

TABLE VII-2.—REDUCTION IN AVERAGE DBP LEVELS FROM PRE-STAGE 2 TO POST-STAGE 2 (ALL PLANTS)—Continued

| Source water | System size (population served) | Average plant-level TTHM concentrations (µg/L) | | | Average plant-level HAA5 concentrations (µg/L) | | |
|--------------|---------------------------------------|---|-----------------|----------------------|---|-----------------|----------------------|
| | | Pre-stage 2 | Post-stage 2 | Percent reduction | Pre-stage 2 | Post-stage 2 | Percent reduction |
| | > 10,000 | 35.5 | 33.8 | 4.7 | 25.0 | 23.8 | 4.7 |
| GW | ≤ 10,000 | 16.0 | 15.6 | 2.2 | 8.5 | 8.3 | 2.2 |
| | 10,000 | 16.2 | 16.0 | 1.7 | 8.6 | 8.5 | 1.7 |

Note: Due to rounding, percent reductions calculated from data in the tables may differ from the actual values presented here

Source: Economic Analysis (USEPA 2003i) Exhibit 5.22b

C. Benefits of the Proposed Stage 2 DBPR

As described previously, the Stage 2 DBPR is expected to reduce both peak and long-term exposure to DBPs, thereby reducing the potential risk of both adverse reproductive and developmental health effects and bladder cancer. As discussed in section III of this preamble, both epidemiological and toxicological evidence suggest a possible increased risk for pregnant women and their fetuses who are exposed to DBPs in drinking water. The Agency believes and the Advisory Committee concluded that the weight of evidence is enough to take regulatory action to help address the potential reproductive and developmental endpoints in the Stage 2 DBPR. However, data are not available at this time to conduct a traditional quantitative risk assessment. Instead, the benefits from reducing most reproductive and developmental risks are discussed qualitatively in this

preamble. For one endpoint, fetal loss, the Agency provides an illustrative calculation to explore the implications of some published results for potential benefits associated with reducing fetal losses that may be attributable to certain DBP exposures.

In addition to achieving greater protection from possible adverse reproductive and developmental health effects, the rule may provide additional reduction in bladder cancer cases as the overall level of DBPs in distribution systems nation-wide decreases. The Agency estimated and monetized the potential benefits from reduction in bladder cancers resulting from this rule. Reductions in bladder cancer (including both fatal and non-fatal cases) provide a range of annualized present value benefits from \$0 to \$986 million using a three percent discount rate (\$0 to \$854 million using a seven percent discount rate) depending on the risk level assumed. These estimates are based on the assumption that the percent

reductions in TTHM and HAAs will correspond to the percent reductions in bladder cancer risk attributed to populations receiving chlorinated drinking water as indicated by various epidemiology studies (USEPA 1998a). Zero is included in this range because of the inconsistent evidence regarding the association between exposure from DBPs and cancer.

Other regulatory alternatives considered by the FACA committee and the Agency could provide greater benefits but with greater technology cost implications. Table VII-3 presents benefits estimates of the proposed Stage 2 DBPR using two population attributable risks derived from published studies (2% and 17%) and assuming there is a causal link between DBP exposure and bladder cancer. In subsection VII.G., Table VII-14 shows potential benefits of all regulatory alternatives considered by the Agency.

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