NYSDOH ELAP CHEMISTRY CHECKLIST

This checklist incorporates references: 'The NELAC Institute' 2016 Standards, **where applicable**.

Directions: Place a mark (e.g., /, √ or X) in the appropriate column (Yes (Y), No (N), or Not Applicable (NA)). If it is an observation on areas for possible improvement, place a mark under the Suggestion (S) column. In database, use code "SGST."

Lab ID: _____ Assessment ID: _____

Lab Name: _____

Audit Dates: _____ Auditor Signature: _____

Laboratory Technical Staff Interviewed:

Name:	Title:	Reports Reviewed:

At the time of the assessment, a question marked 'yes' indicates that no evidence of a deficiency was observed.

NYSDOH ELAP CHEMISTRY CHECKLIST

Complete information below or attach the laboratory list of methods

Chemical Testing Detailed Method Review (Prep and Determinative Methods)	Data Records Observed	Comments
Method Number: **SOP Number:** **Rev.:** **SOP date:** **Personnel records observed:**		
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Relevant Aspect of Standards	NELAC Reference 2016	Y	N	N/A	S	Codes	Comments
The laboratory ensures that the essential standards outlined in the Technical Modules or mandated methods or regulations are incorporated into their method manuals can demonstrate that it meets all requirements contained in a mandated test method or by regulation, even if the requirement is more stringent than the corresponding NELAC standard? (If it is unclear which requirements are more stringent, the standard from the method or regulation must be followed)	M2,5.9.3(c)					**000d11**	
In cases where modifications to the published methods have been made by the laboratory, the laboratory **clearly indicates** in its methods manual **any modifications** made to the referenced test method and **describes any changes or clarifications** where the referenced test method is ambiguous or provides insufficient detail.	M2, 4.2.8.5(f**)**					**554111r**	
When adding a new analyte to a reference method, the laboratory meets all required calibration requirements and the QC requirements of the method to which the analyte is being added. If no QC exists in the method, the laboratory shall adhere to the requirements outlined in a reference method of the same technology (when available).	M4,1.4					**554112a**	
Prior to acceptance and institution of any method for which data will be reported, all **methods have** been **validated.** **Note:** This includes validating the reference method through LOD/LOQ and initial MDL study, evaluation of precision & bias, evaluation of selectivity, and participation in proficiency testing programs, if applicable.	M4,1.5.1					**554222**	
The quality control protocols specified by the laboratory′s method manual are followed by all analysts.	M2,5.9.3(c)					**000d12**	
All essential quality control measures outlined in the Technical Modules or mandated methods or regulations are incorporated in the lab′s method manual.	M2, 5.9.3(c)					**000d13**	
All quality control measures are assessed and evaluated on an on-going basis and the quality control acceptance criteria are used to determine the validity of the data.	M2,5.9.3(b)					**000d14**	

Relevant Aspect of Standards	NELAC Reference 2016	Y	N	N/A	S	Codes	Comments
The laboratory has procedures for developing acceptance/rejection criteria for each test where no method or regulatory criteria exist.	M2,5.9.3(c)					**000d15**	
Does the laboratory evaluate the precision and bias of a reference method or laboratory-developed method for each analyte of concern for each quality system matrix according to a documented procedure?	M4, 1.5.3					**5511333**	
TECHNICAL REQUIREMENTS							
CALIBRATION							
Sample results are quantitated from the initial instrument calibration and not from any continuing instrument calibration verification unless otherwise required by regulation, method or program.	M4,1.7.1.1(i)					**00d129**	
The continuing instrument calibration verification is used to confirm the continued validity of the initial calibration prior to sample analysis with each analytical batch.	M4,1.7.1.2					**00d130**	
The criteria for the acceptance of an initial calibration is established (correlation coefficient or relative standard deviation) and appropriate to the calibration technique employed.	M4, 1.7.1.1(j)					**00d134**	
The laboratory uses and documents a measure of relative error in the calibration. ___(a) if average response factor is used, the relative standard deviation (%RSD) is the measure of relative error. ___(b) if correlation coefficient or coefficient of determination is used, the relative error (%RE) or Relative Standard Error (%RSE) is used.	M4,1.7.1.1(k)					**554113**	
If %RE is used, the calibration is performed at 2 calibration levels (one standard at the midpoint and one standard at the lowest calibration level.	M4,1.7.1.1(k) (ii)					**554113a**	
The %RE at both levels meets the method criteria.	M4,1.7.1.1(k) (ii)					**554113b**	
If no criterion is specified in the method, the criterion and procedure for deriving the criterion specified is in the laboratory SOP.	M4,1.7.1.1(k) (ii)					**554113c**	
The %RSE meets the criterion of the method.	M4,1.7.1.1(k) (ii)					**554113d**	
If there is no criterion specified in the method, the maximum allowable %RSE is numerically identical to the %RSD of the method.	M4,1.7.1.1(k) (ii)					**554113e**	

