

MEMO

State of Idaho
Department of Water Resources
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Date: 2/9/2022

To: Gary Spackman, Director

From: Matt Anders, Hydrology Section Supervisor

cc: Mat Weaver, Deputy Director
Garrick Baxter, Deputy Attorney General
Tim Luke, Water Compliance Bureau Chief
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Subject: Review of Implementation of Rotation into Storage in 2021 by Water District 34

Introduction

The Director of the Idaho Department of Water Resources (IDWR) issued “*Interlocutory Order Regarding Instructions To Water District 34 Watermaster; Order Vacating Deadline and Hearing Dates; Notice of Status Conference*” (Order) on April 7th, 2017. In that order, the Director notified the parties that a status conference was scheduled for November 14, 2017. Water District 34 (WD34) did not implement rotation during the 2017, 2018, and 2019 irrigation seasons, so the Director postponed the status conference. WD34 implemented rotation during the 2020 irrigation season. The Director held a status conference on January 26, 2021. Based on IDWR’s review of rotation and discussions at the status conference, the Director issued “*Amended Interlocutory Order Regarding Instructions To Water District 34 Watermaster; Notice of Status Conference*” (Order) on April 26th, 2021. WD34 implemented rotation during the 2021 irrigation season. The Director will hold an additional status conference on February 9, 2022. This review was prepared in preparation for that status conference to determine if the requirements of the interlocutory order were met during the 2021 irrigation season

Review

This memo constitutes the requested review and is based on data from the WD34 ditch rider logs, Big Lost River Irrigation District (BLRID) storage balance worksheets, BLRID rotation report, WD34 Watermaster Report, and communication with the WD34 Watermaster. For this memo, IDWR first quotes (in bold) an instruction from the 2021 interlocutory order. Following the quoted instruction, IDWR reviews how the instruction was implemented.

1. **On or before May 1, any water user planning to rotate a natural flow water right into storage in the up-coming irrigation season is required to completely fill out and submit to the watermaster a notice of intent to rotate a natural flow water right into storage. The watermaster shall prepare a standard form for notice of intent to rotate Big Lost River rights into storage ("NOI").**

IDWR Review: Eleven water users submitted NOI forms to utilize rotation during the 2021 irrigation season to the WD34 Watermaster on or before the May 1, 2021 deadline. Each of these water users submitted the NOI form created by the WD34 Watermaster. IDWR received copies of the applications submitted by these water users.

Water User	Canal	Water Rights	Implemented Rotation
B & L Farms	Darlington 3-In-1 Burnett Lower Burnett Beck McGowen Pehrson Ditch	15	Yes
Dean Lombardi	Darlington	4	Yes
Marvin Foster	Burnett	3	Yes
Rick Mauthe (McCaslin)	Sharp	4	Yes
Moj Broadie	Burnett	24	No
Nelson Mackay Ranch	Swauger	1	Yes
Randy Pehrson	Darlington Burnett Swauger	10	No
Seefried Ranch LLC	Darlington	1	No
Shane Rosenkrance	Darlington	6	Yes
Stephen B King	Island	3	No
Stephen K King	Island	8	No

2. **The NOI must contain the following information:**

- **A list of all natural flow water rights the water user plans to rotate during the irrigation season;**

IDWR Review: In the application materials received from WD34, all eleven water users submitted a list of the natural flow water right(s) they planned to rotate into storage during the 2021 irrigation season.

- **Identification of all surface and ground water rights, excluding BLRID storage rights, with places of use overlapping the place of use described by the water right(s) for which rotation into storage notice is being submitted;**

IDWR Review: Nine of eleven water users identified surface and/or groundwater rights overlapping the place of use for the water right(s) being rotated. Two water users left the overlapping right section blank. The watermaster stated that he reviewed the water rights for these two applications and confirmed before approving the applications that the water users do not have overlapping groundwater rights.

