

Louisiana Environmental Laboratory Accreditation Program

Assessment Checklist for NELAP-Accredited Facilities Rev.0

Special Instructions

This checklist must be completed by laboratory personnel. Each question must be responded to. LELAP requires that each "Laboratory QS Reference" be filled in with the citation to the specific section of the quality assurance manual or appropriate SOP.

Louisiana Environmental Laboratory Accreditation Program

Assessment Checklist for NELAP-Accredited Facilities

Prepared by: _____ Date: _____

Approved by: _____ Date: _____

*This Checklist is printed from an electronic file.
A signed original is available in the files of LADEQ*

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Audit Location (if different): _____

Audit Date: _____ Audit Organization: _____

Auditor(s): _____
(Signatures) _____

Receipt acknowledgment by Laboratory: _____

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Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
5.0 INTRODUCTION				
1.	Are all items identified in NELAC Chapter 5 Quality System available for the on-site inspection or data audit?	5.0	5101.C 5101.D	
2.	Do the laboratory's management and all analysts ensure that all PT samples are handled (i.e., managed, analyzed, and reported) in the same manner as real environmental samples utilizing the same staff, methods as used for routine analysis of that analyte, procedures, equipment, facilities, and frequency of analysis?	2.5	4711.C 4711.E 5101.C.4	
3.	Does the laboratory post or display their most recent NELAP accreditation certificate or their NELAP-accredited fields of testing in a prominent place in the laboratory facility?	6.8.a.1	5701.A	
4.	Does the laboratory make accurate statements concerning their NELAP accreditation fields of testing and NELAP accreditation status?	4.6.1 6.8.a.2	5701.C	
5.	Does the laboratory accompany the accrediting authority's name and/or the NELAC/NELAP logo with at least the phrase "NELAP accredited" and the laboratory's accreditation number or other identifier when the accrediting authority's name is used on general literature such as catalogs, advertising, business solicitations, proposals, quotations, laboratory analytical reports or other materials?	6.8.a.3	5701.C	
6.	Does the laboratory use their NELAP certificate, NELAP accreditation status and/or NELAC/NELAP logo in such a manner as to not imply endorsement by the accrediting authority?	4.6.1 6.8.a.4	5701.C	
5.4 MANAGEMENT REQUIREMENTS				
5.4.1 Organization				
7.	Is the laboratory, or organization of which it is part, an entity that can be held legally responsible?	5.4.1.1	4703.A	
8.	Does the laboratory carry out its environmental testing activities in such a way as to meet the requirements of the NELAC Standard?	5.4.1.2	5901.A 5911	
9.	Does the laboratory carry out its environmental testing activities in such a way as to satisfy the needs of the client, the regulatory authorities or organizations providing recognition?	5.4.1.2	5901.A 5903.A 5911	
10.	Does the laboratory establish implement and maintain a quality system based on the required elements contained in Chapter 5 that is appropriate to the type, range and volume of environmental testing activities it undertakes?	5.4.2.1	5301.B	
11.	Does the laboratory management system cover work carried out in the laboratory's permanent facilities, at sites away from its permanent facilities, and/or in its associated temporary or mobile facilities?	5.4.1.3	5901.A 5911	
12.	If the laboratory is part of an organization performing activities other than environmental testing, are the responsibilities of key personnel in the organization defined in order to identify potential conflicts of interest?	5.4.1.4	5901 5911	
13.	Where a laboratory is part of a larger organization, are the organizational arrangements such that departments having conflicting interests, such as production, commercial marketing or financing do not adversely influence the laboratory's compliance with the requirements of this Standard?	5.4.1.4.a	4901.A	

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14.	Is the laboratory able to demonstrate that it is impartial and that it and its personnel are free from any undue commercial, financial and other pressures which might influence their technical judgment?	5.4.1.4.b	4901.A	
15.	Does the laboratory engage in only those activities that do not endanger the trust in its independence of judgment and integrity in relation to its environmental testing activities?	5.4.1.4.b	4901.A	
16.	Does the laboratory have managerial and technical personnel with the authority and resources needed to carry out their duties and to identify the occurrence of departures from the quality system or from the procedures for performing environmental tests, and to initiate actions to prevent or minimize such departures?	5.4.1.5.a	4901.A	
17.	Does the laboratory have processes to ensure that its management and personnel are free from any undue internal and external commercial, financial and other pressures and influences that may adversely affect the quality of their work?	5.4.1.5.b	4901.A	
18.	Does the laboratory have policies and procedures to ensure the protection of its clients' confidential information and proprietary rights, including procedures for protecting the electronic storage and transmission of results.	5.4.1.5.c	5315.B	
19.	Does the laboratory have policies and procedures to avoid involvement in any activities that would diminish confidence in its competence, impartiality, judgment or operational integrity?	5.4.1.5.d	4901.A	
20.	Does the laboratory define the organization and management structure of the laboratory, its place in any parent organization, and the relationships between quality management, technical operations and support services?	5.4.1.5.e	5301.C.1	
21.	Does the laboratory specify the responsibility, authority and interrelationships of all personnel who manage, perform or verify work affecting the quality of the environmental tests?	5.4.1.5.f	4901.A	
22.	Does the laboratory have documentation that includes a clear description of the lines of responsibility in the laboratory?	5.4.1.5.f	5301.C.1	
23.	Does the laboratory have adequate supervision of environmental testing staff, including trainees?	5.4.1.5.f 5.4.1.5.g	4901.A.2	
24.	Is supervision provided by persons familiar with methods and procedures, purpose of each environmental test, and with the assessment of the environmental test results?	5.4.1.5.g	4901.A.2 4901.D.2	
25.	Does the laboratory have technical management which has overall responsibility for the technical operations and the provision of the resources needed to ensure the required quality of laboratory operations?	5.4.1.5.h	4901.A	
26.	Do the technical directors document the certification of personnel as having the appropriate educational and/or technical backgrounds for performing all tests for which the laboratory is accredited? (Transcripts, copies of certificates, etc.)	5.4.1.5.h	4901.G	
27.	Do the technical director(s) of a laboratory engaged in <u>chemical analyses</u> have a Bachelor's degree in Chemical, Environmental, Biological Sciences, Physical Sciences or Engineering, with at least 24 college semester credit hours in chemistry and at least 2 years of experience in analyses for which accreditation is sought? (A Master's or Doctoral degree may be substituted for 1 year experience)	5.4.1.5.h 4.1.1.1.a	5901.A 5911	

**Louisiana Environmental Laboratory Accreditation Program
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28.	Does the technical director of a laboratory limited to <u>inorganic chemical</u> analysis, other than metals analysis, have at least an earned Associate's degree in the Chemical, Physical or Environmental Sciences, or 2 years of equivalent and successful college education, with a minimum of 16 college semester credit hours in Chemistry and does he/she have at least 2 years of experience performing such analysis?	5.4.1.5.h 4.1.1.1.b	5901.A 5911	
29.	Do the technical director(s) of a laboratory engaged in <u>microbiological or biological analyses</u> have a Bachelor's degree in Micro, Biology, Chemical, Environmental Sciences, Physical Sciences or Engineering, with at least 16 college semester credit hours in general Microbiology and Biology and at least 2 years (1 year if have a Master's or Doctoral degree) of experience in analyses for which accreditation is sought?	5.4.1.5.h 4.1.1.1.c	5901.A 5911	
30.	Do the technical director(s) of a laboratory engaged in microbiological analyses <u>limited to fecal coliform, total coliform, and standard plate count</u> have at least an Associate's degree (or 2 years of equivalent and successful college education) in an appropriate field of the sciences or applied sciences with 4 college semester credit hours in general Microbiology and one year experience in environmental analyses?	5.4.1.5.h 4.1.1.1.c	5901.A 5911	
31.	Do the technical director(s) of a laboratory engaged in <u>radiological analyses</u> have a Bachelor's degree in chemistry, physics or engineering, with at least 24 college semester credit hours in Chemistry and at least 2 years of experience in the radiological analyses of environmental samples? (A Master's or Doctoral degree may be substituted for 1 year experience)	5.4.1.5.h 4.1.1.1.d	5901.A 5911	
32.	Do the technical director(s) of a laboratory engaged in the <u>microscopic examination of asbestos and/or airborne fibers requiring the use of a transmission electron microscope</u> have a bachelors degree, successful completion of courses in the use of the instrument, and one year experience (including identification of minerals), under supervision, in the use of the instrument?	5.4.1.5.h 4.1.1.1.e.i	5901.A 5911	
33.	Do the technical director(s) of a laboratory engaged in the <u>microscopic examination of asbestos and/or airborne fibers requiring the use of a polarized light microscope</u> have an associates degree or 2 years of college study, successful completion of formal course work in the use of the instrument, and one year experience (including identification of minerals), under supervision, in the use of the instrument?	5.4.1.5.h 4.1.1.1.e.ii	5901.A 5911	
34.	Do the technical director(s) of a laboratory engaged in the <u>microscopic examination of asbestos and/or airborne fibers requiring the use of a phase contrast microscope</u> , as in the determination of airborne fibers, have an associates degree or 2 years of college study, successful completion of formal course work in the use of the instrument, and one year experience?	5.4.1.5.h 4.1.1.1.e.iii	5901.A 5911	
35.	Do the technical director(s) of a laboratory engaged in the examination of <u>radon in air</u> have an associates degree or 2 years of college study, and one year experience in radiation measurement including at least one year in the measurement of radon and/or radon progeny?	5.4.1.5.h 4.1.1.1.d.f	5901.A 5911	
36.	Does the laboratory appoint a member of staff as quality manager (however named) who, has the responsibility and authority for ensuring that the quality system is implemented and followed at all times?	5.4.1.5.i	4901.C.3 5301.B	

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37.	Does the quality manager have direct access to the highest level of management at which decisions are made on laboratory policy or resources?	5.4.1.5.i	4901.C.3 5301.B	
38.	Does the quality manager (and/or his/her designees) serve as the focal point for QA/QC and be responsible for the oversight and/or review of quality control data?	5.4.1.5.i.1	4901.C.3	
39.	Does the quality manager (and/or his/her designees) have functions independent from laboratory operations for which they have quality assurance oversight?	5.4.1.5.i.2	4901.C.3	
40.	Is the quality manager (and/or his/her designees) able to evaluate data objectively and perform assessments without outside (e.g., managerial) influence?	5.4.1.5.i.3	4901.C.3	
41.	Does the quality manager (and/or his/her designees) have documented training and/or experience in QA/QC procedures and is knowledgeable in the quality system as defined under NELAC?	5.4.1.5.i.4	4901.C.4	
42.	Does the quality manager (and/or his/her designees) have a general knowledge of the analytical test methods for which data review is performed?	5.4.1.5.i.5	4901.C.4	
43.	Does the quality manager (and/or his/her designees) arrange for or conduct internal audits as per 5.4.13 annually?	5.4.1.5.i.6	5301.E	
44.	Does the quality manager (and/or his/her designees) notify laboratory management of deficiencies in the quality system and monitor corrective action?	5.4.1.5.i.7	4901.C.3	
45.	Does the laboratory appoint deputies for key managerial personnel, including the technical director(s) and/or quality manager?	5.4.1.5.j	4901.A	
46.	Does the laboratory participate in a proficiency test program as outlined in Chapter 2?	5.4.1.5.k	4711	
5.4.2 Quality System				
47.	Does the laboratory document its policies, systems, programs, procedures and instructions to the extent necessary to assure the quality of the environmental test results?	5.4.2.1	5301.B	
48.	Is the system's documentation communicated to, understood by, available to, and implemented by the appropriate personnel?	5.4.2.1	5301.A 5105.E 5105.D	
49.	Are the laboratory's quality system policies and objectives defined in a quality manual (however named)?	5.4.2.2	5301.C	
50.	Are the laboratory's overall objectives documented in a quality policy statement?	5.4.2.2	5301.C.6	
51.	Is the quality policy statement issued under the authority of the chief executive?	5.4.2.2	5301.C.6	

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52.	Does the quality policy include at least the following: a) <input type="checkbox"/> The laboratory management's commitment to good professional practice and to the quality of its environmental testing in servicing its clients; Does the laboratory define and document its policies and objectives for, and its commitment to accepted laboratory practices and quality of testing services. b) <input type="checkbox"/> The management's statement of the laboratory's standard of service; c) <input type="checkbox"/> The objectives of the quality system d) <input type="checkbox"/> A requirement that all personnel concerned with environmental testing activities within the laboratory familiarize themselves with the quality documentation and implement the policies and procedures in their work; and e) <input type="checkbox"/> The laboratory management's commitment to compliance with this Standard?	5.4.2.2	5301.C.6	
53.	Does the quality manual include or make reference to the supporting procedures including technical procedures?	5.4.2.3	5301	
54.	Does the quality manual outline the structure of the documentation used in the quality system?	5.4.2.3	5301	
55.	Does the quality manual, and related quality documentation, state the laboratory's policies and operational procedures established in order to meet the requirements of this Standard?	5.4.2.3	5301	
56.	NOTE: Where a laboratory's quality manual contains the necessary requirements, a separate SOP or policy is not required.	5.4.2.3	5301	
57.	Does the quality manual list on the title page: a) <input type="checkbox"/> A document title; b) <input type="checkbox"/> The laboratory's full name and address; c) <input type="checkbox"/> The name, address (if different from above), and telephone number of individual(s) responsible for the laboratory; d) <input type="checkbox"/> The name of the quality manager (however named); e) <input type="checkbox"/> The identification of all major organizational units which are to be covered by this quality manual, and f) <input type="checkbox"/> The effective date of the version?	5.4.2.3	5301.C.18	
58.	Does the quality manual and related quality documentation include or reference a quality policy statement, including objectives and commitments, by top management?	5.4.2.3.a	5301.C.6	
59.	Does the quality manual and related quality documentation include or reference the organization and management structure of the laboratory, its place in any parent organization and relevant organizational charts?	5.4.2.3.b	5301.C.1	
60.	Does the quality manual and related quality documentation include or reference the relationship between management, technical operations, support services and the quality system?	5.4.2.3.c	5301.C.1	
61.	Does the quality manual and related quality documentation include or reference procedures to ensure that all records required under Chapter 5 are retained?	5.4.2.3.d	5301.C.7 5315	
62.	Does the quality manual and related quality documentation include or reference procedures for control and maintenance of documentation through a document control system which ensures that all SOPs, manuals, or documents clearly indicate the time period during which the procedure or document was in force?	5.4.2.3.d	5301.C.7	

