



SOP TITLE:	Establishing, Validating, and Maintaining Analyte and Method Codes
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Standard Operating Procedures for Establishing, Maintaining and Validating Analyte and Method Codes

1.0 Purpose

This Standard Operating Procedure (SOP) details the process used to establish codes for new or additional methods and analytes listed on the TNI website. It also sets out steps required for deleting, changing or retiring existing codes.

2.0 Applicability

Proficiency Test (PT) vendors, accreditation bodies (NELAP-recognized and others) and laboratories utilize established PT method and analyte codes for reporting PT data and tracking laboratory accreditation status. The TNI National Laboratory Accreditation Management System (LAMS) relies on an accurate list of method and analyte codes for listing primary laboratory accreditation and aiding in establishing secondary recognition. Method and analyte codes must be unique.

3.0 Background

The procedures for the development of method and analyte codes as laid out in this SOP were originally developed by a subcommittee of the NELAC PT Board, which was chartered with the creation of the initial method and analyte tables.

The original list of analyte codes was established by alphabetizing the list of analytes and assigning a unique 4 digit number using multiples of 5. The original list contained many duplicates, usually due to different naming conventions. These duplicates, along with their codes, were “retired” and moved to a separate table which listed the preferred code.

Every method revision required a different method number so the methods were split and those “new” methods were added to the existing table.

4.0 Establishing Analyte Codes

Whenever an analyte or analyte group (ie. Total Xylene) is requested, the name and CAS number are researched to verify that the analyte does not already exist in the table. If the analyte is determined to be a new analyte then a code is established and the analyte is added to the TNI Analyte table, an email sent to the requester, and the table is posted to the web. CAS numbers for new analytes are verified through the Chemical Abstract Service.

The analyte code is a 4 digit number starting at 1000. New analytes are added to the table, sorted by analyte group, placed in alpha-numeric order and a unique code assigned. If it is not possible to assign an analyte code that maintains alpha-numeric sorting, the nearest code is established. The date of code creation is also recorded.

5.0 Establishing Method Codes

Whenever new method or method revision is requested, the method description, reference number, revision, and date are researched and reviewed to verify that the method does not already exist in the table. If the method is determined to be a new method or revision, then a code is established, the method is added to the TNI Method table, an email sent to the requester, and the table is posted to the web.

5.1 A method code is a unique eight-digit number. The first digit is used to identify the source of the published method and the last digit is used to validate the correctness of the code.

The first digit in the method code refers to the published source of the method (e.g. Standard Methods for the Examination of Water and Wastewater). The complete list of assigned published sources and the corresponding initial digits are as follows:

1 = EPA

Standard Operating Procedures for Establishing, Maintaining and Validating Analyte and Method Codes

- 2 = Standard Methods
- 3 = ASTM
- 4 = USGS
- 5 = AOAC
- 6 = Other method sources
- 7 = Not assigned
- 8 = Not assigned
- 9 = Other government entities such as state or non-EPA federal methods.

- 5.2 The middle digits (positions 2 – 7) are assigned sequentially for each reference source in increments of twenty based on the last number used for the reference.
- 5.3 If more than one method per method group is to be added to the list, the method codes are assigned such that when placed in sequential order, the method names will appear alphabetically and then will be ordered alpha-numerically by revision.
- 5.4 The eighth digit is a “check digit” which is used to check for errors in the code assignments to prevent redundancies. The check digit is computed from other digits in the method code using the checksum formula.

6.0 Method Code Checksum

The method codes are validated through assignment of the check digit (the eighth position in the numerical code). The check digit is assigned using the following formula and taking the rightmost digit from the calculated value:

$$(\text{digit } 1 \times 7) + (\text{digit } 2 \times 6) + (\text{digit } 3 \times 5) + (\text{digit } 4 \times 4) + (\text{digit } 5 \times 3) + (\text{digit } 6 \times 2) + (\text{digit } 7 \times 1)$$

EXAMPLE:

Method Code 10406005

$$(1 \times 7) + (0 \times 6) + (4 \times 5) + (0 \times 4) + (6 \times 3) + (0 \times 2) + (0 \times 1) =$$

$$7 + 0 + 20 + 0 + 18 + 0 + 0 = 45$$

The eighth, furthest right, digit of the method code = last digit of checksum = 5

7.0 Modifying or retiring codes

Once codes have been established it is assumed that they have been put in use. Changing or retiring codes requires a notification of intent, with a recommended implementation date, be given to the NELAP Accreditation Council, LASEC, and PT Executive Committee, with a copy to all PT Providers and PTPA(s). The notice will also be posted on the TNI website. Changes that will likely have minimal impact to the regulatory and regulated community will be implemented within a six month timeframe. Legislative or highly complex changes that will likely have a more severe impact to the regulatory and regulated community will be implemented outside of the six month timeframe. The Methods and Analyte Codes (MAC) subcommittee will query stakeholders and propose a reasonable completion date which will be published on the TNI website. If no negative comments are received, the new codes will be posted on their implementation dates and stakeholders notified.

The MAC subcommittee will publish tables of code changes. The tables will include the dates of the changes and any relevant comments.

8.0 Table Maintenance

- 8.1 The TNI IT Committee will maintain a subcommittee to assign and review codes as needed. The subcommittee is responsible for updating the tables of codes and revising this SOP. The tables of codes and this SOP will be posted on the TNI website.
- 8.2 The subcommittee may assign a new initial digit to refer to methods from other nonprofit standards-setting bodies or regulatory entities.
- 8.3 The table of method codes will contain the following fields:

Method Code The method code number assigned by TNI.

Method Reference The method reference is the number given to the method by the issuing authority. It identifies the issuing authority (ASTM, EPA, Standard Methods, etc), method number or page number and may include a revision. e.g. EPA 524.2. This data can only be changed with appropriate notification.

Revision Revision number as listed on the method title page. This data can only be changed with appropriate notification.

Revision Date Revision date as listed on the method title page. Can be year, month/year, or month/day/year. This data can be edited without notice.

Method Title Title of the method as listed on the method title page. Major changes require notification but typos and minor fixes require no notification.

Added Date the method code was created.

Modified Date that record was last modified.

Comment Any significant information but often includes information about modification to the record.

- 8.4 A separate table that shows upcoming method additions will be maintained.

9.0 SOP Approved Changes

SOP No.	Effective Date	Description of Change
1-109		New Document.