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# BDA Audit
## Handbook

Version No. 2.4


BRITISH DRILLING ASSOCIATION

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# INTRODUCTION & MISSION STATEMENT

Image Credit: Soil Engineering Geoservices

Welcome to the BDA Audit Handbook.

This handbook explains the BDA Audit procedure, outlining what you can expect from an audit and clarifying the full process from booking through to receiving your report. It also references the legislation, regulations and industry standards upon which the audit is based, ensuring the system remains fair, transparent and consistent.

Any additions or alterations to the audit that may affect its outcome are determined by the BDA Health and Safety Committee and/or the Technical and Standards Committee. These are then ratified by the Audit Steering Group (ASG) and communicated to members via the Training and Education Committee before implementation. Major changes or additions always carry a minimum six-month notification period to allow members to prepare adequately.

The BDA Audit is central to the Association's mission to raise standards within the land drilling industry. It is a core part of the BDA's aim to:

- Improve efficiency, health & safety awareness and standards in the industry
- Promote and support scientific research into drilling techniques
- Promote and support the training and education of all personnel involved in the drilling industry including drilling operatives, supervisors, apprentices and engineers
- Promote and support the establishment of new and relevant standardisation
- Establish and improve Codes of Practice
- Liaise with Government bodies and Institutions
- Disseminate information to interested parties
- Compile relevant statistical support
- To collaborate with other related associations both in the UK and abroad to advance our industry
- Promote the drilling industry
- Promote BDA members as exemplars

As a not-for-profit trade association, all funds from audit fees are reinvested directly into BDA activities. The price of a BDA Audit covers administration and the auditor's time and represents a small fraction of the cost of a drilling operation — an investment that delivers substantial returns in professionalism, safety and efficiency.

**Mark Toye**
BDA Chair - December 2025



# HANDBOOK CONTENTS


# WHO?

## 1.1 AUDITORS

There are currently three approved, contracted auditors who carry out the BDA Audit on behalf of the Association.

Each is an experienced industry professional, independently verified and qualified to assess both technical and safety aspects of drilling operations.

**Callum Allardyce (Land Drilling NVQ Ltd)**

### Experience

Callum is a vastly experienced driller, with extensive knowledge of all drilling techniques, practices and legislation accrued over a decade in the geotechnical industry. Callum's eye for detail and his variety of on-site experiences means he is a thorough and fair assessor and auditor for VQs and audits.

### Relevant Qualifications

- GQA PAA\VQ-set Level 3 Award in Assessing Competence in the Work Environment
- IOSH Safe Supervision of Geotechnical Sites
- Streetworks Excavation and Reinstatement Monitoring Signing, Lighting and Guarding
- BOSIET (Basic Offshore Safety Induction and Emergency Training)
- Wire Rope Inspection Training
- NVQ Land Drilling – Lead Driller - Level 2

**Lee Allardyce (Land Drilling NVQ Ltd)**

### Experience

Lee is an A1 qualified assessor who has over 40 years' experience in the drilling industry including owning and operating two successful drilling companies. He has been auditing for over 17 years as well as running BDA Apprenticeship Courses. He has a wealth of knowledge of Cable Percussive, Dynamic Sampling, Rotary and Sonic drilling methods.

### Relevant Qualifications

- A1 NVQ Assessor
- NVQ Level 6 - Construction Contracting Operations Management
- IOSH Managing Safely
- Streetworks Excavation and Reinstatement Monitoring Signing, Lighting and Guarding
- CCNSG Safety Passport
- NVQ Land Drilling – Lead Driller - Level 2

**Andrew Frogley (A Frogley Contracting)**

### Experience

Andy has been Assessing NVQs and Auditing drilling crews for over 10 years. He is an accomplished driller with over 20 years' hands-on experience in mineral exploration, geotechnical and environmental works. Andy's strong knowledge of all drilling practices and procedures in a wide range of ground conditions and formations makes him an ideal Auditor.

### Relevant Qualifications

- A1 NVQ Assessor
- LEEA Lifting Equipment and Accessory Inspector
- NVQ Land Drilling – Lead Driller - Level 2
- IOSH Safe Supervision of Geotechnical Sites
- IOSH Avoiding Danger from Underground Services

## 1.2 AUDIT MANAGER

The BDA Audit Management is a contracted service supplied by an independent third-party. Quality Assurance of every BDA audit is supplied by the BDA Audit Management to ensure consistency of audits and the auditing process from all BDA auditors.

**Keith Spires (Equipe Group)**

### Experience

Keith has over 40 years in the drilling and geotechnics industry, progressing from Driller to Senior Management. Keith is an NVQ Assessor, Internal Quality Assurer and long-standing BDA Auditor involved in the development of health and safety guidance for land drilling.

### Relevant Qualifications

- Edexcel Level 4 Internal Quality Assurance Assessment (V1)
- Edexcel Level 3 Assessing Candidates using a range of Methods (A1)
- Approved Assessor for NVQ Levels 1, 2 & 3 in Land Drilling, Level 3 Occupational Working Supervision
- LEEA Approved Lifting Inspector
- NVQ Level 2 Land Drilling - Lead Diller Rotary, Cable Percussion & Dynamic Sampling

## 1.3 AUDIT STEERING GROUP

The Audit Steering Group (ASG) is a voluntary body comprising the Chairs of the BDA's Sub-Committees, the Audit Management, BDA General Manager and the BDA Chair. The ASG meets quarterly to:

- Review statistical feedback and analysis from completed audits.
- Identify trends in non-conformances and good practice.
- Recommend new or updated training and guidance to improve compliance.
- Approve revisions to audit content in line with current legislation, standards and member feedback.

In 2025, the ASG reaffirmed its focus on promoting driller-led safety culture — shifting emphasis from paperwork compliance towards personal accountability, daily equipment inspections and demonstrated competence in the field.

