U.S. Virgin Islands

Area Designations for the

2012 Primary Annual $PM_{2.5}$ National Ambient Air Quality Standard

Technical Support Document

1.0 Summary

In accordance with Section 107(d) of the Clean Air Act (CAA), the EPA must promulgate designations for all areas of the country. In particular, EPA must identify those areas that are violating a National Ambient Air Quality Standard (NAAQS) or contributing to a violation of the NAAQS in a nearby area. Additionally, through the designation process, the EPA identifies areas that are meeting the NAAQS and those areas without sufficient data for the Agency to make a determination. The EPA uses a designation category of "unclassifiable/attainment" for areas where air quality monitoring data indicate attainment of the NAAQS and for areas that do not have monitors but for which the EPA has reason to believe are likely to be in attainment and are not contributing to nearby violations. The EPA reserves the category of "unclassifiable" for areas where the EPA cannot determine based on available information whether the area is meeting or not meeting the NAAQS or where the EPA has not determined that the area contributes to a nearby violation. The EPA must complete this process within 2 years of promulgating a new or revised NAAQS, or may do so within 3 years under circumstances not relevant to these designations.[1] This technical support document (TSD) describes EPA's decision to designate the U.S. Virgin Islands as "unclassifiable" for the 2012 primary annual fine particle NAAQS (2012 annual PM2.5 NAAQS).[2]

Under section 107(d), states are required to submit area designation recommendations to the EPA for the 2012 annual $PM_{2.5}$ NAAQS no later than 1 year following promulgation of the standard, or by December 13, 2013. In February 2014, the U.S. Virgin Islands recommended that the entire Territory identified in Table 1 be designated as unclassifiable for the 2012 annual $PM_{2.5}$ NAAQS because of insufficient air quality monitoring data.

After considering these recommendations and based on EPA's technical analysis as described in this TSD, the EPA is designating the entire Territory of the U.S. Virgin Islands as unclassifiable for the 2012 annual $PM_{2.5}$ NAAQS. Although prior years have indicated minimal potential for violation, because current air monitoring data are incomplete EPA cannot determine based on available information whether the territory is meeting or not meeting the NAAQS. EPA's technical analysis is provided below.

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[1] Section 107(d) of the CAA requires the EPA to complete the initial designation process within 2 years of promulgation of a new or revised NAAQS, unless the Administrator has insufficient information to make initial designation decisions in the 2-year time frame. In such circumstances, the EPA may take up to 1 additional year to make initial area designation decisions (i.e., no later than 3 years after promulgation of the standard).

[2] On December 14, 2012, the EPA promulgated a revised primary annual $PM_{2.5}$ NAAQS (78 FR 3086, January 15, 2013). In that action, the EPA revised the primary annual $PM_{2.5}$ standard, strengthening it from 15.0 micrograms per cubic meter ($\mu g/m^3$) to 12.0 $\mu g/m^3$.

Table 1. The EPA's Designated Unclassifiable Area for the Territory of the U.S. Virgin Islands for the 2012 annual $PM_{2.5}$ NAAQS

Area	The U.S. Virgin Islands Recommended Unclassifiable Area	EPA's Designated Unclassifiable Area
U.S Virgin Islands	St. Croix St. John St. Thomas	St. Croix St. John St. Thomas

2.0 Technical Analysis

In this technical analysis, EPA used the latest data and information available to EPA (and to the states and tribes through the $PM_{2.5}$ Designations Mapping Tool[3] and the EPA PM Designations Guidance and Data web page[4]) and/or data provided to EPA by states or tribes. This technical analysis is limited to an air quality analysis which involves examining available ambient $PM_{2.5}$ air quality monitoring data. This includes reviewing the design values (DV) calculated for each monitoring location in the area based on air quality data for the most recent complete 3 consecutive calendar years of quality-assured, certified air quality data in the EPA's Air Quality System (AQS). In general, EPA identifies violations using data from suitable Federal Reference Method (FRM), Federal Equivalent Method (FEM), and/or Approved Regional Method (ARM) monitors sited and operated in accordance with 40 CFR Part 58.[5] Procedures for using the air quality data to determine whether a violation has occurred are given in 40 CFR part 50 Appendix N, as revised by a final action published in the Federal Register on January 15, 2013 (78 FR 3086).[6]

