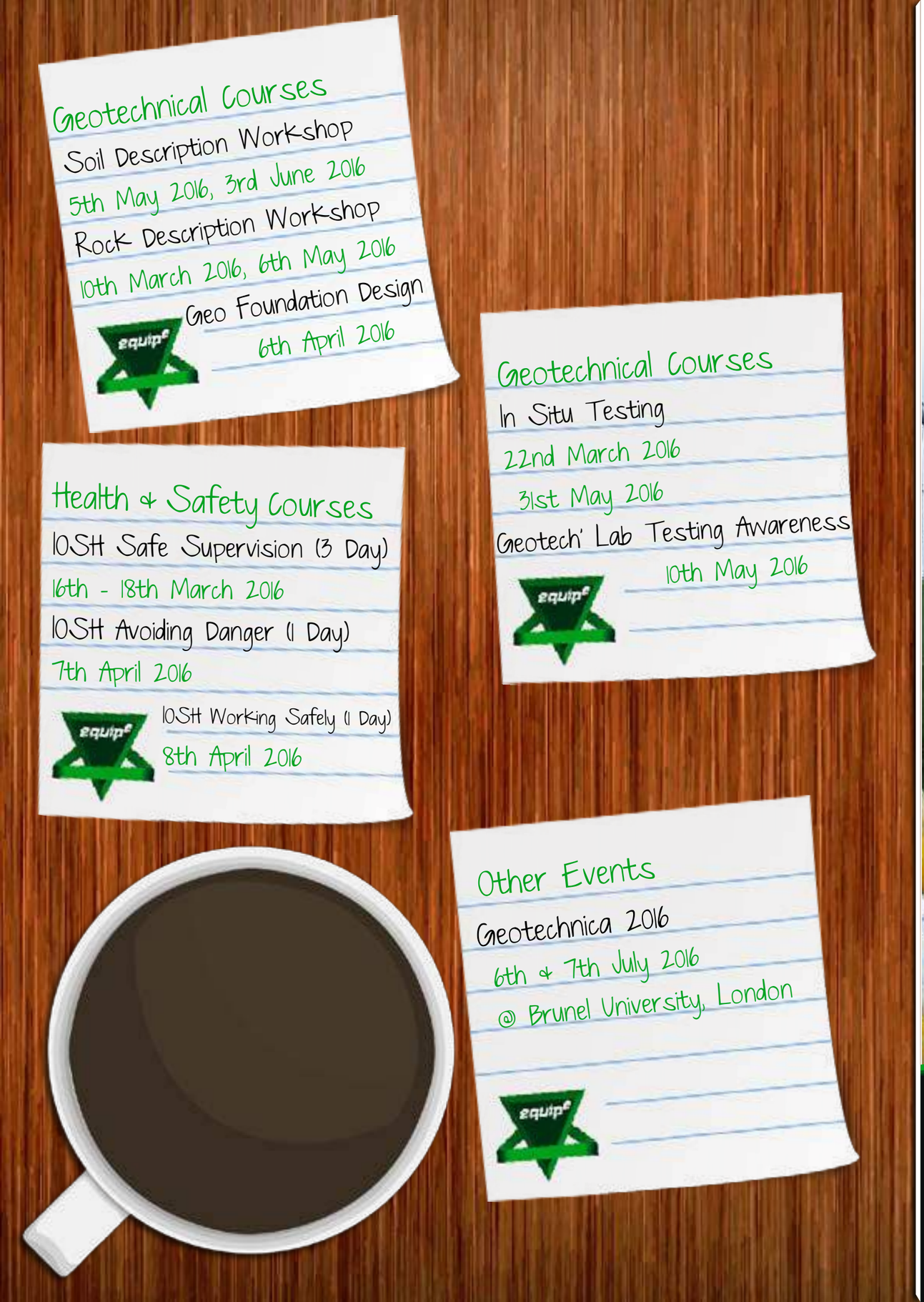

theGeotechnica

March 2016 | Issue 48

The state of the Ground Investigation Industry

The AGS and BDA combine forces to set up an initiative to analyse the GI industry in the UK amidst recent criticism of the sector

ALSO INCLUDED: GEOTECHNICA 2016 CONFERENCE DETAILS

Understanding Total Petroleum Hydrocarbons

DETS attempt to solve some of the confusion surrounding TPH

Health and Safety - LOLER Inspections

Geotechnical Engineering explain the importance of LOLER Inspections

Land Drilling Apprentices Wanted

The BDA are on the hunt fot 2016's Apprentice Scheme applicants

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Welcome

Welcome to the 48th Edition of **theGeotechnica** - the UK's fastest growing online geotechnically focussed e-magazine.