# WHAT?
## 2.1 CHECKLIST

Below is a non-exhaustive list of the items checked during the course of a BDA Audit:

### Industry qualifications / certifications required to undertake a BDA Audit:

- VQs in Land Drilling or Drilling Operations
- Construction Safety Card Scheme (CSCS) Card
- First Aid qualification
- Wire Rope Inspection training
- Asbestos Awareness Training
- Manual Handling training

Image Credit: Soil Engineering Geoservices

### On-site health, safety & environment issues:

- Risk Assessments & Method Statements (RAMS)
  - » Are they appropriate for the drilling being undertaken?
- Rig and equipment inspections
  - » Are they in date, do they cover all aspects of the machine and equipment?
- Welfare facilities
  - » Are they available and appropriate?
- COSHH assessment and management
  - » Are they available and being followed?
- First Aid - kit inc. eye wash facilities
- Environmental control - Spill kit
- Provision of utility detection equipment (CAT & Genny) and qualified operator
  - » If the drill crew are clearing services, they must be trained in how to use the equipment.
- Fire safety
- Vehicle access provisions
- Public access / protection of working area
  - » Are adequate/appropriate protections in place?
- PPE

### Working to relevant legislation and guidance:

- HASAW 1974
- Management of Health and Safety Regulations 1999 (MHSR)
- PUWER 1998
- Control of Substances Hazardous to Health Regulations 2002 (COSHH)
- BS EN 16228 2014
- The Workplace (Health, Safety and Welfare) Regulations 1992

Image Credit: BH Drilling Services

### Drilling machine safety:

- Daily pre-operational inspections (see 2.2)
- Emergency engine stops
  - » Are they all visible, accessible and working correctly?
- Pressured hoses
  - » Are they all undamaged and in good condition?
- Guarding (rotating parts and hot/cold parts)
  - » Are all dangerous parts guarded?
  - » See specific rotary machine guarding guidance (see 2.4)

### Drilling machine compliance:

- Machine and equipment condition
- Compliant data plates and identification for equipment
- Winches / wire ropes / lifting equipment
  - » Safe Working Loads, maximum line pulls, correct terminations, correct Thorough Examination certifications with all Unique IDs and SWLs listed
- Health and safety signs

### Drilling Operations:

- Appropriate drilling method and equipment selected
- Sampling, logging and testing carried out in line with relevant standards
- Driller's Daily Report completed fully and legibly (see 2.3 for guidance)
- Sample Labelling compliant with BS EN 22475-1 (see 2.3 for guidance)
- Wireline Safety Devices used where required (see 2.3
- Working at Height measures in place and compliant (see 2.3)
- Backfilling and reinstatement performed to specification
- Equipment knowledge and maintenance demonstrated
- Backfill and reinstatement to specification

### SPT Calibration certification

### Training & CPD

### Good communication and working practices

### General good practice

# 2.2 HEALTH & SAFETY CONFORMANCE

During the course of a BDA audit, the appointed auditor will examine how the driller ensures health and safety of their drilling operation in practice, checking safe systems of work, emergency controls, guarding, lifting arrangements, access/egress, and safe decision-making on site. The driller must demonstrate clear understanding and ownership of the equipment they are operating.

The standards, legislation and guidance the expectations are taken from include the below:

- Health and Safety at Work Act 1974
- Management Regulations 1999
- Working at Height Regulations 2005
- BS EN 16228 (Drilling and Foundation Equipment – Safety)
- PUWER 1998
- LOLER 1998
- COSHH 2002
- CDM Regulations 2015

The audit will also factor in industry good practice, BDA-specific guidance and the wider context of the drill site when auditors determine the audit outcome.

**From 1 July 2026, the Health & Safety section of the audit will permit a maximum of five minor non-conformances per Lead Driller. This change supports the BDA's ongoing shift toward higher expectations, improved daily discipline and a stronger safety culture across the land drilling industry.**

Because Health & Safety encompasses a wide range of equipment, behaviours and conditions, it is not practical, or advisable, to define every potential scenario. Instead, this section sets out clear definitions, principles and indicative examples, while preserving essential auditor discretion to assess risk and adherence to health and safety expectations on a case-by-case basis.

### Definition of a Health & Safety Minor Non-Conformance

In terms of health & safety in the BDA Audit, a minor non-conformance is an issue that:

- Does not present an immediate or serious risk to health, safety or the environment;
- Represents a deviation from legislation, BDA guidance, site rules, or safe working practices;
- Indicates a lapse in attention, organisation or documentation that must be corrected but does not jeopardise imminent safety; and
- Does not demonstrate a fundamental lack of control over the equipment or the task.

Minor non-conformances will be recorded and some must be rectified in order to achieve audited status, but they do not automatically lead to audit termination unless the cumulative threshold is exceeded.

### Definition of a Health & Safety Major Non-Conformance

A major non-conformance is any issue that:

- Presents an immediate or significant risk to health, safety or the environment;
- Indicates a failure to recognise or control a known hazard;
- Represents a serious breach of legislation or BDA guidance;
- Demonstrates insufficient competence or unsafe behaviour; or
- Involves safety-critical equipment that is missing, defective, incorrectly configured or not understood by the operative.

Major non-conformances that cannot be rectified immediately result in instant audit termination, with no opportunity to correct the issue at a later point.

### Examples of Health & Safety Minor Non-Conformances (Indicative, not exhaustive)

Minor non-conformances typically relate to non-critical issues such as:

1. **Documentation Issues**
   - Pre-operational inspection completed but containing minor omissions or inconsistencies.
2. **Housekeeping & Work Area Organisation**
   - Tools or materials not stored neatly but not causing a trip or fall hazard.
   - Minor clutter around the rig that does not affect access/egress.
3. **Administrative Non-Compliances**
   - Fire extinguisher slightly out of date but still pressurised and accessible.
   - Spill kit missing one minor component but still functional.
4. **Non-Critical PPE or Behavioural Issues**
   - Gloves or eye protection worn inconsistently where risk is low.
   - Ear protection not being worn when specified in RAMS.
5. **Equipment Control (Non-Safety-Critical)**
   - Minor defects on non-essential tooling that do not present an immediate hazard.
   - Low-level wear on hoses or ancillary equipment that is still within safe parameters.

### Examples of Health & Safety Major Non-Conformances (Indicative, not exhaustive)

Major non-conformances include—but are not limited to—any issue that poses direct risk or demonstrates unsafe practice:

1. **Guarding & Dangerous Moving Parts**
   - Interlock or ROM allowing rotation with the guard open.
   - Gaps between 500mm and 1600mm leaving dangerous moving parts accessible within arms length.
2. **Emergency Stops**
   - Any emergency stop that is: defective, disconnected, unclear or difficult to access, or not understood by the driller.

Image Credit: BH Drilling Services

3. **Wire Ropes & Lifting Accessories**
- Rope damage (broken wires, birdcaging, corrosion) not identified by the driller.
- Missing or unreadable unique IDs on winches, ropes or lifting accessories.
- Out-of-date Reports of Thorough Examination for safety-critical equipment.