Relevant Aspect of Standards	NELAC Reference 2016	Y	N	N/A	S	Codes	Comments
If there is no specification for %RSE or %RSD in the method, it is specified in the SOP.	M4,1.7.1.1(k) (ii)					**554113f**	
If calibrations specify a zero point and single calibration standard: ___(a) The zero point and single calibration standard within the linear ranges analyzed daily and used to establish the slope of the calibration. ___(b) In order to verify sensitivity, a standard is analyzed at or below the lowest concentration for which quantitation is reported without qualification prior to any sample analysis and with each calibration and meets method requirements.	M4,1.7.1.1(l)					**54113g** **5411h**	
If no criteria are in the method, the SOP documents the criteria when a single calibration standard is used to calibrate.	M4,1.7.1.1(l)					**54113i**	
If the initial calibration is not acceptable, the laboratory performs a corrective action and all associated samples are reanalyzed.	M4, 1.7.1.1					**55422**	
If re-analysis of samples is not possible, results are reported from analyses of an initial calibration outside the acceptance criteria and includes appropriate data qualifiers.	M4, 1.7.1.1					**55423**	
The SOPs or the test method SOP reference the details of the initial calibration procedures, including calculations integrations, and acceptance criteria associated statistics.	M4,1.7.1.1(a)					**00d131r**	
Sufficient raw data records are retained to permit reconstruction of the initial and continuing calibration including: a___ Calibration date, b___ Test method, c___ Instrument, d___ Analysis date, e___ Each analyte name, f___ Concentration, g___ Response, h___ Calibration curve or response factor, I____ Analyst′s initials or signature, and j____ Unique equation or coefficient used to reduce instrument response to concentration.	M4,1.7.1.1(b)					**0d132ar** **0d132br** **0d132cr** **0d132dr** **0d132er** **0d132fr** **0d132gr** **0d132hr** **0d132ir** **0d132jr**	

Relevant Aspect of Standards	NELAC Reference 2016	Y	N	N/A	S	Codes	Comments
All initial calibration verification standards are traceable to a national standard, when commercially available.	M4,1.7.1.1(d)					**00d133ar**	
The most recent initial calibration analyzed prior to the analytical batch is used unless otherwise specified by the method.	M4,1.7.1.1(c)					**55424**	
There is a written procedure addressing removal and replacement of calibration standards. Note: The lowest and the highest levels of the curve may be removed but removal of interior levels is not permitted unless there is a documented technically valid reason.	M4,1.7.1.1(e)					**55434**	
There is documentation of a technically valid reason for either removal or replacement of any interior calibration.	M4,1.7.1.1(e) (vi)					**55437**	
A laboratory that chooses to remove a calibration standard from the interior of the calibration shall remove that particular standard calibration level for all analytes.	M4. 1.7.1.1. (e) (ii)					**55425**	
If lowest or highest calibration levels were removed the LOQ and/or quantitation range is adjusted accordingly.	M4,1.7.1.1(e) (iii)					**55426**	
If the laboratory replaced a calibration standard: ___(a) the replacement standard was analyzed within 24 hours of the original calibration standard analysis for that calibration level___(b) all analytes were replaced using the replacement calibration standard if the standard within the interior of the calibration is replaced ___(c) the replacement of calibration standards is limited to one calibration standard concentration.	M4,1.7.1(e) (v)					**55427**	
For regression or average response/calibration factor calibrations the minimum number of non-zero calibrations as specified in the table below were used Type of calibration curve — minimum number of calibration standards Threshold testing — 1 Average Response — 4 Linear Fit — 5 Quadratic Fit — 6 Note: fewer calibration standards may be used if equipment firmware or software cannot accommodate the number of standards. Documentation detailing the limitation shall be maintained by the laboratory.	M4,1.7.1.1(f)					**55428**	

