



**Quarries National Joint Advisory Committee (QNJAC)**

# **Geotechnics, Face and Stockpile Operations**

## ***Information Sheet 4***

***October 2012***

## ***Duties of the Operator***

This information sheet has been developed by the Quarries National Joint Advisory Committee (QNJAC) to help quarry operators, contractors, managers and others make health and safety improvements in the quarry industry. This guidance represents good practice which may go further than the minimum you need to do to comply with the law

Approved by the Quarries National Joint Advisory Committee (QNJAC)

**(Version 1: 24 October 2012)**



**Quarries National Joint Advisory Committee (QNJAC)**  
**Geotechnical, Face & Stockpile Operations**  
**Information Sheet 4**

**September 2012**

**Guidance on Duties of the Operator**

**1 Introduction**

- 1.1 This guidance will help company CEOs to ensure that they understand the requirements placed on the “quarry operator” to implement a safe geotechnical management process at quarries for which they are responsible.
- 1.2 This guidance should be read in conjunction with Part VI of The Quarries Regulations 1999 (QR) and Approved Code of Practice and Guidance, Health and Safety at Quarries (L118), QNJAC Information Sheet 1 - Safe Face Management Operations in Quarries, QNJAC Information Sheet 2 - Excavations and Tips Rules and QNJAC Information Sheet 3 - Managing Change to Excavations or Tips:
- 1.3 The quarry operator, usually a company, is required to manage the geotechnical aspects of the site in line with, Regulation 6 (1), which states:  
*“It shall be the duty of the operator of every quarry to take the necessary measures, so far as is reasonably practicable, that the quarry and its plant are designed, constructed, equipped, commissioned, operated and maintained in such a way that persons at work can perform the work assigned to them without endangering their own health and safety or the health and safety of others”*
- 1.4 The requirements above are emphasised by L118 Guidance Note 32, which states:  
*“Regulation 6 is the underpinning requirement of these Regulations. It is intended to secure a co-ordinated, proactive approach to the management of health and safety, which ensures that risks are properly controlled”*

**2 Geotechnical Features**

- 2.1 L118 Guidance Note 35 makes specific reference to the geotechnical features of the site being an aspect that the operator must manage safely. In addition, L118 Guidance Note 36 refers to the design of the excavation.

### **3 Health & Safety Document**

- 3.1 QR Regulation 7 requires the operator to prepare a health and safety document for the operation of a quarry. This is particularly important for geotechnical aspects of the site. Plans must show the quarry design. Excavation & Trenching Rules (E&T Rules) must describe the method of work and daily inspections must be recorded. Table 2 also specifically mentions that the conclusions of appraisals and assessments of excavations and trenches must be documented.

### **4 Management Structure**

- 4.1 Suitable arrangements need to be made for the duties of the operator to be discharged. Depending on the size and complexity of the organisation this may be achieved by delegating duties to competent individuals to undertake them on behalf of the operator.
- 4.2 The health and safety document sets out the authority and responsibilities of all those in the management structure, including how geotechnical issues will be dealt with. Those individuals charged with managing these issues must possess the necessary geotechnical competences to undertake the work assigned to them. This not only includes the geotechnical specialists but also those charged with implementing their findings (including managers, supervisors, relevant workforce and any relevant contractors, e.g. blasting contractors). The competences required will vary depending on the complexity of the geotechnical issues being managed. (see QR Regulations 7, 8 & 9).
- 4.3 All those involved in implementing the geotechnical findings must be provided with sufficient information in order to carry out their work safely.

### **5 Monitoring & Review**

- 5.1 QR Regulation 11 requires the operator to monitor and review geotechnical safety measures and procedures on a regular basis. This must be followed up by remedial action if required.

There are many reasons to review safety measures, including:

- a) Where it becomes apparent that the rules are being ignored.
- b) As a result of formal audits.
- c) In response to near miss / hit reporting by employees.
- d) Following an incident at that site or another site.
- e) Proposals for a significant change to the excavations stockpiles

- and tips working operation.  
f) Feedback from third parties.