The opening article of this month's issue comes from Hazel Davidson of Derwentside Environmental Testing Services. In another excellent entry from Hazel, the topic in focus is Total Petroleum Hydrocarbons (TPH) and the confusion that surrounds them.

Next up, providing another insightful offering is Liz Withington, Senior Manager at Geotechnical Engineering Ltd. This month Liz asks where health and safety starts for a drilling contractor, starting with LOLER Inspections.

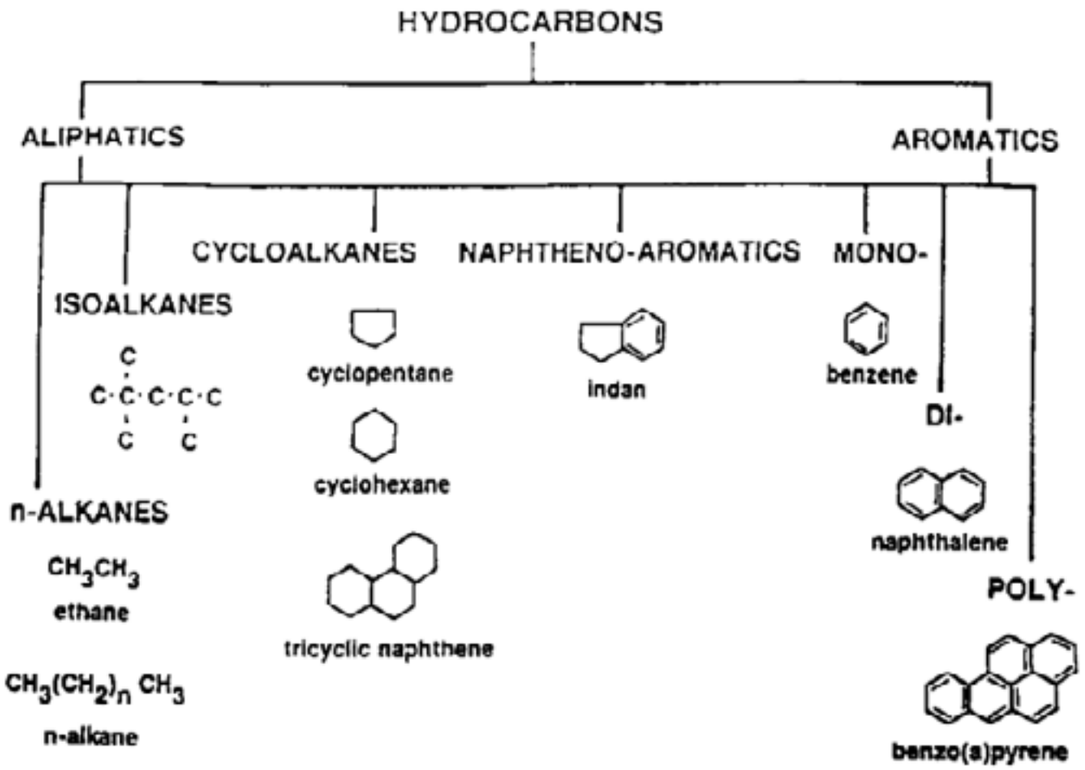
Following on from Liz is a look at the British Drilling Association's 2016 Land Drilling Apprenticeship. Recruitment is underway for this year's intake and the BDA are on the look-out for potential candidates. In this article the BDA provide some more information on the scheme and what it can offer you.

