

# SLNMAS 08

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## Quality Management

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## Introduction

Quality Management (QM) in the Sri Lanka mine action programme is conducted on the mine action operations implemented by the mine action

QM is achieved through the accreditation and monitoring of the mine clearance organisations before and during the land release process, and by the inspection of release land prior to its formal handover to the community.

Quality assurance in terms of EORE is conducted by the accreditation of all EORE organisations before they are allowed to conduct EORE activities and by the monitoring of their activities while they are conducting EORE in the field.

As part of its mandate the National Mine Action Centre (NMAC) is required to ensure that all mine action activities are conducted in accordance with the Sri Lankan National Mine Action Standards (SLNMAS) as established by the NMAC and the International Mine Action Standards (IMAS).

In terms of Explosive Ordnance (EO) clearance, the NMAC requires that all EO to a depth determined and specified in the task and/or contract are located and destroyed. In order to achieve this objective, a comprehensive quality management (QM) system needs to be developed and implemented to ensure that all areas of the cleared ground are entirely free of any EO hazards.

The Quality Assurance (QA) Department at the NMAC will be responsible for the QM process in Sri Lanka with QA teams allocated to the Regional National Mine Action Centre (RNMAC) who will conduct the physical QM activities on behalf of the NMAC.

# Quality Management

## 1 Scope

This Standard establishes the Quality Management (QM) framework for mine action operations in Sri Lanka. Its purpose is to ensure that Mine Action (MA) activities are conducted safely, efficiently, and effectively, in line with established standards and best practices. The Standard is applicable to all mine action operators working in Sri Lanka

This standard does not cover accreditation of mine action operators. Accreditation is clearly described in the Sri Lanka National Mine Action Standard (SLNMAS) 02.

## 2 Terms and Definitions

In this NMAS series, the words “shall”, “should” and “may” are used to indicate the intended degree of compliance:

- “shall” is used to indicate requirements, methods or specifications that are to be applied in order to conform to the standard.
- “should” is used to indicate preferred requirements, methods, or specifications; and
- “may” is used to indicate a possible method or course of action.

The following are the terms additionally used in this standard and the definitions of the concepts denoted by them.

The term '**National Mine Action Authority**' (**NMAA**) refers to the government entity, often an interministerial committee, in an EO-affected country charged with the responsibility for broad strategic, policy and regulatory decisions related to mine action.

**A mine action organisation** is “any organisation (government, military, commercial or NGO/civil society) responsible for implementing mine action projects or tasks. The mine action organisation may be a prime contractor, subcontractor, consultant or agent.”

**Quality in Mine Action** is ‘the degree to which a mine action service, product or output fulfils requirements’.

A **process** is a “set of interrelated or interacting activities that use inputs to deliver an intended result” (ISO 9000:2015)

**Inputs** are “resources required for a process or intervention including: people; money; materials; equipment; information and energy”.

An **output** is “the result of a process” (ISO 9000:2015). Outputs include “The products, capital goods and services which result from a development intervention; may also include changes resulting from the intervention which are relevant to the achievement of outcomes” .

**Outcomes** are “the likely or achieved short-term and medium-term effects of an intervention’s outputs” (OECD glossary of key terms in evaluation and results-based management).

**Impacts** are the “positive and negative, primary and secondary long-term effects produced by a development intervention, directly or indirectly, intended or unintended”.

**Quality management (QM)** is “Management with regard to quality. QM can include establishing quality policies and quality objectives, and processes to achieve these quality objectives through quality planning, quality assurance, quality control and quality improvement.” (ISO 9000:2015)

**Quality Assurance (QA)** is “part of quality management focused on providing confidence that quality requirements will be fulfilled” (ISO 9000:2015). QA is a confidence-building process, based on evidence, that the quality requirements are likely be met. QA encompasses all proactive activity undertaken by an organization to increase confidence in the likelihood that requirements will be met.

