

# JJ Calibrations, Inc.



Quality In Every Measurement

QM rev 25

Presidential Approval

A handwritten signature in dark ink, appearing to read 'John', written over a light gray background.

Date 4/30/19

Operational Approval

A handwritten signature in dark ink, appearing to read 'John', written over a light gray background.

Date 4/30/19

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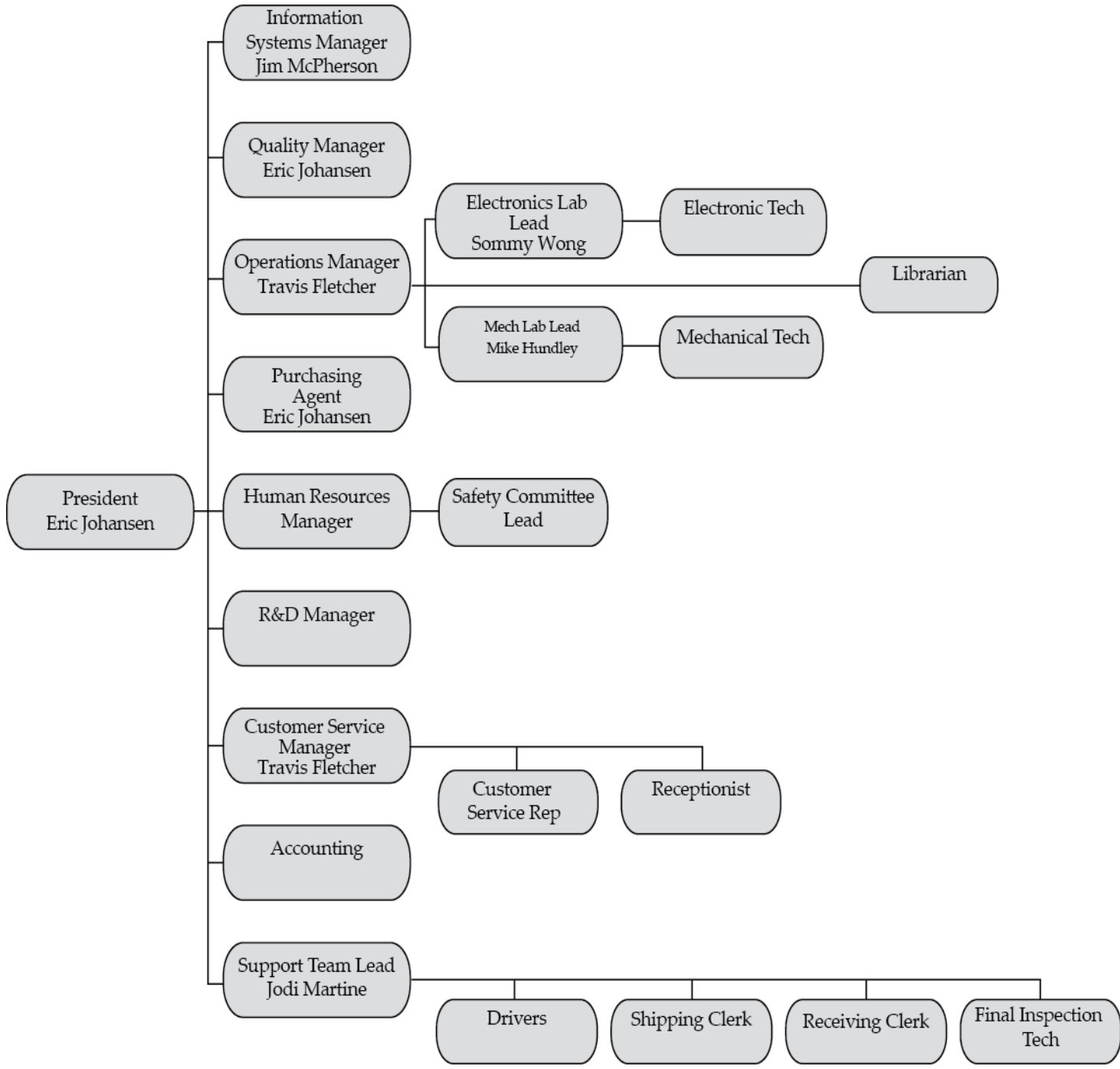
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## Revision Log

Rev #	Date	Description
1	Oct 1984	Original Document.
2	Aug 1986	Document Hillsboro Move. Complete Revision.
3	May 1988	Incorporate/Beaverton Move. Reformat to Word Perfect 4.0. Complete Revision.
3.1	Jul 1988	Correct Typos. Complete Revision.
4.0	Aug 1990	Include CAR, Improved Vendor List, Reformat to Word Perfect 5.0. Complete Revision.
4.1	Jan 1991	Corrected Typos. Complete Revision.
4.2	Nov 1992	Better Definitions on Conformance to MIL-STD. Complete Revision,.
5	Oct 1993	Rewrite for inclusion of ISO requirements. Complete Revision.
5.1	Mar 1994	CAR004. Include Customer Approval of calibration subcontractors Inadvertently left out Rev 4.2 to Rev 5. Affected pages 5 & 6.
6	Dec 1995	Reformat to allow easier cross-reference to ANSI/NCSL Z540-1-1994. Complete Revision.
7	Jan 1996	Make corrections found by accreditation audit.
8	Apr 1997	Correct references to updated SOPM. Reflect Company move.
9	Nov 1997	Include references to on-site calibrations.
10	Mar 2000	Re-format to Microsoft Word. Added corporate and quality values. Changed references to ISO/IEC Guide 25. Added section on Community Citizenship and Safety. Reformat to ISO17025.
11	Jan 2001	Made corrections found by accreditation assessment. Added section for On-Site calibrations.
12	Aug 2002	Modified Organizational Chart to reflect appropriate personnel and job description changes.
13	Oct 2002	Amended portions of document to correct deficiencies found during accreditation audit; defined intellectual property in 3.7, added 2.12 to Document References, added 5.12 to Technical Requirement.
14	Mar 2004	Minor changes, mistakes found in Quality Audit
15	Jan 2006	Wording changes found when compared to ISO 17025-2005.
16	Jan 2007	Correct problems found during A2LA audit and internal audit.
17	Jan 2008	Make changes called for by Horizon Auditor. Also incorporated findings from internal audits.
18	Jan 2009	Updated Document References. Updated formatting and look of Quality Manual.
19	June 2010	Updated Document References, format, Organizational Chart. Minor changes to Responsibilities & Authority in 3 headings.
20	Apr 2011	Updated Document References including some date errors.
21	Apr 2012	Updated Documents, small corrections.
22	Mar 2013	Spelling and incorrect titles fixed.
23	Sept 2014	Updated references and Tech responsibilities in Environment Conditions.
23	May 2015	No Changes found that needed updating
23	May 2016	No signification changes found
23	Mar 2017	Manual revision on hold in anticipation of ISO 17025 Revision
24	July 2018	Complete revision based on ISO 17025:2017
25	April 2019	Revised sections 4.1, 6.4.4, and 6.4.7 for better clarity on requirements. Reworded beginning of sections 6.4.3, 6.6.2, 7.1.1, 7.4.1, 7.7.1, and 7.10.1 to better define subsequent procedural steps.

# Organization Chart



## 1 Introduction

JJ Calibrations, Inc., “JJ”, is an Oregon corporation engaged in the repair, calibration and maintenance of electronic and physical measurement equipment. JJ’s goal is to be the best at making measurements we can be.

Our mission is to help our clients make critical business decisions based on the accurate calibration of their precision measurement tools. We define quality as caring enough that our actions consistently give results that meet or exceed our clients’ needs, requirements and expectations.

We are committed to integrity and fairness in all our relationships. We will try our best to always do what we say.

We will always try to do everything reasonably possible to meet the wants, needs and expectations of our client, both internal and external.

We will always strive to provide the highest accuracy calibration and quality repair at an affordable price.

We treat our employees with respect and dignity. We empower all our employees to be responsible for their own actions and achievement of Company business and quality goals through the execution of their job.

### JJ Quality Values

We take ownership of our actions

Accuracy in calibration and daily work

Ability to adapt to client needs

Commitment to the Company and its clients

Always being there for each other and our clients

High standard in work ethic and job performance

Showing Integrity in doing what we say

All Employees doing their role yet supporting one another when needed

This Quality Manual is provided to give our clients confidence by adequate demonstration of the Company’s capabilities in servicing our clients’ measuring equipment (ME). This is the primary quality document for JJ. All procedures and other documents executed in implementation thereof shall be in addition to and not weaken or detract from its essence or intent. This manual will be readily available to all employees to aid in the performance of their job.

## 2 Scope and Document references

This document specifies a quality system to demonstrate our capability to deliver calibration and repair services, based primarily on ISO/IEC 17025: 2017. It also conforms to the requirements of ISO 9001: 2015, ANSI/NCSL Z540-1: 1994, ISO 10012-1: 2003, and Mil-Std-45662A (obsolete). In addition, it uses many terms from ISO 9000: 2015. 1.3 This document is primarily aimed at achieving customer satisfaction by providing customer oriented solutions at all stages of our operations by adherence to our corporate policies and procedures.

Document requiring periodic changes to reflect new technology, changing client expectations and improvements to the quality system. For documents referenced in this manual the most recent edition applies.

ANSI/NCSL Z540-1: General requirements for calibration laboratories and measuring and test equipment, hereinafter referred to as ANSI Z540-1. (DCN 10039)

JCGM 200: 2012 (VIM) International Vocabulary of Basic and General Terms in Metrology. (DCN 10089)

NCSL GLOSSARY: NCSL Glossary of Metrology Related Terms. (DCN 10044)

A2LA: R101 General Requirements for Accreditation of ISO/IEC Laboratories. (DCN 10036)

A2LA: P102 Policy on Measurement Traceability. (DCN 10058)

A2LA: R103 General Requirements: Proficiency Testing Requirements for Accredited Testing and Calibration Laboratories. (DCN 10059)

A2LA: R104 General Requirements for the Accreditation of Site Testing and Site Calibration Laboratories. (DCN 10033)

A2LA: P101 A2LA Advertising Policy. (DCN 10060)

A2LA: R205 Specific Requirements for Calibration Program Requirements (DCN 10061)

A2LA: P104 Policy for Claims of Measurement Uncertainties for Onsite Calibration on Scopes of Accreditation (DCN 10022)

A2LA: R103A Annex: Proficiency Testing for ISO/IEC 17025 Laboratories (DCN 10059)

A2LA: R218 Applications for Calibration Scopes of Accreditation. (DCN 10065)

EA-4/02 Expression of the Uncertainty of Measurement in Calibration (DCN 10025)

NIST 1994: Tech Note 1297: Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results (DCN 10024)

P14 ILAC Policy for Uncertainty in Calibration

### 3 Terms, Definitions, and Documents

For the purposes of this manual the definitions given in the VIM: 2008 are the primary source. The following definitions also apply.

