

WATERMASTER'S ANNUAL REPORT

From: January 1, 2020 To: December 31, 2020

Water District No. 11

Water District Name: Bear River

Name of Watermaster: Josh Hanks

Mailing Address: 132 E 400 S Richmond UT 84333

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.

Josh Hanks 2-2-2021
Watermaster/signature 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.

2020 Annual Watermaster Report

Idaho Water District 11- Bear River



Last Chance Canal - Photo by Josh Hanks

February 2, 2021
Report provided by Josh Hanks
Bear River Watermaster
Idaho Water District 11
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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

10-1-2019	Bear Lake Beginning Elevation - 5,917.89 ft (72% full)
11-4-2019	Bear Lake Low Elevation - 5,917.84 ft (71% full)
7-7-2020	Bear Lake High Elevation - 5,919.46 ft (79% full)
6-1-2020	Outlet Canal Opened for Irrigation
7-16-2020	Outlet Canal Maximum Release - 1,700 cfs
9-30-2020	Bear Lake Ending Elevation - 5,916.35 ft (64% full)

PacifiCorp Summary of Water Year 2020

The Bear Lake Irrigation Storage Allocation for 2020 was 245,000 acre-feet. Runoff was below normal, with Bear Lake net runoff at 180,000 acre-feet (56% of normal). High runoff management releases were made from November 18, 2019 through March 31, 2020. The Bear Lake Outlet Canal was opened for irrigation releases on June 1 and shut on October 4.

PacifiCorp Operational Notes

- Bear River Black Canyon Recreational Water Releases were curtailed in 2020 due to COVID-19. Only four events occurred, with 2 occurring in September.
- Cutler reservoir was drawn down in November 2019 for Federal Energy Regulatory Commission relicensing purposes, including an update to the storage-elevation relationship.

Water Delivery Cost

115,549 (24 Hour CFS) total delivered for irrigation

(central and lower divisions)

711,048 (24 Hour CFS) delivered for power generation. Oct. 1 - Sept. 31

Total delivered for the 2020 season is 826,597 (24 Hour CFS) with \$82,413 total expenses.

Cost per 24 Hour CFS = \$0.099

(Cost of all Bear River irrigation usage and power flows)

Watermaster Comments for 2020 Season

I felt that I needed to make mention of the COVID-19 virus that affected the world this season starting right as the irrigation season began. As far as water reporting and delivery I did not see much of a change in my day to day duties. The main issue and change was that our meetings, that would have been in person, all changed to virtual meetings. Wearing masks became standard for shopping and fueling up. Many maintenance projects that I had originally planned for this season got delayed due to supplier delays and not wanting to request in-person meetings with individuals.

The 2020 Legislature passed House Bill 382, which authorized a water-rights **adjudication** for Idaho's portion of the Bear River Basin. There is a web page with information published by IDWR, the link to that site is:

<https://idwr.idaho.gov/water-rights/adjudication/BRBA/>

The next event is a commencement hearing related to the adjudication it will be on March 4th, 2021. There is information posted at the web link above for a Zoom meeting if anyone is interested in attending that meeting virtually.

2021 Scenario - This Coming Season

As of January 31st the National Water and Climate Center (NWCC) reports that the Bear River Basin Snow Water Equivalent is 66% of Median. The snowpack reported by SNOTEL sites as of January 1 is 73% of Median as opposed to last year's 103% of Median reported at the same time.

StreamFlow forecasts by the NRCS for the Bear River range from 63% to 73% based on different sections of the river. We will need a few more good storms to raise those percentages for the coming season.

Telemetry System and Bear River Basin Website

I plan to install a telemetry station at the Fern Keetch pump site in Dingle. This data will be sent to the base station cellular receiver located at the West Fork site. I will also be working with the new water user in Pegram that uses water at the Jensen diversion to bring that station back online.

Section 2 - Individual Diversions Report

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

#10043105 Miller Ditch

I installed a new flow sensor here at the beginning of the 2020 season. the sensor was then destroyed somehow? Most of the season this site was manually measured.

#10043110 Rigby Pump

Battery was replaced on the magmeter. And will need to be replaced again this season.

#10043120 Nuffer Canal

They rebuilt their check dam in the river and had better success getting their flows.

#10043140 Sorenson Ditch

The sensor here needs to be secured better in the ditch for the 2021 season.