Relevant Aspect of Standards	NELAC Reference 2016	Y	N	N/A	S	Codes	Comments
For analysis of Aroclors which use linear through origin model (or average response factor), the minimum is to perform an initial multi-point calibration for a subset of Aroclors (e.g., 1016/1260) and to use a one-point calibration to determine calibration factor and pattern recognition for the remaining Aroclors.	M4,1.7.1.1(m)					**55429**	
All initial calibrations are verified with a standard obtained from a second manufacturer or a separate lot if the lot can be demonstrated from the manufacturer as prepared independently from other lots. (ICV).	M4,1.7.1.1(n)					**00d133r**	
The lowest calibration standard is the lowest concentration for which quantitative data are to be reported without qualification.	M4,1.7.1.1(g)					**555221fr**	
The highest calibration standard is the highest concentration for which quantitative data are to be reported without qualification.	M4,1.7.1.1(h)					**555221gr**	
If the results of samples are not bracketed by the initial calibration, the results are reported as having less certainty (defined qualifiers, flags, or explanation in the case narrative).	M4,1.7.1.1(g)(h)					**00d135r**	
For methods that allow data within the linear range of the instrument but above the daily calibration to be reported without qualification: 1) __ The upper reporting limit is equal to the concentration at the highest standard meeting the method limits for accuracy. 2) __ The linearity is established annually and checked at least quarterly with a standard at the top of the linear working range or at a frequency defined by the method, and 3) ___ Samples above the linear calibration range shall be diluted or qualified as estimated values. Note: examples of methods may include ICP, ICP/MS and IC	M4,1.7.1.1(p)					**555221far** **555221fbr** **555221fcr** **555221fdr**	
Corrective actions are performed if the results of the initial calibration are outside of established acceptance criteria.	M4,1.7.1.1					**00d137r**	
If permitted by the method and reanalysis is not possible, data associated with unacceptable initial instrument calibration are not reported unless qualified.	M4,1.7.1.1					**00d138+r**	

Relevant Aspect of Standards	NELAC Reference 2016	Y	N	N/A	S	Codes	Comments
CONTINUING CALIBRATION							
When an initial calibration is not performed on the day of analysis, the laboratory verifies the validity of the initial calibration prior to the analysis of samples by analyzing a continuing instrument calibration verification sample.	M4,1.7.1.2					**00d142r**	
The details of the continuing instrument calibration procedure, calculations, and associated statistics are included or referenced in the test method SOP.	M4,1.7.2(a)					**00d143r**	
The calibration is verified for each compound, element, or other discrete chemical species, except for multi-component analytes such as Aroclors, technical chloradane, Total Petroleum Hydrocarbons, or Toxaphene where a representative chemical related substance or mixture can be used.	M4,1.7.2(b)					**55510br**	
The concentration of the continuing calibration verification standard is equal to or less than one half the highest level in the calibration.	M4,1.71.2 (c)					**55432**	
A continuing instrument calibration verification is performed at the beginning and end of each analytical batch; and at the frequency defined in the method except: 1__ If an internal standard is used, only one continuing calibration verification must be analyzed at the beginning of the analytical batch, and the frequency defined in the method 2__A second source initial calibration verification that passes the CCV criteria may be used in place of a CCV standard 3__ A LCS may be used in place of a CCV (but not as a replacement for a failing CCV) for methods where the calibration goes through the same process as the LCS (using the CCV acceptance criteria)	M4,1.7.1.2(d)(i)-(iii)					**00d144r** **00d1442r** **00d1443r** **00d1444r**	
Sufficient raw data is retained to permit reconstruction of the continuing calibration __a. method __b. instrument __c. analysis date __d. analyte name __e. concentration and response __f. calibration curve or response factor or unique equations used to convert instrument responses to concentrations	M4,1.7.1.2(e)					**5122r**	
The continuing calibration verification records explicitly connect the continuing verification data to the initial instrument calibration.	M4,1.7.1.2(e)					**00d146r**	