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63.	Does the quality manual and related quality documentation include or reference job descriptions of key staff and reference to the job descriptions of other staff?	5.4.2.3.e	4901.A.3	
64.	Does the quality manual and related quality documentation include or reference identification of the laboratory's approved signatories?	5.4.2.3.f	5301.C.18	
65.	Does the title page of the Quality Manual have the signed and dated concurrence, (with appropriate titles) of all responsible parties including the quality manager(s), technical director(s), and the agent who is in charge of all laboratory activities such as the laboratory director or laboratory manager?	5.4.2.3.f	5301.C.18	
66.	Does the quality manual and related quality documentation include or reference the laboratory's procedures for achieving traceability of measurements?	5.4.2.3.g	5301.C.8	
67.	Does the quality manual and related quality documentation include or reference a list of all test methods under which the laboratory performs its accredited testing?	5.4.2.3.h	5301.C.9	
68.	Does the quality manual and related quality documentation include or reference mechanisms for ensuring that the laboratory reviews all new work to ensure that it has the appropriate facilities and resources before commencing such work?	5.4.2.3.i	5301.B	
69.	Does the quality manual and related quality documentation include or reference to the calibration and/or verification test procedures used?	5.4.2.3.j	5301.C.12	
70.	Does the quality manual and related quality documentation include or reference procedures for handling submitted samples?	5.4.2.3.k	5301.C.10	
71.	Does the quality manual and related quality documentation include or reference to the major equipment and reference measurement standards used as well as the facilities and services used by the laboratory in conducting tests?	5.4.2.3.l	5301.C.11	
72.	Does the quality manual and related quality documentation include or reference to procedures for calibration, verification and maintenance of equipment?	5.4.2.3.m	5301.C.12	
73.	Does the quality manual and related quality documentation include or reference to verification practices which may include interlaboratory comparisons, proficiency testing programs, use of reference materials and internal quality control schemes?	5.4.2.3.n	5301.C.13	
74.	Does the quality manual and related quality documentation include or reference procedures to be followed for feedback and corrective action whenever testing discrepancies are detected, or departures from documented policies and procedures occur?	5.4.2.3.o	5301.A.4 5301.C.4	
75.	Does the quality manual and related quality documentation include or reference the laboratory management arrangements for exceptionally permitting departures from documented policies and procedures or from standard specifications?	5.4.2.3.p	5301.C.14	
76.	Does the quality manual and related quality documentation include or reference procedures for dealing with complaints?	5.4.2.3.q	5301.C.15	
77.	Does the quality manual and related quality documentation include or reference procedures for protecting confidentiality (including national security concerns), and proprietary rights?	5.4.2.3.r	5301.C.16 5313.D	
78.	Does the quality manual and related quality documentation include or reference procedures for audits and data review?	5.4.2.3.s	5301.C.17	

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79.	Does the quality manual and related quality documentation include or reference processes/procedures for establishing that personnel are adequately experienced in the duties they are expected to carry out and are receiving any needed training?	5.4.2.3.t	5301.C.20	
80.	Does the quality manual and related quality documentation include or reference procedures for reporting analytical results?	5.4.2.3.u	5301.C.21	
81.	Does the quality manual and related quality documentation include or reference a Table of Contents, and applicable lists of references and glossaries, and appendices?	5.4.2.3.v	5301.C.22	
82.	Are the roles and responsibilities of technical management and the quality manager, including their responsibility for ensuring compliance with Chapter 5 defined in the quality manual?	5.4.2.4	4901.A 4901.C.3	
83.	Is the quality manual kept current under the responsibility of the quality manager?	5.4.2.5	5301.B 5301.D	
84.	Does the laboratory establish and maintain data integrity procedures defined in detail within the quality manual?	5.4.2.6	5301.C.19 5315.A.2 5307.C.2.b	
85.	Does the data integrity system include: a) <input type="checkbox"/> Data Integrity training b) <input type="checkbox"/> Signed data integrity documentation for all laboratory employees, c) <input type="checkbox"/> In-depth, periodic monitoring of data integrity, and d) <input type="checkbox"/> Data integrity procedure documentation.	5.4.2.6	5301.C.19	
86.	Are the data integrity procedures signed and dated by senior management?	5.4.2.6	5301.C.19	
87.	Are these procedures and the associated implementation records properly maintained and made available for assessor review?	5.4.2.6	5315.A 4709.A	
88.	Are the data integrity procedures annually reviewed and updated by management?	5.4.2.6	5301.D	
89.	Does laboratory management provide a mechanism for confidential reporting of data integrity issues in their laboratory? (A primary element of the mechanism is to assure confidentiality and a receptive environment in which all employees may privately discuss ethical issues or report items of ethical concern).	5.4.2.6.1	5301.C.19	
90.	In instances of ethical concern, does the mechanism for confidential reporting of data integrity issues include a process whereby laboratory management are informed of the need for any further detailed investigation?	5.4.2.6.2	5301.D	
5.4.3 Document Control				
91.	Does the laboratory establish and maintain procedures to control all documents that form part of its quality system, whether internally generated or from external sources?	5.4.3.1	5301.C.7	
92.	Are all documents issued to personnel in the laboratory as part of the quality system reviewed and approved for use by authorized personnel prior to issue?	5.4.3.2.1	5307.A	
93.	Is a master list or an equivalent document control procedure identifying the current revision status and distribution of documents in the quality system established and readily available to preclude the use of invalid and/or obsolete documents?	5.4.3.2.1	5301.C.7	
94.	Are procedure(s) adopted to ensure that authorized editions of appropriate documents are available at all locations where operations essential to the effective functioning of the laboratory are performed?	5.4.3.2.2.a	5105.A	

**Louisiana Environmental Laboratory Accreditation Program
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95.	Are procedure(s) adopted to ensure that documents are periodically reviewed and, where necessary, revised to ensure continuing suitability and compliance with applicable requirements?	5.4.3.2.2.b	5307.A	
96.	Are procedure(s) adopted to ensure that invalid or obsolete documents are promptly removed from all points of issue or use, or otherwise assured against unintended use?	5.4.3.2.2.c	5301.C.7	
97.	Are procedure(s) adopted to ensure that obsolete documents retained for either legal or knowledge preservation purposes are suitably marked?	5.4.3.2.2.d	5301.C.7	
98.	Are quality system documents generated by the laboratory uniquely identified?	5.4.3.2.3	5301.C.7	
99.	Does such identification include the date of issue and/or revision identification, page numbering, the total number of pages or a mark to signify the end of the document, and the issuing authority(ies)?	5.4.3.2.3	5307.A	
100.	Are changes to documents reviewed and approved by the same function that performed the original review unless specifically designated otherwise?	5.4.3.3.1	5307.A	
101.	Do the designated personnel have access to pertinent background information upon which to base their review and approval?	5.4.3.3.1	5307.A	
102.	Where practicable, is altered or new text identified in the document or the appropriate attachments?	5.4.3.3.2	5307.A	
103.	If the laboratory's documentation control system allows for the amendment of documents by hand, pending the re-issue of the documents, are the procedures and authorities for such amendments defined?	5.4.3.3.3	5301.C.7	
104.	Are amendments clearly marked, initialed and dated?	5.4.3.3.3	5301.C.7	
105.	Is a revised document formally re-issued as soon as practicable?	5.4.3.3.3	5105.A	
106.	Are procedures established to describe how changes in documents maintained in computerized systems are made and controlled?	5.4.3.3.4	5301.C.7	
5.4.4 Review of Requests, Tenders and Contracts				
107.	Has the laboratory established and maintained procedures for the review of requests, tenders and contracts? (A contract may be any written or oral agreement to provide a client with environmental testing services).	5.4.4.1	5901 5911	
108.	Do the policies and procedures for reviews leading to a contract for environmental testing ensure that the requirements, including the methods to be used, are adequately defined, documented and understood?	5.4.4.1.a	5901 5911	
109.	Do the policies and procedures for reviews leading to a contract for environmental testing ensure that the laboratory has the capability and resources to meet the requirements?	5.4.4.1.b	5901 5911	
110.	Does the review of capability establish that the laboratory possesses the necessary physical, personnel and information resources, and that the laboratory's personnel have the skills and expertise necessary for the performance of the environmental tests in question?	5.4.4.1.b	5901 5911	
111.	Does the review of capability include the current accreditation status of the laboratory?	5.4.4.1.b	5901 5911	
112.	Does the laboratory inform the client of the results of the review of capability if it indicates any potential conflict, deficiency, lack of appropriate accreditation status, or inability on the laboratory's part to complete the client's work?	5.4.4.1.b	5901 5911	
113.	Do the policies and procedures for reviews leading to a contract for environmental testing ensure that the appropriate environmental test method is selected and capable of meeting the clients' requirements?	5.4.4.1.c	5105.A	