#10043150 Ure North Hills Diversions

The water user has stated the flume is now installed, I will visit the site in early spring to check it out. As far as I know the head gate is still not lockable.

#10043180 Smith/Lloyd Ditch

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

#10043160 Jensen Ditch

There is a new user at this diversion. They have taken water successfully, however the sensor is not working and a new measurement device needs to be installed. I am hoping to meet with the water users this April to come up with a plan to install a new device.

#10044010 Hughes Pump 1

This diversion has been added to the system as of the end of the 2020 water season, if water is diverted it will be accounted for in 2021. Located just downstream of the Jensen Ditch.

#10044020 Hughes Pump 2

This is also a new diversion for this coming 2021 season. Both of the Hughes pumps are located in Pegram downstream of the Jensen Ditch.

#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. I will try to troubleshoot more this spring before irrigation begins.

#10044070 Ream/Crockett Canal

(This still needs to be done) The flume at this site needs to have the brush and trees cut back, the vegetation is beginning to grow into the flume and that does affect the flume's ability to read flows correctly.

#10044200 Black Otter

The stilling well house is beginning to tip towards the canal. It may be an issue to consider fixing soon.

#10044450 Preston/Montpelier Canal

I installed a permanent staff gauge back in the pool of the weir and it worked well this season.

#10044450 Todd Lloyd Pump (Preston/Montpelier use)

#10044700 Keetch (Larocco-Kent) Pump

#10044714 Fern Keetch Pump

I will be adding radio telemetry to this site and sending the data to the website for the 2021 season.

#10044800 Pugmire Pump

#10045800 West Fork Canal

Still using a water level sensor to calculate flow based on an old flow rating formula. It tracked fairly accurately, but still has issues when flow changes in large amounts. This site will need an area velocity sensor, or flume, installed to be able to read this flow accurately throughout the season.

#10050400 Indian Creek (pumps direct from Bear Lake)

Installed a metal cutthroat flume on Indian Creek and a Doppler flow meter of the pump. This season we need to add a data recorder to the cutthroat flume to account for water from the creek going into the lake.

#10067831 Charles Kunz (Pacifcorp #3)

#10047305 Wayne Kunz Pump

#10067705 Hardcastle Pump

#10067725 - L STEVENS (Rockin G Ranch)

#10067870 & 10067874 Paul Kunz Pumps #1, #2 (Pacifcorp)

#10067834 Steven Kunz Pump

The meter is still broken and needs replacement. I have worked with the water user to estimate flow usage.

#10067855 Dean Kunz

Storage contract - Allyn & Rhett Phelps Pump

The magmeter failed in the 2016 season and needs to be replaced. They reported no usage for this 2020 season.

#10068205 Chris Christensen or Alleman Pump

#10072550 Eight Mile (Harris Pump 1)

The flow sensor did not work at all this season at the pearl creek diversion. I will work with them to get a better measuring device on this site.

#10072550 Eight Mile 2 (Harris Pump2)

Need to add a solar panel to this battery to keep it charged throughout the season.

#10074805 Bear Meadows

I need to work with the users to get the flow total before they turn power off to the system at the end of the season.

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

The parshall flume is needing maintenance and cleaning. The watermaster for Soda is willing to work with me on keeping the correct flow in this flume. There was a misunderstanding as to how much flow needs to be here. We will make sure it works better this season.

#10078905 Soda Golf Pump
#10079600 Last Chance Canal
#10079800 Bench B Canal
#10080105 Gentile Valley Canal

#10080355 Wheeler Pump
The magmeter has failed and needs to be replaced.

#10080385 Matthews Pump (Wanlass Pump)

#10081650 & 10082550 Skabelund Pumps
One of these sites the flow meter has died and needs to be replaced.

#10083505 Mussler (Fox) Pump
Could not get the meter to ever read on the datalogger. I will troubleshoot again this season.

#10086950 Smith/Bosen Ditch
Spoke to water users in (2017) about a new flume to be installed. The old concrete parshall flume now becomes submerged during the season. Did not see that any progress was made by the end of the season for the new flume site. Have not heard any more about this project.

#10089820 Boyack Pump

#10089880 Upper Riverdale Canal and Pump
#1089881 Upper Riverdale Subdivision
Looks like the battery in this AG2000 magmeter may need replacement.
#10089850 Nelson Ditch

The AVFM display at this site is starting to fall apart. I will try to get this into a more protected enclosure for the coming season.

