

Quality of Science Newsletter

To Quality of Science Subscribers,

The following may be of interest to laboratories or other organizations generating or using color data.

In August, 2017, EPA revised the list of approved methods for determination of color in its "Methods Update Rule"; these changes are included in the July 1, 2018 Code of Federal Regulations at 40 CFR, Section 136.3 (see Table IB, List of Approved Inorganic Test Procedures).

The purpose of this notice is to clarify which methods are approved by DEP for producing data for permit compliance and for surface water ambient monitoring.

Permit Compliance

Only those methods approved at 40 CFR, Section 136.3 may be used when analyzing samples collected for compliance with NPDES permits. These include the listed Standard Methods 2120 B (2011) and USGS I-1250-85 visual methods, Standard Methods 2120 F (2011) using ADMI values, and the NCASI spectrophotometric method developed for paper mill effluents. Contact DEP if an alternate test procedure for color determination is proposed by your organization. DEP will forward your request to EPA Region 4 for review. Approval of the procedure is determined by EPA, although DEP has some discretion whether to recommend the request to EPA for approval.

Surface Water Ambient Monitoring

For the analysis of natural surface water samples not related to permitting (e.g., for impairment assessments), DEP approves the use of visual and spectrophotometric methods that produce results in platinum cobalt units (PCU). The typical approved methods are Standard Methods 2120 B (2011), using the visual or optional spectrophotometric/single-wavelength techniques; or, 2120 C (2011), which employs the spectrophotometric/single-wavelength procedure described in the method.

Technical Notes for Color Analyses

The following should be observed when testing samples for color:

1. For true color, turbidity must be removed. Filter samples using a filter with a pore size adequate for particle removal. A 0.45 μm size is good for most samples. Smaller pore sizes may be necessary for removing fine particles or colloids. Pre-filtering with larger pore sizes may help with the processing of very turbid samples. Samples for spectrophotometric measurement must always be filtered. See specific methods for information about filtering.
2. The adjustment of pH for ambient samples with a natural pH measured in the 4 - 10 pH range is not necessary. Test unadjusted samples as soon as possible after collection to best ensure representativeness of the color of the ambient water.
3. The wavelength range indicated in Standard Methods 2120 C (i.e., 450 nm - 465 nm) is suitable for routine spectrophotometric analysis of ambient surface waters.

The DEP-AEQAS staff can assist with permit-specific questions or put you in contact with the appropriate DEP permitting staff.

If you have any questions or comments concerning this notice about approved color methods, please contact Michael Blizzard (michael.blizzard@floridadep.gov or 850-245-8073).