4. **Working at Height**
- Missing guardrails or toe boards on elevated platforms.
- Gaps over 470 mm that allow falls.
- Unsafe access/egress without handrails or gates.

5. **Wireline Safety**
- Absence of manufacturer-approved safety devices for s-size systems.
- Mixing components from different manufacturers.

6. **Unsafe Practices**
- Entering exclusion zones while machinery is operating.
- Bypassing or disabling safety systems.
- Operating equipment while impaired or distracted.
- Any action that places people, plant or property at immediate risk.

7. **Major Failures in Hazard Recognition**
- Driller fails to identify an obvious, high-risk defect during the pre-use check.
- Fundamental issues with rig setup, lifting operations or equipment controls.

### Auditor Discretion

Due to the varied nature of drilling operations, site conditions and equipment setups, auditors must be able to exercise professional judgement. The BDA therefore emphasises:

- These examples are indicative, not exhaustive;
- The level of risk, likelihood of harm and driller's control all factor into classification;
- Where doubt exists, the auditor's responsibility is to prioritise safety;
- The Lead Driller is expected to understand, explain and justify their decisions and practices.

This approach ensures fairness, consistency and proportionality while preserving the ability to deal robustly with unsafe situations.

### Purpose of the Health & Safety Section

The objective is not simply to identify faults. It is to:

- Promote safe behaviours and competent decision-making;
- Ensure drillers recognise and control hazards;
- Reinforce daily pre-operational discipline;
- Encourage ownership of equipment, maintenance and safety systems;
- Support a positive safety culture across the sector;
- Prevent harm to operatives, colleagues, contractors and the public.

Health & Safety conformance is therefore a core component of the BDA Audit and a fundamental requirement of professional drilling practice.




## 2.3 PRE-OPERATIONAL INSPECTIONS

A major change to how the BDA Audit is conducted came into effect in 2025. Following feedback from members and audited drillers, a stronger emphasis on pre-operational inspections (pre-use checks) of machinery and equipment has been implemented.

### What should be covered in the pre-operational inspection?

Essentially, all aspects of the drilling machine and equipment should be visually inspected before use to ensure they are safe to use. Areas of concern should be recorded and reported. In particular, safety features such as guarding (to protect dangerous moving parts) and emergency stops should be a priority. The BDA have created a template, available on request, that provides an extensive list of items expected to be covered in the inspection.

### BDA Audit Outcomes and Pre-Operational Inspections

During a BDA Audit, the Lead Driller must provide documented evidence of having completed a pre-operational inspection before work begins. Without this record, the audit cannot proceed. The auditor will review the inspection documentation to assess the driller's competence and understanding of equipment safety, supported by spot-checks on selected items such as winches, ropes or lifting accessories. The Lead Driller must be able to demonstrate how they verified each item as safe to use, referencing inspection records, colour-coded systems or equipment certificates. If safety-critical defects are discovered that were not identified during the pre-use checks, responsibility lies with the Lead Driller, resulting in a major non-conformance and immediate audit failure. However, if a defect has been properly identified, reported and risk-assessed, the auditor may allow the audit to continue at their discretion. This approach reinforces individual accountability and ensures that operatives take ownership of both their machinery and their audit outcome.

### Guidance Document

Full guidance on Pre-Operational Inspections and their importance to the BDA Audit process has been outlined and is available from the BDA website here.


# 2.4 TECHNICAL QUALITY CONFORMANCE

Since 2023, the BDA Audit has included an assessment of the technical quality of a driller's work — including record-keeping, sampling, testing and installation.

This ensures that the data, samples and reports produced by drillers meet the same high standard as their safety performance.

From June 2025, the threshold for technical non-conformances has been updated:

- Accumulation of three (3) or more minor technical non-conformances = audit non-achievement.
- This replaces the previous limit of five (5).

This reflects the industry's overall improvement and the BDA's intent to continually raise expectations.

Technical conformance checks include:

- Measurement equipment accuracy (borehole tapes, dip meters)
- Record-keeping completeness (Daily Report)
- Sampling method and sample protection
- In-situ testing to correct Standards (e.g. SPT to BS EN ISO 22476)
- Sample labelling (BS EN ISO 22475-1)
- Installation and reinstatement correctness



## Measurement

We will expect every driller to have a legible, accurate borehole measuring tape and a working water-level dip meter and use them accordingly.

There are four possible non-conformances in this section:

- **MAJOR:** Lack of borehole measuring tape,
- **MAJOR:** Lack of working water-level dip meter,
- **MINOR:** Failure to utilise the borehole measuring tape correctly and accurately,
- **MINOR:** Failure to utilise the water-level dip meter correctly and accurately.

## Record Keeping (Driller's Daily Report)

The Driller's Daily Report (borehole log) should be completed for every type of borehole, this includes dynamic sampling, and these must be legible and complete with full information about the borehole. The log should be completed fully in line with expectations outlined in BS 5930 and the Yellow Book (UK Specification for GI) - full detailed guidance has been published on the BDA website (September 2023).

There are two possible minors and one possible major in this section:

- **MAJOR:** Borehole log not being completed,
- **MINOR:** Log not being accurately completed in line with BDA expectations(Note: There are potentially 19 things that need to be included),
- **MINOR:** Log illegible or misleading.

## Sampling according to BS EN ISO 22475-1

All sampling must be conducted according to BD EN ISO 22475-1 to ensure the highest possible sample quality is obtained and preserved, in the best condition possible. The technical questions will check that samples are placed in the correct containers, liners, boxes, bags tubs (not sandwich bags) etc. They will also check that samples are protected immediately to maintain the sample condition and that the correct sample is being taken in the correct manner regarding the stratum being sampled. We would also expect the driller to know the quality of sample they are being asked to obtain by each sampling method.

There are six possible minors in this section:

- **MINOR:** Inappropriate sampling method or technique being used for the given strata (or if specified by the engineer, the driller's awareness of whether the method is inappropriate),
- **MINOR:** Failure to collect samples without risk of contamination,
- **MINOR:** Failure to collect samples without risk of losing fines (where applicable),
- **MINOR:** Failure to place samples into appropriate containers and/or sealing them correctly (where applicable),
- **MINOR:** Failure to adequately protect samples from vibration, shock, heat, coldness and/or temperature changes,
- **MINOR:** Lack of knowledge of sample class obtainable using their current sampling method.