**Quality Control (QC)** is “part of quality management focused on fulfilling quality requirements” (ISO 9000:2015). QC addresses the question “did we get what we wanted?”

**Competence** is the “ability to apply knowledge and skills to achieve intended results” (ISO 9000:2015).

**Improvement** is “activity to enhance performance”. (ISO 9000:2015)

**Conformity** is “fulfilment of a requirement”, **nonconformity** is “non-fulfilment of a requirement”. (ISO 9000:2015)

The term “**Random Sampling**” refers to the selection of **samples** by a process involving equal chances of selection of each item. Used as an objective or impartial means of selecting areas for **test** purposes.

### **3 Quality Management**

The Sri Lanka NMAC is responsible to ensure that all MA activities are conducted in accordance with the SLNMAS. This requires establishing and implementing internal and external QM processes to ensure that all mine action operations are conducted safely effectively and efficiently.

#### **3.1 Internal QM**

The mine action operators shall ensure to establish internal QM process to conduct internal QA and QC of their mine action operations. The MA operator’s management personnel are responsible for internal QM of all their activities.

MA operators shall ensure that adequate and suitable resources are appointed in order to implement the internal QM activities as required. This is considered as an integral part of effective command, control and supervisory procedures within the organization. The internal Quality Management policy shall be included into the mine action operator’s SOP and should be adhered to during operations any time.

The MA operators shall identify and define opportunities for improvement and take any necessary actions for increasing the efficiency and effectiveness of mine action operations.

Improvement includes improving the output of MA processes performed to meet requirements, as well as to take required measures for correcting, preventing or reducing undesirable results.

Sri Lanka NMAC shall monitor internal QM system of the mine action operators including the competence and qualifications of staff involved in conduct of internal QM activities.

If the MA operators have a well-established and functional internal QM process in place, then it might not be necessary for all the components of demining QM to be carried out.

### **3.1.1 Monitoring by Demining Organisations**

While the Sri Lanka NMAC is responsible to conduct external monitoring of the mine action operations, the operators shall also conduct internal monitoring of their teams.

The MA operators shall regularly monitor their teams' operations to ensure that standards are being maintained and shall take corrective and preventive action if nonconformities identified during internal monitoring.

Well managed and documented internal monitoring by the MA operator will increase the confidence that mine action operations is conducted effectively and efficiently and thus reduces the need for external monitoring by the NMAC.

## **3.2 External QM**

The NMAC has the overall responsibility of external QM of mine action operations in Sri Lanka. This external QM process comprises of three complimentary components namely, accreditation of MA operators, monitoring of MA activities and the post-clearance inspection of cleared land.

- a. Accreditation is the procedure by which a MA operator is formally recognised as competent and able to plan, manage and operationally conduct MA safely, effectively and efficiently. Accreditation is fundamental to the whole mine action QM process. Having thorough and comprehensive accreditation procedures from the outset ensures that a MA operator is established, staffed, equipped, and has the required systems, procedures and support structures in place prior to any work commencing. Furthermore, the accreditation process checks that the MA operator is working in accordance with its documented systems and procedures and capable of achieving required standards. As a result of the accreditation process an accreditation agreement is reached with the MA operator on the standards to which MA operations is to be carried out. This agreement then forms the basis for all follow-on monitoring activities. SLNMAS 02 provides guidance on accreditation of MA operators.
- b. Monitoring is an essential part of mine action operations. Together with accreditation and post-clearance inspections, it provides the NMAC with the necessary confidence that the MA operators is working in accordance with the SLNMAS and its contractual obligations.
- c. Post-clearance inspection is the process of measuring, examining, testing or otherwise comparing a sample of cleared land with the clearance requirements.

Sri Lanka NMAC should conduct post clearance inspections to supplement accreditation and monitoring and to provide additional confidence that clearance requirements have been met and the cleared land is safe for use by the community.

