United States
Environmental Protection
Agency

Region 10
1200 Sixth Avenue
Seattle WA 98101

Alaska
Idaho
Oregon
Washington

EPA

September 4, 1992

Reply to
Attn of: WD-139

Michael T. Llewelyn, Program Manager
Water Quality Program
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Re: Approval of Total Maximum Daily Load (TMDL) for Lower Snohomish River

Dear Mr. ~~Llewelyn~~: Mike

I am pleased to approve the following TMDL and associated wasteload allocation that was submitted by your Department on March 9, 1992:

Waterbody Segment	Waterbody Name	TMDL Parameter
WA-07-1010	Lower Snohomish River	Dioxin

Dioxin controls have been established to ensure compliance with the state's narrative water quality standard for toxic substances. A wasteload allocation has been implemented through effluent limitations in a National Pollutant Discharge Elimination System (NPDES) permit for the Weyerhaeuser Paper Company, Everett Kraft Mill (NPDES Permit No. WA-000300-0). Since the mill is currently closed, actual discharge levels are expected to be well below those authorized in the NPDES permit.

By EPA's approval of this TMDL, it is now incorporated into the state's water quality management plan.

Sincerely,

Charles E. Findley, Director
Water Division

cc: Lynn Singleton, Ecology
Steve Butkus, Ecology
Will Kendra, Ecology

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AUG 18 1992

Reply to
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MEMORANDUM

SUBJECT: Recommendation for TMDL Approval
Lower Snohomish River - dioxin

FROM: Amber Wong, Standards to Permits Specialist
Water Quality Section

TO: File

- TMDL submitted March 9, 1992
- TMDL package completed August 18, 1992
  - EPA Approval Checklist
  - Document 1: Transmittal letter
  - Document 2: TMDL document
  - Document 3: Industrial Section, Washington Department of Ecology. 1990 (version 2.0), Proposed Effluent Limitations for Dioxin and AOX, Olympia, WA
  - Document 4: Letter from Richard Burkhalter, Ecology to Dave Ragsdale, EPA-WOO, transmitting new TCDD and AOX effluent limits, dated January 29, 1991
  - Document 5: Public participation, public notice and public hearing documentation
  - Document 6: NPDES Permit No. WA-000300-0, Weyerhaeuser Paper Company (Everett Kraft Mill), issued May 10, 1991, amended May 24, 1991, amended February 20, 1992.
    expiration date: May 10, 1996
  - Document 7: Fact Sheet for Weyerhaeuser Paper Company (Everett) NPDES permit; dated August 24,

1990

- Document 8: Response to comments received during public hearings and public notice of Weyerhaeuser Paper Company (Everett) NPDES permit, dated July 22, 1991; also, see addendum to Public Responsiveness summary

Transmittal letter - Complete (see Document 1)

- states that TMDL has been established in accordance with Section 303(d)(1) of the Clean Water Act.

- **Review note: meets requirements**

Problem Assessment - Complete (see Document 3)

Background

- Framework for TMDL came from EPA Dioxin Strategy (1983), National Dioxin Study, five-mill study (1987), U.S. EPA-Paper Industry Cooperative Dioxin Study (104 mill study, 1988).

- On October 20, 1988, EPA issued an interim strategy for regulating dioxin discharges from existing mills. The strategy set out proposed interim control measures for chlorine minimization and suspended solids controls, but stopped short of designating effluent limits.

- On June 9, 1989, pursuant to Section 304(l) of the Clean Water Act, Ecology listed 8 pulp mills as violating water quality standards for the priority pollutant TCDD. Weyerhaeuser Paper Company (Everett), discharging to the Lower Snohomish River, was on this list. An Individual Control Strategy (ICS), defined as a water quality-based permit, was required for this facility. Derivation of the TMDL for the Lower Snohomish River for TCDD was part of developing the permit.

Assessment

- The applicable water quality criterion for TCDD is 0.014 ppq, based on a 10 -6 risk level and ingestion of aquatic organisms only (no drinking water component).

- Data from Weyerhaeuser Paper Company (Everett) showed measurable quantities of dioxin in the plant effluent. These values showed that existing effluent from this facility would cause violations of the dioxin water quality standard. In addition, dioxin was found in

fish and shellfish samples taken near the mill.

- One major point source [Weyerhaeuser Paper Company (Everett) was identified. It did not have existing controls for TCDD.

- **Review notes: Problem assessment accurately gives background information, identifies exceedence of water quality standard for dioxin due to one major point source in the waterbody. Supporting information - effluent, fish data - quantify Weyerhaeuser's contribution.**

<u>TMDL document</u> - Complete (see Document 2)

- States that a loading capacity of 0.19 mg/day has been established for the Lower Snohomish River (see Document 8: Response to Comments, page 21 of 31).

