**CENWP-ODB** 21 April 2022

**MEMORANDUM FOR Biologist, Operations Division (CENWP-OD)**

**SUBJECT:** Bonneville Project, Fishway and Fish Activities for **Week 16** of 2022, which covers the period from **10 to 16 April 2022.**

## 1. OPERATION SUMMARY:

a. Daily average river flows ranged from 134.8 to 174.2 kcfs. Daily average powerhouse forebay elevation ranged from 73.4' to 75.0' msl. Daily average project tailwater ranged from 12.5' to 15.1' msl. Secchi disk measurements ranged from 4.0 to 5.0'. Daily average water temperature ranged from 46 to 47°F.

b. Daily average spill ranged from 90.1 to 129.0 kcfs. Spring Spill Season for juvenile passage started on 10 April.

c. Unit Operation: **PH2** remains the priority powerhouse. Main unit drawdowns are measured every Monday and more frequently as needed.

- **Table 1**. *Main Unit Outages*

| Unit | OOS | RTS | Reason | Duration |
|---|---|---|---|---|
| 13 | 1628 on 18 Feb | --- | F.O., Generator Ground | --- |
| 3 | 0920 on 04 Apr | --- | P.O., 5-Year Overhaul | --- |
| 12 | 1332 on 12 Apr | 1407 on 12 Apr | P.O., Trash Raking | 35 mins |
| 11 | 1411 on 12 Apr | 1622 on 12 Apr | P.O., Trash Raking | 2 hours, 11 mins |

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

Fish Unit Outages: Fish Units are periodically placed into reserve service (RS) to float trash when debris differentials become excessive and trash raking is not possible.

- **Table 2**. *Fish Unit Outages*. Nothing to report.

- **Table 3**. *Fish Unit Drawdowns, in Feet.*

| Date | F1 | F2 |
|---|---|---|
| 04/10 | 0.8' | 0.5' |
| 04/11 | 0.7' | 0.3' |
| 04/12 | 0.8' | 0.4' |
| 04/13 | 0.6' | 0.2' |
| 04/14 | 0.6' | 0.3' |
| 04/15 | 0.5' | 0.3' |
| 04/16 | 0.8' | 0.4' |

## 2. MAINTENANCE ACTIVITIES:

a. Auxiliary Water System Closures: Nothing to report.

b. STS/VBS Inspections: The April STS inspection report is displayed in the table below. MU13's STS's are not installed while the unit is still forced OOS. The STS screen in 11A was found damaged and was repaired successfully on Thursday 07 April.

| UNIT | Previous STS HRS | Present readings | STS-A | STS-B | STS-C | HRS RUN | REMARKS |
|---|---|---|---|---|---|---|---|
| 11 | 63330 | 64205 | | | | 875 | |
| 12 | 48786 | 49680 | | | | 894 | |
| 13 | 7950 | ***** | | | | 0 | OOS |
| 14 | 18451 | 19278 | | | | 827 | |
| 15 | 26497 | 27016 | | | | 519 | |
| 16 | 38856 | 39393 | | | | 537 | |
| 17 | 8822 | 9384 | | | | 562 | |
| 18 | 9733 | 10274 | | | | 541 | |

c. Dewatering and Fish Salvages: Nothing to report.

**3. RESEARCH:**

a. Four Peaks Environmental - Fish counting contract: Daytime visual counting (0500 to 2100 PDT) began on 01 April. Fish counts can be viewed here.

b. USFWS – Lamprey Metamorphosis Study: Juvenile lamprey researchers are onsite, and the work is underway.

c. Pacific States Marine Fisheries Commission - Smolt Monitoring: Sample collections at the Smolt Monitoring Facility (SMF) began at 0700 on 02 March. Debris at the primary dewatering structure (PDS) and fish/debris separator was light consisting mostly of sticks. One salmon and five steelhead fallbacks were observed this week. Separation by Code was active for Round Butte Hatchery this week.
Gas Bubble Trauma (GBT) examinations began on 12 April and are typically performed two days per week through the end of spill. Results of this week's GBT examinations: 29 yearling Chinook and steelhead examined with no GBT symptoms observed. Please follow this link https://www.fpc.org/currentdaily/gbtsumbybatchdate.pdf to the FPC web page for more details.

