

PRESS RELEASE

15th January 2015

UK's first independent research to monitor fracking as it happens

The British Geological Survey (BGS) plans to expand its existing national environmental monitoring programmes by carrying out independent detailed research in areas of the UK that may see shale gas exploration and production. In a UK first, this will include independent monitoring during hydraulic fracturing ('fracking') subject to planning approvals at two proposed shale gas exploration sites in Lancashire. All results of this research will be open and made freely available to the public.

The BGS has existing national environmental research programmes that include seismic and groundwater monitoring. This research will be enhanced in selected areas where shale gas resources have been identified to gain vital 'baseline' information. In addition, if planning applications for shale gas exploration are approved in Lancashire, this research will include monitoring during hydraulic fracturing. This ground-breaking research will provide the UK scientific community, with unique real time data from a shale gas operation over its whole life cycle - before, during and after hydraulic fracturing has taken place.



Monitoring of methane in groundwater

As part of the enhanced research programme, groundwater, regional air quality, seismicity and ground movements will be independently monitored at two proposed hydraulic fracturing sites in Lancashire. This will be carried out by a UK consortium led by the BGS with university partners (Birmingham, Bristol, Liverpool, Loughborough and Manchester). This work is different to the operator's own monitoring and that required by the regulator. It is designed to enhance the scientific understanding and knowledge of the effects of shale gas operations on the environment and support peer reviewed science.



In December 2012, Ed Davey, the Secretary of State for the Department of Energy and Climate Change, gave the green light for shale gas exploration to resume. Cuadrilla currently has two planning applications (Preston New Road and Roseacre Wood) before Lancashire County Council and intends to commence shale gas exploration if these are approved.

Professor John Ludden, Executive Director of the BGS, said "This ground breaking research will provide new scientific insight and innovative ways of monitoring the environment impact of shale gas development."

Professor Rob Ward, Director of Groundwater Science at the BGS, said "Hydraulic fracturing of shale rock is a new activity within the UK which, as with any subsurface industrial activity, will induce changes. A programme of research that will involve monitoring before, during and after the operations will provide valuable scientific information."

Ends

The consortium research team will consist of the following scientists:

- Professor Mike Stephenson, Dr Rob Ward, Dr Brian Baptie, Dr Daren Goody, Dr Pauline Smedley & Dr Colm Jordan, BGS
- Dr Mike Rivett, University of Birmingham
- Professor Michael Kendall & Dr James Verdon, University of Bristol
- Professor David Read, Loughborough University
- Professor Andreas Rietbrock, University of Liverpool
- Dr Grant Allen, University of Manchester

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Notes for Editors

The following are available for interview:

- Professor John Ludden, Executive Director, British Geological Survey
- Professor Mike Stephenson, Director of Science and Technology, British Geological Survey
- Professor Rob Ward, Director of Groundwater Science, British Geological Survey
- Dr Brian Baptie, Head of Seismology, British Geological Survey
- Dr Grant Allen University of Manchester



For additional information go to: www.bgs.ac.uk

Photographs are available from our ftp server:
<ftp://ftp.bgs.ac.uk/pubload/bgspress/ShaleGasMonitoring>

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The British Geological Survey

The British Geological Survey (BGS), a component body of the Natural Environment Research Council (NERC), is the nation's principal supplier of objective, impartial and up-to-date geological expertise and information for decision making for governmental, commercial and individual users. The BGS maintains and develops the nation's understanding of its geology to improve policy making, enhance national wealth and reduce risk. It also collaborates with the national and international scientific community in carrying out research in strategic areas, including energy and natural resources, our vulnerability to environmental change and hazards, and our general knowledge of the Earth system. More about the BGS can be found at www.bgs.ac.uk.

The Natural Environment Research Council

The Natural Environment Research Council (NERC) is the UK's main agency for funding and managing world-class research, training and knowledge exchange in the environmental sciences. It coordinates some of the world's most exciting research projects, tackling major issues such as climate change, food security, environmental influences on human health, the genetic make-up of life on earth, and much more. NERC receives around £300 million a year from the government's science budget, which it uses to fund research and training in universities and its own research centres. www.nerc.ac.uk

The University of Manchester

The University of Manchester, a member of the prestigious Russell Group of British universities, is the largest and most popular university in the UK. It has 20 academic schools and hundreds of specialist research groups undertaking pioneering multi-disciplinary teaching and research of worldwide significance. The University of Manchester is one of the country's major research institutions, rated fifth in the UK in terms of 'research power' (REF 2014), and has had no fewer than 25 Nobel laureates either work or study there. The University had an annual income of £886 million in 2013/14. www.manchester.ac.uk

The University of Birmingham

The University of Birmingham is a truly global university producing world-leading research and is ranked amongst the world's top 100 institutions. Birmingham benefits from mutual partnerships with a wide range of international institutions and hosts a large international community of researchers and students. With almost 5,000 international students from more than 150 countries, and 31% of academic staff from overseas, Birmingham's campus is truly a diverse and global place which attracts the brightest and best international students and staff. The University of Birmingham was named The Times and The Sunday Times University of the Year 2013/4.



The University of Bristol

The University of Bristol is one of the most popular and successful universities in the UK, and was ranked within the top 30 universities in the world in the QS World University rankings 2013. Bristol is a member of the Russell Group of UK research-intensive universities, and a member of the Worldwide Universities Network, a grouping of research-led institutions of international standing. The University was founded in 1876 and was granted its Royal Charter in 1909. It was the first university in England to admit women on the same basis as men. The University is a major force in the economic, social and cultural life of Bristol and the region, but is also a significant player on the world stage. It has over 15,000 undergraduates and nearly 6,000 postgraduate students from more than 100 countries, and its research links span the globe. Eleven Bristol graduates and members of staff have been awarded Nobel Prizes, including Sir Winston Churchill who was Chancellor of the University of Bristol from 1929 until 1965.

Loughborough University

Loughborough is one of the country's leading universities, with an international reputation for research that matters, excellence in teaching, strong links with industry, and unrivalled achievement in sport and its underpinning academic disciplines. It has been awarded five stars in the independent [QS Stars](#) university rating scheme, putting it among the best universities in the world, and is consistently ranked in the top twenty of UK universities in the Times Higher Education's 'table of tables'. In recognition of its contribution to the sector, Loughborough has been awarded seven [Queen's Anniversary Prizes](#). In 2015 the University will open an additional academic campus – [Loughborough University in London](#) – on the Queen Elizabeth Olympic Park, offering postgraduate education, as well as research and enterprise opportunities.

University of Liverpool

The University of Liverpool is one of the UK's leading research institutions with an annual turnover of £400 million, including £78 million for research. Liverpool is ranked in the top 1% of higher education institutions worldwide and is a member of the Russell Group. Visit www.liv.ac.uk or follow us on twitter at: <http://www.twitter.com/livuninews>