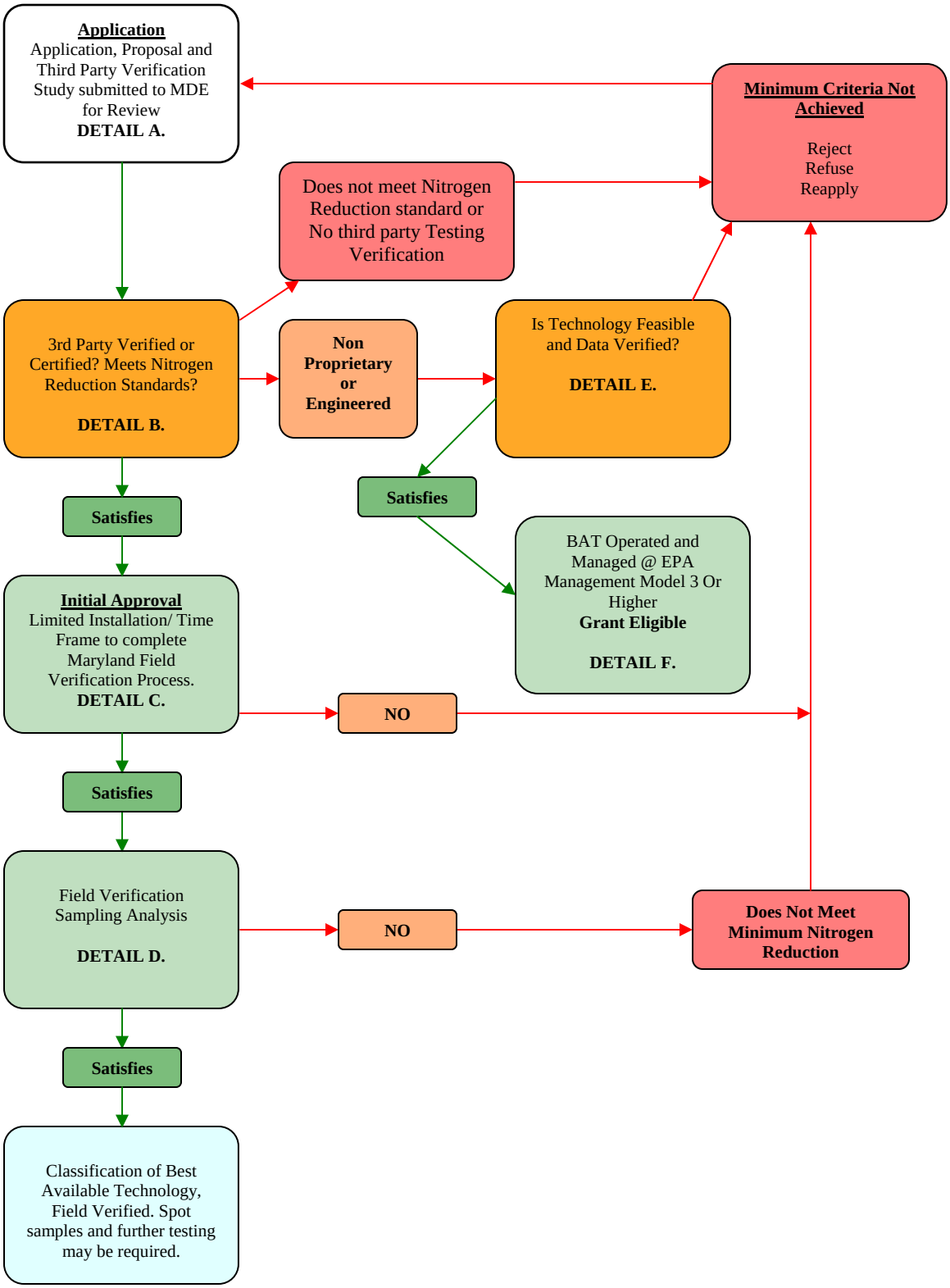
BAT VERIFICATION PROGRAM FLOWCHART 2012



Required Total Nitrogen (TN) Standards: A standard of an assumed 60 mg/L TN will be used as the influent value. The Arithmetic mean effluent TN concentration must be 30 mg/L or less to be classified as a Field Verified Technology.

