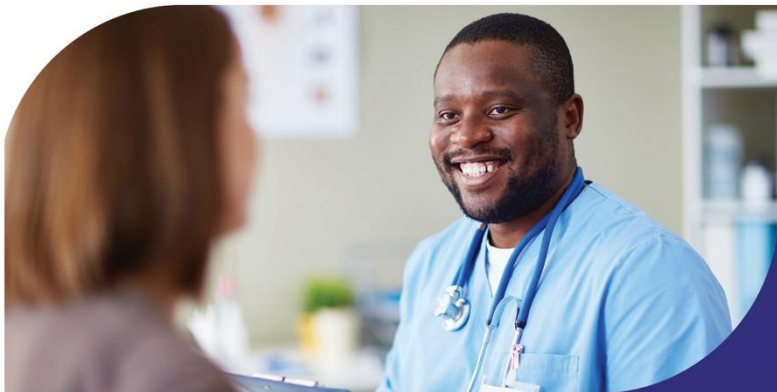




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An tÚdarás Sláinte agus Sábháilteachta
Health and Safety Authority

Presentation on Geotechnical Campaign 12th May - 23rd May 2025



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DATE 24th April 2025.

Purpose of the Campaign.

The Campaign will have four main aims!

- To gather information on the Industry's understanding of the Geotechnical Aspects in relation to the Quarry Regulations
- To see how industry uses Geotechnics on a daily basis. ie: Assessments & Procedures.
- Gather information on competency in relation to geotechnics.
- Does industry engage geotechnical experts and if so, are their recommendations followed.

Definition:

- What is Geotechnics?

Geotechnics is the branch of engineering concerned with the study and modification of soils and rock. It uses the principles of soil mechanics and rock mechanics to solve engineering problems.

Development Plans

Four Questions relate to the Development Plans for the quarry.

- Has a written plan for the extraction of the quarry been put in place.
- Is that plan updated as the quarry progresses. (Working plan of the quarry)
- Are Excavations, Tips, and Lagoons designed to an engineering standard?

Material Properties, Geological Environment, Extraction sequencing, Environmental Conditions.

- Are Excavations Tips and Lagoons constructed and maintained to the design standard.

Plans, Sections, Inspections, Records. Review.

Risk Assessment & Safe Operating Procedures.



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- **Risk Assessments:** Have Excavations, Tips, & Lagoons been assessed?
- **Safe Operating Procedures:** Have Procedures been developed for the safe use of Excavations, Tips, & Lagoons.

Depth/Height,
Ground Conditions,
Slopes, Construction Standards,
Local Environment,
Excavation Methods
Machinery
Inspection Regime.

Appraisal

Appraisal:

- Competent person to carry out an appraisal?
- Has Appraisal been carried out?
- Did it identify a significant hazard.

Significant Hazard: For a hazard to be significant consider the possible failure and the consequences of the failure. The consequences is crucial when deciding if a hazard is significant. The probability of failure happening is not as relevant. Consequences depend on failure scale, area affected and impact on people and property.

Significant Hazards:

- **Working Faces:** >20m Compulsory Geotechnical Report.
Multiple Benches: Overall height of benches > 30m
Overall face angle (all benches) should be 1:1 or 45°
Other faces that may have significant hazards due to geology, environmental conditions that may impact people inside or outside the quarry.
- **Tips:** Tips >20m in height.
Area >10000m²
Land Slope > 1:12 or 8%
can be considered significant hazards.
- **Lagoons:**
Volume > 10000m³
Land Level > 4m below Lagoon and within 50m from its edge.