### **3.2.1. The QM Department**

Within the NMAC a QM department has been established under the NMAC Director. This department manages the QA activities through the Regional National Mine Action Centre (RNMAC) where the QA teams are based. The department is responsible to implement and co-ordinate all the external QM activities (accreditation, monitoring and sampling) in the Country. The department is also responsible for the following:

- a. The development of the National Mine Action Standards (NMAS) in light of International Mine Action Standards (IMAS) for conducting of all MA activities in Sri Lanka. The QM department is also responsible for maintaining this document by continually reviewing and publishing amendments to it.
- b. The accreditation and licensing of all MA operators and their sub-units wishing to undertake MA activities in Sri Lanka. The accreditation and licensing process forms an integral part of the Quality Management process and is comprehensively discussed in SLNMAS 02.
- c. Monitoring the tasking of the QA teams by the RNMAC, in accordance with predetermined priorities.
- d. The monitoring of QA inspection results and reacting on those results that require rectification by MA organisations.

### **3.2.2. Basic QM principles**

The basic framework for meeting international and national standards and the degree of internal QA is as follows:

- a. Adherence to training standards and enforcement of these standards.
- b. Adherence to the SLNMAS.
- c. Adherence to the operator's Standard Operating Procedure (SOP) approved by Sri Lanka NMAC.
- d. Evaluation of MA assets before deployment (i.e. Detection Dogs(MDD), Manual, demining machines, completions survey teams, NTS teams, EORE teams, etc).
- e. Discipline on the demining worksites.
- f. Levels of supervision and the associated internal QA checks.
- g. Risk assessment for different EO threat.
- h. The final use of the land and threat encountered will determine the depth of clearance.

## **4 Monitoring**

Sri Lanka NMAC should conduct external monitoring of MA operations through the systematic collection and analysis of data to evaluate the impact and effectiveness of mine action operations. It is crucial for ensuring safe, efficient, effective field operations, and contribute to achieving the set objectives.

The monitoring conducted by Sri Lanka NMAC involves observation, inspection or assessment of worksites, facilities, equipment, activities, processes, procedures and documentation to confirm that a MA operator is working in accordance with the SLNMMAS and the accreditation agreement.

#### **4.1 Conduct of External Monitoring**

Prior to an external monitoring visit, RNMAC/NMAC may inform the relevant MA operator of the objectives of the visit, and any preparation required (such as ensuring the availability of certain documents or key staff). The actual date and time of site visits may be given in advance or visits may be unannounced. Unannounced visits tend to observe organizations in their normal working mode, while announced visits tend to be more productive and less disruptive.

After arrival at a MA work site, the QA team leader shall introduce the team to the person in charge of the work site and explain the purpose of the visit.

Below is the guideline for the QA team to use:

- a. Shall ensure that activities, drills and methods are in accordance with the operator's SOP approved by NMAC.
- b. Shall ensure that all safety aspects are being adhered to and that correct procedures are being employed
- c. Shall have PPE while conducting QA visit of the clearance operations.
- d. Shall always remain impartial and not let personal opinions, family ties or friendships affect their judgement and performance of their duties.
- e. Shall be free from operational, political, commercial, financial and other pressures that might affect their judgement
- f. Should not make changes to techniques taught on the MA operators training courses or to the procedures detailed in their approved SOP. Reference based recommendations on changes may be made as observation in the QA reports for action by the operator.
- g. Should follow the standard evaluation sheet when conducting the QA visit.
- h. Shall not get involved in any argument with any member of the MA operator during or after a QA visit.
- i. Shall provide timely information to the NMAC of changes to security, weather and or other circumstances that may affect operations.

#### **4.2 What should be monitored**

External monitoring includes visits of all the key processes including field operations and the internal QM of the MA operators.



#### 4.2.1 Management practices and documentation

NMAC should include the monitoring of management documentation, such as qualifications, training records, insurance cover, and general occupational health practices and records. The monitoring should also pay particular attention to compliance with the organization's internal QM plan. Samples of all documentation and records referred to above should be selected randomly from the relevant documentation.