BEST AVAILABLE TECHNOLOGY (BAT)
VERIFICATION PROGRAM FLOWCHART DETAIL 2012

Detail A. Submit an application for technology review to the Maryland Department of the Environment (MDE). Vendor contacts, general technology description, operating manuals, existing verification information including test protocols and monitoring plans are to be included with the application. The application is reviewed by the BAT Review Committee, which consists of 3 individuals with expertise and knowledge in nutrient reduction technologies.

Detail B. The NSF/ANSI 245-2010 standard is an example of a third-party testing standard that has tested several nutrient reduction residential wastewater treatment systems. The program utilizes standard test methods, independent performance evaluations and test result preparation to ultimately verify the vendor's claim. Average daily ambient temperature data will be used in the initial analysis for classification of BAT. Daily average ambient air temperatures will be compared from the testing location for the duration of the testing to the Baltimore Region for the same time period. Not more than ten (10) sampling days in test period will be greater then fifteen degrees (15°F) Fahrenheit warmer than that of the Maryland based comparison. If the results of the third party testing indicate the MDE nitrogen reduction standard can be met then the technology proceeds to Detail C. If the results of the third party testing indicate the MDE nitrogen reduction standard cannot be met then the technology must re-apply. If the technology is not third party verified or is individually engineered, proceed to detail E.

Detail C. Technologies initially approved enter a field verification period where a limit of fifteen (15) installations is allowed. Twelve (12) of these installations will be used in the initial analysis. The remaining three (3) systems will be classified as reserve systems in the need of a replacement for one of the original twelve. MDE approval must be given before any change can occur. The vendor/applicant must submit a field verification plan that includes detailed instructions for collecting samples and a sampling schedule. All technologies must sample a minimum of 12 units 4 times each in consecutive quarters to include at least one quarter of winter time samples. Winter time is classified as December 15 through February 15of a given season. Adequately trained sample collection personnel shall be provided by a certified laboratory and shall be independent of the technology vendor, technology vendor's authorized service provider, and the system design engineer of record. The technology vendor is responsible for the training of the sampling laboratory personnel. Incorrect collection of samples due to insufficient training will not be dismissed from analysis. All monitoring results must be reported to MDE and the local Approving Authority on an as sampled basis by the sampling organization. A service provider approved by the vendor and MDE shall be responsible for operating and maintaining the system. At the conclusion of the field verification testing period, the vendor/applicant shall submit to MDE and the Approving Authority a final report that includes all monitoring information and a summary of all maintenance activities.

Detail D. The BAT Review Committee is responsible for evaluating the final report submitted by the applicant/vendor at the conclusion of the field verification period. Forty eight (48) TN effluent data points per technology will be used in the analysis, no more or less will be used unless previously approved by MDE and the BAT Review Committee. The arithmetic mean of the effluent TN shall be less than 30 mg/l and show a minimum of a 50% reduction. If the nitrogen reduction standard has been met, the technology receives an unconditional approval. The unconditional approval is good for a minimum of three years from the date the technology first entered the field verification period. Spot sampling may still be required of technologies with unconditional approval. These spot samples may be used in an analysis for continuation of field verification status. Any manipulation to the technology must first be presented to the BAT Review Committee for approval. Failure to do so will result in immediate removal from BAT list. Systems not meeting the nitrogen removal standard will either be rejected or remain in a modified field verification program. Any modified field verification program must be proposed by the vendor/applicant and approved by the BAT Review Committee.

Detail E. For non-proprietary technologies, the vendor/applicant must provide a detailed description of the technology process, which illustrates sound scientific fundamentals and engineering practice. Non-proprietary technologies which have undergone independent field verification through national demonstration projects, university research studies or other formal state verification programs may be approved as a highly managed system and enter Detail F. Technologies not demonstrated to meet the nitrogen removal standard are rejected.

Detail F. Highly managed systems must have renewable operating permits and/or a responsible management entity; or a combination of both. Provisions must be made for sampling, reporting, maintenance and enforcement. Nitrogen reduction standard established for third party verified/certified systems must be met.