Relevant Aspect of Standards	NELAC Reference 2016	Y	N	N/A	S	Codes	Comments
The laboratory has established acceptance criteria of a continuing calibration verification analysis. (e.g., relative percent difference).	M4,1.7.1.2(f)					**00d147r**	
Routine corrective actions are performed if the results of the continuing calibration verifications are outside of established acceptance criteria.	M4,1.7.1.2(f)(ii)					**00d148r**	
If corrective action fails to produce an acceptable second consecutive (immediate) calibration verification, the lab performs a new initial calibration before analyzing new samples.	M4,1.7.1.2(f)(ii)					**00d149r**	
When sample data associated with a failed calibration verification is reported, the laboratory qualify the data unless prohibited by client or regulation.	M4,1.7.1.2(f)(iii)					**00d150+r**	
If the acceptance criteria for the continuing calibration verification are exceed high (i.e., high bias) and there are associated samples that are non-detects, then those non-detects may be reported. Otherwise, the samples affected by the unacceptable calibration verification shall be re-analyzed after a new calibration curve has been established, evaluated and accepted.	M4,1.7.1.2(f)(iii)(a)					**00d151+**	
If there was a low bias and there is a failed continuing calibration verification, only data associated with samples that have a result greater than the maximum regulatory limit/decision level are reported. (Other affected samples are reanalyzed after a new curve has been established, evaluated, and accepted.)	M4,1.7.1.2(f)(iii)(b)					**00d152+r**	
	QUALITY CONTROL						
	METHOD BLANK						
The laboratory has **QC procedures** for monitoring the validity of environmental tests with a negative control (method blank).	M4,1.7.2					**55435**	
The method blank is processed along with and under the same conditions as the associated samples including all steps of the analytical procedure.	M4,1.7.2.1(a)					**000d16r**	
Procedures are in place to determine if a method blank is contaminated.	M4,1.7.2.1(a)					**00D111ar**	

Relevant Aspect of Standards	NELAC Reference 2016	Y	N	N/A	S	Codes	Comments
While the goal is to have no detectable contaminants in a **method blank,** the laboratory critically evaluates/investigates the nature of interference and the effect on the analysis of each sample within the batch to minimize or eliminate the problem through a documented corrective action.	M4,1.7.2.1(a) & M4,1.7.3.1					**55430**	
Any affected samples associated with a contaminated blank are reprocessed for analysis or the results are reported with appropriate data qualifying codes.	M4,1.7.2.1(a)					**000d17+r**	
A method blank is performed such as: a.__ one per preparation batch, per matrix type; or b.__ in those instances for which there is no separate preparation method, the batch is defined as environmental samples that are analyzed together with the same method and personnel, using the same lots of reagents, not to exceed the analysis of 20 environmental samples.	M4,1.7.2.1(b)					**000d18ar**	
The method blank consists of a matrix that is similar to the associated samples and is known to be free of the analytes of interest.	M4,1.7.2.1(c)					**000d19r**	
Each method blank is critically evaluated as to the nature of the interference and the effect on the analysis of each sample within the batch.	M4,1.7.3.1					**00d110r**	
The source of contamination is investigated, and measures taken to minimize or eliminate the problem and the affected samples reprocessed. a.__ Data is appropriately qualified if: 1. The concentration of a targeted analyte in the blank is at or above the reporting limit as established by the test method or by regulation, AND is greater than 1/10 of the amount measured in any sample, and 2. The blank contamination affects the sample results as per the test method requirements or the individual project data quality objectives	M4,1.7.3.1(a) (b)					**00d111r**	
When a blank is determined to be contaminated, the laboratory investigates the cause and takes measures to minimize or eliminate the problem.	M4,1.7.3.1(c)					**D111d3r**	
The laboratory evaluates samples associated with a contaminated blank as to the best corrective action for the samples (e.g., reprocessing or data qualifying codes) and the corrective action documented.	M4,1.7.3.1(c)					**D111d31+r**	