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114.	Are any differences between the request or tender and the contract resolved before any work commences?	5.4.4.1	5105.A	
115.	Is each contract acceptable to both the laboratory and the client?	5.4.4.1		
116.	Are records of reviews, including any significant changes maintained?	5.4.4.2	5315.A	
117.	Are records also maintained of pertinent discussions with a client relating to the client's requirements or the results of the work during the period of execution of the contract?	5.4.4.2	5315.A	
118.	Does the review cover any work that is subcontracted by the laboratory?	5.4.4.3	5307.D	
119.	Is the client informed of any deviation from the contract?	5.4.4.4.	5901 5911	
120.	If a contract needs to be amended after work has commenced, is the same contract review process repeated and any amendments communicated to all affected personnel?	5.4.4.5	5901 5911	
121.	Is suspension of accreditation, revocation of accreditation, or voluntary withdrawal of accreditation reported to the client?	5.4.4.5	5901 5911	
5.4.5 Subcontracting of Environmental Tests				
122.	When a laboratory subcontracts work is the work placed with a laboratory accredited under NELAP for the tests to be performed or with a laboratory that meets applicable statutory and regulatory requirements for performing the tests and submitting the results of tests performed?	5.4.5.1	5307.D	
123.	Is the laboratory performing the subcontracted work indicated in the final report and non-NELAP accredited work clearly identified?	5.4.5.1	5313.A	
124.	Does the laboratory advise the client of the subcontracting arrangement in writing and, when appropriate, gain the approval of the client, preferably in writing?	5.4.5.2	5315.A	
125.	Is the laboratory responsible to the client for the subcontractor's work, except in the case where the client or a regulatory authority specifies which subcontractor is to be used?	5.4.5.3	5901 5911	
126.	Does the laboratory maintain a register of all subcontractors that it uses for environmental tests and maintain a record of the evidence of compliance with 5.4.5.1?	5.4.5.4	5315.A	
5.4.6 Purchasing Services and Supplies				
127.	Does the laboratory have a policy and procedure(s) for the selection and purchasing of services and supplies it uses that affect the quality of the environmental tests?	5.4.6.1	5301.F.2 5301.H.1.f	
128.	Do procedures exist for the purchase, reception and storage of reagents and laboratory consumable materials relevant for the environmental tests?	5.4.6.1	5301.F.2 5301.H.1.f	
129.	Does the laboratory ensure that purchased supplies, reagents and consumable materials that affect the quality of environmental tests are not used until they have been inspected or otherwise verified as complying with requirements defined in the methods for the environmental tests concerned?	5.4.6.2	5301.H.1.f 5303.G.1.a 5303.G.1.f (gases)	
130.	Do the services and supplies used comply with specified requirements?	5.4.6.2	5301.H.1.f 5303.G.1.a	
131.	Are records of actions taken to check compliance with the requirements maintained?	5.4.6.2	5315.A	
132.	Do purchasing documents for items affecting the quality of laboratory output contain data describing the services and supplies ordered?	5.4.6.3	5303.F	
133.	Are these purchasing documents reviewed and approved for technical content prior to release?	5.4.6.3	4901.A	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
134.	Does the laboratory evaluate suppliers of critical consumables, supplies and services that affect the quality of environmental testing?	5.4.6.4	5301.H.1.f 5303.G.1.a 5303.G.1.f (gases)	
135.	Does the laboratory maintain records of these evaluations and list those approved?	5.4.6.4	5315.A	
5.4.7 Service to the Client				
136.	Does the laboratory afford clients or their representative's cooperation to clarify the client's request and monitor the laboratory's performance in relation to the work performed?	5.4.7	5301.F.8	
137.	Does the laboratory ensure confidentiality to clients work while providing service to other clients?	5.4.7	5315.B	
5.4.8 Complaints				
138.	Does the laboratory have a policy and procedure for the resolution of complaints received from clients or other parties?	5.4.8	5301.C.15	
139.	Does the laboratory maintain records of all complaints and of the investigations and corrective actions taken by the laboratory?	5.4.8	5315.A	
5.4.9 Control of Nonconforming Work				
140.	Does the laboratory have a policy and procedures that is implemented when any aspect of its environmental testing work, or the results of this work, does not conform to its own procedures or the agreed requirements of the client?	5.4.9.1	5301.F.1.s	
141.	Do the policy and procedures ensure that the responsibilities and authorities for the management of nonconforming work are designated and actions (including halting of work and withholding of test reports-as necessary) are defined and taken when nonconforming work is identified?	5.4.9.1.a	5301.G	
142.	Do the policy and procedures ensure that an evaluation of the significance of the nonconforming work is made?	5.4.9.1.b	5301.F.1.s	
143.	Do the policy and procedures ensure that corrective actions are taken immediately, together with any decision about the acceptability of the nonconforming work?	5.4.9.1.c	5301.F.1.r	
144.	Do the policy and procedures ensure that where the data quality is or may be impacted, the client is notified?	5.4.9.1.d	5301.F.1.r	
145.	Do the policy and procedures ensure that the responsibility for authorizing the resumption of work is defined?	5.4.9.1.e	5301.F.1.r 5301.G	
146.	Where the evaluation indicates that the nonconforming work could recur or that there is doubt about the compliance of the laboratory's operations with its own policies and procedures, are the corrective action procedures given in 5.4.10 promptly followed?	5.4.9.2	5301.G	
5.4.10 Corrective Action				
147.	Does the laboratory establish a policy and procedure and designate appropriate authorities for implementing corrective action when nonconforming work or departures from the policies and procedures in the quality system or technical operations have been identified?	5.4.10.1	5301.A.3 5301.F.1.r	
148.	Does the procedure for corrective action start with an investigation to determine the root cause(s) of the problem?	5.4.10.2	5301.F.1.r	
149.	Does the laboratory identify potential corrective actions where corrective action is needed?	5.4.10.3	5301.F.1.r	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
150.	Does the laboratory select and implement the action(s) most likely to eliminate the problem and to prevent recurrence?	5.4.10.3	5301.F.1.r	
151.	Are corrective actions appropriate to the magnitude and the risk of the problem?	5.4.10.3	5301.F.1.r	
152.	Does the laboratory document and implement any required changes resulting from corrective action investigations?	5.4.10.3	5301.F.1.r 5315.A	
153.	Does the laboratory monitor the results to ensure that the corrective actions taken have been effective?	5.4.10.4	5301.F.1.r	
154.	Where the identification of non-conformances or departures casts doubts on the laboratory's compliance with its own policies and procedures, or on its compliance with this Standard, does the laboratory ensure that the appropriate areas of activity are audited in accordance with 5.4.13 as soon as possible?	5.4.10.5	5301.G	
155.	In addition to providing acceptance criteria and specific protocols for corrective actions in the Method SOPs, does the laboratory implement general procedures to be followed to determine when departures from documented policies, procedures and quality control have occurred?	5.4.10.6.a	5301.H.2 5301.G	
156.	Do these procedures identify the individual(s) responsible for assessing each QC data type?	5.4.10.6.a.1	5301.H.2	
157.	Do these procedures identify the individual(s) responsible for initiating and/or recommending corrective actions?	5.4.10.6.a.2	5301.H.2	
158.	Do these procedures define how the analyst shall treat a data set if the associated QC measurements are unacceptable?	5.4.10.6.a.3	5301.H.2	
159.	Do these procedures specify how out-of-control situations and subsequent corrective actions are to be documented?	5.4.10.6.a.4	5301.H.2 5315.A	
160.	Do these procedures specify procedures for management (including the quality manager) to review corrective action reports?	5.4.10.6.a.5	5301.H.2 5301.B 5301.G	
161.	To the extent possible, are samples reported only if all quality control measures are acceptable?	5.4.10.6.b	5301.H	
162.	If a quality control measure is found to be out of control, and the data is to be reported, are all samples associated with the failed quality control measure reported with the appropriate data qualifier(s)?	5.4.10.6.b	5313.B.6	
5.4.11 Preventive Action				
163.	Is preventive action a pro-active process to identify opportunities for improvement rather than a reaction to the identification of problems or complaints?	.	5301.F.3	
164.	Are needed improvements and potential sources of nonconformance, either technical or concerning the quality system, identified?	5.4.11.1	5301.F.3	
165.	If preventive action is required, are action plans developed, implemented and monitored to reduce the likelihood of the occurrence of such non-conformances and to take advantage of the opportunities for improvement?	5.4.11.1	5301.F.3	
166.	Do procedures for preventive actions include the initiation of such actions and application of controls to ensure that they are effective?	5.4.11.2	5301.F.3	
5.4.12 Control of Records				
167.	Does the laboratory maintain a record system to suit its particular circumstances and comply with any applicable regulations?	5.4.12	5315.A	
168.	Does the system produce unequivocal, accurate records which document all laboratory activities?	5.4.12	5315.A	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
169.	Does the laboratory retain all original observations, calculations and derived data, calibration records and a copy of the test report for a minimum of five years?	5.4.12	5315.A	
170.	If the laboratory's clients specify that a sample will be used for evidentiary purposes, does the laboratory have a written SOP for how it will carry out legal chain of custody (for example, ASTM D 4840- 95 and Manual for the Certification of Laboratories Analyzing Drinking Water, March 1997, Appendix A)?	5.4.12	5301.C.10	
171.	Does the laboratory establish and maintain procedures for identification, collection, indexing, access, filing, storage, maintenance and disposal of quality and technical records?	5.4.12.1.1	5315.A	
172.	Do quality records include reports from internal audits and management reviews as well as records of corrective and preventive actions? (Records may be in any media, such as hard copy or electronic media).	5.4.12.1.1	5315.A	
173.	Are all records legible?	5.4.12.1.2	5315.E	
174.	Are all records retained in such a way that they are readily retrievable?	5.4.12.1.2	5315.A	
175.	Are all records stored in facilities that provide a suitable environment to prevent damage or deterioration and to prevent loss?	5.4.12.1.2	5315.A	
176.	Has retention times of records been established?	5.4.12.1.2	5315.A	
177.	Are all records held secure and in confidence?	5.4.12.1.3	5315.B	
178.	Does the laboratory have procedures to protect and back-up records stored electronically?	5.4.12.1.4	5307.C.2	
179.	Does the laboratory have procedures to prevent unauthorized access to or amendment of records stored electronically?	5.4.12.1.4	5315.A.4	
180.	Does the record keeping system allow historical reconstruction of all laboratory activities that produced the analytical data?	5.4.12.1.5	5315.A	
181.	Is the history of the sample readily understood through the documentation?	5.4.12.1.5	5315.A	
182.	Does this history include inter-laboratory transfers of samples and/or extracts?	5.4.12.1.5	5307.D	
183.	Do the records include the identity of personnel involved in sampling, sample receipt, preparation, or testing?	5.4.12.1.5.a	5315.C	
184.	Is all information relating to the laboratory facilities equipment, analytical test methods, and related laboratory activities, such as sample receipt, sample preparation, or data verification documented?	5.4.12.1.5.b	5315.A 5315.C	
185.	Does the record keeping system facilitate the retrieval of all working files and archived records for inspection and verification purposes, e.g., set format for naming electronic files?	5.4.12.1.5.c	5315.A	
186.	Are all changes to records signed or initialed by responsible staff?	5.4.12.1.5.d	5315.E	
187.	Is the reason for the signature or initials clearly indicated in the records such as "sampled by," "prepared by," or "reviewed by"?	5.4.12.1.5.d	5901.A 5911	
188.	Are all generated data except those that are generated by automated data collection systems, recorded directly, promptly and legibly in permanent ink?	5.4.12.1.5.e	5315.E	
189.	Are entries in records changed so as not to be obliterated by methods such as erasures, overwritten files or markings?	5.4.12.1.5.f	5315.E	
190.	Are all corrections to record-keeping errors made by one line marked through the error?	5.4.12.1.5.f	5315.E	
191.	Does the individual making the correction sign (or initial) and date the correction?	5.4.12.1.5.f	5315.E.	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
192.	Are entries to electronically maintained records changed so as to not erase or overwrite the files?	5.4.12.1.5.f	5315.A.4	
193.	Is the individual making the change to electronically maintained records identified?	5.4.12.1.5.f	5315.A	
194.	Does the laboratory retain records of original observations, derived data and sufficient information to establish an audit trail, calibration records, staff records and a copy of each test report issued, for a defined period?	5.4.12.2.1	5315.A	
195.	Do the records for each environmental test contain sufficient information to facilitate, if possible, identification of factors affecting the uncertainty and to enable the environmental test to be repeated under conditions as close as possible to the original?	5.4.12.2.1	5315.A	
196.	Do the records include the identity of the personnel responsible for the sampling, performance of each environmental test and checking of results?	5.4.12.2.1	5315.A	
197.	Are observations, data and calculations recorded at the time they are made?	5.4.12.2.2	5315.A	
198.	Are observations, data and calculations identifiable to the specific task?	5.4.12.2.2	5315.A	
199.	When mistakes occur in records, is each mistake crossed out, not erased, made illegible or deleted, and is the correct value entered alongside?	5.4.12.2.3	5315.E	
200.	Are all alterations to records signed or initialed by the person making the correction?	5.4.12.2.3	5315.E	
201.	In the case of records stored electronically, are equivalent measures taken to avoid loss or change of original data?	5.4.12.2.3	5315.A 5307	
202.	When corrections are due to reasons other than transcription errors, is the reason for the correction documented?	5.4.12.2.3	5315.E	
203.	Are all records (including those pertaining to test equipment), certificates and reports safely stored, held secure and in confidence to the client?	5.4.12.2.4.a	5315.A	
204.	Are all NELAP-related records available to the accrediting authority?	5.4.12.2.4.a	5101	
205.	Are all records, including those specified in 5.4.12.2.5 retained for a minimum of five years from generation of the last entry in the records?	5.4.12.2.4.b	5315.A	
206.	Is all information necessary for the historical reconstruction of data maintained by the laboratory?	5.4.12.2.4.b	5315.A	
207.	Are records which are stored only on electronic media supported by the hardware and software necessary for their retrieval?	5.4.12.2.4.b	5315.A.3	
208.	Do records that are stored or generated by computers or personal computers have hard copy or write-protected backup copies?	5.4.12.2.4.c	5307.C.2	
209.	Has the laboratory established a record management system for control of laboratory notebooks, instrument logbooks, standards logbooks, and records for data reduction, validation, storage and reporting?	5.4.12.2.4.d	5301.C.7 5301.A	
210.	Is access to archived information documented with an access log?	5.4.12.2.4.e	5315.A.2	
211.	Are records protected against fire, theft, loss, environmental deterioration, vermin and, in the case of electronic records, electronic or magnetic sources?	5.4.12.2.4.e	5315.A 5307.C.2.b	
212.	Does the laboratory have a plan to ensure that the records are maintained or transferred according to the clients' instructions (see 4.1.8.e) in the event that a laboratory transfers ownership or goes out of business?(In cases of bankruptcy, appropriate regulatory and state legal requirements concerning laboratory records must be followed.)	5.4.12.2.4.f	5315.A	
213.	Is a record of all procedures to which a sample is subjected while in the possession of the laboratory maintained?	5.4.12.2.5.1	5315.A	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
214.	Are records maintained of sample preservation including appropriateness of sample container and compliance with holding time requirement?	5.4.12.2.5.1.a	5315.A	
215.	Do the sample handling records include sample identification, receipt, acceptance or rejection and log-in?	5.4.12.2.5.1.b	5315.A	
216.	Are records maintained of sample storage and tracking including shipping receipts, sample transmittal forms, (chain of custody form)?	5.4.12.2.5.1.c	5315.A	
217.	Does the laboratory have documented procedures for the receipt and retention of samples, including all provisions necessary to protect the integrity of samples?	5.4.12.2.5.1.d	5315.A	
218.	Does the laboratory retain all original raw data, whether hard copy or electronic, for calibrations, samples and quality control measures, including analysts' work sheets and data output records (chromatograms, strip charts, and other instrument response readout records)?	5.4.12.2.5.2.a	5315.A	
219.	Does the laboratory have a written description or reference to the specific test method used which includes a description of the specific computational steps used to translate parametric observations into a reportable analytical value?	5.4.12.2.5.2.b	5315.A	
220.	Does the laboratory retain copies of final reports?	5.4.12.2.5.2.c	5315.A	
221.	Does the laboratory retain archived SOPs?	5.4.12.2.5.2.d	5315.A	
222.	Does the laboratory keep correspondence relating to laboratory activities for a specific project?	5.4.12.2.5.2.e	5315.A	
223.	Does the laboratory retain all corrective action reports, audits and audit responses?	5.4.12.2.5.2.f	5315.A	
224.	Are records maintained of proficiency test results and raw data?	5.4.12.2.5.2.g	5315.A	
225.	Does the laboratory keep records of the results of data review, verification, and cross-checking procedures?	5.4.12.2.5.2.h	5315.A	
226.	Do analytical records include the following essential information associated with an analysis, such as strip charts, tabular printouts, computer data files, analytical notebooks, and run logs: a) <input type="checkbox"/> Laboratory sample ID code; b) <input type="checkbox"/> Date of analysis and time of analysis is required if the holding time is 72 hours or less or when time critical steps are included in the analysis, e.g., extractions, and incubations; c) <input type="checkbox"/> Instrumentation identification and instrument operating conditions/parameters (or reference to such data); d) <input type="checkbox"/> Analysis type; e) <input type="checkbox"/> All manual calculations, e.g., manual integrations; and, f) <input type="checkbox"/> Analyst's or operator's initials/signature; g) <input type="checkbox"/> Sample preparation including cleanup, separation protocols, incubation periods or subculture, ID codes, volumes, weights, instrument printouts, meter readings, calculations, reagents; h) <input type="checkbox"/> Sample analysis?	5.4.12.2.5.3	5315.A	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
227.	(Cont.) Do analytical records also include the following essential information associated with an analysis, such as strip charts, tabular printouts, computer data files, analytical notebooks, and run logs i) <input type="checkbox"/> Standard and reagent origin, receipt, preparation, and use; j) <input type="checkbox"/> Calibration criteria, frequency and acceptance criteria; k) <input type="checkbox"/> Data and statistical calculations, review, confirmation, interpretation, assessment and reporting conventions; l) <input type="checkbox"/> Quality control protocols and assessment; m) <input type="checkbox"/> Electronic data security, software documentation and verification, software and hardware audits, backups, and records of any changes to automated data entries; n) <input type="checkbox"/> Method performance criteria including expected quality control requirements?	5.4.12.2.5.3	5315.A	
228.	Are the following administrative records maintained: a) <input type="checkbox"/> Personnel qualifications, experience and training records; b) <input type="checkbox"/> Records of demonstration of capability for each analyst; and c) <input type="checkbox"/> A log of names, initials and signatures for all individuals who are responsible for signing or initialing any laboratory record?	5.4.12.2.5.4	5315.G	
5.4.13 Internal Audits				
229.	Does the laboratory conduct internal audits of its activities to verify that its operations continue to comply with the requirements of the quality system and this Standard with a predetermined schedule and procedure, and at least annually?	5.4.13.1	5301.E	
230.	Does the internal audit program address all elements of the quality system, including the environmental testing activities?	5.4.13.1	5301.E	
231.	Is it the responsibility of the quality manager to plan and organize audits as required by the schedule and as requested by management?	5.4.13.1	5301.E	
232.	Are such audits carried out by trained and qualified personnel who are, wherever resources permit, independent of the activity to be audited?	5.4.13.1	5301.E	
233.	Do personnel audit their own activities only when it can be demonstrated that an effective audit will be carried out?	5.4.13.1	5301.E	
234.	When audit findings cast doubt on the effectiveness of the operations or on the correctness or validity of the laboratory's environmental test results, does the laboratory take timely corrective action?	5.4.13.2	5301.A.3	
235.	When audit findings cast doubt on the effectiveness of the operations or on the correctness or validity of the laboratory's environmental test results, does the laboratory notify clients in writing if investigations show that the laboratory results may have been affected?	5.4.13.2	5901.A 5911	
236.	Does the laboratory notify clients promptly, in writing, of any event such as the identification of defective measuring or test equipment that casts doubt on the validity of results given in any test report or test certificate or amendment to a report or certificate?	5.4.13.2	5901.A 5911	
237.	Does the laboratory specify, in the laboratory's quality manual, the time frame for notifying a client of events that cast doubt on the validity of results?	5.4.13.2	5901.A 5911	
238.	Is the area of activity audited, the audit findings and corrective actions that arise from them recorded?	5.4.13.3	5315.A	
239.	Does laboratory management ensure that these actions are discharged within the agreed time frame as indicated in the quality manual and/or SOPs?	5.4.13.3	5301.C.14	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
240.	Do follow-up audit activities verify and record the implementation and effectiveness of the corrective action taken?	5.4.13.4	5301.C.14	
5.4.14 Management Reviews				
241.	In accordance with a predetermined schedule and procedure, does the laboratory's executive management periodically and at least annually conduct a review of the laboratory's quality system and environmental testing activities to ensure their continuing suitability and effectiveness, and to introduce necessary changes or improvements?	5.4.14.1	5301.D 5301.D	
242.	Does the management review take account of: <input type="checkbox"/> The suitability of policies and procedures; <input type="checkbox"/> Reports from managerial and supervisory personnel; <input type="checkbox"/> The outcome of recent internal audits; <input type="checkbox"/> Corrective and preventive actions; <input type="checkbox"/> Assessments by external bodies; <input type="checkbox"/> The results of interlaboratory comparisons or proficiency tests; <input type="checkbox"/> Changes in the volume and type of the work; <input type="checkbox"/> Client feedback; <input type="checkbox"/> Complaints; <input type="checkbox"/> Other relevant factors, such as quality control activities, resources and staff training?	5.4.14.1	5301.C.17 5301.D 5301.E	
243.	Are findings from management reviews and the actions that arise from them recorded?	5.4.14.2	5301.D	
244.	Does management ensure that those actions are carried out within an appropriate and agreed timescale?	5.4.14.2	5301.C.14	
245.	Does the laboratory have a procedure for review by management and does it maintain records of review findings and actions?	5.4.14.2	5301.C.17 5301.D	
5.4.15 Internal Audits				
246.	Does the laboratory, as part of their overall internal auditing program, insure that a review is conducted with respect to any evidence of inappropriate actions or vulnerabilities related to data integrity?	5.4.15	5301.D	
247.	Is discovery of potential issues handled in a confidential manner until such time as a follow up evaluation, full investigation, or other appropriate actions have been completed and the issues clarified?	5.4.15	5301.E	
248.	Are all investigations that result in finding of inappropriate activity documented?	5.4.15	5315.A	
249.	Does documentation of the investigations include any disciplinary actions involved, corrective actions taken, and all appropriate notifications of clients?	5.4.15	5301.C.19 5301.A	
250.	Is all documentation of these investigation and actions taken maintained for at least five years?	5.4.15	5315.A	
5.5 TECHNICAL REQUIREMENTS				
5.5.1 General				
251.	Many factors determine the correctness and reliability of the environmental tests performed by a laboratory. These factors include contributions from: human factors (5.5.2); accommodation and environmental conditions (5.5.3); environmental test methods and method validation (5.5.4); equipment (5.5.5); measurement traceability (5.5.6); sampling (5.5.7); the handling of samples.	5.5.1.1		