#### 4.2.2 Worksite safety

NMAC shall assess the suitability of the worksite layout and safety procedures, and how effectively the procedures are being applied. The NMAC shall stop operations at a worksite if individual safety or the safety of the team or other individuals has been placed at risk.

#### 4.2.3 Land Release

Land release process and its field activities (NTS, TS and clearance) shall be monitored to ensure they are conducted in accordance with the Sri Lanka NMMAS and the MA operator's SOP. This shall include the team capability (people, equipment and procedures) and observe how this capability is being applied.

Any new SHA or CHA reported by NTS should be visited by the NMAC representative before certification.

Any previous SHA or CHA recommended for cancellation shall be visited by the NMAC QA team before approving the cancellation report.

#### 4.2.4 Completions Survey

The NMAC should monitor the completion survey process to ensure it is conducted in accordance with the completions survey SOP.

The completions survey reports should be properly checked by the NMAC QA teams.

#### 4.2.5 Storage, transportation and handling of explosives

The demolitions of all recovered EO to be conducted within the same day and no operator is allowed to keep recoveries overnight due to security concern. The required number of recoveries to dispose shall be communicated to Sri Lanka Army (SLA) personnel before hand. Every SLA engineer unit has been tasked to provide EOD teams to conduct daily demolitions in every task. No operator is allowed to keep bulk explosives and accessories for demolitions.

#### 4.2.6 Medical support

The NMAC shall ensure that medical support is available on site including the qualifications of the medical staff, medical equipment, stores, supplies and medicine provided to the medical staff, and vehicles for casualty evacuation. Documented procedures for treatment and casualty evacuation shall be examined.

#### 4.2.7 EORE

EORE monitoring shall be conducted by the relevant MA operator. The NMAC may assess and measure the progress of a EORE task or project against stated objectives. Monitoring of EORE operations include but not limited to the following:

- a) EORE sessions and activities to ensure they are consistent with Sri Lanka NMMAS, organization's SOPs and mine action completion strategy.
- b) Observing the level of community involvement within activity and assessing its impact on behaviour changes.

- c) Documentation including implementation plan, EORE Kit and materials and EORE guidelines approved by the NMAC.
- d) Safety of the field staff and the level of their training in field safety procedures.

#### 4.2.8 Community liaison

This refers to the processes used to exchange information between mine action operator and the affected communities on the presence and the potential EO risk in the communities. Community participation including women, girls, men and boys is necessary for effective mine action operations and especially during each stage of the land release process.

Community liaison efforts of the mine action operators shall be assessed to ensure that the needs of EO affected communities are properly identified and addressed, particularly those emanating from the completion survey. These should be implemented (i.e. additional EORE) and MA operations can then effectively support them.

### **5. Nonconformities**

Nonconformities identified during the monitoring shall be communicated to the MA operator. The severity of nonconformities should determine the subsequent corrective/preventive action(s) to be taken by the concerned MA operator.

The MA operator shall communicate their required plan of actions with the NMAC and take measures to confirm the effective implementation of the corrective and preventive actions.

The NMAC should initiate an investigation if critical nonconformities identified by the QA team to find the root causes of the critical nonconformities.

#### **5.1 Critical nonconformities**

A critical non-conformity is a major nonconformity that implies an immediate and significant safety, environmental and/or quality risk to any worker, visitor, customer, authority, member of the public, other stakeholders/interested parties or the environment/infrastructure.

Examples of critical nonconformities are:

- a. Demining accident
- b. Discovery of EO in a cleared lane during an ongoing clearance operation of a task
- c. Discovery of EO in an area presented for inspection.
- d. Discover of explosion of EO in an area in a released land.
- e. Conducting demining operations without PPE
- f. Conducting demining operations without medical support

The NMAC QA team shall stop operations at a worksite on any occasion when they have identified a critical nonconformity.

