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DEPARTMENT OF
WATER RESOURCES

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STATE OF IDAHO

DEPARTMENT OF WATER RESOURCES

IN THE MATTER OF THE DISTRIBUTION OF WATER TO VARIOUS WATER RIGHTS HELD BY AND FOR THE BENEFIT OF A&B IRRIGATION DISTRICT, AMERICAN FALLS RESERVOIR DISTRICT #2, BURLEY IRRIGATION DISTRICT, MILNER IRRIGATION DISTRICT, MINIDOKA IRRIGATION DISTRICT, NORTH SIDE CANAL COMPANY, AND TWIN FALLS CANAL COMPANY	Docket No. CM-DC-2010-001 **BONNEVILLE-JEFFERSON'S POST-HEARING BRIEF AND JOINDER IN SUPPORT OF IGWA'S POST-HEARING BRIEF**

The Bonneville-Jefferson Ground Water District (hereafter "Bonneville-Jefferson"), acting for and on behalf of its respective members, through counsel, submits its *Post-Hearing Brief*, pursuant to the Director's instructions and request at the close of the administrative hearing on June 6-9, 2023. Bonneville-Jefferson also joins in support of *IGWA's Post-Hearing Brief*.

OVERVIEW

This brief addresses a portion of the evidence presented during the June 6-9, 2023, hearing before the Idaho Department of Water Resources (hereafter "Department") on the April 21, 2023,

Fifth Amended Final Order Regarding Methodology for Determining Material Injury to Reasonable In-Season Demand and Reasonable Carryover (hereafter "Fifth Order") (Ex. 300) and the Final Order Regarding April 2023 Forecast Supply (Methodology Steps 1-3) (hereafter "April As Applied Order") (Ex. 301).

During the hearing, the parties presented testimony from various lay and expert witnesses and various exhibits were presented and admitted into the record. At the close of the hearing the Director allowed the parties one week to submit post-trial briefing. He requested that the parties not provide detailed commentary on the nuanced testimony from the hearing. Rather, he identified legal questions for the parties to address.

Given the time frame set by the Director, Bonneville-Jefferson has prepared its brief having not received nor reviewed all the hearing transcripts. This brief is based upon the exhibits admitted at the hearing and counsel's notes on testimony from the hearing.

APPLICABLE LEGAL STANDARDS

The hearing in question is to address the findings of fact and conclusions of law of an agency order. In *Idaho Ground Water Assoc. v. Idaho Dep't of Water Res.*, 160 Idaho 119, 137, 369 P.3d 897, 915 (2016), the Idaho Supreme Court explained:

> Idaho Code section 67–5248 provides that an agency order shall include "a reasoned statement in support of the decision" and "shall be accompanied by a concise and explicit statement of the underlying facts of record supporting the findings." I.C. § 67–5248(a). The order should "identify facts, as well as inferences drawn from the facts upon the application of its expertise and judgment, which underlie its decision. Such an explanation is essential to meaningful judicial review." *Woodfield v. Bd. of Prof'l Discipline of Idaho State Bd. of Med.*, 127 Idaho 738, 747, 905 P.2d 1047, 1056 (Ct.App.1995).

In short, the Director bears the burden of supporting his order, but the answer to the Director's questions about respective burdens of proof is probably best set forth in *Jasso v. Camas Cnty.*, 151 Idaho 790, 796, 264 P.3d 897, 903 (2011):

> If there is to be any meaningful judicial scrutiny of the activities of an administrative agency—not for the purpose of substituting judicial judgment for administrative judgment but for the purpose of requiring the administrative agency to demonstrate that it has applied the criteria prescribed by statute and by its own regulations and has not acted arbitrarily or on an ad hoc basis—we must require that its order clearly and precisely stated what it found to be the facts and fully explain why those facts lead it to the decision it makes. Brevity is not always a virtue.
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> ...
>
> We wish to make it clear that by insisting on adequate findings of fact we are not simply imposing legalistic notions of proper form, or setting an empty exercise for local governments to follow. No particular form is required, and no magic words need be employed. *What is needed for adequate judicial review is a clear statement of what, specifically, the decisionmaking body believes, after hearing and considering all the evidence, to be the relevant and important facts upon which its decision is based. Conclusions are not sufficient*.
>
> *Workman Family P'ship.*, 104 Idaho at 37, 655 P.2d at 931 (emphasis original) (citations and quotations removed).

