

**CHELAN PUBLIC UTILITY DISTRICT
ROCKY REACH HYDROELECTRIC PROJECT NO. 2145
STUDY PLAN OUTLINE – First-Draft
October 15, 2000**

DISSOLVED GAS BIOLOGICAL EFFECTS STUDY

Study Goal

The purpose of this study is to compile and collect baseline data necessary to determine whether aquatic species residing downstream from Rocky Reach Dam show evidence of adverse affects from levels of total dissolved gas (TDG) generated from spill at the project. The ultimate objective is to document, if it be the case, that levels of dissolved gas entrained by Rocky Reach project operations in excess of the 110% water quality standard are not causing any measurable adverse affects on aquatic species.

Issues To Be Addressed

The primary issue to be addressed is whether there are significant ongoing Project-related impacts to aquatic organisms resulting from exceedance of the 110% saturation water quality standard for TDG.

Informational Needs

- Compile pertinent literature related to the effects of exposure to TDG levels above 110% for fish and invertebrate aquatic organisms.
- Collect samples of fish and invertebrate aquatic organisms in the Rocky Reach tailrace and downstream areas in the vicinity.
- Conduct a legal analysis of the potential to seek a Section 401 water quality certification through the Use Attainability Analysis method provided for in the Clean Water Act.
- Collect information sufficient to obtain a Section 401 water quality certification in the event that reasonable operational or structural modifications to the project can not meet the water quality standard.

Level of Analysis

- Summarize any existing and historical data on TDG and gas bubble trauma (GBT) that have not been presented in previous documents.
- Develop a detailed study design to evaluate incidence of GBT in resident and migratory aquatic organisms.
- Develop a plan of action for seeking to use the Use Attainability Analysis if GBT levels are very low.