- **A map of the irrigated lands to which the natural flow water rights are appurtenant (maps should be on 8.5" x 11" attachments);**

IDWR Review: All eleven water users submitted 8.5" by 11" maps of the appurtenant irrigated lands as attachments.

- **Personal attestation by the water user in writing of his/her intent to beneficially use the water rotated into storage during the year in which the water is rotated and acknowledgement that rotated water will only be used on the place of use described by the water right.**

IDWR Review: All eleven water users submitted a signed attestation to beneficially use rotated water during the 2021 irrigation season and only on the place of use described in the water right.

The following table summarizes the NOI forms submitted by water users.

Water User	Natural Flow Water Rights Being Rotated	Overlapping Surface & Groundwater Rights	Map	Personal Attestation
B & L Farms	Y	Y	Y	Y
Dean Lombardi	Y	Y	Y	Y
Marvin Foster	Y	N	Y	Y
Rick Mauthe (McCaslin)	Y	Y	Y	Y
Moj Broadie	Y	Y	Y	Y
Nelson Mackay Ranch	Y	Y	Y	Y
Randy Pehrson	Y	Y	Y	Y
Seefried Ranch LLC	Y	N	Y	Y
Shane Rosenkrance	Y	Y	Y	Y
Stephen B King	Y	Y	Y	Y
Stephen K King	Y	Y	Y	Y

3. Prior to approving an NOI form, the watermaster shall confirm on an individual water right basis the following:

- **Whether the diversion rate of the water rights being rotated into storage conforms to all total diversion rate limitations including diversion rate limitations on overlapping ground water rights;**

- **Whether the water right(s) being rotated overlap with supplemental ground water rights with provisions requiring the user to make full beneficial use of all surface water available to the user for irrigation prior to utilizing supplemental ground water. Supplemental ground water rights with these provisions will be limited according to the supplemental ground water right conditions when overlapping surface water rights are being rotated into storage.**

IDWR Review: The watermaster stated he considered the listed requirements when reviewing rotation applications and only approved applications that met them. He calculated the combined diversion rate for surface and groundwater rights for each applicant. IDWR received copies of these analyses. For example, the analysis for Dean Lombardi is in "RotationRightsDL.xlsx."

4. **A water user must notify the ditch rider each time the user wants to rotate natural flow into storage during the irrigation season. Requests by water users to rotate natural flow into storage must be made 48 hours in advance of the calendar date on which rotation into storage is requested to occur. The ditch rider must submit written documentation of water user requests to rotate natural flow into storage to the BLRID, and BLRID must submit written documentation of such requests to the watermaster, the same day requests are made. The watermaster shall identify and record the water rights and diversion rate to be rotated. The calendar dates on which rotation of natural flow into storage is requested to occur cannot predate the date of the water user's request.**

IDWR Review: The watermaster updated the rotation procedure for the 2021 irrigation season. For the 2020 irrigation season, water users notified the ditch rider of their intent to rotate into storage in advance of when the water user wanted to rotate natural flow into storage using a form created by the watermaster. For the 2021 irrigation season, the watermaster eliminated the separate rotation request forms and had water users communicate directly with their ditch rider to request rotation into storage. This is the same procedure water users use to request natural flow and storage deliveries. The written request requirement was met by the ditch rider recording on the ditch rider log the date the water user requested to start and end rotation into storage.

The Big Lost River data routing procedure for the 2021 irrigation season started with water users verbally communicating with their ditch rider to request delivery of natural flow, delivery of storage, rotation of natural flow water rights into Mackay Reservoir, and/or delivery of rotation storage. The ditch riders recorded these requests each day of the irrigation season on a ditch rider log. The ditch rider sent a ditch rider log each day to BLRID, which forwarded a copy to the watermaster. BLRID entered the daily delivery data from the ditch rider logs into its storage balance worksheets two or three times per week.

The following table summarizes when rotation occurred according to the BLRID storage balance worksheets and if the dates rotation started and ended were recorded on the ditch rider log. In three instances, the start and end of rotation was not recorded on the ditch rider logs. The watermaster stated he is working to eliminate these minor record-keeping deficiencies.

