Corporate Quality Manual

MOTIVA Lab

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PREFACE

This Corporate Quality Manual documents the policies, objectives and main system components of the health, safety, environmental and quality management system (HSEQMS) that governs MOTIVA Lab.

This Corporate Quality Manual provides a framework for the development and implementation of local policies and procedures required in all MOTIVA Lab departments and sections. Where this Manual and a local procedure differ or conflict, this Manual shall govern.

Notice of Authority

I confirm that the Policies listed in this Manual govern the operations of the MOTIVA Laboratories (MOTIVA Lab). Each subordinate policy/procedure is developed and issued separately.

_____ 22 December 2017

I.A.M Quality, Quality Manager Date

I hereby approve Issue 01 of the MOTIVA Lab Corporate Quality Manual.

_____ 22 December 2017

I. B. Boss, General Manager Date

1.0 FROM VISION TO COMPETENCE

1.1 Vision and Mission

1.1.1 Vision

To be recognized as the supplier of choice in testing and other conformity assessment services.

1.1.2 Mission

MOTIVA delivers value to its people, its customers, and those industries it serves:

- By employing exceptional people, delivering competent expertise and operating excellent processes;
- By operating an efficient business within the context of conformant safety, environmental and quality systems, and
- By managing sustainable growth.

1.1.3 Values

MOTIVA values are the foundations of the business and guide all corporate, commercial and technical operations:

- **Technical and Operational Integrity:** MOTIVA Lab services are valued because of adherence to technically valid processes in the search for objective results. This integrity is backed by business practices which include transparency, honesty, and prevention or mitigation of any real or perceived conflict of interest.
- **Technical Innovation:** MOTIVA Lab is constantly seeking improvements in technical processes and makes use of continual improvement tools to identify areas where innovation can be implemented.
- **Belief in People:** MOTIVA staff are the reason MOTIVA Lab can succeed at all. No system or organization will survive without good people. MOTIVA Lab recruits, mentors, and supports its people. As a result, they share ideas seamlessly, with teamwork providing the foundation for successful delivery. Staff combined knowledge and experience power the MOTIVA vision and their passion infuses trust from MOTIVA clients.

1.2 Health, Safety, Environmental, and Quality (HSEQ) Policy

1.2.1 The MOTIVA Lab HSEQ Policy consists of three parts:

- MOTIVA Lab ensures the health, welfare and safety of all employees and visitors.
- MOTIVA Lab delivers technically valid test and inspection results as part of a sustainable business.
- MOTIVA Lab exercises appropriate and reasonable care to eliminate harmful environmental impacts.

1.2.2 This policy is implemented through attainment of the Corporate Objectives that follow.

1.3 Corporate Quality Objectives

Each Corporate Objective below is addressed in its own section of the Corporate Quality Manual.

1.3.1 MOTIVA Top Management Leads by Example

MOTIVA Lab is appropriately structured for its business and MOTIVA Lab top management leads by example. All management personnel understand and have agreed to the implementation of the Corporate HSEQ Policy and Objectives. Management personnel take an active part of

implementing MOTIVA Lab health, safety, environmental, and quality system requirements and support their teams in the attainment of these objectives.

1.3.2 MOTIVA Lab Delivers Competent Results

MOTIVA Lab delivers technically valid results on time, every time using approaches and environments that meet or exceed all applicable regulatory specifications. MOTIVA Lab reinforces this reputation through the maintenance of formal third-party recognition schemes, including accreditations from ILAC-recognized accreditation bodies, approvals from designated regulatory authorities, and formal recognitions of proficiency from accredited proficiency testing providers.

1.3.3 MOTIVA Lab Employees Demonstrate Competence and Safe Practices

MOTIVA Lab trains, supervises and demonstrates the continuing proficiency and safe working practices of the persons within MOTIVA Lab to carry out assigned activities. MOTIVA Lab establishes goals for this objective and tracks their attainment.

1.3.4 MOTIVA Lab Maintains Conformant Management Systems

MOTIVA Lab maintains a management system appropriate to the needs of the business and includes aspects that cover issues related to health, safety, the environment and quality. Its implementation also allows MOTIVA Lab to demonstrate conformance to the following requirements, standards and specifications:

- ISO/IEC 17025 – General requirements for the competence of testing and calibration laboratories
- ISO/IEC 17020 – General criteria for the operation of various types of bodies performing inspection
- ISO 14001 – Environmental management systems requirements
- OHSAS 18001 – Safety Management Systems

The documented system, methods, and procedures incorporate adequate safety controls and quality control/quality assurance all levels of the business. They are based on regulatory requirements, industry standards or best practice, as appropriate. Records are maintained of the implementation and the outcomes. All MOTIVA Lab systems and processes are continually monitored for improvement.

1.3.5 MOTIVA Lab Maintains Appropriate Supporting Infrastructure

MOTIVA Lab uses facilities, equipment, supplies and services that are technically and operationally appropriate, and promote the health, welfare, and safety of employees and visitors. MOTIVA Lab can demonstrate that all facilities, equipments and supplies are functioning properly and meet or exceed required health, safety, environmental, and quality specifications.

1.3.6 MOTIVA Lab Maintains the Integrity of Samples and Sample Handling

MOTIVA Lab maintains the integrity of all samples, from reception to disposal, with adequate security, protection, and defined processes for their receipt, identification, checking, routing, storage, reporting, and disposal.

1.3.7 MOTIVA Lab Demonstrates Traceability of Measurement

MOTIVA Lab produces results traceable to the SI, through a National Metrology Institute (NMI), and accorded uncertainties appropriate to requirements. Where such traceability is neither possible nor appropriate, intrinsic standards are used to establish the traceability of measurements.