- **Review note: Clearly identifies the load capacity for the TMDL. Clearly links this to the water quality criterion of 0.014 ppq. Concisely summarizes the implementation and monitoring followup (through the NPDES permit). References the supporting technical documents.**

<u>Supporting Studies</u> - Complete (see Documents 3 and 4)

- TCDD permit limits for the point source (WLA) were calculated based on compliance with the water quality criteria, taking into account the tidal prism and dilution analysis of the outfall to the Lower Snohomish River. Three factors in calculating the WLA were: 1) the applicable water quality criterion of 0.014 ppq, 2) the harmonic mean flow of 14,070 cfs for the Lower Snohomish River (documents 4 and 8), and 3) the fraction of the dioxin loading capacity reserved for the Snohomish River (0.4037). Based on this analysis, the long term TCDD loading for the Lower Snohomish River is 0.19 mg/day.

- NPDES permit limits were calculated according to the statistical method outlined in EPA's Technical Support Document for Water Quality-based Toxics Control. This statistical method takes effluent variability and sampling frequency into account. The annual average load for the mill = 0.36 mg/day. The daily maximum limit = 0.59 mg/day.

- Weyerhaeuser must meet this level by March 8, 1994.

- Weyerhaeuser permit issued May 10, 1991.

First amendment: May 24, 1991.
Second amendment: February 20, 1992.

- **Review notes: Documentation clearly gives basis for calculating the TMDL. Tidal prism and dilution calculations were used for determining the TCDD loading for the Lower Snohomish River. Calculation of the WLA - fine. Permit limits to implement the TMDL were calculated according to EPA guidance. The date for meeting the effluent limits falls within guidelines.**

Public participation - Complete (see Document 5)

- Public notice of the Weyerhaeuser permit and wasteload allocation from August 21, 1990 to October 3, 1990. Public hearing on the permit on September 26, 1990.

- **Review notes: Adequate public participation.**

Enforceability - Complete (see Documents 6, 7)

- NPDES Permit No. WA-000300-0, Weyerhaeuser, Everett

- **Review notes: Valid permit and supporting documentation with applicable conditions**

TMDL effectiveness plan - Complete (see Document 6)

- In permit: effluent and sludge monitoring for dioxins, furans, adsorbable organic halogens; ambient bioaccumulation.

- **Review notes: Adequate monitoring to assess compliance with the TMDL.**

Current Status of the Mill

- The mill ceased operations earlier this year. Discharge of dioxin, if any, should be well below the level authorized in the NPDES permit. The mill has not formally asked for revocation of their NPDES permit, so the permit limits and conditions are still applicable.

Recommendation, approve TMDL.

ALW, 8/18/92

TOTAL MAXIMUM DAILY LOAD

Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600

Developed pursuant to 40 CFR 130.7 and the Federal Clean Water Act

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WATERBODY SEGMENT: WA-07-1010

Lower Snohomish River

(mouth and east of longitude 122° 13'40"W to latitude 47° 56'30"N - Snohomish RM 8.1)

RECEIVING SYSTEM INFORMATION:

Basin: Snohomish
Counties: Snohomish

TMDL PARAMETER:

2,3,7,8 TCDD (Dioxin)

APPLICABLE RULES:

WAC 173-201-047(3)
WAC 173-201-047(4)

SOURCES COVERED BY THIS TMDL:

Allocation Type	Source Description
WLA	Weyerhaeuser at Everett

TMDL:

A TMDL for 2,3,7,8 TCDD of 0.19 mg per day to the Lower Snohomish River. This loading rate has been shown to be consistent with the narrative state water quality criterion of 0.014 ppq and the long term harmonic mean flow of 14,070 cfs for Steamboat Slough.

Technical Documents:

Industrial Section, Washington Department of Ecology. 1990 (version 2.0). Proposed Effluent Limitations for Dioxin and AOX. Olympia, WA.

Burkhalter, R.A. New TCDD and AOX Effluent Limits. Letter to Dave Ragsdale dated January 29, 1991.

Addendum to Public Comment Responsiveness Summary for the Weyerhaeuser Mill at Everett. dated June 12, 1991.

Implementation:

The WLA has been incorporated into the draft permit. The permit has been appealed. Final action on the permit awaits the decision on the appeal.

Monitoring:

The draft permit under appeal requires ambient monitoring to assess TMDL implementation be conducted by the permittee before 180 days of the permit expiration for bioaccumulation of TCDD in 4 species; Starry Flounder, Sandab, Mussels, and Crab.