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
252.	Does the laboratory take account of the above factors that contribute to the total uncertainty of measurement in developing environmental test methods and procedures, in the training and qualification of personnel, and in the selection of the equipment it uses?	5.5.1.2	5901 5911	
5.5.2 Personnel				
253.	Does laboratory management ensure the competence of all who operate specific equipment, perform environmental tests, evaluate results, and sign test reports?	5.5.2.1	5901.A 5911	
254.	When using staff that are undergoing training, is appropriate supervision provided?	5.5.2.1	5901.A 5911	
255.	Are personnel performing specific tasks qualified on the basis of appropriate education, training, experience and/or demonstrated skills, as required?	5.5.2.1	5901.A 5911	
256.	Does the laboratory have sufficient personnel with the necessary education, training, technical knowledge and experience for their assigned functions?	5.5.2.1	5901.A 5911	
257.	Are all personnel responsible for complying with all quality assurance/quality control requirements that pertain to their organizational/technical function?	5.5.2.1	5301.C.2	
258.	Does each technical staff member have a combination of experience and education to adequately demonstrate a specific knowledge of their particular function and a general knowledge of laboratory operations, test methods, quality assurance/quality control procedures and records management?	5.5.2.1	5901.A 5911	
259.	Does management of the laboratory formulate the goals with respect to the education, training and skills of the laboratory personnel?	5.5.2.2	5901.A 5911	
260.	Does the laboratory have a policy and procedures for identifying training needs and providing training of personnel?	5.5.2.2	4901.H	
261.	Is the training program relevant to the present and anticipated tasks of the laboratory?	5.5.2.2	5901.A 5911	
262.	Does the laboratory use personnel who are employed by, or under contract to, the laboratory?	5.5.2.3	5901 5911	
263.	Where contracted and additional technical and key support personnel are used, does the laboratory ensure that such personnel are supervised and competent and that they work in accordance with the laboratory's quality system?	5.5.2.3	5901.A 5911	
264.	Does the laboratory maintain current job descriptions for all personnel who manage, perform, or verify work affecting the quality of the environmental tests?	5.5.2.4	4901.A.3	
265.	Does management authorize specific personnel to perform particular types of sampling, environmental test, to issue test reports, to give opinions and interpretations and to operate particular types of equipment?	5.5.2.5	4901.A	
266.	Does the laboratory maintain records of the relevant authorization(s), competence, educational and professional qualifications, training, skills and experience of all technical personnel, including contracted personnel?	5.5.2.5	4901.G	
267.	Are the records readily available and do they include the date on which authorization and/or competence is confirmed?	5.5.2.5	4901.G	
268.	Are records on the relevant qualifications, training, skills and experience of the technical personnel maintained by the laboratory?	5.5.2.5	4901.G	
269.	Do the records include demonstrated proficiency for each laboratory test method, such as the criteria outlined in 5.5.4.2.2 for chemical testing?	5.5.2.5	4901.G	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
270.	Does laboratory management define the minimal level of qualification, experience and skills necessary for all positions in the laboratory?	5.5.2.6.a	5901.A 5911	
271.	Does laboratory management define basic laboratory skills required such as using a balance, colony counting, aseptic or quantitative techniques?	5.5.2.6.a	5901.A 5911	
272.	Does laboratory management ensure that all technical laboratory staff have demonstrated capability in the activities for which they are responsible?	5.5.2.6.b	4901.G	
273.	Are demonstrations of capability documented?	5.5.2.6.b	4901.G	
274.	In laboratories with specialized "work cells" (a well defined group of analysts that together perform the method analysis), does the group, as a unit, meet the above criteria and is this demonstration fully documented?	5.5.2.6.b	4901.H	
275.	Does laboratory management ensure that the training of each member of the technical staff is kept up-to-date (on-going) by keeping evidence on file that demonstrates that each employee has read, understood, and is using the latest version of the laboratory's in-house quality documentation, which relates to his/her job responsibilities?	5.5.2.6.c.1	4901.H 4901.G 5315.G	
276.	Does laboratory management ensure that the training of each member of the technical staff is kept up-to-date by documenting evidence of training courses or workshops on specific equipment, analytical techniques or laboratory procedures?	5.5.2.6.c.2	4901.H 4901.G 5315.G	
277.	Is analyst training considered up to date if an employee training file contains a certification that technical personnel have read, understood and agreed to perform the most recent version of the test method (the approved method or standard operating procedure as defined by the laboratory document control system 5.4.2.3.d)?	5.5.2.6.c.3	4901.H 4901.G 5315.G	
278.	Is analyst training considered up to date if an employee training file contains documentation of continued proficiency by at least one of the following once per year: <ul style="list-style-type: none"> i. <input type="checkbox"/> Acceptable performance of a blind sample (single blind to the analyst). Note: successful analysis of a blind performance sample on a similar test method using the same technology (e.g., GC/MS volatiles by purge and trap for Methods 524.2, 624 or 5030/8260) would only require documentation for one of the test methods. The laboratory must determine the acceptable limits of the blind performance sample prior to analysis; ii. <input type="checkbox"/> an initial measurement system evaluation or another demonstration of capability; iii. <input type="checkbox"/> at least four consecutive laboratory control samples with acceptable levels of precision and accuracy. The laboratory must determine the acceptable limits of precision and accuracy prior to analysis; or iv. <input type="checkbox"/> If i-iii cannot be performed, analysis of authentic samples with results statistically indistinguishable from those obtained by another trained analyst? 	5.5.2.6.c.3	4901.H 4901.G 5315.G	
279.	Does the laboratory document all analytical and operational activities of the laboratory?	5.5.2.6.d	5315.A	
280.	Is laboratory management responsible for supervising all personnel employed by the laboratory?	5.5.2.6.e	4901.A	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
281.	Does laboratory management ensure that all sample acceptance criteria (Section 5.5.8) are verified and that samples are logged into the sample tracking system and properly labeled and stored?	5.5.2.6.f	4901.A	
282.	Is laboratory management responsible for documenting the quality of all data reported by the laboratory?	5.5.2.6.g	4901.A	
283.	Is data integrity training provided as a formal part of new employee and is it provided on an annual basis for all current employees?	5.5.2.7	4901.A 5315.A.2	
284.	Are topics covered documented in writing and provided to all trainees?	5.5.2.7	5315.G	
285.	Do key topics covered during training include organizational mission and its relationship to the critical need for honesty and full disclosure in all analytical reporting, how and when to report data integrity issues, and record keeping?	5.5.2.7	4901.A 5315.A.2	
286.	Are employees required to understand that any infractions of the laboratory data integrity procedures will result in a detailed investigation that could lead to very serious consequences including immediate termination, debarment or civil/criminal prosecution?	5.5.2.7	5301.C.19 5315.A.2	
287.	Does the initial data integrity training and the annual refresher training have a signature attendance sheet or other form of documentation that demonstrates all staff have participated and understand their obligations related to data integrity?	5.5.2.7	4901.G	
288.	Do senior managers acknowledge their support of these procedures by 1) <input type="checkbox"/> Upholding the spirit and intent of the organization's data integrity procedures and 2) <input type="checkbox"/> Effectively implementing the specific requirements of the procedures?	5.5.2.7	4901.A	
289.	Are specific examples of breaches of ethical behavior discussed including improper data manipulations, adjustments of instrument time clocks, and inappropriate changes in concentrations of standards?	5.5.2.7	5301.C.19 4901.A	
290.	Does training include discussion regarding all data integrity procedures, data integrity training documentation, in-depth data monitoring and data integrity procedure documentation?	5.5.2.7	5301.C.19 4901.A 5315.A.2	
291.	Does data integrity training require emphasis on the importance of proper written narration on the part of the analyst with respect to those cases where analytical data may be useful, but are in one sense or another partially deficient?	5.5.2.7	5301.C.19 4901.A	
5.5.3 Accommodations and Environmental Conditions				
292.	Are laboratory facilities for environmental testing, including but not limited to energy sources, lighting and environmental conditions, such as to facilitate correct performance of the environmental tests?	5.5.3.1	5103.A	
293.	Does the laboratory ensure that the environmental conditions do not invalidate the results or adversely affect the required quality of any measurement?	5.5.3.1	5103.A	
294.	Is particular care taken when sampling and environmental tests are undertaken at sites other than a permanent laboratory facility?	5.5.3.1	5103.A	
295.	Are the technical requirements for accommodation and environmental conditions that can affect the results of environmental tests documented?	5.5.3.1	5301.C.11	
296.	Does the laboratory monitor, control and record environmental conditions as required by the relevant specifications, methods and procedures or where they influence the quality of the results?	5.5.3.2	5315.A	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
297.	Is due attention paid, for example, to biological sterility, dust, electromagnetic disturbances, radiation, humidity, electrical supply, temperature, and sound and vibration levels, as appropriate to the technical activities concerned?	5.5.3.2	5301.H.1.g 5103.A	
298.	Are environmental tests stopped when the environmental conditions jeopardize the results of the environmental tests?	5.5.3.2	5301.G	
299.	In instances where monitoring or control of any of the above mentioned items are specified in a test method or by regulation, does the laboratory meet and document adherence to the laboratory facility requirements?	5.5.3.2	5301.H.1.g 5315.A	
300.	Is there effective separation between neighboring areas in which there are incompatible activities including culture handling or incubation areas and volatile organic chemicals handling areas?	5.5.3.3	5103.A.9	
301.	Are measures taken to prevent cross-contamination?	5.5.3.3	5103.A.3	
302.	Is access to and use of areas affecting the quality of the environmental tests controlled?	5.5.3.4	5103.B	
303.	Does the laboratory determine the extent of control based on its particular circumstances?	5.5.3.4	5103.A	
304.	Are measures taken to ensure good housekeeping in the laboratory?	5.5.3.5	5103.C	
305.	Are special procedures prepared where necessary?	5.5.3.5	5103.A	
306.	Are work spaces (access and entryways to the laboratory; sample receipt areas; sample storage areas; chemical and waste storage areas; and, data handling and storage areas) available to ensure an unencumbered work area?	5.5.3.6	5103	
5.5.4 Environmental Test Methods and Method Validation				
307.	Does the laboratory use appropriate methods and procedures for all environmental tests within its scope? (These include sampling, handling, transport, storage and preparation of samples, and, where appropriate, an estimation of the measurement uncertainty as well as statistical techniques for analysis of environmental test data.)	5.5.4.1	5105.A 5105.B 5105.D 5105.E 5301.H.4	
308.	Does the laboratory have instructions on the use and operation of all relevant equipment, and on the handling and preparation of samples where the absence of such instructions could jeopardize the results of environmental tests?	5.5.4.1	5105.A	
309.	Are all instructions, standards, manuals and reference data relevant to the work of the laboratory kept up to date and made readily available to personnel?	5.5.4.1	5105.A	
310.	Do deviations from environmental test methods occur only if the deviation has been documented, technically justified, authorized, and accepted by the client?	5.5.4.1	5105.B.1	
311.	Does the laboratory maintain SOPs that accurately reflect all phases of current laboratory activities such as assessing data integrity, corrective actions, handling customer complaints, and all test methods?	5.5.4.1.1	5301.F 5301.C	
312.	These documents may be equipment manuals provided by the manufacturer, or internally written documents with adequate detail to allow someone similarly qualified other than the analyst, to reproduce the procedures used to generate the test result.	5.5.4.1.1.a	5301.F 5301.C	
313.	If the test methods are copies of published methods are any changes or selected options in the methods documented and included in the methods manual?	5.5.4.1.1.b	5301.F	
314.	Are copies of all SOPs accessible to all personnel?	5.5.4.1.1.c	5105.B	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
315.	Are the SOPs organized?	5.5.4.1.1.d	5105.A	
316.	Does each SOP clearly indicate the effective date of the document, the revision number and the signature(s) of the approving authority?	5.5.4.1.1.e	5301.C.18 5307.A	
317.	The documents specified in 5.5.4.1.1.a and 5.5.4.1.1.b that contain sufficient information to perform the tests do not need to be supplemented or rewritten as internal procedures, if the documents are written in a way that they can be used as written. If there are any changes, including the use of a selected option, are they documented and included in the laboratory's methods manual?	5.5.4.1.1.f	5105.A	
318.	Does the laboratory have and maintain an in-house methods manual(s) for each accredited analyte or test method?	5.5.4.1.2.a	5105.A 5301.F	
319.	Does the laboratory methods manual consist of copies of published or referenced test methods or SOPs that have been written by the laboratory?	5.5.4.1.2.b	5307.A	
320.	In cases where modifications to the published method have been made by the laboratory or where the referenced test method is ambiguous or provides insufficient detail, are these changes or clarifications clearly described?	5.5.4.1.2.b	5307.A 5105.A 5301.F	
321.	Does each test method include or reference where applicable: 1) [] Identification of the test method; 2) [] Applicable matrix or matrices; 3) [] Detection limit; 4) [] Scope and application, including components to be analyzed; 5) [] Summary of the test method; 6) [] Definitions; 7) [] Interferences; 8) [] Safety; 9) [] Equipment and supplies; 10) [] Reagents and standards; 11) [] Sample collection, preservation, shipment and storage; 12) [] Quality control; 13) [] Calibration and standardization; 14) [] Procedure; 15) [] Data analysis and calculations; 16) [] Method performance; 17) [] Pollution prevention; 18) [] Data assessment and acceptance criteria for quality control measures; 19) [] Corrective actions for out-of-control data; 20) [] Contingencies for handling out-of-control or unacceptable data; 21) [] Waste management; 22) [] References; and, 23) [] Any tables, diagrams, flowcharts and validation data?	5.5.4.1.2.b	5301.F.1	
322.	Does the laboratory use methods for environmental testing, including methods for sampling, which meet the needs of the client and which are appropriate for the environmental tests it undertakes?	5.5.4.2	5105.A 5301.A	
323.	Are methods published in international, regional or national standards used if possible?	5.5.4.2.1.a	5105.B	
324.	Does the laboratory ensure that it uses the latest valid edition of a standard unless it is not appropriate or possible to do so?	5.5.4.2.1.a	5105.A	
325.	When necessary, is the standard supplemented with additional details to ensure consistent application?	5.5.4.2.1.a	5307.A	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
326.	When the use of specific methods for a sample analysis are mandated or requested, are only those methods used?	5.5.4.2.1.b	5105.B	
