



United States Department of the Interior



BUREAU OF RECLAMATION
Columbia-Cascades Area Office
1917 Marsh Road
Yakima, WA 98901-2058

IN REPLY REFER TO:

CCA-1000
2.2.4.23

VIA ELECTRONIC, FEDEX, AND/OR US MAIL

To: Prineville Reservoir Storage Contractors

Subject: Notification of Shortage of Storage Allocations for 2022, Prineville Reservoir, Crooked River Federal Reclamation Project, Oregon

Dear Ladies and Gentleman:

I write to you in the midst of historic drought conditions in central Oregon. Prineville Reservoir has just experienced the lowest inflow on record during the October through March period. Due to severe drought conditions, Prineville Reservoir is expected to fill to only about 27% of its capacity, or approximately 40,850 acre-feet this year. This is well below Prineville Reservoir's full capacity of 148,633 acre-feet. The reservoir's contracted "first-fill" storage space (86,113 acre-feet) is currently less than half full, and the uncontracted space (62,520 acre-feet) is empty. Due to the shortage of storage water, this letter is being sent to inform project contractors about their storage allocations—*i.e.*, the amount of storage water available for use—and new procedures that will be implemented this season to safeguard, track, and ensure delivery of individual storage water entitlements. This letter also provides contact information of representatives from the Oregon Water Resources Department (OWRD) and the operator of the dam, Ochoco Irrigation District (OID). Reclamation has been in close contact with these representatives, who are aware of the limited storage water supplies and will be able to assist you within their respective areas of responsibility.

Preliminary Storage Allocations for 2022

Final storage allocations will be determined by Reclamation in late April or early May following the date of allocation¹ and after final carryover storage determinations are made, as discussed further below. In the interim, Reclamation is providing a Preliminary Storage Allocation Table (Attachment 1) to assist project contractors in planning for this year's shortages in their storage supplies.

Your preliminary 2022 storage allocation can be found in the blue-highlighted Column K on Attachment 1. Your allocation is based on an estimate of the stored water you carried over from last year, your storage use after October 1 last year, and your proportionate share of new reservoir fill. Because it is possible that Prineville Reservoir could be empty this summer, it is important that your storage allocation represents "wet" storage – meaning we must ensure that

¹ "Date of allocation" refers to the date on which the reservoir reaches its maximum storage content.

every acre-foot of water you are entitled to on paper (*i.e.*, Attachment 1) will be in the reservoir and available to you for delivery when called for during the irrigation season. This requires adjusting storage allocations to account for reservoir losses (e.g., evaporation, seepage, etc.), sedimentation, as well as maintaining 10 cfs releases past the dam after irrigation deliveries end and before winter instream releases begin². We realize in the past these reductions have not been applied since the reservoir was never in jeopardy of being completely empty.

Your carryover storage refers to the amount of your 2021 storage allocation that you did not use and remained in the reservoir as of October 1. However, based on information currently available to Reclamation, there is no way to reliably and accurately determine how much storage each individual contractor carried over from last year. This lack of information stems from the relatively unique historical circumstances of project contractors having enjoyed full water supplies in the past and the corresponding perceived lack of need to track storage carried over in contractor accounts. Because of the inability to reliably and accurately determine individual contractor carryover amounts from last year, each contractor will be allocated a proportionate amount of the total stored water carried over from last year,³ as shown in the yellow-highlighted Column D on Attachment 1.

If you do not agree with the estimated carryover amount, the quantity of carryover storage you have been allocated in Attachment 1 can be modified, but only if Reclamation is provided with evidence clearly showing that the total volume of water you diverted last year was less than your total storage allocation from last year, which was 100% for all contracted storage accounts. For example, if your 2021 storage allocation was 500 acre-feet and you have measurement records clearly demonstrating that you diverted only 300 acre-feet in 2021, then Reclamation would allocate 200 acre-feet to your 2021 carryover, which may be greater or less than your estimated carryover amount in Attachment 1.

If you believe you have the foregoing type of evidence to support a carryover quantity different from what is in Attachment 1, you will need to contact the Reclamation representative (identified below) not later than April 20, 2022. After this date, Reclamation will expeditiously work to make a final determination of storage allocations and send notices to project contractors of their final storage allocations for this year.