1.3.8 MOTIVA Lab Maintains the Integrity of Generated Data

MOTIVA Lab maintains adequate data management procedures that incorporate appropriate security, recording, calculation, validation, authorization, transmittal, storage and disposal of all operational, technical, and supporting data and related records.

1.3.9 MOTIVA Lab Monitors and Measures the Performance of its Systems

MOTIVA Lab monitors and measures the systems used to support all technical, commercial, financial and supporting business operations. MOTIVA Lab audits these systems and MOTIVA Lab top management examines them yearly to ensure they are appropriate and aligned to the needs of the business.

1.4 Terms and Definitions

The following terms and definitions are provided to ensure consistency of application of MOTIVA Lab management systems.

1.4.1 Organization: MOTIVA Laboratories Inc. (MOTIVA Lab). Also referred to as "the business."

1.4.2 Management System: refers to the documented approach implemented within MOTIVA Lab to control and direct all operations. The top-level processes are documented in the MOTIVA Lab Corporate Quality Manual. MOTIVA Lab management systems include aspects related to health, safety, the environment, quality, finance, human resources and commercial activities. Their implementation also demonstrates compliance to statutory and regulatory obligations; conformance to applicable National and International Standards; and the fulfillment of customer and internal business requirements.

1.4.3 Corporate Quality Manual: the top tier set of documents and specifications within MOTIVA Lab, providing an overview of the business including mission, vision, and values. It defines the scope of the MOTIVA Lab business and supporting systems, details corporate policies, and references the procedures implemented within the business that support health, safety, environmental and quality efforts. Roles, responsibilities and structures are included.

1.4.4 Corporate Policy: a documented strategy adopted by the business at group or within a specific region that is aligned with one or more of the Corporate Objectives contained in the Corporate Quality Manual and to which resources are aligned to ensure its effective execution.

1.4.5 Corporate Quality Objective: An approach adopted by the business, in support of the overall attainment of the MOTIVA Lab Corporate HSEQ Policy, against which resources can be allocated and attainment can be measured.

1.4.6 Documentation: collective term to include all internally generated and externally sourced documents such as policies, procedures, methods, forms, specific instructions, drawings, standards and specifications, legislation, statutes, regulations, equipment manuals, instructions, instrumental and computer software.

1.4.7 Specification: A document stating a requirement. In other words, it includes any written direction to do something or how to do it. Almost all documents are also specifications.

1.4.8 International Standards: consensus based approaches developed by internationally established committees including stakeholders from manufacturers/providers, users/consumers, private sector stakeholders, public sector stakeholders and technical experts. International standards bodies include, amongst others, the ISO (International Organisation for Standardisation), IEC (International Electrotechnical Commission), ITU (International Telecommunications Union), IEEE (Institute of Electrical and Electronics Engineers), ASTM (American Society of Testing and Materials), CSA (Canadian Standards Association), and UL (Underwriters Laboratories). Published standards include, amongst others, ISO 9000:2005; ISO 9001:2008; ISO/IEC 17000:2004; ISO/IEC 17020:2004; ISO/IEC 17021:2006; ISO/IEC 17024:2003; ISO/IEC 17025:2005; ISO/IEC 17043:2010.

Note that most health and safety requirements imposed on MOTIVA Lab are regulatory and not from international standards.

1.4.9 Procedure: a document/specification for a discrete operation or component part of a process that does not generate results/reports that are provided to customers. Procedures may be generated at any level within the business and include all support instructions which enable the attainment of business objectives.

1.4.10 Method: a document/specification for a technical procedure; routine method of testing, measurement, calibration, inspection or certification; including specialist procedure and protocol for a project. This document/specification is followed in order to provide test/calibration results or inspection/certification or advisory reports to customers. Examples include the chemical/microbiological testing of food and environmental samples; fatigue testing of metals, mechanical testing of welds.

1.4.11 Instruction: a document/specification generated in instances where modifications to routine operations and procedures are required for specific pieces of work, projects or studies. Instructions are generated at section level and should be generated in advance of work commencing to ensure that procedures and/or processes are documented in the requisite level of detail, communicated to and understood by all involved. instructions may be generated internally or supplied by customers in the form of customer specific instructions; test, validation or calibration methods or project protocols. All instructions must be referenced in procedures or methods in order to be valid.

1.4.12 Records: collective term to include all internally generated and externally sourced records, hard copy or electronic, including, but not limited to, original observations, certification and inspection reports; test and calibration reports/certificates; equipment records; audit findings and reports; photographs; corrective actions; management reviews and similar. Records are evidence of the appropriate implementation of documents/specifications.

1.4.13 Deviation: a perceived or actual departure from policies, procedures or processes in the management system or technical operations, or from a requirement from an external specification such as a standard.

Note: This term encompasses all concepts sometimes referred to as a “non-conformance,” “departure,” or “deficiency.”

1.4.14 Potential Deviation: a potential departure from policies, procedures or processes in the management system or technical operations, or from a requirement from an external specification such as a standard.

Note: This term encompasses all concepts previously referred to as a “potential non-conformance,” “potential departure,” or “potential deficiency.”

1.4.15 Opportunity for Improvement: a potential improvement in some aspect of MOTIVA Lab operations in terms of a savings in time or effort, a reduction in complexity, an enhancement to health and safety, an expansion of scope, or other measurable advantage to the business itself or the people working in MOTIVA Lab.

1.4.16 Complaint: a written expression of dissatisfaction from any party, concerning any aspect of MOTIVA Lab operations. Complaints received by MOTIVA Lab over the phone are recorded by the recipient.

1.4.17 International Laboratory Accreditation Cooperation (ILAC) and International Accreditation Forum (IAF): international co-operations of accreditation bodies. The ILAC and the IAF arrangements support international trade by promoting international confidence and acceptance of work performed by accredited organizations.