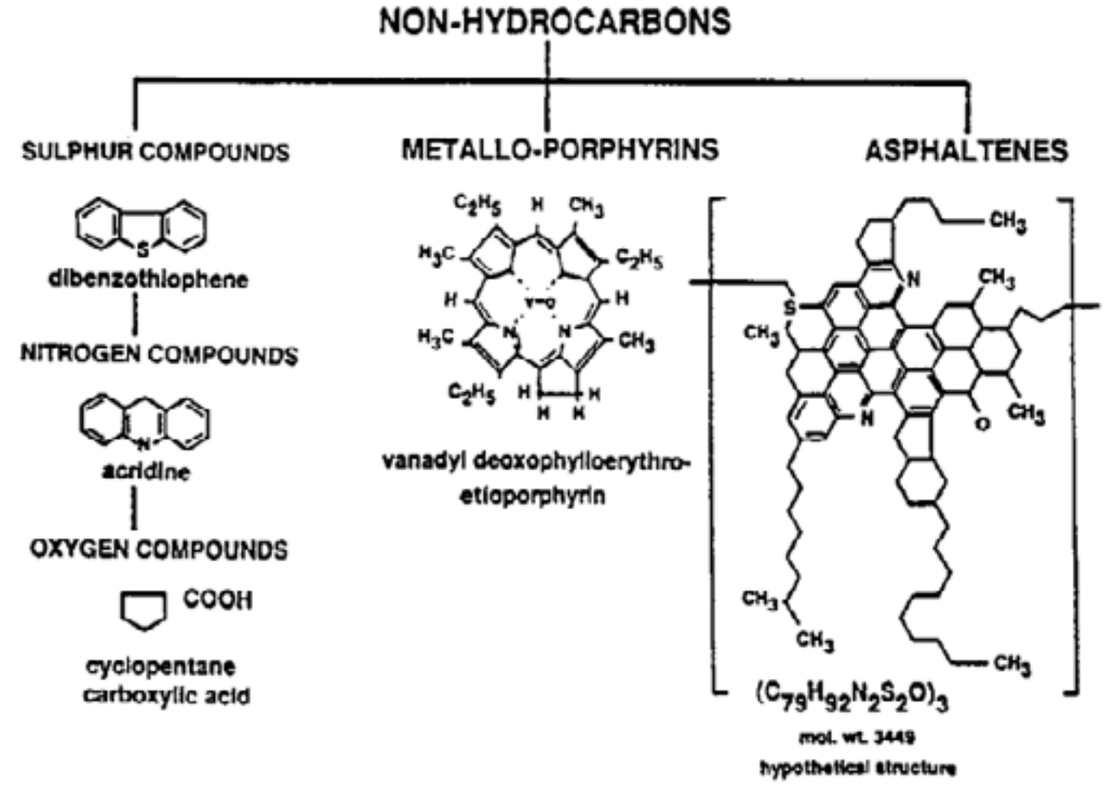
Our final contribution is also our cover article which is a special piece on a new joint initiative being set up by the Association of Geotechnical and Geoenvironmental Specialists (AGS) and the British Drilling Association (BDA). Recently a statement was made to a number of industry leading practitioners, questioning not only the quality of the UK ground investigation industry, but also the morale and the low public opinion of the sector. In reaction to this, the AGS and BDA have combined to create an initiative to analyse and improve the state of the UK GI industry - The Task Force. This month **theGeotechnica** has an exclusive insight into the aims of the initiative, including details of an upcoming survey to be sent to all contractors, consultants and 'clients' working within the sector.

As with every new edition of the magazine, the Editorial Team here at **theGeotechnica** will be on the lookout for even more new, original and interesting content from all corners of the sector, and would actively encourage all readers to come forward with any appropriate and relevant content - whether it be a small news item or a detailed case study of works recently completed or being undertaken. If this content is media rich and interactive, then all the better. We are looking to increase the already large readership of the magazine through better social media integration and promotion, as well as improving content month on month.

Finally, for any content that is submitted we will ensure that an advertising space, proportionate to the quality of content provided, is reserved should you wish to place an advert in that single edition of the magazine. We hope you enjoy this month's edition of the magazine and are inspired to contribute your own content for the coming editions of **theGeotechnica**.

Editorial Team,
theGeotechnica





UNDERSTANDING TOTAL PETROLEUM HYDROCARBONS (TPH)

Writing for theGeotechnica this month is Hazel Davidson of Derwentside Environmental Testing Services. In another excellent entry from Hazel, the topic in focus is Total Petroleum Hydrocarbons (TPH) and the confusion that surrounds them.

Fig. 1 (above and right): Major groups of hydrocarbons.

This topic causes more confusion than any other, with many clients not understanding exactly what is being measured, or what they should be asking their laboratory to provide for any specific site.

By definition, petroleum compounds are derived from crude oil, but crude oil itself is a highly variable material consisting of thousands of compounds, depending on where it was formed. All crude oil is formed from buried organic material subjected to intense heat and pressure, but the chemical composition can vary from light (volatile) condensates to solid, tarry bitumens. Chemically, they are all composed of carbon and hydrogen, but contain varying proportions of other elements: nitrogen, sulphur and oxygen being the most common (NSO). For example, a North Sea crude contains < 0.5% sulphur, whereas a crude from the Kirkuk field (Middle East) can contain 3 – 4% sulphur.