327.	When the client does not specify the method to be used or where methods are employed that are not required, as in the Performance Based Measurement System approach, are the methods fully documented and validated?	5.5.4.2.1.c	5105.B 5105.C	
328.	When the client does not specify the method to be used or where methods are employed that are not required, are the methods used available to the client and other recipients of the relevant reports?	5.5.4.2.1.c	5313.B.7	
329.	Does the laboratory select appropriate methods that have been published either in international, regional or national standards, or by reputable technical organizations, or in relevant scientific texts or journals, or as specified by the manufacturer of the equipment?	5.5.4.2.1.c	5105.B	
330.	Are laboratory-developed methods or methods adopted by the laboratory used only if they are appropriate for the intended use and if they are validated?	5.5.4.2.1.c	5105.B 5105.C	
331.	Is the client informed as to the method chosen?	5.5.4.2.1.c	5313.B.7	
332.	Does the laboratory inform the client when the method proposed by the client is considered to be inappropriate or out of date?	5.5.4.2.1.d	5901 5911	
333.	Does the laboratory confirm that it can properly operate all methods before introducing the environmental tests ?	5.5.4.2.2	4901.H	
334.	If the method changes, is the confirmation repeated?	5.5.4.2.2	4901.H	
335.	Prior to acceptance and institution of any method, is a satisfactory demonstration of method capability required?	5.5.4.2.2.a	5301.H	
336.	Is this demonstration done in an applicable and available clean matrix sample of a matrix in which no target analytes or interferences are present at concentrations that impact the results of a specific test method?	5.5.4.2.2.a	5301.H	
337.	For analytes which do not lend themselves to spiking, is the demonstration of capability performed using quality control samples?	5.5.4.2.2.a	5301.H	
338.	Is a continuing demonstration of method performance, as per the quality control requirements in Appendix D (such as laboratory control samples) required thereafter?	5.5.4.2.2.b	4901.H	
339.	In cases where a laboratory analyzes samples using a method that has been in use by the laboratory before July 1999, and there have been no significant changes in instrument type, personnel or method, is the continuing demonstration of method performance and the analyst's documentation of continued proficiency deemed acceptable?	5.5.4.2.2.c	5301.H	
340.	In those described in 1, does the laboratory have records on file to demonstrate that a demonstration of capability is not required?	5.5.4.2.2.c	4901.G	
341.	In all cases, are the appropriate forms such as the Certification Statement (Appendix C) completed and retained by the laboratory to be made available upon request?	5.5.4.2.2.d	4901.G	
342.	Is all associated supporting data necessary to reproduce the analytical results summarized in the Certification Statement retained by the laboratory?	5.5.4.2.2.d	4901.G	
343.	Is a demonstration of capability completed each time there is a change in instrument type, personnel, or method?	5.5.4.2.2.e	4901.H	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
344.	In laboratories with a specialized “work cell(s)” (a group consisting of analysts with specifically defined tasks that together perform the test method), does the group as a unit meet the criteria of a through e and is this demonstration of capability fully documented?	5.5.4.2.2.f	4901.H 4901.G	
345.	When a work cell(s) is employed, and the members of the cell change, does the new employee(s) work with experienced analyst(s) in that area of the work cell where they are employed?	5.5.4.2.2.g	4901.H	
346.	Does this new work cell demonstrate acceptable performance through acceptable documented continuing performance checks?	5.5.4.2.2.g	4901.H	
347.	Is the demonstration repeated if the four preparation batches following the change in personnel have a failure of any batch acceptance criteria, e.g., method blank and laboratory control sample?	5.5.4.2.2.g	4901.H 5301.H.2	
348.	If the entire work cell is changed/replaced, does the new work cell perform the demonstration of capability?	5.5.4.2.2.g	4901.H	
349.	When a work cell(s) is employed, is the performance of the group linked to the training record of the individual members of the work cell?	5.5.4.2.2.h	4901.H 5315.A	
350.	Is the introduction of environmental test methods developed by the laboratory for its own use a planned activity?	5.5.4.3	5105.A	
351.	Is the introduction of environmental test methods assigned to qualified personnel equipped with adequate resources?	5.5.4.3	4901.A	
352.	Are plans updated as development proceeds and is there effective communication amongst all personnel involved?	5.5.4.3	4901.A	
353.	When it is necessary to use methods not covered by standard methods, are these methods subject to agreement with the client?	5.5.4.4	5901 5911	
354.	Does this agreement include a clear specification of the client's requirements and the purpose of the environmental test?	5.5.4.4	5901 5911	
355.	Is the method developed validated appropriately before use?	5.5.4.4	5105.B.2	
356.	Does the laboratory validate non-standard methods, laboratory-designed/developed methods, standard methods used outside their intended scope, and amplifications and modifications of standard methods to confirm that the methods are fit for the intended use?	5.5.4.5.2	5105.B.2	
357.	Is the validation as extensive as is necessary to meet the needs of the given application or field of application?	5.5.4.5.2	5105.B.2	
358.	Does the laboratory record the results obtained, the procedure used for the validation, and a statement as to whether the method is fit for the intended use? The minimum requirements shall be the initial test method evaluation requirements given in Appendix C.3 of Chapter 5.	5.5.4.5.2	5105.B.2	
359.	Does the range and accuracy of the values obtainable from validated methods (e. g. the uncertainty of the results, detection limit, selectivity of the method, linearity, limit of repeatability and/or reproducibility, robustness against external influences and/or cross-sensitivity against interference from the matrix of the sample/test object), as assessed for the intended use, relevant to the clients' needs?	5.5.4.5.3	5105.B.2	
360.	Does the laboratory have and apply procedures for estimating uncertainty of measurement?	5.5.4.6.1	5301.A 5901.A	
361.	In cases where the nature of the test method may preclude rigorous, metrologically and statistically valid, calculation of uncertainty of measurement does the laboratory at least attempt to identify all the components of uncertainty and make a reasonable estimation?	5.5.4.6.1	5301.A	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
362.	In cases where the nature of the test method preclude rigorous, metrologically and statistically valid, calculation of uncertainty of measurement, and does the laboratory ensure that the form of reporting of the result does not give a wrong impression of the uncertainty?	5.5.4.6.1	5301.A	
363.	Is a reasonable estimation based on knowledge of the performance of the method and on the measurement scope and does it make use of, for example, previous experience and validation data?	5.5.4.6.1	5301.A	
364.	In those cases where a well-recognized test method specifies limits to the values of the major sources of uncertainty of measurement and specifies the form of presentation of calculated results, is the laboratory considered to have satisfied this clause by following the test method and reporting instructions?	5.5.4.6.1	5301.A	
365.	When estimating the uncertainty of measurement, are all uncertainty components which are of importance in the given situation taken into account using appropriate methods of analysis?	5.5.4.6.2	5301.A	
366.	Are calculations and data transfers subject to appropriate checks in a systematic manner?	5.5.4.7.1	5307.C	
367.	Does the laboratory establish SOPs to ensure that the reported data are free from transcription and calculation errors?	5.5.4.7.1.a	5301.F.5 5307.C	
368.	Has the laboratory established SOPs to ensure that all quality control measures are reviewed, and evaluated before data are reported?	5.5.4.7.1.b	5301.F.5 5307.C	
369.	Does the laboratory have established SOPs addressing manual calculations including manual integrations?	5.5.4.7.1.c	5307.C	
370.	When computers, automated equipment, or microprocessors are used for the acquisition, processing, recording, reporting, storage or retrieval of environmental test data, does the laboratory ensure that computer software developed by the user is documented in sufficient detail and is suitably validated as being adequate for use?	5.5.4.7.2.a	5307.C.2.a	
371.	Are procedures established and implemented for protecting the data including, but not be limited to, integrity and confidentiality of data entry or collection, data storage, data transmission and data processing?	5.5.4.7.2.b	5307.C.2.b	
372.	Are computers and automated equipment maintained to ensure proper functioning and are they provided with the environmental and operating conditions necessary to maintain the integrity of environmental test data?	5.5.4.7.2.c	5307.C.2.c	
373.	Does the laboratory establish and implement appropriate procedures for the maintenance of security of data including the prevention of unauthorized access to, and the unauthorized amendment of, computer records?	5.5.4.7.2.d	5307.C.2.d	
374.	Commercial off-the-shelf software (e. g. word processing, database and statistical programs) in general use within their designed application range is considered to be sufficiently validated, but is laboratory software configuration or modifications validated?	5.5.4.7.2	5307.C.2.a	
5.5.5 Equipment				
375.	Is the laboratory furnished with all items of sampling, measurement and test equipment required for the correct performance of the environmental tests (including sampling, preparation of samples, processing and analysis of environmental test data)?	5.5.5.1	5303.A	
376.	In those cases where the laboratory needs to use equipment outside its permanent control, does it ensure that the requirements of LAC Title 33:I and NELAC are met?	5.5.5.1	5303	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
377.	Is the equipment and the software used for testing and sampling capable of achieving the accuracy required and does it comply with specifications relevant to the environmental tests concerned?	5.5.5.2	5305.A	
378.	Before being placed into service, is equipment (including that used for sampling) calibrated or checked to establish that it meets the laboratory's specification requirements and complies with the relevant standard specifications?	5.5.5.2	5305.A	
379.	Is equipment checked and/or calibrated before use?	5.5.5.2	5305.A	
380.	Is all support equipment maintained in proper working order?	5.5.5.2.1.a	5303.B	
381.	Are the records of all repair and maintenance activities including service calls kept?	5.5.5.2.1.a	5303.D	
382.	Is all support equipment calibrated or verified at least annually, using NIST traceable references when available, over the entire range of use?	5.5.5.2.1.b	5901.A 5911	
383.	Are the results of such calibration within the specifications required of the application for which this equipment is used?	5.5.5.2.1.b	5305.B	
384.	If the results of the calibration are not within the specifications required, does the laboratory remove the equipment from service until repaired; or does the laboratory maintain records of established correction factors to correct all measurements?	5.5.5.2.1.b	5303.C	
385.	Are raw data records retained to document equipment performance?	5.5.5.2.1.c	5303.E	
386.	Prior to use on each working day, are balances, ovens, refrigerators, freezers, and water baths checked in the expected use range, with NIST traceable references where available?	5.5.5.2.1.d	5303.H 5305.B	
387.	Is the acceptability for use or continued use according to the needs of the analysis or application for which the equipment is being used?	5.5.5.2.1.d	5303.A	
388.	Are mechanical volumetric dispensing devices including burettes (except Class A glassware) checked for accuracy on at least a quarterly use basis?	5.5.5.2.1.e	5305.A	
389.	Are glass microliter syringes considered in the same manner as Class A glassware if they come with a certificate attesting to established accuracy or is the accuracy initially demonstrated and documented by the laboratory?	5.5.5.2.1.e	5305.B	
390.	For chemical tests, is the temperature, cycle time, and pressure of each run of autoclaves documented by the use of appropriate chemical indicators or temperature recorders and pressure gauges?	5.5.5.2.1.f	5301.H.1.c 5303.D	
391.	Do the essential elements that define the procedures and documentation for initial instrument calibration and continuing instrument calibration verification ensure that the data is of known quality and is appropriate for a given regulation or decision?	5.5.5.2.2	5305.A 5301.H.1.c	
392.	If more stringent standards or requirements are included in a mandated test method or by regulation, does the laboratory demonstrate that such requirements are met?	5.5.5.2.2	5305.A	
393.	If it is not apparent which standard is more stringent, are the requirements of the regulation or mandated test method followed?	5.5.5.2.2	5305.A	
394.	Is initial instrument calibration used directly for quantitation and continuing instrument calibration verification used to confirm the continued validity of the initial calibration?	5.5.5.2.2	5305.A	
395.	Are the details of the initial instrument calibration procedures including calculations, integrations, acceptance criteria and associated statistics included or referenced in the test method SOP?	5.5.5.2.2.1.a	5301.C.12 5301.F.1	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
396.	When initial instrument calibration procedures are referenced in the test method, are the referenced material retained by the laboratory and are they available for review?	5.5.5.2.2.1.a	5301.H.4	
397.	Are sufficient raw data records retained to permit reconstruction of the initial instrument calibration? Examples are: calibration date, test method, instrument, analysis date, each analyte name, analyst's initials or signature; concentration and response, calibration curve or response factor; or unique equation or coefficient used to reduce instrument responses to concentration	5.5.5.2.2.1.b	5315.A 5315.C	
398.	Are the sample results quantitated from the initial instrument calibration and only quantitated from any continuing instrument calibration verification unless required by regulation, method, or program?	5.5.5.2.2.1.c	5301.H.1.c	
399.	Are all initial instrument calibrations verified with a standard obtained from a second manufacturer or lot if the lot can be demonstrated from the manufacturer as prepared independently from other lots?	5.5.5.2.2.1.d	5301.H.1.c	
400.	Are the standards used in the initial calibration traceable to a national standard, when available	5.5.5.2.2.1.d	5305.B	
401.	Is criteria for the acceptance of an initial instrument calibration established, e.g., correlation coefficient or relative percent difference?	5.5.5.2.2.1.e	5301.H.1.c 5301.H.2	
402.	Is the criteria used appropriate to the calibration technique employed?	5.5.5.2.2.1.e	5301.H.4	
403.	Does the lowest standard correspond to the lowest quantitation level for which quantitative data are reported (see Appendix C)?	5.5.5.2.2.1.f	5313.B.6	
404.	Is any data that is reported below the lower limit of quantitation considered to have an increased quantitative uncertainty and is it reported using defined qualifiers or flags or explained in the case narrative?	5.5.5.2.2.1.f	5313.B.6	
405.	Is the highest standard considered to be the highest concentration for which quantitative data are to be reported?	5.5.5.2.2.1.g	5313.B.6	
406.	If any data is reported above this highest standard, is it considered to have an increased quantitative uncertainty and reported using defined qualifiers or flags or explained in the case narrative?	5.5.5.2.2.1.g	5313.B.6	
407.	Are measured concentrations outside the working range reported as having less certainty and reported using defined qualifiers or flags or explained in the case narrative. Noted exception: The questions below that list 5.5.5.2.2.1.h as the root reference occur for instrument technology (such as ICP or ICP/MS) with validated techniques from manufacturers or methods employing standardization with a zero point and a single point calibration standard.	5.5.5.2.2.1.h	5313.B.6; 5901; 5911	
408.	Prior to the analysis of samples, is the zero point and single point calibration analyzed and the linear range of the instrument established by analyzing a series of standards, one of which must be at the lowest quantitation level? Sample results within the established linear range will not require data qualifier flags.	5.5.5.2.2.1.h.1	5301.H.1.c	