1.4.18 Subcontracting: The provision of services to MOTIVA Lab by an outside organization for the same services for which MOTIVA Lab is accredited. If a test is part of the MOTIVA Lab scope of accreditation or is normally conducted within MOTIVA Lab, any request to have this same test conducted by an outside agency is considered subcontracting.

1.4.19 Supplier: the company or person to whom an order has been placed for the procurement of products or services (including calibration and testing) or the execution of a specific part of a particular contract. None of the products or services falling under this definition are normally supplied by MOTIVA Lab.

1.4.20 Customer or Client: a firm or person having a contractual agreement with MOTIVA Lab for the provision of MOTIVA Lab services, or the recipient of a product or service from MOTIVA Lab.

2.0 MOTIVA LAB STRUCTURE AND OPERATIONS

2.1 Corporate Objective

2.1.1 MOTIVA Lab is appropriately structured for its business and MOTIVA Lab top management leads by example. All management personnel understand and have agreed to the implementation of the Corporate HSEQ Policy and Objectives. Management personnel take an active part of implementing MOTIVA Lab health, safety, environmental, and quality system requirements and support their teams in the attainment of these objectives.

2.2 MOTIVA Lab Legal Structure

2.2.1 MOTIVA Laboratories Inc. is a federally chartered corporation under the Canada Corporations Act. Copies of the documentation that meets statutory requirements for the legal identification of the business are available for review by appropriate authorities and third party recognition agencies.

2.3 Independence, Impartiality and Integrity (See Pol-002 and Pol-003)

2.3.1 Impartiality is essential for MOTIVA Lab to deliver appropriate conformity assessment services that provide confidence.

2.3.2 All MOTIVA Lab personnel are engaged to ensure independence, impartiality and objectivity in the provision of conformity assessment services. Top management implements the MOTIVA Lab Code of Ethics and all management and staff demonstrate commitment to this policy by recording their signatures on such a commitment.

2.3.3 It is MOTIVA Lab policy to assure and effectively manage impartiality. MOTIVA Lab does not supply or design products of the type inspected or tested or provide any other products or services that could compromise the confidentiality, objectivity or impartiality of testing processes and decisions.

2.3.4 MOTIVA Lab has a zero tolerance policy with respect to the acceptance of gifts and inducements as detailed in HR policies and procedures.

2.3.5 It is MOTIVA Lab policy that:

- MOTIVA Lab does not collude or falsify results of participation in proficiency testing schemes.
- MOTIVA Lab proficiency testing schemes are designed, wherever possible, to minimize the possibility of collusion and falsification of results from participants.
- MOTIVA Lab personnel declare any potential conflicts of interest on recruitment and throughout their employment as applicable. All identified potential conflicts of interest are assessed and, where a threat to impartiality is confirmed, effective and timely eliminating or mitigating action is taken
- MOTIVA Lab management and personnel are free from any undue internal or external commercial, financial or other pressures that may adversely affect their impartiality and integrity with respect the activities performed.
- MOTIVA Lab testing, calibration, consultancy and advisory activities are not allowed to compromise the impartiality, integrity and objectivity of any MOTIVA Lab activities, processes, procedures and decisions.
- MOTIVA Lab personnel do not engage in any activities that could diminish confidence in the competence, impartiality, judgment or operational integrity of any business activities.

2.4 Confidentiality (See Pol-003)

2.4.1 It is MOTIVA Lab policy to maintain customer confidentiality in relation to all business activities. To ensure confidentiality, all staff (permanent or contract) are required to sign confidentiality agreements on appointment.

2.4.2 Should a third party request information pertaining to any customer of MOTIVA Lab, no information will be disclosed without the full written consent of the customer.

2.4.3 In the event that MOTIVA Lab is legally obliged to disclose information to a third party, or an authority having jurisdiction, MOTIVA Lab will comply with the law. Affected customers are informed if MOTIVA Lab is permitted to do so by the authority having jurisdiction.

2.4.4 MOTIVA Lab ensures that records, data and documentation pertaining to customers are maintained in confidence. MOTIVA Lab publishes procedures regarding the protection of customer confidentiality and access to MOTIVA Lab facilities. This includes the protection of electronic data.

2.5 Insurance

2.5.1 MOTIVA Lab retains sufficient insurance for the scope of business activities in the following categories:

- Errors and omissions liability insurance.
- Commercial general liability insurance.
- Worker compensation.

2.6 Cooperation and Transparency

2.6.1 MOTIVA Lab cooperates with customers, stakeholders, specification bodies and others in order to enhance the technical content of delivered services or in order to enhance customer service.

2.6.2 MOTIVA Lab promotes, as much as possible within the context of maintaining customer confidentiality, transparency of operations.

2.6.3 All staff are encouraged to share their experiences and knowledge with their peers, colleagues and industry bodies.

2.7 Structure, Roles and Responsibilities

2.7.1 MOTIVA Lab management, technical and quality personnel are provided with sufficient resources to implement their portion of the MOTIVA Lab management system in their respective areas and to ensure the effective operations of the technical, operational and support functions for which they are responsible.

2.7.2 The business operating structure is outlined in Appendix I of this manual. Each section that delivers specific conformity assessment services are published on www.MOTIVA Lab.com.

2.7.3 Corporate support services are provided by the following centralized components:

- Human Resources (HR);
- Information Technology (IT);
- Finance;
- Sales and Marketing;
- Health, Safety, Environment and Quality (HSEQ)

2.7.4 The General Manager and all Managers and Supervisors appoint deputies to key roles within the business. These are outlined within the Job Descriptions of the personnel concerned.