Relevant Aspect of Standards	NELAC Reference 2016	Y	N	N/A	S	Codes	Comments
LABORATORY CONTROL SAMPLE (LCS)							
The laboratory has **QC procedures** for monitoring the validity of environmental tests with a positive control (laboratory control sample).	M4,1.7.2					**55431**	
The LCS is used to evaluate the performance of the total analytical system including all preparation and analysis steps.	M4,1.7.2.2.1					**00d112ar**	
An LCS (a sample matrix free of analytes of interest spiked with a verified known amount of analyte) is performed at a frequency of: a.__ one per preparation batch, per matrix type (except for analytes for which spiking solutions are not available); or b.__ in those instances for which there is no separate preparation method, is the batch defined as environmental samples that are analyzed together with the same method and personnel, using the same lots of reagents, not to exceed the analysis of 20 environmental samples	M4,1.7.2.2.2					**00d112r** **00d112br**	
If the matrix spike is used as the LCS, the acceptance criteria is as stringent as the LCS.	M4,1.7.2.2.3					**00d113r**	
The components spiked are those that are specified by the mandated test method or other regulatory requirement or as requested by the client.	M4,1.7.2.2.3					**00d114** **00d114a**	
In the absence of specified spiking components, the laboratory spikes per the following: a. ___ For those components that interfere with an accurate assessment such as spiking simultaneously with technical chlordane, toxaphene and PCBs, the spike is chosen so that it represents the chemistries and elution patterns of the components to be reported b.___ For those test methods that have extremely long lists of analytes, a representative number is chosen as below: 1.___ The analytes are selected that representative of all analytes reported 2.___ The following criteria are used for determining the minimum number of analytes to be spiked: a) ___ laboratory ensures that all targeted components are included in the spike mixture over a 2-year period	M4,1.7.2.2.3(a) M4,1.7.2.2.3(b) M4,1.7.2.2.3(b)					**0d115ar** **d115b1r** **d115b2ar**	

Relevant Aspect of Standards	NELAC Reference 2016	Y	N	N/A	S	Codes	Comments
b) ___ For methods that include 1-10 targets, all components are spiked.	M4,1.7.2.2.3(b)(i)					**d115b2br**	
c) ___ For methods that include 11-20 targets, at least 10 or 80% are spiked, whichever is greater.	M4,1.7.2.2.3(b)(ii)					**d115b2cr**	
d) ___ For methods with more than 20 targets, at least 16 components are spiked.	M4,1.7.2.2.3(b)(iii)					**d115b2dr**	
For **laboratory control sample**, the laboratory documents the calculation in % recovery or other statistical treatments and compares the results to the acceptance criteria as published in the mandated method.	M4,1.7.3.2(a)					**00d116r**	
The individual LCS is compared to the acceptance criteria: a.__ as published in the mandated test method; b.__ where there are no established criteria, the laboratory determines internal criteria and documents the method used to establish the limits; or c.__ utilizes client specified assessment criteria.	M4,1.7.3.2(a)					**00d117ar**	
Samples that are analyzed along with an LCS determined to be 'out of control' a.__ are considered suspect and the samples reprocessed and re-analyzed; or b.__ the data is reported with appropriate qualifying codes.	M4,1.7.3.2(a)					**0d117b+r**	
The number of allowable marginal exceedances are determined as follows: ☐ >90 analytes in LCS, no more than 5 analytes allowed in ME of the LCS control limit ☐ 71-90 analytes in LCS, no more than 4 analytes allowed in ME of the LCS control limit ☐ 51-70 analytes in LCS, no more than 3 analytes allowed in ME of the LCS control limit	M4,1.7.3.2(b)					**LCS90r** **LCS71r** **LCS51r**	