d. USDA – Pinniped and Avian Hazing: Deck-based pinniped hazing started 14 March and avian hazing started 01 April.

e. USGS – Bass Sampling: Smallmouth bass tagging and sampling for tissue analysis and acoustic telemetry monitoring began on 14 March. BRZ boat fishing in the Main Dam Forebay was concluded on 08 April. Efforts now focus on different zones of the Bonneville Forebay. This study is an extension of a study started in 2020 and is in support of a broader effect being conducted by USACE under the Comprehensive Environmental Response, Compensation and Liability Act at Bradford Island.

f. State Agency Pinniped Trapping: Sea lion trapping started on 04 April.

g. ODFW SMF Sampling: ODFW began sampling at the SMF using the sort-by-code system to target juvenile spring Chinook from the Round Butte Hatchery for post-release pathogen screening.

h. USGS TDG Monitoring: USGS re-installed TDG monitoring equipment on Cascades Island above and below the Main Dam on 31 March. Water-quality data collection will continue through the end of spill season.

**4. FISHWAYS:**

a. Project biologists inspected from 10 – 16 April.

b. Fish Passage Plan observations:

- **Table 4**. *FPP Items Out of Criteria.*

| Date | Location | FPP Violation | Cause | Response |
|---|---|---|---|---|
| PH1 | | | | |
| 04/10 – 16 | PH1 ITS | S. End Gate Inoperable and Chain Gates 1a & 1b Closed | S. End Gate Inoperable, 1a and 1b Closed for Safety Reasons | W.O. |
| 04/10– 16 | PH1CC | FG 2-19 Stuck in the Mostly Closed Position, Should Be Open | Mechanically Bound | W.O. |
| 4/16 | PH1CC | S. Ent/TW Diff <1.0’ | Unknown | NA |
| Bradford Island | | | | |
| 04/12,15,16 | A-Branch | Weir Staff Gauge >1.1’ | Unknown | N/A |
| Cascades Island | | | | |
| 04/13 – 14 | CI Fishway | FG 6-11 Mechanically Bound in the Closed Position, Should Be Open | Mechanically Bound | W.O. |
| 4/12 | CI Fishway | FG 6-10 Open, Should Be Closed | PLC Hardware Alarm/PLC Disabled | W.O. |
| 4/12 | CI Fishway | FG 6-19 Open, Should Be Closed | PLC Hardware Alarm/PLC Disabled | W.O. |
| Washington Shore: Nothing to Report | | | | |

- PH1 Collection Channel diffuser FG 2-19 was found mechanically bound in the mostly closed position on 02/24/22 by PH1 Mechanics. No repairs can be made until the PH1CC can be dewatered in the next Oregon Fishway Winter Maintenance Period (winter 2023/2024).
- 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 Washington Shore/Cascades Island Fishway Winter Maintenance Period (winter 2022/2023).

c. Adult Fishways:

(1) The AFF was watered up on 14 March.

(2) Sensor calibrations were conducted on 12 April.

(3) SLEDs are installed at all locations.

(4) Bradford Island, Cascades Island, and Washington Shore Fishways remain in service.

d. Juvenile Fishways:

(1) The ITS remains in service (auto-chain gates 3B, 6C, & 10B only).

(2) The hydro-cannon remains in service.

(3) The B2CC remains in service.

(4) The DSM remains in service.

(5) STSs remain in service.

e. Lamprey Fishways:

(1) BI, CI, and WA Shore LPS's were placed into service on 18 April.

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

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

(4) The AFF and CI lamprey traps remain out of service.

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

**Table 5**. *Avian Counts*.

| Date | Gulls | Cormorants | Terns | Wh. Pelicans | Grebes |
|---|---|---|---|---|---|
| 04/10 | 21 | 1 | 0 | 0 | 0 |
| 04/11 | 16 | 0 | 0 | 0 | 0 |
| 04/12 | 23 | 3 | 0 | 0 | 0 |
| 04/13 | 38 | 0 | 0 | 0 | 0 |
| 04/14 | 21 | 1 | 0 | 0 | 0 |
| 04/15 | 27 | 1 | 0 | 0 | 0 |
| 04/16 | 13 | 0 | 0 | 0 | 0 |

**5. WATER QUALITY MONITORING:**

a. Fishway Temperatures: Temperature monitoring concluded for the season on 09 October 2021.