Water User	Canal	Dates Rotation Occurred According to Storage Balance Worksheets	Start/End Dates Recorded on Ditch Rider Log
B & L Farms	Burnett	Did not rotate.	---
	Beck	5/30-6/6	No
	Pehrson Ditch	6/9-6/20	No
Did not rotate.		---	
Dean Lombardi	Darlington	5/1-5/6	Yes
		5/24-6/3	Yes
Marvin Foster	Burnett	5/3-5/25	Yes
		6/2-7/3	Yes
Rick Mauthe (McCaslin)	Sharp	5/1-6/4	Yes
Moj Broadie	Burnett	Did not rotate.	---
Nelson Mackay Ranch	Swauger	5/1-5/6	Yes
Randy Pehrson	Darlington	Did not rotate.	---
	Burnett	Did not rotate.	---
	Swauger	Did not rotate.	---
Seefried Ranch LLC	Darlington	Did not rotate.	---
Shane Rosenkrance	Darlington	5/1-5/14	Yes
		5/24-5/30	No
Stephen B King	Island	Did not rotate.	---
Stephen K King	Island	Did not rotate.	---

5. Prior to approving rotation into storage requests during the irrigation season, the watermaster shall confirm on an individual water right basis the following:

- **Whether the water user can beneficially use the rotated water on the land identified on the standard NOI form by the end of the current irrigation season;**
- **Whether there is a "reasonable need for irrigation water" on the land identified;**
- **Whether the water user has operable diversion, delivery, and application facilities;**
- **Whether the water is deliverable to the water right place of use and the irrigated lands identified;**
- **Whether the Big Lost River is disconnected as described by the General Provisions, or if connected that the priority date on the river is October 1, 1936, or junior;**
- **That the rotation conforms to all conditions of the General Provisions and the WD34 Rules.**

IDWR Review: The watermaster stated he considered the listed requirements when reviewing rotation into storage requests during the irrigation season and only approved requests that met them.

6. **After September 1 of each year, the watermaster may only approve rotation into storage requests when an individual water user can demonstrate: a) that the water user's water supply (natural flow plus remaining BLRID storage plus remaining water already rotated into storage) is insufficient for the remainder of the irrigation season, and b) all water already rotated into storage and any additional rotation storage can be beneficially used by the end of the irrigation season. The watermaster may request additional information and/or written justification from the water user to complete this analysis. Water users dissatisfied with denial of rotation into storage requests may petition the Director for reconsideration of the watermaster's denial.**

IDWR Review: No water users requested rotation after September 1, 2021.

7. **If the watermaster determines that rotation can be approved, the watermaster will document the analysis supporting approval. If the watermaster determines rotation cannot be approved, the watermaster will notify the water user and BLRID in writing and explain the basis for the denial. Water users dissatisfied with denial of rotation into storage requests may petition the Director for reconsideration of the watermaster's denial.**

IDWR Review: The watermaster did not document his analysis of whether the considerations in instruction #5 were met. He is concerned that documentation for every rotation into storage request during the season is too burdensome.

The watermaster did not deny any rotation applications for the 2021 irrigation season. The watermaster stated that if a request to rotate into storage had been denied he would have notified a water user in writing and documented the reason(s) for the denial.

8. **During the irrigation season, water users with rotation storage balances that want rotation storage delivered must notify the ditch rider when the user wants rotation storage delivered. The ditch rider must receive requests for delivery of rotation storage 48 hours in advance of the calendar date on which delivery of rotation storage is requested to commence. The ditch rider must record each request for rotation storage delivery into a ditch rider log which must be submitted to the BLRID and watermaster daily. BLRID must submit a written report daily to the watermaster documenting delivery requests. The watermaster will review delivery requests to ensure that rotation storage will be beneficially used at the same place of use described by the water right for which natural flow was rotated into storage.**

IDWR Review: The Big Lost River data routing procedure for the 2021 irrigation season started with water users verbally communicating with their ditch rider to request delivery of natural flow, delivery of storage, rotation of natural flow water rights into Mackay Reservoir, and/or delivery of rotation storage. The ditch riders recorded these requests

each day of the irrigation season on a ditch rider log. The ditch rider sent a ditch rider log each day to BLRID, which forwarded a copy to the watermaster. BLRID entered the daily delivery data from the ditch rider logs into its storage balance worksheets two or three times per week.