## 5.2 Major Nonconformity

A major nonconformity can generally be defined as a “breach” of SLNMAS or the operators approved SOP that is considered to be life threatening. If left unaddressed, can become a critical nonconformity.

The following list, although non exhaustive, gives examples of major nonconformities.

- a) Safety distances not being applied in accordance with the standard
- b) Ambulance or evacuation vehicle not available on site
- c) Insufficient medical support and equipment required for casualty stabilization/evacuation on site
- d) Any significant deviation from SLNMAS or the operator’s SOP that can potentially impact on safety and/or can potentially lead to a demining incident/accident (e.g. marking/clearance procedures, demolition procedures);
- e) Wrong use of demining assets which may potentially lead to demining incident/accident and missing the EO during operations
- f) No means of communication at clearance site
- g) Poor command/control by the command element which will potentially impact on safety and/or lead to a demining incident/accident; and
- h) Wrong practice and carelessness of deminer which may potentially impact on safety and/or potentially lead to a demining incident/accident (e.g. missed signal).
- i) Use of wrong equipment for mine action operations

Sometime, there may be occasions when other major nonconformities can occur. The following list, although not exhaustive, provides examples of such major nonconformities that may be recorded:

- a) Repeated failure to apply accredited management systems.
- b) Lack of internal QM processes.
- c) Refusal to allow monitoring or inspection to take place.
- d) Repeated interference with external monitoring or inspections.
- e) Premature release of cleared land in breach of task implementation plan.
- f) Application of processes known to place staff or the local population at unacceptable risk.

## 5.3 Minor nonconformities

A minor nonconformity can generally be defined as a “breach” of SLNMAS or the operator’s SOP that is not considered to be life threatening and/or can be rectified immediately without further training or additional resources being required/deployed. Minor nonconformities can generally be defined but should not restrict to:

- a) Any deviation from SLNMAS or the operator’s SOP that does not potentially impact on safety and/or cannot potentially lead to a demining incident/accident.
- b) Problems where the consequences are limited to internal inefficiencies, but products and customers/end users are not affected
- c) Poor command/control in the team as long as it does not potentially impact on safety and/or may not potentially lead to a demining incident/accident.
- d) Carelessness of deminer as long as it does not potentially impact on safety and/or may not potentially lead to a demining incident/accident.

#### **5.4 Observations**

There might be situation that the NMAC QA teams during field visit may identify some cases related to weaknesses in the processes that cannot be listed as nonconformity, but which can be improved upon. Such circumstances may be categorized as observations and recorded within monitoring documentation.

Despite an observation is not a nonconformity when it identified by the QA team, it may become to lead to a nonconformity if appropriate preventive action is not subsequently taken. When observations are made, there should be scheduled follow up visits to ensure changes are made to the correct standard.

#### **6. Suspension of Task(s)**

The examples when the NMAC shall suspend field operations in a task includes but not limited to:

- a) When a critical nonconformity has been identified
- b) Where one or several major nonconformities have been observed that either individually or as a whole constitute a threat to life of mine action staff or to other people.
- c) Where there is a current or imminent threat from external factors to the security and safety of mine action staff.
- d) When there is any encroachment into the hazardous areas that cannot be resolved soon.
- e) When there is no medical support in accordance with the organisation's SOP.
- f) When civilians and animals are inside or are about to enter the hazardous area
- g) When demining field operations is conducted without PPE
- h) When no proper supervision in accordance with the clearance organisation's SOP, exist.
- i) Where there is a reoccurrence of minor nonconformities within a team that affect safety and identified during each separate monitoring visits.

Following the suspension of any task, all relevant information shall be clearly and appropriately recorded. When the issues have been rectified, then on the recommendation of the NMAC, the operations in the suspended task should resume.