This case illustrates that the Director's decision must show that he considered the applicable rules and statutes and identify precisely what he found to be facts. In this regard, the conclusions in the Fifth Methodology Order must consider the criteria set forth in the Rules for Conjunctive Management and it must precisely identify the facts upon which each conclusion is based. However, in making these determinations, the Director must also use the "best science available." *Clear Springs Foods, Inc. v. Spackman*, 150 Idaho 790, 813 (2011).

The Proposed Finding of Fact set forth below, as well as the arguments presented in IGWA's Post-Hearing Brief, show that the Fifth Methodology Order did not meet this standard. For Example, no factual basis was identified justifying the sudden move from steady state to

transient modeling, as this was, as Jennifer Sukow stated, a policy decision. The Order did not consider, nor did the Director allow evidence, regarding futile call. Where the parties were barred from obtaining or presenting evidence regarding the Director's factual basis for policy decisions, the move to transient modeling falls short of the standard above.

Furthermore, the Fifth Methodology Order is not supported in fact with regard to certain adjustments not being included in the model. For example, technically defensible data sets exist to make adjustments for supplemental ground water and to calculate and exclude fallowed acres in the Twin Falls Canal Company.

PROPOSED FINDINGS OF FACT

A. Testimony of Bryce Contor

Following are the proposed findings of fact based upon the testimony, expert report, and exhibits provided by Bonneville-Jefferson's retained expert, Bryce Contor, of Rocky Mountain Environmental Associates, Inc:

1. The Fifth Amended Methodology Order does not present a technical rationale supporting implementation of transient modeling because:

    a. IDWR has had access to the current understanding of the general implications of transient vs. steady-state modeling since at least 1999, and access to the specific implications of a curtailment context since 2006;

    b. The 1999 SRPAM model had stress periods even shorter than the current model;

    c. Though its stress periods were longer than the current model, the 2006 ESPAM1.1 model was designed and deployed to represent effects on an irrigation-season time scale;

d. The 2013 ESPAM2.1 model had identical stress periods to the current ESPAM2.2 model.

e. The transient version of the model can be used to represent temporary curtailment of water rights.

f. No new methods or information has been developed since 2006 that would substantially effect the impacts of transient modeling.

2. A technically correct Finding of Fact #83 is:

> Merriam-Webster's Dictionary defines stead-state as "a state or condition of a system or process… that does not change in time. "A steady state ESPAM simulation based on input values of acre feet of curtailment can only indicate total acre feet of accrual to modeled reaches of the Snake River and tributary springs resulting after the effects of curtailment have fully been realized. For example, a steady-state analysis of curtailment of 1,000-acre feet would indicate where the 1,000 acre feet of accrual eventually would be expressed, but would not describe the timing of arrival of accruals.

3. A technically correct Finding of Fact #84 is:

> Steady-state analysis does not calculate the time to reach steady-state conditions nor describe the seasonal timing of the impacts, but only estimates the spatial distribution of accruals. To estimate the timing of accruals, transient modeling must be employed.

4. The Department has not set criterion for accuracy and precision of the ESPAM2.2 results.

a. Unless the criteria for accuracy and precision are very low, ESPAM2.2 is not sufficiently precise for monthly estimation of effects to the Near Blackfoot to Minidoka reach, for decisions that have the gravity of substantial volumes of supply for the SWC.

5. The use of ESPAM modeling in the Fifth Methodology Order is not technically defensible because ratios of relief to cost are not considered in light of modeling precision, and when the underlying policy is not adjusted for spatial and temporal differences in response.

6. The arguments presented against considering supplemental groundwater use within the SWC are not factually correct because it is technically possible and reasonably achievable to assess and address supplemental groundwater use within the SWC:

a. Since the initial development of ESPAM1.0 in the early 2000s, the extent and effect of supplemental groundwater irrigation has been calculated for the parts of the SWC Service Areas that are within the ESPAM model boundary.

b. The data and methods that have been used in the ESPAM model are readily available and applicable to the parts of the SWC Service Areas that are outside the ESPAM model boundary.

c. As a result of measurement orders, the measurement and report of well discharge data, and the availability of these data in IDWR's Water Measurement Information System (WMIS) are much more robust than in the early 2000s when these calculations first were undertaken, and the methods developed.

d. IDWR has known, or could have known, since at least 2015 that these data would be important to a correct calculation of Reasonable In Season Demand. The intervening eight years would have been sufficient time to apply the existing data and methods, or to improve them, for purposes of the methodology.