Image Credit: BH Drilling Services

## Testing according to BS EN ISO 22476

All testing must be conducted to its given Standard and must be recorded correctly on the drilling log. The audit will particularly focus on the Standard Penetration Test and assess the driller's knowledge and application of BS EN ISO 22476. Questions will assess whether self-penetration has been measured and recorded, rod straightness, whether the equipment's certification is in date, the condition of shoes/cones being used, whether spares are available and whether the test is being carried out accurately.

There are five possible minors and one possible major in this section:

- **MINOR:**Lack of correct roll pins, dampeners and designated locking pin (where applicable)
- **MAJOR:** Lack of a valid, in-date energy efficiency certificate
- **MINOR:** SPT equipment in inappropriate condition (damaged shoes/cones, no spares, incorrect rods being used)
- **MINOR:** Failure to check straightness of rods
- **MINOR:** Failure to record straightness of rods
- **MINOR:** Failure to conduct SPT to 22476-3 requirements (Note: There are potentially eight things that need to be included).

## Labelling according to BS EN ISO 22475-1

All labelling must be completed as per the given Standard – BS EN ISO 22475-1. This includes more than one means of identification on each sample, the details included on the label and if the label is sufficiently legible. Full details on guidance for labelling was published on the BDA website in September 2023.

There will be three possible minors in this section:

- **MINOR:** Incomplete content on labelling (Note: There are six things that need to be included),
- **MINOR:** Failure to ensure samples carry more than one means of identification (i.e. two labels, one inside the container, one outside),
- **MINOR:** Sample label illegible.

## Installation and Reinstatement

Where installs or reinstatement of boreholes are witnessed, or an earlier example of one observed, it is expected that they are completed correctly.

There are three possible minors for installations and seven possible minors for reinstatement in this section:

- **MINOR:** Failure to complete install according to specification (i.e. correct level, sealed, sufficient filters where required, gas tap fitted where required),
- **MINOR:** Failure to accurately measure and report depths and levels of installations,
- **MINOR:** Failure to appropriately protect installation (drainage, security cover, no trip hazard, no surface water ingression),
- **MINOR:** If backfilled, failure to utilise arisings,
- **MINOR:** If backfilled, failure to compact arisings,
- **MINOR:** If grouted, failure to grout from the base of the borehole,
- **MINOR:** If grouted, failure to utilise suitable grout mixer,
- **MINOR:** If grouted, failure to monitor and comply with mixing requirements,
- **MINOR:** Failure to remove all spoil,
- **MINOR:** Failure to leave borehole area as found (clean, tidy, no waste remaining).

All of the above non-conformances have been witnessed during the last 18 months of audit data collection and hence the need for improvement identified by the BDA Technical and Standards Committee. It is important to note that the audit will not be reducing its focus on health and safety aspects, but expanding the audit remit to raise standards for technical aspects as well.

Currently, the above only applies to auditees undertaking a Ground Investigation audit, not Geothermal or Waterwell. However, increased focus on the technical aspects of Geothermal and Waterwell drilling will be addressed, following the implementation of the questions into the GI audit.

# 2.5 SPECIFIC GUIDANCE

Based on the findings on the most frequently logged non-conformances, the BDA is keen to provide further, specific guidance to its members in order to ensure greater adherence to industry Standards and regulations. Below is guidance on rotary guarding, certification for Thorough Examinations and Factors of Safety for wire ropes.

**Above:** Large, unnecessary gap that permits access to dangerous parts.

**Above:** Due to machine setup, guard starts more than 500mm from floor. Either adjust setup, or extend guard.

**Above:** Rubber infill used to extend guard down and accomodate flush system.

## ROTARY GUARDING

Full guidance on rotary guarding can be found on the BDA website, however for the purposes of the BDA audit, the expectations can be summarised as below:

- The guard must not be easy to bypass or disable.
- The guard must have a working Restricted Operating Mode (ROM) system that governs the controls when open, or there must be no rotation with it open.
- To re-engage full operational rotation there must be a deliberate action with the guard closed.
- The guard must fully enclose the dangerous moving parts of the drilling machine from 500mm from the floor/drilling platform to 1600mm above the floor/drilling platform, or to such a height that access is prevented.
  - Any gaps present must serve a specific purpose or form a fundamental requirement for the operation of the machine.
  - Any gaps present must be small enough and/or positioned in such a way that no dangerous points can be reached at arm's length.
  - If the bottom of the guard starts more than 500mm from the floor/ drilling platform in order to accommodate a flush system, this can be mitigated in various ways, two of those ways are:
    1. A static object such as outer nonrotating casing in the borehole can be used to cover the 500mm gap. However, the casing must be inserted with the guard 500mm from the floor and when proceeding with the borehole progression, the casing and guard must overlap so that there is no easily accessible gap between the two above the 500mm height.
    2. The guard can be extended by attaching additional guarding media, such as Polycarbonate sheet, conveyor belt rubber or other substantial media by fixing it on to the existing guarding to infill any gap.

**Above:** 100% compliant guard; extends to within 500mm from the floor, fully encompasses the string and is wide enough for all dangerous parts to be at least arms-length away.

Below is the decision-making flowchart that BDA auditors work to when determining if guarding is compliant with audit requirements.

**Height of guard (500mm from floor or drilling platform / extends 1600mm from floor or drilling platform):**

| | Guard is within 500mm of the floor / does extend 1600mm above the floor | Guard is not within 500mm of the floor / does not extend 1600mm above the floor |
|---|---|---|
| You can't touch a dangerous part at arms-length | Fully compliant | Minor: Design must be improved, but can be corrected post-audit |
| You can touch a dangerous part at arms-length | Observation: Recommend design is revisited to fully prevent contact where practicable | Major: Design must be improved, must be resolved immediately |

**Any gaps between 500mm and 1600mm:**

| | There is a functional reason for gap | There is no functional reason for gap |
|---|---|---|
| You can't touch a dangerous part at arms-length | Observation: Recommend design is revisited to eliminate gap or gap made as small as is practicable | Minor: Design must be improved, but can be corrected post-audit |
| You can touch a dangerous part at arms-length | Major: Design must be improved, must be resolved immediately | Major: Design must be improved, must be resolved immediately |