409.	Is a zero point or single point calibration standard analyzed with each analytical batch?	5.5.5.2.2.1.h.2	5301.H.1.c	
410.	Is a standard corresponding to the lowest quantitation level analyzed with each analytical batch and does it meet established acceptance criteria?	5.5.5.2.2.1.h.3	5301.H.1.c 5301.H.4	
411.	Is the linearity verified at a frequency established by the method and/or the manufacturer?	5.5.5.2.2.1.h.4	5301.H.4	
412.	If the initial instrument calibration results are outside established acceptance criteria, are corrective actions performed and all associated samples reanalyzed?	5.5.5.2.2.1.i	5301.A.3 5301.H.2	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
413.	If reanalysis of the samples is not possible, is data associated with an unacceptable initial instrument calibration reported with appropriate data qualifiers?	5.5.5.2.2.1.i	5313.B.6	
414.	If a reference or mandated method does not specify the number of calibration standards, is the minimum number two, (one of which is be at the lowest quantitation limit) not including blanks or a zero standard with the noted exception of instrument technology for which it has been established by methodologies and procedures that a zero and a single point standard are appropriate for calibrations (see 5.5.5.2.2.1.h)?	5.5.5.2.2.1.j	5301.H.1.c	
415.	Does the laboratory have a standard operating procedure for determining the number of points for establishing the initial instrument calibration?	5.5.5.2.2.1.j	5301.H.1.c	
416.	Is equipment operated by authorized personnel?	5.5.5.3	4901.E	
417.	Are up-to-date instructions on the use and maintenance of equipment (including any relevant manuals provided by the manufacturer of the equipment) readily available for use by the appropriate laboratory personnel?	5.5.5.3	5303.B	
418.	Is all equipment properly maintained, inspected and cleaned?	5.5.5.3	5303.B	
419.	Are maintenance procedures documented?	5.5.5.3	5303.B	
420.	Is each item of equipment and its software used for environmental testing that is significant to the result, uniquely identified, when practicable?	5.5.5.4	5303.D.1	
421.	Are records maintained of each major item of equipment and its software significant to the environmental tests performed?	5.5.5.5	5303.D	
422.	Do the records include at least the following: a) <input type="checkbox"/> The identity of the item of equipment and its software; b) <input type="checkbox"/> The manufacturer's name, type identification, and serial number or other unique identification; c) <input type="checkbox"/> Checks that equipment complies with the specification (see 5.5.5.2); d) <input type="checkbox"/> The current location; e) <input type="checkbox"/> The manufacturer's instructions, if available, or reference to their location; f) <input type="checkbox"/> Dates, results and copies of reports and certificates of all calibrations, adjustments, acceptance criteria, and the due date of next calibration;	5.5.5.5	5303.D	
423.	Do the records include at least the following: g) <input type="checkbox"/> The maintenance plan, where appropriate, and maintenance carried out to date; documentation on all routine and non-routine maintenance activities and reference material verifications h) <input type="checkbox"/> Any damage, malfunction, modification or repair to the equipment i) <input type="checkbox"/> Date received and date placed in service (if available); j) <input type="checkbox"/> If available, condition when received (e.g. new, used, reconditioned).	5.5.5.5	5303.D	
424.	Does the laboratory have procedures for safe handling, transport, storage, use and planned maintenance of measuring equipment to ensure proper functioning and to prevent contamination or deterioration?	5.5.5.6	5303.B	
425.	Is equipment that has been subjected to overloading or mishandling, gives suspect results, or has been shown to be defective or outside specified limits, taken out of service?	5.5.5.7	5303.C	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
426.	Is the equipment isolated to prevent its use or clearly labeled or marked as being out of service, until it has been repaired and shown by calibration or test to perform correctly?	5.5.5.7	5303.C	
427.	Does the laboratory examine the effect of the defect or departure from specified limits on previous environmental tests and institute the "Control of nonconforming work" procedure as required by 5.4.9?	5.5.5.7	5301.F.1.s	
428.	Whenever practicable, is all equipment under the control of the laboratory and requiring calibration labeled, coded or otherwise identified to indicate the status of calibration including the date when last calibrated and the date or expiration criteria when recalibration is due?	5.5.5.8	5901.A 5911	
429.	When, for whatever reason, equipment goes outside the direct control of the laboratory, does the laboratory ensure that the function and calibration status of the equipment are checked and shown to be satisfactory before the equipment is returned to service?	5.5.5.9	5305.A	
430.	When an initial instrument calibration is not performed on the day of analysis, is the validity of the initial calibration verified prior to sample analyses by a continuing instrument calibration verification sample with each analytical batch?	5.5.5.10	5305.A 5301.H.1.c	
431.	Are the details of the continuing instrument calibration procedure, calculations and associated statistics included or referenced in the test method SOP?	5.5.5.10.a	5301.F.1 5301.F.n	
432.	Is calibration verified for each compound, element, or other discrete chemical species, except for multi-component analytes such as Aroclors, Total Petroleum Hydrocarbons, or Toxaphene where a representative chemical related substance or mixture can be used?	5.5.5.10.b	5305.A 5301.H.1.c	
433.	Is calibration verification performed at the beginning and end of each analytical batch? (except, if an internal standard is used, only one verification needs to be performed at the beginning of the analytical batch)	5.5.5.10.c.1	5305.A 5301.H.1.c	
434.	Is calibration verification performed whenever it is expected that the analytical system may be out of calibration or might not meet the verification acceptance criteria;	5.5.5.10.c.2	5305.A 5301.H.1.c	
435.	Is calibration verification performed if the time period for calibration or the most previous calibration verification has expired.	5.5.5.10.c.3	5305.A 5301.H.1.c	
436.	Is calibration verification performed for analytical systems that contain a calibration verification requirement?	5.5.5.10.c.4	5305.A 5301.H.1.c	
437.	Are sufficient raw data records retained to permit reconstruction of the continuing instrument calibration verification? Examples are: test method, instrument, analysis date, analyte names, concentration and response, calibration curve or response factor, any unique equations used to convert instrument responses into concentrations.	5.5.5.10.d	5315.A 5305.C	
438.	Do the continuing calibration verification records explicitly connect the continuing verification data to the initial instrument calibration?	5.5.5.10.d	5315.A 5305.C	
439.	Is criteria for the acceptance of a continuing instrument calibration verification established, e.g., relative percent difference?	5.5.5.10.e	5301.H.2	
440.	If the continuing instrument calibration verification results obtained are outside established acceptance criteria, are corrective actions performed?	5.5.5.10.e	5301.C.4 5301.H.1.c	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
441.	If routine corrective action procedures fail to produce a second consecutive (immediate) calibration verification within acceptance criteria, then does the laboratory either demonstrate performance after corrective action with two consecutive successful calibration verifications, or is a new initial instrument calibration performed?	5.5.5.10.e	5305.A 5301.H.1.c	
442.	If the laboratory has not verified calibration, does sample analyses not occur until the analytical system is calibrated or calibration verified?	5.5.5.10.e	5305.A 5301.H.1.c	
443.	If samples are analyzed using a system on which the calibration has not yet been verified, are the results flagged?	5.5.5.10.e	5313.B.6	
444.	Are samples affected by unacceptable calibration verification reanalyzed after a new calibration curve has been established, evaluated and accepted? Exception: Data associated with an unacceptable calibration verification may be usable under the following special conditions: 1. <input type="checkbox"/> When the acceptance criteria for the continuing calibration verification are exceeded high, i.e., high bias, and there are associated samples that are non-detects, then those non-detects may be reported. 2. <input type="checkbox"/> When the acceptance criteria for the continuing calibration verification are exceeded low, i.e., low bias, those sample results may be reported if they exceed a maximum regulatory limit/decision level.	5.5.5.10.e	5313.B.6	
445.	Where calibrations give rise to a set of correction factors, does the laboratory have procedures to ensure that copies (e. g. in computer software) are correctly updated?	5.5.5.11	5901.A 5911	
446.	Is test and calibration equipment, including both hardware and software, safeguarded from adjustments which would invalidate the test results?	5.5.5.12	5303.B	
5.5.6 Measurement Traceability				
447.	Is all equipment used for environmental tests, including equipment for subsidiary measurements (e. g. for environmental conditions) having a significant effect on the accuracy or validity of the result of the environmental test or sampling calibrated before being put into service and on a continuing basis?	5.5.6.1	5305.A 5303.G.3 5303.H	
448.	Does the laboratory have an established program and procedure for the calibration of its equipment including balances, thermometers, and control standards?	5.5.6.1	5305.A 5303.G.3 5303.H	
449.	Does this program include a system for selecting, using, calibrating, checking, controlling and maintaining when used to perform environmental tests: <input type="checkbox"/> Measurement standards, <input type="checkbox"/> Reference materials used as measurement standards, and <input type="checkbox"/> Measuring and test equipment?	5.5.6.1	5305.A 5303.G.3 5303.H	
450.	For testing laboratories, does the laboratory ensure that the equipment used can provide the uncertainty of measurement needed?	5.5.6.2.1	5305.A	
451.	Is the overall program of calibration and/or verification and validation of equipment designed and operated so as to ensure that measurements made by the laboratory are traceable to national standards of measurement?	5.5.6.2.1.a	5305.B 5301.C.8	
452.	Where traceability of measurements to SI units is not possible or not relevant, are the same requirements, for example, certified reference materials, agreed methods and/or consensus standards required?	5.5.6.2.2	5305.B 5301.C.8	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
453.	Where traceability to national standards of measurement is not applicable, does the laboratory provide satisfactory evidence of correlation of results, for example by participation in a suitable program of inter-laboratory comparisons, proficiency testing, or independent analysis?	5.5.6.2.2	5305.B	
454.	Does the laboratory have a program and procedure for the calibration of its reference standards?	5.5.6.3.1	5305.A	
455.	Are reference standards calibrated by a body that can provide traceability as described in 5.5.6.2.1?	5.5.6.3.1	5303.H.1.a	
456.	Are reference standards of measurement held by the laboratory (such as class S or equivalent weights or traceable thermometers) used for calibration only and for no other purpose, unless it can be shown that their performance as reference standards would not be invalidated?	5.5.6.3.1	5901.A 5911	
457.	Are reference standards calibrated before and after any adjustment?	5.5.6.3.1	5901.A 5911	
458.	Are reference standards, where commercially available, traceable to a national standard of measurement?	5.5.6.3.1	5305.B	
459.	Are reference materials, where commercially available, traceable to SI units of measurement, or to certified reference materials?	5.5.6.3.2	5305.B	
460.	Are reference materials, where possible, traceable to [] National or international standards of measurement, or to [] National or international standard reference materials?	5.5.6.3.2	5305.B	
461.	Are internal reference materials checked as far as is technically and economically practicable?	5.5.6.3.2	5305.D	
462.	Are checks needed to maintain confidence in the status of reference, primary, transfer or working standards and reference materials carried out according to defined procedures and schedules?	5.5.6.3.3	5301.C.8	
463.	Does the laboratory have procedures for safe handling, transport, storage and use of reference standards and reference materials in order to prevent contamination or deterioration and in order to protect their integrity?	5.5.6.3.4	5901.A 5911	
464.	Do documented procedures exist for the purchase, reception and storage of consumable materials used for the technical operations of the laboratory?	5.5.6.4	5301.F.2	
465.	Does the laboratory retain records for all standards, reagents, reference materials and media including: [] The manufacturer/vendor, [] The manufacturer's Certificate of Analysis or purity (if supplied), [] The date of receipt, [] Recommended storage conditions, and [] An expiration date after which the material shall not be used unless its reliability is verified by the laboratory.	5.5.6.4.a	5303.F 5315.A 5303.G.1.b	
466.	Are original containers (such as provided by the manufacturer or vendor) labeled with an expiration date?	5.5.6.4.b	5303.G.1.d	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
467.	Are records maintained on reagent, standard, and reference material preparation?	5.5.6.4.c	5315.A	
468.	Do the preparation records indicate: <input type="checkbox"/> Traceability to purchased stocks or neat compounds, <input type="checkbox"/> Reference to the method of preparation, <input type="checkbox"/> Date of preparation, <input type="checkbox"/> Expiration date and <input type="checkbox"/> Preparer's initials	5.5.6.4.c	5315.A	
469.	Do all containers of prepared reagents, standards, and reference materials bear a unique identifier and expiration date and be linked to the documentation requirements in 5.5.6.4.c?	5.5.6.4.d	5303.G.1.c	
470.	Are procedures in place to ensure prepared reagents meet the requirements of the test method?	5.5.6.4.e	5303.G.1.a	
471.	Does the source of reagents comply with 5.5.9.2.a.6 and D.1.4.b?	5.5.6.4.e	5303.G.1.a	
472.	Do all containers of prepared reagents bear a preparation date?	5.5.6.4.f	5303.G.1.c	
473.	Is an expiration date defined on the container or documented elsewhere as indicated in the laboratory's quality manual or SOP?	5.5.6.4.f	5303.G.1.c	
5.5.7 Sampling				
474.	Does the laboratory have a sampling plan and procedure for sampling when it carries out sampling of substances, materials or products for subsequent environmental testing?	5.5.7.1	5301.F.1.j	
475.	Is the sampling plan as well as the sampling procedure available at the location where sampling is undertaken?	5.5.7.1	5301.F.1.j	
476.	Are sampling plans, whenever reasonable, based on appropriate statistical methods?	5.5.7.1	5301.F.1.j	
477.	Does the sampling process address the factors to be controlled to ensure the validity of the environmental test and calibration results?	5.5.7.1	5301.F.1.j	
478.	Where sampling (as in obtaining sample aliquots from a submitted sample) is carried out as part of the test method, does the laboratory use documented procedures and appropriate techniques to obtain representative sub-samples?	5.5.7.1	5301.F.1.j	
479.	Where the client requires deviations, additions or exclusions from the documented sampling procedure, are these recorded in detail with the appropriate sampling data?	5.5.7.2	5315.A	
480.	Are these deviations included in all documents containing environmental test results?	5.5.7.2	5313.B.6	
481.	Are these deviations communicated to the appropriate personnel?	5.5.7.2	5301.G	
482.	Does the laboratory have procedures for recording data and operations relevant to sampling that forms part of the environmental testing that is undertaken?	5.5.7.3	5301.F.1.j	
483.	Do the records include: <input type="checkbox"/> The sampling procedure used, <input type="checkbox"/> The identification of the sampler, <input type="checkbox"/> Environmental conditions (if relevant) <input type="checkbox"/> Diagrams or other equivalent means to identify the sampling location as necessary and, <input type="checkbox"/> If appropriate, the statistics the sampling procedures are based upon.	5.5.7.3	5301.F.1.j	
5.5.8 Handling of Samples				

