

WATERMASTER'S ANNUAL REPORT

From: January 1, 2023 To: September 30, 2023

Water District No. 11

Water District Name: Bear River

Name of Watermaster: Josh Hanks

Mailing Address: 132 E 400 S, Richmond, UT 84333


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DEPT. OF WATER RESOURCES
EASTERN REGION

AFFIDAVIT OF WATERMASTER

As the appointed watermaster of water district no. 11, I hereby certify that the information contained in this report is true and correct to the best of my knowledge.


Watermaster signature

2/5/2024

Date

Pursuant to Section 42-606 Idaho Code, this Watermaster's Annual Report shall be filed prior to the end of the watermaster's appointment for the current year, and kept in the office of the Idaho Department of Water Resources (IDWR). The Watermaster's Daily Diversion Records should be attached to this report if those records are not submitted electronically to IDWR.

2023 Annual Watermaster Report

Idaho Water District 11- Bear River



Photo: Bear River Flooding May 17, 2023 (Pegram, Idaho)

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**DEPT. OF WATER RESOURCES
EASTERN REGION**

February 5, 2024
Report by Josh Hanks
Bear River Watermaster
Idaho Water District 11
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- Watermaster Affidavit
- Income and Expense Reports
- Budget Report

Section 1 – Season Summary & Comments

Data within this report has been provided by the Idaho Department of Water Resources, PacifiCorp and Bear River Watermaster records.

Bear Lake Water Supply - Season Summary

10-1-2022	Bear Lake Beginning Elevation: 5,910.09 ft (35% full)
11-06-2022	Bear Lake Low Elevation: 5,909.71 ft (33% full)
7-09-2023	Bear Lake High Elevation: 5,917.23 ft (68% full)
6-26-2023	Outlet Canal Opened for Irrigation
7-24-2023	Outlet Canal Maximum Release: 1,070 cfs Total Bear Lake Storage Release 47,400 acre-feet (15,400 for irrigation)
9-30-2023	Bear Lake Ending Elevation: 5,916.11 ft (63% full)

PacifiCorp Summary of Water Year 2023 - Provided by Connely Baldwin

The Bear Lake Irrigation Storage Allocation for 2023 was 245,000 acre-feet. Runoff was well above normal, with Bear Lake net runoff at **512,000** acre-feet. The Bear Lake area reported an extremely deep spring snowpack. Declines in Bear Lake levels appeared to be significantly reduced due to runoff associated with this local and regionally heavy snowpack. Bear Lake storage released for irrigation (omitting system loss water) was only 15,400 acre-feet.

Water Delivery Cost

90,550.45 (24 Hour CFS) delivered for irrigation (*central and lower divisions*)
(includes natural flow and storage flow)

540,374 (24 Hour CFS) delivered for power generation. Oct. 1 - Sept. 31

Total delivered for the 2023 season 630,924.45 (24 Hour CFS) with
\$90,448 total expenses.

Cost per 24 Hour CFS = \$0.14

(*Cost of Bear River irrigation usage and power flows combined*)

Watermaster Comments for 2023 Season

The 2023 irrigation season was a very good year for natural flows. Bear Lake level rose more than 7.5 ft with the help of a robust 512,000 estimated acre-ft of inflow (runoff), compared to the 76,700 acre-ft inflow from 2022, this was a very big turn-around and much needed. In some cases there was too much water which delayed planting, and field access in some areas. Due to the above average amount of natural flow there was no need to regulate

in the lower division this season. In the central division we were able to distribute water as needed by the users, even though we were technically in a water emergency for a few months. Overall the 2023 season was a great year for water deliveries and a very good year for avoiding the need to use pumped storage from Bear Lake. I'd also like to point out that the small amount 15,400 acre-ft pumped out of the lake for irrigation was a big benefit for the coming 2024 season. The 2022 season had 148,500 acre-ft pumped for irrigation.

2024 Irrigation Season Potential

As of February 4th, 2024 the NRCS website shows that the upper Bear River range is at 97% of average snow depth and the lower Bear River range is at 98%. The soil moisture is showing at near 100% or greater in the Bear River watershed. The total available storage, at Bear Lake, is estimated to be the full allotment of 245,000 acre-ft. Hopefully, we can continue to receive the snow and precipitation to help continue adding to Bear Lake for next season.

Meters, Telemetry System and Bear River Basin Website

I was able to install the telemetry station at the Fern Keetch pump site in Dingle. This data was sent to the base station cellular receiver located at the West Fork site. And then made available on the beaver river basin website. I plan to also add the new pump station, at Cutler reservoir, that belongs to West Cache Irrigation. It will be very helpful to get the data from their pump station added to the Bear River Basin website. This has been an ongoing project, but due to flow meter issues and other technical challenges it has not happened yet.

