

- 5.2.5. Excess materials will either be returned to the client, or disposed of in accordance with the applicable SOPs.
- 5.2.6. Access to laboratories and sample storage facilities will be restricted to authorized personnel to further ensure that sample integrity is maintained.
- 5.2.7. Ambient conditions will be monitored in storage facilities and laboratories where control of those conditions is necessary to maintain the integrity of the sample.

### 5.3. Notification of Problems

Clients or suppliers will be notified if the integrity of their samples or materials is jeopardized either upon receipt or while in the possession of the company.

### 5.4. Records

Records of all procedures to which a sample is subjected to while in the laboratory shall be maintained. Chain of custody records shall establish an intact, continuous record of the physical possession, storage, and disposal of all samples.

**Table 5 Sample Containers, Preservatives and Maximum Holding Times**

Method	Sample Type	Maximum Holding Times	Container Type	Preservation
<b>EPA Method 8280</b>	Aqueous	Extraction: 30 days <sup>(1)</sup>	Amber Glass	4 °C
	Solid	Analysis: 45 days <sup>(2)</sup>	Glass Container	4 °C
<b>EPA Method 8290</b>	Aqueous	Extraction: 30 days <sup>(1)</sup> Analysis: 45 days <sup>(2)</sup>	Amber Glass	4 °C dark
	Solid		Glass Container	4 °C
	Fish/Tissue		Glass Container	-20 °C
<b>EPA Method 1668</b>	Aqueous	Extraction: 1 year <sup>(1)</sup> Analysis: 1 year <sup>(2)</sup>	AGB	0 – 4 °C <sup>(3,6)</sup> dark
	Solid		AGJ	< 4 °C dark <sup>(7)</sup> < -10 °C dark <sup>(8)</sup>
	Fish/Tissue		AGJ	< 4 °C dark <sup>(7)</sup> < -10 °C dark <sup>(8)</sup>
<b>EPA Methods 1613A &amp; 1613B</b>	Aqueous	Extraction: 1 year <sup>(1)</sup> Analysis: 1 year <sup>(2)</sup>	AGB	0 – 4 °C <sup>(3)</sup> dark
	Solid		AGB	< 4 °C dark <sup>(7)</sup> < -10 °C dark <sup>(8)</sup>
	Fish/Tissue		AGJ	< 4 °C dark <sup>(7)</sup> < -10 °C dark <sup>(8)</sup>
<b>EPA Method 613</b>	Aqueous	Extraction: 7 days <sup>(1)</sup> Analysis: 40 days <sup>(2)</sup>	AGB	4 °C <sup>(3)</sup> dark
<b>EPA Method 513</b>	Aqueous	Extraction: 90 days <sup>(1)</sup> Analysis: 40 days <sup>(2)</sup>	AGB	Ambient dark
<b>EPA Method 23</b>	MM5 Train	Extraction: 30 days <sup>(1)</sup> Analysis: 45 days <sup>(2)</sup> Trap Prep: 30 days	Train and/or AGB	Adsorbents on ice <sup>(7)</sup>
<b>EPA Method T0-9A <sup>(4)</sup></b>	PUF	Extraction: 7 days <sup>(1)</sup> Analysis: 40 days <sup>(2)</sup> PUF Prep: 30 days		< 4 °C

**Table 5 Sample Containers, Preservatives and Maximum Holding Times**

Method	Sample Type	Maximum Holding Times	Container Type	Preservation
<b>CARB Method 428</b> <sup>(4)</sup>	MM5 Train	Extraction: 30 days <sup>(1)</sup> Analysis: 45 days <sup>(2)</sup> Trap Prep: 30 days	Train and/or AGB	0 – 4 °C dark <sup>(5)</sup>
<b>CARB Method 429</b>	MM5 Train	Extraction: 21 days <sup>(1)</sup> Analysis: 40 days <sup>(2)</sup> Resin QC Date: 21 days	Train and/or AGB	4 °C dark
<b>NCASI 551</b> <sup>(4)</sup>	All Samples			4 °C
<b>EPA Method 1614 (Draft)</b>	Aqueous <sup>(3)</sup>	Extraction: 1 year <sup>(1)</sup> Analysis: 1 year <sup>(2)</sup>	AGB	0 – 4 °C <sup>(3)</sup> dark
	Solid		AGJ	< 6 °C dark < -10 °C dark
	Fish/Tissue		AGJ	< 6 °C dark < -10 °C dark
<b>PCN</b>	Aqueous	Extraction: 1 year <sup>(1)</sup> Analysis: 1 year <sup>(2)</sup>	AGB	0 – 4 °C <sup>(3)</sup> dark < -10 °C dark
	Solid		AGJ	< -10 °C dark
	Fish/Tissue		AGJ	< -10 °C dark
<b>EPA Method 1625</b>	All samples	Extraction: 7 days <sup>(1)</sup> Analysis: 40 days <sup>(2)</sup>	Amber Glass Containers	0 – 4 °C <sup>(3)</sup> dark

- (1) From collection
- (2) From extraction
- (3) If residual chlorine is present sodium thiosulfate is added as per the method
- (4) Holding times set by Vista Analytical Laboratory
- (5) Recommended by Vista Analytical Laboratory
- (6) Adjust sample to pH 2-3 with sulfuric acid
- (7) From collection until laboratory receipt
- (8) Storage at laboratory

## 6. TRACEABILITY OF MATERIALS

Procedures for identifying, controlling, and tracking items purchased from vendors, items developed in-house, samples received from clients, and client reports are detailed in SOPs.

Purchased materials and supplies will be checked to confirm that they meet quality specifications.

### 6.1. Verification of Items Developed In-house

6.1.1. Items developed in-house such as computer programs, equipment, and procedures, will be tested to verify that they meet the intended objectives. Test records will be maintained so that client reports can be traced to specific items.

### 6.2. Control of Laboratory Samples

6.2.1. Each sample will be assigned a unique laboratory ID number that will be used to track the sample as it is processed through the laboratory. This unique ID number is also used to associate the analytical results with the sample.

6.2.2. Samples will be batched for analysis. Each batch will be assigned a unique batch number that will be used to associate sample results with quality control data.

### 6.3. Standards and Reagents Traceability

6.3.1. Documented procedures shall exist for the purchase, reception, and storage of consumable materials used for the technical operations within the laboratory. Certificate of Analysis records for all standards shall be retained by QA Manager. Reagent and standard preparation documentation shall indicate traceability to purchased stock or neat compounds, reference to method of preparation, date of preparation, expiration date, and preparer's initials.

### 6.4. Quality Control Records

6.4.1. Records will be maintained to trace calibration standards and instrument calibration data to NIST or USEPA standards as appropriate. If NIST or USEPA standards are not available other standards will be used which are acceptable to specific project requirements.

6.4.2. Each instrument will be assigned a unique ID number. Records will be maintained to document the performance and maintenance of each instrument.

- 6.4.3. Records will be maintained to identify the individuals responsible for preparing calibration standards, analyzing samples, and reviewing analytical data.
- 6.4.4. Quality control records will be maintained to demonstrate that individual test procedures have been verified. Individual analytical results will be traceable to these quality control records.
- 6.5. Certificates of Analysis
  - 6.5.1. All client reports and certificate of Analysis will be uniquely identified. Where appropriate, contract or purchase order numbers will be referenced on client reports. When requested, test procedures will be referenced on Certificates of Analysis.
- 6.6. Instruments and Equipment
  - 6.6.1. All measuring operations and testing equipment effecting accuracy or validity of tests shall be calibrated and verified before being put into service and on a continuing basis.

## 7. PROCESS CONTROL

Analytical procedures and other processes that directly affect the quality of services will be conducted under controlled conditions using SOPs that are written at a level of detail appropriate to the complexity of the process.

Personnel will be properly trained before being given responsibility for an analytical procedure or other process that directly affects the quality of a service.

### 7.1. Instruments and Facilities

7.1.1. Analytical instruments will be maintained in a condition, which will ensure that they are able to meet specified operating conditions.

7.1.2. Laboratory facilities will be designed to meet specific operating conditions, and maintained in a condition, which will ensure that the operating conditions are consistently met.

7.1.3. Results of quality control checks will be recorded.

### 7.2. Performance Audits

7.2.1. The laboratory shall ensure the quality of results provided to clients by implementing checks to monitor the quality of the laboratory's analytical activities.

7.2.1.1. Internal QC procedures.

7.2.1.2. Participation in proficiency testing or other interlaboratory comparisons.

7.2.1.3. Use of certified reference materials.

## 8. LABORATORY INSTRUMENTATION

All laboratory instrumentation and testing equipment used by the company will be maintained and calibrated in accordance with SOPs to verify proper operation. Table 8 details a list of current laboratory instrumentation for analysis.

Instrumentation will be placed into service dependent upon the capability of achieving the accuracy required and shall comply with relevant specifications to the instrument.

Authorized personnel shall operate laboratory instrumentation and testing equipment.

Instrumentation and equipment will be used in a manner that ensures that measurement uncertainty is known and consistent with specified quality requirements.

Methods and intervals of calibration specified for each instrument will be based on the individual operating characteristics of the instrument and the quality requirements of the analytical procedure.

### 8.1. Calibration Standards and Instruments

- 8.1.1. Calibration and verification procedures will use standards and instruments, whenever applicable, that are traceable to recognized national or international standards. Where traceability to national standards does not exist, the basis for the calibration will be documented.
- 8.1.2. Prior to use, laboratory instrumentation and testing equipment shall be calibrated and checked to establish that it meets the laboratory's specification requirements and complies with the relevant standard specifications.
- 8.1.3. Where applicable, reference standards and instrumentation will be checked periodically between calibration and verification procedures.