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
484.	Does the laboratory have procedures for the transportation, receipt, handling, protection, storage, retention and/or disposal of samples, including all provisions necessary to protect the integrity of the sample?.	5.5.8.1	5301.C.10	
485.	Do these procedures protect the interests of the laboratory and the client?	5.5.8.1	5301.C.10	
486.	Does the laboratory have a system for identifying samples?	5.5.8.2	5301.C.10	
487.	Is the identification retained throughout the life of the sample in the laboratory?	5.5.8.2	5301.C.10	
488.	Is the system being designed and operated so as to ensure that samples cannot be confused physically or when referred to in records or other documents?	5.5.8.2	5301.C.10	
489.	Does the system, if appropriate, accommodate a sub-division of groups of samples and the transfer of samples within and from the laboratory?	5.5.8.2	5301.C.10	
490.	Does the laboratory have a documented system for uniquely identifying the samples to be tested, to ensure that there can be no confusion regarding the identity of such samples at any time?	5.5.8.2.a	5301.C.10	
491.	Does the system include identification for all samples, sub-samples and subsequent extracts and/or digestates?	5.5.8.2.a	5301.C.10	
492.	Does the laboratory assign a unique identification (ID) code to each sample container received in the laboratory? Note: The use of container shape, size or other physical characteristic, such as amber glass, or purple top, is not an acceptable means of identifying the sample.	5.5.8.2.a	5301.C.10	
493.	Does the laboratory code maintain an unequivocal link with the unique field ID code assigned each container?	5.5.8.2.b	5301.C.10	
494.	Is the laboratory ID code placed on the sample container as a durable label?	5.5.8.2.c	5301.C.10	
495.	Is the laboratory ID code entered into the laboratory records and is it the link that associates the sample with related laboratory activities such as sample preparation?	5.5.8.2.d	5301.C.10 5315.A	
496.	Upon receipt of the sample(s) is the condition, including any abnormalities or departures from normal or specified conditions as described in the environmental test method, recorded?	5.5.8.3	5501 5315.A	
497.	When there is doubt as to the suitability of a sample for environmental test, or when a sample does not conform to the description provided, or the environmental test required is not specified in sufficient detail, does the laboratory consult the client for further instructions before proceeding and is the discussion recorded?	5.5.8.3	5501 5315.A	
498.	Are all samples, which require thermal preservation, checked to determine acceptability by verifying the arrival temperature is either within 2°C of the required temperature or the method specified range?	5.5.8.3.1.a.1	5301.C.10	
499.	For samples with a specified temperature of 4°C, are samples checked to verify the temperature ranges from just above the freezing temperature of water to 6°C?	5.5.8.3.1.a.1	5301.C.10	
500.	Are samples that are hand delivered to the laboratory immediately after collection considered acceptable if there is evidence that the chilling process has begun such as arrival on ice?	5.5.8.3.1.a.1	5301.C.10	
501.	Does the laboratory implement procedures for checking chemical preservation using readily available techniques, such as pH or free chlorine, prior to or during sample preparation or analysis?	5.5.8.3.1.a.2	5105.A	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
502.	Do microbiological samples from chlorinated water systems that do not require an additional chlorine residual check in the laboratory have sufficient sodium thiosulfate added to each container to neutralize at minimum 5 mg/l of chlorine for drinking water samples and 15 mg/l of chlorine for wastewater samples or <input type="checkbox"/> is one container from each batch of laboratory prepared containers or lot of purchased ready-to-use containers checked to ensure efficacy of the sodium thiosulfate to 5 mg/l chlorine and/or 15 mg/l as appropriate and the check is documented or <input type="checkbox"/> is chlorine residual checked in the field and is actual concentration documented with sample submission?	5.5.8.3.1.a.3	5901.A 5911	
503.	Are the results of all checks recorded?	5.5.8.3.1.b	5315.A	
504.	If the sample does not meet the sample receipt acceptance criteria, does the laboratory either: 1. <input type="checkbox"/> Retain correspondence and/or records of conversations concerning the final disposition of rejected samples; or 2. <input type="checkbox"/> Fully document any decision to proceed with the analysis of samples not meeting acceptance criteria.	5.5.8.3.1.c	5501	
505.	If the laboratory proceeds with the analysis of samples not meeting acceptance criteria, is the condition of these samples, at a minimum, noted on the chain of custody or transmittal form and laboratory receipt documents?	5.5.8.3.1.c.2.i	5501 5315.A	
506.	Is the analysis data appropriately "qualified" on the final report?	5.5.8.3.1.c.2.ii	5313.B.6	
507.	Does the laboratory utilize a permanent chronological record such as a log book or electronic database to document receipt of all sample containers?	5.5.8.3.1.d	5315.A	
508.	Is the sample receipt log used to record the following: <input type="checkbox"/> Client/project name <input type="checkbox"/> Date and time of laboratory receipt <input type="checkbox"/> Unique laboratory ID code, and <input type="checkbox"/> Signature or initials of the person making the entries.	5.5.8.3.1.d.1	5315.A	
509.	During the log-in process, is sample collection information unequivocally linked to the log record or included as a part of the log?	5.5.8.3.1.d.2	5315.A	
510.	If sample collection information is recorded/documented elsewhere, are the records a part of the laboratory's permanent records, easily retrievable upon request and readily available to individuals who will process the sample?	5.5.8.3.1.d.2	5315.A	
511.	Is the field ID code which identifies each container linked to the laboratory ID code in the sample receipt log?	5.5.8.3.1.d.2.i	5315.A	
512.	Is the date and time of sample collection linked to the sample container and to the date and time of receipt in the laboratory?	5.5.8.3.1.d.2.ii	5315.A	
513.	Is the requested analyses (including applicable approved test method numbers) linked to the laboratory ID code?	5.5.8.3.1.d.2.iii	5315.A	
514.	Are any comments resulting from inspection for sample rejection linked to the laboratory ID code?	5.5.8.3.1.d.2.iv	5315.A	
515.	Is all documentation, such as memos or transmittal forms that are transmitted to the laboratory by the sample transmitter retained?	5.5.8.3.1.e	5315.A	
516.	If chain of custody procedures are used, is a complete chain of custody record form maintained?	5.5.8.3.1.f	5315.C	
517.	Does the laboratory have a written sample acceptance policy that clearly outlines the circumstances under which samples shall be accepted or rejected?	5.5.8.3.2	5501	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
518.	Are data from any samples which does not meet the sample acceptance criteria flagged in an unambiguous manner clearly defining the nature and substance of the variation?	5.5.8.3.2	5313.B.6	
519.	Is the sample acceptance policy made available to sample collection personnel?	5.5.8.3.2	5501	
520.	Does the sample acceptance criteria include: a) <input type="checkbox"/> Proper, full, and complete documentation, which includes sample identification, the location, date and time of collection, collector's name, preservation type, sample type and any special remarks concerning the sample; b) <input type="checkbox"/> Proper sample labeling to include unique identification and a labeling system for the samples with requirements concerning the durability of the labels (water resistant) and the use of indelible ink; c) <input type="checkbox"/> Use of appropriate sample containers; d) <input type="checkbox"/> Adherence to specified holding times; e) <input type="checkbox"/> Adequate sample volume. (Sufficient sample volume must be available to perform the necessary tests); and f) <input type="checkbox"/> Procedures to be used when samples show signs of damage, contamination or inadequate preservation.	5.5.8.3.2	5501	
521.	Does the laboratory have procedures and appropriate facilities for avoiding deterioration, contamination, loss or damage to the sample during storage, handling, preparation and testing?	5.5.8.4	5301.C.10	
522.	Are handling instructions provided with the sample followed?	5.5.8.4	5301.C.10	
523.	When samples have to be stored or conditioned under specified environmental conditions, are these conditions maintained, monitored and recorded?	5.5.8.4	5303.H.4.c	
524.	Where a sample or a portion of a sample is to be held secure, does the laboratory have arrangements for storage and security that protect the condition and integrity of the secured samples or portions concerned?	5.5.8.4	5301.C.10	
525.	Are samples stored according to the conditions specified by preservation protocols?	5.5.8.4.a	5303.H.4.e	
526.	Are samples which require thermal preservation stored under refrigeration which is +/-2 of the specified preservation temperature unless method specific criteria exist? For samples with a specified storage temperature of 4°C, storage at a temperature above the freezing point of water to 6°C is considered acceptable.	5.5.8.4.a.1	5303.H.4.e	
527.	Are samples stored away from all standards, reagents, food and other potentially contaminating sources?	5.5.8.4.a.2	5303.H.4.d	
528.	Are samples stored in such a manner to prevent cross contamination?	5.5.8.4.a.2	5303.H.4.d	
529.	Are sample fractions, extracts, leachates and other sample preparation products stored in the same manner as samples or according to specifications in the test method?	5.5.8.4.b	5303.H.4 5301.C.10	
530.	Does the laboratory have SOPs for the disposal of samples, digestates, leachates and extracts or other sample preparation products?	5.5.8.4.c	5301.F.7	
5.5.9 Assuring the Quality of Environmental Test and Calibration Results				
531.	Does the laboratory have quality control procedures for monitoring the validity of environmental tests undertaken?	5.5.9.1	5301.C.13 5301.H	
532.	Are the resulting data recorded in such a way that trends are detectable and, where practicable, statistical techniques are applied to the reviewing of the results?	5.5.9.1	5301.C.13 5301.H	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
533.	Is the monitoring planned and reviewed?	5.5.9.1	5301.C.13	
534.	Does the monitoring include, but not limited to, the following: a) <input type="checkbox"/> Regular use of certified reference materials and/or internal quality control using secondary reference materials; b) <input type="checkbox"/> Participation in interlaboratory comparison or proficiency-testing program (see Chapter 2) c) <input type="checkbox"/> Replicate tests using the same or different methods; d) <input type="checkbox"/> Retesting or recalibration of retained samples; e) <input type="checkbox"/> Correlation of results for different characteristics of a sample (for example, total phosphate should be greater than or equal to orthophosphate).	5.5.9.1	4711.A 5301.H.1 5301.C.13	
535.	Does the laboratory have detailed written protocols in place to monitor the following quality controls: 1) <input type="checkbox"/> Positive and negative controls to monitor tests such as blanks, spikes, reference toxicants; 2) <input type="checkbox"/> Tests to define the variability and/or repeatability of the laboratory results such as replicates; 3) <input type="checkbox"/> Measures to assure the accuracy of the test method including calibration and/or continuing calibrations, use of certified reference materials, proficiency test samples, or other measures; 4) <input type="checkbox"/> Measures to evaluate test method capability, such as limit of detection and limit of quantitation or range of applicability such as linearity; 5) <input type="checkbox"/> Selection of appropriate formulae to reduce raw data to final results such as regression analysis, comparison to internal/external standard calculations, and statistical analyses; 6) <input type="checkbox"/> Selection and use of reagents and standards of appropriate quality; 7) <input type="checkbox"/> Measures to assure the selectivity of the test for its intended purpose; and 8) <input type="checkbox"/> Measures to assure constant and consistent test conditions (both instrumental and environmental) where required by the test method such as temperature, humidity, light, or specific instrument conditions.	5.5.9.2.a	5301.H.1	
536.	Are all quality control measures assessed and evaluated on an on-going basis?	5.5.9.2.b	5301.H.2	
537.	Is quality control acceptance criteria used to determine the usability of the data?	5.5.9.2.b	5301.H.2	
538.	Does the laboratory have procedures for the development of acceptance/rejection criteria where no method or regulatory criteria exist? (See 5.5.8.3.2 Sample Acceptance Policy.)	5.5.9.2.c	5301.H.3	
539.	Are the quality control protocols specified by the laboratory's method manual (5.5.4.1.2) followed?	5.5.9.2.d	5301.A.1 5301.A.2	
540.	Does the laboratory ensure that the essential standards outlined in Appendix D or mandated methods or regulations (whichever are more stringent) are incorporated into their method manuals?	5.5.9.2.d	5301.A.1 5301.A.2	
541.	When it is not apparent which is more stringent is the QC in the mandated method or regulations followed?	5.5.9.2.d	5301.H.4	
5.5.10 Reporting the Results				

