

### **Supplemental Instructions to Excel Workbook:**

To perform this assessment a starting dataset consisting of all result records for those analytes that ultimately would be required to implement the proposed criteria was assembled from the most recent iteration of the IWR dataset:

1. Analyses were limited to the ten-year period of record subsequent to the year 2000 through 2009 (since that was the last complete year for which data were available; however, long-term averages were based on the most recent seven years (2003 - 2009)).
2. Analytes extracted for analyses included: chlorophyll-a (both corrected and uncorrected), total nitrogen, and total phosphorus; as well as nitrate-nitrite; analytes extracted for classification purposes included color, alkalinity, and specific conductance.

### **Preprocessing of data:**

Annual geometric means were calculated for each year from 2000 through 2009 for each of the constituents specified in each of the proposed criteria: since no minimal sample size for any particular year was specified in the proposed criteria, geometric mean values were calculated for all waterbody-year combinations having at least one result value in the given year. Preprocessing of the data followed standard IWR protocols: data were parsed for reporting anomalies and other inconsistencies in reporting; in addition, all data collected at the same location less than four days apart were taken as one sample, with the median value used to represent the entire sampling period. Annual summary statistics for chlorophyll were based on complete years reporting of either corrected chlorophyll, or combined corrected and uncorrected chlorophyll; however, after November 10, 2006, only corrected chlorophyll was accepted.

### **Classification for lakes:**

Assessment of lakes in the proposed criteria consists of two parts: since the proposed criterion to be applied for any particular lake is based on its classification with respect color and alkalinity, it is first necessary to classify all lakes in the state of Florida with respect to long-term average lake color and alkalinity. The classification scheme for lakes specifies that the long-term average color is based on a rolling average of up to seven years using all available lake color data; however, since alkalinity data may not be routinely available in data collected for Florida lakes, the classification also incorporates a provision that specific conductance may be substituted when alkalinity data is not available. The long-term average color and alkalinity (and specific conductance) values were calculated as the rolling average of the annual geometric means for each constituent and a classification for each WBID that appears in the WBID list from the IWR dataset was determined.

### **Baseline Lake Assessments:**

Lake assessments were performed for all WBIDs having a waterbody type of lake in the most recent IWR dataset for all three constituents: concentrations of each constituent for the baseline assessment were calculated as the annual geometric means for each of the years 2000-2009, and the resulting values were compared with the respective lake classification-specific criteria values for each year as described in Part 131. Years for which the annual geometric mean exceeded the lake classification-specific criteria value were flagged; and the number of flagged years within each three year period was determined.

Three-year periods which included at least two years (i.e., either two or three years) where the geometric means exceeded lake classification-specific criteria were determined to represent impairments. At least one three-year period demonstrating an impairment for WBID resulted in that WBID being assessed as "does not meet". Three-year periods were similarly classified as "meets standard" when there was at least one three-year period having at least two years of data where the geometric means did not exceed the lake classification-specific criteria; WBIDs having some data, but for which there was insufficient data with which to make a determination of either impaired or not impaired, were assessed as having "insufficient data". Results for any year where alkalinity and conductivity data were not available with which to determine the long-term average color and alkalinity were excluded from the assessment, since no numeric nutrient criteria value could be determined (although in the future it may be possible to determine the correct value to impute when this may be required).

**Modified Lake Assessments:**

The proposed criteria provide that under certain circumstances, it may be appropriate to calculate a modification of the criteria values that adjust the baseline criteria within a lake classification-specific range of values. However, due in part to time restrictions in performing this preliminary assessment, as well as uncertainties related to the methodology to be used in calculating these modifications, the modified criteria were evaluated at the top-end of the modified bounds to obtain an estimate of the maximum variation that might be expected from the baseline assessments.

**Stream Assessments:**

The "> 1 geomean surpasses" the criterion was applied based on the following example.

The data set includes the following: 0.52 (2001), 1.1 (2002), 0.85 (2004), 0.67 (2005), 0.98 (2006); TN criterion = 0.824

- Step 1: Calculate the annual geoMeans for each year
- Step 2: Create sequential three year periods
- Step 3: Compare the annual geoMeans in each three year period to the criteria value
- Step 4: Count the number of excursions (an excursion would occur if the annual geomean is larger than the criteria value) in each three year period
- Step 5: Identify the three year period having the maximum number of excursions above the criteria value
- Step 6: If at least one three year period has at least two excursions, then the EPA proposed criteria for this WBID would be exceeded

