

MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)

SUBJECT: Bonneville Lock & Dam, Fishway and Fish Activities for Week 08 of 2024, which covers the period from 19 to 24 February 2024.

1. ITEMS OUT OF CRITERIA (OOC):

- **Table 1.** FPP Items Out of Criteria.

Date	Location	FPP Violation	Cause	Response
02/18 – 24	BON	Unit Priority – U3, U4, U6, U7, U9 & U10 F.O.	U3, U4, U6, U7, U9, & U10 F.O., Oil Leak Investigation	W.O., Next Available Unit(s) Ran in Place
02/18 – 24	BON	Unit Priority – U12 F.O.	U12 F.O., Stator Ground	W.O., Next Available Unit Ran in Place
Bradford Island: Nothing to Report.				
Cascades Island:				
02/18 – 24	CI Fishway	FG 6-12 Closed, Should be Open	Mechanically Bound	W.O.
02/20 – 22	CI Fishway	FG 6-18 Open, Should be Closed	Mechanically Bound	W.O.
02/20 – 22	CI Fishway	Excessive Drawdown on FV 5-3/5-4 Trash Racks	Lack of Cranes at PH2	Cleaning Attempts W/O Crane + Spill to Draw Debris from Trash Racks
Washington Shore:				
02/20 – 22	WA Shore Fishway	Weir 37 High, >1.1'	Weir 37 Blowdown Valve OOS	W.O.
02/20 – 22	WA Shore Fishway	Weir 38 High, >1.1'	Weir 37 Blowdown Valve OOS	W.O.
02/21	WA Shore Fishway	SUE Ent/TW Diff <1.0'	Single F.U. Ops	Adjustment to Entrance Gates
02/20 – 21	WA Shore Fishway	SDE Ent/TW Diff <1.0'	Single F.U. Ops	Adjustment to Entrance Gates
02/20 – 21	WA Shore Fishway	NDE Ent/TW Diff <1.0'	Single F.U. Ops	Adjustment to Entrance Gates

- The Cascades Island Fishway diffuser FG 6-11 is mechanically bound in the closed position due to stripped shaft threads. A work order has been created and repairs will be made during the next full dewater of the Cascades Island Fishway.
- Cascades Island Fishway diffuser FG 6-12 is mechanically bound in the closed position for unknown reasons. A work order has been created and repairs will be made during the next full dewater of the Cascades Island Fishway.
- Cascades Island Fishway diffuser FG 6-18 was found stuck in the open position with limiter torque problems in the fall of 2022. A work order has been created and repairs have been attempted, but full repair requires complete dewatering of the fishway. These repairs will be made during the next full dewater of the Cascades Island Fishway.

- PH1 Unit Priority: Multiple oil sheens have been observed in the PH1 tailrace by Bonneville Staff on several occurrences over the past year. Please refer to MFRs 24BON001, 24BON003, 24BON004, 24BON005, and 24BON007 for details. Consequently, Units 3, 4, 6, 7, 9, and 10 have been forced out of service and will remain OOS until a full dewater, inspection, and investigation of each Unit has been completed.

2. OPERATION SUMMARY:

- Daily average river flows ranged from 116.4 to 123.4 kcfs. Daily average powerhouse forebay elevation ranged from 74.5’ to 75.5’ msl. Daily average Project tailwater ranged from 11.5’ to 11.7’ msl. Secchi disk measurements ranged from 5.0 to 7.0’. Daily average water temperature ranged from 39 to 41°F.
- Daily average spill remained at 0.6 kcfs.
 - Spillbay 18 remains closed for the duration of IWWP and winter maintenance activities in the Bradford Island Fishway.
- Unit Operation: **PH2** remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

• **Table 2.** Main Unit Outages

Unit	OOS	RTS	Reason	Duration
4	1631 on 29 Mar 2023	---	F.O., Oil Leak Investigation/5-YR Overhaul	---
3	1105 on 12 Jun 2023	---	F.O., Oil Leak Investigation	---
6	1714 on 03 Jan	---	F.O., Oil Leak Investigation	---
10	1714 on 03 Jan	---	F.O., Oil Leak Investigation	---
12	0731 on 05 Jan	---	F.O., Stator Ground	---
9	1220 on 11 Jan	---	F.O., Oil Leak Investigation	---
7	1409 on 15 Feb	---	F.O., Oil Leak Investigation	---
18	0648 on 20 Feb	0927 on 20 Feb	P.O., STS Install	2 hours, 39 mins
17	0936 on 20 Feb	1239 on 20 Feb	P.O., STS Install	3 hours, 3 mins
16	1249 on 20 Feb	1513 on 20 Feb	P.O., STS Install	2 hours, 24 mins
15	0241 on 21 Feb	1457 on 21 Feb	P.O., QTCI/STS Install	12 hours, 16 mins
14	1010 on 21 Feb	1238 on 21 Feb	P.O., STS Install	2 hours, 28 mins
13	1243 on 21 Feb	1509 on 21 Feb	P.O., STS Install	2 hours, 26 mins
11	0704 on 22 Feb	1001 on 22 Feb	P.O., STS Install	2 hours, 57 mins

- Fish Units: Second Powerhouse Fish Units provide attraction flow for the Washington Shore (WS) fish ladder.

Fish Unit Outages: Fish Units are periodically paced into reserve shutdown (RS) to float trash when debris differentials become excessive and trash raking is not possible. Single Fish Unit Operations (**FPP Table BON-12**) began on 04 December when F2 was placed OOS for a 2-YR OH. F1 was placed OOS for an annual OH on 08 February, continuing Single Fish Unit Operations.