Relevant Aspect of Standards	NELAC Reference 2016	Y	N	N/A	S	Codes	Comments
☐ 31-50 analytes in LCS, no more than 2 analytes allowed in ME of the LCS control limit ☐ 11-30 analytes in LCS, no more than 1 analytes allowed in ME of the LCS control limit ☐ <11 analytes in LCS, no analytes allowed in ME of the LCS control limit						**LCS31r** **LCS11r** **LCS10r**	
If the same analyte exceeds the LCS control limit repeatedly, it is an indication of a systemic problem. The source of the error is located, and corrective action taken.	M4,1.7.3.2(b)					**D1121e2r**	
Laboratories have a written procedure to monitor the application of marginal exceedance allowance to the LCS.	M4,1.7.3.2(b)					**D1121e3r**	
SAMPLE SPECIFIC CONTROLS							
The laboratory documents the **quality system matrix specific QC procedures** for determining the effect of the sample matrix on method performance (e.g., MS, MSD, dups, surrogates).	M4,1.7.2.3					**00d118r**	
These procedures relate to the analyses of matrix specific QC samples and they are designed as data quality indicators for a specific sample using the designated test method.	M4,1.7.2.3					**00D113ar**	
The laboratory has procedures in place for tracking, managing, and handling matrix specific QC criteria including spiking appropriate components at appropriate concentrations, calculating recoveries and relative percent difference, evaluating and reporting results based on performance of the QC samples.	M4,1.7.2.3					**00d119r**	
The frequency of the analysis of matrix specific samples is followed as specified by the method or determined as part of the contract review process.	M4,1.7.2.3.1(b)					**00d120r**	
The components spiked are those specified by the mandated test method, where applicable.	M4,1.7.2.3.1(c)					**00d121r**	
Any permit specified analytes, as specified by regulation or client requested analytes are also included.	M4,1.7.2.3.1(c)					**00d122r**	

Relevant Aspect of Standards	NELAC Reference 2016	Y	N	N/A	S	Codes	Comments
The components to be spiked will be as specified by the mandated method. All permit specified analytes as specified by the regulation or client requested analytes will be included. If there are no specified components, the laboratory spikes per the following: 1)___ For those components that interfere with an accurate assessment such as spiking simultaneously with technical chlordane, toxaphene and PCBs, the spike is chosen which represents the chemistries and elution patterns of the components to be reported. 2)___ For those test methods that have extremely long lists of analytes, all analytes are used, or a representative number chosen using the following criteria: a) For methods that include 1-10 targets, spike all components; b) For methods that include 11-20 targets, spike at least 10 or 80% of components, whichever is greater; and c) For methods with more than 20 targets, spike at least 16 components	M4,1.7.2.3.1(c) M4,1.7.2.3.1(c)(i) M4,1.7.2.3.1(c)(ii)					**0d123b** **0d123b1** **0d123b2**	
The laboratory includes all targeted components in the spike mixture over a 2-year period.	M4,1.7.2.3.1(c)(ii)					**00d123r**	
MATRIX SPIKE/MATRIX SPIKE DUPLICATES AND DUPLICATES							
Matrix duplicates are defined as replicate aliquots of the same sample taken through the entire analytical procedure.	M4,1.7.2.3.2(a);					**0d1132ar**	
The results from the analysis of matrix duplicates indicate the precision of the results for the specific sample using the selected method.	M4,1.7.2.3.2(a)					**d1132a1r**	
The frequency of the analysis of matrix duplicates is determined as part of a systematic planning process (e.g., Data Quality Objectives) or as specified by the mandated test method.	M4,1.7.2.3.2(b)					**00d177r**	
Matrix duplicates are performed on replicate aliquots of actual sample.	M4,1.7.2.3.2(c)					**00d178r**	

