

ASSESSOR CHECKLIST: ENVIRONMENTAL LEAD (Pb) PROGRAM REQUIREMENTS  
(revised 02/16/95)

The following pages present the criteria from the "Environmental Lead (Pb) Program Requirements" in a checklist format. The laboratory's policies and procedures must meet these requirements. Quality system documentation and supporting records must be available for the assessor's review.

Before the assessment, the laboratory is asked to complete all of the unshaded document reference identifiers in the checklist's second column (labelled "Doc. Ref.") and place a tick mark in the yes (Y), no (N), or not applicable (NA) space for each checklist item. This serves to help both the laboratory and the assessors prepare for the assessment and may save a significant amount of assessment time and cost. The appropriate "document reference" should include quality manual, laboratory manual, SOP, etc. references. The noted references should specify procedure number, page number and section number, if possible, where each checklist item is addressed.

Assessor Instructions: Review the laboratory's documented quality system to verify compliance with the applicable Environmental Lead (Pb) Program documentation requirements. Assess to verify that the documented quality system is indeed implemented as described. Record comments related to any requirement on the space provided. Assess the laboratory's technical competence to perform specific tests or specific types of tests. Record comments related to tests on separate sheets and/or on the draft scope(s) of accreditation. All deficiencies must be identified and explained in the assessor deficiency report.

Laboratory Name: \_\_\_\_\_ City: \_\_\_\_\_  
State: \_\_\_\_\_

Personnel Information (Names, Titles, and Responsibilities):

Technical Manager: \_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Quality Manager: \_\_\_\_\_  
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Key Technical Staff and Their Unique Capability\*: \_\_\_\_\_

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\* A "key technical staff person" is anyone whose absence or departure would reduce the laboratory's competence to carry out one or more specific tests.

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Environmental Lead (Pb) Program - 1994  
Checklist

Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
4L ORGANIZATION AND MANAGEMENT (No Additions)					
5L QUALITY SYSTEM, AUDIT AND REVIEW  The laboratory shall comply with the quality control (QC) requirements of applicable federal or state environmental or public health agencies when testing specific matrices as well as the requirements specified below:					
5L.1 The laboratory shall have QC procedures (SOPs) specific to each test technology addressing, as appropriate, the use of:					
5L.1.1 Reagent/method blank analyses					
5L.1.2 Replicate/duplicate analyses					
5L.1.3 Spiked and blank sample analysis					
5L.1.4 Blind samples					
5L.1.5 Quality control samples					
5L.1.6 Control charts or equivalent					
5L.1.7 Calibration standards					
5L.1.8 Reference material samples					
5L.1.9 Internal standards					

Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
5L.2 (a) The laboratory quality control program shall include the continual evaluation of its performance (system process control) for each matrix which includes the determination of accuracy and precision.					
(b) One possible method used for laboratory system process control is the use of control charts to monitor the performance of specific QC samples. Control charts must specify warning and action limits.					
(c) In the absence of a statistically sufficient data base to determine the necessary frequency for QC samples, the laboratory must default to the use of a set frequency for QC samples stated in its analytical standard operating procedure. The required minimum performance criteria and QC sample frequency are stated below for analytical SOPs employing AAS or ICP.					
(d) In the absence of specified QC sample frequency, determinations are based on the use of system process control data produced by the laboratory for the specific method utilized.					

Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
<p>5L.3 (a) Accuracy studies are performed to determine how close a measurement comes to an actual or accepted reference value. Accuracy can be expressed as percent recovery and evaluated by analysis of matrix spike samples. A matrix spike is an aliquot of a sample fortified (spiked) with a known quantity of the analyte of interest and subjected to the entire analytical procedure.</p>					
<p>(b) Precision is evaluated by the reproducibility of analyses. Precision is commonly expressed as standard deviation or relative percent difference and can be evaluated by the analysis of replicate samples. Replicate sample analyses are one or more additional analyses on separate portions of a given sample in order to assist in the evaluation of method variance. Most commonly, two replicate analyses (defined as a duplicate analysis) are performed.</p>					

Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
(c) In the analysis of soil, dust (vacuum) and paint chip matrices, samples may be too small and difficult to homogenize and split in order to obtain samples for matrix spike evaluations or replicate analyses. For samples where such is the case, the laboratory must select alternative QC options such as the analysis of duplicate laboratory control samples per batch in order to monitor laboratory performance.					
5L.4 (a) Matrix spiked samples shall be analyzed with a minimum frequency of five percent (5%) of the samples for each matrix, per batch of samples (samples processed at a single time). If there are fewer than 20 samples in a batch, at least one spiked sample for each matrix, per batch, shall be analyzed.					
(b) Replicate (duplicate) samples shall be analyzed with a minimum frequency of five percent (5%) of samples for each matrix, per batch of samples. If there are fewer than 20 samples in a batch, at least one sample for each matrix, per batch, shall be analyzed.					
(c) In the event the analyte is not detected in the sample, replicate matrix spike samples may be analyzed.					

Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
5L.5 (a) When analyzing wipe samples, method spike samples shall be prepared using blank collection media with a minimum frequency of 5%.					
(b) If there are fewer than 20 samples per batch, at least one method spike/spike duplicate set shall be analyzed per batch.					
(c) The matrix samples are to be prepared using a lead-based paint (NIST SRM traceable) applied directly to the wipe.					
5L.6 (a) When using methods requiring sample pretreatment not performed on calibration standards, a method blank containing all reagents and subject to all preparation steps shall be processed and analyzed along with the samples.					
(b) Method blanks shall be analyzed with a minimum frequency of five percent (5%) of the samples for each matrix, per batch of samples. If there are fewer than 20 samples in a batch, at least one method blank for each matrix, per batch, shall be analyzed.					
(c) The use of method blanks provides a measurement of laboratory and/or reagent contamination. Method blanks shall not be used to correct sample results.					

Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
5L.7 (a) Prior to sample analysis, at least one independent lead reference or laboratory control sample (LCS) shall be analyzed with each matrix, per batch of samples, with a minimum frequency of 5%.					
(b) If there are fewer than 20 samples per batch, than at least 1 reference or control sample shall be analyzed per batch, per matrix type.					
(c) The concentration of the control sample shall be within the working range of the method and shall not require extensive pretreatment, dilution or concentration prior to analysis. Sources of these samples include but are not limited to: NIST Standard Reference Materials, proficiency testing samples from the ELPAT Program, commercially available certified reference samples, or samples prepared from different sources of analyte than calibration standards and whose concentrations were determined using definitive methods.					
(d) All reference or laboratory control sample materials shall be NIST traceable.					

Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
5L.8 (a) Acceptable performance limits for analytical instrumentation as well as each method shall be established based upon the continuing statistical evaluation of data generated by the analysis of quality control samples, unless specific minimum acceptance limits are established by the method.					
(b) The laboratory's calculation procedures for statistically derived acceptance limits shall be documented.					
(c) Some methods have listed acceptance criteria for applicable analytes based upon determinations by a single laboratory, the compilation of data from many laboratories, or limits that are assumed or expected. These limits may be too broad to define accurate acceptance criteria for routine use. These limits are best used as guidelines during the initial phases of method use and are superseded when the laboratory has collected sufficient self-generated data for proper statistical evaluation.					
(d) In the absence of sufficient data for the statistical determination of adequate QC sample frequency, the following minimum QC sample frequencies are required (where applicable) for analytical SOPs employing AAS or ICP instrumentation:					

Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
(QC Sample/Frequency/Acceptance Limits)  (d1) Initial Calibration Verification (ICV) / Once per run after calibration / Within ±10% of known value.					
(QC Sample/Frequency/Acceptance Limits)  (d2) Initial Calibration Blank (ICB) / Once per run at the beginning of run / Absolute value not more than 20% of the regulatory limit or minimum level of concern.					
(d3) Continuing Calibration Verification (CCV) / Before and at the end of a sample run as well as every 10 samples / Within ±10% of known value for ICP or FAAS; within ±20% for GFAA.					
(d4) ICP Interference Check Sample (ICS) / Beginning and end of each run or twice every 8 hours for ICP analysis / within ±20% of known value.					
(d5) Continuing Calibration Blank (CCB) / After each ICS and CCV / Absolute value not more than 20% of the regulatory limit or minimum level of concern.					
(d6) Laboratory Control Sample (LCS) / 1 per 20 samples or batch (5%) / within ±20% of known value.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
(d7) Matrix Spike / 1 per 20 samples or batch (5%) / within ±25% of known value.					
(d8) Duplicate Sample / 1 per 20 samples or batch (5%) / within ±25% RPD for values greater than or equal to 5 times the detection limit.					
(d9) Method Blank / 1 per 20 samples or batch (5%) / Absolute value not more than 20% of the regulatory limit or minimum level of concern.					
5L.9 Control charts or a quality control data base shall be used to record quality control data and track laboratory performance with the associated acceptance limits for each matrix and to evaluate instrument performance.					
5L.10 (a) Laboratory dust wipe sampling and analysis shall be conducted at least quarterly to determine surface concentration levels of lead in the laboratory.					
(b) The laboratory systems documents shall specify the maximum allowable concentration of lead for sample preparation and analysis areas associated with the lead analysis.					
(c) Sample preparation and analysis is not to proceed until surface contamination is within the specified maximum allowable concentration stated in the laboratory's quality system documents.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
5L.10.1 (A) Labware cleaning procedures shall be specified by the laboratory in a written SOP.					
(B) The procedure must include a periodic monitoring of lead concentrations in cleaning baths, where applicable, or the monitoring of glassware contamination during the analysis of reagent or other blanks.					
(C) The monitoring frequency must be at least once a month.					
5L.10.2 Where the laboratory is responsible for taking dust sample wipes in the field, the laboratory must evaluate blank wipes representative of the lots to be used in the field for lead contamination analysis prior to field sampling.					
5L.11 (a) If the reported values of QC samples fall outside of the acceptance limits stated in the method, samples associated with the batch are to be reanalyzed including a new set of QC samples; no sample values are to be reported unless the QC samples are within the acceptance limits.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
(b) Laboratories shall document, investigate and take corrective action for all episodes where the QC data shows an out-of-control situation.					
(c) No data shall be reported until the cause of the problem is determined and corrected, or the laboratory demonstrates the cause was a random event and no longer affects data.					
(d) The laboratory shall keep records of all out-of-control events, the determined cause(s) and corrective actions taken.					
(e) Laboratories shall respond to client quality complaints and maintain records of corrective action.					
<b>6L PERSONNEL</b>					
6L.1 (a) The technical manager (however named) shall possess a college degree in chemistry or a related science and have at least 3 years of non-academic analytical laboratory experience of which at least 2 years shall be metals analysis experience.					
(b) The technical manager shall be on-site at least 50% of the time.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
6L.2 (a) The quality manager (however named) shall possess a college degree in a basic or applied science and have at least 1 year of non-academic analytical chemistry experience and training in statistics.					
(b) Alternatively, the quality manager can have a college degree in other than the basic or applied sciences, with at least 4 years of non-academic analytical chemistry experience and training in statistics.					
(c) The technical manager may also function as the quality manager so long as he/she does not act in the position of analyst/technician involved with the analysis of the samples.					
(d) The quality manager may be employed by the laboratory on a part-time basis or as a consultant in order to meet the external monitoring function of the position.					
6L.3 (a) Persons in each senior technical position (i.e. inorganic chemist/spectroscopist) shall have a bachelor's degree in chemistry or related field with a minimum of one year of non-academic experience in metals analysis.					
(b) Successful training in specific metals method used in the laboratory shall be verified and documented using reference materials of the matrices of concern.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
(c) Proficiency testing results must be documented.					
(d) Persons filling the following job functions must meet the associated minimum experience and training requirements:					
6L.3.1 Inductively Coupled Plasma-Emission Spectroscopy: One year experience with satisfactory completion of a short course on ICP or an equivalent in-house training course.					
6L.3.2 Flameless Atomic Absorption Spectroscopy: One year with satisfactory completion of a short course on graphite furnace atomic absorption (GFAA) or an equivalent in-house training course.					
6L.3.3 Flame Atomic Absorption (FLAA) Spectroscopy: One year with satisfactory completion of a short course on FLAA or an equivalent in-house training course.					
6L.3.4 X-Ray Fluorescence (XRF) Spectroscopy: One year with satisfactory completion of a short course on XRF or an equivalent in-house training course.					