The suspension of a task may also result in the suspension or termination of operational accreditation if no corrective and preventive action taken by the concerned MA operator.

#### **7. Competence and qualification of staff involved in QM**

Mine action QM inspectors (internal and external) play a crucial role in ensuring that mine action operations are conducted safely, effectively, and in accordance with the SLNMMAS and the mine action operator's SOP.

Key competencies and qualifications can include but not limited to:

- a. Completion of a mine action QM training program
- b. Certification from Sri Lanka NMAC to conduct QA and QC of mine action operations in Sri Lanka
- c. In-depth knowledge of national mine action standards and best practices, including International Mine Action Standards (IMAS) and national regulations.
- d. Understanding of scope and types of EO contamination in Sri Lanka
- e. Previous experience in mine action operations
- f. Experience in conducting assessments, audits, and inspections.
- g. Ability to analyse and interpret data related to mine action operations.
- h. Critical thinking skills to identify the nonconformities, develop effective solutions and to provide constructive feedback to mine action teams
- i. Clear and effective communication skills, both written and verbal.
- j. Thorough and constructive approach to inspections and assessments.
- k. Attention to detail to ensure compliance with established standards and procedures.
- l. Cultural sensitivity and awareness, particularly in diverse operational environments.
- m. Ability to adapt to different working conditions and environments.
- n. Ability to plan, manage and coordinate QM activities effectively.
- o. Commitment and adherence to established safety procedures.
- p. Ability to maintain confidentiality and impartiality during QA and QC operations.
- q. Ability to meet the physical demands of the job, including potential deployment to remote or hazardous areas.

### **7.1 Frequency of monitoring visits**

Monitoring should take place according to the program agreed between RNMAC and the NMAC.

The following are guidelines determining the frequency of monitoring visits:

- a. Every ongoing task should be monitored at least once by the RNMAC QA team. Requirements for further visits should be decided by the RNMAC based on the analysis of the first monitoring findings.
- b. The RNMAC QA teams may visit the EORE teams. However, monitoring visit of EORE teams shall be mainly conducted by the relevant MA operator.
- c. NTS teams shall be visited at least once by the NMAC representative when new SHA or CHA reported by the team
- d. Any previous SHA or CHA recommended for cancellation by the NTS shall be visited by the NMAC QA team before approving the cancellation report.
- e. Where MA teams have had an accident or two consecutive major nonconformity reports, they will be subjected to increased visits to ensure that agreed corrective actions are implemented.

### **7.2 Signing of evaluation sheet**

The QA Team shall only stay at a site as long as to complete the QA visit and not longer.

After completion of the visit the QA team leader shall discuss the QA findings with the team leader at the work site. Any minor points shall be dealt with by the MA operator team leader at the work site and are to be mutually agreed between him/her and the QA team leader. The MA operator's team leader at the work site shall have the opportunity to write any comments about the visit in the space provided on the sheet and sign it.

### **7.3 Control of QA monitoring sheet**

At the end of the day and on returning from the day's visits the QA team leader should submit the complete monitoring sheets to the senior QA assistant.

The monitoring sheet findings shall be entered into the IMSAM database after check and certification by the RNMAC/NMAC.

The RNMAC/NMAC shall maintain a complete set of written (originals) and electronic records of the monitoring visits conducted by the RNMAC/NMAC. The records and reports will remain the property of the NMAC. Copies of the various reports may be given to the respective MA operator on request.

The RNMAC/NMAC should establish a platform to communicate comments and changes made with the MA operators.

### **7.4 Reports**

On completion of a week's evaluation, the RNMAC should provide a weekly summary QA visit report, indicating the activities that have been carried out during the previous week. The report should provide a brief synopsis on the results of each site inspected, as well as recommendations for future inspections. After the QA reports reviewed and discussed at the RNMAC, it should be forwarded to the QA officer at the NMAC for information.