# 2.5 SPECIFIC GUIDANCE CONT.

## THOROUGH EXAMINATION CERTIFICATION

Although 100% of drilling machines put forward for audit have carried some form of Thorough Examination certification, a very large percentage frequently have incorrect or missing information. Below is guidance on avoiding the most common issues found:

- Ensure ALL winches, ropes and accessories have unique ID numbers that are either stamped onto them directly or carry an appropriate label. This includes both winches on cable percussion drilling machines and both winches MUST be identifiable.
- Ensure ALL of these Unique IDs are listed on the Thorough Examination certification.
- Ensure ALL line pulls for ALL winches are listed on the certification.
- Ensure ALL Safe Working Loads (SWL) (or Working Load Limits) are listed for ALL ropes and accessories.
- If a wire rope has a Factor of Safety (FoS) applied to give it's SWL, this FoS MUST be listed on the certificate, ideally alongside the Minimum Breaking Load (MBL).
- The SWL of all ropes and accessories SHOULD be greater than the line pull of the winch they are being used with. There are exceptions to this whereby an accessory may be sacrificial or may be repeatedly lifting a specific known load (i.e. an SPT hammer or the wire rope for the setup winch on a cable percussion drilling machine). In this scenario, the SWL should be greater than the given load, but may not have to be greater than the pull of the winch.
- Finally, ensure that items are being Thoroughly Examined at the correct intervals. Machinery (and items permanently fixed to it) should be examined once every twleve months. Accessories (items that are detatchable from the machinery without use of a tool) should be examined every 6 months.

## FACTORS OF SAFETY FOR WIRE ROPES

All ropes on rotary drilling machines CAN have a Factor of Safety (FoS) of 3:1 applied, thanks to a stipulation within BS EN 16228. However, often third-party companies assigned to carry out Thorough Examinations on drilling equipment are not aware of this Standard and immediately apply a FoS of 5:1 when producing certification, resulting in a lower SWL being listed. This means that often wire ropes on rotary drilling machines are technically safe to use, however their certification says otherwise as their unintentionally lowered SWL is then less than the pull of the winch. Audit guidance regarding this is as below:

- Ensure ALL SWLs listed on certification have their applied FoS stated, along with the MBL.
- Ensure ALL wire ropes on rotary machines have their SWL calculated using 3:1, not 5:1.
- For all wire ropes on rotary drilling machines, ask that BS EN 16228 is listed on the certificate for reference.

## FURTHER SPECIFIC GUIDANCE

Please find below a list of extensive guidance for the BDA audit. Please ensure all parties involved (management, H&S representativess and, most importantly, the drilling team) have been made aware of these documents and have taken the time to read and study them ahead of the audit taking place.

- BDA Technical Guide – Driller's Daily Report
- BDA Technical Guide – Rotary Guarding
- BDA Technical Guide – Sample Labels
- BDA Technical Guide – Wireline Drilling Safety
- BDA Technical Guide – Wire Ropes, Factor of Safety and Thorough Examination Reports
- BDA Audit Guidance – Pre-Operational Inspections
- BDA Position Statement – Acceptable and Unacceptable Hydraulic Hose Damage

# 2.6 AUDIT FINDINGS

BDA auditors will conduct the audit against specific audit criteria in order to determine audit findings. Audit findings provide factual evidence collected by auditors to indicate conformity or non-conformity with an aspect of the audit criteria.

Individual audit findings and subsequent reports will include notes on conformity and good practices along with their supporting evidence, opportunities for improvement, and any recommendations to the auditee.

Non-conformities and their supporting audit evidence will be recorded. Non-conformities will be graded depending on the context of the organisation and its risks. This grading will be qualitative (e.g. non-conformity and major non-conformity). They will be reviewed with the auditee in order to obtain acknowledgement that the audit evidence is accurate and that the non-conformities are understood.

At the end of an audit visit, there are four potential outcomes:

1. Audit achieved
2. Audit not yet achieved (pending rectification of specified minor non-conformance)
3. Audit terminated (when a major non-conformance has been recorded or the minor non-conformance threshold has been surpassed)
4. Audit not achieved (when audits are unable to be completed, but no major non-conformance has been logged – i.e. no drilling is witnessed on the day of audit).

Every attempt will be made to resolve any diverging opinions concerning the audit evidence or findings with any unresolved issues recorded in the audit report. Audit reports will be forwarded to the line manager of the auditee following submission by the auditor and internal verification by the Audit Manager.

### OBSERVATION

DEFINED AS: *An opportunity for improvement or recommendations to the auditee.*
EXAMPLE: *SPT rod straightness being checked and documented.*

### MINOR NON-CONFORMITY

DEFINED AS: *A deviation from current standards which if left unrectified could lead to a hazard to the health or safety of personnel or the environment or to a sub-standard quality of work.*
EXAMPLE: *Samples not being stored in line with BS EN ISO 22475.*

### MAJOR NON-CONFORMITY

DEFINED AS: *A deviation from the current standards which presents an immediate hazard to the health or safety of personnel or the environment, a potential breach of legal duty and where rectification cannot be immediately achieved.*
EXAMPLE: *Engine emergency stop not working correctly.*

- In these circumstances it is the BDA's right to terminate the audit and inform the project manager and record the findings on the audit report. Non-achievement of audit owing to a major non-conformity cannot be rectified at a later date, it must be re-assessed when the auditee has resolved the issue.