The requirement to record each request for delivery of rotation storage was not clearly met during the 2021 irrigation season. The watermaster stated that delivery of rotation storage recorded on a ditch rider log is the documentation that a water user requested delivery of rotation storage. Additional documentation is needed on the ditch rider logs to record each request by a water user for delivery of rotation storage. The process of recording the dates of requests for rotation into storage on the ditch rider logs that was used in 2021 should also be utilized to document requests for delivery of rotation storage.

The Order states “BLRID must submit a written report daily to the watermaster documenting delivery requests.” In practice, the BLRID did not submit a separate daily report to the watermaster. Instead, the watermaster relied on the ditch rider logs that he received daily as the written report documenting delivery requests.

The watermaster stated he reviewed requests for delivery of rotation storage to ensure that rotation storage was beneficially used at the same place of use described in the water right that was rotated into storage. This review is straightforward for most users because they only have one place of use. However, this analysis is complex for water users with multiple places of use and diversions from multiple canals. Water users with multiple places of use and diversions from multiple canals should be required in future years to submit any additional information the watermaster deems necessary to complete his analysis.

The ditch rider logs and the BLRID storage balance worksheets do not always match. On some days, a delivery of rotation storage is recorded on both the ditch rider log and the BLRID storage balance worksheet. On other days, a delivery of rotation storage is only recorded on the BLRID storage balance worksheet. The watermaster provided feedback that any inconsistency between ditch rider logs and BLRID storage balance worksheets resulted from BLRID’s policy to not change the ditch rider logs after they have been submitted to BLRID. Any necessary changes BLRID staff identifies during their quality control review are made to the BLRID storage balance worksheets.

- 9. For delivery of rotation storage, the watermaster will consult with the BLRID and determine the total amount of rotation storage to be released from the reservoir, the amount of rotation water to be released for each user and for each point of diversion, and the dates when rotation storage will be delivered. The watermaster shall assess losses to the delivery of rotation storage consistent with WD34 Rule 40.03.**

IDWR Review: Consultation between BLRID and the watermaster for rotation deliveries followed the same process used for determining releases from Mackay Reservoir for natural flow and storage deliveries.

The BLRID storage balance worksheets confirm BLRID assessed losses to water users when rotation storage was delivered. The calculation consisted of the rotation storage delivery at the head of the canal multiplied by a delivery factor. For example, on the “Rosenkrance” tab in “Darlington_Storage_2021_Balances.xlsx” the “(Used) Rotation at Head” (column S) is multiplied by the “Reach Delivery Factor” (column T) with the result being the “Total” (column U).

10. In the event that a futile call determination on the Big Lost River below the Beck Canal diversion is imminent or likely, the watermaster shall contact water users with diversions below the Beck Canal diversion who have rotation storage balances and request whether the users wish to release rotation storage.

IDWR Review: No water user rotated natural flow into storage below the Beck Canal during the 2021 irrigation season. This requirement did not apply.

11. The watermaster will retain the following information in the Water District archives and make it available for public review:

- **All NOI forms submitted by water users;**

IDWR Review: All eleven of the NOI forms for the 2021 irrigation season are archived at Water District 34 and available to the public. IDWR received copies of the eleven NOI applications approved by the watermaster to rotate into storage during the 2021 irrigation season.

- **All written correspondence submitted to the watermaster by BLRID documenting in-season requests by water users to rotate natural flow into storage or have rotation storage delivered;**

IDWR Review: The ditch rider logs serve as this documentation. All of the ditch rider logs for the 2021 irrigation season are archived at Water District 34 and available to the public. IDWR has obtained copies of all of the ditch rider logs.

