Algal Growth Potential and Limiting Nutrient Data Verification and LIMS Upload

1. SCOPE AND APPLICATION

1.1. This method is based on procedures developed by FDEP Biology Laboratory Staff. It is used to verify data generated in Algal Growth Potential (AGP) and Limiting Nutrient (LN) tests prior to uploading results to the Laboratory Information Management System (LIMS) for reporting to clients.

2. SUMMARY OF THE METHOD

2.1. A review of a record of preparation is performed to ensure that samples were processed within holding time. A non-conformance report is generated for samples that were not processed within hold-time. Inoculation data, count data, and result data are reviewed simultaneously by two people. Errors are corrected, non-conformance reports are generated (if necessary) and qualifiers are added to results. Reviewed results are then uploaded into LIMS. Dated and initialed data sheets are filed.

3. 3. EQUIPMENT AND SUPPLIES

3.1. Supplies

3.1.1. Ruler or straight-edge

3.1.2. Verification/upload stamp

3.1.3. Outlier calculator – located in X:\Labs\Lab5\Biology\Bench Common\ToxCommon\AGP\Worksheets

3.1.4. Inoculation Preparation Worksheet

3.1.5. Daily Count Record Sheet

3.1.6. Run Set-Up Sheet

3.1.7. Black ink pen – black ink should be used for all logbook and benchsheet entries. To correct raw data entries, place a single line through the incorrect or illegible entry (do not overwrite), write the corrected entry near the error and initial the correction.

3.2. Equipment

3.2.1. Computer with printer access and access to LIMS

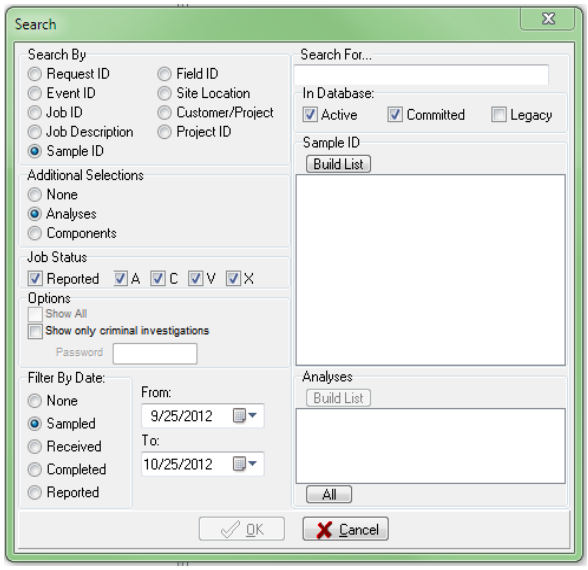
3.2.2. Calculator

4. PREPARATION

4.1. Log in to LIMS and select **General/LIMS Browser** to find all the samples in the run to be verified. Use the "Search By" and "Search For…" criteria displayed in Figure 1 below. Use the date range "From" as the date first sample in the run was sampled

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(collected) and "To" as the date last sample in the run was sampled. Choose all samples ID's displayed and choose the tests applicable to the run being verified. Click the [**OK**] button to generate a list of events.



4.2. Once the query completes, a list of LIMS events will display. Click on the 

button at the top of the screen. Use the **Reports/File Formats** utility to generate a tab-delimited report with the following information for the samples: Event ID (field size 22), Sample ID (8), Field ID (18), Priority (7), Date Sampled (19), Date Received (19), Date Prepared (19), and Date Analyzed (19). Generate and print the report.

Note: Choosing the field sizes listed above in parentheses will enable all the information to fit on one page. This information can be saved as a template so that it does not have to be set up each time a report is generated. For more information on using the LIMS Browser and/or Report utility, contact the Laboratory Support Section or someone with the Biology Section who is familiar with the program.

4.3. In LIMS, select **Laboratory/Biology/AGP LN Manager**. Find and double-click the correct Run ID.

4.4. In the **Run Setup** screen, using the *Inoculum Preparation* Worksheet verify that the information in the "Background Data", "Premix Data" and "Inoculation Check Data" is correct.

4.5. Using criteria in SOP TA-06.19, uncheck the boxes that are to the left of undesired (incorrect) data or that represent duplicate counts. Unchecked data will not be used in calculations.

Note: Counts will appear multiple times if a file was uploaded more than once. Sometimes it is necessary to compare Mean Cell Volumes in order to choose the correct count.

4.6. Click on the **Raw Counts** tab and verify that all the counts are correct. Uncheck any invalid counts. Invalid counts include counts in excess of three counts per flask/vial/count day, incorrect flasks and vials, and incorrectly uploaded counts.

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4.7. Click on the **Flask Averages** tab and, using the *Daily Count Record Sheet*, verify that all Flask IDs, Vial IDs and dilutions are correct.

4.8. Compare the % Dry Weight of each flask set with the Outlier Calculator. Uncheck any flasks that are a High or Low Outlier.

Note: This requires experience and professional judgment. Not every flask set must be checked with the calculator, but it is better to err on the side of checking too often.

4.9. Click on the **% Change** tab. Click on the **Export** button, and save the file to the My Documents/Test % Change/Counts [last two digits of the run ID year]. Use the Run ID as the file name.

4.10. Open Microsoft Excel and open the text file generated in Step 4.9. Highlight the first four rows, rick-click and choose **Insert**.

4.11. Highlight all of the data, including the headings and select **Data/Sort**. Sort by Sample ID, ascending. Click **OK**. For each LN sample, the AGP should be listed first and then the flask treatments in the order they were set up for easy reference.

4.12. For any sample lab duplicate (LD) move the row so that it lies directly beneath the original sample.

4.13. While the data are highlighted, choose **Format/AutoFormat**. Choose "List 1" and click **OK**.

4.14. In **Print Preview** choose the landscape orientation for printing.

4.15. In **Header/Footer**, add a **Custom Header** and in the "Center Section" type in the document title ("LN % Change" for limiting nutrients and "AGP % Change" for AGP). Hit [Enter] and type in "Setup Date:[type in date in mm-dd-yy format]". Press [Enter] and type in "Run ID" [type run id]". Click **OK twice** and then click **Close**.

5. REFERENCES

5.1. EPA 821-R-02-013 Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, 4th Ed. October 2002.

APPENDIX OF CHANGES

01/04/2008	Added Scope and Application, Summary of Method and Appendix of Changes
12/30/2008	Added Reference Section. Deleted Step 8 'Balance capable of weighing to +/- 0.00001 grams' and associated comment 'OHAUS® 250 D located in the Microbiology Lab (Room B212)' from Materials.
10/27/2011	Replaced "easily readable" with "legible" in the Comment for Step 4.
10/23/2012	Reformatted SOP.
01/28/2015	Formatted for 508 compliance.
09/11/2015	Updated links.

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