New Procedures for Requesting, Tracking, and Delivering Storage from Prineville Reservoir

Reclamation recognizes that due to sufficient water supplies in the past, there has been no perceived need to account for the release of individual storage water entitlements from Prineville Reservoir. However, due to the shortage of storage supplies this year, it is imperative that procedures be implemented to provide a transparent and accurate way to track and deliver individual contractor storage water entitlements. These procedures, which are detailed in Attachment 2, were prepared in close collaboration with OID, who operates the dam as

² A minimum release of 10 cfs must be maintained from the reservoir for the benefit of downstream fish as required by Section 4 of the Crooked River Project authorization, Act of August 6, 1956 (70 Stat. 1058; 73 Stat. 554; 78 Stat. 954), as amended by the Crooked River Collaborative Water Security and Jobs Act of 2014 (Pub. Law 113-244, 128 stat. 2864, Dec. 18, 2014).

³ This does not include the City of Prineville and McKay Creek Land storage accounts because they were full as of October 1. This also does not include the North Unit Irrigation District (NUID) because its storage account had no contractual right to carryover last year.

Reclamation's agent.

You will need to follow the procedures in Attachment 2 to request delivery of your storage. Storage usage will be tracked throughout the season and communicated regularly to project contractors so they can properly manage their storage supplies. To allow for flexibility due to changing hydrologic conditions or other circumstances, the procedures may be changed from time to time during the irrigation season. Any changes, including updated weekly storage reports, will be communicated to project contractors as quickly as possible in accordance with Attachment 2.

Protecting Delivery of Your Storage from the Outlet Works of the Dam to your Headgate

It is important to note that in accordance with your storage contract, Reclamation and OID are responsible for delivering your storage water to the outlet works of the dam. Neither Reclamation nor OID have any jurisdiction over, or control of, your storage water after it leaves the dam's outlet works. The responsibility for administering water rights, including both natural (live) flows and storage, below the dam is vested solely in OWRD pursuant to state law. During the irrigation season, Reclamation and OID will communicate regularly with the OWRD watermaster regarding (1) the quantity of storage water being delivered at the outlet works of the dam, and (2) the intended recipient(s) of that storage water. However, you are strongly encouraged to contact the watermaster to determine what action(s) need to be taken to ensure your storage water is protected after it is released from dam until it reaches your headgate.

Contact Information

| Bureau of Reclamation | Ochoco Irrigation District (OID) | Oregon Water Resources Department (OWRD) |
|--|---|--|
| Gregg Garnett Bend Field Office Manager 1375 S.E. Wilson Ave., Ste. 100 Bend, Oregon 97702-1435 (541) 389-6541 x. 226 (office) (541) 408-8343 (cell) ggarnett@usbr.gov | Bruce Scanlon District Manager 1001 N.W. Deer St. Prineville, Oregon 97754 (541) 447-6449 ochocoirrigation@gmail.com | Kyle Gorman S.C. Regional Manager 231 SW Scalehouse Loop, Ste. 103 Bend, Oregon 97702 (541) 306-6885 kyle.g.gorman@water.oregon.gov Bill Nashem Watermaster 231 SW Scalehouse Loop, Ste. 103 Bend, Oregon 97702 (541) 639-4109 william.d.nashem@water.oregon.gov |

Reclamation is sensitive to the extraordinary hardships that water users in the basin will endure due to the ongoing drought in the basin. Reclamation is committed to working closely with you and the other project contractors, in close collaboration with OID and OWRD, to manage this season's available water supply. If you have any questions, please contact Mr. Gregg Garnett, whose contact information is provided above.

Sincerely,

CAROLYN CHAD

Digitally signed by CAROLYN
CHAD
Date: 2022.04.08 16:32:14
-07'00'

Talmadge Oxford
Columbia Cascades Area Manager

Acting For

Enclosures

cc: Kyle Gorman, Oregon Water Resources Department
Bill Nashem, Crooked River Watermaster

Identical Letters Sent To:

NOTE: Names and Addresses Redacted from Original to protect privacy

Link to Dry Year Plan Distribution List provided electronically.