#10089950 Riverdale Irrigation Canal

#10089955 Higley Pump
Needs a new battery or power supply of some type.

#10089960 Riverdale/Preston Pump
#10089970 Lucia Pump
Still needs a new flow meter

#10090250 West Cache Canal

#10091120 Hodges Pump

#10091110 Johnson Pump

#10091495 Griffith Pump (Bastion Pump)

#10091455 Floyd Jensen Pump

#10091460 Bear Grove LLC (S. Bobka Pump)

Meter seems to be reading but may need new batteries for next season.

#10091503 Ingleet Lamont

In 2019 this site was updated with a new pump and new magmeter.

#10091563 M Curry

Could not get a final reading off this meter this year. I need to ask the user to show me how to power the meter for a year end and year start reading.

#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

Installed a new area velocity sensor. The radio struggled this season to get data to the cellular data site. It may be that trees have now grown to block the signal or the radio in the logger is worn out. I will troubleshoot more this season.

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	1,415
10043110 - RIGBY	79.3
10043120 - NUFFER CANAL	1675
10043140 - TRANSTRUM (SORENSEN)	385
10043150 - URE NORTH HILLS	466.8
10043160 - WILLIAMSON (JENSEN)	335.5
10043180 - J SMITH (LLOYD)	296.6
10044060 - DINGLE IRRIGATION CANAL	4,310
10044070 - REAM-CROCKETT CANAL	4,297
10044200 - BLACK OTTER CANAL	3,451
10044450 - PRESTON-MONTPELIER CANAL	5,290
10044700 - KEETCH (LAROCCO-KENT)	133.2
10044714 - FERN KEETCH	115.9
10044800 - J KEETCH (PUGMIRE)	118.9
10045800 - WESTFORK CANAL	6,386
10047305 - STEWART	0.00
10050400 - INDIAN CREEK LLC	58.7
10067705 - HARDCASTLE	0.00
10067725 - ROCKIN G RANCH	139
10067831 - CHARLES KUNZ	0.00
10067834 - S R KUNZ	20.6
10067855 - PACIFICORP 3 (D. Kunz)	0.00
10067870 - PACIFICORP 2 (P. Kunz)	0.11

10067874 - PACIFICORP 1 (P. Kunz 2)	29.2
10068205 - ALLEMAN	0.00
10068210 - ALAN PHELPS	0.00
10072550 - EIGHT MILE RANCH (HARRIS)	403
10072554 - EIGHT MILE 2 (HARRIS)	23
10074805 - BEAR R MEADOWS LLC	35.4
10076000 - SODA CREEK TRANSFER FLOW	96.8
10078905 - SODA GOLF	30.6
10079600 - LAST CHANCE CANAL	23,073
10079800 - BENCH 'B' CANAL	20,698
10080105 - GENTILE VALLEY CANAL	5,991
10080355 - WHEELER	0.00
10080385 - MATHEWS, B	178.8
10081650 - SKABELUND 1	25.6
10082550 - DAVID SKABELUND	0.00
10083505 - MUSSLER (FOX)	11.5
10086950 - SMITH-BOSEN CANAL	68.3
10086975 - TWIN LAKES PUMPS	0.00
10089820 - BOYACK	49
10089850 - NELSON CANAL	403.2
10089880 - UPPER RIVERDALE CANAL	0.00
10089881 - UPPER RIVERDALE SUBDIVISION	29.2
10089950 - RIVERDALE CANAL	1,323
10089955 - HIGLEY	0.00
10089960 - RIVERDALE-PRESTON PUMP	389.1
10089970 - T LUCHIA	3.2
10090250 - WEST CACHE CANAL	22,081
10091110 - B JOHNSON PUMP	0.00
10091120 - L BRYCE	0.00

10091455 - FLOYD JENSEN	84.5
10091460 - BEAR GROVE LLC	16.1
10091495 - GRIFFITH	34
10091503 - B LAMONT	145.9
10091563 - M CURRY	47.7
10092650 - CUB RIVER PUMPS	9,584
10092755 - C WHITNEY	0.00
10092900 - WEST CACHE NO.2 (UTAH)	1,722
Total Irrigation Delivery 24 Hour CFS =	115,549

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

<https://idwr.idaho.gov/apps/wm/DiversionDataApplication>