**Audit:** A systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled. (ISO 9000: 2015)

**Calibration:** Set of operations which establish, under specified conditions, the relationship between values of quantities indicated by a measuring instrument or measuring system, or values represented by a material measure or reference material, and the corresponding values realized by standards. (VIM)

The result of a calibration permits either the assignment of values of measurand to the indications or the determination of corrections with respect to indication. (VIM:)

A calibration may also determine other metrological properties such as the effect of influence quantities. (VIM)

The result of a calibration may be recorded in a document, sometimes called a calibration certificate or a calibration report. (VIM)

**Calibration certificate or report:** Document which presents calibration results and other information relevant to a calibration. (ANSI/NCSL Z540-1: 1994, NCSL GLOSSARY: 1999)

Calibration method: Defined technical procedure for performing a calibration or verification. (ANSI/NCSL Z540, NCSL GLOSSARY)

**Certified reference material (CRM):** Reference material, accompanied by a certificate, one or more of whose property values are certified by a procedure which establishes traceability to an accurate realization of the unit in which the property values are expressed, and for which each certified value is accompanied by an uncertainty at a stated level of confidence. (VIM: 2008)

**Contract:** Agreed requirements between a supplier organization or customer organization transmitted by any means.

Intellectual Property: A generic expression referring to PATENTS, TRADEMARKS, COPYRIGHTS, TRADE SECRETS, trade dress, and any other tangible personal property that is created through the intellectual efforts of its creator or creators.

**Impartiality:** Presence of objectivity. Conflict of interest do not exist, or are resolved so as not to adversely influence subsequent activities of the laboratory.

**Interlaboratory comparisons:** Organization, performance and evaluation of calibrations on the same or similar items by two or more laboratories in accordance with predetermined conditions. (ANSI/NCSL Z540-1, NCSL GLOSSARY)

**International (measurement) standard:** Standard recognized by an international agreement to serve internationally as the basis for assigning values to other standards of the quantity concerned. (VIM)

**Influence quantity:** Quantity that is not the measurand that affects the result of the measurement. (VIM). Examples: ambient temperature; frequency of an alternating measured voltage.

**Laboratory/calibration laboratory:** Body that calibrates or performs calibrations and verifications. (ANSI/NCSL Z540-1, NCSL GLOSSARY)

Permanent: Laboratory erected on a fixed location for a period expected to be greater than three years.

Mobile: Fully equipped, self-contained, transportable testing or calibration laboratory capable of performing tests or calibrations under controlled environmental conditions.

Site (referred to as On-Site herein): Calibration performed by staff of a laboratory or organization outside of the premises or grounds on which the permanent laboratory or the organization's permanent base or headquarters is located. Site calibrations are normally performed under two categories:

Site calibrations performed by staff sent out on-site by an accredited, permanent laboratory.

Site calibrations performed on-site by organizations that do not have a permanent laboratory.

**Limits of permissible error (of a measuring instrument):** The extreme values of an error permitted by specifications, regulations, etc., for a given measuring instrument. (VIM) This term is frequently referred to as "tolerance" in the United States.

**Measurand:** A particular quantity subject to measurement. (VIM: 2008) As appropriate, this may be the "measured quantity" or the "quantity to be measured." (ANSI/NCSL Z540-1: 1994, NCSL GLOSSARY: 1999)

**Measurement:** The set of operations having the object of determining the value of a measurand. (ANSI/ NCSL Z540-1, NCSL GLOSSARY); Set of operations having the object of determining a value of a quantity. (VIM)

**Measurement assurance:** Measurement assurance is a technique that may include, but is not limited to:

Use of good experimental design principles so the entire measurement process, its components, and relevant influence factors can be well characterized, monitored and controlled.

Complete experimental characterization of the measurement process uncertainty including statistical variations, contributions from all known or suspected influence factors, imported uncertainties, and the propagation of uncertainties throughout the measurement process.

Continuously monitoring the performance and state of statistical control of the measurement process with proven statistical process control techniques including the measurement of well characterized check standards along with the normal workload and the use of appropriate control charts.

**Measurement standard (etalon):** Material measure, measuring instrument, reference material or measuring system intended to define, realize, conserve or reproduce a unit of one or more values of a quantity to serve as a reference. (VIM)

**Measuring Equipment (ME):** Measuring instrument, software, measurement standard, reference material or auxiliary apparatus or combination thereof necessary to realize a measurement process. (ISO 9000)

**Measuring instrument:** A device intended to be used to make measurements, alone or in conjunction with supplementary device(s). (VIM)

**Mutual consent standard:** An artifact or process that is used as a de facto standard by mutual consent of the supplier and customer when no recognized U.S. national standard is available. (ANSI/NCSL Z540-1, NCSL GLOSSARY)

**National (measurement) standard:** Standard recognized by a national decision to serve, in a country, as the basis for assigning the value to other standards of the quantity concerned. (VIM)

**Organization:** Group of people and facilities with an arrangement of responsibilities, authorities and relationships. (ISO 9000)

**Process:** Set of interrelated or interacting activities which transforms inputs into outputs (ISO 9000)

**Product:** Result of a process. (ISO 9000: 2000)

**Proficiency testing:** Determination of the laboratory calibration performance by interlaboratory comparisons or other means. (ANSI/NCSL Z540-1)

**Quality:** Degree to which a set of inherent characteristics fulfills requirements. (ISO 9000)

**Quality manual:**

A document stating the quality policy, quality system and quality practices of an organization. NOTE: The quality manual may call up other documentation relating to the laboratory's quality arrangements. (ANSI/NCSL Z540-1)

Document specifying the quality management system of an organization. (ISO 9000)

**Quality management system:**

The organizational structure, responsibilities, procedures, processes and resources for implementing quality management. (ANSI/NCSL Z540-1, NSCL GLOSSARY)

Management system to direct and control an organization with regard to quality. (ISO 9000)

**Quality system review:** A formal evaluation by management of the status and adequacy of the quality system in relation to quality policy and new objectives resulting from changing circumstances. (ANSI/NCSL Z540-1)

**Reference material:** Material or substance one or more of whose property values are sufficiently homogeneous and well established to be used for the calibration of an apparatus, the assessment of a measurement method, or for assigning values to materials. (VIM)

**Reference standard:** Standard, generally having the highest metrological quality available at a given location or in a given organization, from which measurements made there are derived. (VIM: 2008, NCSL GLOSSARY)

**Requirement:**

A translation of the needs into a set of individual quantified or descriptive specifications for the characteristics of an entity in order to enable its realization and examination. (ANSI/NCSL Z540-1)

Need or expectation that is stated, generally implied or obligatory. (ISO 9000)

**Review:** Activity undertaken to determine the suitability, adequacy and effectiveness of the subject matter to achieve established objectives. (ISO 9000)

**Site:** Location where site calibration takes place

**Tender:** Offer made by an organization in response to an invitation to satisfy a contract award and/or to provide product.

**Traceability:** Property of a result of a measurement or the value of a standard whereby it can be related to stated references, usually national or international standards, through an unbroken chain of comparisons all having stated uncertainties. (VIM:)

**Uncertainty of measurement:** Parameter, associated with the result of a measurement that characterizes the dispersion of the values that could reasonably be attributed to the measurand. (VIM, ANSI/NCSL Z540-1, NCSL GLOSSARY)

**Validation:** Confirmation, through the provision of objective evidence, that the requirements for a specific intended use or application have been fulfilled. (ISO 9000)

**Verification:** Evidence by calibration that specified requirements have been met. NOTE: The term "verification", as defined in this manual is frequently referred to as "calibration" in the United States. (ANSI/NCSL Z540-1, NCSL GLOSSARY)

In connection with the management of measuring equipment, verification provides a means for checking that the deviations between values indicated by a measuring instrument and corresponding known values are consistently smaller than the limits of permissible error defined in a

standard, regulation or specification peculiar to the management of the measuring equipment.

The result of verification leads to a decision either to restore to service, to perform adjustments, to repair, to downgrade, or to declare obsolete.

In all cases documentation of the verification performed is kept in the measuring instrument's individual record.

Confirmation, through the provision of objective evidence that specified requirements have been fulfilled. (ISO 9000)

### 3.1 Understanding internal documents

**Control Document (CD):** Hard copy receipt that lists all equipment picked up or delivered to the Company by or for a client. It indicates whether accessories were included and that we have temporary possession of ME. The white original is given to the client. The yellow copy is retained by the Company and used to receive the items and generate the **Work Order**.

**Work Order:** The main system control document used in the process of routing and controlling work and retaining work information. The Work Order is created in two sections that are explained below. The technician is responsible for ensuring the accuracy of the Make, Model, and S/N entries. Technicians must review every service code on the Work Order prior to commencing work to ensure they perform all of the services requested by the client. Additional client information is listed in the event the technician or Operations Manager needs to contact the client.

Top Portion: Includes Customer information. This portion is returned to the customer with the ME.

Name and address of company sending item in for service.

Job number assigned to this job becomes Calibration Certificate number.

Date item received from client.

Accessories (marked if included): In addition to noting them in the computer all accessories will be attached to unit if at all possible.

Probes: Leads, Probes, or other extensions.

Cover: A partial enclosure made for the unit.

Cord: Power Cord.

Case: A complete enclosure made for the unit.

Pouch: An attached bag or case that holds accessories.

Manual: Service Manual or Operating Manual.

Description of the Instrument:

Make: Manufacturer of item.

Model: Manufacturer's model number of item.

Serial Number. (S/N) Unique alphanumeric identifier for item, preferably assigned by the manufacturer.

Prop: Abbreviation for Property Number. Client defined identification number for item.

Brief description of item.

Dept: Client defined department for tracking purposes.

PO#: Purchase order number for work authorized.

Ship Via: What method to get the unit back to the customer

Insure for: If customer has requested shipping insurance the value is listed here.

Rcvd Via: How the unit got from the customer to us.

Rcvd By: The person at the company who logged it into the system.

Bottom portion: Includes secondary section for Job Number, Make, Model, Serial, Prop, and Desc. Additionally it includes:

Rush: Marked if the customer has requested rush services and has agreed to pay for them.

Warranty: Marked if the customer is returning the unit with a complaint.

Repair: UUT may require repair, may be inoperable or the client has notified us they think something is wrong with the equipment.

OnSite: Marked if the work is to be done at the Customer's location.

Need by Date: Requested return date

Tolerance: The tolerance for the tool, or manufacturers specs if multiple tolerances.