Attachment 1: Preliminary Storage Allocation Table

April 8, 2022

| Prineville Reservoir Storage Contracts | | | PRELIMINARY Water Year 2022 Storage Allocations | | | | | | | | |
|--|-----------------------------|-----------------|---|--|----------------------|--|---|--|--|--|--|
| A | B | C | D | E | F | G | H | I | J | K | L |
| Contractor | Contract Amount (acre-feet) | % of Contracted | October 1, 2021 Carryover Storage (acre-feet) | Storage Use prior to the Day of Allocation (acre-feet) | New Fill (acre-feet) | Reserved for Projected 10 cfs Releases from Storage 7/16-10/26 (acre-feet) | WY2022 Allocation Before Loss (acre-feet) | Estimated Reservoir Losses (acre-feet) | Estimated Sedimentation Loss (acre-feet) | WY2022 Storage Allocation After Loss (acre-feet) | WY2022 Storage Allocation After Loss (% of Contract) |
| Ochoco Irrigation District | 57,899 | 67.24% | 13,475 | 4,218 | 19,619 | 1,294 | 27,582 | 2,194 | 994 | 24,394 | 42% |
| Peoples Irrigation Co. | 3,497 | 4.06% | 814 | 0 | 1,185 | 78 | 1,921 | 153 | 60 | 1,708 | 49% |
| Ulupalakua Ranch, Inc. | 2,176 | 2.53% | 506 | 0 | 737 | 49 | 1,195 | 95 | 37 | 1,063 | 49% |
| Quail Valley Ranch, LLC | 1,243 | 1.44% | 289 | 0 | 421 | 28 | 683 | 54 | 21 | 607 | 49% |
| Quail Valley Ranch II, LLC | 1,205 | 1.40% | 280 | 0 | 408 | 27 | 662 | 53 | 21 | 588 | 49% |
| City of Prineville | 724 | 0.84% | 168 | 0 | 245 | 16 | 398 | 32 | 12 | 354 | 49% |
| William Sigman | 350 | 0.41% | 81 | 0 | 119 | 8 | 192 | 15 | 6 | 171 | 49% |
| Low Line Ditch Company | 330 | 0.38% | 77 | 0 | 112 | 7 | 181 | 14 | 6 | 161 | 49% |
| Jack & Kathryn Riley | 286 | 0.33% | 67 | 0 | 97 | 6 | 157 | 12 | 5 | 140 | 49% |
| Larry & Barbara Goss | 135 | 0.16% | 31 | 0 | 46 | 3 | 74 | 6 | 2 | 66 | 49% |
| Butler Ranch, Inc. | 104 | 0.12% | 24 | 0 | 35 | 2 | 57 | 5 | 2 | 51 | 49% |
| Billie Estridge | 97 | 0.11% | 23 | 0 | 33 | 2 | 53 | 4 | 2 | 47 | 49% |
| South Valley Bank & Trust | 84 | 0.10% | 20 | 0 | 28 | 2 | 46 | 4 | 1 | 41 | 49% |
| Clara Varcoe | 50 | 0.06% | 12 | 0 | 17 | 1 | 27 | 2 | 1 | 24 | 49% |
| Crooked River Water LLC | 39 | 0.05% | 9 | 0 | 13 | 1 | 21 | 2 | 1 | 19 | 49% |
| Crooked River Water LLC | 19 | 0.02% | 4 | 0 | 6 | 0 | 10 | 1 | 0 | 9 | 49% |
| Nick & Mary Maithonis | 19 | 0.02% | 4 | 0 | 6 | 0 | 10 | 1 | 0 | 9 | 49% |
| Robert Dellenback | 16 | 0.02% | 4 | 0 | 5 | 0 | 9 | 1 | 0 | 8 | 49% |
| McKay Creek Land (OID) | 2,740 | 3.18% | 2,740 | 2,740 | 928 | 61 | 867 | 69 | 47 | 751 | 27% |
| NUID Temp Contract | 10,000 | 11.61% | 0 | 0 | 3,388 | 223 | 3,165 | 252 | 172 | 2,742 | 27% |
| City of Prineville 5100 | 5,100 | 5.92% | 5,100 | 5,100 | 1,728 | 114 | 1,614 | 128 | 88 | 1,398 | 27% |
| | | | | | | | | | | | |
| Contracted Storage Totals | 86,113 | 100% | 23,729 | 12,058 | 29,179 | 1,924 | 38,926 | 3,096 | 1,479 | 34,351 | 40% |
| | | | | | | | | | | | |
| Uncontracted Storage | 62,520 | | 6,361 | 6,361 | 0 | 0 | 0 | 0 | 0 | 0 | 0% |
| | | | | | | | | | | | |
| Total Active Capacity | 148,633 | | 30,090 | 18,419 | 29,179 | 1,924 | 38,926 | 3,096 | 1,479 | 34,351 | 23% |