### 8.2. Calibration Records

- 8.2.1. Except for procedures requiring reanalysis, calibration prior to each analysis and previous calibration data will be reviewed when an instrument is out of calibration to determine whether or not the analytical results are acceptable.
- 8.2.2. Instruments that are unable to maintain calibration or not operating properly will be taken out of service. Instruments will not be placed back into service until they have been repaired and verified to be operating properly.
- 8.2.3. The records for each test or calibration shall contain sufficient information to indicate whether specified quality or process parameters are achieved. Each instrument will be assigned a

unique ID number. Records will be maintained to document the performance and maintenance of each instrument.

**Table 8 Instrument List**

<b>Name</b>	<b>ID</b>	<b>Acquired</b>
Waters Autospec Ultima High Resolution Mass Spectrometer	VG-5	1998
Waters Autospec Ultima High Resolution Mass Spectrometer	VG-6	2000
Waters Autospec Ultima High Resolution Mass Spectrometer	VG-7	2001
Waters Autospec Ultima High Resolution Mass Spectrometer	VG-8	2001
Waters Autospec Ultima High Resolution Mass Spectrometer	VG-9	2004

## 9. QUALITY RECORDS

Procedures for identification, collection, indexing, access, filing, storage, maintenance and disposal of quality and technical records shall be in accordance with SOPs. Quality records shall include internal audits and management reviews as well as records of corrective actions and preventative actions. Technical records include original observations, calculations and derived data, calibration records and a copy of final report.

### 9.1. Documentation of Quality Records

- 9.1.1. Quality records will be generated in accordance with the specification of applicable procedures, programs, and contracts. These records will be maintained to demonstrate that specified quality requirements are met, and that the Quality System is functioning successfully.
- 9.1.2. Quality records of subcontractor services which affect the quality of the company's services will be required to meet the conditions of this section.
- 9.1.3. Documents will be clean and legible, and will reference back to the specific activities or procedures to which they apply.

### 9.2. Quality and Technical Records

- 9.2.1. Quality and technical records shall be conducted in accordance with SOPs.
- 9.2.2. History of all samples must be traceable and readily understood through the documentation.
- 9.2.3. Instruments may not be used in analytical procedures unless maintenance and calibration records indicate that specified quality requirements are achieved. The results of instrument maintenance and calibration inspections will be clearly identified either on the instrument or in maintenance and calibration documents
- 9.2.4. Work must pass specified quality requirements before it will be released to the succeeding step in the process or, finally, to the clients. The results of quality control checks on work processes will be documented in a manner that clearly indicates the status of the work to the responsible personnel.
- 9.2.5. Individuals authorized to conduct instrument maintenance and calibration procedures and quality control checks will be identified in the documentation.

### 9.3. Records Management and Storage

- 9.3.1. The laboratory shall retain on record all original observations, calculations and derived data, calibration records and a copy of report for a minimum of five years. This applies to both manual and electronic data.
- Individual records will be reviewed and noted if storage requirements longer than five years are required based on client, project or state specific regulations.
- 9.3.2. Records must provide sufficient information for an adequate audit trail that produces the same results for the sample analytical data. The sample from receipt to analysis must be readily understood through documentation.
- 9.3.3. All records shall be safely stored, held secure and in confidence to the clients. NELAP related records shall be available to the accrediting authority
- 9.3.4. All records shall be archived and protected from fire, theft, loss, and environmental deterioration. Any access to archived information shall be documented in the Archive Access Log
- 9.3.5. Quality documents will be stored in a manner that protects them from loss, damage, unauthorized alterations, and held in confidence to the client.
- 9.3.6. Documents will be indexed and filed in a manner that allows them to be readily retrieved. Clients will be provided access to records that document the quality of work done for them.
- 9.3.7. If the laboratory were to transfer ownership, the procedures on handling documents would remain the same. The transfer would ensure that the procedures in place prior to transfer show little significant change for client ease into transition.
- 9.3.8. If the laboratory were to go out of business, the laboratory would contact the client with the option of how they would like to proceed with their data. All data would be handled according to client or Vista approval for proper destruction or safekeeping.

## 10. CORRECTIVE ACTION

Nonconforming conditions are when any aspect of the quality system or technical operations does not conform to procedures or to client requirements. Nonconforming conditions have an adverse effect to the quality specifications and are handled in accordance with SOPs. If a nonconformance occurs, where necessary, the client shall be notified.

The applicable SOPs provide instructions for determining the root cause of nonconforming conditions, designing and implementing corrective action, and evaluating the effectiveness of the corrective action.

### 10.1. Causes of Nonconformance

Procedures will be implemented to determine the root cause of nonconformance conditions, and the corrective action will be designed to eliminate the root cause and prevent reoccurrence.

### 10.2. Corrective Action

10.2.1. Corrective actions are taken immediately, together with any decision about the acceptability of the nonconforming work. Procedures that result in or allow nonconformance conditions will be revised. If necessary, new procedures will be written.

10.2.2. The revised or new procedures will be implemented and evaluated to ensure that the corrective action steps taken effectively eliminate the nonconformance conditions.

### 10.3. Documentation

10.3.1. Results of root cause analyses and corrective action steps implemented to eliminate nonconformance conditions will be documented and reported to appropriate levels of management in accordance with laboratory SOPs. Records of corrective actions are maintained by QA Manager.

## 11. REPORTS

Handling, storage, packaging, and, when applicable, delivery of client reports will be conducted in accordance with SOPs to ensure that specified quality requirements and confidentiality of the reports are maintained. The reports shall include all the information requested by the client or required by the method used. Reports may also include electronic data. Electronic data will follow the same criteria as reports. Any information not reported to the client shall be readily available in the laboratory.

### 11.1. Handling and Storage of Reports

- 11.1.1. Reports and files will be handled in a manner that ensures that client confidentiality is maintained, and that the reports are protected from loss, damage, or unauthorized alterations.
- 11.1.2. All reports and files will be coded for ease of identification and retrieval.
- 11.1.3. File cabinets and storage rooms will be designed to protect filed copies of reports from loss, damage, or unauthorized alterations.
- 11.1.4. Computer files will be backed up to electronic storage media and stored in a manner that protects them from loss, damage, or unauthorized personnel.
- 11.1.5. The condition of reports and files in storage will be periodically evaluated to ensure that there is no deterioration, and that the reports remain readily accessible to authorized personnel.
- 11.1.6. NELAP related records shall be made available to the accrediting authority, and shall be maintained for a minimum of five years.
  - Individual records will be reviewed and noted if storage requirements longer than five years are required based on client, project or state specific regulations.

### 11.2. Packaging and Delivery of Reports

- 11.2.1. Client reports will be inspected prior to delivery to ensure that they meet specified quality requirements. Then the reports will be packaged for delivery to the client in a manner that ensures protection while in transit.
- 11.2.2. When required by specific contractual stipulations, the company will assume responsibility for protection of client reports while en route to the client.

### 11.3. Laboratory Report Format and Content

All laboratory reports shall include, at least, the following information:

- 11.3.1. A title, indicating the nature of the document (i.e. Test Report, Laboratory Results);
- 11.3.2. Name and address of the laboratory, location analysis was conducted if different from the address of the laboratory, and a phone number with name of a contact person;
- 11.3.3. Unique identification of the report and of each page, and the total number of pages. It must be clear that discrete pages are associated with a specific report, and that the report contains a specified number of pages;
- 11.3.4. NELAC accredited logo and a statement certifying that the report meets all requirements of NELAC and cannot be reproduced;
- 11.3.5. Name and address of client, where appropriate and project name if applicable;
- 11.3.6. Description and unambiguous identification of the tested sample including the client identification code;
- 11.3.7. Identification of test results derived from any sample that did not meet NELAC sample acceptance requirements such as improper container, holding time, or temperature;
- 11.3.8. Date of receipt of sample, date and time of sample collection, date(s) of performance 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;
- 11.3.9. Identification of the test method used, or unambiguous description of any non-standard method used;
- 11.3.10. If the laboratory collected the sample, reference to sampling procedure;
- 11.3.11. Any deviations from, additions to or exclusions from the test method, and any non-standard conditions that may have affected the quality of results, and including the use and definitions of data qualifiers
- 11.3.12. Measurements, examinations and derived results, supported by tables, graphs, sketches and photographs as appropriate, and any failures identified; identify whether data are calculated on a dry weight or wet weight basis, identify the reporting units
- 11.3.13. A signature and title, or an equivalent electronic identification of the person(s) accepting responsibility for the content of the report, and date of issue;
- 11.3.14. Clear identification of all test data provided by outside sources, such as subcontracted laboratories, clients, etc.

- The original report from subcontracted laboratories should be included in the client laboratory report.
- 11.3.15. Reports shall, when required, include a statement of compliance/non-compliance with requirements and/or specifications, including identification or test results derived from any sample that did not meet NELAC sample acceptance requirements such as improper container, holding time, or temperature.
- 11.3.16. Additional information, which may be required by specific methods, clients or groups of clients.
- 11.3.17. After issuance of the report, the report remains unchanged.
- 11.3.18. Any report that requires amending must clearly state that the report has been revised. The amended report must also meet the requirements set forth within Chapter 5 of the NELAC standards.

## DATA QUALIFIERS & ABBREVIATIONS

B	This compound was also detected in the method blank.
C	Result was obtained from a confirmation analysis using either a DB-225 or SP-2331 GC column.
D	Dilution
H	The signal-to-noise ratio is greater than 10:1.
I	Chemical Interference
J	The amount detected is below the Lower Calibration Limit of the instrument.
P	The amount reported is the maximum possible concentration due to possible chlorinated diphenylether interference.
*	See Cover Letter
Conc.	Concentration
DL	Sample-specific estimated detection limit
MDL	The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero in the matrix tested.
EMPC	Estimated Maximum Possible Concentration
NA	Not applicable
RL	Reporting Limit – concentrations that correspond to low calibration point
ND	Not Detected
TEQ	Toxic Equivalency

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.

