Appendix B: Aquatic Bioassessment Laboratory Protocol for the SWAMP Database

The following protocols for data entry to the SWAMP database are used by ABL after identification and enumeration of BMI specimens as written in Section 4.

Entering Taxonomic Results into the SWAMP Taxa Entry Form

BMI identification and enumeration results are entered into the SWAMP database. At the taxonomist's discretion, this data may either be entered concurrent with BMI identification and enumeration using a bench-top laptop computer.

The SWAMP database and associated files are available from the SWAMP Data Management Team (DMT). The user will maintain a copy of the SWAMP database, including the *BMI Data Entry Form*, on the local computer. The database protocol in this SOP is current as of the publication date, but is subject to change as updates are made to the SWAMP database. Always confirm current protocol with the SWAMP DMT.

Step 1: Open the SWAMP Taxa Entry form on a local computer and link to the SWAMP backend database.

Step 2: Select "Enter Benthic Data".

Step 3: Select the appropriate LabSampleID for data entry. *BMI Data Entry Form*.

Step 4: Populate the *BMI Data Entry Form* with data. Each row of data is one Final ID, count and life stage combination that corresponds with one identified vial produced in Section 4 (e.g., *Baetis* larvae)

BMI Data Entry Form categories and definitions are as follows:

- Organism: taxa name to designated SAFIT level
- Count: number of specimens identified as organism
- Life Stage: record appropriate life stage code.
    - A - Adult
    - L - Larvae/Nymph
    - P - Pupae
    - X - Undefined (used for all non-insect taxa)
- Dist: distinct taxa designation; this is selected to indicate that the taxon in the vial is morphologically different enough from the other specimens identified to the same Final ID that, in the taxonomists professional opinion, the specimens represent a separate taxon. Multiple distinct taxa can be recorded under the same Final ID by entering a different number for each in the distinct field (e.g., 1, 2, 3). This distinction is only relevant within each sample. This action permits the taxonomist to override the SAFIT 2 distinct algorithm.
- SAFIT 2 Dist: An algorithm in the SWAMP database that determines whether or not an entry is distinct based on the other organisms in the sample including the ones the taxonomist marked distinct.
- Excl Taxa: The taxonomist can indicate if the organism and life stage should be excluded from data analysis. Examples include if it is a large and/or rare taxa not identified in the standard count or if it is a non-target taxa identified in the sample
- Taxa Qual: taxonomic qualifier; if a taxon was not able to be identified to the designated STE, this is the default. The codes are:
    - D – damaged beyond identification
    - I – immature specimen
    - L – taxonomic literature not sufficient

    - M – bad slide mount
    - None – no code representing the taxonomist's justification for not identifying a specimen to STE
    - O – other; write a reason in the comments field
- Taxonomist: the last name of the taxonomist responsible for identification
- Comments: taxonomist records specimen notes here
- Res Qual: Unique code that qualifies the numeric count result. It is defaulted to "=" but can be changed by selecting the appropriate code in the drop-down menu.
- QA Code: : Unique code applied to the result which describes any special conditions, situations, or outliers occuring during or prior to analysis. It is defaulted to "None" but can be changed by selecting the appropriate code in the drop-down menu.
- Units: Defaulted to "count" for BMIs
- Enter Date: date of data entry into SWAMP database (MM/DD/YYYY format)
- Lab Sample ID: Laboratory sample identification code as assigned in Section 2.4

Step 5: Before closing the *BMI Data Entry Form*, check all data for transcription and other errors. Compare the taxonomic names recorded on the vial and slide labels with those recorded on the *BMI Data Entry Form*.

- Check the count information recorded on the vial and slide labels to ensure counts are entered correctly on the *BMI Data Entry Form*.
- Count the number of vials and slides to confirm that all have been accounted for on the *BMI Data Entry Form*.