The non-hydrocarbons (right half of Fig. 1) are sometimes referred to as heterohydrocarbons, as they contain the additional elements, N, S and O (nitrogen, sulphur and oxygen) as well as carbon and hydrogen. However, in laboratories, most of the analytical efforts relate

to the top half of Fig. 1, the true hydrocarbons, and these consist of two main groups, the aliphatics and the aromatics. The major difference between them is that aromatics are all based on the benzene ring and contain resonating double bonds, and this structural difference has a major effect on their toxicity.

Alternative names for aliphatic species: alkanes, paraffins, saturated compounds, mineral oil, naphthenes, non-polar compounds

Aromatics are either monoaromatic (one benzene ring, e.g. BTEX benzene, toluene, ethyl benzene, xylenes) or polyaromatic (multiple benzene rings, e.g. naphthalene, benzo-a-pyrene) or PAHs, and aromatics include the more carcinogenic compounds, and have much lower action values in soil.

As a general rule, refinery fractions increase in boiling point range and density, and decrease in volatility and solubility in water.

Analytical methods

- TPH screen, covering the carbon range C6 – 35, using one solvent extraction of pentane or hexane for both VPH (part) and EPH with analysis by GCFID. This is fine for determining the most contaminated areas of a site or for monitoring remediation processes, but it does not usually give sufficient information for risk assessment.

"This is fine for determining the most contaminated areas of a site... but it does not usually give sufficient information for risk assessment."

- Volatile petroleum hydrocarbons (VPH), carbon range C5 – 12, using a headspace GCFID method – as well as the total VPH, BTEX compounds can also be identified and quantified.

- Extractable petroleum hydrocarbons (EPH), carbon range C10 – 40, using solvent extraction and weighing the dried residue extracted. This will not contain the Volatile Petroleum Hydrocarbons (VPH), but may contain significant levels of indigenous organic material. The solvent should be strong enough (polar) to extract degraded aromatics, e.g dichloromethane or hexane/acetone.

- Cleaned up EPH – the EPH extract is passed through a silica based column which removes the most polar NSO compounds (usually the indigenous compounds, such as humic acids).

- Mineral oil – the cleaned up EPH is eluted with a non-polar solvent such as hexane, and only the aliphatics will elute. This will not contain the aromatics or the NSO compounds.

- Speciated TPH – the Criteria Working Group (CWG) banding analysis, carbon range C5 – 40, which provides both aliphatic and aromatic fractions split into specific bands and quantified. It includes both VPH and EPH, excludes the NSO compounds, and provides the best method for risk assessment.

TPH is a complex subject, and there is a lot of information to be derived from GC traces, such as the degree of weathering, but this article is only a summary. Please contact your laboratory for more in depth information. ■

Oil Type	C Range	Boiling Pt.	Sol. in H_2O	Density	% Arom.
Gasoline	C_4-C_{10}	25-215°C	Moderate	0.74	10 - 25
Kerosene & Jet Fuel	C_{10}-C_{15}	160-400°C	Moderate/low	0.81	<15
Diesel Fuel & Light Fuel Oils	C_{12}-C_{28}	160-400°C	Low	0.86	15 - 20
Heavy Fuel Oils	C_{19}-C_{35}	315-540°C	V. low	0.88	15 - 35
Motor Oils & Lube Oils	C_{20}-C_{44}	425-540°C	V. low	0.90	< 15
Bitumen	> C_{35}	> 500°C	Insol.	1.0	30 - 50

Fig. 2 Refinery fractions and physical properties

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geotechnical

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CPD Approved Courses for Geotechnical Academy Alumni

Specifying Site Investigations

This one day course will look at the various methods available to carry out intrusive and non intrusive investigation. Whilst the course will concentrate on geotechnical methods some geo-environmental methods will be briefly discussed. The course will look at the aims of SI and categorise the various stages in an investigation.

Soil Description Workshop

From 2007 new European Standards have started replacing the British Standards (Codes) under which investigations in the UK have been carried out. UK working practice will have to change to meet these new requirements but few practitioners are aware of the changes or the timetable. The workshop will comprise a series of lectures on the changes, and lectures on soil description followed by practical sessions describing soil samples.

Rock Description Workshop

From 2007 new European Standards have started replacing the British Standards (Codes) under which investigations in the UK have been carried out. UK working practice will have to change to meet these new requirements but few practitioners are aware of the changes or the timetable. The workshop will comprise a series of lectures on the changes, and lectures on rock description followed by practical sessions describing rock and compiling mechanical logs of rock core.