6L.3.5 General Chemistry and Instrumentation: Six months.					
6L.3.6 Field Testing: Six months.					
6L.3.7 Sample Collection: Six months.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
6L.4 (a) Lead (Pb) analysts technicians shall have completed a training course in metals analysis (or an equivalent in-house course) and have demonstrated ability to produce reliable results through accurate analysis of standard reference materials (SRMs), proficiency testing samples, or in-house quality control samples.					
(b) Their performance must be documented.					
(c) Junior staff (nondegreed personnel with less than 3 years relevant experience) must work under the direct supervision of the technical manager, or under the supervision of a senior technical person described above or an analyst/technician who has performed successfully over a period of three years in the analysis of metals using the same technologies being applied for the analysis of lead (Pb) in samples.					
6L.5 The laboratory must comply with the following minimum levels of experience required for independent operation:					
6L.5.1 Inorganic Sample Preparation: 3 months per method used.					
6L.5.2 Routine Sample Analysis: 6 months per method used.					
6L.6 Analyst/technicians in training may work on samples submitted for Pb analysis under the NLLAP as long as the following conditions are met:					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
6L.6.1 They have demonstrated the ability to produce reliable results through accurate analysis of SRMs, proficiency testing samples or in-house quality control samples.					
6L.6.2 They have met at least 50% of the experience period required stated above.					
6L.6.3 Their immediate supervisor or instructor is physically present 70% of the time in their work area when they are preparing and/or analyzing the samples.					
6L.7 The laboratory shall have documented evidence contained in their training records of analyst\tester proficiency for each test method or activity performed on the matrices of concern.					
7L ACCOMMODATION AND ENVIRONMENT (NOTE: This section does not apply to field testing.)					
(a) Laboratory personnel should apply general and customary safety practices as a part of good laboratory procedures.					
(b) Each laboratory must have a safety and chemical hygiene plan (per OSHA rule 29 CFR 1910.1450), as part of their standard operating procedures.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
(c) Where safety practices are included in an approved method, they must be strictly followed.					
7L.1 The laboratory shall use distilled/demineralized water that it can demonstrate to be free of interferences at detection limits.					
7L.2 The laboratory shall routinely check and record the conductivity of distilled/demineralized water (for a continuous system check, should be per batch or daily).					
7L.3 The laboratory shall provide exhaust hoods for volatile materials (per 29 CFR 1910.1450, Occupation Exposure to Toxic Substances in Laboratories and ANSI/AIHA Z9.5-1992, American National Standard for Laboratory Ventilation).					
7L.4 The laboratory shall provide contamination-free work areas (as necessary).					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
7L.5 The laboratory shall provide adequate facilities for storage of samples, extracts, reagent, solvents, reference materials and standards to preserve their identity, concentration, purity and stability.					
7L.6 The laboratory shall have written, detailed procedures and facilities in place for collection, storage and disposal of chemical wastes (40 CFR 261).					
7L.7 The laboratory shall appropriately store corrosive, reactive or explosive chemicals safely in conformance with 20 CFR 1910.					
7L.8 The laboratory shall provide adequate separation of activities to ensure that no activity has an adverse effect on analyses.					
7L.9 The laboratory shall maintain monitoring records on facilities and equipment as appropriate.					
8L EQUIPMENT AND REFERENCE MATERIALS					
8L.1 The following criteria pertain to analytical/pan balances:					
8L.1.1 Analytical balances shall be capable of weighing to 0.1 mg.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
8L.1.2 Records of balance calibration shall be kept for at least two ranges (no more than two decades apart) using weights that conform to at least Class 3 tolerances.					
8L.1.3 Records showing functional/calibration checks each day of use for analytical balances and monthly for other balances shall be maintained.					
8L.1.4 The balances shall undergo metrological calibration at least annually.					
8L.2 The following criterion pertains to labware and sample collection devices:					
8L.2.1 All such devices shall be cleaned in a manner appropriate for the analytical procedures for which it is to be used.					
8L.3 The following criteria pertains to ovens:					
8L.3.1 Thermometers shall be graduated in increments no larger than 1°C.					
8L.3.2 If the oven temperature cannot be read without opening the door, the bulb of the thermometer shall be immersed in a sand bath.					
8L.3.3 Oven temperature shall be adequately monitored and controlled (e.g. beginning and end of each use cycle).					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
8L.4 The following criterion pertains to hot plates:					
8L.4.1 Maintain the temperature at the center of the hot plate at a temperature sufficient to sustain a mild reflux.					
8L.5 The following criterion pertains to microwave ovens:					
8L.5.1 Calibrate the power available for heating weekly (This quality control function is performed to determine that the microwave has not started to degrade and that absolute power settings (watts) may be compared from one microwave unit to another (see Appendix D of Environmental Lead Program Requirements)).					
8L.6 The following criteria pertain to thermometers:					
8L.6.1 The laboratory shall have access to a NIST (NBS)-traceable thermometer for use in verifying working thermometers.					
8L.6.2 The calibration of working mercury-in-glass thermometers shall be checked at least annually against a NIST (NBS)-traceable certified thermometer.					
8L.6.3 The calibration of dial-type thermometers shall be checked at least quarterly against a NIST (NBS)-traceable thermometer.					

