

## **AQU 3 Appendix 1**

---

*Article 409 of the Merwin License*

**MERWIN LICENSE ARTICLE 49**

(AS AMENDED SEPTEMBER 1995)

Part I. DECEMBER 8 TO MARCH 1

- A. Minimum flow of 1,500 cfs will be maintained
- B. Ramp-up limit = 1 foot per hour, based on Ariel gage  
Ramp-down limit = 1 1/2 feet per hour, based on Ariel gage

Part II. MARCH 1 THROUGH MAY 31

A. MARCH

If March 1 runoff forecast  $\geq$  400,000 DSF for March 1 through May 31, then minimum flow = 2,000 cfs

If March 1 runoff forecast  $<$  400,000 DSF, then minimum flow will be interpolated between 400,000 DSF (1,000 cfs) and 340,000 DSF (2,000 cfs) by the equation  $y = 0.017x - 4680$   
(y = minimum flow; x = runoff forecast)

At no time will minimum flow below Merwin be less than 1,000 cfs

B. APRIL

If April 1 runoff forecast  $\geq$  340,000 DSF for April 1 through May 31, then minimum flow = 2,700 cfs

If April 1 runoff forecast  $<$  340,000 DSF, then minimum flow will be interpolated between 340,000 DSF (2,700 cfs) and 270,000 DSF (1,300 cfs) by the equation  $y = 0.02x - 4100$

At no time will minimum flow below Merwin be less than 1,300 cfs

C. MAY

If May 1 runoff forecast  $\geq$  175,000 DSF for May 1 through May 31, then minimum flow = 2,700 cfs

If May 1 runoff forecast  $<$  175,000 DSF, then minimum flow will be interpolated between 175,000 DSF (2,700 cfs) and 145,000 DSF (1,650 cfs) by the equation  $y = 0.035x - 3425$

At no time will the minimum flow below Merwin be less than 1,650 cfs

- D. During May 16 through May 31, Merwin will operate with the goal to minimize flow releases in excess of two-unit capacity.

Part III. JUNE AND JULY

2,700 cfs	June	(natural flow is equal to or above 2,000 cfs)
2,000 cfs	July 1 - July 15	(natural flow is equal to or above 1,600 cfs)
1,500 cfs	July 16 - July 31	(natural flow is equal to or above 1,200 cfs)

If natural flow is below these numbers, then minimum flow will equal natural flow. Except at no time will minimum flow be less than 1,650 in June and 1,200 cfs in July.

From June 1 through June 30, Merwin will operate with the goal to minimize flow releases in excess of two-unit capacity

Part IV. (March 1 - July 31)

- A. The period of plateau operation may be modified if the need (abundance of fish) so indicates, as determined jointly by the Washington Departments of Fisheries and Game and the Merwin licensee.
- B. Daily fluctuation in flows below Merwin will be restricted by providing flow plateaus (periods of near-steady discharge). Each plateau will be of as long a duration as possible when in effect, but flow plateaus can be changed as a result of changes in natural flow or power demand on the Lewis River power system. Reductions in the number of generating units on the line during the period of plateau operation will be held to as few as possible, with a target level of no more than twelve during this period.
- C. In changing a flow plateau on the rising stage, the Merwin plant may be loaded to provide a gradual rise as measured at the USGS gage of not more than one (1) foot per hour. On the falling stage the following limitations prevail: (a) for plateau operation of flows above 6,000 cfs the fall should be at a gradual rate of not more than 750 cfs per hour; (b) for plateau operation above 3,000 cfs but less than 6,000 cfs the fall should be at a gradual rate of not more than 500 cfs per hour; (c) for plateau operation for flows below 3,000 cfs the fall should be at a gradual rate not to exceed 300 cfs per hour, and limited to only one change in any 24-hour period.

Part V. AUGUST 1 THROUGH OCTOBER 15

- A. Minimum flow of 1,200 cfs will be maintained
- B. Same as “B” of Part I

Part VI. OCTOBER 16 THROUGH DECEMBER 7

- A. October 16 - 31 2,700 cfs
- B. November 1 - 15 lesser of natural flow at Merwin + 2,000 cfs OR 4,200 cfs
- C. Nov 16 - Dec 7 lesser of natural flow at Merwin + 2,000 cfs OR 5,400 cfs
- D. Part VI. (C). may be terminated at an earlier date by WDFW if salmon spawning or other conditions so warrant, and if such termination is requested by the Merwin licensee.
- E. Same as “B” of Part I.

Part VII

- A. As used herein, the term “natural flow” shall mean, on any day, the average of the natural flow of the Lewis River at Merwin during an immediately preceding three-day period.
- B. The licensee shall meet with the WDFW, at the request of any of the parties, to discuss issues related to stream flows. In the event the licensee encounters a difference of opinion regarding stream flows with WDFW, the parties may, by mutual consent, agree to consult with the Director, Division of Project Compliance and Administration, for resolution regarding such difference of opinion.

This page intentionally blank.