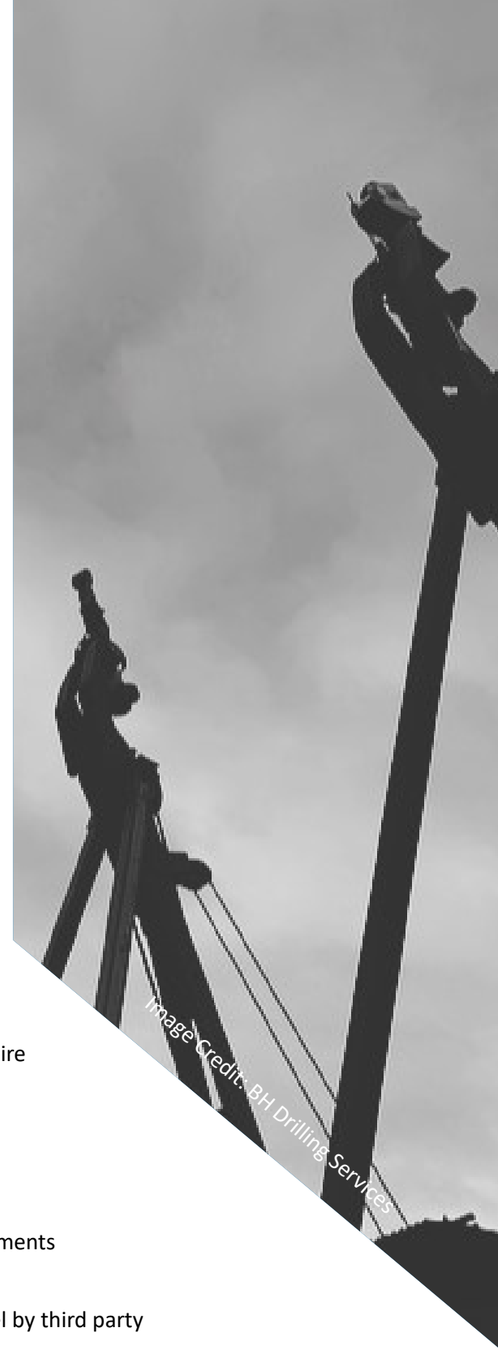


# 2.7 AUDIT REMIT

All Audits will be carried out and any subsequent non-conformances will be noted according to adherence with the latest and current list of Standards, Guidance, Legislation and Regulations provided here.

### HEALTH & SAFETY

- First Aid at Work Regulations
- Health and Safety at Work Act
- UK Specification for Ground Investigation (Yellow Book)
- Health and Safety Executive Guidance Number 47 (HSG47) Avoiding Danger from Underground Services
- Construction Design and Management Regulations (CDM)
- The Provision and Use of Work Equipment Regulations (PUWER)
- The Workplace (Health, Safety and Welfare) Regulations
- The Management of Health and Safety at Work Regulations
- The Control of Substances Hazardous to Health Regulations (COSHH)
- The Working at Height Regulations
- Personal Protective Equipment at Work Regulations
- The Regulatory Reform (Fire Safety) Order (England & Wales) or Fire (Scotland) Act




### TECHNICAL

- BS 5930 - Code of practice for ground investigations
- BS EN ISO 22475 – Sampling methods and groundwater measurements
- BS 22475-2 - Qualification criteria for enterprises and personnel
- BS 22475-3 - Conformity assessment of enterprises and personnel by third party
- BS EN ISO 14688 – Identification and classification of soil
- BS EN ISO 14689 - Identification and classification of rock
- BS EN 16228-1:2014 - Drilling and foundation equipment — Safety Part 1: Common requirements
- BS EN 16228-1:2014 - Drilling and foundation equipment — Safety Part 2: Mobile drill rigs for civil and geo-technical engineering, quarrying and mining
- BS EN ISO 22476 - Field testing
- BS EN ISO 22282 – Geohydraulic testing
- BS EN ISO 18674 – Geotechnical monitoring by field instrumentation

# WHERE?
## 3.1 LOCATION

BDA audits can be carried out on any working site across the UK & Ireland, but additional costs may apply to visits outside the mainland. Audits are also only completed provided that access to the working site is not in contravention with any contracts entered into by the Contractor being audited and their Client.

All sites on which a BDA audit is to be carried out must comply with current legislation and guidance, and the BDA auditor will only assess within a safe working environment.

Auditors must be advised prior to audit of any parking restriction of the auditor's transport and proved suitable alterative arrangements where necessary. In circumstances where the BDA audit location cannot be accessed by normal road-going private cars, the company arranging the BDA audit will ensure suitable arrangements are in place for transport to the BDA audit location.

Where there are site-specific, specialist PPE requirements for all operatives and visitors to site, these specialist PPE items will be supplied to the BDA auditor by the auditees' company.

Audits can only be carried out on live, working sites with real-time drilling activities taking place. The auditee must be observed drilling and progressing a borehole during the visit, whether sampling or open-holing.

BDA audits can be carried out during night shifts and in the marine environment, however any such audits will be subject to an enhanced rate of BDA audit cost and increased timescale to complete. These costs and timescales will be agreed with BDA Audit Management prior to the BDA audit taking place.


# WHEN?
# 4.1 AUDIT PROCESS

## 1. Pre-Audit

- A company decides it needs its drilling teams to be audited
- After collecting all relevant paperwork and certifications (Front & Back of VQ Certificate, Front & Back of CSCS Card, First Aid Certificate, Asbestos Awareness Training certificate, Manual Handling training certificate and Wire Rope Inspection training certificate – Rotary and CP Lead Drillers only), a representative from the company fills in the registration form or contacts the BDA audit Management office to organise multiple audits
- During registration, applicants are offered the opportunity to obtain an MP Connect / BDA audit card endorsed with the CSCS confirmation of CSCS health and safety test achievement.
- On completion of the registration form, the representative either uses a credit card to pay for the audit(s) immediately, or arranges for other immediate payment
- The BDA audit office ensures all pre-audit paperwork is present and sufficient
- Once all paperwork is received and payment has been processed, the BDA audit office confirms the location of the auditee's next working site
- The audit is assigned
- The assigned auditor will contact the auditee or employer directly to arrange a time and date that the audit will be completed
- The auditor will contact the auditee immediately prior to the audit to request any additional details regarding access to site, special requirements i.e. PPE, time and site inductions
- NOTE: No more than two Lead Drillers may be audited on the same machine within a 12-month period without prior approval from the BDA Audit Management.

## 2. Audit

- The auditor arrives on site and offers the auditee the opportunity to undergo the CSCS health and safety test, before commencing with the BDA audit
- If any deviations from industry good practice are identified, they are shared with the auditee and noted as observations by the auditor within the report
- If any non-conformities have been identified, they are shared with the auditee and discussed immediately. If required, the auditor will then agree with the auditee the timescale within which the non-conformities will need to be rectified for the audit to be achieved
- If a major non-conformity is identified, the auditor will immediately ask that the drilling is paused and will then offer the auditee the opportunity to immediately correct the non-conformance, if possible, and provided that it isn't something that should have been covered by the driller's pre-operational inspection. Only if the auditee and/or employer is unable to immediately rectify the major non-conformity, or if it is something that should have been identified and corrected prior to the audit taking place will the auditor report a major non-conformance and the audit be deemed 'NOT ACHIEVED'.
- *Note: A number of questions asked during the audit are for BDA information-gathering purposes only and do not effect the audit outcome.*