ThreeYearPeriod	Year 1	annual Geomean 1	Year 2	annual Geomean2	Year 3	annual Geomean 3	NumberOf Excursions
2001-2003	2001	0.52	2002	1.1	2003		1
2002-2004	2002	1.1	2003		2004	0.85	2
2003-2005	2003		2004	0.85	2005	0.67	1
2004-2006	2004	0.85	2005	0.67	2006	0.98	2
2005-2007	2005	0.67	2006	0.98	2007		1
2006-2008	2006	0.98	2007		2008		1

Not every stream could be classified as clear or not, due to the absence of color data. So this summary may not represent every clear stream or NO<sub>3</sub>NO<sub>2</sub> assessment. However, every stream that had data for TN and/or TP was assessed.

### **Hints on Finding Your Waterbody:**

In Excel there is a 'filter' function. This is already turned on in the summary sheet. Note the drop-down arrow in the header. You can use this filter to find your waterbody by WBID or name. Simply go to that column, click on the drop-down arrow and you'll see a list. You can scroll down the list or click on the "Text filters" option and search by any of those filters.

"Equals" means you know exactly what you're looking for.

"Contains" means a word you know is contained in the field, such as "Black" or "Spring".

You can also use this function if you know what county your waterbody is in. You can filter every row that contains "Hamilton" county which will give you a list of all waterbodies and parameters assessed for this county. You can then copy and paste just this portion into a new worksheet if you want to keep them out separately.

Also in Excel is the "find" function. The button looks like binoculars. When you click this a box comes up where you can then type what you're looking for and it will either "find all" or "find next". You can search the entire worksheet or just a particular column. If you want to search a particular column, then you just need to highlight the column or click on the letter above the column header (for example, "C") then click the "find" function.

<b>Term</b>	<b>Description</b>	<b>Other Information</b>
Assessment classification	Classification that defines the waterbody type	Example: Clear, acidic lake
Assessment Status	Meets or does not meet the applicable criteria	
Canal	waterbody type = Canal	The WBIDs in the South region were reviewed to exclude any WBIDs that may represent wetland, wetland/canal, or estuary assessment units. This was determined based on station location and data results.
Clear, stream	waterbody = stream	Color data indicate this waterbody is clear or has a long-term average of $\leq 40$ PCU.
DPV	Downstream Protection Value	Proposed EPA Nutrient Criterion determined from Appendix B-18 in EPA's Technical Support Document.
Insufficient data	There is insufficient data to assess or to classify a lake, so there is no criteria or assessment. Also if there was insufficient data to assess against the ">1 in 3-year" criteria.	
IPV	In-stream Protection Value	Proposed EPA Nutrient Criterion determined from Federal Register Volume 75, No. 16 (January 26, 2010).
Lake, ID	Waterbody type = Lake, Insufficient data	There was insufficient color, alkalinity and/or specific conductance data to determine a classification.
Long-term	Data from 2003 - 2009, the most recent 7 years	Other results (rolling 3 year assessment) are from 2000 - 2009, the most recent 10 years.
N/A	Not applicable	The parameter does not apply. Example: chlorophyll-a does not apply in streams.

No criterion	No criterion provided.	No criterion for streams in South FL, only criteria proposed for canals in the South region. These WBIDs were not assessed. For DPVs, the WBID was not included in table in Appendix B-18, or if in table beginning on pg. B18-10, then a table with criteria was not included for the EDA (example: WBID 1532). There are several WBIDs that are listed in EDA F100x, however there is not a table of values provided for that EDA.
Not Assessed	WBID or parameter was not assessed due to insufficient information.	
Not included		
TBD	To be determined, either by EPA or FDEP	DPVs for lakes have not been done by FDEP and are not included in this summary.
Unknown	Information unknown	There are several WBIDs that were not included in EPAs watershed regions. These WBIDS are gaps in the GIS coverage. They appear as white holes when you view the EPANWR coverage. The IPVs and DPVs are therefore "unknown" and they are "not assessed".
WBID	Waterbody Identification number	This number represents the assessment unit for a waterbody.