## 12. PERFORMANCE AND SYSTEM AUDITS

Performance, System, and External audits are conducted to verify conformance with Vista's quality assurance program, to determine the effectiveness of the QA program, and to continually improve Vista's data quality.

### 12.1. System Audits

- 12.1.1. Internal audits (facility audits) of activities affecting the quality of the company's services will be conducted by the QA Manager on a regular schedule in accordance with laboratory SOPs. Internal audits are performed biannually. The QA Manager is trained and qualified as an auditor who, wherever possible, is independent of the activities being audited. Internal audits verify that operations continue to comply with the requirements of the quality system and NELAC standards.
- 12.1.2. It is the responsibility of the QA Manager to plan and organize audits based on a predetermined schedule or as requested by management.
- 12.1.3. SOPs and checklists will be used to focus the internal audit on specific activities of the area to be audited.
- 12.1.4. Personnel will not be allowed to audit activities for which they are responsible or in which they are directly involved, unless it is demonstrated that an effective, nonbiased, audit can be performed.
- 12.1.5. Results of internal audits will be documented by the audit team and submitted to the manager(s) in charge of the audited area and the management of the QA Manager.
- 12.1.6. Appropriate corrective action steps will be promptly taken to address any deficiencies or areas for improvement identified by the internal audit. Laboratory management shall ensure that these actions are within the agreed time frame.
- 12.1.7. Laboratory management shall immediately notify, in writing, any client whose work may have been affected by any found deficiencies.
- 12.1.8. All records of internal facility inspections and responses will be maintained by the QA Manager.

### 12.2. Management Reviews

- 12.2.1. Management shall review the quality system annually to evaluate its continuing suitability and effectiveness and make any necessary changes or improvements.

- 12.2.2. The review may include account reports from managerial and supervisory personnel, the outcome of recent internal audits, assessments by external bodies, the results of interlaboratory comparisons or proficiency tests, any changes in the volume and type of work undertaken, feedback from clients, corrective actions and other relevant factors.
- 12.3. Performance Audits
  - 12.3.1. Performance audits are conducted as single blind assay samples. A performance evaluation sample (PE), purchased from an independent contractor, is analyzed twice a year. The acceptable result for the PE sample is unknown until after the experimental result is reported to the contractor. Other externally originated PEs are analyzed when supplied by the client as either a single blind or as a double blind sample and are scheduled through the laboratory as routine samples. All performance audits are handled in the same manner as real environmental samples including staff, method, procedures, equipment, facilities, and frequency.
- 12.4. External Audits
  - 12.4.1. External audits are performed on an on-going basis by clients, regulating agencies (State and Federal), or other third party auditors. These audits are pre-scheduled with the client and Quality Assurance Manager to ensure that the appropriate laboratory personnel are available to address all audit inquiries. All deviations or deficiencies noted during the audit are to be addressed in the time frame provided by the auditor.
- 12.5. Data Audits
  - 12.5.1. Data audits at Vista utilize a three tier data review system involving laboratory directors, client managers and the QA Manager.
  - 12.5.2. Tier 1. In the initial phase, the analyst, defined as the instrument operator, completes final data calculations, enters the data and submits the results to a laboratory director for review. In the case of anomalies, the laboratory director may require the analyst to prepare a corrective action report (CAR) discussing the potential causes for the problems encountered as well as the recommended corrective action. The analyst reviews the data, signs and dates the raw data and any CARs (if applicable). The laboratory director after review of the data will approve all final datasheets.
  - 12.5.3. Tier 2. The second tier review requires the project manager, defined as the laboratory director signing the cover letter of the final report, to review and approve the data package. The project manager examines the data for completeness and assesses

whether the package as a whole meets the data quality objectives set by the client. The project manager is required to discuss or explain any data anomalies in the text of the cover letter.

- 12.5.4. Tier 3. The third tier review is performed by the Quality Assurance Manager. The QA Manager will audit approximately 5% of the data packages and review all aspects of the data package covered during the second and third tier reviews. The QA Manager review may result in a request to the laboratory director for additional information regarding the data set and if necessary, re-analysis of selected samples.

## 13. TRAINING

Training assessments and all related training documentation shall be conducted in accordance with SOPs.

### 13.1. Initial On-Site Training

- 13.1.1. The training requirement of each employee will be assessed periodically to ensure the competency of their job responsibilities that career development objectives are being met, and that general-purpose educational opportunities are being utilized. The training program shall be relevant to the present and anticipated tasks of the laboratory.
- 13.1.2. Previous training, education, and experience will be considered when evaluating the training needs of each employee.
- 13.1.3. Manuals, texts, SOPs, journals, analytical methods and inhouse Analytical Procedures are available for all new trainees, with on the job training performed by senior staff.

### 13.2. Training Programs

- 13.2.1. Job related training will be provided through regularly scheduled in-house seminars and courses, university courses, conferences and seminars, and one-on-one on the job tutorials.
- 13.2.2. Specified performance criteria must be successfully met while under supervision before personnel will be made responsible for activities that affect the quality objectives of the company.

### 13.3. Training Documentation

- 13.3.1. Training records will be maintained in each individual's training file. These records will be readily available to supervisors to ensure that employees have demonstrated capability prior to performing activities for which they are responsible. Employees are responsible for keeping their training file up-to-date. The training files shall maintain records of competence, education and professional qualifications, training, skills and experience of all technical personnel, including contracted personnel.
- 13.3.2. Evidence on file demonstrating each employee has read and understood the current version of in-house quality documents (QM, QAPP, SOPs).
- 13.3.3. Documentation of training courses.
- 13.3.4. Documentation of continued proficiency at least once per year.

## 14. CLIENT SERVICES

Routine client service as well as responses to client inquiries, audit reports, recommendations, and complaints will be handled in accordance with SOPs.

### 14.1. Routine Services

- 14.1.1. Each client will be assigned a Project Manager who will be responsible for ensuring that the needs of the client are clearly understood and communicated to the appropriate areas of the company.
- 14.1.2. The Project Manager reviews all new work to ensure that it has the appropriate facilities and resources before commencing such work. Once the Project Manager accepts the new work, an acknowledgement letter is sent to the client for confirmation.
- 14.1.3. Clients will be given the opportunity to verify that the company's services conform to specified requirements. Regardless of whether or not client verifications are conducted, the Quality System will be responsible for ensuring that all services conform to specified requirements.
- 14.1.4. As the client's representative, the Project Manager will be responsible for ensuring that the client's needs are met. The Project Manager will maintain good communication, advice and guidance in technical matters, and opinions and interpretations based on results.
- 14.1.5. All client data are managed and maintained with the utmost care and diligence to ensure that the protection of clients' confidential information and proprietary rights are a primary concern.

### 14.2. Contract Review

- 14.2.1. For all analytical service to be provided contract review is accomplished through the generation of a written quote or contract. Sales and client services personnel are responsible for implementing and documenting contract review. Client requirements are defined and documented in the written quote or contract.

### 14.3. Responses to Client Audits, Inquiries, and Complaints

- 14.3.1. The QA Manager will be responsible for coordinating responses to client audits.
- 14.3.2. Complaints received from clients or other parties regarding data or laboratory activities will be directed to the appropriate project manager and reported to the laboratory president or laboratory director.

- 14.3.3. If a corrective action(s), which may require completion of a CAR (corrective action report), is taken, this will be documented and archived with the appropriate project data.
- 14.3.4. All complaints will be documented and records of actions in response to any complaints will be maintained.
- 14.3.5. If a complaint raises doubt regarding the laboratory's policies or compliance with NELAP or other standards, those areas shall be promptly reviewed or audited by the laboratory QA Manager.

## 15. STATISTICAL TECHNIQUES

Statistical techniques used to monitor the performance of activities that directly affect quality objectives will be conducted in accordance with SOPs.

### 15.1. Statistical Process Control Procedures

15.1.1. Statistical Process Control will be used to monitor analytical procedure performance indicators such as accuracy and precision, and process performance indicators such as turnaround time and Nonconformance reports.

15.1.2. Results of SPC analyses will be used to improve processes that affect quality objectives.

## 16. SUBCONTRACTING

- 16.1. Vista Analytical may subcontract services, or may refer a client directly to another lab, for a particular analysis. Subcontracted laboratories are held responsible for the implementation of their own QM and meeting their data quality objectives.
- 16.2. Clients shall be notified prior to subcontracting any portion of their testing to another laboratory.
- 16.3. Services requiring NELAC accreditation will only be subcontracted to a laboratory with NELAC accreditation.
- 16.4. For DoD clients, subcontractor laboratories must have documented compliance with DoD QSM requirements, must be approved by the specific DoD laboratory approval process, must demonstrate the ability to generate acceptable results through the analysis of proficiency testing samples, and must receive project-specific approval from the DoD client before any samples are analyzed.
- 16.5. For services associated with projects outside of California, individual state accreditations may need to be met.
- 16.6. Vista Analytical shall retain records demonstrating that the above requirements have been met. Original reports received from a subcontracted laboratory will be included with the clients test report.

## 17. DATA INTEGRITY AND ETHICS

Vista Analytical Laboratory expects employee compliance with all laboratory SOPs and applicable regulatory guidelines and standards. Vista encourages participation in cooperative and educational efforts designed to promote and inform laboratory personnel of the necessity of active compliance.