- **All written watermaster correspondence denying requests for rotation for credit and/or denying requests for delivery of rotation storage; and**

IDWR Review: The watermaster did not deny any applications for the 2021 irrigation season.

- **The annual rotation for credit summary report submitted by BLRID.**

IDWR Review: BLRID wrote a report titled *2021 BLRID Report for Rotation Credit* (“BLRID Report”). This report is archived at Water District 34 and available to the public. IDWR received a copy of the BLRID Report on December 15, 2021. The

report contains the following for each user approved to rotate into storage during the 2021 irrigation season:

- The amount of undelivered rotation at the end of the irrigation season.
- The amount of undelivered BLRID storage at the end of the irrigation season.
- Copies of the BLRID storage balance worksheets, which contain the daily rotation storage balances, daily BLRID storage account balances, and water users water rights

12. A summary of rotation for credit for the irrigation season will be included in the watermaster's annual report. The intent of the summary is to provide transparency so water users in WD34 understand how rotation for credit was implemented during the irrigation season. The watermaster has discretion concerning the content and format of the summary report. The report may vary from year to year based on the circumstances of the irrigation season, but at a minimum it should include the following information:

- **Identification of each user that rotated natural flow into storage, by canal or point of diversion;**
- **Volume of water under each natural flow water right rotated for credit and rotation storage released associated with each natural flow water right from the reservoir for each user at each point of diversion;**
- **Volume of any unused rotation storage that remained in Mackay Reservoir at the end of the irrigation season for each user for each point of diversion;**
- **Each user who was denied rotation for credit and a discussion of reasons for denying rotation for credit;**
- **A discussion of positive and negative input received from water users regarding how rotation for credit is being implemented; and**
- **Recommendations by the watermaster and/or water district advisory committee for improving implementation of rotation for credit.**

IDWR Review: The watermaster submitted the rotation credit portion of his 2021 WD34 Watermaster report to IDWR on December 15, 2021. The report contains the following for each user approved to rotate during the 2021 irrigation season:

- The canal the water user used for rotation.
- The amount of water rotated.
- The amount of rotation storage delivered to the water user

- The amount of undelivered rotation storage at the end of the irrigation season.

The following instructions shall be implemented by the BLRID in the administration and accounting of rotation for credit:

1. The BLRID must adopt and implement accounting procedures to track rotation for credit and the subsequent delivery of rotated storage that produce data that can be shared with and used by WD34 for administrative and accounting processes. Accounting procedures implemented by the BLRID must:

a. Identify individual water right rotation storage balances on a daily time step and publish such information on a weekly basis to its webpage;

IDWR Review: BLRID used its 2021 storage balance worksheets to document for each water user on a daily time step the amount of natural flow rotated into storage and the amount of rotation storage delivered. Each week, BLRID published on its website a summary for each canal showing each user's:

- Total remaining BLRID storage.
- Total deliveries to the field headgate.
- Total deliveries to the canal headgate
- Total storage deliveries to the canal headgate.
- Total natural flow deliveries to the canal headgate.
- Total rotation into storage remaining to be delivered.

b. Apply losses to the storage and delivery of rotation storage as determined by the watermaster consistent with WD34 Rule 40.03;

IDWR Review: The BLRID storage balance worksheets confirm BLRID assessed losses to water users when rotation storage was delivered. The calculation consisted of the rotation storage delivery at the head of the canal multiplied by a delivery factor. For example, on the "Rosenkrance" tab in "Darlington_Storage_2021_Balances.xlsx" the "(Used) Rotation at Head" (column S) is multiplied by the "Reach Delivery Factor" (column T) with the result being the "Total" (column U).

c. Prohibit negative rotation storage balances;

IDWR Review: According to the BLRID and the Watermaster reports, no water user ended the irrigation season with a negative rotation storage balance. This is confirmed by the final storage balance worksheets IDWR received after the irrigation season from BLRID.

d. Prohibit cancellation of negative storage water account balances with rotation storage balances;

IDWR Review: The BLRID storage balance worksheets confirm that BLRID did not cancel negative storage water account balances with rotation storage balances.