Descriptions of the column headings in the "All Assessments\_final" Excel worksheet

<p><b>Chlorophyll-a (ug/L), Baseline or In-stream Criterion for TN, TP, or NO3NO2 (mg/L)</b></p>	<p>Information in this column represents the appropriate criterion for the assessment type (e.g. Clear, stream) and parameter and were derived from information in Federal Register Volume 75, No. 16 (January 26, 2010).</p>
<p><b>Assessment Status based on In-stream criteria or using Chlorophyll-a or Baseline Criteria (TN, TP or NO3NO2; &gt;1 geomean surpasses the criterion)</b></p>	<p>Information in this column represents the assessment of the IPVs for streams (NO3NO2, TN &amp; TP), canals (chlorophyll-a, TN &amp; TP) and lakes (chlorophyll-a, baseline criteria: TN &amp; TP). Applying this criterion: "Concentration values are based on annual geometric mean not to be surpassed more than once in a 3-year period." from Federal Register Volume 75, No. 16 (January 26, 2010). These assessments were based on annual geometric means calculated for data collected in 2000-2009.</p>
<p><b>Long-term Avg. of annual Geometric Means (TN, TP, NO3NO2, or Chl-a)</b></p>	<p>Information in this column represent the long-term average of annual geometric means calculated from data collected in 2003-2009.</p>
<p><b>Assessment status based on long-term avg. of annual geomeans exceeding TN, TP, NO3NO2, or Chl-a In- stream or Baseline Criterion</b></p>	<p>Information in this column represents the assessment of the long-term averages for streams (NO3NO2, TN &amp; TP) and lakes (chlorophyll-a, baseline criteria: TN &amp; TP). Applying this criterion with the IPVs or baseline values: "the long-term average of the anual geometric mean values shall not surpass the listed concentration values." from Federal Register Volume 75, No. 16 (January 26, 2010). These assessments were based on the average of the annual geometric means calculated for data collected in 2003-2009.</p>
<p><b>Modified Criterion for Lakes (TN or TP, Upper Bound)</b></p>	<p>Information in this column represent the upper bound of the modified criteria for lakes provided in Federal Register Volume 75, No. 16 (January 26, 2010).</p>
<p><b>Assessment Status Using Upper Bound of Modified TN or TP Criteria (&gt;1 geomean surpasses the criterion)</b></p>	<p>Information in this column represents just one part of the modified criteria assessment, using the upper bound of the range provided in Federal Register Volume 75, No. 16 (January 26, 2010). Applying this criterion: "Concentration values are based on annual geometric mean not to be surpassed more than once in a 3-year period." from Federal Register Volume 75, No. 16 (January 26, 2010). These assessments were based on annual geometric means calculated for data collected in 2000-2009.</p>
<p><b>Assessment status based on long-term avg. of annual geomeans exceeding TN or TP Modified Criteria</b></p>	<p>Information in this column represents the assessment of the long-term averages for lakes (modified criteria: TN &amp; TP). Applying this criterion with the upper bound values: "the long-term average of the annual geometric mean values shall not surpass the listed concentration values." from Federal Register Volume 75, No. 16 (January 26, 2010). These assessments were based on the average of the annual geometric means calculated for data collected in 2003-2009.</p>
<p><b>Downstream Protection Criterion based on table in Appendix B-18 of EPA's TSD</b></p>	<p>Information in this column represents the DPVs derived from information provided in Appendix B-18 in the Technical Support Document for US EPA's Proposed Numeric Nutrient Criteria for FL Inland Surface Fresh Waters. All WBIDs were not included in this Appendix therefore not all WBIDs have a DPV assessment. Also FDEP did not include DPV assessments for lakes.</p>

<p><b>Assessment status based on exceeding the Downstream criteria for TN (&gt;1 geomean surpasses the criterion)</b></p>	<p>Information in this column represents the assessment of the DPVs for streams (TN). Applying this criterion: "Concentration values are based on annual geometric mean not to be surpassed more than once in a 3-year period." from Federal Register Volume 75, No. 16 (January 26, 2010). These assessments were based on annual geometric means calculated for data collected in 2000-2009.</p>
<p><b>Assessment status based on long-term avg. of annual geomeans exceeding the Downstream criteria for TN</b></p>	<p>Information in this column represents the assessment of the long-term averages for streams (TN). Applying this criterion with the DPV: "the long-term average of the anual geometric mean values shall not surpass the listed concentration values." from Federal Register Volume 75, No. 16 (January 26, 2010). These assessments were based on the average of the annual geometric means calculated for data collected in 2003-2009.</p>
<p><b>Annual Geometric Means</b></p>	<p>These are the calculated geometric means for each year that FDEP has data. These values may represent 1 to many samples collected in a particular year. If a year is missing, then we did not have any data for that year.</p>
<p><b>County that the WBID boundaries cross (excluded those that only included 5% or less of the WBID area)</b></p>	<p>This is the county that the WBID lies in. If &gt; 5% of the WBID lay within a county then it was included in this list, therefore a WBID may have more than county listed.</p>