2.7.5 The appointed HSEQ Manager and their staff have overall responsibility for monitoring and reporting on quality and/or health and safety within a defined remit and have direct access to the highest executive level within MOTIVA Lab. See the function descriptions given below. Responsibilities of the HSEQ staff include:

- Operation of the MOTIVA Lab management system in conformity with applicable specifications.
- Reporting to management on the performance of the management system components within their
- authority and of any improvements required
- Providing guidance and training in safety, quality and other business-unit-related activities
- Auditing, inspecting, and reporting
- Facilitating continual improvement in their management systems
- Promoting integrity, teamwork and performance throughout their business area.

2.7.6 MOTIVA Lab appoints experienced, technically-competent individuals as Laboratory managers or as part of technical management teams in multi-disciplinary sections. Those appointed as Laboratory manager or as part of a technical management team are specified in the respective MOTIVA Lab documents. These individuals (or teams):

- work with the HSEQ staff to ensure the effective implementation of the management system and technical operations within their laboratories / sections
- support the General Manager to fulfill their responsibilities for the overall technical operations of their testing and calibration laboratories
- facilitate witness audits and report findings to management, including opportunities for improvement
- train, mentor and develop staff to ensure the required level of technical competence is available to consistently deliver the required level of service provision

3.0 MOTIVA LAB COMPETENCIES

3.1 Corporate Objective

3.1.1 MOTIVA Lab delivers technically valid results using approaches and environments that meet or exceed all applicable regulatory specifications. MOTIVA Lab reinforces this reputation through the maintenance of formal third-party recognition schemes, including accreditations from ILAC-recognized accreditation bodies, approvals from designated regulatory authorities, and formal recognitions of proficiency from accredited proficiency testing providers.

3.2 Scope of MOTIVA Lab Operations

3.2.1 MOTIVA Lab delivers accredited test results in chemistry, microbiology, and toxicology in support of environmental regulations and policy. MOTIVA Lab delivers accredited tests results in metallurgy and composite materials; construction materials; polymers and coatings; fire safety and resistance; and food and consumer products. Accreditations for all MOTIVA Lab laboratories can be found on www.MOTIVALab.com.

3.2.2 MOTIVA Lab's accredited calibration activities include mass, pressure, dimensional, temperature, electrical/electronics, and force.

3.3 MOTIVA Lab's Undertaking to Deliver Competence (See SP-005)

3.3.1 MOTIVA Lab understands customer requirements and acquires the information to deliver the required level of technical and service whenever undertaking new work. Thorough contract review helps achieve this level of understanding.

3.3.2 MOTIVA Lab reviews all tenders and contracts to determine, prior to allocating resources and preparing bid responses to customers, if the MOTIVA Labs implicated have the following in place in order to produce technically valid results:

- the people with the requisite skills and knowledge;
- the environment with the requisite facilities and equipment;
- the quality processes, and
- the procedures.

3.3.3 As well, MOTIVA Lab determines whether:

- there is any business risk to MOTIVA Lab (for example, such that may be associated with diversification into new markets);
- the timescales are achievable;
- any subcontracting is required, and
- ultimately MOTIVA Lab can fully meet customer requirements

3.3.4 MOTIVA Lab formally reviews contracts for work at the planning stage, throughout the duration of the contract, during any considerations for amendment, and at its conclusion to ensure that contractual requirements are mutually agreed, appraised as required, and fulfilled.

3.4 Subcontracting and Procurement of Competence (See SP-008)

3.4.1 Testing and calibration activities are subcontracted only in exceptional circumstances. Should the need arise MOTIVA Lab selects subcontractors on the basis of their competence to perform the activities required.

3.4.2 In all instances, MOTIVA Lab remains responsible to the customer for any subcontracted testing or calibration.

3.4.3 MOTIVA Lab procures services and supplies that comply with specified criteria. MOTIVA Lab evaluates these to determine conformance to specification prior to implementation or use as appropriate.

3.4.4 Subcontractors, suppliers and service providers are subject to assessment, prequalification and approval. A list of approved subcontractors, suppliers and service providers is maintained by the Purchasing Manager.

4.0 THE PEOPLE OF MOTIVA LAB

4.1 Corporate Objective

4.1.1 MOTIVA Lab trains, supervises and demonstrates the continuing competence and safe working habits of MOTIVA Lab staff. MOTIVA Lab establishes goals for this objective and tracks their attainment.

4.2 Recruitment, Training and Competence Management (See SP-005)

4.2.1 MOTIVA Lab recruits and qualifies staff using best practice. Personnel are recruited on the basis of relevant academic, technical and managerial qualifications, experience and underpinning knowledge to perform the work required of them.

4.2.2 All staff are under contract (permanent or short term) and receive training in MOTIVA Lab management system in order to work in conformity with the policies and procedures referenced herein. Personnel are required to sign a formal contract on commencement of employment, part of which is a commitment to work in line with the MOTIVA Lab Code of Conduct at all times.

4.2.3 MOTIVA Lab trains, qualifies, and assesses the competence of staff before they can undertake work on behalf of the business. Key competence criteria are identified for staff to ensure that technical competence meets the required standard and its application is effectively managed throughout MOTIVA operations.

4.2.4 MOTIVA Lab commits to the training and development of staff. Training and development needs are identified and mutually agreed through the MOTIVA Lab performance management and appraisal process. This process compares job descriptions with personnel training needs and results in training objectives for all personnel.

4.2.5 Training and competence assessment is provided by experienced, authorized personnel and is formally documented/recorded to indicate that requisite levels of competence have been demonstrated.

4.2.6 This manual and the associated management system documentation details persons responsible for specific tasks. For clarity, in line with normal management practice, it is perfectly acceptable for the designated person to delegate the actual performance of the task to another suitably competent individual. However, the responsibility for ensuring that the task is carried out cannot be delegated. This responsibility shall always reside with the individual stipulated in the Management System documentation.