Furthermore, the RNMAC should provide and send a monthly summary report to the NMAC. The monthly report should cover the following:

- a. Summary of QA visits conducted during the month.
- b. Critical, major and minor nonconformities identified.
- c. Corrective actions taken on work sites during QA visits.
- d. Observations regarding amendments to organisation's SOP or equipment.
- e. Suggestions regarding amendments to the SLNMAS.
- f. Lessons learned and recommendations.

## **8. Inspection of cleared land**

The purpose of post clearance inspection is to provide confidence to the interested parties that the requirements of national mine action standards have been met, the MA operator has cleared the area and destroyed all EO from the area within the specified depth, and the area is safe for use.

Post clearance inspection of cleared land should take place by conducting a sampling process by the RMAO/NMAC.

During the inspection of the demined area, the MA operator shall understand that failure to comply with demining requirements (clearance, reduced) constitutes a critical non-conformity.

The non-conformity will be subject to root cause analysis and implementation of agreed corrective actions, which may include requirements for re-clearance of the area by the MA operator.

Repeated critical non-conformity with respect to the demined area will result in suspension or termination of the MA operator's certification agreement.

The RNMAC QA team shall use search equipment that is capable of detecting the target object at the depth specified in the demining task.

## **8.1 Principles of the post-clearance inspection and sampling process in Sri Lanka**

The following are principles for sampling:

- a. All demining areas, regardless of size, are subject to inspection.
- b. The senior operations assistant shall decide if sampling of cleared land needs to be conducted after scrutinizing the completion survey report of the cleared land.
- c. The specific size of the portion of the demined area to be inspected is determined by the RNMAC QA team
- d. The portion of the area selected for verification shall be the minimum necessary, taking into account local circumstances and conditions. Unless otherwise specified, no less than 1% of the demined area or the area that has been reduced after maintenance shall be inspected. Inspection of the reduced areas is performed at the sites where the clearing was carried out.
- e. The area to be sampled shall be inspected to the depth agreed in the original task execution plan. If no clearance depth is mentioned, then the minimum depth shall be 15 cm from the original ground surface in the areas where manual clearance techniques were utilised and 20 cm in the areas where mechanical asset utilised.
- a. The samples to be inspected (ranging in size from 1 m<sup>2</sup> to 30 m<sup>2</sup>) are chosen randomly.
- f. To save time and QA resources sampling of cleared land may already commence during the QA monitoring visits depending on if EO are found. The sizes and position of the lots sampled during the QA visits should be recorded and the remaining parts should be done during the final QC inspection.
- g. The post-clearance inspection and sampling should be completed within 14 working days after the completion survey report is submitted to the RNMAC.
- h. The same clearance technique should be utilised by the QA team as the technique utilised by the MA operator in the case of manual demining. In the case where demining machines were utilised depth measurements shall be conducted at random covering the area cleared.
- i. During the post-clearance inspection, the survey and recording results of the area cleared should also be inspected.

## 8.2 Acceptance criteria

The land submitted for sampling shall only be accepted as “cleared” if all the sampling units are found to be free of all EO hazard including improvised explosive ordnance and unexploded sub-munitions down to the depth specified and agreed in the task implementation plan. Where any sample in the lot is found to contain one or more EO, this will constitute a ‘critical non-conformity’, and the land submitted for inspection shall be declared to have failed the inspection.

The facts of discovery of EO shall be documented in the presence of a representative of the MA operator and the information about the location and nature of the EO is registered, photographed, and the location on the area and map is indicated.

Once an EO is detected, the inspection team shall immediately stop the inspection, goes to a safe area and draws up a critical non-conformity report.