- 17.1. Vista does not condone and will not tolerate the fraudulent manipulation or falsification of data, intentional non-compliance, gross negligence, or any other unethical conduct. Employees who are aware of, or reasonably suspicious of, any case fraudulent or unethical conduct shall notify the laboratory President, Director, or QA Manager. Allegations of unethical conduct may be reported anonymously and will be fully investigated under the direction of the Quality Assurance Manager.
- 17.2. Any employee who knowingly manipulates and/or falsifies data or documents or engages in any unethical conduct is subject to immediate release from employment and other serious consequences.
- 17.3. Vista Analytical Laboratory provides mandatory initial and annual or as needed, Laboratory Ethics and Data Integrity refresher training to all employees. Topics covered are approved by management, documented in writing, and provided to all trainees.
  - 17.3.1. Training topics include:
    - Quality System requirements
    - Personnel training requirements
    - Vista Analytical Laboratory Ethics policy
    - Examples of actions that are strictly prohibited
    - Other breaches of data integrity
    - Pertinent SOPs and other quality documents
    - Potential consequences of misconduct
    - Confidential mechanism for reporting allegations
    - Investigation procedures and documentation
  - 17.3.2. All employees sign an ethics statement and documentation of training attendance that demonstrates they have participated and understand their obligations related to data integrity. This sheet is maintained in individual training records.
- 17.4. Upon hire, new employees are required to read and sign a confidentiality statement. This signed statement is maintained in personnel files.

## **APPENDIX**

**Key Resumes**

**Certifications**

**William J. Luksemburg**

**President**

**EDUCATION**

B.S. Chemistry, California State University, Fresno, CA (1974)

**EXPERIENCE**

- Present **President, Vista Analytical Laboratory**  
Responsible for the management of business planning including venture funding, sales and marketing and the review of laboratory operations of Vista Analytical Laboratory, formerly Alta Analytical Laboratory.
- 1990 - 2000 **Director of HRMS Services, Alta Analytical Laboratory**  
Mr. Luksemburg, a co-founder, directed the routine analysis and method development work in the High Resolution Mass Spectrometry department. He was responsible for marketing HRMS dioxin services to environmental engineering firms, the pulp and paper industry, government agencies and other industrial clients. Mr. Luksemburg was also responsible for the development of new markets using HRMS instrumentation. In addition Mr. Luksemburg directed routine and special projects, reviewed and interpreted data, and interfaced with clients.
- 1986 - 1990 **Principal Scientist/HRMS Manager, Enseco-Cal Lab**  
As Principal Scientist in the Special Services department at Enseco-Cal Lab Mr. Luksemburg coordinated the operation and maintenance of five high resolution magnetic sector instruments. He was responsible for developing a business that now is one of the major suppliers of HRMS PCDD/PCDF analysis to the pulp and paper industry in the U.S. Mr. Luksemburg also coordinated the training and development of the staff in the operation and maintenance of HRMS instruments.
- 1979 - 1986 **Senior Chemist, Radian Corporation**  
In Radian's Sacramento laboratory, Mr. Luksemburg was GC/MS supervisor for ABN and VOA analysis. He coordinated the activities of five chemists in the operation and maintenance of four quadrupole mass spectrometers.
- 1974 - 1979 **Chemist, Carnation Company**  
As a staff chemist, Mr. Luksemburg was involved in the analysis of products and ingredients used in Carnation's animal feed division.

## QUALIFICATIONS

Mr. Luksemburg has over 30 years experience in production analytical laboratories including 25 years experience in the field of environmental mass spectrometry. Much of this experience has involved PCDD/PCDF analysis of environmental samples, concentrated on High Resolution Mass Spectrometry analysis of PCDDs/PCDFs in a variety of matrices. Mr. Luksemburg is recognized throughout the pulp and paper industry for his research and production work on dioxins and furans. He recently was recognized on the international level when his chapter on dioxin analysis of pulp and paper (Rappe, 1991), was published by the World Health Organization. He is one of the few individuals in the world to successfully adapt the high-resolution magnetic sector instruments to "production" analysis of environmental samples at the picogram and femtogram levels.

## RECENT PUBLICATIONS AND PRESENTATIONS

"Determination of Method Detection Limits in Pulp and Paper Mill Effluents," in Rotorua, New Zealand, at the *ISWPC Post Symposium Workshop*, May 1991.

"Comparison of NCASI Method 551, EPA Method 1613A, and the Proposed FDA Method for the Analysis of 2,3,7,8-TCDD and 2,3,7,8-TCDF in Food Packaging Material," in Boston, MA, at the *1993 TAPPI Environmental Conference*, March 1993.

"Extraction of Large Volumes of Aqueous Samples Using Solid Phase Extraction Disks," in Portland, OR at the *1994 TAPPI Environmental Conference*, April 1994.

"PCDDs and PCDFs in Urban Stormwater Discharged to San Francisco Bay, California," in Amsterdam at the *1996 Dioxin 16th Symposium on Chlorinated Dioxins and Related Compounds*, August 1996.

NCASI Technical Bulletin No. 551, "NCASI Procedures for the Preparation and Isomer Specific Analysis of Pulp and Paper Industry Samples for 2,3,7,8-TCDD and 2,3,7,8-TCDF," LaFleur, L., Ramage, K., Bousquet, T., Brunck, R., Luksemburg, W., Miille, M., Peterson, R., and Valmores, S., (1989).

"Optimization of Extraction Procedures for the Analysis of TCDD/TCDF in Pulp, Paper Base Stocks, and Pulp Industry Solid Wastes," LaFleur, L., Ramage, K., Gillespie, W., Luksemburg, L., Miille, M., and Valmores, S., *Chemosphere*, Vol. 19, pp 643-648, 1989.

"Analytical Procedures for the Analysis of TCDD and TCDF in Food Sources," LaFleur, L., Bousquet, T., Ramage, K., Davis, T., Luksemburg, W., and Peterson, R., Presented by L. LaFleur at Dioxin '89, Toronto, Canada. Waiting publication in *Chemosphere*.

"Determination of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans in Pulp and Paper Industry Wastewaters, Solid Wastes, Ashes and Bleached Pulps," Luksemburg, W., *Environmental Carcinogens-Methods of Analysis and Exposure Measurement-Volume 11*, World Health Organization, Christopher Rappe, Editor, 1991.

"Potential Sources of Polychlorinated Dibenzothiophenes in the Passaic River, New Jersey," Huntley, S., Wenning, R., Paustenbach, D., Wong, A., and Luksemburg, W., *Chemosphere*, Vol. 29, No.2, pp 257-273, 1994.

“Polychlorinated Dioxins and Dibenzofurans in Environmental Samples From China,” Luksemburg, W., Mitzel, R., Huaidong, Z., Hedin, J., Silverbush, B. and Wong, A., Dioxin '96, Vol. 28, pp 262-263, 1996.

“Transport of Chlorinated Dioxin and Furan Contaminants in Pentachlorophenol-treated Wood to Milk and Adipose Tissue of Dairy Cattle,” Fries, G., Wenning, R., Paustenbach, D., Mathur, D., and Luksemburg, W., Dioxin '96, Vol. 29, pp 447-449, 1996.

“Polychlorinated Dioxins and Dibenzofurans in Environmental Samples from China,” Luksemburg, W., Mitzel, R. S., Hedin, J. M., Silverbush, B. B., Wong, A. S., Zhou, H. D., Dioxin '96, Vol. 28, pp. 262, 1996.

“Polychlorinated Dioxins and Dibenzofurans (PCDDs/PCDFs) in Environmental and Human Hair Samples Around a Pentachlorophenol Plant in China,” Luksemburg, W., Mitzel, R.S., Hedin, J. M., Silverbush, B. B., Wong, A. S., Zhou, H. D., Dioxin '97, Vol. 32, p. 38, 1997.

“A Congener Specific Evaluation of Transfer of Chlorinated Dibenzo-p-dioxins and Dibenzofurans to Milk of Cows Following Ingestion of Pentachlorophenol-Treated Wood”, Fries, G., Paustenbach, D., Mather, D., Luksemburg, W., Env. Sci. Technol., Vol. 33, p. 1165-1170, 1999.

“Complete Mass Balance O Dietary Polychlorinated Dibenzo-p-dioxins and Dibenzofurans in Dairy Cattle and Characterization of the Apparent Synthesis of Hepta- and Octachlorodioxins”, Fries, G., Paustenbach, D., Luksemburg, W., J. of Ag. and Food Chem., Vol. 50, #15, pp. 4226-4231 2002.

“Occupational Contamination with PCDD/F During Recycling of Non-Gamma HCH in a Chinese Chemical Factory. Part IV Comparison of Samples In and Outside the Factory with Isomer and Congener Patterns”, Olie, K., Coenraads, P., Tang, N., Wong, A., Dioxin 2002, Vol. 56, pp. 307-310, 2002.

“Polychlorinated Dibenzodioxins and Dibenzofurans (PCDDs/PCDFs) Levels in Environmental and Human Hair Samples Around an Electronic waste Processing Site in Guiyu, Guangdong Province, China”, Luksemburg, W., Mitzel, R., Peterson, R., Hedin, J., Maier, M., Schuld, M., Zhou, H., Wong, A., Dioxin 2002, Vol. 55, pp. 347-350, 2002.

“Benthic, Infaunal Community, Sediment Toxicity and Bioaccumulation Potential of PCDD/Fs in Sediments from Arcata Bay, California”, Moore, D., Diener, D., Irwin, M., Wenning, R., Mackey, L., Luksemburg, W., Dioxin 2003, Vol. 62, pp. 5-8, 2003.

Levels of Polybrominated Diphenyl Ethers (PBDEs) in Fish, Beef, and Fowl Purchased in Food Markets in Northern California USA, Luksemburg, W., Wenning, R., Patterson, A., and Maier, M., Presented at BFR 2004, June, 2004, Toronto, Canada.