## **6 Inspection**

- 6.1 QR Regulation 12 requires the operator to ensure that working activity and tip operations are inspected on a regular basis, often daily. It specifically requires that faces above where people work or have to travel are inspected before any work either commences or recommences. Any inspection must be thorough and carried out by a competent person who is trained and appointed to the task. The requirements should be stated in the Excavation and Tips Rules.
- 6.2 The results of inspections must be recorded and signed by the person undertaking the inspection and an appropriate person in the management structure (usually their manager).
- 6.3 If action is necessary as a result of the inspection, the timescale should be specified e.g. day, week, month, and the remedial action taken must be recorded.
- 6.4 Geotechnical inspection frequency and methods may vary with weather conditions and / or the seasons, e.g. lighting may be required in winter.
- 6.5 The inspection scheme must be reviewed from time to time. There must also be a provision to stop work immediately if there is an imminent risk of danger.

## **7 Benches & haul Roads**

- 7.1 QR Regulation 13 specifically requires the operator to ensure that benches and haul roads are designed, constructed and maintained to ensure that vehicles can use them safely. This includes the construction of suitable edge protection and rock traps. Road widths, sight lines, gradients and existing rock stabilisation work, etc. should also be taken into account.

## **8 Emergency Procedures**

- 8.1 QR Regulation 15 requires the operator to ensure that there is a suitable emergency procedure in place to allow personnel to be evacuated safely in the event of danger. Operatives, including contractors, must be aware of this procedure. There should be sufficient means of communication available in the event of an incident. The emergency procedure should be tested on a regular basis.

## **9 Risk to the Public**

- 9.1 QR Regulation 16 requires the operator to ensure that any geotechnical risks to the general public are controlled. Provision of barriers may be necessary to discourage trespass.

## **10 Permit To Work**

- 10.1 QR Regulation 18 requires the operator to ensure that a suitable system of risk assessment is in place for working excavations and tips. This has to be a “live” process to take account of changing geological and weather conditions. In certain circumstances, such as face scaling or the construction of edge protection, a permit to work system may be required.

## **11 Danger Areas**

- 11.1 QR Regulation 22 requires the operator to ensure that any quarry faces deemed dangerous as a result of an inspection or other observation to be physically cordoned off to prevent inadvertent unauthorised access. There must be a process of communicating this information to employees and contractors.

## **12 Explosives**

- 12.1 QR Part V (Regulations 24-29) applies to the use of explosives at quarries. The operator must ensure that they are complied with as appropriate. As part of the process quarry blasts must be designed, reviewed and modified if necessary to ensure that blasting does not cause excessive damage to the quarry face, which in turn could increase the risk of instability.

## **13 Excavations & Tips (See QNJAC Information Sheet 1 & 3)**

- 13.1 QR Regulation 30 requires *“the operator to ensure that excavations and tips are designed, constructed, operated and maintained so as to ensure that instability or movement, which is likely to give rise to a risk to the health and safety of any person is avoided”*

This includes:

Rock faces and blasted rock piles.

Sand and gravel faces.  
Overburden faces.  
Working below water.  
Overburden stockpiles.  
Material stockpiles.  
Solid Waste tips.  
Liquid Waste tips or lagoons.  
Access roads, haul roads, tunnels and ramps.  
It is essential to ensure that a competent person, such as a suitably experienced Chartered Engineer or Chartered Geologist, prepares a design before the work takes place.

#### **14 Excavation & Tips Rules (See QNJAC Information Sheet 2)**

- 14.1 QR Regulation 31 requires the operator to ensure that suitable and sufficient rules are made to ensure the safe construction and operation of excavations and tips. These rules are known as the Excavations and Tips Rules (E & T). The E & T rules are required to describe the manner in which these activities are carried out, the extent of supervision and the precautions to be taken. The geotechnical specialist must review and comment on the E & T Rules during the assessment or when there is a significant change.