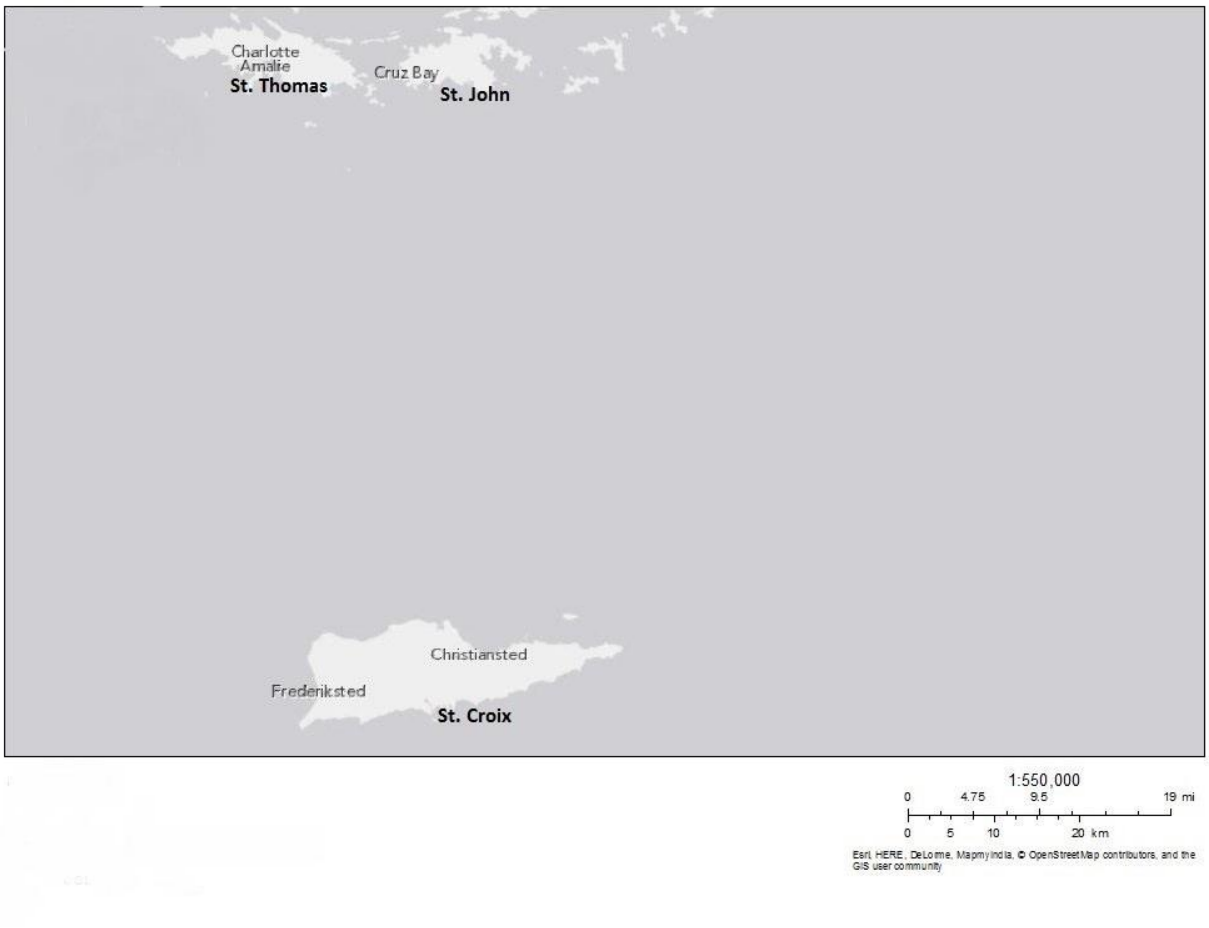
Figure 1: Map of the Virgin Islands Unclassifiable Area

[3] EPA's $PM_{2.5}$ Designations Mapping Tool can be found at *http://geoplatform2.epa.gov/PM_MAP/index.html*.

