<th>Natural Flow Diverted</th>
<th>Predicted Natural Diversions</th>
<th>Natural Flow Adjustment</th>
<th>Preliminary Storage Allocation</th>
<th>Minidoka Credit Adjustment</th>
<th>FS (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4/1 to 6/30 (AF)</td>
<td>7/1 to 10/31 (AF)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A&amp;B</td>
<td>18,071</td>
<td>0</td>
<td>0</td>
<td>129,037</td>
<td>0</td>
<td>147,108</td>
</tr>
<tr>
<td>AFRD2</td>
<td>104,081</td>
<td>0</td>
<td>(62,057)</td>
<td>385,563</td>
<td>1,000</td>
<td>428,587</td>
</tr>
<tr>
<td>BID</td>
<td>100,332</td>
<td>42,818</td>
<td>(1,626)</td>
<td>219,388</td>
<td>5,130</td>
<td>366,042</td>
</tr>
<tr>
<td>Milner</td>
<td>18,586</td>
<td>0</td>
<td>(1,310)</td>
<td>84,795</td>
<td>0</td>
<td>102,071</td>
</tr>
<tr>
<td>Minidoka</td>
<td>141,782</td>
<td>61,833</td>
<td>0</td>
<td>351,272</td>
<td>8,370</td>
<td>563,257</td>
</tr>
<tr>
<td>NSCC</td>
<td>495,026</td>
<td>164,850</td>
<td>0</td>
<td>825,597</td>
<td>(7,750)</td>
<td>1,477,723</td>
</tr>
<tr>
<td>TFCC</td>
<td>420,040</td>
<td>478,414</td>
<td>0</td>
<td>238,009</td>
<td>(6,750)</td>
<td>1,129,713</td>
</tr>
</tbody>
</table>

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E. Revised Shortfall Projection

26. Demand shortfall is calculated as the difference between RISD and the FS.

27. Based on the above, and as summarized in the table below, the Director projects no mid-season demand shortfall to the SWC for 2019.

<table>
<thead>
<tr>
<th></th>
<th>FS (AF)</th>
<th>RISD (AF)</th>
<th>Shortfall (AF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A&amp;B</td>
<td>147,108</td>
<td>52,554</td>
<td>0</td>
</tr>
<tr>
<td>AFRD2</td>
<td>428,587</td>
<td>395,542</td>
<td>0</td>
</tr>
<tr>
<td>BID</td>
<td>366,042</td>
<td>208,653</td>
<td>0</td>
</tr>
<tr>
<td>Milner</td>
<td>102,071</td>
<td>44,497</td>
<td>0</td>
</tr>
<tr>
<td>Minidoka</td>
<td>563,257</td>
<td>320,475</td>
<td>0</td>
</tr>
<tr>
<td>NSCC</td>
<td>1,477,723</td>
<td>887,580</td>
<td>0</td>
</tr>
<tr>
<td>TFCC</td>
<td>1,129,713</td>
<td>973,148</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

F. Time of Need

28. Step 5 of the Methodology Order requires that the Director estimate the Time of Need if there is water owed to SWC members that is in addition to the reasonable carryover shortfall volume. Methodology Order at 37. As stated above, there was no reasonable carryover shortfall in 2018. Execution of Step 6 demonstrates there is no mid-season demand shortfall to the SWC for 2019. With no additional water owed to SWC members, there is no need to establish a Time of Need as described in Step 6.

CONCLUSIONS OF LAW

1. Idaho Code § 42-602 authorizes the Director to supervise water distribution within water districts:

   The director of the department of water resources shall have direction and control of the distribution of water from all natural water sources within a water district to the canals, ditches, pumps and other facilities diverting therefrom. Distribution of water within water districts created pursuant to section 42-604, Idaho Code, shall be accomplished by watermasters as provided in this chapter and supervised by the director. The director of the department of water resources shall distribute water in water districts in accordance with the prior appropriation doctrine. The provisions of chapter 6, title 42, Idaho Code, shall apply only to distribution of water within a water district.

2. Idaho Code § 42-607 provides the watermaster, under the direction of the Director, shall regulate diversions “when in times of scarcity of water it is necessary so to do in order to supply the prior rights of others in such stream or water supply . . . .”
3. Step 5 of the Methodology Order requires that the Director estimate the Time of Need if there is water owed to the SWC members that is in addition to the reasonable carryover shortfall volume. *Methodology Order* at 37. No member of the SWC is owed reasonable carryover in 2018 for use in 2019. *November Carryover Order* at 5. Execution of Step 6 of the Methodology Order demonstrates there is no mid-season demand shortfall to the SWC for 2019. With no additional water owed to SWC members, there is no need to establish a Time of Need as described in Step 6.

4. Because there is no mid-season demand shortfall and because there will be no Time of Need this year, it is unnecessary to execute Step 7 of the Methodology Order. At the end of the irrigation season, the Director will issue an order applying Step 9 of the Methodology Order.

**ORDER**

Based upon and consistent with the foregoing, IT IS HEREBY ORDERED that there is no demand shortfall for the SWC members in 2019.

Dated this 17th day of July 2019.

[Signature]

GARY SPAENKMAN
Director
CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on this 17th day of July 2019, the above and foregoing was served on the following by the method(s) indicated below:

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☐ U.S. Mail, postage prepaid
☐ Hand Delivery
☐ Overnight Mail
☐ Facsimile
☒ Email
EXPLANATORY INFORMATION TO ACCOMPANY A FINAL ORDER
(To be used in connection with actions when a hearing was not held)

(Required by Rule of Procedure 740.02)

The accompanying order is a "Final Order" issued by the department pursuant to section 67-5246, Idaho Code.

PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a final order within fourteen (14) days of the service date of this order as shown on the certificate of service. **Note: The petition must be received by the Department within this fourteen (14) day period.** The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See section 67-5246(4), Idaho Code.

REQUEST FOR HEARING

Unless the right to a hearing before the director or the water resource board is otherwise provided by statute, any person who is aggrieved by the action of the director, and who has not previously been afforded an opportunity for a hearing on the matter shall be entitled to a hearing before the director to contest the action. The person shall file with the director, within fifteen (15) days after receipt of written notice of the action issued by the director, or receipt of actual notice, a written petition stating the grounds for contesting the action by the director and requesting a hearing. See section 42-1701A(3), Idaho Code. **Note: The request must be received by the Department within this fifteen (15) day period.**

APEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, any party aggrieved by a final order or orders previously issued in a matter before the department may appeal the final order and all previously issued orders in the matter to district court by filing a petition in the district court of the county in which:

i. A hearing was held,
ii. The final agency action was taken,
iii. The party seeking review of the order resides, or
iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of: a) the service date of the final order, b) the service date of an order denying petition for reconsideration, or c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration, whichever is later. See section 67-5273, Idaho Code. The filing of an appeal to district court does not in itself stay the effectiveness or enforcement of the order under appeal.

Revised July 1, 2010