

aquaculture enterprise and the entire farm/company. EPA will perform the closure analysis for the enterprise, facility, and company levels. These analyses involve several complexities (e.g., what to consider as earnings, what costs are included, and the number and type of forecasting methods used). Section V.C.3.b.ii contains our detailed responses to comments on these and other aspects of the closure analysis.

Closure Analysis—Forecasting methods. EPA examines the possibility of closure under three forecasting methods to project future earnings. The first method uses U.S. Department of Agriculture (USDA) long-run baseline projections for the Consumer Price Index, Food at Home, Fish and Seafood Sector for 2004 through 2012 (USDA Agricultural Baseline Projections to 2012, Staff Report WAOB-2003-1, February, DCN 20363). This projection reflects the current industry downturn which then changes to a long-run annual increase of 1.5 percent. This index is used to adjust the revenue information in the detailed questionnaire to project revenue in future years.

The second method uses historic time-series data collected and published by several government agencies to estimate price trends and project them into the future. For trout, EPA uses USDA trout price data for 1994–2002 (Trout Production, Sales of fish 12" or longer, U.S. Average price per pound). For all other fish, EPA uses U.S. Department of Labor, Bureau of Labor Statistics, Fish PPI, Producer Price Index—Unprocessed and packaged fish, not seasonally adjusted, (Series ID: WPU0223) from January 1980 through February 2003. EPA examined Series ID: WPU-223-1-3 (salmon) not seasonally adjusted but could find no trend in the data. EPA converts the data to constant dollars where needed. For time series with monthly observations, EPA converts the series to a 12-month centered moving average to smooth seasonal variations. We performed a regression analysis using this price data to derive kinked trend lines for prices (e.g., Chow Breakpoint Test, see DCN 20366 and DCN 20371 for details). This type of regression allows the slope of the price line to differ before and after suggested breakpoints in time. Both data sets (trout and all fish) show downward trends for prices. We converted price level forecasts into an index using 2001 as the base period (this is the most recent year for which data were collected in the detailed questionnaire). We also applied this index to base year (2001) data from the detailed survey to project future revenues. The third

forecasting method assumes constant future revenues using the average of 1999–2001 earnings collected in the detailed questionnaire.

For this notice, EPA projected impacts only when the same impacts occurred using two of the three forecasting methods. EPA seeks comment on basing its closure analysis for the final rule on impacts that occur using one of the three methods.

The forecasting methods give a range of trends (i.e., upward (USDA), downward (estimated price indices), and no change (survey earnings average)). However, EPA expects to adjust the forecasts to reflect more recent data for the final rule, so this range of trends may change (see DCN 20450).

Closure Analysis—Baseline Industry Conditions. We can not analyze facilities with negative net earnings under 2 or 3 of the forecasting methods before they incur pollution control costs with the methodology used for the facility closure analysis. EPA seeks comment on omitting such facilities from the closure analysis. Such facilities represent situations such as:

- Start-ups (where the first year of income is negative but does not indicate future earnings)
- Cost centers (that transfer production to other facilities under the same ownership at no cost, or the cost is set to the operating costs)
- Facilities where the company does not record income statement information at the facility level.
- Facilities that are likely to fail with or without the rule.

Direct and Community Impacts. When the analysis projects that a facility will close as a result of the rule, EPA then tracks the direct and indirect impacts from that closure. We consider all associated revenues, production wages, and employment (both paid and unpaid labor and management) lost. We will also examine the increase in local unemployment resulting from the facility closure. These approaches respond to comments that suggested the need to determine how the CAAP industry impacts communities (e.g., employment) in several areas of the country.

Indirect and National Impacts. Impacts on the CAAP industry are known as direct effects. Impacts due to lost CAAP output and employment in sectors that directly support the CAAP industry are known as indirect effects. Induced effects are overall changes in household and business spending due to direct and indirect effects. The U.S. Department of Commerce's Bureau of Economic Analysis (BEA) tracks these

effects both nationally and regionally in large "input-output" tables, published as the Regional Input-Output Modeling System (RIMS II) multipliers (DCN 20386). EPA used the multipliers for the RIMS II industry number 1.0302 (miscellaneous livestock) because it includes all of SIC code 0273. EPA used national final demand multipliers for output (3.7163) and employment (45.2228) because they include direct, indirect, and induced effects. For example, for every \$1 million in output lost due to the projected closure of a CAAP facility, nearly \$3.8 million in output and 45 jobs are lost nationwide. When a facility is projected to fail as a result of the rule, EPA may estimate the loss in output associated with facility closure and then use the RIMS II multipliers to estimate national level impacts.

Impact on Financial Health. EPA will calculate impacts on financial health at the company level using USDA's four-state categorization of financial health based on a combination of net cash income and debt/asset ratio (i.e., favorable, marginal solvency, marginal income, and vulnerable). EPA calculates the financial state of each company before and after incremental pollution control costs. EPA considers any change in categorization an impact of the rule.

Impact on Borrowing Capacity ("Credit Test"). Commenters suggested that impacts on borrowing capacity should be considered. Based on several measures used by USDA, EPA developed a method to examine whether a bank would lend a farm/company the amount needed to cover the costs of incremental pollution control. According to the USDA, "Lenders generally require that no more than 80 percent of a loan applicant's available income be used for repayment of principle and interest on loans" (DCN 20395, p. 19). EPA considered the income available for debt coverage as after-tax cash flow for 2001 for the farm or company (typically, the worst year represented in the questionnaire data). For sole proprietors, EPA collected data for aquatic animal production from Schedule F or Schedule C from the IRS tax forms submitted with a proprietor's Form 1040. EPA intentionally did not request information from the proprietor's Form 1040 (the Agency specifically excluded the collection of off-farm income data). We multiplied the after-tax cash flow by 80 percent to obtain a proxy for USDA's "maximum feasible loan payment" (MFLP). We then calculated the ratio of the pre-tax annualized cost of an option and the after-tax MFLP. We assumed that a bank would compare the pre-tax cost to the