Requirement	Compliance			Document Reference	Comments
	Y	N	N/A		
8L.7 The following criteria pertain to autopipetor/dilutors:					
8L.7.1 The apparatus shall have sufficient sensitivity for the intended use.					
8L.7.2 Records shall be kept showing that delivery volumes are checked gravimetrically at least monthly.					
8L.8 The following criteria pertain to reagents and standards:					
8L.8.1 The laboratory shall specify their requirements in its documented quality system.					
8L.8.2 The laboratory shall use ACS reagent grade or the quality specified by the analytical methods in use.					
8L.8.3 The laboratory shall inspect/verify concentration (if appropriate) and shall date, assign an expiration date and initial upon receipt.					
8L.8.4 The laboratory shall not use reagents and standards beyond their expiration dates.					
9L MEASUREMENT TRACEABILITY AND CALIBRATION					
9L.1 The laboratory shall use quality control materials and calibration standards that are traceable to NIST standards.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
9L.2 The laboratory shall document the frequency, conditions and standards used to establish calibration of all analytical/testing methodology.					
9L.3 The laboratory shall verify and document all working standards versus primary (reference) standards.					
9L.4 (a) Instrument performance checks shall be carried out before use for analysis of samples.					
(b) Such checks shall include, as appropriate, evaluation of instrument sensitivity, noise levels and absorbance/emission levels versus historical values.					
(c) Acceptance criteria shall be stated.					
9L.5 (a) Standard curves shall be prepared to adequately cover the expected concentration ranges of the samples using at least 3 calibration standards (except for ICP) and one blank, unless otherwise specified by the method employed.					
(b) Acceptance criteria shall be stated.					
(c) New curves shall be prepared whenever an out-of-control condition is indicated and after new reagents are prepared.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
9L.6 (a) For ICP analyses, where possible, a minimum of a two point calibration plus a blank shall be performed each day of use before the analysis of samples.					
(b) Linearity shall be confirmed by the calibration standards, their concentrations encompassing the concentration range of interest for the samples to be analyzed.					
(c) Analysts using instruments with software utilizing only a single high standard for calibration, are to perform a calibration check using a reference sample with a concentration at the low end of the range of interest. In addition, an interference check standard shall be analyzed each day of use.					
(d) Acceptance criteria shall be stated (see below).					
9L.7 (a) Calibration blanks must be successfully analyzed before and periodically with the analysis of samples.					
(b) The calibration blank solutions consist of the same reagents used to digest samples. Performance criteria are stated in section 5L.8.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
(c) Prior to analyzing samples, an initial calibration verification (ICV) standard must be analyzed.					
(d) The source of the ICV standard must be independent from the instrument calibration samples and NIST-traceable. Performance criteria are stated in section 5L.8.					
(e) Continuing calibration verification (CCV) standards shall be analyzed in accordance to the analytical SOP.					
(f) The CCV standard may be prepared from independent reference standards or from the same standards used to prepare the instrument calibration curve. Acceptance criteria shall be stated.					
9L.8 (a) Field testing devices shall be calibrated as required by the testing procedure.					
(b) Acceptance criteria shall be stated.					
(c) In the absence of a requirement in the testing procedure, calibration shall be in accordance with the manufacturer's specification.					
10L METHODS					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
10L.1 The laboratory shall have documented procedures for making and controlling revisions to in-house SOPs (use revised SOPs only after written authorization by senior technical personnel).					
10L.2 The laboratory shall have documented procedures for data collecting and reducing, reporting and record keeping.					
10L.3 The laboratory shall have documented validation procedures to apply at appropriate levels of all measurement processes.					