- e. Prohibit the use of rotation storage on lands separate from the place of use under the rights rotated into storage (rotation storage must be used on the same land as the rights rotated to storage);**

IDWR Review: The BLRID General Manager stated he reviewed each delivery request to ensure that rotation storage was beneficially used at the same place of use described in the water right that was rotated into storage.

- f. Ensure that if the Mackay Reservoir fills after water has been rotated into storage, all water in the reservoir at the time it fills becomes storage water of the BLRID; and**

IDWR Review: This criteria was not triggered in 2021 because Mackay Reservoir did not reach a four (4) day average elevation of 6,066.12 feet during the period from April 1, 2021 until August 1, 2021. The maximum four (4) day average elevation during this period was 6,057.22 feet on April 28, 2021.

- g. Ensure any water stored under rotation for credit that is not used in the same irrigation season in which it is stored shall become storage water of the BLRID at the end of the irrigation season.**

IDWR Review: The BLRID report indicates 1 miners inch (0.04 AF) of undelivered rotation storage remained at the end of the 2021 irrigation season. BLRID has no procedure for allowing individual water users to carryover storage allocations into the next irrigation season so IDWR assumes this 0.04 AF has become BLRID storage.

- h. Each year, after the end of the irrigation season, but no later than December 15, the BLRID will prepare and submit an annual report to the watermaster and the Director summarizing rotations for that year. The written summary must include daily rotation storage balances and storage water right balances for all water rights for which rotation for credit occurred. The summary must also include year-end rotation storage balances and storage water right balances for all water rights for which rotation occurred.**

IDWR Review: IDWR received the BLRID Report on December 15, 2021. This report contains the following for each user approved to rotate natural flow into storage during the 2021 irrigation season:

- The amount of undelivered rotation storage at the end of the irrigation season.
- The amount of undelivered BLRID storage at the end of the irrigation season.

- Copies of the BLRID storage balance worksheets, which contain the daily rotation storage balances, daily BLRID storage account balances, and water users water rights

Administration of Rotation Deliveries in 2021

The WD34 Watermaster delivered rotation storage when requested by the water user. Delivery of rotation storage occurred under these circumstances:

- Water user received deliveries of both rotation storage and natural flow at the same time.
- Water user received delivery of rotation storage before the water user's available BLRID storage.
- Water user received delivery of rotation storage and did not request delivery of available in priority natural flow.
 - Turning off a natural flow water right to deliver storage is an uncommon practice in Idaho water administration. It appears the intent of delivering rotation storage before natural flow is to ensure water users have no undelivered rotation storage at the end of the irrigation season. It masks the fact that at least a portion of the water user's water demand late in the irrigation season could have been satisfied by the water user's natural flow water rights; the rotation storage was not needed at that time.

Use of Overlapping Groundwater Rights While Rotating Natural Flow Rights

The watermaster reviewed all NOI applications and determined the combined use limits for each water user. When a water user wanted to rotate into storage, the watermaster added up the water users' natural flow diversion, groundwater diversion, and rotation into storage. He did not allow the total of these three things to exceed the combined use limits of the water rights. As a result, there were instances where water users were allowed to rotate into storage while they were diverting groundwater during the 2021 irrigation season. The watermaster stated in the past that there were times when the combined total of natural flow diversion, groundwater diversion, and rotation into storage exceeded a water user's combined use limits, but he is not currently allowing that practice.

The General Provisions do not prohibit this practice and the groundwater rights normally do not include conditions requiring surface water use prior to groundwater use. However, water users had not developed groundwater rights when the practice of rotation was conceived. Water users developed groundwater sources starting in the 1950s to address late season water shortages, the same problem rotation was implemented to remedy. Use of overlapping groundwater rights should be prohibited when a water user is rotating natural flow water rights into Mackay Reservoir