Reported Instrument Problem: What the customer has told us about the instrument.

Customer Notes to Technician: Notes from the customer file in the database that apply to every item serviced for that customer.

Reported instrument problems/instructions: Specific problems/instructions as per the customer.

Cal Interval: The time between calibrations the customer has selected.

Suggested Standards: Standards that have been used to calibrate that make/model before.

Received Conditions - Received Tolerance: What the technician observed as he or she began taking measurements.

In Tolerance: Measurements were within the expected range.

Out of Tolerance: Measurements were outside the expected range. Technician is to note direction and amplitude of out of tolerance condition for level 1 calibrations.

Functional: Unit seems to be working correctly; no measurements are available for this type of unit.

Limited: Unit has previously had a problem that does not interfere with using other aspects of the unit.

Other: Technician must specify situation.

Damaged: Unit is damaged, no data can be taken.

Malfunction: Unit is working incorrectly.

Non-Functional: Unit is not working at all.



Returned Conditions: This is how the technician has left the instrument after calibration.

In Tolerance: Measurements were within the expected range.

Out of Tolerance: Measurements were outside the expected range. Technician is to direction and amplitude of out of tolerance condition.

Functional: Unit seems to be working correctly; no measurements are available for this type of unit.

Limited: Unit has a problem that does not interfere with using other aspects of unit. The specifics about the limitation are to be listed, and noted on the sticker.

Other: Technician must specify situation.

Damaged: Unit is damaged, no data can be taken. It has been determined to be not repairable, or the customer has requested no repairs be attempted.

Malfunction: Unit is working incorrectly. It has been determined to be not repairable, or the customer has requested no repairs be attempted.

Non-Functional: Unit is not working at all. All attempts at troubleshooting have failed.

Action Taken: What was done to the unit.

Calibrated: Measurements from this unit was compared to our standard, data may or may not have been taken at the time.

Adjusted: Measurements were adjusted to measure more accurately.

Charted: Measurements were recorded in a chart format.

Op Checked: Item has been tested for functionality.

Repaired: Unit has been repaired. A description of the repair will be listed.

Repaired/Adjusted: Unit has been repaired, adjusted, or both. Details will be listed.

Return As Is (RAI): No changes have been made to the unit.

Calibrated w/Parts: Parts have been replaced that do not affect the calibration.

Corresponding Information:

Cal Date: Date the calibration occurred.

Temp °C: Temperature at the time of calibration, recorded in centigrade.

%RH: Relative Humidity at the time of calibration.

Tech#: Employee number of the technician who performed the calibration.

Standards Used: Standard numbers of the company equipment used to perform the calibration.

Comments: Any information the technician needs the customer to know about the equipment. Includes notes on all out of tolerance conditions, adjustments, parts used, and repairs.

**Certificate of Calibration (CofC):** The main certification and hard copy of the work performed, data collected and traceability control document. It is generated from the work order number after final inspection. It is digitally signed after final inspection.

## 4 General Requirements

### 4.1 Impartiality

Laboratory Activities shall be undertaken with concern to impartially and structured and managed to safeguard impartiality.

**4.1.2** Laboratory Management shall be committed to impartiality. The Quality Manager is to ensure that the management system related to quality is implemented and followed always. The Management Team is to ensure that all personnel are free from any undue internal and external pressures and influences that may adversely affect the quality of the calibrations. All employees are to avoid involvement in any activities that would diminish confidence in the competence, impartiality, judgment, or operational integrity of themselves or JJ. Reasonable production discussions are acceptable as long as the quality of work is first.

The following are not acceptable under any circumstances:

Harassment or Intimidation of any employee for any reason;

Offering financial remuneration on a piece basis or individual calibration;

Performing work on equipment that is provided to JJ Calibrations for service for a competitor for personal gain of one employee or group of employees rather than JJ Calibrations as a business.

**4.1.3** The laboratory shall be responsible for the impartiality of its laboratory activities and shall not allow commercial, financial or other pressures to compromise impartiality.

Company personnel are restricted from accepting any gift or gratuity beyond an occasional, reasonably priced meal during business, accepted only to facilitate business discussions. This meal should never rise to a price that may put the employee in a debt of gratitude to the client.

Token gifts valued at less than \$25.00 e.g.; a coffee mug or hat bearing the logo and/or name of the giver's business or product.

While we do not practice direct sales, we will act as our customer's agent in procuring an item, but will never stock an item as a replacement for a non-repairable item. We do not want our staff to be tempted to declare something as non-repairable strictly to facilitate a sale of replacement equipment and / or to increase profits based off of sales of replacement equipment rather than performing cost effective repairs.

**4.1.4** The laboratory shall identify risks to its impartiality on an on-going basis. This shall include those risks that arise from its activities, or from its relationships, or from relationships of its personnel.

Identified Risk:

Calibration services;

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Key calibration technicians – JJ goal is cross training most technicians so that no one parameters has only one technician that can perform the calibration.

Key calibration vendor services

Key calibration standards

Interlab Relations;

Interactions between labs will be performed in such a way that impartiality is not questioned.

When another lab has JJ calibrate their ME, it will be processed and calibrated to the same rules, procedure, calibration, and quality as all of the rest of JJ customers.

Vendors that JJ sends ME for calibrations they will not make undue requests for favor, whether it is customer or JJ ME.

Working with other labs, such as PT interlabs or Round Robins, will be done in such a way that does not question impartiality.

Internal Relationships;

However, such relationships do not necessarily present a laboratory with a risk to impartiality.

Complaints about a fellow worker should be taken to that person's supervisor. If the situation is not handled satisfactorily take it to that supervisor's direct supervisor or take it directly to the President.

**4.1.5** If a risk to impartiality is identified, the laboratory shall be able to demonstrate how it eliminates or minimizes such risk. When a risk has been identified, this will be added to the management review. All efforts to eliminate and prevent future will be communicated and addressed by the management team.

## 4.2 Confidentiality

JJ shall be responsible, through legally enforceable commitments, for the management of all information obtained or created during the performance of laboratory activities. The laboratory shall inform the customer in advance, of the information it intends to place in the public domain. Except for information that the customer makes publicly available, or when agreed between the laboratory and the customer (e.g. for the purpose of responding to complaints), all other information is considered proprietary information and shall be regarded as confidential.

Great care shall be taken to protect the confidentiality of our clients.

No information about one client shall be shared with another client without expressed written authorization specific in the scope of what information is to be shared to whom, how, and when.

If reports are to be used as samples, care shall be taken to eliminate all reference to the client and specific information related to the client. Whenever possible use JJ as the example client.

Under no circumstances are records of one client to be shared with another client without prior approval from the client whose data will be shared.

Ensure that emailed information is being sent to the right person

On-site Requirements: All on-site operations are subject to the same requirements as those of the permanent laboratory.

Once on-site operations are complete all data shall be secured and held confidential prior to completion and formal submission to the client. Company data shall not be stored, permanently or temporarily, at any of its clients' locations

**4.2.2** When JJ is required by law or authorized by contractual arrangements to release confidential information, the customer or individual concerned shall, unless prohibited by law, be notified of the information provided.

**4.2.3** Information about the customer obtained from sources other than the customer (e.g. complainant, regulators) shall be confidential between the customer and the laboratory. The provider (source) of this information shall be confidential to the laboratory and shall not be shared with the customer, unless agreed by the source.

**4.2.4** Personnel, including any committee members, contractors, personnel of external bodies, or individuals acting on the laboratory's behalf, shall keep confidential all information obtained or created during the performance of laboratory activities, except as required by law.

## 5 Structural Requirements

**5.1** JJ Shall operate in a legally responsible manner for all of its activities. JJ is a corporation that is incorporated under the laws of the State of Oregon. It is the responsibility of each member of JJ to act in a legal and ethical manner at all times.

**5.2** JJ's President, Quality Manager (QM), and Operations Manager(OM) have the overall responsibility for the laboratory. Each laboratory has a lead, who has responsibility of those labs.

The QM is to ensure that the management system related to quality is implemented and followed always.

The Management Team to ensure that all personnel are free from any undue internal and external pressures and influences that may adversely affect the quality of the calibrations.

All employees are to avoid involvement in any activities that would diminish confidence in the competence, impartiality, judgment, or

operational integrity of themselves or the Company.

The Operations Manager to ensure adequate supervision of calibration staff, including trainees, by persons familiar with methods and procedures, the purpose of each calibration and with the assessment of the calibration results.

Key personnel are to have deputies for their duties, and to see that those deputies are capable of carrying out those duties.

Each Manager ensures that all personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the objectives of the management system.

**5.3** JJ Shall define and documents the range of laboratory activities for which it conforms with 17025.

The capabilities of the lab are notated, but not limited to, in the scope of calibration. This is assessed and validated by A2LA

Calibrations performed by JJ that are not listed on the scope of accreditation must still conform and meet the guidelines put forth in 17025.

Calibration performed on the behalf of JJ shall be indicated on the certificate, and certificates will show that these were not performed under our scope.

**5.4** All Activities performed by JJ, including customer service, calibration, and consulting, shall be carried out as to meet the requirements of ISO 17025:2017, customer requirements, regulatory authorities, and recognizing organizations. This is applicable to all work performed at JJ's location and sites away from its location, including customers facilities.

It is the responsibility of every technician and support personnel to carry out their work in a way that meets the requirements of ISO: 17025:2017 and the customer's requirements

**5.5** JJ Shall have documentation for the structure of its organization and management, as well documentation of the responsibilities, authority and interrelationships of all personnel who manage, perform or verify work affecting the results of laboratory activities. See a) Organizational Chart, and b) Job Description Manual, and c) Docstore.

Management shall provide evidence of commitment to the development and implementation of the management system and to continually improving its effectiveness.

Customer Complaints will be researched and resolved by the Quality Manager.

If it is determined to be needed, set up CARs (Corrective Action Requests) with realistic time frames for all systemic problems.

Document need for re-evaluation on next regularly scheduled audit for CAR items.

The quality documentation shall be available for use by all laboratory personnel. This manual has been prepared to explain our commitment to good professional practices and quality of calibration services and shall be kept up to date.

**5.6** The QM is responsible for the implementation of maintenance and improvement of the management system. This includes identification of deviations from the managements system and reporting to management team on the performance of the management system and any needed improvement.

The OM is responsible for deviations from the management system in regard to technical operations to the management system or from the procedures for performing laboratory activities. OM is also responsible for ensuring the effectiveness of laboratory activities.

Top management shall ensure that the integrity of the management system is maintained when changes to the management system are planned and implemented.

All employees are responsible for initiation of action to prevent or minimize deviations, whether by their actions and then reporting to the QM, or by informing the QM/OM of the deviation so that it may be resolved.