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
542.	Are the results of each test or series of environmental tests carried out by the laboratory reported accurately, clearly, unambiguously and objectively, and in accordance with any specific instructions in the environmental test methods?	5.5.10.1	5313.A	
543.	Are the results reported, usually in a test report that includes all the information requested by the client and necessary for the interpretation of the environmental test results and all information required by the method used? This information is normally that required by 5.5.10.2 and 5.5.10.3.	5.5.10.1	5313.A	
544.	In the case of environmental tests performed for internal clients, or in the case of a written agreement with the client, the results may be reported in a simplified way. Is any information listed in 5.5.10.2 to 5.5.10.4 not reported to the client, readily available in the laboratory which carried out the environmental tests?	5.5.10.1	5313.A	
545.	Some regulatory reporting requirements or formats such as monthly operating reports may not require all items listed below. In those cases does the laboratory provide all the required information to their client for use in preparing such regulatory reports?	5.5.10.1	5313.A	
546.	Does the laboratories, if it is operated by a facility and whose sole function is to provide data to the facility management for compliance purposes (in-house or captive laboratories) does the laboratory have all applicable information specified in 5.5.10.2.a-m readily available for review by the accrediting authority?	5.5.10.1	5313.A 5315.A 4709	
547.	If a formal report detailing the information is not required, does the: a) <input type="checkbox"/> Is the in-house laboratory itself responsible for preparing the regulatory reports; or b) <input type="checkbox"/> Does the laboratory provide information to another individual within the organization for preparation of regulatory reports?	5.5.10.1	5313.A	
548.	Does the facility management ensure that the appropriate report items are in the report to the regulatory authority if such information is required?	5.5.10.1.b	5313.A	
549.	Does each test report certificate include at least the following information, except under the conditions in 5.5.10.1.a and 5.5.10.1.b: a) <input type="checkbox"/> A title (e.g. "Test Report," "Certificate of Results," or "Laboratory Results"); b) <input type="checkbox"/> The name and address of the laboratory, the location where the environmental tests were carried out, if different from the address of the laboratory, and phone number with name of contact person for questions; c) <input type="checkbox"/> Unique identification of the test report (such as the serial number), and on each page an identification in order to ensure that the page is recognized as a part of the test report, and a clear identification of the end of the test report; d) <input type="checkbox"/> The name and address of the client and project name if applicable; e) <input type="checkbox"/> Identification of the method used; f) <input type="checkbox"/> A description of, the condition of, and unambiguous identification of the sample(s), including the client identification code;	5.5.10.2 5.5.10.2.a-f	5313.B	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
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550.	<p>g) <input type="checkbox"/> The date of receipt of the sample(s) where this is critical to the validity and application of the results, date and time of sample collection, the date(s) of performance of the environmental test, and time of sample preparation and/or analysis if the required holding time for either activity is less than or equal to 72 hours;</p> <p>h) <input type="checkbox"/> Reference to the sampling plan and procedures used by the laboratory or other bodies where these are relevant to the validity or application of the results;</p> <p>i) <input type="checkbox"/> The environmental test or calibration results with, where appropriate, the units of measurement, and any failures identified; identify whether data are calculated on a dry weight or wet weight basis; identify the reporting units such as µg/l or mg/kg; and for Whole Effluent Toxicity, identify the statistical package used to provide data;</p> <p>j) <input type="checkbox"/> The name(s), function(s) and signature(s) or equivalent electronic identification of person(s) authorizing the test report or calibration certificate, and date of issue;</p> <p>k) <input type="checkbox"/> Where relevant, a statement to the effect that the results relate only to the samples;</p> <p>l) <input type="checkbox"/> At the laboratory's discretion, a statement that the certificate or report shall not be reproduced except in full, without the written approval of the laboratory</p>	5.5.10.2.g-1	5313.B	
551.	Do the laboratories certify that the test results meet all requirements of NELAC or provide reasons and/or justification if they do not?	5.5.10.2.m	5313.A	
552.	<p>Does the laboratory indicate on each page an identification in order to ensure that the page is recognized as a part of the test report or calibration certificate by</p> <p>i. <input type="checkbox"/> Listing the total number of pages on the first page of the report, as long as the subsequent pages are identified by the unique report identification and consecutive numbers, or</p> <p>ii. <input type="checkbox"/> identifying each page is with the unique report identification. The pages are identified as a number of the total report pages (example: 3 of 10, or 1 of 20).</p> <p>iii. <input type="checkbox"/> Employ another method of identifying the pages in the report so that it is clear to the reader that discrete pages are associated with a specific report, and that the report contains a specified number of pages.</p> <p>Describe the method for identifying the order in the comments section.</p>	5.5.10.2.c.1	5313.B.2	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
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553.	Where it is necessary for the interpretation of the test results, does the test report also include the following: a) <input type="checkbox"/> Deviations from (such as failed quality control), additions to, or exclusions from the test method, and information on specific test conditions, such as environmental conditions and any nonstandard conditions that may have affected the quality of results, including the use and definitions of data qualifiers; b) <input type="checkbox"/> Where quality system requirements are not met, a statement of compliance/non-compliance with requirements and/or specifications, including identification of test results derived from any sample that did not meet NELAC sample acceptance requirements such as improper container, holding time, or temperature; c) <input type="checkbox"/> Where applicable, a statement on the estimated uncertainty of measurement; information on uncertainty is needed in test reports, when a client's instruction so requires; d) <input type="checkbox"/> Where appropriate and needed, opinions and interpretations; e) <input type="checkbox"/> Additional information which may be required by specific methods, clients or groups of clients; f) <input type="checkbox"/> Qualification of numerical results with values outside the working range?	5.5.10.3.1	5313.B	
554.	Do test reports containing the results of sampling include the following, where necessary for the interpretation of test results: a) <input type="checkbox"/> The date of sampling; b) <input type="checkbox"/> Unambiguous identification of the substance, material or product sampled (including the name of the manufacturer, the model or type of designation and serial numbers as appropriate); c) <input type="checkbox"/> The location of sampling, including any diagrams, sketches or photographs; d) <input type="checkbox"/> A reference to the sampling plan and procedures used; e) <input type="checkbox"/> Details of any environmental conditions during sampling that may affect the interpretation of the test results; f) <input type="checkbox"/> Any standard or other specification for the sampling method or procedure, and deviations, additions to or exclusions from the specification concerned?	5.5.10.3.2	5313.A	
555.	When opinions and interpretations are included, does the laboratory document the basis upon which the opinions and interpretations have been made?	5.5.10.4	5313.A	
556.	Are opinions and interpretations clearly marked as such in a test report?	5.5.10.4	5313.A	
557.	When the test report contains results of tests performed by subcontractors, are these results clearly identified by subcontractor name or applicable accreditation number?	5.5.10.5	5313.A	
558.	Does the subcontractor report the results in writing or electronically?	5.5.10.5	5313.A	
559.	Does the laboratory make a copy of the subcontractor's report available to the client when requested by the client?	5.5.10.5	5901 5911	
560.	In the case of transmission of environmental test results by telephone, telex, facsimile or other electronic or electromagnetic means, are the requirements of this Standard met?	5.5.10.6	5313.D	
561.	In the case of transmission of environmental test results by telephone, telex, facsimile or other electronic or electromagnetic means, does the laboratory ensure that all reasonable steps are taken to preserve confidentiality?	5.5.10.6	5313.D	

**Louisiana Environmental Laboratory Accreditation Program
Assessment Checklist for NELAP-Accredited Facilities Rev 0
Issued: October 4, 2008**

Item	Relevant Aspect of Standard	Citation		
		NELAC Reference	LAC Reference	Lab QS Reference
562.	Is the format of the report designed to accommodate each type of environmental test carried out and to minimize the possibility of misunderstanding or misuse?	5.5.10.7	5313.A	
563.	Are material amendments to a test report after issue made only in the form of a further document, or data transfer, which includes the statement "Supplement to Test Report, serial number... [or as otherwise identified]", or an equivalent form of wording?	5.5.10.8	5313.C	
564.	Do such amendments meet all the requirements of this Standard?	5.5.10.8	5313.C	
565.	When it is necessary to issue a complete new test report, is this uniquely identified and does it contain a reference to the original that it replaces?	5.5.10.8	5901.A 5911	