Section 2 - Individual Diversions Report

Note: The site numbers below are the Idaho Department of Water Site ID numbers.

#10043105 Miller Ditch

This sensor has continued to struggle. It will work for a few weeks and then stop giving depth data which throws off the reading. I have recommended to the user that we install a flume down stream, or possibly a non-contact sensor.

#10043110 Rigby Pump

The meter may need replacement. This coming season we will check for correct operation.

#10043120 Nuffer Canal

#10043140 Sorenson Ditch

#10043150 Ure North Hills Diversions

The flume was installed in the early summer of 2021. It is a metal ramp flume. However, it was submerged and not reading the few times I visited the site.

#10043180 Smith/Lloyd Ditch

The flume at this location does not read correctly due to sediment and vegetation in the ditch downstream. The flume needs to be raised. I will work with the user to get the flume installed correctly.

#10043160 Jensen Ditch

#10044010 Hughes Pump 1

Not used this season.

#10044020 Hughes Pump 2

Did not get used this season

#10044060 Dingle Canal

The AVFM sensor did well this season until the last couple of weeks. It was then giving zero flow data even though there was flow. It seems that the slime and growth on the sensor stops it from reading. I cleaned the sensor a couple times this season and it would work again for a few days. I am considering moving the sensor to the side wall to see if that helps with the issue.

#10044070 Ream/Crockett Canal

I installed a pressure transducer this season into a stilling well attached to the inlet of the flume. The reading was stable and I did not have the data drifting that had been common at this site. I plan to make a more permanent installation this season.

#10044200 Black Otter**#10044450 Preston/Montpelier Canal****#10044450 Todd Lloyd Pump (Preston/Montpelier use)****#10044700 Keetch (Larocco-Kent) Pump**

Worked well this season.

#10044714 Fern Keetch Pump

Added the telemetry to the meter and data was sent to the web.

#10044800 Pugmire Pump**#10045800 West Fork Canal**

Still using a water level sensor to calculate flow based on an old flow rating formula. Would be good to get a better reading at this location.

#10050400 Indian Creek (pumps direct from Bear Lake)**#10067831 Woolstenhume (PacifiCorp #3)**

Has not been used for many seasons.

#10047305 Wayne Kunz Pump**#10067705 Hardcastle Pump****#10067725 - L Stevens (Rockin G Ranch)**

#10067870 & 10067874 Woolstenhume #1, #2 (Pacifcorp)

#10067834 Steven Kunz Pump

The meter is still broken and needs replacement.

#10067855 Dean Kunz

Storage contract - Rhett Phelps Pump

#10068205 Chris Christensen or Alleman Pump

#10072550 Eight Mile (Harris Pump 1)

The sensor at this location is not working. I will work with the user to replace or add a flume.

#10072550 Eight Mile 2 (Harris Pump2)

Meter did not work this season. I think it is a power issue. I will add a new battery pack and see if that fixes the issue.

#10074805 Bear Meadows

#11-00449/11-00531C Soda Golf Transfer

The parshall flume is in need of maintenance and cleaning.

#10078905 Soda Golf Pump

Was able to add a battery pack part way through the season. The meter seemed to work fine after that.

#10079600 Last Chance Canal

#10079800 Bench B Canal

Flume needs to be cleaned out.

#10080105 Gentile Valley Canal

#10080355 Wheeler Pump

The magmeter was replaced and is working well.

#10080385 Matthews Pump (Wanlass Pump)

#10081650 & 10082550 Skabelund Pumps

Flow meter was replaced. I purchased an output cable for the meter and will

get the data back on the website this coming season.

#10083505 Mussler (Fox) Pump

#10086950 Smith/Bosen Ditch

#10089820 Boyack Pump

#10089880 Upper Riverdale

No usage, cannot find a water right to go with this diversion.

#1089881 Read Lane Subdivision

The users were very helpful this season and reported their use every week by texting me the meter total.

#10089850 Nelson Ditch

I installed a wooden cover for the AVFM display and it seems to be weathering better. The sensor needs to be moved to the pipe for the next season to try and get a better reading.

#10089950 Riverdale Irrigation Canal

#10089955 Higley Pump

Needs a new battery or power supply of some type.

#10089960 Riverdale/Preston Pump

#10089970 Lucia Pump

#10090250 West Cache Canal

#10091120 Hodges Pump

#10091110 Johnson Pump

A new pump was installed in the river and no meter. User was asked to install a meter.

#10091495 Holliday-Fuqua (was Griffin)

#10091455 Floyd Jensen Pump

#10091497 Christensen Pump

#10091499 Green Acres Pump

#10091460 Bear Grove LLC (S. Bobka Pump)

Need to replace battery and verify meter is still working

#10091503 Ingleet Lamont

#10091563 M Curry

The meter screen is hard to read. User says that he will try to get that fixed.