In Situ Testing

The course will cover both the theory and the practice of various In Situ Testing techniques used on typical geotechnical projects. In addition the courses will consider the effect that Eurocodes will have on the UK's current practice. This course provides an overview of in situ tests used in common practice and some of the more specialist tests together with their advantages and limitations.

Field Instrumentation and Monitoring

The course comprises a comprehensive one day appreciation of the complete process involved in Instrumentation and Monitoring in the geotechnical environment. The course provides an overview of the current guidance documents and their requirements. The course will consider the design of both individual installations and the installation of suites of instruments in the wider site contex.

Geotechnical Foundation Design

This one day course will provide a general overview of foundation design. It will include an assessment of the use and choice of shallow foundations and piles. It will cover the derivation of bearing capacity formula and their use. Exercises will be carried out to calculate the working loads and settlement of simple foundations. The methods used to calculate these will be in accordance with those described in Eurocode.

IOSH Working Safely (on Geotechnical Sites)

This one day course is developed by industry specialists within RPA Safety Services and Equipe Training as a foundation to site safety. Its aim is to impart the core safety skills required of those working on geotechnical sites by building on their existing specialist technical skills. After attending the course, candidates should be able to identify hazards on site, understand basic safety legislation, participate fully and confidently in site safety consultation and manage priority risks to a sufficient standard.

IOSH Avoiding Danger from Underground Services

Partnering with RPA Safety Services once again, Equipe provide another IOSH certified health and safety course. This one day course is aimed at anybody involved in specifying, instructing, managing, supervising or actually breaking ground and really addresses the problems and risks related to underground services, which may be encountered during both planning and execution of geotechnical projects.

IOSH Safe Supervision of Geotechnical Sites

Equipe has partnered with RPA Safety Services, an independent occupational health and safety specialist, to provide a unique IOSH certified course for the Drilling and Geotechnics industry. The three day course is certified by IOSH, is specifically focussed on the geotechnical industry and provides a totally unique and relevant Health and Safety course for managers and supervisors.

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WHERE DOES HEALTH & SAFETY START?

Providing another informative piece for theGeotechnica this month is Liz Withington, Senior Manager at Geotechnical Engineering Ltd***. This month Liz asks where health and safety starts for a drilling contractor, starting with LOLER Inspections.***

"Quality is never an accident; it is always the result of intelligent effort" - John Ruskin

The first priority on any site is Health and Safety. So where does Health and Safety start? At the site gate, at the site induction, at the project planning stage or when choosing a competent contractor? Of course, it is all of these and many other considerations. But how would you choose a competent ground investigation contractor? Do you choose the cheapest because "all contractors are the same", or do you check that they comply with the appropriate rules and regulations for the industry? Complying with these rules and regulations may not be the most visible of their activities, but they are essential to provide a safe, reliable, legally compliant service to your site, so that you the Client, or you the Consultant, can receive the quality data that you require to reduce your risk.

Compliance with LOLER (Lifting Operations and Lifting Equipment Regulations 1998) is an essential requirement for ground investigation contractors. LOLER replaced existing legal requirements relating to the use of lifting equipment, for example: the Construction (Lifting Operations) Regulations 1961, the Docks Regulations 1988 and the Lifting Plant and Equipment (Records of Test). The LOLER Regulations aim to reduce risks to people's health and safety from lifting equipment provided for use at work. In addition to the requirements of LOLER, lifting equipment is also subject to the requirements of the Provision and Use of Work Equipment Regulations 1998 (PUWER).

The regulations place duties on people and companies who own, operate or have control over lifting equipment.

"If you are an employer or self-employed person providing lifting equipment for use at work, or you have control of the use of lifting equipment, then the Regulations will apply to you."

If you are an employer or self-employed person providing lifting equipment for use at work, or you have control of the use of lifting equipment, then the Regulations will apply to you. So what is a "lifting" operation? The regulations define a lifting operation as "an operation concerned with the lifting or lowering of a load". A "load" being the items lifted and includes people. So what is "lifting equipment"? Lifting equipment is work equipment for lifting or lowering loads and includes lifting accessories and attachments used for anchoring, fixing or supporting equipment.

If we take the above words from LOLER into the drilling industry, it becomes far clearer what is covered:

Cable Percussion drillers should be all too familiar with the LOLER terminology and have been required to have lifting certification for their rigs for many years. However, the regulations go far beyond just a winch rope certificate as the whole rig structure assists the lift.

Rotary Rigs lift the drill string constantly, therefore fall under LOLER but not just the winch as many think, the whole rig is supporting the winch and therefore a LOLER inspection is a requirement for the whole rig not just the winch and cable.