Levels of PCDD/PCDF, PCBs and PBDEs in Wild and Farm Raised Fish, Luksemburg, W., Maier, M., Patterson, A., USEPA National Forum on Contaminants in Fish, San Diego, CA USA (2004).

Levels of Polybrominated Diphenyl Ethers(PBDEs) in the Hackensack River and Newark Bay, New Jersey USA, Wenning, R., Von Burg, A., and Luksemburg, W., Presented at BFR 2004, June, 2004, Toronto, Canada.

## **PROFESSIONAL AFFILIATIONS**

American Society for Mass Spectrometry  
American Chemical Society  
Technical Association of the Pulp and Paper Industry  
Society of Environmental Toxicology and Chemistry  
American Association for the Advancement of Science

**Martha M. Maier**

**Laboratory Director**

## **EDUCATION**

B.S. Chemistry, University of Wisconsin, Madison, WI (1983)  
B.S. Philosophy, University of Wisconsin, Madison, WI (1983)

## **EXPERIENCE**

Present **Laboratory Director, Vista Analytical Laboratory, Inc.**  
The Laboratory Director for Vista Analytical Laboratory, formerly Alta Analytical, oversees the routine operations of the laboratory. Performs the interpretation and final review of analytical data, and issues final reports. Acts as a liaison between the laboratory and the Quality Assurance department. Project manager for routine and special projects.

1999-2001 **Director, Ultra-Trace Analyses Group, Paradigm Analytical Laboratories, Inc**  
Responsible for extractions, analyses, final review and processing of all data generated by the group. Served as project manager. Oversaw the development of analytical procedures for the analysis for PCBs by HRMS (Method 1668A), as well as the implementation of NELAP certification.

1998-1999 **Bioanalytical Project Manager, Alta Analytical Laboratory**  
Liaison between pharmaceutical clients and the Liquid Chromatography Mass Spectrometry (LCMS) Services group, ensuring efficient study management and timely reporting of laboratory results. Directed all phases of study conduct, including: review of study protocols and sponsor Standard Operating Procedures; initiation, maintenance and review of study and raw data files; scheduling of sample analyses; and preparation of final reports.

1992-1998 **Associate Scientist, Alta Analytical Laboratory**  
Involved in sales and project management. Directed sample analysis, reviewed data and prepared reports. Presented papers and gave educational seminars and presentations on dioxin/furan analysis. Arranged exhibit schedule and represented the laboratory at technical meetings and industry conferences. From 1992-1997, acted as laboratory representative for the Eastern U.S., both in sales and project management capacities.

1990-1992 **Technical Sales, Enseco-Cal Lab**  
Coordinated the dioxin/furan marketing program. Prepared bids, organized exhibits, and oversaw the production of marketing materials. Acted as a liaison between the salespeople and the dioxin/furan laboratory.

- 1988-1990      **HR GC/MS Operator, Enseco-Cal Lab**  
Dioxin/furan analysis of pulp, food, and low-level environmental samples using high resolution GC/MS. Promoted to scientist position in December 1989. Involved in data review and project management.
- 1987-1988      **GC/MS Operator, Enseco-Cal Lab**  
Dioxin/furan analysis using low-resolution GC/MS systems. Promoted to lead person in May 1988.
- 1986-1987      **GC/MS BNA Operations Supervisor, Radian Corporation**  
Responsible for the scheduling and completion of all semi volatile analyses. Trained other operators in BNA analysis and routine instrument maintenance.
- 1984-1986      **GC/MS Operator, Radian Corporation**  
Analyzed environmental samples for volatile and semi volatile organic pollutants using EPA Methods 624, 625, SW-8240, SW-8270, and by EPA Contract Lab Protocol. Performed routine maintenance on all systems. Responsible for interfacing the GC/MS lab with the laboratory database management system.
- 1984-1984      **Analytical Chemist, Wisconsin Department of Agriculture**  
Assayed pesticide formulations using HPLC, GC, and TLC. Researched, developed and modified methods.

## QUALIFICATIONS

Ms. Maier has over 22 years of experience in the environmental laboratory, including 19 years of specialization in dioxin/furan analysis.

## AFFILIATIONS

Air & Waste Management Association  
American Chemical Society  
Technical Association of the Pulp & Paper Industry

**James M. Hedin**

**Director of Instrumentation Laboratory**

**EDUCATION**

B.S. B.S. Chemistry, University of Minnesota, Duluth, MN (1986)

**EXPERIENCE**

- Present **Director of Instrumentation Laboratory, Vista Analytical Laboratory**  
Mr. Hedin performs routine analysis and method development work in the High Resolution Mass Spectrometry department at Vista Analytical Laboratory, formerly Alta Analytical Laboratory. He is responsible for routine maintenance of HR/MS instruments. Mr. Hedin also aids in the training of new staff, reviews and interprets data, and interfaces with clients.
- 1990 – 1999 **Associate Scientist, Alta Analytical Laboratory**  
Mr. Hedin performs routine analysis and method development work in the High Resolution Mass Spectrometry department. He is responsible for routine maintenance of HR/MS instruments. Mr. Hedin also aids in the training of new staff, reviews and interprets data, and interfaces with clients.
- 1988 – 1990 **GC/MS Chemist, Enseco-Cal Lab**  
As GC/MS Chemist at Enseco-Cal Lab Mr. Hedin was responsible for the operation and maintenance of quadrupole GC/MS instruments. His duties entailed sample analysis by EPA methods for volatiles and semi-volatiles. Mr. Hedin also aided in the training of the staff in the department.
- 1987 – 1988 **Extraction Chemist, Enseco-Cal Lab**  
Mr. Hedin's duties entailed sample extraction for Dioxin/Furan Analysis by High Resolution Mass Spectrometry. He assisted in the training of new staff, and the development of new extraction techniques.

**QUALIFICATIONS**

Mr. Hedin has over 20 years experience in production analytical laboratories and environmental mass spectrometry. Most of this experience has involved PCDD/PCDF analysis of environmental samples and High Resolution Mass Spectrometry analysis of PCDD's/PCDFs in a variety of matrices.

**PROFESSIONAL AFFILIATIONS**

American Society for Mass Spectrometry

**Rose M. Harrelson**

**Quality Assurance Manager**

**EDUCATION**

B.S.                    Physiology, University of California, Davis (1989)

**EXPERIENCE**

- Present                **Quality Assurance Manager, Vista Analytical Laboratory**  
Ensure compliance to the laboratory Quality System according to the National Environmental Laboratory Accreditation Program (NELAP) standards and Alta's Quality Manual (QM); review and manage performance of MDLs, IPRs, PE samples; review data packages for compliance and completeness; maintain state certifications; maintain and update SOPs; maintain and update control charts; provide employee orientation and training; maintain and update QM and SOQ.
- 2001 – 2005        **Quality Assurance Specialist, Air Toxics Ltd.**  
Technical and QA review of analytical data, technical liaison between clients and laboratory operations; create, implement, and maintain QA controls and documentation; review and revise SOPs; collection and assessment of QC data; internal and external lab audit reports and responses; implement preventive and corrective actions; manage laboratory certifications; develop, implement, and manage the internal training program; serve as project manager for proficiency testing samples.
- 1992 – 1999        **Quality Assurance Specialist, Quanterra Environmental Services**  
Facilitated the implementation of Quality Assurance policies at the facility; performed as the QA Unit for the pesticide registration GLP program; reviewed work proposals and project plans for quality assurance aspects; coordinated audit activities at the facility; conducted QA training courses; responded to auditors regarding audits and performance evaluation samples; recommended corrective action as appropriate; maintained state certifications and agency approvals; maintained records pertaining to control charts, method validation and method detection limits, performance evaluation results, audit results, QC database, and customer service; assisted in the standardization and development of laboratory SOPs.

**QUALIFICATIONS**

Ms. Harrelson has over 18 years of experience in the environmental laboratory, including 15 years of specialization in laboratory Quality Assurance.

## CERTIFICATIONS



<b>Accrediting Authority</b>	<b>Certificate Number</b>
State of Alaska, DEC	CA413-2008
State of Arizona	AZ0639
State of Arkansas, DEQ	08-043-0
State of Arkansas, DOH	Reciprocity through CA
State of California – NELAP Primary AA	02102CA
State of Colorado	N/A
State of Connecticut	PH-0182
State of Florida, DEP	E87777
State of Indiana Department of Health	C-CA-02
Commonwealth of Kentucky	90063
State of Louisiana, Health and Hospitals	LA08000
State of Louisiana, DEQ	01977
State of Maine	2008024
State of Michigan	9932
State of Mississippi	Reciprocity through CA
Naval Facilities Engineering Service Center	NFESC413
State of Nevada	CA004132007A
State of New Jersey	CA003
State of New Mexico	Reciprocity through CA
State of New York, DOH	11411
State of North Carolina	06700
State of North Dakota, DOH	R-078
State of Oklahoma	D9919
State of Oregon	CA200001-006
State of Pennsylvania	68-00490
State of South Carolina	87002001
State of Tennessee	TN02996
State of Texas	T104704189-08-TX
U.S. Army Corps of Engineers	N/A
State of Utah	CA16400
Commonwealth of Virginia	00013
State of Washington	C1285
State of Wisconsin	998036160
State of Wyoming	8TMS-Q

Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request.