[4] EPA's PM Designations Guidance and Data web page can be found at *http://www.epa.gov/pmdesignations/2012standards/techinfo.htm*.

[5] Suitable monitors include all FEM and/or ARMs except those specific continuous FEMs/ARMs used in the monitoring agency's network where the data are not of sufficient quality such that data are not to be compared to the NAAQS in accordance with 40 CFR part 58.10(b)(13) and approved by the EPA Regional Administrator per 40 CFR part 58.11(e).

[6] As indicated in Appendix N to 40 CFR part 50, Interpretation of the National Ambient Air Quality Standards for $PM_{2.5}$, section 3(a) indicates "Except as otherwise provided in this appendix, all valid FRM/FEM/ARM $PM_{2.5}$ mass concentration data produced by suitable monitors that are required to be submitted to AQS, or otherwise available to EPA, meeting the requirements of part 58 of this chapter including appendices A, C, and E shall be used in the DV (design value) calculations. Generally, EPA will only use such data if they have been certified by the reporting organization (as prescribed by § 58.15 of this chapter); however, data not certified by the reporting organization can nevertheless be used, if the deadline for certification has passed and EPA judges the data to be complete and accurate."



Air Quality Data

All data collected during the year are important when determining contributions to an annual standard such as the 2012 annual $PM_{2.5}$ NAAQS. Compliance with an annual NAAQS is dependent upon monitor readings throughout the year, including days with monitored ambient concentrations below the level of the NAAQS. For the 2012 annual $PM_{2.5}$ NAAQS, the annual mean is calculated as the mean of quarterly means. A high quarter can drive the mean for an entire year, which, in turn, can drive an elevated 3-year DV.

$PM_{2.5}$ Design Values – As part of the designation process, EPA calculated DVs based on air quality data for the most recent 3 consecutive calendar years of quality-assured, certified air quality data from suitable FEM/FRM/ARM monitoring sites in the EPA's Air Quality System (AQS). For this designation analysis, EPA used data for the 2011-2013 period (i.e., the 2013 design value). A monitor's DV is the metric or statistic that indicates whether that monitor attains a specified air quality standard. The 2012 annual $PM_{2.5}$ NAAQS is met at a monitoring site when the 3-year average annual mean concentration is 12.0 micrograms per cubic meter ($\mu g/m^3$) or less (e.g., 12.1 $\mu g/m^3$ or greater is a violation). A DV is only valid if minimum data completeness criteria are met or when other regulatory data processing provisions are satisfied (See 40 CFR part 50 Appendix N). The regulatory monitor in the U.S. Virgin Islands did not have complete monitoring data for the 2011-2013 period. Therefore, EPA could not calculate a valid DV. Table 2 summarizes the available data for the

monitoring site in the area of analysis for the U.S. Virgin Islands.[7] There were no other FEM/FRM/ARM monitoring sites in the Virgin Islands.

Table 2. Air Quality Data collected at Regulatory Monitor

County, State	Monitor Site ID	State Rec NA?	2009-2011 Design Value	2010-2012 Design Value	2011-2013 Design Value	2011 Complete Quarters	2012 Complete Quarters	2013 Complete Quarters
St. Croix, VI	780100012	No	Not Valid	Not Valid	Not Valid	0	4	0

Conclusion for the U.S. Virgin Islands Area

Based on the assessment described above, EPA is designating the entire Territory of the U.S. Virgin Islands as "unclassifiable" for the 2012 annual PM2.5 NAAQS because current air quality data are incomplete. There is not sufficient data for EPA to make an attainment or nonattainment designation.

[7] In certain circumstances, one or more monitoring locations within a monitoring network may not meet the network technical requirements set forth in 40 CFR 58.11(e), which states, "State and local governments must assess data from Class III $PM_{2.5}$ FEM and ARM monitors operated within their network using the performance criteria described in table C-4 to subpart C of part 53 of this chapter, for cases where the data are identified as not of sufficient comparability to a collocated FRM, and the monitoring agency requests that the FEM or ARM data should not be used in comparison to the NAAQS. These assessments are required in the monitoring agency's annual monitoring network plan described in §58.10(b) for cases where the FEM or ARM is identified as not of sufficient comparability to a collocated FRM…."