## 3. Post-Audit

- Where minor non-conformities have been identified for rectification, the auditor shall ensure that all required evidence has been collected to close out the non-conformities. In order to achieve this, the auditee/employer can request a provisional copy of the incomplete audit report.
- The Auditee and/or their Employer must then provide evidence to the Auditor as proof that the non-conformities have been rectified in the previously agreed and specified timescale (no more than 21 days from point of Audit)
- If non-conformities are not rectified and supporting evidence provided to the Auditor within the agreed timescale, the audit is marked as 'NOT ACHIEVED'
- If evidence of rectification is received, the Auditor will close out the non-conformities within the Audit Report and mark it as 'ACHIEVED – Subject to quality assurance' and submit to the BDA Audit Manager for Quality Assurance
- The BDA Audit Manager has seven days to complete quality assurance before the report is formally presented to the Auditee and employer
- If the Auditee has achieved audited status, then a completed copy of the audit report will be sent to the Auditee and Employer along with a .JPEG copy of the auditee's audit card
- The Auditee will then receive an email/SMS notification prompting them to download the Cardskipper App to their smartphone which will display their official BDA audit card
- If the Auditee has not achieved audited status, then a completed copy of the audit report identifying the non-conformities will be sent to the Auditee and Employer. Once these non-conformances are corrected, the Auditee will be invited to start the Audit process again

## Audit Report

The official Audit Report formatting will follow the internationally recognised RAG system to identify the findings of the audit. The audit report will contain all of the below:

- If identified: A list of Auditor observations concerning deviations from industry recognised good practice. The BDA would expect that actions would be taken to improve on all auditor observations ahead of any future, repeat audits. These observations will be identified in **GREEN**.

OBSERVATION

- If identified: A list of all minor non-conformances. These non-conformances are deemed to not be an immediate health and safety risk, however are deviations from established industry Standards, Guidance, Legislation and Regulations. These non-conformances will be identified in **AMBER**. Some minor-non-conformities will be required to be rectified prior to audited status being granted; if this is the case, the auditee will be notified and the non-conformity will be listed at the end of the report. Some minor non-conformities are deviations from standards, however cannot be rectified post-audit and thus will remain on the audit report.

MINOR

- If identified: A list of all major non-conformances. Major non-conformances are deviations from established industry Standards, Guidance, Legislation and Regulations which either pose an immediate health and safety hazard, or, in certain scenarios, compromise the technical accuracy of the drilling operation. These non-conformances will be identified in **RED**.

MAJOR

- Photographic evidence to support all findings from the audit


mpqc

## 4.2 QUALITY ASSURANCE

The purpose of the Quality Assurance provided by the BDA Audit Manager is to ensure all BDA audits are carried out to the same specification and standard. The BDA Audit Manager cannot alter the result of an audit without consultation and agreement with the Auditor, however, they can request additional evidence and information from the Auditee/Employer to support the Auditor.

On 1st May 2021, the BDA Audit was accredited by the Mineral Products Qualification Council. Following the awarding of the accreditation, the assessment and quality assurance of the audit is now externally verified by an industry-recognised training and assessment body, bringing the audit fully in line with ISO 9001.

The BDA Audit also provides a robust annual competency assessment, as outlined in BS EN 22475-2.




## 4.3 BDA AUDIT CARD & MP AWARDS CSCS CARD

### BDA Audit Card

The BDA no longer issue physical audit cards but instead issue an e-card (digital card), alongside a watermarked digital image copy for office use.

Developed in partnership with Swedish digital communication experts, Cardskipper, the e-card system creates a secure environment for the Auditee's data and allows for greatly improved control, management and communication between the BDA and individual Auditees, whilst also reducing the environmental impact associated with the creation and use of plastic cards.

BRITISH DRILLING ASSOCIATION

**DELIVERING THE BDA AUDIT CARDS IN PARTNERSHIP WITH**

Cardskipper

This cutting edge digital system provides each Auditee with their own Audit e-card which can be downloaded direct to their smart device via the free, secure Cardskipper app. The app is free to download from Apple and Android stores and offers additional communication features between the BDA, BDA Audit Management and the auditee, such as sending Safety Alerts, industry related news, standards updates, renewal reminders and any changes to BDA audit content.

### MP Awards CSCS Card

Thanks to partnership with MPQC for accreditation purposes, the BDA audit team are also now permitted to administer CSCS health and safety assessments on behalf of MPQC. This means if you don't have a valid CSCS card, or you have an operative whose card has expired, they can now take a touch-screen CSCS H&S test before their audit takes place.

If they pass this test, alongside their BDA audit card, auditees will also receive a digital MP Awards CSCS card that links to both the MP Connect system that lists all qualifications present for the auditee in MP's database, and also the CSCS database via the SmartCheck app to verify their in-date CSCS health and safety test. However, should they fail the H&S test, they will also fail their audit.

There is no extra cost for this and is a free benefit of being a BDA Member and undertaking an annual BDA audit. However, you will need to opt in to this service when completing the application forms.

# WHY?

## 5.1 TIMELINE

In 1992 the British Drilling Association (BDA) introduced an accreditation to assess competence of all member land drilling operatives against industry standards and regulations. The development of this accreditation and it's successor, the BDA Audit, can be marked against time:

**1995**

BS EN 791:1995 Drill rigs. Safety – the original standard for drill rig safety is published.

**1998**

Provision Use of Work Equipment Regulations (PUWER) and Lifting Operations & Lifting Equipment Regulations (LOLER) are published providing the requirement for safe, suitable and routinely inspected work equipment; protection against dangerous moving, & temperature affected parts.

**2000**

Vocational Qualification (VQ) in Land Drilling is introduced to demonstrate competence under assessment.

**2006**

BDA Audit officially replaces BDA Accreditation.

**2007**

The Construction (Design and Management) Regulations 2007 are published, outlining that "Employees are expected to have the appropriate qualifications and experience for the assigned tasks".

**2011**

British Standard 22475:2011 Parts II and III stipulate qualification and audit criteria for enterprises and personnel working in the ground investigation and testing industry.

**2012**

Institute of Civil Engineers (ICE) publishes the Second Edition of the UK Specification for Ground Investigation (Yellow Book). This industry specification states the requirement for operatives to be adequately trained and and third-party audited in order to demonstrate competence.