**CALIFORNIA DEPARTMENT OF PUBLIC HEALTH**  
**ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM - NELAP RECOGNIZED**  
**NELAP Fields of Accreditation**



VISTA ANALYTICAL LABORATORY, INC

Lab Phone (916) 673-1520

1104 WINDFIELD WAY  
 EL DORADO HILLS, CA 95762

Certificate No: 02102CA Renew Date: 01/31/2009

**105 - Semi-volatile Organic Chemistry of Drinking Water**

105.230	000	EPA 1613	Dioxins
105.230	001	EPA 1613	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)

**111 - Semi-volatile Organic Chemistry of Wastewater**

111.090	001	EPA 613	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)
111.111	000	EPA 1613B	Dioxins
111.111	001	EPA 1613B	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)
111.111	002	EPA 1613B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)
111.111	003	EPA 1613B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)
111.111	004	EPA 1613B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)
111.111	005	EPA 1613B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)
111.111	006	EPA 1613B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)
111.111	007	EPA 1613B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)
111.111	008	EPA 1613B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)
111.111	009	EPA 1613B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)
111.111	010	EPA 1613B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)
111.111	011	EPA 1613B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)
111.111	012	EPA 1613B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)
111.111	013	EPA 1613B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)
111.111	014	EPA 1613B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)
111.111	015	EPA 1613B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)
111.111	016	EPA 1613B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)
111.111	017	EPA 1613B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)
111.111	018	EPA 1613B	Total TCDD
111.111	019	EPA 1613B	Total PeCDD
111.111	020	EPA 1613B	Total HxCDD
111.111	021	EPA 1613B	Total HpCDD
111.111	022	EPA 1613B	Total TCDF
111.111	023	EPA 1613B	Total PeCDF
111.111	024	EPA 1613B	Total HxCDF
111.111	025	EPA 1613B	Total HpCDF

**117 - Semi-volatile Organic Chemistry of Hazardous Waste**

117.120	000	EPA 8280A	Dioxins and Dibenzofurans
117.120	001	EPA 8280A	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)

As of 01/07/2008, this list supersedes all previous lists for this certificate number.  
 Customers: Please verify the current accreditation standing with the State.

117.120	002	EPA 8280A	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)
117.120	003	EPA 8280A	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)
117.120	004	EPA 8280A	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)
117.120	005	EPA 8280A	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)
117.120	006	EPA 8280A	2,3,7,8-Tetrachlorodibenzofuran (TCDF)
117.120	007	EPA 8280A	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)
117.120	008	EPA 8280A	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)
117.120	009	EPA 8280A	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)
117.120	010	EPA 8280A	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)
117.120	011	EPA 8280A	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)
117.120	012	EPA 8280A	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)
117.120	013	EPA 8280A	Total TCDD
117.120	014	EPA 8280A	Total PeCDD
117.120	015	EPA 8280A	Total HxCDD
117.120	016	EPA 8280A	Total TCDF
117.120	017	EPA 8280A	Total PeCDF
117.120	018	EPA 8280A	Total HxCDF
117.120	019	EPA 8280A	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)
117.120	020	EPA 8280A	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)
117.120	021	EPA 8280A	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)
117.120	022	EPA 8280A	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)
117.120	023	EPA 8280A	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)
117.120	024	EPA 8280A	Total HpCDD
117.120	025	EPA 8280A	Total HpCDF
117.130	000	EPA 8290	Dioxins and Dibenzofurans
117.130	001	EPA 8290	2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD)
117.130	002	EPA 8290	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)
117.130	003	EPA 8290	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)
117.130	004	EPA 8290	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)
117.130	005	EPA 8290	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)
117.130	006	EPA 8290	2,3,7,8-Tetrachlorodibenzofuran (TCDF)
117.130	007	EPA 8290	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)
117.130	008	EPA 8290	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)
117.130	009	EPA 8290	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)
117.130	010	EPA 8290	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)
117.130	011	EPA 8290	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)
117.130	012	EPA 8290	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)
117.130	013	EPA 8290	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (HpCDD)
117.130	014	EPA 8290	1,2,3,4,6,7,8-Heptachlorodibenzofuran (HpCDF)
117.130	015	EPA 8290	1,2,3,4,7,8,9-Heptachlorodibenzofuran (HpCDF)
117.130	016	EPA 8290	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)

As of 01/07/2008, this list supersedes all previous lists for this certificate number.  
Customers: Please verify the current accreditation standing with the State.





# Quality Assurance Program Manual

**Facility Name:** Weck Laboratories, Inc.  
**Location:** 14859 E. Clark Ave., Industry, CA 91745  
**Telephone:** 626-336-2139

Revision 18A

EFFECTIVE DATE: November 3, 2008

DATE OF SUBMITTAL: November 3, 2008

Approved by:

**Alfredo Pierri**  
President/Lab Director

11/3/08

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## Table of Contents

1.	Introduction.....	1
1.1.	Mission Statement.....	1
1.2.	Services Provided.....	2
1.3.	Proficiency Testing .....	2
1.4.	Ethics Policy.....	2
2.	Quality Policy .....	3
2.1.	QA Objectives for measuring data.....	3
2.2.	Resources .....	4
3.	Description of the QAP Manual.....	4
3.1.	Terminology .....	4
3.2.	Scope.....	8
3.3.	Fields of Testing .....	9
3.4.	Management of the QAP Manual .....	9
4.	Description of the Laboratory .....	9
4.1.	Identification.....	9
4.2.	Fields of Activity .....	9
4.3.	Organization Structure .....	9
5.	Staff.....	10
5.1.	Management Personnel.....	10
5.2.	Personnel Qualifications.....	11
5.3.	Personnel Training.....	12
6.	Laboratory Capabilities and Accreditations.....	12
7.	Quality Assurance Objectives .....	14
7.1.	Precision.....	14
7.2.	Accuracy .....	14
7.3.	Representativeness .....	15
7.4.	Completeness .....	15
7.5.	Comparability.....	15
7.6.	Detection limits.....	15
8.	Sampling.....	15
9.	Sample Handling .....	16
9.1.	Sample tracking .....	16
9.2.	Review of Requests, Tenders and Contracts.....	16
9.3.	Sample acceptance policy.....	17
9.4.	Sample receipt protocol.....	18
9.5.	Storage conditions.....	18
9.6.	Custody of Samples and Documentation .....	19
9.7.	Sample Disposal .....	19
10.	Calibration Procedures and Frequency .....	19
10.1.	Traceability of Calibration .....	19
10.1.1.	General .....	19
10.1.2.	Specific Requirements .....	20
10.2.	Reference Standards and Reference Materials.....	21
10.3.	General Requirements .....	21

## Table of Contents-continued

10.4.	Analytical Support Equipment.....	21
10.4.1.	Balances and Reference Weights .....	22
10.4.2.	Thermometers.....	22
10.4.3.	Monitoring of Temperature.....	22
10.5.	Initial Instrument Calibration and Continuing Calibration Verification .....	22
11.	Test Methods and Standard Operating Procedures.....	25
11.1.	Test methods.....	26
11.1.1.	Source of Methods.....	26
11.1.2.	Validation of Methods .....	27
11.2.	SOPs for Sample Management .....	28
11.3.	SOPs for Reagent/Standard Preparation .....	28
11.4.	SOP for General Laboratory Techniques .....	28
11.5.	SOPs for Equipment Calibration and Maintenance.....	29
12.	Quality Control Determinations .....	29
12.1.	General.....	29
12.2.	Essential QC Determinations .....	29
12.2.1.	Blanks – Negative Controls.....	30
12.2.2.	Reproducibility and Recovery Determinations – Positive Controls .....	31
12.2.2.1.	Duplicates.....	31
12.2.2.2.	Laboratory Control Samples (LCS).....	32
12.2.2.3.	Matrix Spikes and Matrix Spike Duplicates.....	33
12.2.2.4.	Surrogates .....	34
12.2.2.5.	Equations used for Calculations .....	34
12.2.2.6.	Quality Control Charts.....	35
12.2.3.	External References and Control Samples .....	35
12.3.	Method Detection Limits and Reporting Limits.....	36
12.4.	Selectivity .....	37
12.5.	Demonstration of Method Capability.....	37
12.6.	Performance and Proficiency Testing Program.....	38
12.7.	Additional Quality Control Checks .....	39
12.8.	Estimation of Uncertainty of Measurement .....	39
13.	Data Reduction, Verification and Reporting .....	39
13.1.	Laboratory Worksheets – Raw Data Documentation.....	39
13.2.	Data Reduction and Review .....	39
13.3.	Report Format and Contents.....	40
13.4.	Records .....	41
13.4.1.	Standard Operating Procedures.....	42
13.4.2.	Equipment Maintenance Documentation.....	42
13.4.3.	Calibration Records and Traceability of Standards/Reagents .....	42
13.4.4.	Sample Management.....	43
13.4.5.	Original Data .....	43
13.4.6.	QC Data.....	43
13.4.7.	Correspondence .....	44
13.4.8.	Deviations .....	44
13.4.9.	Final Reports.....	44
13.4.10.	Administrative records.....	44

## Table of Contents-continued

13.5.	Document Control System.....	44
13.6.	Confidentiality .....	45
13.7.	Service to the Client .....	45
14.	Performance and System Audits and Frequency.....	45
14.1.	Internal Laboratory Audits .....	45
14.2.	Management Review .....	45
14.3.	Other Audits .....	46
15.	Facilities, Equipment and Reagents .....	46
15.1.	Facilities .....	46
15.2.	Equipment and Equipment Maintenance .....	47
15.3.	Reagents and Chemicals .....	49
15.4.	Analytical Standards and Reference Materials .....	49
15.5.	Computers and Electronic Data Related Requirements .....	50
16.	Specific Routine Procedures Used to Evaluate Data Quality .....	51
16.1.	Laboratory Control Samples.....	51
16.2.	Matrix Spikes/Matrix Spike Duplicates .....	51
16.3.	Surrogate Recoveries .....	51
16.4.	Method Blanks.....	51
17.	Non-conforming Work, Corrective Action and Preventive Action.....	52
17.1.	Control of Non-conforming Environmental Testing Work .....	52
17.2.	Corrective Action .....	52
17.3.	Preventive Action.....	53
18.	Subcontracting and Support Services and Supplies.....	54
18.1.	Subcontracted Laboratory Services .....	54
18.2.	Outside Support Services and Supplies.....	54
19.	References.....	54
	Appendices.....	56

**Note:** *This revision, named 18A has not been modified from Revision 18, except for the names of Technical directors and QA Manager.*

## **1 INTRODUCTION**

Weck Laboratories is an independent testing laboratory specializing in environmental analytical services. The company was founded in 1964 and it is organized as a California corporation.