4.3 Group and Regional Personnel and Responsibilities

4.3.1 **General Manager (GM):** responsible for all MOTIVA Lab operations, including the execution of the MOTIVA Lab strategic plan and the implementation of strategic goals and objectives. Provides leadership and direction toward the achievement of MOTIVA Lab's mission, vision and values. The GM has overall responsibility for health, safety, environment and quality policy within MOTIVA Lab.

4.3.2 **Financial Officer (FO):** responsible to the GM and Board of Directors for all financial and fiscal management aspects of MOTIVA Lab operations. Provides leadership and financial governance and supports the GM in the administrative, business planning, accounting and budgeting aspects of the business.

4.3.3 **IT Manager (ITM):** responsible to the GM for the alignment of IT/ IS objectives with the MOTIVA Lab strategic plan. Provides vision and leadership in the development and

implementation of IT/ IS projects in order to improve operational effectiveness, service quality, and to mitigate business risk.

4.3.4 **Sales Manager (SM):** responsible to the GM for the development and implementation of global best practice, including the introduction of strategic business performance measures, benchmarking tools and techniques.

4.3.5 **Laboratory Manager (LM):** each LM is responsible to the GM for the operational management and performance of their respective laboratories. Provides leadership in the implementation of the MOTIVA Lab management system in their respective laboratories, including health, safety, environment and quality, including continual improvement of technical operations.

4.3.6 **HR Manager (HR):** responsible to the GM for the alignment of HR objectives with the MOTIVA Lab strategic plan. Provides advice and guidance on employment law and on HR initiatives to assist the GM in motivating teams to achieve commonly-established operational and other goals.

4.3.7 **HSEQ Manager (QM):** responsible to the GM for ensuring compliance with health, safety and environmental legislation and for ensuring that technical and quality operations comply with applicable International Standards and statutory obligations. Also responsible of the development and continual improvement of the management system.

4.3.8 **Purchasing Manager (PM)**: responsible to the Finance Manager for coordinating the approval of suppliers and service providers and for establishing procurement policy. Responsibilities also include negotiating cost effective procurement contracts.

5.0 MOTIVA LAB MANAGEMENT SYSTEM

5.1 Corporate Objective

5.1.1 MOTIVA Lab maintains a management system appropriate to the needs of the business and includes allows MOTIVA Lab to demonstrate conformance to the following requirements, standards and specifications:

- ISO/IEC 17025 – General requirements for the competence of testing and calibration laboratories
- ISO 14001 – Environmental management systems requirements
- OHSA 18001 – Safety Management Systems

5.1.2 The documented system, methods, and procedures incorporate adequate safety controls and quality control/quality assurance all levels of the business. They are based on regulatory requirements, industry standards or best practice, as appropriate. Records are maintained of the implementation and the outcomes. All MOTIVA Lab systems and processes are continually monitored for improvement.

5.2 Scope of the Management System (See Appendix 1)

5.2.1 The MOTIVA Lab management system covers all activities within MOTIVA Lab, including:

- All aspects regarding the health, safety and welfare of MOTIVA Lab employees, and visitors to MOTIVA Lab facilities;
- The acquisition and use of expertise with the requisite skills and knowledge required for all aspects of the business;
- The use of facilities and equipment in support of all operations;
- Where appropriate, sampling, sub-sampling and preparation;
- All activities related to the quality control (QC) and quality assurance (QA) of technical and supporting operations;
- All supporting operations of the business, including HR, Finance, Purchasing, IT and Marketing, and
- The governance of the business.

5.2.2 Each laboratory and section within MOTIVA Lab is required to conform to the requirements of this management system and implement it within their area, although some aspects of the management system may need to be tailored to suit the specific operational needs of some areas Tailoring is at the discretion of the applicable manager, but requires consensus with the GM and QM.

5.2.3 All management system documentation is published on the MOTIVA Lab intranet. See below for reference to the published policies, procedures and records which are maintained by MOTIVA Lab.

5.2.4 The MOTIVA Lab management system consists of a number of levels. The highest level (first tier) is this Corporate Quality Manual and associated policies. The second tier of documentation includes those procedures and testing and calibration methods which directly support the overall management system and may be created by designated managers depending on the application of the document and the needs of the business. The third tier consists of specific instructions developed and controlled by applicable laboratory managers. Third tier documents include customer-specified methods, in-house methods, explanations and clarifications of both standard methods and calibration procedures.

5.3 MOTIVA Lab Continual Improvement Program (See SP-001 & SP-002)

5.3.1 Continual improvement is the tool whereby MOTIVA Lab implements the management system at all levels to address conditions which do not meet MOTIVA Lab specification or which impede the attainment of MOTIVA Lab Corporate Objectives. The MOTIVA Lab continual improvement program has the same overall aims as the MOTIVA Lab management system. It is aimed at:

- Providing a safe workplace for MOTIVA Lab employees and visitors,
- Instilling work practices and a social responsibility that supports the sustainability of the Environment, and
- Producing technically valid test results

5.3.2 The main components of the program MOTIVA Lab Continual Improvement Program are:

- **(Quality/Environmental)** Identification and recording of conditions which do not currently meet specification **(deviation),** or may not do so in the future **(potential deviation)** or which may allow part of the management system to perform better in the future **(opportunity for improvement).**
- **(Health/Safety)** Identification and recording of conditions which may have caused an injury **(injury or near miss),** or may do so in the future **(hazardous condition),** or which may allow part of the management system to enhance the health, welfare and safety of persons within MOTIVA Lab in the future **(opportunity for improvement).**
- Determination of the need for permanent resolution, and if so, analysis and identification of the root causes of the identified condition.
- Selection of a spectrum of solutions to either correct or prevent the condition or provide permanent resolution by addressing the root cause.
- Implementation of the selected solution.
- Recording of these activities from identification of the condition to close out of solution.
- Monitoring of the implemented solution to determine its effectiveness