#10092755 Carol Whitney Pump

#10092650 Cub River Pumps

The cable for the pump station flow meter has been run to the datalogger site, I need to work with the water users to find out which signal in the PLC to connect to for getting that data to our datalogger.

#10092900 West Cache Pumps

Replaced the antenna at the cub river base station and now this site reports in regularly. The issue is that the sensor is not reading once it gets covered in silt. Need a new sensor.

#10109375 West Cache 4 (Cutler)

This season the meters all had trouble. They should all be working for the coming season and we can get the flow onto the bear river website.

Section 3 - Individual Diversions Flow Data

The data below is gathered from the Idaho Dept. of Water website. This data is collected throughout the water season by way of meters, flumes, dataloggers, and manual flow measurements by the Watermaster.

<u>Water District 11 Points of Diversion</u>	<u>Total 24 Hour CFS</u>
10043105 - MILLER CANAL	271.3
10043110 - RIGBY	14.5
10043120 - NUFFER CANAL	1,511
10043140 - TRANSTRUM (SORENSEN)	97.0
10043150 - URE NORTH HILLS	81.0
10043160 - WILLIAMSON (JENSEN)	165.5
10043180 - J SMITH (URE)	27.0
10044010 - HUGHES PUMP 1	0.00
10044020 - HUGHES PUMP 2	0.00
10044060 - DINGLE IRRIGATION CANAL	4,196
10044070 - REAM-CROCKETT CANAL	3,344
10044200 - BLACK OTTER CANAL	2,585
10044450 - PRESTON-MONTPELIER CANAL	4,885

10044700 - KEETCH (LAROCCO-KENT)	99.5
10044714 - FERN KEETCH	101.3
10044800 - J KEETCH (PUGMIRE)	80.5
10045800 - WESTFORK CANAL	11,314
10047305 - STEWART	0.00
10050400 - INDIAN CREEK LLC	0.00
10067705 - HARDCASTLE	4.42
10067725 - ROCKIN G RANCH	22.0
10067831 - CHARLES KUNZ	0.00
10067834 - S R KUNZ	8.48
10067855 - PACIFICORP 3 (D. Kunz)	0.00
10067870 - PACIFICORP 2 (P. Kunz)	8.0
10067874 - PACIFICORP 1 (P. Kunz 2)	22.0
10068205 - ALLEMAN	0.00
10068210 - ALAN PHELPS	14.1
10072550 - EIGHT MILE RANCH (HARRIS)	442.5
10072554 - EIGHT MILE 2 (HARRIS)	87.5
10074805 - BEAR R MEADOWS LLC	23.5
10076000 - SODA CREEK TRANSFER FLOW	106.4
10078905 - SODA GOLF	49.4
10079600 - LAST CHANCE CANAL	15,632
10079800 - BENCH 'B' CANAL	16,776
10080105 - GENTILE VALLEY CANAL	2,473
10080355 - WHEELER	58.1
10080385 - MATHEWS, B	103.9
10081650 - SKABELUND 1	33.2
10082550 - DAVID SKABELUND	0.00
10083505 - MUSSLER (FOX)	3.5
10086950 - SMITH-BOSEN CANAL	54.2

10086975 - TWIN LAKES PUMPS	0.00
10089820 - BOYACK	40.6
10089850 - NELSON CANAL	323.2
10089880 - UPPER RIVERDALE	0.00
10089881 - READ LANE SUBDIVISION	53.7
10089950 - RIVERDALE CANAL	1,070
10089955 - HIGLEY	0.00
10089960 - RIVERDALE-PRESTON PUMP	237.1
10089970 - T LUCHIA	5.55
10090250 - WEST CACHE CANAL	17,056
10091110 - B JOHNSON PUMP	70.0
10091120 - L BRYCE	0.00
10091455 - FLOYD JENSEN	64.5
10091460 - BEAR GROVE LLC	10.2
10091495 - HOLLIDAY-FUQUA(griffin)	12.2
10091497 - CHRISTENSEN	10.0
10091499 - GREEN ACRES	44.4
10091503 - B LAMONT	82.8
10091563 - M CURRY	61.8
10092650 - CUB RIVER PUMPS	5,954
10092755 - C WHITNEY	0.00
10092900 - WEST CACHE NO.2 (UTAH)	308.0
10109375 - WEST CACHE NO.4 (UTAH)	451.6
Total Irrigation Delivery 24 Hour CFS =	90,550.45

Reported data for each of these sites is publicly available on the Idaho Department of Water Resources website. Login as a guest.

<https://research.idwr.idaho.gov/apps/watermanagement/diversion>