

“small low-sales farms.” These data indicate that it is possible for labor to earn a zero or negative return in the short run. EPA recognizes that, under standard economic theory, an enterprise in which labor is earning no return, either as wages or profit, is unlikely to be viable in the long run. The Farm Financial Standards Council also discusses the issue of unpaid labor (DNC 20095, pp. II–3 and II–22). EPA does not estimate a charge for unpaid labor when calculating farm income under discounted cash flow or net income analysis for this NODA. However, EPA seeks comment on whether it should impute a cost for unpaid labor and management in the closure analysis and, if so, on what data and methods the wage should be based.

c. Revisions to Economic Analyses for Non-commercial Facilities. EPA uses a methodology for non-commercial facilities where pre-tax annualized costs are compared with the operating budgets for Federal, State, Tribal (owned and operated by Tribal governments), and research facilities. For Alaskan non-profit facilities, EPA compares pre-tax annualized costs to reported salmon revenues. EPA is also considering calculations, such as the increased need for taxes or fees to cover the additional costs, that can be made as detailed questionnaire data permit. EPA seeks comment on methodologies for investigating impacts on non-commercial operations, including methods for characterizing the implications or consequences of percent reductions in facility budgets.

D. Revisions to Assumptions and Methodology Used in Benefits Analyses

The proposal established limits for total suspended solids (TSS) loads from flow-through and recirculating systems and required practices to minimize accumulation of excess feed from net pen systems. These requirements, according to EPA loadings calculations, would reduce facility discharges of TSS, total nitrogen (TN), total phosphorus (TP), and biochemical oxygen demand (BOD). The proposal also required facility operators to minimize releases of non-native species, pathogens, and therapeutants. At proposal, EPA did not quantify baseline or regulated loads for these latter parameters.

Reductions in these loadings (TSS, TN, TP, BOD, non-native species, pathogens, and therapeutants) could affect water quality, the uses supported by varying levels of water quality, and other aquatic environmental variables (e.g., primary production and populations or assemblages of native organisms in the receiving waters of

regulated facilities). EPA discussed several of these possible responses to loading reductions qualitatively at proposal. The proposal also estimated the monetized benefits based on changes in the recreational use value of freshwater streams affected by the rule.

EPA anticipates that its overall approach for characterizing benefits for the final rule will be similar to that used for the proposed rule. The proposal approach involved three efforts. First, EPA developed an estimate of national monetized benefits of the rule. We derived the monetized benefit estimate by applying (1) the QUAL2E (a water quality model) to a range of model facilities and receiving water conditions and (2) an economic monetization method that related water quality improvements to monetized benefits. Second, EPA discussed the possible impacts from rule-related reductions in BOD, TN, TP, and TSS loads on stream water quality relative to national water quality criteria. This discussion was primarily qualitative. Third, EPA included qualitative discussions of possible benefits of the rule that could not be quantified. Examples of such possible benefits include those that might arise from reductions in releases of non-native species or reductions in inadvertent spills of drugs and chemicals used at CAAP facilities. Again, these were qualitative discussions only, and EPA neither quantified nor monetized these possible benefit areas. While we expect to retain this overall approach, the Agency may revise inputs, methods, or information in each of these areas. Sections V.D.1–V.D.3 discuss these improvements further.

EPA's analysis of possible benefits of the final rule will address public comments about the proposal benefits analysis. We received some comments addressing the Agency's water quality-based monetized benefit estimate. One commenter criticized EPA's monetized benefit estimate as insufficiently reflecting the value of water quality. Other commenters asserted that EPA overestimated environmental benefits of the regulation. One of these commenters argued that EPA's use of frequency factors led to overestimation of benefits. Another commenter questioned whether EPA should extrapolate estimates of freshwater benefits for reductions in pollutant discharges to Alaska facilities that are discharging to marine environments. This commenter also asserted that, in many nutrient-poor streams where salmonid fish are found, hatchery-related nutrients lead to improved downstream fishing, and that a rule-related reduction in these

nutrient inputs should be subtracted from EPA's benefits estimate.

In addition to comments on EPA's monetized benefit estimate, EPA received some comments on whether and how to characterize benefits from rule-related reductions in discharges of non-native species, pathogens, antibiotics or other therapeutants, and other chemicals. One commenter argued that it is extremely complex and controversial to make statements about benefits as a result of controlling non-native species, pathogens, antibiotics, or chemical releases is extremely complex and controversial.

1. Revisions to Monetized Benefits Estimate

At proposal, EPA used an approach for estimating national benefits from rule-related improvements in water quality that relied on (1) simulating improvements in downstream water quality parameters for model facilities, and (2) applying a monetization method that related changes in water quality to “willingness to pay” (WTP) values for water quality improvements. For the monetization method, we combined four simulated water quality parameters to generate a water quality index (WQI–4). The parameters were dissolved oxygen (DO), biochemical oxygen demand (BOD), total suspended solids (TSS), and fecal coliform (FC). Because we do not expect loadings for FC to be discharged from CAAP facilities, we assumed that background levels of this parameter remain unchanged. The WQI is a 0–100 scale that weighs each water quality parameter to reflect its significance for determining the suitability of water for progressively more demanding uses. We converted changes in the WQI–4 to monetary values based on a contingent valuation survey (Carson and Mitchell, 1993, DCN 20157).

At proposal, data were not available for site-specific estimates of water quality responses to reduced pollutant loadings. Neither were they available for facility-specific estimates of pollutant loadings and loading reductions nor individual facility locations for all potentially regulated facilities. Therefore, to simulate possible ranges in downstream water quality improvements for regulated facilities, we used estimates of pollutant loadings and loading reductions for representative (“model”) facilities and a hypothetical receiving water with a wide range of assumed background water quality and flow conditions. We used the Enhanced Stream Water Quality (QUAL2E) model to perform these simulations. We then applied the