5.3.3 Deviations, potential deviations, hazardous conditions and opportunities for improvement are normally identified during the following activities:

- Customer service, including receipt of customer inputs to processes and their responses to requests for feedback.
- Complaints, following investigation of the validity of such complaints. Only validated complaints will produce deviations. All others may produce potential deviations or opportunities for improvement.
- All technical operations including quality control, quality assurance, and method validation, any of which can identify issues requiring consideration. This also includes those operations that result in a report produced and delivered on behalf of MOTIVA Lab.
- Audits, inspections, assessments, and evaluations. Each issue (finding) raised is classified as a condition requiring consideration.
- Management review of MOTIVA Lab operations. Issues raised here are normally opportunities for improvement.
- Proficiency testing and other inter-laboratory comparison activities. Any failure or potential failure score is treated as a deviation.

5.3.4 All MOTIVA Lab staff identify and record issues related to the types of conditions noted above, during the activities noted above. The treatment of the identified condition is facilitated by HSEQ staff, who assist in the remainder of the steps to be followed.

5.3.5 The need for permanent resolution of the identified condition is dependent on the impact it may have on MOTIVA Lab, its people and its operations. There are normally three considerations and if any one of the responses from these three questions is “Yes” then

full corrective or preventive action MUST be taken, starting with the identification of the root cause. Otherwise, simple correction or prevention is acceptable, without any root cause analysis.

Condition 1 - Does the identified condition present risk to the health, welfare and safety of MOTIVA Lab employees and/or visitors or, or it may do so in the future? Any condition that poses a threat or risk to MOTIVA Lab, the people that work in MOTIVA Lab, or MOTIVA Lab's customers, or other stakeholders is considered unacceptable. It has the potential to harm people and the company. If the condition does not involve health and safety, it may still present unacceptable risk or potential risk, as determined by the following algorithm: RISK = cost of the condition (damage) X probability of its occurrence

Condition 2 - Has the condition resulted in the production of technically invalid data, or does it have the potential to do so?

Condition 3 - Would it take less effort (and/or cost) for MOTIVA Lab to implement full corrective (or preventive) action than simple (and repeated) correction or prevention?

5.3.6 Analysis of root causes, if required, consists of identification of the component part of the management system that failed to support MOTIVA Lab policy, objectives, or operational requirements. Root causes normally fall into one of the following categories:

- Personnel factors
- Environmental factors
- Quality factors
- Procedural factors
- Organizational factors

5.3.7 Once the root cause is identified, the only solutions deemed acceptable are those that address the root cause. In the case where no root cause is needed or identified, any solution that corrects (or prevents) the condition is deemed acceptable.

5.3.8 Implemented solutions are recorded and a date for follow up is selected. Follow up determines the effectiveness of the implemented solution. If follow up determines that the solution was not effective (ie, the condition has recurred) then either the root cause or the selected solution were not appropriate and the process is restarted from the analysis of the root cause.

5.3.9 Once follow up is complete and the selected solution is deemed effective, all actions regarding the original condition are deemed closed.

5.4 Technical Methods and Procedures

5.4.1 MOTIVA Lab selects and uses technical procedures in support of test and calibration, operations that meet one or more of the following criteria:

- Methods and procedures as stipulated by regulation, legislation, regulatory agencies and authorities having jurisdiction;
- Methods and procedures published in national, regional or international standards and other consensus based documents from within the technical communities associated with the science under consideration
- Documented in-house methods are prepared from the respective reference publications, with further details added to ensure consistency of application.

5.4.2 MOTIVA Lab ensures that all methods and procedures are fit for purpose and appropriately validated for the intended use.

5.5 Proficiency Testing / Quality Control/Assurance (See TP-003)

5.5.1 MOTIVA Lab participates in proficiency testing schemes or inter-laboratory comparisons where these are available and relevant to the range of testing and calibration services provided. PT participation assists in assuring quality and result integrity and provide metrics against which performance can be objectively assessed.

5.5.2 MOTIVA Lab implements quality control procedures. Depending on the type of testing, calibration, and inspections performed, this may include the use of certified reference materials; secondary reference materials; the retesting/recalibration of retained items; and re-inspections.

5.5.3 The MOTIVA Lab approach to quality assurance is holistic, encompassing people, plant, and processes. Method witnessing schedules are supported by participation in external proficiency testing schemes and the internal quality control regimes within the laboratories as appropriate.

5.5.4 Results from participation in PT schemes and inter-laboratory comparisons are reviewed on a quarterly basis and reported to the HSEQ Manager. Results generated through the quality control regimes are subject to audit as part of the method witnessing schedule.

5.6 Management System Focus on Health and Safety (See SP-006)

5.6.1 MOTIVA LAB provides its employees with a safe and desirable working environment meeting and or exceeding all applicable regional legislation.

5.6.2 MOTIVA LAB eliminates foreseeable hazards which may result in fires, security losses, property damage accidents, and personal injuries / illnesses through internal risk (hazard) assessments and engineering certifications as required by applicable statute.

5.6.3 MOTIVA Lab employees recognize and understand their legislated responsibilities for immediately reporting all near misses, first aid and medical aid accidents at all MOTIVA Lab facilities. Work practices and procedures are clearly defined and maintained in applicable published safety policies and procedures. Managers and safety committee members receive formal training to fully understand their legislated responsibilities and the operational legislation applicable to their businesses.