The purpose of the Weck Laboratories Quality Assurance Program is to operate under standardized QA procedures, to provide guidance to all personnel and it is designed to continually monitor the reliability of test results, ensuring that they fall within acceptable limits, and provide guidelines for the implementation of corrective action when necessary.

This Quality Assurance Manual is a summary document that outlines the policies and operational procedures and the laboratory management system associated with work carried out at its permanent facility in the City of Industry, California, as well as at sites away from its permanent facilities, or in associated temporary or mobile facilities.

It is intended to ensure the high quality of analytical services that the Laboratory is committed to provide to its clients. This Manual contains references to other supporting documents also related to the Quality Assurance Program, such as SOPs, QC acceptance limits, MDL studies, Performance Evaluation Results and Policy documents.

The QA Manual and its supporting documents are reviewed annually to ensure that they reflect current laboratory practices and are in agreement with current regulations.

All policies and procedures have been structured in accordance with the NELAC standards and applicable requirements, regulations, guidance, and technical standards from the USEPA and State regulatory agencies. This manual has been prepared in accordance with the guidance documents listed in section 19.

If more stringent standards or requirements than the specified in this Manual are included in a mandated test method or by regulation, such requirements must be met. If it is not clear which requirements are more stringent, the standard from the method or regulation is to be followed.

This Quality Manual, SOPs and related documentation describe the quality system for Weck Laboratories, Inc.

### **1.1 Mission Statement**

Weck Laboratories provides qualitative and quantitative data for use in critical decisions relating to the protection of the public and the environment. The data used for such purposes must be scientifically valid, defensible and of known and documented quality. All environmental testing activities are carried out in such a way as to meet the requirements of the current NELAC Standard and to satisfy the needs of the client, the regulatory authorities or organizations providing recognition.

It is our goal to provide our clients with the best possible services, in terms of quality of laboratory work, honesty in our procedures and reporting, efficiency in our turnaround time and reasonable prices for our services and at the same time satisfy the needs of the regulatory authorities and organizations providing recognition.

Top management of the laboratory is totally committed to the attainment of the best possible quality of data and instructs and educates the staff on this company policy.

All the necessary resources and materials shall be provided to the personnel of the laboratory in order to meet and/or improve the quality requirements of NELAC and consequently of ISO 9001 and 9002, of the analytical methods performed at the lab and any special requirements from clients.

## **1.2 Services provided**

The services provided by this facility are the following:

- Organic chemical analyses
- Inorganic chemical analyses
- Trace metal analyses
- Microbiological analysis limited to total coliform, fecal coliform and standard plate count.
- Physical analyses
- Field services (sampling and simple field determinations)

The technical and service requirements for all requests to provide analyses are thoroughly evaluated before commitments are made to accept the work. This includes a review of facilities and instrumentation, staffing, and any special QC or reporting requirements to ensure that analyses can be performed within the expected schedule. All measurements are made using published reference methods or methods developed by Weck Laboratories. Competence with all methods is demonstrated according to the procedure described in Appendix 9 prior to use.

## **1.3 Proficiency Testing**

Weck Laboratories, Inc. analyzes Proficiency Testing samples at a frequency established by the current regulations, typically two times per year, from an approved PT provider that meets the requirements specified in chapter 2 of the current NELAC standard. The specific analytes and matrices analyzed are based on the current scope of the laboratory services and are documented in a laboratory SOP on PT samples analyses.

The goal for PT results is obtaining 100% of all analytes within acceptable limits. When there are results out of the acceptance range, corrective action is initiated to prevent the error from reoccurring. A report with the documentation of the corrective action is also filed.

## **1.4 Ethics policy**

Weck Laboratories, Inc. has developed a proactive program for prevention and detection of improper, unethical or illegal actions. A main component of this program is the periodic training and communications that the employees receive from management about the ethics policy and the utmost importance of an honest and ethical behavior in all activities performed at the laboratory.

Proper ethical conduct in the laboratory is strictly enforced. The Company's Code of Ethics (Appendix 2) is presented to current and prospective employees in both the QA manual and the Employee Handbook.

The Data Integrity Plan, which includes the description of the data integrity procedures, serves to combine the elements currently in place and document further procedures to ensure our compliance with requirements in the NELAC standard and from other regulatory agencies.

These procedures include the following elements:

- data Integrity training

- signed data integrity documentation for all laboratory employees
- in-depth, periodic monitoring of data integrity
- data integrity procedure documentation.

The data integrity procedures are signed and dated by senior management. These procedures and the associated implementation records are properly maintained and made available for assessor review. The data integrity procedures are annually reviewed and updated if necessary by management.

The Data Integrity Plan also provides a mechanism for confidential reporting of data integrity issues in the 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. In instances of ethical concern, the mechanism also includes a process whereby laboratory management is to be informed of the need for any further detailed investigation.

Each employee is required to understand and sign a Data Integrity Agreement, contained in the Data Integrity Plan document. The Laboratory Ethics seminar that is presented as a refresher to current employees on an annual basis and as part of the hiring process for new employees include elements describing examples of improper and illegal actions, how to identify appropriate and inappropriate laboratory and instrument manipulation practices, guidance for manual integration practices and consequences of unethical or improper behavior.

Punishment for improper, illegal or unethical activities range from suspension to termination, depending on the degree and nature of the unethical activity.

Employees are required and encouraged to bring up to management any improper activities they detect or are suspicious of. Any incident reported is immediately investigated by the management and the person or persons involved are subject to disciplinary actions.

The Management shall also monitor the program for detecting improper, unethical or illegal action by performing internal proficiency testing (single or double blind), reviewing of analytical data post-analysis, performing electronic data audits using special software as Mint Miner® and providing an open door policy for employees to report any suspicious activity without fears.

In order to assist the laboratory technical personnel in performing their duties without detrimental influences, it is the policy of the Company that the laboratory be impartial and that it and its personnel are free from any undue commercial, financial and other pressures which might influence or adversely affect their normal performance having an impact on the quality of the work they produce or their technical judgment. By this policy all laboratory personnel dedicated to technical activities should not be influenced by, or involved in any financial or commercial matter while performing laboratory work. If any employee feels that he or she might be under any kind of pressure as described above, the Laboratory Director must be notified immediately. Additionally, the Laboratory will not engage in any activities that may endanger the trust in its independence of judgment and integrity in relation to its environmental testing.

## **2 QUALITY POLICY**

### **2.1 QA objectives for measuring data**

The objective of the Quality Assurance Program is to monitor the reliability of the analytical data produced by the Laboratory and to implement effectively the quality control procedures and operations defined for each analysis. The purposes of this program are:

- Provide data that is scientifically valid, defensible, and of known and documented quality in accordance with standards developed by the National Environmental Laboratory Accreditation Conference (NELAC) and any applicable state or EPA regulations or requirements.
- Ensure that analytical results fall between acceptable control limits.
- Provide mechanisms for corrective action when necessary.
- Establish standardized practices to provide consistency in the generation of data.
- Define the quality of each analytical system in terms of accuracy, precision and sensitivity.
- Identify in the early stages possible problems that may affect data quality.

## **2.2 Resources**

The resources of Weck Laboratories are instrumental in implementing this policy. Highly trained personnel, including chemists and related scientists continue their education by attending seminars and technical meetings; instrumentation that is continuously upgraded to maintain the state-of-the-art in analytical instruments; and a facility currently consisting of 22,000 sq. ft. of laboratory area distributed in a manner that minimizes laboratory contamination.

## **3 DESCRIPTION OF THE QAP MANUAL**

### **3.1 Terminology**

°C	Degrees Celsius
AA	Atomic Absorption
ANSI/ASQC	American National Standards Institute/American Society for Quality Control
ASQC	American Society for Quality Control
ASTM	American Society for Testing and Materials
Audit	A documented investigative evaluation used to determine the degree of compliance with established procedures and guidelines, applied to specific analytical processes.
BFB	Bromofluorobenzene
BNA	Base, neutral and acid
BOD	Biochemical Oxygen Demand
BS	Blank Spike, equivalent to LFB and LCS
BTEX	Benzene, toluene, ethyl benzene and xylene
CA	Corrective Action, the measures taken to correct a situation that is out of the control limits set by QC procedures