#### **15 Appraisal of the Excavation and Tips**

- 15.1 QR Regulation 32 requires the operator to ensure that a suitable and sufficient appraisal of all excavations and tips are undertaken by a competent person to determine whether or not a significant hazard exists. For those features deemed to represent a significant hazard, a geotechnical assessment is required (QR Regulation 33). For non-significant hazards the frequency of appraisals should be determined by the competent person.

#### **16 Definition of a Geotechnical Assessment**

- 16.1 QR Regulation 33 defines the “geotechnical assessment” as “*an assessment carried out by a geotechnical specialist identifying and assessing all factors liable to affect the stability and safety of a proposed or existing excavation or tip.*” A geotechnical assessment must address all relevant parts of Schedule 1. The operator must ensure that a suitably qualified geotechnical specialist (See definition in QR Regulation 2) completes an assessment. If remedial work is required as a result of the assessment, it must be carried out in the required timescale stated in the

assessment.

- 16.2 If the conclusion of the assessment is that the feature is a significant hazard, then a geotechnical assessment must be undertaken at least every 2 years or such shorter period as specified by the geotechnical specialist in his report. If the conclusion is that the feature is a non-significant hazard then the frequency of appraisals should be determined by the geotechnical specialist.

## **17 Tip Records**

- 17.1 QR Regulation 36 requires the operator to *“ensure that sufficient records are kept of the nature, quantity and location of all substances accumulated or deposited in a notifiable tip to enable an accurate assessment of the stability of that tip to be made”*.

## **18 Notification of Excavations and Tips**

- 18.1 QR Regulation 37 requires the operator to ensure that he notifies the HSE at least 30 days before commencing or re-commencing work on an excavation or tip that either is or is expected to become a significant hazard. The operator must also inform the HSE when the structure ceases to become a significant hazard. (An example of a notification form is shown in Appendix 1).

## **19 Worker Participation**

- 19.1 QR Regulation 40 requires the operator to make and maintain arrangements to ensure that all managers and operatives (including contractors) are able to review, discuss and continuously improve all aspects of health and safety at the quarry, including the geotechnical management process.

**Appendix 1: QR 1999: Regulation 37 – Example of Notification of Excavations & Trenches form.**

Information Required	Site specific data	Notes
<b>Operator</b>		
Name		<i>Self-Explanatory</i>
Address		<i>Self-Explanatory</i>
PostCode		<i>Self-Explanatory</i>

<b>Site</b>		
Name		<i>Self-Explanatory</i>
Address		<i>Self-Explanatory</i>
PostCode		<i>Self-Explanatory</i>

<b>Description of Structure</b>				
Designation				<i>Local name – preferably a name that can be identified with the structure</i>
Nature of structure				<i>Excavation/Tip/Both</i>
Location	Grid /Ref	E	N	<i>Grid Ref &amp; Lat. and Long. Lat. and Long are more useful for Digital mapping</i>
		Lat./ Long	Lat.	
Area				<i>Area of / covered by in m<sup>2</sup></i>
Height/depth				<i>From highest to lowest point in m</i>
Material				<i>Mechanical description</i>

<b>Conclusion of Geotechnical Specialist</b>				
Date of Assessment				<i>Must be 30 days before commencement of operations or in the case of a newly identified hazard within 30days of identification</i>
Name				<i>Self-Explanatory</i>
Qualifications				<i>Self-Explanatory</i>
Significance of hazard				<i>What/Who is at risk</i>
Stability				<i>stable / unstable</i>
Safety				<i>Safe / Unsafe</i>
Remedial				<i>None / as detailed in the assessment</i>
Completion date for remedial measures				<i>As required by regulation</i>
Frequency of Assessment				<i>Every ? months</i>

<b>Notification Details</b>		
Person making Notification		<i>Self-Explanatory</i>
Title		<i>Self-Explanatory</i>
Date		<i>Self-Explanatory</i>

Type of Notification		<i>Email / Letter</i>
Email for correspondence		<i>Self-Explanatory</i>
Address for correspondence		<i>Self-Explanatory</i>