The following criteria will determine the acceptance or non-acceptance of cleared land:

- a. Where the full excavation and rake excavation manual demining techniques were used and any EO are found within the intimated clearance depth, the area submitted for inspection shall not be accepted as cleared. This shall constitute a ‘critical non-conformity’ and the land submitted for inspection shall be declared to have failed the inspection.
- b. Where manual demining utilising metal detectors has been conducted to clear the land and any EO found within the intimated clearance depth, then the area submitted for inspection shall not be accepted as cleared. This shall constitute a critical non-conformity’ and the land submitted for inspection shall be declared to have failed the inspection.
- c. Where manual demining utilising only metal detectors has been conducted to clear the land and one or more pieces of scrap ferrous metal, with a weight equal to or greater than the ferrous metal content of the mine is found, then it should be considered a non-conformity. The land submitted for inspection shall be declared to have failed the inspection if the NMAC investigation did not support other reasons to justify the presence of scrap metals in the cleared area.
- d. Where mechanical excavation has been conducted to clear the land and EO are discovered, then the area submitted for inspection shall not be accepted as cleared. This shall constitute a ‘critical non-conformity’ and the land submitted for inspection shall be declared to have failed the inspection.
- e. Where surface clearance during Battle Area Clearance (BAC) was conducted and any UXO are found on the surface or protruding from the ground, the area submitted for inspection shall not be accepted as cleared. This shall constitute a ‘critical non-conformity’ and the land submitted for inspection shall be declared to have failed the inspection.
- f. Where sub-surface clearance during BAC was conducted and any UXO are found on the surface or subsurface to the depth as specified in the task implementation plan, then the area submitted for inspection shall not be accepted as cleared. This shall constitute a ‘critical non-conformity’ and the land submitted for inspection shall be declared to have failed the inspection.



### **8.3 Preventative and corrective actions**

The demining organisation shall be required to re-clear the failed area as part of the corrective action if the critical non-conformity is a missed EO or if the procedures used by the MA operator indicates deviation from the standard.

If an area has been re-cleared by the MA operator and fails re-inspection, then the RNMAC/NMAC may require the lot to be cleared again using a different sub-unit using different operational procedures and with different equipment, if these alternate methods exist. Alternatively, a different MA operator may be asked to re-clear the land. The RNMAC/NMAC may then decide to withdraw the accreditation for the demining team (or MA operator) that carried out the initial clearance and re-clearance for shorter or longer periods while the requirements for more extensive corrective action are identified and addressed.

If no acceptable reason is given for a critical non-conformity, by the demining organisation, the RNMAC/NMAC should require the land to be marked and fenced until the reasons for the major non-conformity can be identified or until a more reliable clearance effort can be undertaken. Investigation should be carried out by NMAC or operator to discover where criteria wasn't met.

### **8.4 Cost of post-clearance inspection**

There is always a cost associated with re-clearance and re-inspection of re-cleared land. The cost issues should be clearly articulated in the clearance agreement between NMAC and the MA operator. The NMAC may ask the relevant MA operator to cover the costs of re-clearance and re-inspection as appropriate.

### **8.5 Record of inspections and results**

The sample plan, the methods used for inspection, and the results should be recorded by the QA team leader, including the location, depth, types of hazard and other non-conformities as specified in this standard such as metal fragments or explosive residue. Details of all corrective action shall also be recorded. All records shall be passed to the NMAC for inclusion in the completion report for the cleared land. Once the cleared land has been handed over the NMAC shall be the custodian of all completion reports, handover certificates and supporting information.

### **8.6 Recording of post-clearance inspection and sampling**

A post-clearance inspection report needs to be completed by the QA team leader and submitted to the senior operations assistant attached to the demining organisation's completed completion survey report of the cleared area if the land is accepted as cleared.

A detailed sketch of the cleared area indicating the location of the sampled units shall be compiled and attached to the report. Items found in every sampled unit shall be indicated and listed.

The reason for any non-conformity shall be fully described and where the land submitted for inspection fails the inspection the reasons for failure shall also be listed in full.

**Annex A: Revised QA monitoring sheet currently being used**

(to be added by NMAC)

**Annex B: Post clearance inspection report currently being used**

(to be added by NMAC)