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CAL	Calibration standard, a solution prepared from the dilution of stock standard solutions. The CAL solutions are used to calibrate the instrument response with respect to analyte concentration.
CARB	California Air Resources Board
CAS	Chemical Abstract Service
CATC	Cyanide amenable to chlorination
CCC	Calibration check compound
CCV	Continuing calibration verification
CFR	Code of Federal Regulations
CI	Chemical ionization
Cl <sub>2</sub>	Chlorine
CLP	Contract Laboratory Program
COC	Chain of Custody
COD	Chemical oxygen demand
CRDL	Contract Required Detection Limit
CV	Coefficient of variation
CVAA	Cold Vapor Atomic Absorption Spectroscopy
DBCP	1,2-dibromo-3-chloropropane
DBF	Dibenzofurans
D/DBP	Disinfectants and disinfection by-products
DFTPP	Decafluorotriphenylphosphine
Dissolved	The concentration of analyte in an aqueous sample that will pass through a 0.45 µm membrane filter assembly prior to sample acidification.
DLR	Detection Limit for Reporting purposes, established by the California Department of Health Services for potable water analysis.
DO	Dissolved oxygen
DOC	Demonstration of capability
DOC	Dissolved Organic Carbon
DOE	Department of Energy
DOT	Department of Transportation
DOD	Department of Defense
DQIs	Data Quality Indicators
DQOs	Data Quality Objectives
DRO	Diesel-range organics
ECD	Electron capture detector
EDB	1,2-dibromoethane
EDD	Electronic data deliverable
EI	Electron impact ionization
ELAP	Environmental Laboratory Accreditation Program. A program managed by the State of California, Department of Health Services for accreditation of environmental testing laboratories.
EPA	United States Environmental Protection Agency
FIA	Flow-injection analysis
FID	Flame-ionization detector
FPD	Flame photometric detector
GC/MS	Gas chromatography/mass spectrometry
GFAA	Graphite Furnace Atomic Absorption Spectroscopy
GPC	Gel-permeation chromatography
GRO	Gasoline-range organics

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HAA	Haloacetic acid
HAN	Haloacetonitrile
HDPE	High Density Polyethylene
HPLC	High Performance Liquid Chromatography
HRGC	High Resolution Gas Chromatography
HRMS	High Resolution Mass Spectrometry
IC	Ion Chromatography
IC/MS/MS	Ion Chromatography-Tandem Mass Spectrometry
ICAP	Inductively Coupled Argon Plasma Spectroscopy
ICP	Inductively Coupled Plasma
ICP-AES	Inductively Coupled Atomic Emission Spectroscopy
ICP-MS	Inductively coupled plasma-mass spectrometer
ICV	Initial calibration verification
ICS	Interference check sample
IDL	Instrument Detection Limit
IEC	interelement correction factor
IPC	Instrument Performance Check Solution - A solution of the method analyte, used to evaluate the performance of the instrument system with respect to a defined set of method criteria.
ISE	Ion-selective electrode
ISO/IEC	International Standards Organization/International Electrotechnical Commission
LCL	Lower Control Limit
LCS	Laboratory control sample, equivalent to LFB.
LC/MS/MS	Liquid Chromatography-Tandem Mass Spectrometry
LD1 and LD2	Laboratory Duplicates - Two aliquots of the same sample taken in the laboratory and analyzed separately with identical procedures. Analyses of LD1 and LD2 indicate precision associated with laboratory procedures, but not with sample collection, preservation, or storage procedures.
LDR	Linear Dynamic Range - The concentration range over which the instrument response to an analyte is linear.
LFB	Laboratory Fortified Blank - An aliquot of LRB to which known quantities of the method analytes are added in the laboratory. The LFB is analyzed exactly like a sample, and its purpose is to determine whether the methodology is in control and whether the laboratory is capable of making accurate and precise measurements.
LFM	Laboratory Fortified Sample Matrix (LFM) – Also known as Matrix Spike. An aliquot of an environmental sample to which a known quantity of the method analyte is added in the laboratory. The LFM is analyzed exactly like a sample, and its purpose is to determine whether the sample matrix contributes bias to the analytical results. The background concentration of the analyte in the sample matrix must be determined in a separate aliquot and the measured value in the LFM corrected for background concentration.
LIMS	Laboratory information management system
LLE	Liquid-liquid extraction
LOD	Limit of detection, equivalent to MDL
LOQ	Limit of quantitation, equivalent to RL, PQL and MRL
LRB	Laboratory Reagent Blank - An aliquot of reagent water or other blank matrices that are treated exactly as a sample including exposure to all glassware, equipment, solvents, reagents, and internal standards that are used with other

samples. The LRB is used to determine if the method analyte or other interferences are present in the laboratory environment, reagents, or apparatus.

LWL	Lower Warning Limit
MBAS	Methylene Blue Active Substance
MDL	Method Detection Limit - The minimum concentration of an analyte that can be identified, measured, and reported with 99% confidence that the analyte concentration is greater than zero.
MEK	Methyl ethyl ketone
MRL	Method Reporting Limit, equivalent to RL and PQL
MS	Matrix spike
MSA	Method of standard additions
MSD	Mass-selective detector
MSD	Matrix spike duplicate
MSDS	Material Safety Data Sheet
MS/MS	Multistage mass spectrometry
MTBE	Methyl-tertiary-butyl ether
NELAC	National Environmental Laboratory Accreditation Conference
NELAP	National Environmental Laboratory Accreditation Program
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute for Standards and Technology
NPD	Nitrogen-phosphorus detector
NPDES	National Pollutant Discharge Elimination System
OCP	Organochlorine pesticides
OSHA	Occupational Safety and Health Administration
PAH	Polynuclear Aromatic Hydrocarbons (or PNA)
PBMS	Performance Based Measurement System
PC	Personal computer
PCBs	Polychlorinated biphenyls
PCDD	Polychlorinated dibenzo-p-dioxins
PCDF	Polychlorinated dibenzofurans
PID	Photoionization detection
PQL	Practical Quantitation Limit
PT	Proficiency Testing
RF	Response Factor
QA	Quality Assurance
QAP	Quality Assurance Program
QAPP	Quality Assurance Program Plan
QAPjP	Quality Assurance Project Plan
QC	Quality Control
QCS	Quality Control Sample - A solution of the method analyte of known concentration, which is used to fortify an aliquot of LRB or sample matrix. The QCS is obtained from a source external to the laboratory and different from the source of the calibration standards. It is used to check either laboratory or instrument performance.
RL	Reporting limit
RPD	Relative percent difference
RSD	Relative standard deviation
RT	Retention time
SCAQMD	South Coast Air Quality Management District

SI	International System of Units
SIM	Selected-ion monitoring
SOC	Synthetic organic chemical
SOP	Standard Operating Procedure
SPCC	System Performance Check Compounds
SPE	Solid-phase extraction
SPME	Solid-phase microextraction
SRM	Standard Reference Material
SUR	Surrogate compound,
SVOA	Semivolatile organics analysis
TCD	Thermal conductivity detector
TCDD	Tetrachlorodibenzodioxin
TCDF	Tetrachlorodibenzofuran
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total dissolved solids
TEM	Transmission electron microscopy
TIC	Tentatively identified compounds
TKN	Total Kjeldahl Nitrogen
TOC	Total Organic Carbon
TOX	Total Organic Halides
TPH	Total petroleum hydrocarbon
TPH-D	Total petroleum hydrocarbons as diesel
TRPH	Total recoverable petroleum hydrocarbon
TSS	Total suspended solids
UCL	Upper Control Limit
UV	Ultraviolet
UV/VIS	Ultraviolet/visible-light
UWL	Upper Warning Limit
VOA	Volatile Organic Analyte
VOC	Volatile organic compound(s)
WET	Waste Extraction Test (California leaching test)
WET	Whole effluent toxicity
WP	Water Pollution Performance Evaluation Samples
WS	Water Supply Performance Evaluation Samples
ZHE	Zero-headspace extraction

Other terminology commonly used can be found in the glossary section of the NELAC standards.

### 3.2 Scope

The purpose of the Quality Assurance Program (QAP) described in this manual is to ensure the integrity of the data produced by the laboratory. The QAP encompasses all aspects of the analytical process. The management of Weck Laboratories, Inc. is committed to provide analytical and environmental services of the highest possible quality in order to satisfy the requirements of the regulatory agencies and to meet or exceed our clients' expectations.

This commitment is transmitted to all levels of our organization. Employees and associates are encouraged to constantly improve the quality of their work.

### **3.3 Fields of Testing**

The analytical activities that will be described in this manual are divided into the following main groups:

- Environmental testing involving analysis of drinking water, wastewater, soil and hazardous waste. The analysis of environmental samples follows primarily the methodology approved by the California Department of Health Services under the Environmental Laboratory Accreditation Program and other regulatory agencies.
- Industrial Hygiene analysis of metals and organics in air filters and sorbent tubes following primarily NIOSH published methods.
- Analysis of air samples follows the methodology of the California Air Resources Board, the SCAQMD and other agencies.

### **3.4 Management of the QAP Manual**

The Quality Assurance Program is constantly monitored, reviewed and evaluated. The Quality Assurance Officer is the primary person in charge of updating, revising and distributing this QAP Manual. The Laboratory Director and Technical Directors also have input in the upgrade of the Manual. The revision process takes place when needed if there is a change in some of the processes described, and it is also reviewed and re-approved yearly, if no changes are needed. After the revision is completed, the manual is approved for release by the QA Officer and by the Management. After it is submitted, some time is allowed for training of the personnel in the changes introduced if any. The Dates of submittal and the effective date are in the cover page of the document.

## **4 DESCRIPTION OF THE LABORATORY**

### **4.1 Identification**

Dr. Friedrich J. Weck founded Weck Laboratories, Inc. in 1964 as a consulting and contract laboratory dedicated to independent analytical testing and research activities. Over the years the Laboratory's primary activity shifted to environmental analytical chemistry.

The company is a California Corporation established in 1981. The address of the Laboratory facility is 14859 East Clark Avenue, City of Industry, California, 91745, located north of the 60 Freeway, Seventh Avenue exit.

### **4.2 Fields of Activity**

Weck Laboratories offers a full range of environmental testing, including drinking water, wastewater, groundwater, soil, hazardous waste, ambient air and industrial hygiene testing. The types of analyses performed include both organic & inorganic chemical, physical and bacteriological tests, distributed between two buildings located at the facility.

### **4.3 Organizational Structure**