Identified deviations from management system or from procedures shall be reviewed to determine level of action needed. If it is determined to be needed, set up CARs (Corrective Action Requests) with realistic time frames for all systemic problems.

**5.7** JJ management team shall review the effectiveness of the management system and meeting all requirements from customers, ISO 17025, and outside organizations. This shall be done with review of internal reports and internal during management meetings. The management team will determine what changes may need to be implemented to the management system at this time, and review its changes both while it occurs and during the next meeting. Management is to ensure that all personnel are aware of the relevance and importance of their activities and how they contribute to the achievement of the objectives of the management system.

## 6 Resource Requirements

**6.1** JJ shall have the necessary personnel, facilities, equipment, systems, and support services needed to perform its laboratory activities.

### 6.2 Personnel

**6.2.1** All personnel shall be competent with and work in accordance with the management system. Everyone shall avoid involvement in any activities that would diminish confidence in the competence, impartiality, judgment, or operational integrity of themselves or JJ.

JJ shall make every effort to use only permanent employees. In the event that contracted key or technical support people are used, JJ shall ensure they are supervised and competent, and that they work in accordance with the Company quality system.

**6.2.2** This shall be documented in the training files for all employees. These records shall include the competency for all laboratory activities, such as; education, qualification, training, technical knowledge, skills, experience, and validation.

Records are maintained in the computer on all personnel to provide a history of training, experience, and performance on the job.

**6.2.3** The training records and personnel records shall indicate the activities and competency of such of each employee. Competency shall be reviewed and approved by the appropriate level in the management system.

OTJ training will be by competent technician for each parameter of calibration. Trainee shall first review procedure(s) for the parameter. Trainee shall watch the trainer perform the calibration on at least 3 different ME. Trainee then shall perform the calibration at least 3 times in front of trainer. If calibration is performed correctly, the calibration parameter will be added to their record, dated and initialed by trainer/lab lead. Technicians with training from another source will have their competency verified in a similar manner.

**6.2.4** Job description, including duties, responsibilities, and authorities shall be defined. It is the responsibility of the Management team to ensure that job descriptions are kept up to date. These can be found within Job Description Manual.

**6.2.5** Job Description Manual shall indicate personnel responsible for; determining the competency, selection/training/supervision/authorization of personnel, and monitoring competency.

JJ shall have records of personnel who, according to their training and competency, are authorized to perform tasks:

Determining the competence requirements;

Selection of personnel;

Training of personnel;

Supervision of personnel;

Authorization of Personnel;

Monitoring competency of personnel.

**6.2.6** Authorization of personnel shall be indicated in Job Description Manual. Specific job positions shall have indicated in the manual their specific authorizations. These include; the development, modification, verification and validation of methods and procedures; analysis of results; and review and authorization of results.

### 6.3 Facilities and Environmental conditions

**6.3.1** It is the policy of the Company to provide laboratory accommodation and environmental conditions to facilitate correct calibration performance. These shall insure that outside conditions are eliminated that could adversely affect the validity of results.

**6.3.2** Temperature and Humidity maintained in each lab as follows:

Electrical Lab  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ;

Electronic Standards Lab  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ;

Temperature / Humidity Lab  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$  (Environmental chambers used to calibrate devices have their own internal temperature/humidity);

Mechanical/Hand Tool lab  $20^{\circ}\text{C} \pm 2^{\circ}\text{C}$ ;

Dimensional/Gage Block  $20^{\circ}\text{C} \pm 1^{\circ}\text{C}$ ;

Pressure/Force lab  $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ ;

Humidity Is Monitored: Steps will be taken to change the humidity when the Operations Manager feels it is a threat to the calibrations or equipment: Electronic Labs  $> 30\%$ ; Dimensional Labs  $< 60\%$ .

**6.3.3** Monitoring and recording devices are located in each lab. Records are digitally stored.

**6.3.4** General access to areas affecting the quality of calibration activities is limited to calibration personnel only. Access by any other employee shall be limited to: business basis or; when accessing a restroom. The air in the labs are filtered and circulated. Separation between incompatible calibration and laboratory activities is maintained by usage of specific lab areas.

**6.3.5** When calibration occurs at a customers' facility (Onsite) technicians are issued a Temp/Humidity meter to monitor conditions. Environmental conditions shall be recorded at time of calibration of customers UUT.

Where the environment may affect the instrumentation, the calibration standard, the UUT, or the required accuracy or precision of measurement, the data shall be qualified on the calibration results.

Where calibrations are undertaken in a hostile or unstable environment or in an environment that may affect the calibration results, the results of the calibration shall be documented in order to determine the effect of the environment on the performance of the calibration.

### 6.4 Equipment

**6.4.1** JJ shall ensure the laboratory has available all items of equipment, including reference materials, required for the correct performance of calibrations and laboratory activities, and for achieving the accuracy required. JJ shall ensure that the database and all its resources are available to each technician to facilitate the calibrations necessary. JJ shall monitor the standards needed for calibrations performed in the labs and at customers facility.

**6.4.2** JJ policy is to use only standards under its permanent control. In the rare event that a customers'/outside facilities equipment is needed to provide calibration, the unit will be calibrated before use.

**6.4.3** JJ Standards shall be handled, transported, stored and used and maintained the following manner:

When not in use standards are to be stored in a safe and contamination free manner. Many have their own designated storage shelves or cases. Carts are available for transport and usage of standards, both for in lab and onsite calibrations.

Routine Maintenance will be performed at the time of calibration and noted on the calibration certificate.

Working standards are checked visually and for correct operation each time they are used. A calibration check is made if there is any question regarding the accuracy and/or performance of a standard.

Standards are to be stored in a manner to prevent contamination and deterioration. The use of shelves, cases, and covers shall be used as necessary.

**6.4.4** JJ Standards shall be calibrated per OEM specs, and its interval logged in the database. Calibration status shall be indicated in the database and notated on the attached calibration sticker. Any notated limitation shall be indicated on the unit and in the database. Any limitations placed on JJ equipment shall be considered when selecting the equipment for use.

When equipment goes outside the direct control of the Company for any time that item of equipment will be verified before it is returned to service. For items sent out for calibration this verification will be for operational functioning.

**6.4.5** Standards used for calibration shall be of appropriate and adequate capability as to achieve the necessary measurement accuracy and/or measurement uncertainty as to provide valid results or to meet customers' needs/requirements.

**6.4.6** All standards used for calibration of JJ or customer ME shall be calibrated before use. Any other JJ ME that is not for the direct measurement/calibration of ME shall be marked as "Reference Only".

**6.4.7** JJ shall establish a calibration program, which shall be reviewed and adjusted as necessary in order to maintain confidence in the status of calibration.

Standards are reviewed for previous use in calibration. If the standard has been found to have not been used for calibration of ME in two or more years, or an extended period of time as directed by Management, the unit may be retired until it is needed again. Standard shall be calibrated again before activation and used for calibration of ME.

Calibration intervals for JJ standards shall be initially set using OEM recommendations for electronic ME, and 12-month cycle for physical/dimensional. Calibration intervals may be lengthened or shortened to ensure continued uncertainty based a) Performance Analysis b) Guardbanding c) Uncertainty Analysis. on preceding calibration results, as follows:

Lengthening Calibration Intervals: The calibration interval for a ME may be lengthened to the desired interval when one of the above methods is utilized and has proven that it is feasible to lengthen it.

Shortening Calibration Intervals: Calibration intervals shall be shortened to the desired interval when an instrument is found to be Out-Of-Tolerance (OOT) upon calibration. If one range, one value, or one function of an ME is found to be outside its tolerance limits by any amount whatsoever, the instrument shall be considered OOT. Management may shorten the calibration interval of any ME that is found to have significant defects or to be malfunctioning OOT.

Note: An instrument that fails and is returned for repair or is dropped or damaged during its certification period shall NOT be considered OOT.

**6.4.8** The Calibration Certificate number, Serial number, Property number, and calibration date/due date shall be recorded on the calibration sticker, and placed in a fashion that is clearly displayed. These are also recorded in the database and calibration certificate.

**6.4.9** All JJ ME that is suspect for any reason (damage, questionable operation, out of calibration, broken seal, etc.) shall be removed from service, and a verification/calibration will be performed. A Work Order may be initiated to cover the trouble-shooting and adjustment or repair necessary to correct the problem. JJ will examine the effect of the defect or departure from specified limits on previous tests and/or calibrations performed and will, in the event the ME is Significantly OOT, institute "Non-Conforming Work" procedure.

**6.4.10** On JJ Standards that require intermediate checks, these checks shall be recorded.

**6.4.11** Where calibrations require new correction factors, all copies of current correction factors will be recalled and the new correction factors will be issued.

**6.4.12** All ME will be safeguarded, both hardware and software, from adjustments that would invalidate the calibrations. Tamper resistant seals shall be affixed to accessible controls or adjustments of instruments or standards that, if moved, would affect calibration.

**6.4.13** All ME unique identifiers shall be recorded in the database. Calibration certificates, results / observations, data, dates, intervals, accuracies, and measurement uncertainties shall be recorded in the database. Reference materials, OEM specifications, and external guidelines necessary for calibration of ME shall also be recorded in the database.

## 6.5 Metrological Traceability

**6.5.1** It is the policy of JJ to ensure that all equipment used for calibrations, or having a significant effect on the accuracy of a calibration, shall have documented unbroken chain of calibrations. These calibrations shall all contribute to the measurement uncertainty of the ME.

**6.5.2** These calibrations shall be traceable to the International System of Units, SI, by a competent laboratory accredited to ISO 17025. In the case of a reference material used for calibration, certified found/actual values provided by competent lab or provider with stated metrological traceability.

**6.5.3** When Metrological traceability to the SI is not available, calibration performed shall demonstrate traceability to an appropriate reference; Certified values from calibration reports/certificates from a competent supplier  
The use of specified methods or standards, clearly defined, that provide measurement results relevant for intended use and that are agreed upon by all parties concerned.

## 6.6 Externally provided products and services

**6.6.1** JJ shall use only outside support services and supplies that adequately ensure total confidence in its calibrations. JJ maintains records of all suppliers from whom we obtain critical consumables, support services or supplies which affect the quality of calibrations.

**6.6.2** JJ shall define, review, and approve externally provided products and services by performing the following:

Recording and retaining details of the competence and compliance of its subcontractors and maintain a register of all approved subcontractors.

These subcontractors will be defined and categorized into the approved vendor list as:

Accredited – Customer requested calibration that requires outside calibration shall only be sent to an accredited vendor, unless previously agreed upon by customer. Scope and certificate shall be retained. Certificate renewal date shall be recorded, and vendor re-evaluated post renewal date

Registered – Must show registration to a relevant ISO or similar. Renewal date shall be recorded, and vendor re-evaluated post renewal date

Surveyed – Completed a Subcontractor Quality System Survey. Re-validated every 2 years or as needed

Repair – Vendor for repairs.