e. Because of the existence of these methods and data, a defensible adjustment for supplemental groundwater use within the SWC Service Areas is reasonably within reach, on a technical basis.

f. Also, substantially more acre feet of diversion are required to support a surface-water irrigated acre than a groundwater-irrigated acre because the curtailment requirement is multiplied by the following:

   i. An acre of groundwater irrigation requires fewer acre feet of gross diversion than does an acre of surface-water irrigation supplied by a long canal.

   ii. For most groundwater-irrigated lands, more accrual from curtailment arrives at nontarget reaches than arrives at the Near Blackfoot to Minidoka Reach.

   iii. The curtailment requirement again is multiplied by the fact that more accruals from curtailment occur in future years than in the year of need.

   iv. Thus, neglecting a single acre of supplemental irrigation within the SWC Service Area results in needless curtailment of many groundwater-irrigated acres.

   v. Therefore, strictly on a technical basis, the refinement of quantifying the effect of supplemental irrigation within the Surface Water Coalition service area could provide substantial relief to a broad constituency of Idaho water users.

g. Deficiencies that might exist in the groundwater-diversion data from IDWR's Water Measurement Information System will tend to under-estimate rather than

over-estimate pumping, resulting in a conservative over-attribution of calculated surface-water shortfall. This is conservative on behalf of the senior users.

h. The following factors multiply the effect of ignoring supplemental groundwater use within the SWC:

i. Because of inherent characteristics of surface-water delivery systems, supplying one acre with surface water requires substantially more water than supplying an acre with groundwater.

ii. Not all effects of curtailment of groundwater propagate to the Near Blackfoot to Minidoka reach, so more than one acre foot of curtailment is required to produce one acre foot of accrual.

iii. When obligations are calculated on a transient basis, the temporal delay in propagation creates an additional multiplier of effort.

7. The Department's use of transient modeling in the Fifth Amended Methodology Order is not technically defensible where it fails to model and account for future accruals to target, and non-target reaches.

8. Technical methods exist to inform a coherent plan under either a transient or a steady state paradigm. This could be accomplished by aligning the calculation and expectations of relief to the physical time frame of aquifer response by considering future accruals to target and non-target reaches.

9. Transient modeling is more technically defensible if, when accounting for non-target accruals, the accounting decay of accruals, and the spatial assignment, match reality. The transient aquifer response functions with double-entry accounting technologies should be linked

and the hydrologic realities of groundwater/surface water, the legal requirements of prior appropriation water law, and the economic requirements for equitable and efficient allocation of resources must be honored.

10. A reasonable and technically defensible way exists to identify fallowed acres in the methodology order. If the purpose is to establish a Permissible Place of Use or a Service Area, fallowed acres should be included. If the purpose were to describe the total amount of irrigation in a single year, the acres should not be included.

11. Failing to exclude fallowed acres in and adjust for such acres, distorts the results in favor of SWC.

12. IDWR irrigated data land sets contain the information necessary to generate a more technically defensible calculation of the SWC irrigated acres than the shapefiles provided by SWC.

13. Omitting supplemental ground water adjustments in the model creates a "multiplier" effect. The same thing applies to the 5% "no change" standard for accepting the SWC's representation of its acreage. If a surface-water-irrigated acre required nearly six acre feet of diversion and a groundwater irrigated acre required two acre feet, approximately three acres of groundwater reduction would be needlessly indicated for a one-acre over-estimate of surface-water irrigation. Because only about half the accruals from curtailment, on average, arrive at the Near Blackfoot to Minidoka reach, six acres would have to be curtailed to achieve the effect of three acres of reduction. If the IDWR estimate is correct that only 9% to 15% of accruals arrive in the first five months of the irrigation season, then an additional multiplier of ten must be applied, so that an over-estimate of one acre of surface-water irrigation could curtail 60 acres of groundwater beneficial use.

14. The 2023 As-Applied Order employs Steady State analysis to calculate IGWA's proportionate responsibility for mitigation, but these calculations are not defined by the Fifth Amended Methodology Order.

15. The mechanisms that drive fallowed acres or foregone irrigation are persistent year to year. Omitting them from an irrigated-lands map is the best way to ensure that the map represents the typical number of acres irrigated in any one year. This is true even though the particular locations of fallow or foregone irrigation will change from year to year.