10L.4 The laboratory shall have documented procedures to check the validity of reported analysis values.					
10L.5 The laboratory shall have documented procedures for correcting erroneously reported results.					
10L.6 The laboratory shall use at least ACS reagent grade chemicals to prepare standards.					
10L.7 The laboratory shall use primary standard and QC reference materials.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
10L.8 The laboratory shall prepare fresh analytical standards at a frequency consistent with good laboratory practices unless otherwise stated in the method (frequency is a function of concentration and type of matrix; generally, the lower the concentration the less stable the standard).					
10L.9 The laboratory shall properly label reference materials/reagents with concentrations, date of preparation, expiration date and the identity of the person preparing the reagent.					
10L.10 The laboratory shall have standards preparation documentation such as a preparations records book.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
<p>10L.11 SOPs for test methods shall supply or refer to information addressing the following areas:</p> <ul style="list-style-type: none"> <li>(a) Interferences</li> <li>(b) Safety Considerations</li> <li>(c) Apparatus and Equipment</li> <li>(d) Reagents and Supplies</li> <li>(e) Sample Preservation and Storage</li> <li>(f) Sample Preparation</li> <li>(g) Instrument Calibration</li> <li>(h) Quality Control Procedures</li> <li>(i) Detailed Step-by-Step Procedure</li> <li>(j) Sample Calculations</li> <li>(k) Method Performance (Accuracy and Precision)</li> </ul>					
<p>10L.12 (a) Procedures published by federal agencies (e.g. USEPA, NIOSH), nationally or internationally recognized technical authorities are acceptable to use once the laboratory has demonstrated adequate performance with the method for each particular matrix.</p>					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
(b) The method performance procedures used must be documented. An example of a method performance procedure would be the evaluation of a minimum pool of 20 consecutively analyzed QC sample results for each applicable type of QC sample.					
(c) In reviewing the performance of the laboratory control samples (LCS) for 20 consecutively analyzed LCS samples, no more than 4 of 20 samples could have percent recoveries outside of $\pm 20\%$ acceptance limits in order for the method to be considered for potential use.					
(d) Similarly, the performance of the other QC samples would also be evaluated.					
10L.13 (a) Linear calibration ranges (or working calibration ranges) shall be established and routinely verified for each method.					
(b) Method detection limits (MDLs) shall be established and statistically verified at least annually for each method and matrix of concern (paint chips, soil and/or dust).					
(c) For methods with stated MDLs, the laboratory shall demonstrate and document its ability to achieve such MDLs.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
(d) MDLs shall be determined using procedures published or recognized by federal agencies (e.g. USEPA, NIOSH) or nationally or internationally acknowledged technical authorities (e.g. ISO, IUPAC). An example of an acceptable recommended procedure is in 40 CFR Part 136, Appendix B.					
11L HANDLING OF SAMPLES					
11L.1 The laboratory shall have documented procedures for collection, shipping, receipt and storage of samples, as appropriate.					
11L.2 The laboratory shall give samples an unambiguous sample number when collected and/or logged in.					
11L.3 The laboratory shall maintain a permanent record for sample collection and log-in data.					
11L.4 The laboratory shall store samples in such a way as to maintain their identity, integrity, stability and concentration.					
11L.5 The laboratory shall follow documented chain-of-custody procedures, when required.					
11L.6 (a) The laboratory shall have a sample custodian who shall be responsible for the sample control/logging.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
(b) The procedures involved include the control, identity, preservation, condition of samples and sample handling, storage and disbursement for analysis.					
(c) Along with a procedure for sample receipt, sample rejection criteria shall be documented as well as procedures for advising field personnel and the client of problems with samples.					