None – Does not fit into defined categories. These vendors must show a history of competent/quality service. Calibrations that can only be done by OEMs usually reside in this. Customer requested vendors may reside here.

Inactive – Vendor has been unused for a period of time, roughly after 2 years of non-use.

Do Not Use – Vendor has been found to provide work that is unsatisfactory or is toxic as a business. No work to be sent to such Vendor.

Products and/or parts ordered from a vendor shall be inspected to verify that it matches order requirements. The Receiving Department conducts incoming check of purchased parts or lab supplies. This check includes visual examination for damage, verification of quantity, visual identification of the parts to the supplier's packing slip, and comparison of the shipper to the Company purchase order. Any questions regarding the quality of an incoming shipment are immediately referred to Purchasing. Accepted items to be brought to purchasing.

Units coming back from calibration will be inspected by Receiving to verify unit matches vendor packing slip and JJ PO. Units and accompanying paperwork to be brought to Quality. Quality will review paperwork and/or certificates to insure required work and calibration were performed correctly. If the unit is back from repair, unit will be returned to technician for re-calibration and verification that repair was completed and unit is functioning within tolerance.

**6.6.3** JJ POs shall contain all relevant information to properly communicate the requirements of its vendors. For parts or supplies, this information must involve data describing the product. This may be a part number, type, class, grade, or other technical information in order to ensure precise identification for the vendor. A PO for the purchase of new equipment must contain information about the unit(s) being ordered. This includes Make, Model, and brief description. If unit is being purchase with calibration, the appropriate calibration level and acceptance must be indicated. If the unit is being sent to vendor for repair or adjustment, the PO must include units Make, Model, SN and brief description. It may also indicate problems found with the unit.

## 7 Process Requirements

### 7.1 Review of requests, tenders and contracts

**7.1.1** JJ shall review all calibration and/or repair requests, tenders or contracts from customers in the following manner:

Review of customer documents shall include requested calibration level, calibration interval, unit(s) being sent in, specific requests, known issues with unit(s), and any other information on document. Current customers with already approved terms for all of their calibrations have been recorded into their customer file, and will be used as the equipment is received. Any new information from a current customer on their documentation supersedes that of previous.

ME found to be within our capabilities will logged into the database with Make, Model, description, calibration levels available, procedure, accuracy's, and assigned lab.



ME not within our capabilities will be logged into the database similarly, notating in the procedure that it is a vendor calibration.

When calibration or repairs are to be performed by an external vendor, the customer will be notified via automatic email. If costs for external calibration/repair/evaluation fees are known, customer will be informed before unit is sent out. Approval for sending the unit will be received before sending the unit to the vendor.

Customer requested levels of calibration shall be reviewed. This is to occur at a) the customer base level for all of their equipment. This is to be put into their customer notes, all tools updated as needed. b) at time unit is sent in for calibration. New requirements supersede previous and will be logged at time of calibration/request.

**7.1.2** If a customer has specified a method or procedure to be used to calibrate their ME, this method or procedure will be verified to be valid. Validity is based upon the appropriateness for the intended use by; range, accuracy, uncertainty, linearity, repeatability, sensitivity, or date of method. If customer requested method/procedure is found to be inappropriate, customer will be informed and offered method that is valid for intended use.

**7.1.3** Valid Customer requested standard(s) to be used for calibration of their ME, standard will be reviewed to be relevant to the calibration to be performed. These shall be indicate on the certificate.

JJ uses Simple Acceptance as a decision rule on certificates. When customer specifies a specific decision rule, other then Simple Acceptance, to be used for the calibration of their ME, the decision rule will be reviewed to be within capabilities. If within capabilities this will be agreed upon by both parties, customer requested decision rule will be notated in the workorder, and applied/commented on the cert.

**7.1.4** All requests, tenders, and purchase orders will be reviewed prior to acceptance for calibration. Deviations from customer request or tender from contract will be determined if any impact on the integrity of the laboratory or the validity of the calibration of ME. Work will commence upon acceptance from both JJ and customer.

**7.1.5** Deviation from agreement shall occur only if the deviation has been documented, technically justified, authorized and accepted by the customer.

**7.1.6** If the client wishes to amend or modify the Purchase Order after receipt of the ME, or after work has commenced, this modification shall be documented and filed in the client file and the Purchase Order Amendment shall be subjected to the same review process as the Purchase Order. These amendments shall be communicated with all affected personnel.

Technical amendments will be communicated to the technician, and modified in the database.

Non-Technical amendments will be communicated to the affected department and modified in the database.

**7.1.7** Customer may request to observe the performance of the calibration of the ME. This request shall be reviewed, and reasonable access to the lab and the technicians involved in calibration shall be made available.

**7.1.8** Records of requests, tenders, contracts, and purchase orders shall be maintained. This includes any significant changes, and pertinent discussions with customer relating to the customers' requirements, requests, and the results of JJ activities.

## 7.2 Selection, verification and validation of methods

### 7.2.1 Selection and verification of methods

**7.2.1.1** JJ shall use appropriate procedures and methods for all calibration it performs. Calibrations requiring measurement uncertainty will have those values calculated and added to the database.

**7.2.1.2** All methods, instructions, manuals, standards, and procedures that are necessary to calibrate ME shall be stored and readily available in Technicians performing calibration shall only have access to current revisions of procedures in DocStore.

When necessary updates, modifications, or additional details will be supplemented to achieve correct and current calibrations.

**7.2.1.3** JJ shall ensure that it uses the latest valid version of a method unless it is not appropriate or possible to do so. When necessary, the application of the method shall be supplemented with additional details to ensure consistent application.

**7.2.1.4** Unless specified by the customer, JJ will select an appropriate method from its In-House list of procedures or shall use standard methods that have been published either in international, regional or national standards by reputable technical organizations or the manufacturer.

**7.2.1.5** Procedures will be validated before use in calibration of ME. The validation shall be appropriate for the intended calibration; e.g., range, accuracy, uncertainty, linearity, repeatability, sensitivity, selectivity of method, robustness against external influences, etc. and recorded in Docstore. If method is revised by the issuing body, validation shall be repeated to the extent necessary.

**7.2.1.6** When a procedure or method needs to be created, a technician who has been authorized shall be assigned to develop procedure. Procedure will be validated and approved by those who are authorized before being added to DocStore. As with all procedures, review will occur to insure proper calibration is valid. Procedures to be revised as needed.

## 7.2.2 Validation of methods

**7.2.2.1** JJ will validate non-standard methods, Company developed methods, standardized methods used outside their intended range and amplifications of standardized methods to confirm that they are fit for their intended use. Determination on the performance of a method should be one of, or a combination of the following:

Calibration using reference standards or reference materials.

Comparison of results achieved with other methods.

Inter-laboratory comparisons.

Systematic assessment of the factors influencing the result.

Assessment of the uncertainty the results based on scientific understanding of the theoretical principles of the method and practical experience.

Testing of method to verify robustness using controlled parameters

**7.2.2.2** When changes to a procedure are required, influences shall be determined and if found affecting original validation, a new validation shall be performed.

**7.2.2.3** The performance of procedures shall be relevant to the customers' needs. Characteristics can included, but not limited to: The range, accuracy, the uncertainty of the results, detection limit, selectivity of the method, linearity, limit of repeatability or reproducibility, robustness against external influences, cross-sensitivity against interference from the matrix of the object.

**7.2.2.4** JJ Shall record validation of procedure in DocStore. Validated Procedures shall indicate their intended use, specifications to be used, performance characterizations from method. Results obtained will be notated in the units being calibrated model details/datasheets.

## 7.3 Sampling

N/A - JJ does not provide Sampling services

## 7.4 Handling of test or calibration items

**7.4.1** JJ shall handle calibration items in the following manner:

Customers calibration ME is handled in such a way as to prevent damage, protect the integrity of the calibration and protect the identity and ownership of the item from the time we receive it until it is returned to the customer. All precautions shall be used to avoid deterioration or damage to the calibration item during transportation, receipt, handling, storage, retention and/or disposal. Special customer handling will be notated and followed.

ME handling is facilitated by the use of wheeled carts and shelves for moving and staging equipment in process.

Shelving for ME in each status awaiting action must have easy access and must allow adequate space. Workbench surfaces shall be of suitable material to prevent damage during calibration and repair. Storage at each status shall be held secure, for such reasons of record, safety, value, and security.

Preparations for shipment using each method is organized to meet the type of equipment, distance, and carrier used when shipping is required. Shipping to use proper materials such as bubble pack, foam blocks, foam-in-place, and boxes to meet individual packing requirements. Shipping using external shipping carriers shall followed, including the space and amount of material surrounding ME(s), and type/quality of box to be used.

**7.4.2** JJ shall record, upon receipt of the calibration item, the identity of the ME(s) and enter into the database. Identification includes but not limited to customer, and the ME SN, Make, Model, and Property#. This identification shall be retained throughout the life of the ME. Database is capable of ensuring that items cannot be confused physically or when referred to in records or other documents. The database also accommodates subdivision of groups of items and the transfer of items within and from the Company.

**7.4.3** JJ shall record, upon receipt of the calibration item, the identity of the item, the condition of calibration item, including any abnormalities or departures from standard condition as prescribed in the relevant calibration method. If any of the following conditions exist, JJ is to contact the customer for further instructions: a) There is any doubt as to the suitability of an item for calibration. b) When the item does not conform to the description provided. c) When the calibration procedure is in doubt. d) When there is any obvious physical damage. e) When the calibration procedure departs from standard procedure. Decisions made by the customer will be recorded.

**7.4.4** Where a calibration item is to be stored or conditioned under specified environmental conditions, those conditions are to be maintained, monitored and recorded.

## 7.5 Technical records

**7.5.1** JJ shall ensure that all technical information is correctly collected and recorded. This technical information stored into the database is used to facilitate and identify all factors that occurred during the calibration, enabling the repetition or replication of the calibration as closely as possible to the original. Technical information stored includes technician, standard, environmental, data taken during calibration, observations/comments, and event log.



**7.5.2** Amendments to technical records will be recorded, indicated by "Rev X", where x based on the revision version. Original certificate number maintains the same. Amended information will be detailed in the comments section of the certificate.

## 7.6 Evaluation of measurement uncertainty

**7.6.1** JJ shall identify all contributors to the measurement uncertainty of a ME during its calibration. All contributors shall be taken into account using appropriate method of analysis. Guidelines for the various methods of calculating measurement uncertainty can be found in such documents: International Guide to the Expression of Uncertainty (GUM), ANSI/NCSL Z540, and A2LA.