**2014**

BS EN 16228 - Drilling & foundation equipment safety supersedes BS EN 791:1995 taking into consideration current state of the art knowledge of drilling machines and their safety performance from a manufacturer and operator perspective and the respective requirement.

**2015**

Construction (Design and Management) Regulations 2015 (CDM, 2015) are released, reinforcing the expectation of employees to have the appropriate qualifications and experience for the assigned task.

**2015**

BDA Audit is digitalised and updated to reflect changing legislation. Audits are now completed via tablet computers.

**2020**

BDA Audit adds independent management and Quality Assurance to improve standard of Auditing and ensure consistency.

**2021**

BDA Audit is awarded third-party accreditation by industry awarding body, the Mineral Products Qualification Council (MPQC).

## 5.2 ORIGINS OF BDA AUDIT

- In 1974 the Health & Safety at Work Act (HASAWA) legislated all people carrying out work must be trained to carry out their role. This was further enforced by CDM, 2007 "Employees are expected to have the appropriate qualifications and experience for the assigned tasks" and reiterated in the 2015 version.

  - *Employers must demonstrate their workforce satisfy this legal demand at all times.*

- In 2000, Vocational Qualifications (VQs) in Land Drilling were introduced to create a minimum standard for which drilling operatives could be trained and assessed against across the spectrum of near shore and off-shore construction drilling disciplines.

  - *This award is recognised as the minimum standard of training by the BDA and is promoted through specification by clients and contractors as the only method to demonstrate competence.*

- The BDA Audit contributes to the demonstration of compliance with BS 22475 Parts 2 and 3, the Yellow Book and CDM, 2015 and was developed to improve on the successful raising of the safety bar created during the BDA Accreditation scheme, simultaneously introducing ongoing competence post-VQs.


## 5.3 SUMMARY

- If anything goes wrong during, or as a result of, the works involved in a project (injury, engineering failure, inaccurate/poor data, fatality etc), competence of all those involved can be questioned by either HSE, the police or a judge.
- If Employers or Clients cannot prove that the people employed to carry out work are competent to carry out the job, they now become culpable in any suspected Breach of Legislation.
- Failure to demonstrate this fundamental requirement can result in a personal prosecution to the worker, the employer or both together. With potential unlimited fines and custodial sentences available for inditable breaches, protection against the direct and indirect implications is paramount.
- The BDA Audit offers a third party, independent assurance to assist demonstration of legal obligations and compliance with industry standards, guidance and good practice.
- The BDA Audit is the only competence scheme which enables clients, consultants and contractors to comply with BS 22475 Parts 2 and 3.

# APPEALS & COMPLAINTS

## 6.1 APPEALS

An appeal is defined as either:

a) An appeal against a decision made by the BDA Audit Management or a BDA Auditor regarding the acceptance of an Auditee's evidence/results of an Audit, either as part of an external verification function or an external examination function. (In this instance an appeal will not necessarily involve re-assessing the evidence), or

b) An appeal against a decision regarding reasonable adjustments and special considerations, or

c) An appeal against decisions relating to any action to be taken against an Auditee or a BDA Auditor following an investigation into malpractice or maladministration.

Auditees/Employers wishing to implement the appeals procedure should first discuss the case with the BDA Auditor who carried out the initial Audit. The BDA Audit Manager will endeavour to resolve the matter to the mutual satisfaction of the candidate and/or candidate employer, the Auditor, and the BDA.

Appeals must be made in writing and sent to BDA Audit Management within seven working days.

Should the Auditee/Employer not be satisfied with the outcome, they must appeal in writing to the Appeals Panel of the BDA Audit within seven working days of receiving the decision.

### The Appeals Panel

The Appeals Panel will include:

- BDA Audit Steering Group
- A non-involved BDA Auditor

The Appeals Panel will consider the appeal and will inform the Auditee/ Employer of the decision within 28 working days.



Image Credit: WJ Groundwater


Image Credit: Eijkelkamp Fraste

## 6.2 COMPLAINTS

Complaints may include, for example:

- Conversations/communication with BDA Auditors or Management which do not meet your expectations
- Poor/difficult relationships with the Auditor or Audit Manager, affecting Audit delivery or assessment
- Incorrect or confusing communication or advice

Complaints should not include any assessment/accreditation issues

### How to submit a complaint?

Complaints may be submitted by email, telephone or letter. However, should your complaint involve a third party which the BDA works with, the BDA Audit Management will ask you to ensure the complaint is made as a written complaint and your details may be disclosed to the third party as part its investigation process. The BDA Audit Management will not investigate complaints involving a third party without this process being understood and adhered to.

### Escalation of Complaint

If the Complainant is still dissatisfied following the decision of the BDA Audit Management they can also refer the complaint to the appropriate regulatory authority e.g. Ofqual or SQA.

**To view the full BDA Audit Complaints Procedure, please contact the BDA Audit Office directly.**

# WITH THANKS TO

The BDA would like to thank the below for their efforts, collaboration and contributions in the creation of this document:

### Image Contributions

- Archway Engineering
- BH Drilling Services
- Eijkelkamp Fraste
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### Content Contributions

- BDA Chair - Mark Toye
- BDA Health and Safety Chair - Paul Breslin
- BDA Technical and Standards Chair - Lee Healey
- BDA Marketing Chair - Debbie Darling
- BDA Auditors - Callum Allardyce, Lee Allardyce, Andrew Frogley
- BDA Audit Management & Administration - Calum Spires, Keith Spires
- Other Technical Contributions -Julian Lovell, Richard Fielden, Jon Christie

**BDA Audit Handbook**

**Version 2.1 (September 2021)**
Updates to:
- 4.1: Audit Process
    - Colour coding system
    - 'Information only' questions

**Version 2.2 (January 2023)**
Updates to:
- 1.1: Auditors
- 1.3: Audit Steering Group
- 2.2: Specific Guidance
    - Rotary guarding
    - Thorough Examination Certification
    - Factors of Safety for Wire Ropes
- 3.1: Location
- 4.3: MP Awards CSCS Card

**Version 2.3 (October 2023)**
Updates to:
- 2.2: Technical Quality Conformance
    - Full details on minors

Version 2.4 (December 2025)
Updates to:
- 2.2: Health and Safety Conformance
- 2.3: Pre-Operational Inspections

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BRITISH DRILLING ASSOCIATION

The BDA is a not-for-profit organisation, committed to improving standards in health & safety, quality of workmanship and technical standards for the benefit of the Drilling Industry and its Clients.