See Attachment 1A for Storage Allocation Table Descriptions

Attachment 1A: Preliminary Storage Allocation Table Descriptions

April 8, 2022

| Column | Column Title | Column Description |
|--------|--|--|
| A | Contractor | The name of each contractor |
| B | Contract Amount (acre-feet) | The amount of the storage contract space for each contractor |
| C | % of Contracted | The % of the total contracted space for each contractor |
| D | October 1, 2021 Carryover Storage (acre-feet) | Carryover storage into the 2022 season consists of the physical reservoir contents at the end of the day September 30, 2021 (30,090 acre-feet). McKay Creek Land OID (2,740 acre-feet), City of Prineville (5,100 acre-feet), and Uncontracted Storage (6,361 acre-feet) carried over 100% of their allocation into the 2022 season (totalling 14,201 acre-feet). NUID Temp Contract, no carryover entitlement. The remaining 15,889 acre-feet of carryover storage was distributed proportionally based on Contract Amount to the remaining contractors. |
| E | Storage Use prior to the Day of Allocation (acre-feet) | Storage use prior to the day of allocation totalled 18,419 acre-feet for winter flows 10/1/2021 through 4/10/2022: => 5,100 acre-feet of City of Prineville => 6,361 acre-feet of uncontracted storage => 2,740 acre-feet of McKay Creek Land (OID) storage and 4,218 acre-feet of Ochoco Irrigation District storage. OID storage use is adjusted for natural flow releases for diversions downstream of the dam that have occurred starting 2/23 per the watermaster. |
| F | New Fill (acre-feet) | New fill during the winter and spring of 2022 totalled 29,179 acre-feet assuming 40,850 acre-feet maximum contents reached in April 2022. The new fill was distributed proportionally based on Contract Amount to all contracted accounts. |
| G | Reserved for Projected 10 cfs Releases from Storage 7/16-10/26 (acre-feet) | 1,924 acre-feet of New Fill has been reserved proportionally to provide 10 cfs of releases from Prineville Dam after irrigation deliveries cease (indications are deliveries will cease July 31, but due to uncertainty, assume July 15) through the time period when natural flow into the reservoir becomes greater than 10 cfs or releases past the dam of more than 10 cfs are being made for other purposes (including the Deschutes Basin Habitat Conservation Plan). Inflow projections are based on minimum flow data from 1993-2021 period for the Prineville River above Reservoir near Post gauge (CRPO) => Approximately October 26; the volume has been calculated as that amount necessary to supplement the reservoir inflow. |
| H | WY2022 Allocation Before Loss (acre-feet) | WY2022 Allocation Before Loss for each account is calculated as Carryover Storage (Column D) - Storage Use Prior to Day of Allocation (Column E) + New Fill (Column F) - 10 cfs Reservation (Column G). |
| I | Estimated Reservoir Losses (acre-feet) | Storage allocations have been adjusted proportionally based on Allocation before Loss to account for estimated reservoir losses (e.g. evaporation, seepage, etc.). The amount of 3,096 acre-feet was determined based on a historical analysis of subtracting April through October computed unregulated flow (change in storage + discharge) volume at Prineville Reservoir from the April through October flow volume at the Crooked River above Prineville Reservoir near Post. Historical years with > +/- 1 Standard Deviation were excluded as outliers, and the average for the non-excluded 1994-2021 period was used. This calculation was checked by calculating estimated evaporation using projections of reservoir elevations throughout the season and methods described in FAO Irrigation and Drainage Paper No. 56 (https://academic.uprm.edu/abe/backup2/tomas/fao%2056.pdf) Chapter 6 => $Evapotranspiration = Kc \times ETo \times Prineville\ Reservoir\ Surface\ Area$, where Kc varies between 0.65 and 1.25 throughout the season, ETo is taken from the Bureau of Reclamation Powell Butte Agrimet Station (POBO ETOS) using data from the drier and warmer than normal WY2021, and Prineville Reservoir surface area is taken from the 1998 Prineville Reservoir Sedimentation Study stage-surface area table. (https://www.usbr.gov/tsc/techreferences/reservoir/Prineville%20Reservoir%201998%20Sedimentation%20Survey.pdf) and adding that to a calculation of negative natural flow (change in storage + outflow + evaporation) at Prineville Reservoir that occurred during a similar dry year 2015 season. |
| J | Estimated Sedimentation Loss (acre-feet) | Storage allocations have been adjusted proportionally based on Contract Amount to account for approximately 1,479 acre-feet of sedimentation that is estimated to have occurred in the contracted space below the 2022 maximum fill point since the time of the 1998 Prineville Reservoir Sedimentation Survey (https://www.usbr.gov/tsc/techreferences/reservoir/Prineville%20Reservoir%201998%20Sedimentation%20Survey.pdf). The estimate is based on guidance provided in the study that used a theoretical distribution of future sediment in the reservoir computed using the Empirical Area Reduction Method. |
| K | WY2022 Storage Allocation After Loss (acre-feet) | WY2022 Storage Allocation After Loss for each account is calculated as WY2022 Allocation Before Loss (Column H) - Estimated Reservoir Losses (Column I) - Estimated Sedimentation Loss (Column J). This column represents the amount of storage water each contractor has available for the 2022 Season. |
| L | WY2022 Storage Allocation After Loss (% of Contract) | WY2022 Storage Allocation After Loss (% of Contract) is calculated as WY2022 Storage Allocation After Loss (Column K) ÷ Contract Amount (Column B). |