Geotechnical Report

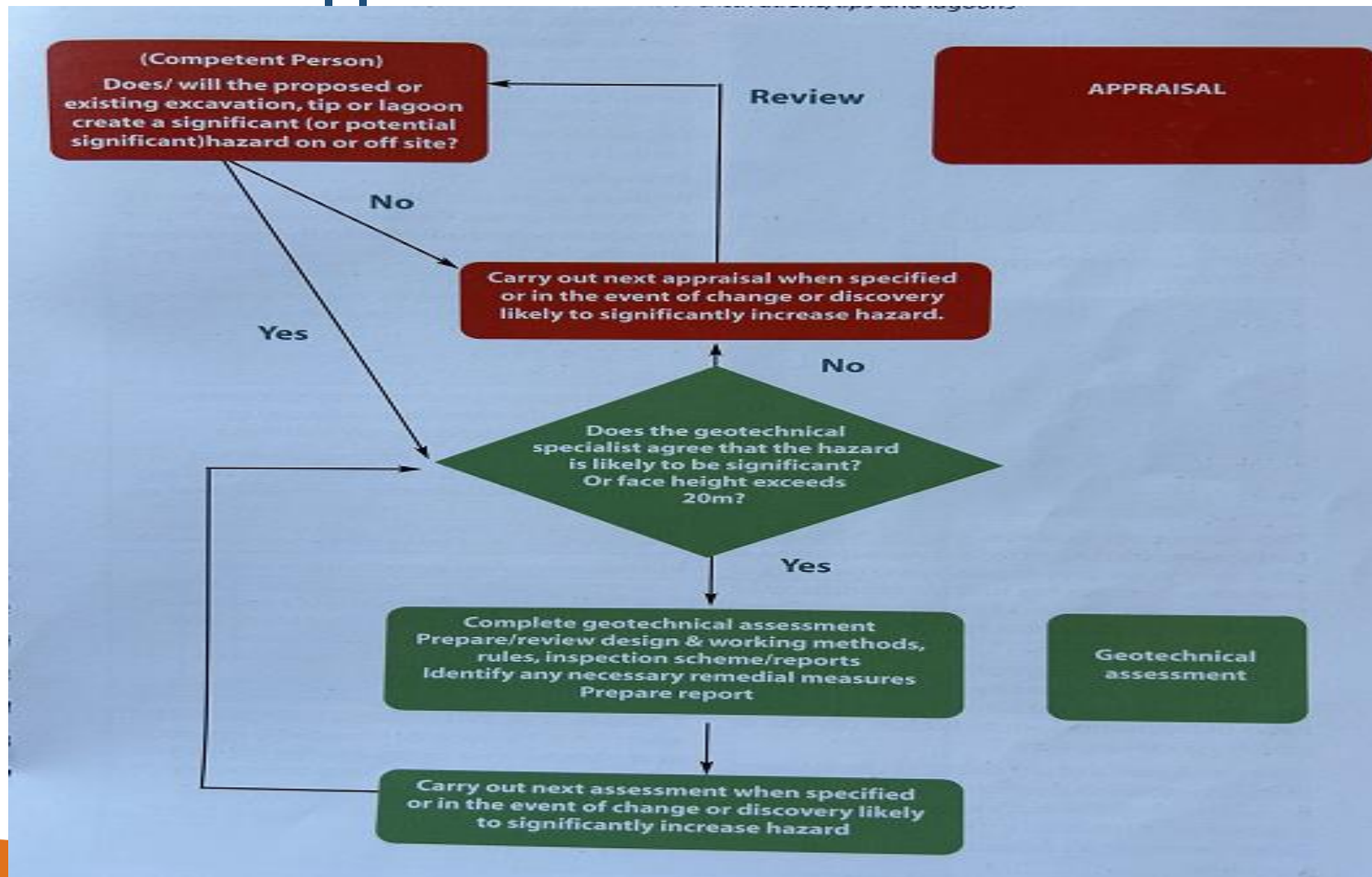


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Report:

- Site Survey
- Site Investigation
- Plans & Sections
- Assumptions before Analysis
- Analysis Findings
- Design arising from Analysis
- Recommendations.

Flowchart Appraisal & Assessment



Question Set

Geotechnical Question Set				
		Yes	No	N/a
1	Is there a written Development Plan for the quarry?			
2	Is the Development Plan followed and updated as the quarry expands?			
3	Have excavations tips and lagoons an approved Engineering Design?			
4	Have excavations tips and lagoons been constructed and maintained to design to ensure their safety?			
5	Are Risk Assessments in place for excavations, tips and lagoons within the quarry?			
6	Are safe written operating procedures in place for excavations tips and lagoons?			
7	Is there a competent person in the quarry to carry out a geotechnical appraisal of excavations tips and lagoons?			
8	Has a geotechnical appraisal of the quarry been carried out to identify Significant Hazards?			
9	Has the appraisal identified significant hazards requiring a Geotechnical Assessment?			
10	Are quarry working faces greater than 20m.? If "Yes" a geotechnical report is mandatory. (Reg 54)			
11	Does Quarry Management follow all of the recommendations within the Geotechnical Report?			
12	Does the Geotechnical Report outline a timeline for review in the quarry?			
13	Are the recommendations in the Geotechnical Report communicated to supervisory staff and employees?			
14	Are geotechnical recommendations incorporated into the Daily Inspection Reports?			
15	Has training been provided to persons assigned to carry out daily inspection reports?			

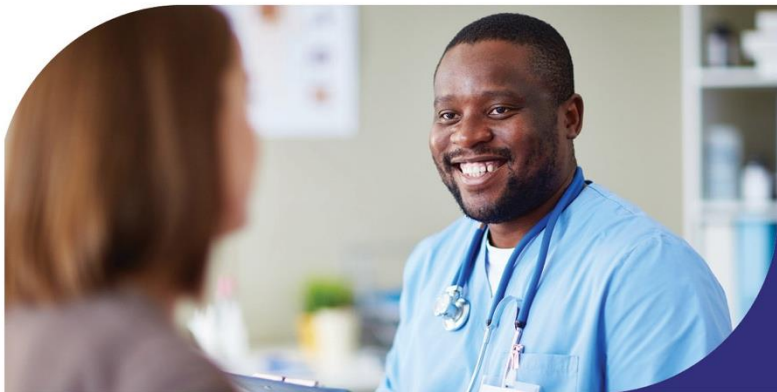




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Go raibh maith agaibh
Thank you



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