Customers requesting the uncertainties to be calculated by a different method will be reviewed for validity, and if it can be produced by JJ during the calibration. All uncertainties reported shall be as expanded uncertainties using a coverage factor of  $k=2$  to approximate the 95% confidence level.

**7.6.2** All calibrations requiring Accredited calibrations, including JJ standards, shall have the measurement uncertainties evaluated.

**7.6.3** N/A - JJ does not provide testing.

## 7.7 Ensuring the validity of results

**7.7.1** JJ shall ensure the validity and quality of the results by performing the following:

Calibration methods, performance and results will be monitored. Data collected during calibration shall be recorded in the database, linked to the ME and specific calibration instance/certificate. Data can then be used so that any trends may be detectable, and when practical, statistical techniques shall be applied to review the results. These methods shall be reviewed using, but not limited to:

- ME will be retained and unit will be recalibrated by another qualified technician to analyze performance and results;
- Correlation of results for different characteristics of an item, where appropriate. If one parameter is out the other parameters will be given closer attention;
- Analysis of quality control data where such data indicates a potential problem or nonconformance;
- Use of alternative standards that has been calibrated to provide traceable results;

**7.7.2** JJ Shall monitor its performance by comparison with results of other laboratories, where available and appropriate. This will be planned and reviewed and shall include but not limited to:

- Participating in a sponsored proficiency test whenever possible;
- When a sponsored proficiency test is unavailable participation in inter-laboratory proficiency tests will be used;
- When inter-laboratory tests are unavailable or results would not be relevant, an intra-laboratory test may be developed.

**7.7.3** JJ Shall be analyzed and used to control and improve its capabilities and activities, where applicable. If the results of the analysis of the data from the monitored activities are found to be outside the criteria of the method, appropriate action shall be taken to prevent incorrect results and ensure that they do not occur again.

## 7.8 Reporting of results

### 7.8.1 General

**7.8.1.1** Certificate and results shall be reviewed and authorized prior to release.

**7.8.1.2** JJ shall accurately, clearly, unambiguously and objectively report the results of each calibration on a Certificate of Calibration. The certificate shall include all information agreed upon with the customer and necessary for the interpretation of the results and all information required by the method used.

**7.8.1.3** Upon customer request, a simplified or truncated certificate can be issued. These certificates shall still retain all unique identifiers required. The amount of information provided is dependent on the requested amount by the customer.

### 7.8.2 Common requirements for calibration certificates

**7.8.2.1** The minimum information on a calibration certificate or report from an outside supplier to meet JJ requirements is:

- a) title, "Certificate of Calibration";
- b) Name and address of JJ Calibrations;
- c) If calibration occurred at customers location the certificate will notate "Onsite" on the certificate;
- d) Unique identification of the certificate by number;
- e) Name and contact of customer requesting calibration. If requested, the certificate can be issued to a 3<sup>rd</sup> company, the 3<sup>rd</sup> companies name and contact information will be issued on the certificate;
- f) Identify the calibration procedure used;
- g) Unambiguous identification of the item calibrated, including description and condition of unit;
- h) Date of receipt of unit and date of performance of calibration;

- i) Calibration results with units of measurement, as applicable;
- j) Statement that results on certificate are for only the UUT and that instance of calibration;
- k) Identification of the person authorizing the calibration;
- l) Clear identification of the end of the document;
- m) A statement that the document shall not be reproduced, except in full, without the written approval of the laboratory;
- n) Any deviations from, additions to or exclusions from the calibration method;
- o) Any special limitations of use;
- p) An Indication of any Out-Of-Tolerance condition. Level one calibration remarks can include direction and a percentage off from nominal. All other levels data will be provided;
- q) Identification the standards used during the calibration, listing the model number, description, and serial number;
- r) When a subcontractor performs calibration it will be clearly stated.

7.8.2.2 JJ is responsible for all information on the certificate, unless it has been provided by the customer or an outside vendor. External data shall be clearly identified, including a statement that external data can affect the validity of the results

### 7.8.3 Specific requirements for test reports

N/A - JJ does not provide test reports.

### 7.8.4 Specific requirements for calibration certificates

7.8.4.1 JJ shall provide additional information on certificates, where relevant, that are necessary for the interpretation of the test results including;

- a) The measurement uncertainty stated in the same unit as that of the measurand or in a term relevant to the measurand;
- b) Environmental conditions at time of calibration;
- c) Evidence that the measurements are traceable, such as a statement of traceability to SI
- d) Before and after data if the unit is adjusted or repaired, when available;
- e) A statement that the instrument was calibrated and specifications to which it was calibrated;

7.8.4.2 N/A - JJ does not provide sampling

7.8.4.3 Calibration interval listed on certificate is from agreed upon value and date from customer. Calibration interval increases after ME has been calibrated and returned to customer shall be check for validity. Interval increases from customer on ME that is already past due date will be declined.

### 7.8.5 Reporting sampling

N/A - JJ does not provide sampling

### 7.8.6 Reporting statements of conformity

7.8.6.1 JJ uses Simple Acceptance rule on all certificates unless requested by the customer, and is indicated in the results on the certificate.

7.8.6.2 If a customer requests that a different statement of conformity is used for the calibration, it will be reviewed to determined if JJ can accommodate the requested conformity. If a different conformity is used the certificate shall clearly identify:

- a) the specified results the statement of conformity applies;
- b) the specifications, standards or parts thereof are met or not met;
- c) the decision rule applied

### 7.8.7 Reporting opinions and interpretations

Opinions and interpretations are not offered to clients, this is for test laboratories only

### 7.8.8 Amendments to reports

7.8.8.1 When an issued certificate needs to be changed or amended, any change of information from the original shall be clearly identified and when reasonable the reason for the change included on the amended certificate.

7.8.8.2 Amended certificates shall only be issued as an additional document, not an updated original, and shall be indicated on the certificate as "Rev A" or similar alpha numeric.

Amended certificates shall meet all the requirements of the of the original certificate.

7.8.8.3 If a cert cannot be amended, and new certificate shall be issued with all requirements of this document, and shall reference the original calibration.

## 7.9 Complaints

JJ shall address and resolve all customer complaints whether solicited or not.

**7.9.1** JJ has a documented process to receive, evaluate and make decisions on complaints.

**7.9.2** Complaint process is available upon request. If upon review of a complaint it is found to relate to a lab, the complaint will be assigned to the lab lead for investigation. Lab lead will determine activities involved and how to deal with it. JJ shall be responsible for all decisions at all levels of the handling process for complaints.

**7.9.3** Complaints can be logged into the database by all employees and by customers logging into their customer portal. The Quality Manager will review each complaint and determine who is best suited to handle and respond. Complaint will be reviewed by the person(s) assigned, and all evidence will be gathered and verified. All individuals involved with complaint will be noted. All complaints shall be permanently logged. If during the process it is determined that a corrective action needs to be initiated, it shall be issued by the Quality Manager.

The outcome of the complaints reviewed by individual not involved with the original activity under review for complaint. Upon approval, outcome shall be reported to the complainant whenever possible.

**7.9.4** JJ shall be responsible for gathering and verifying all necessary information to validate the complaint.

**7.9.5** Whenever possible, the laboratory shall acknowledge receipt of the complaint, and provide the complainant with progress reports and the outcome.

**7.9.6** The outcomes to be communicated to the complainant shall be made by, or reviewed and approved by, individual(s) not involved in the original laboratory activities in question.

**7.9.7** Whenever possible, the laboratory shall give formal notice of the end of the complaint handling to the complainant.

## 7.10 Nonconforming work

**7.10.1** When work does not conform to the procedures of JJ or the agreed upon requirements of the client, JJ shall perform the following:

Promptly evaluate the significance of the error of the results, take prompt remedial action and, where applicable, take corrective action. All JJ employees have the authority and responsibility to stop non-conforming work.

The QM shall immediately be notified and shall perform an evaluation of the significance of the impact on the validity of the calibration results. If it is determined that the possibility of miss-calibration of JJ Standards exists, a reverse trace will conduct a record search for client instruments that may be affected. Clients whose instruments are found in this category will be notified to send their unit back for calibration. This notification will start with either the most recent calibration or the one likely to have the most impact. If these units show no impact other customers will not be notified.

The QM or the OM shall authorize resumption of work once the nonconformity is resolved

**7.10.2** All non-conformance and actions thereof shall be recorded and maintained.

**7.10.3** A Corrective Action Report (CAR) will be initiated when the non-conformances indicate a problem with the quality system, or where the evaluation indicates a doubt about the compliance of the laboratory's operations with its own policies or procedures. This will be initiated by the QM, and issued to the appropriate roles.

## 7.11 Control of data and information management.

**7.11.1** JJ and all employees shall have access to all data and information needed to perform their/its functions and activities.

**7.11.2** JJ uses third party programs such as Rbase for its database, and Excel for functions outside of database abilities. Where necessary, OEM operating and recording software for standards being used as standards during calibration. Any changes or updates must be authorized by management before implementation.

**7.11.3** JJ information system shall control and monitor:

- a) Database access is limited to employees with individual logins. Each employee has their own password, and the database is set up that restrictions are in place so that employees only have access to the information needed to do their functions
- b) Restrictions to data is per job function, as per indicated by levels of access each employee has in the database. Information cannot be tampered with due to restrictions. Required updates and revisions are notated. Database and digital files are on a server that is RAID based to prevent loss. Additionally, database is backed up daily, and backups and files are stored on a local secondary server. Backups and files are routinely transferred to an external hard drive for transfer to an offsite hard drive
- c) Paper records are stored so as to prevent degradation and loss due to environmental. Paper records are not altered from original. New information is stored with originals. Paper records are stored for a minimum period of 5 years.
- d) If for any reason there is a loss of records, the event will be logged and reviewed for the appropriate immediate and corrective actions. This process will be handled in the same manner as a CAR.

**7.11.4** External backups are maintained in similar manner to originals maintained on JJ Servers. External hard drive has no external access to prevent loss and tampering.

**7.11.5** Any calculations performed will be done using database or external software that has been shown and verified to be appropriate and correct.

## 8 Management System requirements

### 8.1 General

JJ's management shall strive, at a minimum, to address the follow in regard to the laboratories management system:

- a) Management system documentation
- b) Control of management system
- c) Control of records
- d) Actions take to address risks and opportunities
- e) Improvements
- f) Corrective Actions
- g) Internal audits
- h) Management reviews

### 8.2 Management system documentation

**8.2.1** JJ's policies are designed and meant to cover and fulfill the purpose if ISO/IEC 17025:2017. JJ shall establish, document, and maintain said policies. These policies shall be acknowledged and implemented at all levels of the laboratory. It is the responsibility of every technician and support personnel to carry out their work in a way that meets the requirements of ISO: 17025:2017 and the customer's requirements.