Table 3. Fish Unit Outages

Unit	OOS/RS	RTS	Reason	Duration
F1	0016 on 08 Feb	---	P.O., Annual Overhaul	---
F2	2129 on 20 Feb	2249 on 20 Feb	R.S., Float Trash	1 hour, 20 mins

- **Table 4.** Fish Unit Drawdowns, in Feet.

Date	F1	F2
02/18	---	0.8'
02/19	---	0.6'
02/20	---	
02/21	---	0.4'
02/22	---	0.2'
02/23	---	0.3'
02/24	---	0.2'

2. MAINTENANCE ACTIVITIES:

- Auxiliary Water System Closures:
 - FV 6-9 was closed for cleaning from 1515 to 1520 on 20 February.
- STS/VBS Inspections: STS's returned to service this reporting week.
- Dewatering and Fish Salvages: Nothing to report.

3. RESEARCH

- Four Peaks Environmental - Fish counting contract: Daytime video counting (0400 to 2000 PDT) began on 01 December. Fish counts can be viewed [here](#).
- USFWS – Lamprey Metamorphosis Study: Juvenile lamprey researchers are onsite and the work is underway.

4. FISHWAYS:

- Project Biologists inspected on 20 to 22 February.
- Adult Fishways:
 - (1) The AFF remains out of service for the winter maintenance season.
 - (2) Sensor calibration checks were occurred on 21 February.
 - (3) SLEDs are installed at all locations.
 - (4) The Cascades Island and Washington Shore Fishways remain in service. The Bradford Island Fishway was taken out of service for the winter maintenance season on 05 December.
- Juvenile Fishways:
 - (1) The ITS remains in service.
 - (2) The hydro-cannon returned to service this reporting week.
 - (3) The B2CC was closed for the season on 01 September but remains available to flush trash or provide surface passage for fish if involuntary spill occurs outside of fish passage spill season. **(FPP BON Section 2.2.2.)**

(4) The DSM returned to service this reporting week.

(5) STSs returned to service this reporting week.

d. Lamprey Fishways:

(1) BI, CI, and WA Shore LPS's remain out of service.

(2) The Bradford Island Wetted Wall (BIWW) remains out of service.

(3) The PH2 Lamprey Flume Structure (LFS) remains out of service.

(4) The 2023 lamprey trapping and translocation activities have concluded for the 2023 season.

(5) Avian Monitoring: Avian counts are recorded 01 April – 31 October.

5. WATER QUALITY MONITORING:

a. Fishway Temperatures: Fishway temperature monitoring has concluded for the 2023 season.

b. Zebra Mussel Monitoring: No signs of colonization were observed this reporting week.

7. CONSTRUCTION:

- Installation of the B-Branch LPS in the B-Branch Entrance Bay is underway.

8. HAZMAT, SPILLS AND CLEANUP: Nothing to report.

9. TELETYPES CURRENTLY IN EFFECT:

- A teletype was distributed on 30 August detailing the fall/winter spill priority list and fall/winter spill caps. This teletype provides the order that projects spill for lack of load conditions and is to be used until further notice. Please see teletype BON R 083023 1555 for further details.
- A teletype was distributed on 20 December replacing the previous teletype BON R 122023 1131 Tailwater Operation for Chum Incubation 4. This 5th revision to the teletype states: Effective, Sunday 31 December 2023, at 0001 HRS, until further notice, Bonneville Dam minimum tailwater elevation is 11.3 ft during all hours. The intent of this operation is to ensure sufficient tailwater elevation to protect chum redds in the Ives/Pierce Island area during the egg incubation period. This 5th revision's updated minimum tailwater elevation was based on an updated WDFW chum salmon survey data that occurred on 20 December. Please see teletype BON R 122023 1340 for more details.
- A teletype was distributed on 12 February detailing a Bonneville Spillway outage. The entire Bonneville Spillway, with the exception of Spillbay 1, will be tagged out and not available for spill during the following dates:
19 February through 28 February, daily from 0630 to 1800 HRS.
The purpose of this operation is to support dive work on the Bradford Island CERCLA sampling and instrumentation work. Spillbay 1 will remain open at 0.5 feet during the operation for fish attraction flow (approximately 1.1 kcfs). Please see teletype BON R 021224 1435 for more details.
 - Two revisions to this teletype were distributed on 28 February (BON R 022824 1400 and BON R 022824 1620). The final revision states the following:
The entire Bonneville Spillway, with the exception of Spillbay 1, will be tagged out and not available for spill during the following dates and times:
19 February through 29 February and 02 March, daily from 0630 to 1800 HRS
The purpose of this operation is to support dive work on the Bradford Island CERCLA sampling and instrumentation work. Spillbay 1 will remain open at 0.5 FT during the operation for fish

attraction flow (approximately 1.1 kcfs). Please see teletype BON R 022824 1620 for more details.

- A teletype was distributed on 29 February detailing a Bonneville Forebay operation and spillway outages. Bonneville is to maintain the Forebay above a minimum of 75 FT, hard constraint, during the following dates and times:
 - 04 March, from 0830 to 1500 HRS
 - 05 March, from 0830 to 1500 HRS
 - 06 March, from 0830 to 1500 HRSOn 06 March between 0800-1200 HRS, Spillway Gates 2-17 will be tagged out and not available for spill, and the Spillbay 1 and 18 will remain open 0.5 FT during the operating for fish attraction flow (approximately 2.2 kcfs). This operation supports a pre-spill bathymetric survey. Please see teletype BON R 022924 1630 for more details.

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