(d) An identification scheme shall be documented and utilized, when applicable, in order to designate sample extracts, split samples and duplicates.					
(e) The laboratory shall have a person responsible for ensuring that all analyses are performed within any USEPA/HUD or method-specified holding times, where appropriate.					
12L RECORDS					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
12L.1 The laboratory shall ensure that all observations and calculations are recorded in a permanent manner (such as laboratory/field notebooks, pro-forma work sheets, or magnetic media) at the time they are made and that the units of measurement in which observations are recorded are stated.					
12L.2 The laboratory shall ensure that original records are uniquely identified and traceable to the tests or test items to which they refer and to any test reports based upon them.					
12L.3 The laboratory shall ensure that records are traceable, retrievable and legible and include sufficient information and explanation such that they can be readily interpreted by knowledgeable persons other than those responsible for their generation.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
12L.4 The laboratory shall ensure that records contain sufficient information to permit identification of possible sources of error and to permit, where feasible and necessary, satisfactory repetition of the test under the original conditions.					
12L.5 The laboratory shall ensure that records contain sufficient details of any significant departures from test specifications or other specified procedures including authorizations for such departures.					
12L.6 The laboratory shall ensure that records are checked for data transcription or calculations.					
12L.7 The laboratory shall ensure that records identify the person or persons responsible for their generation and those responsible for checking data transcriptions and calculations.					
12L.8 The laboratory shall ensure that corrections or amendments to test records are made in a manner that does not obliterate the original data and are signed or initialled by the person responsible.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
12L.9 (a) The laboratory shall ensure that test records are protected from loss, damage, misuse or deterioration and are retained for an appropriate period in a manner that permits retrieval when required.					
(b) Test records that are created and/or retained on magnetic media (e.g. computer disks) or photographic media (e.g. microfiche) shall be stored in a manner that protects them from the hazards that affect such media and provisions shall be made for the printing of such records when required.					
12L.10 The laboratory shall maintain records related to environmental lead (Pb) analyses a minimum of 10 years.					
12L.11 The laboratory shall ensure that the records system provides for retrievability and traceability of the sample source, the methodology of the analysis/testing, results (including calibration and instrument checks), the person performing the analysis and the date (in the case of mobile laboratories, the location where the analytical work was performed).					
12L.12 The laboratory shall have a secure archive where access, deposit and removal of records are controlled and documented.					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N A		
12L.13 (a) In instances where the laboratory is going out of business, clients of Pb analyses, done under the NLLAP, are to be notified 60 days in advance of the closure of the laboratory.					
(b) All final test reports generated by the laboratory, as required in section 13, are to be submitted to the clients if not previously done.					
13L CERTIFICATES AND REPORTS					
(a) Test reports must be reviewed and signed by the technical manager or his/her designee taking responsibility for the test.					
(b) Test reports must conform to the documentation requirements of Appendix C of the Environmental Lead Program Requirements.					
13L.1 (a) Measurement values below the method quantitation limit (MQL) shall be reported as "<" along with reference to the method quantitation limit.					
(b) The reporting of zero concentration is not permitted.					
14L SUB-CONTRACTING OF TESTING (No Additions)					
15L OUTSIDE SUPPORT AND SUPPLIES (No Additions)					

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Requirement	Compliance			Document Reference	Comments
	Y	N	N/A		
16L COMPLAINTS (No Additions)					

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