

we chose are nonwastewaters disposed in nonhazardous municipal solid waste landfills; wastewaters stored and treated in on-site tanks prior to discharge to a POTW or under a NPDES permit; and wastewaters managed in onsite surface impoundments prior to discharge to a POTW or under a NPDES permit. The general criteria for selection of plausible waste management scenarios and the rationale for choosing each of these scenarios are described in this section.

1. Plausible Waste Management Selection Criteria and Modeling Considerations

Our regulations at § 261.11(a)(3)(vii) require us to consider the risk associated with “the plausible types of improper management to which the waste could be subjected” because exposures to wastes (and therefore the risks involved) will vary by waste management practice. The choice of which “plausible management scenario” (or scenarios) to use in a listing determination depends on a combination of factors which are discussed in general terms in our policy statement on hazardous waste listing determinations contained in the first proposed Dyes and Pigments Listing Determination (59 FR 66072, December 22, 1994). We have applied this policy in all subsequent listings and believe it is appropriate to continue to apply it here.

Our approach to selecting waste management scenarios to model for risk analysis is to examine current industry management practices; assess whether or not other practices are available to the industry; and to decide what practices the industry would reasonably be expected to use. There are common waste management practices, such as landfilling, which we generally presume are plausible for solid wastes and which we will evaluate for potential risk. There are other practices which are less common, such as land treatment, which we consider plausible only where the disposal methods have been reported to be practiced. Where a practice is actually reported in use, that practice is generally considered “plausible” and may be considered for potential risk. In some situations, potential trends in waste management for a specific industry suggest we will need to project “plausible” management even if it is not currently in use in order to be protective of potential changes in management and therefore in potential risk. We then evaluate which of these current or projected management practices for each waste are likely to pose significant risk based on an assessment of exposure

pathways of concern associated with those practices.

2. Selection of Waste Management Scenarios for Risk Assessment Modeling of Dyes and/or Pigments Nonwastewaters

The majority of nonwastewaters are landfilled. Based on information available as we started our risk analyses, we decided to model disposal of nonwastewaters in both offsite municipal solid waste landfills and a small number of onsite and offsite nonhazardous industrial waste landfills. After we began these analyses, ETAD submitted additional information indicating that our initial information regarding an onsite landfill was not relevant, as the facility operating that landfill treats waste by incineration prior to disposal. In addition, we obtained information from the State of Illinois regarding the offsite landfill that we had initially identified as an industrial landfill, clarifying that this landfill in fact accepts municipal wastes. Consequently, we decided that disposal in an industrial landfill is not a plausible management practice for these wastes, and we are basing our proposed listing decision solely on our assessment of disposal in MSWLFs. Upon receipt of this information, we modified our subsequent modeling runs to reflect a landfill distribution that was solely made up of MSWLFs.

The primary difference between modeling industrial nonhazardous landfills and municipal landfills is that industrial nonhazardous landfills are slightly smaller than municipal landfills so the quantities of dyes and/or pigments production waste modeled in an industrial landfill would be a relatively larger proportion of the total waste quantities going into the unit. Given the linear nature of our modeling for the organic loading limits, we do not believe that the model results would differ significantly if the landfill size distribution reflected industrial landfills. The preliminary runs that we conducted on a distribution of industrial and municipal landfills reflected our preliminary (and incorrect) characterization of some of the currently used landfills as industrial nonhazardous landfills. These preliminary results were very similar to the results for MSWLFs only (that serve as the basis for today’s proposal).

We modeled three liner scenarios: unlined, clay-lined, and synthetic-lined landfills. The risk assessment in section III.G.2.d.i contains more details about our risk modeling for landfills and the three liner scenarios. In past listings, EPA has not included the effect of liners

in the modeling of releases from landfills. Previously, we generally assumed that liners may fail over the long term, and therefore we modeled landfills as if they were unlined. We have been reluctant to take liners into account due to the uncertainties in the long term efficacy of liners and because we lacked data that we could use to project infiltration rates from a lined unit.²⁰

More recently, EPA has modeled reduced infiltration rates for lined landfills to support the Guide for Industrial Waste Management. The Industrial Waste Evaluation Model (IWEM) incorporated models to evaluate the groundwater protection afforded by various liner systems.²¹ For modeling composite liners, the IWEM used empirical data for infiltration rates collected from lined landfills. As part of the effort to characterize and develop distributions for the infiltration rates through liners, EPA collected information for nonhazardous waste management unit liner systems (*i.e.*, the rates of leachate infiltration through liners).²² EPA is today proposing to use data collected in this effort to construct distributions of infiltration rates for modeling of Subtitle D MSWLFs.

We believe it is appropriate to consider liners in today’s listing determination for several reasons. First, we have no indication that these wastes are (or are likely to be) landfilled in cells without liners. In comments on the earlier listing proposals for dye and pigment wastes, industry groups (ETAD and CPMA) stated that industry does not use unlined landfills; ETAD went further and identified the landfills being used by their members and described the liner systems in place at these landfills. Second, CERCLA liability concerns create strong incentives against the operation of such units by landfill owners and against the placement of these wastes in such units by waste generators. Third, our data show that the industry uses municipal solid waste landfills. These units have been subject to the Part 258 standards

²⁰ For example, we argued this most recently in the chlorinated aliphatics listing, where we concluded that uncertainties regarding the long-term effectiveness of landfill liners were sufficient to support a decision to list. We emphasized, however, that this decision was specific to a waste containing high concentration of mercury, a highly toxic, very persistent constituent. 65 FR 67101 (Nov. 8, 2000).

²¹ *Industrial Waste Management Evaluation Model (IWEM) Technical Background Document*. EPA530-R-02-012, U.S. EPA, August 2002. See also http://www.epa.gov/epaoswer/non-hw/indusd/iwem_tbd.htm.

²² “Characterization of Infiltration Rate Data to Support Groundwater Modeling Efforts,” Draft Final TetraTech, Inc. September 28, 2001.