**8.2.2** These policies shall also address the competence, impartiality and consistent operation of the laboratory. The factors used to evaluate included but are not limited to:

- How well we are meeting our definition of quality;
- The latest regulatory requirements;
- Our client's special needs;
- Effectiveness of latest systems corrections;

**8.2.3** Management shall provide evidence of commitment to the development and implementation of the management system and to continually improve its effectiveness. System shall be reviewed and discussed for current development and structure, and future needs during management reviews.

It is the QM's responsibility to ensure that the quality system is implemented and followed always. The OM will assist in this process.

All JJ employees have the responsibility to be familiar with the quality documentation and implement the policies and procedures in their work.

All management is responsible to be in compliance with ISO 17025.

All management shall communicate to the organization the importance of meeting customer as well as statutory and regulatory requirements.

**8.2.4** All documentation, processes, systems, records, related to the fulfilment of the requirements of this document shall be included in, referenced from, or linked to the management system. The elements of the Company's quality system are documented in this Quality Manual and other related documentation, consisting of:

- Quality Manual.
- Job Description Manual.
- Employee Manual

**8.2.5** All personnel involved in laboratory activities shall have access to the parts of the management system documentation and related information that are applicable to their responsibilities. Availability of all authorized editions of quality documents through DocStore.

### 8.3 Control of management system documents

**8.3.1** JJ Shall establish and maintain procedures for identification, collection, indexing, access, storage, maintenance and disposal of quality and technical records. Quality records shall include reports from internal audits and management reviews as well as records of corrective and preventative actions.

**8.3.2** Documents to be reviewed and approved by authorized employees before being uploaded to DocStore, where documents can only be viewed or printed. Authorized personnel include but are not limited to Quality Manager, Operations Manager, and Lab Leads. Documents shall be reviewed and updated as necessary, such as a correction by the OEM to a previously released manual. Changes and current revisions shall be identified in DocStore. Only current revisions can be viewed from Docstore. All documents have a unique identifier in DCN numbers, and file ID. Physical copies of old revisions shall be removed and destroyed.

## 8.4 Control of records

**8.4.1** JJ Shall retain legible records to demonstrate the fulfillment of the requirements of 17025.

8.4.2 JJ shall implement the controls needed for the identification, storage, protection, back-up, archive, retrieval, retention time, and disposal of its records.

All records, certificates and reports will be safely stored and held secure and in confidence to the client for a minimum of five years. After that point, physical copies shall be destroyed. All documents held in database and DocStore will be held indefinitely.

Access to the database shall be by password only. JJ employees receive a unique password created and stored in the database. Customer access to their files through WebIn portal is by login and password created by them and stored in database. This login only allows access to their customer files, no access to additional customer or JJ files is available

Database data shall be backed up daily and stored on the server. Server is backed up weekly. Offsite storage is done by manual backup of server which is then hand carried to external facility.

The DocStore program is set up to be read or print only. Modifications to documents in the DocStore program can only be made by complete revision updates.

## 8.5 Actions to address risks and opportunities

**8.5.1** JJ shall consider the risks and opportunities associated with the laboratory activities in order to;

- a) Give assurance that the management system achieves its intended results;
- b) Enhance opportunities to achieve the purpose and objectives of the laboratory;
- c) Prevent, or reduce, undesired impacts and potential failures in the laboratory activities;
- d) Achieve improvement.

**8.5.2** The laboratory shall plan:

- a) Actions to address these risks and opportunities;
- b) How to:
  - integrate and implement these actions into its management system;
  - evaluate the effectiveness of these actions.

## 8.6 Improvement

**8.6.1** JJ shall strive for continuous improvement in the effectiveness of its management system using the quality policy, quality objectives, audit results, analysis of data, corrective and preventative actions and management reviews. Audit results will be reviewed by the President at the conclusion of each Audit.

During quarterly management meetings, the following will be reviewed:

Quality Objectives

Analytical data collected by the database

Corrective and preventative actions

Management reviews

Every employee can log an anonymous suggestion for improvement in the database. They can encompass any issue the employee wishes to raise. These shall be reviewed, and outcome indicated in the database.

**8.6.2** JJ customers are encouraged to provide feedback, both positive and negative, on the quality of Company work, workmanship, and customer service. Surveys are sent out automatically to our customers, and surveys are available to be completed on our website and through customer portal.

## 8.7 Corrective Actions

JJ shall initiate corrective action any time nonconforming work or departure from policies or procedures in the quality system has been identified. Required changes will be documented and implemented.

**8.7.1** In the case of non-conformance, JJ will promptly evaluate the significance of the error of the results, take prompt remedial action and, where applicable, take corrective action.

If the non-conformity is because a JJ standard was found OOT, the QM shall immediately be notified and shall perform an evaluation of the significance of the impact on the validity of the calibration results. If it is determined that the possibility of miss-calibration by JJ ME exists, a reverse trace will be performed to search for client instruments that may be affected. Customers whose instruments are found to be affected by

the non-conformance will be notified to send their unit back for calibration. This notification will start with either the most recent calibration or the one likely to have the most impact. If these units show no impact other customers will not be notified.

**8.7.1.1** Activities involved with non-conformance shall be ceased until the non-conformance has been resolved. A CAR will be created and issued to the responsible party for the recording of the non-conformance. Any employee involved with the non-conformance is responsible for assisting in the analysis of the problem and in determining effective corrective action.

Evaluate the effects of the non-conformance. Determine the level of non-conformance. Verify how the non-conformance has affected or shall affect activities, and remedy the consequences.

**8.7.1.2** The QM shall utilize any resource available to evaluate the need/course of action to eliminate the cause to ensure it does not recur or occur elsewhere.

Review and analyzing nonconforming items directly and recording information. All findings and data found during the investigation shall be logged into the CAR

Determine and identify causative conditions or factors (root cause); i.e., human error, equipment failure, system failure, failure to follow procedure.

Determine if there is possibility that similar non-conformance exists or could occur. If it is determined that there is the possibility of similar, the process will be repeated per each incident.

**8.7.1.3** Implement any action needed;

Once root cause is determined a recommended corrective action shall be selected and offered in the CAR. This will be reviewed for acceptance and resolution by the QM. If unacceptable it will be returned for further analysis. Once acceptable, the Quality Manager shall approve and authorize implementation.

**8.7.1.4** Review the effectiveness of any corrective action taken;

Quality Manager will review implementation of corrective action as reported on the CAR for its effectiveness and practicality. When satisfied that the solution is permanent and effective, the QM will complete the "Follow-up" section of the CAR form.

**8.7.1.5** Update risks and opportunities determined during planning, if necessary;

**8.7.1.6** Make changes to the management system, if necessary.

When changes to the system have occurred due to a nonconformance that casts doubts on the Company's ongoing compliance with its own policies and procedures the QM shall audit the appropriate areas with the next internal audit.

**8.7.2** Corrective actions shall be to a degree appropriate to the magnitude and the risk of the problem.

**8.7.3** JJ Shall document and retain record of any corrective actions. All CARs are entered into the database, logged by chronological order and assigned a unique number. These records shall include:

Nature of the non-conformance, complaint, issue;  
Assigned lab/personnel;  
Subsequent actions taken;  
Results of follow-up.

## 8.8 Internal Audits

**8.8.1** JJ shall periodically audit its facilities, processes and personnel to verify that operations continue to comply with the requirements of the quality system, and to IEC/ISO 17025:2017.

**8.8.2** Scheduled audits should be initiated, whenever possible, according to the following schedule (Exceptions may occur with documentation as to the cause):

Quality System and Manual audited during first quarter.  
Work Instruction Manual during third quarter  
Employee manual sent out during fourth quarter.

Quality system and manual review shall include:

Verify we are following Quality Manual  
JJ files for accuracy and completeness  
Deficiencies found from the previous year  
Complaints from previous year  
Updated reference documents



CARs issued since previous audit  
Ensure surveys are reviewed and appropriate response taken

Work Instruction manual review shall include:

Training Records

Verify descriptions match work performed

Employee manual shall have independent review to verify it meets state and federal laws.

Auditing shall be by trained and qualified staff or outside independent vendor, proof of audit training shall be maintained. Auditors shall be independent of the aspect of the audit. All staff who assist in the audit should be trained in the aspect of the audit. Audits shall be reviewed by President.

Document and retain all audit findings and any corrective actions that arise from them. All discrepancies will be recorded and reviewed by management. All systemic failures shall be documented for corrective action. Corrective Actions will be reviewed on a regular basis to determine if corrective action has been carried through and if it was effective. Follow-up activities shall verify and record the implementation and effectiveness of the corrective actions taken.

## 8.9 Management reviews

**8.9.1** JJ Shall plan for senior management to annually review the quality system and all audits of the quality system. Each quarter the management team will review the preceding quarter's performance and plan the current and upcoming months.

**8.9.2** All input from those in attendance shall be noted and responsibilities assigned for action items. All members will initial that they attended the meeting and participated in the discussion. The agenda for the meeting will include the following:

Suitability of policies and procedures;

Reports from managerial and supervisory personnel;

Outcome of recent internal audits;

Corrective and preventative actions;

Assessments by external bodies;

Results of inter-laboratory comparisons and/or proficiency tests;

Changes in volume and type of work;

Customer Feedback;

Complaints;

Recommendations for improvement;

Other relevant facts, such as quality control activities, safety, resources and staff training.

**8.9.3** Findings from management reviews and the actions that arise from them shall be recorded. The management shall ensure that those actions are carried out within an appropriate and agreed timescale. Resources that have found to be needed for the continued activities of the lab, or needed improvements, shall be researched and implemented at best course of interest for JJ.

## 8.10 Advertisement of accredited laboratory status

It is the policy of this company to affect control over the intellectual property of the Accrediting body (including but not limited to: Titles, Logos, copy written documents/software, proprietary information, patented designs, etc), released by the Accrediting body for the use of their Accredited Entities, to use/disseminate said intellectual property in a manner consistent with the policies, procedures and Legal precepts set forth by the Accrediting body regarding said dissemination of intellectual property released by the Accrediting body for the use of their Accredited Entities.

### 8.10.1 Use of the A2LA Logo on Calibration Certificates/Reports:

In any instance where the Company uses the A2LA accredited Logo to endorse Calibration Certificates/Reports/Results, the company shall ensure the Logo is accompanied by the A2LA Certificate number(s).

The "A2LA Accredited" Logo, including "Calibration 723.01", may be displayed on all certificates and reports that contain exclusively results from activities that have been carried out within the Company's official A2LA Scope of Accreditation.