Dynamic Sampling Rigs lift the drill string constantly and again the whole rig supports the lifting and therefore the inspection is required for the whole rig.

In short, for a ground investigation contractor the lifting equipment includes:

- The rig

- The rig winch
- The rig chains
- The forklift truck

Similarly the lifting accessories includes:

- The SPT hammer
- Bow shackles
- D Shackles
- Swivels
- Slings
- Winch cables
- Lifting eye
- Hooks

All of this equipment should be subject to a "thorough examination" and clearly marked with its Safe Working Load (SWL). The thorough examination should be carried out by a competent person at a frequency depending on the type of equipment and the purpose to which it is used. Typically in the case of lifting equipment this is on first use and 12 month intervals, and for lifting accessories this is on first use and then every 6 months.

"The clear marking of the SWL is also a requirement of the regulations..."

The clear marking of the SWL is also a requirement of the regulations, the SWL being the maximum load the equipment can safely lift.

At Geotechnical Engineering Limited we use an external supplier, sourced through our "approved supplier" system to test all of our lifting equipment and accessories. Certificates are produced for each individual item of equipment, and each item clearly colour coded to show that it is compliant. Our current colour is green, this will be replaced in 6 months with another clearly identifiable colour. ■

More details of the services that Geotechnical Engineering can deliver can be found at Geotechnical Engineering Ltd.

To book your equipment in for LOLER and PUWER Inspection, get in touch with Equipe either via the contact form on our website found here, send us an email on info@equipegroup.com or give us a call on +44 (0)1295 670990.

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The true value of a good ground investigation is all too often missed and as an industry we often revert to blaming the client or resigning ourselves to lowest cost always wins. However, the geotechnical industry is full of intelligent, competent, resourceful and hard-working individuals.

Geotechnica 2016 will reflect on the current 'state of the industry', look at what the industry is doing well, lessons learnt from past and ongoing projects, innovations and emerging technologies. It is an inclusive event and will be used to share knowledge, promote best practice and help the industry debate, evaluate and establish initiatives to move forward.

Full programme to follow.

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Speakers:
Jonathan Gammon
Head of Ground Investigations, HS2 Ltd
Professor Paul Nathanail
Managing Director, LQM Ltd

Session - Ground Investigation Techniques
Speakers:
Andrew Milne
Project Chairman, AGS/BDA Task Force & Managing Director, Geotechnical Engineering Ltd

Session - Laboratory Testing and Sampling
Speakers:
Dr John Powell
Technical Director, GEOLABS Ltd
Tom Lunne
Expert Advisor, NGI

Session - Maximising the benefits of Ground Investigation Specialist Services
Speakers:
Adrian Wilkinson
Director, LM-Geotechnical
Dr Simon Hughes
Operations Manager, TerraDat (UK) Ltd
Kim Beesley
Managing Director European Geophysical Services

Session – Health, Safety & Environmental Update
Speakers:
Tom Phillips
Managing Director, RPA Safety Services

Session - Innovation and Emerging Technologies - Where next for the industry?
Speakers:
TBC

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- Advanced Groundwater Techniques
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- Robertson Geologging
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- TerraDat
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LAND DRILLING APPRENTICESHIPS

BDA NOW RECRUITING FOR SPRING 2016

Recruitment is underway for the British Drilling Association's 2016 Land Drilling Apprenticeships and the BDA are on the look-out for potential candidates. In this article the BDA provide some more information on the scheme and what it can offer you.

The UK construction industry will need an additional 250 civil engineering operatives and related occupations (which includes skilled Lead Drillers) to meet demand every year from 2016 until 2020, according to the latest Construction Skills Network research (LMI).

This report predicts growth in every nation and region in the UK with an annual UK average increase of 2.5%, driven by the infrastructure and private housing sectors.

"With this opportunity comes the inevitable problem of a skill shortage..."

With this opportunity comes the inevitable problem of a skill shortage but this forecast should help employers feel more confident about putting forward an apprentice from within their existing workforce.

This is where the BDA Apprenticeship comes in.

"Apprentices are the lifeblood of a successful industry, and we need to train many more to secure the future of the Land Drilling industry."

Apprentices are the lifeblood of a successful industry, and we need to train many more to secure the future of the Land Drilling industry. It is up to us to work together and train our people, to do our part in building a better Britain.

The BDA's Land Drilling Apprenticeship Scheme is open to all land drilling sectors and is designed to take drilling support operatives (2nd men) through to the award of the National Vocational Qualification (NVQ) in Land Drilling, level 2, as a Lead Driller.