5.6.4 Accidental loss is controlled through appropriate risk management in combination with active employee involvement in Joint Health & Safety Committees (JHSC), accident investigations, workplace inspections and employee training. The prevention of loss has been established as a responsibility for all MOTIVA Lab personnel at all levels of management and staff alike. This responsibility includes adherence to published safety procedures, reporting of incidents of both hazardous work conditions and near miss incidents, and the submission of recommendations by the JHSC to enhance laboratory safety performance and improve efficiencies.

5.6.5 All management functions and test processes comply with MOTIVA LAB loss prevention requirements as they apply to the design, operation and maintenance of facilities and equipment.

5.6.6 Joint Health & Safety Committees, facility performance reporting and the development of annual goals and objectives posted in each area are the vehicles used each year to enhance safety and improve operational efficiencies.

6.0 MOTIVA LAB INFRASTRUCTURE

6.1 Corporate Objective

6.1.1 MOTIVA Lab uses facilities, equipment, supplies and services that are technically and operationally appropriate, and promote the health, welfare, and safety of employees and visitors. MOTIVA Lab can demonstrate that all facilities, equipments and supplies are functioning properly and meet or exceed required health, safety, environmental, and quality specifications.

6.2 General Environmental Conditions and Facilities

6.2.1 MOTIVA Lab controls its environments in the manner specified for the health and safety of MOTIVA Lab employees and for the conduct of technical operations.

6.2.2 MOTIVA Lab maintains and records environmental conditions that may have an influence on the quality of technical operations (testing, inspection, proficiency testing, and certification) or may have an influence on the health and safety of MOTIVA Lab employees or visitors. Such controls and their records include temperature, air flow, humidity and supporting services wherever necessary to ensure that facilities are maintained at the specified conditions for the safe and correct performance of calibrations, testing, proficiency testing sample preparation, research, development, consultancy, and training.

6.2.3 MOTIVA Lab has appropriate arrangements in place for the maintenance of buildings and facilities to maintain validity and integrity of records, documentation, data, reference standards and materials, equipment, and calibration or test items.

6.2.4 MOTIVA Lab segregates incompatible activities either physically or in time to prevent the possibility of tests or calibration results being compromised

6.2.5 MOTIVA Lab ceases any testing, calibration, inspection or certification activity, in the event that environmental conditions or other factors could compromise the outcome. When the incompatible circumstance is remedied, MOTIVA Lab implements appropriate procedures to restart the work.

6.3 Equipment

6.3.1 All equipment used in the provision of MOTIVA Lab services is fit for purpose; uniquely labeled; traceable to the SI; and maintained, stored, transported and operated in accordance with documented procedures and instructions. Environmental and equipment operating conditions support the integrity of the data generated. This includes reference standards, reference materials and equipment used for subsidiary measurements (such as environmental conditions) and to equipment used for access and similar uses in facilities or on site.

6.3.2 MOTIVA Lab ensures the continued capability of its equipment through preventive maintenance, servicing, inspection and calibration as appropriate.

6.3.3 In the event that existing fixed equipment used for testing or calibration services is moved from one environment to another or where new equipment is procured for accredited testing or calibration services, the relevant MOTIVA Lab informs the appropriate Accreditation Body.

7.0 SAMPLE INTEGRITY AND SAMPLE HANDLING

7.1 Corporate Objective

7.1.1 MOTIVA Lab maintains the integrity of all samples, from reception to disposal, with adequate security, protection, and defined processes for their receipt, identification, checking, routing, storage, reporting, and disposal.

7.2 Sampling

7.2.1 MOTIVA Lab requires customers to follow accepted protocols when sampling. MOTIVA Lab provides appropriate procedures to customers for sampling and provides sampling tools as appropriate. Sampling tools include record formats for customers to complete at the time of sampling and then submit to MOTIVA Lab with the sample.

7.2.2 Samples submitted to MOTIVA Lab by customers are checked for fitness prior to be accepted.

7.2.3 Samples taken by MOTIVA Lab, onsite or in the lab, follow MOTIVA Lab published protocols, which include sampling plans and all relevant factors to ensure that a valid, representative sample is taken for subsequent measurement and analysis.

7.2.4 Records relating to sampling activities are maintained locally and reference or include the following:

- the sampling plan used
- the procedure or applicable Standard
- personnel taking the sample
- sample location, diagrammatically or by other means
- statistical justification supporting the sampling procedure (where relevant)
- the environmental conditions (where relevant)

7.2.5 Any abnormality or deviation from normal or specified conditions is recorded during sample receipt. Precise details of the checks to be performed depend on the type of item. Where items do not conform to requirements or are otherwise deemed unsuitable for test or calibration, the customer's advice is sought and their instructions to MOTIVA Lab are recorded on the applicable file.

7.3 Sample Handling

7.3.1 All test and calibration samples are uniquely identified, protected from degradation, damage or loss at all stages of their progress through the associated MOTIVA Lab facility. Measures are taken to ensure customer confidentiality whilst in the laboratory, and after disposal, or during return to the customer as appropriate.

7.3.2 All samples are appropriately referenced in associated records and reports to provide traceability of the sample through its processes from sampling/sample receipt to issuance of the report.

8.0 TRACEABILITY OF MOTIVA LAB MEASUREMENTS

8.1 Corporate Objective

8.1.1 MOTIVA Lab produces results traceable to the SI, through a National Metrology Institute (NMI), and accorded uncertainties appropriate to requirements. Where such traceability is neither possible nor appropriate, intrinsic standards are used to establish the traceability of measurements.

8.2 Reference Standards, Materials and Instruments (See-TP-001)

8.2.1 MOTIVA Lab measurements are traceable to the International System of Units (SI) (Systéme international d'unités) wherever the concept is applicable. Testing and calibration laboratories establish this level of traceability of their measuring instruments by means of an unbroken chain of calibrations linking them to relevant primary standards of measurement defined within the mutual recognition arrangement between the national measurement institutes under the aegis of the International Council of Weights and Measures (CIPM).