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

**6. CONSTRUCTION:** Nothing to report.

**7. HAZMAT, SPILLS AND CLEANUP:**

- On Sunday, 10 April at approximately 1020, USACE Rangers noticed the USACE 22ft Rigger Workboat taking on water. The boat was moored at the guide wall upstream of the navigation locks. At 1055, Operations staff assessed the situation and discovered a fuel sheen in the water. At 1200 the USACE Ranger Boat entered the B1 Forebay BRZ to assist in the rescue of the boat. Riggers were able to extract the boat and were out of the BRZ at 1350. An absorbent boom was deployed at 1345 and the sheen was contained within the old navigation lock chamber. The amount of potentially spilled material is 60 gals of unleaded gasoline and 1 gallon of 2-cycle oil.

**8. TELETYPES CURRENTLY IN EFFECT:**

- A teletype was distributed on 01 March detailing a "no spill operation" for Bonneville Lock & Dam. This teletype requests BPA to not spill at Bonneville for the following dates and times:
    - 14 March – 17 March, 0600 – 1900 HRS
    - 21 March – 24 March, 0600 – 1900 HRS
    - 28 March – 31 March, 0600 – 1900 HRS
    - 04 April – 07 April, 0600 – 1900 HRS

  If spill is necessary during these times, the Corps requests that BPA makes best efforts to shape spill outside the dates and times above. This request is to provide safe working conditions for USGS conducting fish tissue sample study in the Main Dam Forebay BRZ. The PH2 Corner Collector (B2CC) will continue to operate as described in the 2021 Fish Passage Plan, see section 2.3.2.5.V. For further details, please see teletype BON R 030122 0834.
    - A revision to this teletype was sent out on 31 March. This revision edits the end dates to now extend through Saturday, 9 April to 1900 HRS. Please see teletype BON R 033122 0823 for further details.

- A teletype was sent out 07 April regarding Bonneville Spring Spill for Juvenile Fish Passage. This teletype is a revision to the original Spring Spill for Juvenile Passage teletype (BON R 040422 1038) with revisions to include the current location of the 125% gas cap spill rate, which is now in the Level 2 of the spill priority list.

  Effective Sunday 10 April at 0001 HRS through Wednesday 15 June at 2359 HRS, Bonneville Dam is to operate in accordance with the 2022 Fish Operations Plan (FOP) to provide spring spill for juvenile fish passage, as described below:
  - Pursuant to FOP Table 3, the 2022 spring spill operation at Bonneville is as follows:
    - 125% gas cap, 24 HRS/Day:
      - The spill rate for the 125% gas cap is defined in the current spill priority list teletype, Level 2. This spill rate is estimated to meet but not exceed 125% TDG in the Bonneville Dam Tailrace, unless otherwise determined based on current conditions or Project constraints. The spill cap for BON will not exceed a MAX of 150 kcfs to avoid causing erosion in the spillway stilling basin.
  - Distribute spill according to spill patterns in the 2022 Fish Passage Plan (FPP) Table BON 16. Actual spill may range up to +/- 3 kcfs from the target due to project operational limits described in the FOP Sections 3 and 8.8.3.
  - Operate PH2 Units within the restricted operating ranges defined in the FPP Section 4.2.2.2, unless otherwise instructed via teletype.
  - During periods of high spill, there may be a need to temporarily reduce spill or modify patterns to maintain safe navigation in the tailrace (per FOP Section 4.6).
    - Spill adjustments for navigation safety may be made at the discretion of the Project Operator based on current conditions and the navigation situation. Make best efforts to minimize the magnitude and duration of the adjustment to the extent possible.
    - Coordinate all spill adjustments with BPA Hydro Scheduling
  - If river flow is too low to maintain FOP spill and minimum generation requirements in FOP Table 1, operate at minimum generation and spill the remainder of outflow.
  - If notified that BPA has declared a “Transmission System Reliability Need” or “Transmission System Emergency”, adjust operations as instructed by BPA Hydro Scheduling or Transmission Dispatch (per FOP Section 4.4)

  Please see teletype BON R 040722 1620 for more details of this teletype. Please see teletype BON R 04072022 1525 for specifics on the 125% Gas Cap in Level 2 for fish passage projects pursuant to the 2022 FOP.

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