Attachment 2: Requesting and Delivering Storage:

Date: April 8, 2022

The following procedure describes the process for requesting and delivering storage from Prineville Reservoir during the 2022 season. To allow flexibility to adapt to changing hydrologic conditions or other circumstances throughout the 2022 irrigation season, the procedure set out below is subject to change. The latest version of the procedure can be found on Reclamation's website at: <https://www.usbr.gov/pn/cca0/projects/PrinevilleResStorage/PrinevilleResStorage.html>.

Anyone with questions regarding this procedure, or who would also like to receive email notifications of procedure updates and weekly storage reports, should contact Gregg Garnett, Reclamation Bend Field Office Manager, at ggarnett@usbr.gov or 541-389-6541.

Step 1: Beginning Monday April 11, 2022, and each subsequent Monday for the remainder of the contractor's irrigation season or until contractor's storage is exhausted, the contractor will call the Ochoco Irrigation District (OID) office (541-447-6449) by 12:00 pm PT to place an order for their individual desired storage flow rate from Prineville Reservoir for the subsequent 7-day Tuesday through Monday period.

Step 2: OID, Reclamation, and the Watermaster will coordinate on Monday afternoons to determine the final flow rate target from Prineville Reservoir with consideration of the individual storage flow rate orders from Step 1, reservoir inflow, and other pertinent factors.

Step 3: OID will travel to Prineville Reservoir and will set the outflow to the flow rate determined in Step 2 to the extent practical on Tuesday morning, unless conditions dictate otherwise.

Step 4: Reclamation will compute storage remaining for each contractor based on the contractor's storage allocation and to-date storage delivered from Prineville Reservoir. A Weekly Storage Report will be posted on Reclamation's website (<https://www.usbr.gov/pn/cca0/projects/PrinevilleResStorage/PrinevilleResStorage.html>) as soon as practical each week.