The Company shall ensure the A2LA accredited Logo will not be used on Certificates, Reports, or results that are not included in the Company's existing scope of accreditation.

When a Certificate, Report, or Result contains both accredited and nonaccredited parameters, the Company shall ensure the non-accredited parameters are clearly identified as such. This will be accomplished, by placing a check mark by the accredited parameter and note that items with the check are accredited.

In any instance where the Company issues a Calibration Certificate, Report or Result with the intent that said Certificate, Report or Result meets the requirements of the A2LA traceability Policy, the Company shall ensure that Certificate, Report or Result contains the A2LA Accredited Logo and A2LA certificate number.

Non-accredited Calibration Certificates, Reports or Results are distinguished from accredited Calibration Certificates, Reports or Results by exclusion of the A2LA accredited Logo. There shall be nothing in the reports, certificates or in any attachments or other materials which implies or may lead any user of the results or any interested party to believe that the work is accredited when it is not.

In any instance where the A2LA name and/or Logo is used/disseminated by JJ, it shall at a minimum be accompanied by the word “accredited”.

In any instance where the “A2LA accredited “ Logo is used/disseminated by JJ it shall ensure the Logo maintains its form. Therefore, when the Company re-produces the Logo, the Logo is allowed to assume different sizes, but the aspect ratio/geometry of the Logo must remain “as is”. It may be generated electronically as long as the prescribed formats and forms are retained.

**8.10.2** The Accrediting body has the responsibility of informing JJ of the policies and procedures, changes to the policies and procedures and effective dates thereof, or any Legal precepts, changes to any legal precepts and effective dates thereof, regarding the use/dissemination of the Accrediting body’s intellectual property released by the Accrediting body for the use of their Accredited entities.

**8.10.3** The Management team has the responsibility and authority of controlling the use/dissemination of intellectual property of the Accrediting body released by the Accrediting body for the use of their Accredited Entities in a manner consistent with the policies, procedures and legal precepts set forth by the Accrediting body regarding the use/dissemination of said intellectual property.

**8.10.4** Current AB is A2LA but if at the time the AB is no longer A2LA, the A2LA Logo shall not be used/disseminated in any manner by JJ. The A2LA Logo shall only be used/disseminated by JJ with the name that holds the A2LA accreditation under, JJ Calibrations, Inc.

When the company promotes or provides proof of accreditation, the company shall only use the current scope of accreditation. The certificate shall be used for display purposes and to accompany the scope.

### **8.11 On-site Calibrations**

JJ shall provide on-site calibrations with the same integrity as provided at the permanent lab. This includes ensuring that relevant parts of the quality documentation and up-to-date calibration procedures exist and are available to all staff performing on-site calibrations.

**8.11.1** With exception due to the complexity, size, or accuracy of the standards to be used, all calibrations that JJ performs in lab will be able to provide onsite calibration. These limitations include, but not limited to: Ring gages, Thread (ID/OD), Wires, Cylindrical gages. Calibration of pipettes onsite is limited to the availability and calibration of customer scale during onsite (accuracy of the scale to determine the capability of the calibration). Temp and RH ME is limited to ambient per customer request unless customer has a chamber that is thusly calibrated before by JJ.

**8.11.2** Maintain an up-to-date record of requested and confirmed onsite requests, and for the lab(s) involved, and a list of ME to be calibrated during onsite, via the onsite schedule.

**8.11.3** Calibrations and the Certificate will indicate when a calibration is performed onsite.

**8.11.4** Have approved signatories for all calibrations performed on-site, these will be the same signatories available for all calibrations.

**8.11.5** Provide trained and competent personnel for on-site calibrations. Besides training on the individual calibrations technicians will be trained on the unique situations they may encounter during an onsite.

**8.11.6** Ensure equipment used for on-site calibrations are fit for use and are checked prior to and directly after on-site. Technicians will acknowledge check outs prior to onsite via the Onsite Notes.

**8.11.7** Ensure the environment will not invalidate the calibration status of standards used on-site. The environment shall be continuously monitored to ensure that it is stable and conducive for the type and range of calibration performed. In the event the environment is or becomes too hostile to ensure the integrity of the calibration results the calibration shall be stopped.

**8.11.8** Audit on-site efforts, operations and calibrations. Onsite audits will record observations, timetables, and tasks preformed.

**8.11.9** To calculate the measurement uncertainty. Measurement uncertainties will be calculated the same way they are done in house, with special attention to the effects of the environmental conditions.

## **9 Organizational Commitment**

### **9.1 Community Citizenship**

JJ shall be dedicated to finding and implementing ways to enhance the lives of others in our community, and to be a responsible community citizen. JJ will find ways to get involved in the community and will provide time and resources for its employees to get involved in the community through Company sponsored activities. The following are some ways we will endeavor to do this:

Recycling all materials whether they be reused for similar or new functions, or to be sent to a responsible company to be properly handled.

JJ encourages employees who give raw blood, plasma, or platelets.

JJ reserves the privilege to utilize one or more special programs during the year to meet the needs of someone in the community. Examples are:



Providing a meal for a family at Thanksgiving or Christmas;  
 Providing financial support for a family in order to meet a house payment or utility bill, purchase gifts for Christmas;  
 Headstart's Adopt-A-Family, providing clothing for those who need it, etc.

## 9.2 Safety and Health

JJ is dedicated to good safety practices and to provide information and resources in order for its employees to follow good health practices.

Safety issues found will be included in the management review, including resolution. The Safety Lead dedicated to continually reviewing the facility and JJ practices with a focus on identifying potential safety hazards and taking proactive measures to eliminate those hazards.

It is the responsibility of every employee to practice safe work habits and follow safety procedures in their daily work routine at JJ's facilities and our clients' as well. All employees of the Company have the responsibility and authority to initiate action that could result in preventive safety measures.

Follow these guidelines whenever using the following equipment or activities:

**Machine Tools:** Sander, Grinder, and Drill Press. Always wear safety glasses or goggles, and keep hands and loose clothing away from grinding surfaces.

**Hot Pot/Hot Plate:** Keep hands and fingers clear of "peel coat" liquid, outside of the pot, these can cause burns. Take care not to drip the "peel coat". Turn off pot at the end of the day.

**Force stands:** Use caution at all possible pinch points. Do not place hands on the screw while the stand is connected to power or being operated. Power down when not in use.

**Lifting:** Do not try to lift more than you are capable of. Get help or get a cart. General rule of thumb for maximum weight to lift alone is 23 Kg (50 lb). Lift with your legs, not your back; using good lifting techniques. Wear the available back belt if conditions warrant it.

**Box Cutter, Razor Blades, And X-acto Knives:** Use only on items for which they are designed. Keep hands and fingers clear. Store in appropriate fashion.

**Chemicals:** Be aware of what you are handling. Read the MSDS. Know the safety procedures called out in the MSDS, all MSDS can be found in DocStore. Pay special attention when venting pressurized gases. Aerated gas can fill a room instantaneously and inhalation may occur. Use exhaust fans when available.

**Pressurized Air:** Do not point air nozzle towards yourself or others; intentionally or unintentionally. Protect your eyes, as particles can fly back at you from the item you are pointing towards. Pressurized air can cause damage to some items; e.g., tools and/or ME. If in doubt, ask a manager.

**Laboratory Equipment Usage:** Turn off any outputs before connecting or disconnecting any equipment from its source or from other ME. Return standards to lowest settings before leaving the area. Never leave an output energized with no equipment attached.

**High Voltage:** NEVER WORK WITH HIGH VOLTAGE ALONE. Always work with at least one other person when calibrating or repairing any device at 1Kv or greater.

**Postal Safety:** Know what to look for in a suspicious piece of mail. Any time an item is in doubt get a manager to make an evaluation. Warning signs:

- It's unexpected;
- It's from someone you don't know;
- It's addressed to someone no longer at our address;
- It's handwritten and has no return address or bears one that cannot be confirmed as legitimate;
- It's lopsided or lumpy in appearance;
- It's sealed with excessive amounts of tape;
- It's marked with restrictive endorsements such as "Personal" or "Confidential";
- It has excessive postage.

What to do with a suspicious piece of mail:

- Do not handle a letter or package that you suspect is contaminated;
- Do not shake it, bump it, or sniff it;
- Wash your hands thoroughly for 5 minutes with soap and water after handling the suspected mail;
- Notify Clackamas County Sheriff's department or Portland Police authorities.

**Hazard Identification and Assessment:** Every employee is responsible for and has the authority to identify any item or circumstance they feel is hazardous. The Safety Lead, by themselves or with others will coordinate the assessment of hazardous items or circumstances.

## 9.3 ESD Procedure

Protect Company and Client owned ME from damage caused by ESD. All employees performing repairs/adjustments on electronic

instrumentation or handling ESD sensitive instrumentation shall follow the two basic rules of ESD control:  
Handle all ESD sensitive devices at approved static safeguarded workstations;  
Transport and store all ESD sensitive devices in static shielding packaging.

There are several classifications of ESD devices. The voltage and types of electronic devices that can be damaged by static discharge describe the following classes. If you are in doubt of the class assume the most sensitive.

CLASS 1: Static Sensitivity range from 0 to 1000 volts. Types of devices that represent this class are: Metal Oxide Semiconductor (MOS) amplifiers, silicon controlled rectifiers, precision voltage regulator micro-circuits, ultra-high frequency semiconductors, large scale integrated circuits or any hybrids utilizing MOS circuits.

CLASS 2: Static Sensitivity range from 1000 to 4000 volts. Types of devices that represent this class are: Shottky diodes, precision resistor networks, and high-speed emitter coupled logic microcircuits, Op-Amps with MOS circuitry or any hybrids using class 2 parts.

NOTE: There are some devices that can be damaged with as little as 20 Volts!

Do NOT remove ESD sensitive items from packaging. When handling ESD sensitive products packaged in ESD packaging, verify quantity only by viewing the package.

Repair or Adjustment: Any time any of the above listed parts are used in an electronic instrument and that instrument requires removal of the cover for service or adjustment, the following minimum procedures will apply:

An ESD-dissipative mat shall cover the working surface of the bench. It shall be properly attached to an earth ground;  
An ESD wrist strap shall be worn when handling ESD sensitive materials and shall be properly attached to an earth ground.

Before beginning any work on ESD sensitive materials, the dissipative mat and wrist strap shall be verified visually that they are attached to an earth ground.

When removing parts from a circuit with ESD sensitive parts, a grounded soldering iron must be used.

Solder suckers suspected of causing static or which are manufactured of metalized plastic must not be used.

Testing: The following testing procedures shall apply: The wrist strap tester shall be tested each month and be recorded in the ESD test log.

On-site Requirements: Avoid opening ESD sensitive equipment or parts on-site. Return them to the permanent laboratory for proper handling.