16. A single-year curtailment calculated using steady-state modeling cannot produce full relief for the SWC. However, for many of the hindcast years, neither would a single-year curtailment based on transient modeling have been able to produce full relief.

17. IDWR processing of irrigated-lands data includes remote-sensing data from multiple dates in the given year, as well as hand work to refine results. These are the best available science for determination of irrigated area.

18. Use of WMIS pumping data allows direct calculation of the contribution of supplemental groundwater pumping, regardless of the complexity of the distribution system. Failures in WMIS data that might occur would cause an underestimate of pumping volume, which would result in a bias in results that would tend to increase the calculated shortfall.

19. The "best available science" for considering irrigation returns is to use the data that are available, because omission of unmeasured returns is conservative in that it would tend to increase the calculated shortfall. Applying an imperfect data set still is conservative in behalf of producing an over-calculation of shortfall.

20. Omission of known factors, for which data and methodology exist, makes the Fifth Amended Methodology Order technically incomplete and therefore does not represent the best available science.

21. Either transient or steady-state modeling can be part of a technically valid approach that is coherent in administration relative to the temporal implications of the method chosen and the characteristic response time through the aquifer.

22. Although Matt Anders testified that, in considering anticipated reservoir carryover, IDWR consults with Water District 01, such practice is not specified in the Fifth Amended Methodology Order. This practice should be specified in the Order to ensure consistency in the data used by the Department.

23. TFCC's estimation of its irrigated acres is not reliable because a reliable calculation of a 5% or more variation in 196,000 irrigated acres cannot be determined accurately without conducting measurements on the ground, in the field, or with robust remote-sensing analysis with field verification on a statistically valid sample.

24. IDWR did not implement any of the ground water users' suggestions to the technical working group but implemented some of SWC's suggestions.

25. The Department's omission of an adjustment to the model accounting for SWC return flows from field runoff drain systems cuts to the benefit of SWC.

26. The consequences of the degrading R square value in prediction equation(s) are that it indicates reduced ability to be sure that SWC receives adequate supply. Conversely, it could needlessly cause an excessive burden to ground water users.

27. The consequence of neglecting Portneuf, Blackfoot, and Henry's Fork in 2023, where the snowpack above Heise was anomalously low relative to all the other headwaters basins, was an inflated estimate of shortfall. The consequence will be to depress the estimation of shortfall on a year when above-Heise snowpack is anomalously high relative to the others.

28. Technical issues arise from the Department having not established any criterion for minimum conservatism of the RSID calculations, and from not having identified a mechanism to calculate the combined degree of conservatism. Too-little conservatism would harm the SWC and too-large would harm groundwater appropriators. Lack of calculation methods means that the combined effect remains unknown, and lack of a criterion means that even if it were known, it could not be evaluated. Contributors to conservatism include at least the following:

a. Conservatism in selection of baseline diversion volume;

b. Conservatism in selection of temperatures for calculation purposes;

c. Conservatism in selection of precipitation estimates.

29. The River Package does not allow proper representation of the communication between the River and the Aquifer, given that it is a single layered model. While the River Package can represent communication between the river and the top of the aquifer within the river cell, it cannot properly represent the complex transit of water to upper part of the river cell from deep in the aquifer, or from deep in adjacent cells.

B. Additional Facts

Following are other relevant facts supported by the evidence presented at the hearing:

1. Bonneville-Jefferson's retained expert, Rocky Mountain Environmental Associates, Inc., was not invited and did not participate in the technical working group for the Fifth Methodology Order.

2. The Department did not represent to members of the Technical Working Ground for the Fifth Methodology Order that the Department would implement transient modeling in its calculations for the 2023 irrigation season.

3. The parties were only permitted six weeks to conduct review and analysis of the Fifth Methodology Order, acquire evidence, depose witnesses, retain experts, and prepare legal arguments before the Department conducted the June 6, -9, 2023, hearing.

4. Bonneville-Jefferson and its experts did not have sufficient time to conduct full analysis that that would have provided the Department with information which could have improved the accuracy of the Fifth Methodology Order.

CONCLUSION

Based on the foregoing, the Director can and should modify his Order to consider all the factors in the Rules for Conjunctive Management and include the recommended adjustments that will improve the model.

DATED: June 16, 2023

OLSEN TAGGART PLLC

/s/ *Skyler C. Johns*
SKYLER C. JOHNS

CERTIFICATE OF SERVICE

I hereby certify that on this 16th day of June 2023, I served the foregoing document on the persons below via email as indicated:

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