This is achieved by a mix of formal off-the-job training and supervised on-the-job training at employer level, followed by NVQ assessment. The scheme provides full and comprehensive training in the knowledge, qualities and skills that a Lead Driller should possess.

Training modules include Induction and sessions on Employment Rights & Responsibilities; Health, Safety & Environment; Geology; Drilling Applications & Methods; Site Management; Drilling & Grouting; Ground Investigation; Anchoring & Geothermal Drilling. It is hoped to add a unit in the near future on Digital Logging and New Drilling Technology.

Employers deliver the supervised work based training to satisfy a series of educational demands such as 'Instructing & Supervising Drill Crew' etc. Completion of this training

"Employers deliver the supervised work based training to satisfy a series of educational demands..."

is periodically verified by the BDA and CSkills.

The Scheme is fully endorsed by CSkills and forms part of their apprenticeship programme for the specialist trades known as SAPs.

“It is supported by grants to eligible employers (including those under the levy threshold (£80,000 wage bill).”

It is supported by grants to eligible employers (including those under the levy threshold (£80,000 wage bill). The BDA’s role is that of Training facilitator carrying out all of the administration of the scheme, organising the ‘off-the-job’ training modules, monitoring, with CSkills, the ‘on-the-job’ training and arranging for the NVQ assessment to take place at the appropriate time.

It is envisaged that the 2016/17 course will be based in England (as last year’s intake was based in Scotland) but recruits from all regions are welcome. However, if there is enough demand (minimum 6), a course can also be arranged in Scotland.

In 2015 the BDA, with the help of CITB, undertook a review and revision of the course content and training material to make sure that the apprenticeship was still fit for purpose and matched the requirements the modern drilling industry and moreover a review of training providers last year has also helped to ensure that course continues to deliver top class training. ■

Company & Apprentice Benefits

- Quality training to agreed national, industry and BDA standards
- The learner will learn key practical skills and knowledge of best techniques from day one
- Off-the-job Trainers will be industry experts in their field
- Fully documented training records satisfying legal requirements e.g. HASWA
- Apprentice eligible for CSCS Trainee card following Health & Safety test
- Costs fully covered by CITB grants to eligible companies
- Retention of employees by offering nationally recognised training / qualification
- Recruitment of new employees seeking career path
- Training of apprentices on correct and safe operations
- Apprentices work towards a set goal – Level 2 NVQ Diploma in Land Drilling Operations - Land Driller
- Apprentice input into company practices following formalised training
- Exposure of apprentices to range of drilling activity not within their company

For more information on Land Drilling apprenticeships see the BDA’s website http://www.britishdrillingassociation.co.uk/Apprenticeship or contact the office at office@britishdrillingassociation.co.uk or telephone 01773 778751.

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- SAFER G cannot be easily bypassed or disabled.
- Integration of self-checking diagnostics system which ensures the 'failure to safe' mechanism is present at all times.
- SAFER G can detect an object moving anywhere within a safe-guarded zone.
- Ability to differentiate between small and large objects (muds, liquids and dust particles vs. people).

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UK GI ANALYSIS

ANALYSING THE STATE OF THE UK GROUND INVESTIGATION INDUSTRY

Recently a statement was made to a number of industry leading practitioners, questioning not only the quality of the UK ground investigation industry, but also the morale and the low public opinion of the sector. In reaction to this, the AGS and BDA have combined to create an initiative to analyse and improve the state of the UK GI industry - The Task Force. This month theGeotechnica has an exclusive insight into the aims of the initiative, including details of an upcoming survey to be sent to all contractors, consultants and 'clients' working within the sector.

"The UK Ground Investigation industry at the moment is generally out of date, poorly skilled, demoralised, under-paid, under-respected, and barely 'fit for purpose'." This was a recent statement made to a group of respected industry practitioners. So is it true?

The interesting reaction from the group was not one of instant condemnation of the statement but an analysis of which parts may not be quite true. We all like to put the world to rights but the ensuing conversations regarding the 'state of the industry' were quite damning and concluded that:

"The interesting reaction from the group was not one of instant condemnation of the statement…"

- There has been very little investment in the industry for many years
  - Investment in terms of 'human resources' (training and development, systems etc) was poor
  - Investment in 'physical resources' (equipment, techniques, innovation etc) was low
- In many areas, the 'product' of the industry is sub-standard
- The 'product' is not perceived as good value (however cheap it is)
- Some of the practices are clearly unsafe
- Technical expertise, knowledge and application is poor
- 'Engineering judgement' is a dying skill
- Some of the environmental and 'social' practices are out of date, in comparison to other related industries
- There is an unhealthy cynicism and defeatism among service providers, resulting in blaming the Consultant, the Contractor, the Subbie, the Client, the BDA, the AGS etc etc
- The industry is not proud of itself

"The industry has lost its confidence or at best has a very low self esteem…"

- The industry has lost its confidence or at best has a very low self esteem

What is the proof of this you may ask?