8.3 Reference Standards, Materials and Instruments (See TP-001)

8.3.1 Reference standards of measurement, reference materials, and reference instruments are traceable through a body that can provide traceability to the SI units of measurement or through appropriately certified reference materials by the process of the competent propagation of uncertainties. These reference standards, materials and instruments are used solely to calibrate other standards, materials and instruments.

8.4 Uncertainties of Test and Calibration Results (See TP-002)

8.4.1 Uncertainties of measurement are estimated for all MOTIVA Lab test and calibration measurements. The uncertainties of measurements are recorded and retained by MOTIVA Lab. Uncertainties of measurement are reported in test reports only:

- when it is relevant to the validity or application of the test results, or
- when a customer's instructions so requires, or
- when the uncertainty is known by MOTIVA Lab to affect compliance to a specification limit.

8.4.2 Uncertainties of measurement are always reported on calibration certificates..

8.4.3 The processes used to estimate uncertainties within MOTIVA Lab are derived from the following references, among others:

- JCGM 100:2008 – Evaluation of measurement data — Guide to the expression of uncertainty in measurement (GUM) . Note: This document was also known as ISO/IEC Guide 98 — Guide to the expression of uncertainty in measurement.
- Eurachem/CITAC Guide CG4 – Quantifying Uncertainty in Analytical Measurement (QUAM)

9.0 INTEGRITY OF MOTIVA LAB DATA

9.1 Corporate Objective

9.1.1 MOTIVA Lab maintains adequate data management procedures that incorporate appropriate security, recording, calculation, validation, authorization, transmittal, storage and disposal of all operational, technical, and supporting data and related records.

9.2 Data Acquisition and Storage (See TP-003)

9.2.1 MOTIVA Lab information management systems maintain the integrity of generated and stored. Data is backed up offsite in a manner to protect it and sufficiently often to maintain its integrity.

9.2.2 IT procedures are in place within MOTIVA Lab for all aspects of the operations and maintenance of the electronic systems that support the business.

9.3 Reporting (See TP-004)

9.3.1 Test and calibration results, PT and inspection reports, product certifications and the certification of management systems are reported in accordance with applicable standards, regulatory and client requirements.

9.3.2 MOTIVA Lab reports are authorized prior to release by an appropriately qualified person and records are maintained to demonstrate this.

10.0 MANAGEMENT SYSTEM MEASUREMENT

10.1 Corporate Objective

10.1.1 MOTIVA Lab monitors and measures the management systems used to support all technical, commercial, financial and supporting business operations. MOTIVA Lab audits these systems and MOTIVA Lab top management examines them yearly to ensure they are appropriate and aligned to the needs of the business.

10.2 Auditing and Reporting (See SP-003)

10.2.1 MOTIVA Lab audits are performed by trained and qualified auditors to verify the effective implementation of all aspects of the management system.

10.2.2 MOTIVA Lab internal audits include witnessing of testing, calibration, inspection and certification activities. These activities cover all aspects of testing, calibration, inspection and certification.

10.2.3 MOTIVA Lab audits all methods on scopes of accreditation at least once in the four year accreditation cycle, or more often where a regulatory or other specification for such frequency exists.

10.2.4 In addition, MOTIVA Lab facilities are assessed by technical experts employed by relevant accreditation and regulatory bodies, clients and their representatives. These independent assessments provide further inputs and measurements into the MOTIVA Lab management system.

10.3 Management Review (See SP-003)

10.3.1 Management reviews are conducted at least annually and in accordance with published procedures. The objective of management review is to determine the conformance of the management system with MOTIVA Lab's own needs. When it is clear that the management system does not meet MOTIVA Lab's own corporate needs, decisions are made to modify the management system or modify corporate expectations.

10.3.2 Management review activities include the following items, as a minimum:

- the suitability of policies and procedures;
- reports from managerial and supervisory personnel;
- reports from the MOTIVA Lab continual improvement program, including:
  - customer feedback, including complaints and compliments;
  - the results of inter-laboratory comparisons or proficiency tests;
  - the outcome of recent internal audits;
  - assessments and audits by external bodies;
  - incident and deviation logs with associated corrective and preventive actions, and
- changes in the volume and type of the work;
- recommendations for improvement, and
- other relevant factors, such as quality control activities, resources and staff training.

10.3.3 Management review activities are led (chaired) by the highest authority normally located onsite of the applicable MOTIVA Lab. Local HSEQ staff will normally manage the process and act in a secretarial capacity. The output of management review is a set of actions to either modify the management system or modify corporate expectations, normally in the form of opportunities for improvement leading to preventive actions.

APPENDIX 1 – MOTIVA Lab Document Structure

MOTIVA Lab documentation is structured as per the list below:

Tier 1 – Corporate Policies

- Corporate Quality Manual – Pol-001
- MOTIVA Lab Code of Ethics – Pol-002
- MOTIVA Lab Conflict of Interest and Confidentiality Guidelines – Pol-003

Tier 2 – Procedures and Methods

- Continual Improvement Procedure – SP-001
- Feedback Procedure – SP-002
- Internal Audit and Management Review Procedure – SP-003
- Documentation and Control of Records Procedure – SP-004
- Training and Qualification Procedure – SP-005
- Job Hazard Assessment Procedure – SP-006
- Contract Review Procedure – SP-007
- Subcontracting Procedure – SP008

- Lab Traceability Procedure – TP-001
- Lab Uncertainty Procedure – TP-002
- Lab QA/QC Procedure – TP-003
- Lab Reporting Procedure – TP-004

Tier 3 – Instructions