Relevant Aspect of Standards	NELAC Reference 2016	Y	N	N/A	S	Codes	Comments
The matrix spike/matrix spike duplicate is used to assess the precision and accuracy of analytical results in each matrix and are expressed as percent recovery (%R) and relative percent difference (RPD). Matrix duplicate is used to assess precision and is expressed as RPD or another statistical treatment (e.g., absolute differences).	M4,1.7.3.3(a) &M4,1.7.3.3(b)					**00d179r**	
The laboratory documents the calculation for percent recovery, relative percent difference or other statistical treatment used.	M4,1.7.3.3(a)					**00d180r**	
The results are compared to the acceptance criteria in the mandated test method when published.	M4,1.7.3.3(a)					**00d181r**	
Where there are no established criteria, the laboratory determines internal criteria and documents the method used to establish the limits.	M4,1.7.3.3(a)					**00d182r**	
For matrix spike results outside established criteria, corrective action is documented, or the data is reported with appropriate data qualifying codes.	M4,1.7.3.3(a)					**00d183r**	
SURROGATES							
When required, the laboratory choose **surrogates** to reflect the chemistries of the targeted components of the method and adds the surrogates prior to sample preparation/extraction to all samples, standards, and blanks.	M4,1.7.2.3.3(a)(b)					**00d184r**	
Surrogate compounds are chosen for being unlikely to occur as environmental contaminants and to represent the various chemistries of the target analytes in the method.	M4,1.7.2.3.3(c)					**0d1133cr**	
The results of surrogate recoveries are compared to the acceptance criteria published in the mandated test method.	M4,1.7.3.3(c)					**00d185r**	
Where there are no established criteria, the laboratory determines internal criteria and documents the method used to establish the limits.	M4,1.7.3.3(c)					**00d186r**	
Surrogates outside the acceptance criteria are evaluated for the effect indicated for the individual sample results.	M4,1.7.3.3(c)					**00d187r**	

Relevant Aspect of Standards	NELAC Reference 2016	Y	N	N/A	S	Codes	Comments
The appropriate corrective action is guided by the data quality objectives or other site-specific requirements.	M4,1.7.3.3(c)					**00d188r**	
Results are reported from analyses with surrogate recoveries outside the acceptance criteria with appropriate data qualifiers.	M4,1.7.3.3(c)					**00d189+r**	
OTHER CRITERIA							
Procedures are documented for data reduction, such as use of linear regression.	M4,1.7.2.4					**00d162r**	
The source of standards is traceable to national standards when commercially available.	M4, 1.7.1.1(d)					**00d163r**	
In methods where the purity of reagents is not specified, analytical reagent grade is used.	M4,1.7.2.5(a)					**00d164r**	
The laboratory uses reagents of the purity or of greater purity than that specified in the method.	M4,1.7.2.5(a)					**00d165r**	
The laboratory documents that the purity of the reagents meets the requirements of the test method.	M4,1.7.2.5(a)					**0d14b1r**	
The quality of water sources is monitored and documented to meet method specified requirements.	M4,1.7.2.5(b)					**00d167r**	
The laboratory verifies that the concentration of titrants is in accordance with written laboratory procedures.	M4,1.7.2.5(c)					**00d167ar**	
The laboratory evaluates selectivity by following the checks established within the method, which may include mass spectral tuning, second column confirmation, ICP interelement interference checks, chromatography retention time windows, sample blanks, spectrochemical absorption or fluorescence profiles, co-precipitation evaluations, and electrode response factors.	M4,1.5.4					**0D1101r**	