Well, to be honest, a lot of experienced people saying very similar things as well as a good smattering of anecdotes. It is also a bit disheartening when industry representatives are

“…industry representatives are told by a major client that they believed the most hazardous part of their project would be the ground investigation phase. “

told by a major client that they believed the most hazardous part of their project would be the ground investigation phase.

State of the Industry

It is fair to say that the ground investigation industry is not good at sharing knowledge, lessons learnt, failings or even good practice. There are always arguments of commercial sensitivity and competitive edge and, of course, these have to be considered. However, many other industries have identified that the benefits for individuals, companies and the industry as a whole are far greater with a more collaborative and sharing culture.

There is a recognition by many of the leading players in the industry that the solutions to the problems lie within the industry and we should not expect others to provide them for us. Stakeholders within the industry have been attempting to ‘educate the client’ for over 30 years and this has clearly not worked.

“Compliance with health, safety and environmental legislation should not be up for debate…”

Compliance with health, safety and environmental legislation should not be up for debate, as with any other laws of the land, organisations must know what is right and wrong. However, we continually see photographs and hear of practices which suggest otherwise. Ignorance is no defence in a court of law and non-compliance can be a costly error and so why do individuals or organisations within the industry take these risks?

There are also new technical standards which clearly state ‘what is right and what is wrong’. Whether or not they are ‘perfect’ is irrelevant; whether or not we agree with them is pointless. The debate has happened; they are in place and they are the current British Standards. Any changes to these standards will involve positive engagement, moving forwards.

Practitioners and companies have the choice of whether they now provide services and products to the (new) British Standards, or some other sub-standard.

With this in mind, the industry has established a ‘Task Force’ of industry practitioners to obtain a clearer picture of the ‘state of the industry’. The time is right for the industry to ‘up its game’ and there is a collaborative desire to do something about it from within.

The Task Force

The Task Force has been set up by two trade organisations, the AGS and the BDA. Between these two organisations, consultants, contractors and suppliers are represented and as such the task force can claim to be reasonably representative of the industry as a whole.

The purpose of the joint AGS and BDA Initiative is to:

- Gain greater recognition, influence and respect.
- Promote a higher status, both ‘professionally’ and in business terms.
- Improve the health, safety and welfare of all participants
- Draw attention to the new technical standards, advocate adherence to them, assist in their explanation and interpretation, and give clear indications of ‘right’ and ‘wrong’ practice.
- Restore pride and self-esteem/worth back into the industry

“The objective is to engage as many people as possible in a survey of the UK Ground Investigation industry…”

The objective is to engage as many people as possible in a survey of the UK Ground Investigation industry as it is now (size, capability, standards, skills, attitudes, opinions, processes, practices etc). Initially, in May there will be two separate surveys sent out, as follows:

1. Contractors survey – primarily via the BDA membership and participants/ associates

2. Consultants and ‘Clients’ survey – primarily via the AGS membership and participants/ practitioners/associates/ contacts

The main focus of the surveys will be ‘intrusive’ investigations (and the spin offs e.g. handling and testing of samples obtained). It is recognised that there are other ‘sister’ disciplines, including in situ testing, geophysics, utility tracing, remote sensing etc. At the appropriate stage these will be acknowledged and considered alongside intrusive techniques.

The Deliverable(s)

The ‘Task Force’ are keen to develop tangible deliverables which can really help move the industry forward. As the surveys progress the Task Force will identify initiatives, routes and methods to share the initial findings of the surveys with everyone in the industry and also to engage the industry to promote change. The initial status will be reported in a Position Paper which will be delivered at Geotechnica 2016 and disseminated through all available media, including: both AGS and BDA websites, trade magazines (both on-paper and on-line), seminars, presentations, across other industry trade associations/ bodies, social media, training etc. It is hoped that this initiative will be a stimulus for involvement, change and the start of a new era of collaboration. We welcome your participation in the process.

In all communications, the Task Force will give a strong message to all those in the industry, through the various media, that the BDA and the AGS are united in their endeavour to modernise the industry, and to act as ‘influencers for change’. ■

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