

Lostock Gralam Parish Council

5 September 2016

INEOS – Who Are We?

- A leading global chemical company
- Sales \$40bn
- 17,000+ employees
- 65 manufacturing sites in 16 countries including 6 in the UK
- We also produce gas from the North Sea to serve 1 in 10 homes

Our name isn't on the product label but we make the vital chemicals that go into the manufacture of everyday items

INEOS is interested in gas

- Methane – the energy source for our chemical plants
- Ethane - the raw material to make our chemical products

INEOS has invested \$1bn to bring ethane from the US

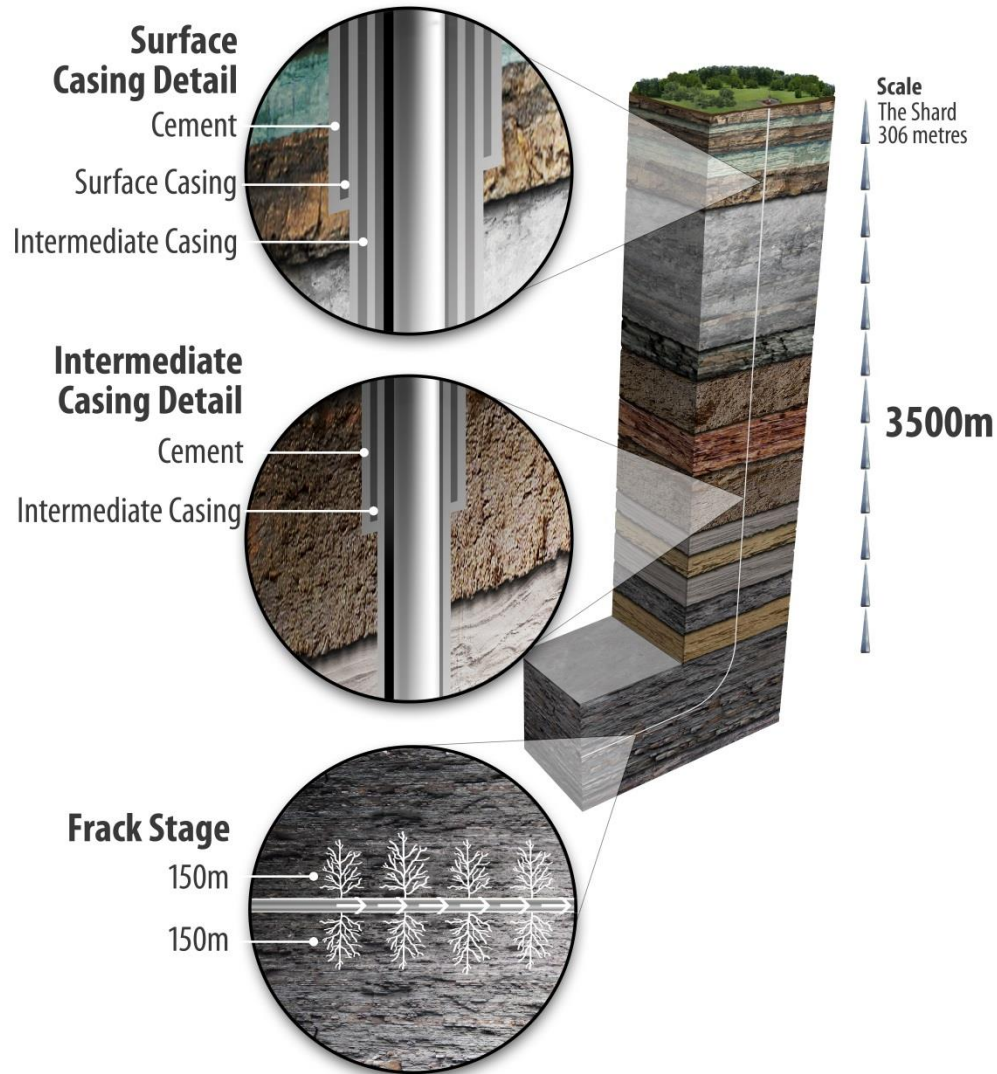
- **A boost to UK manufacturing**
- **Securing jobs**



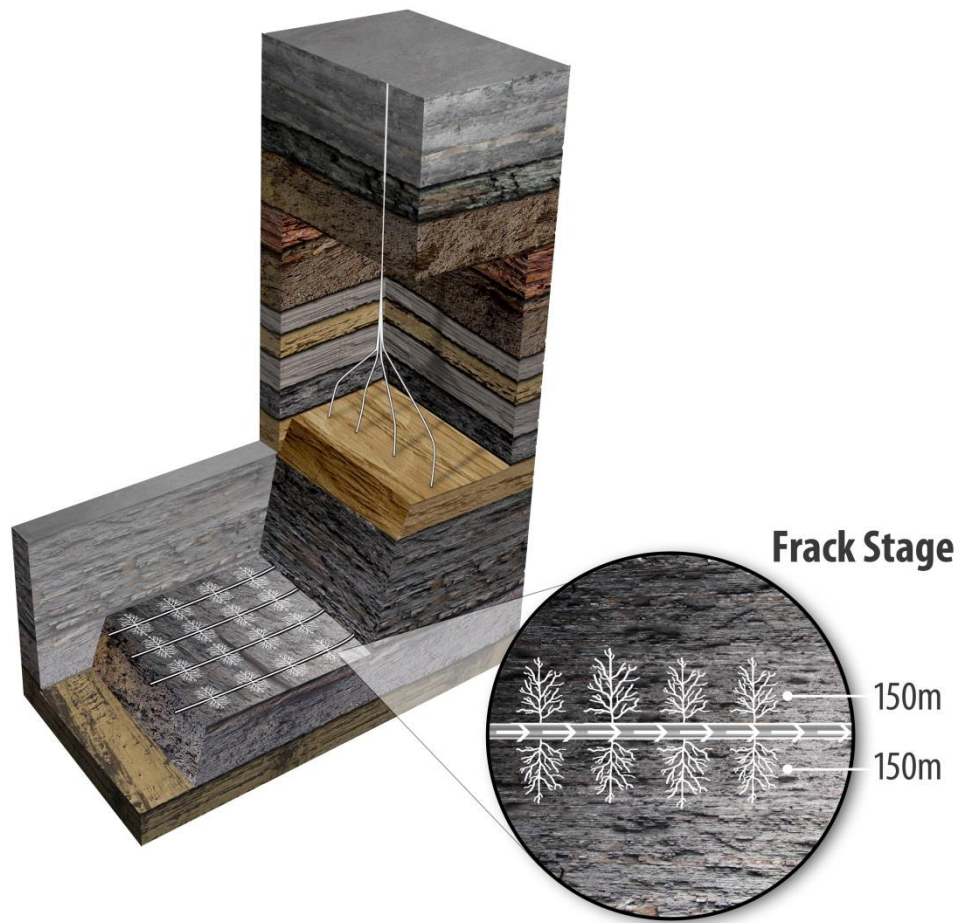
The INEOS approach

- UK Shale gas is a national asset and an opportunity
 - Manufacturing Industry
 - The Treasury
 - Communities
 - Security of supply
 - Protect existing jobs
 - Create new jobs and exportable skills
- Our approach is to demonstrate
 - Technical rigour
 - Transparent and open communications

Well Integrity



Multi-well pads reduce land requirement



Stages of Site Development – Drilling rig



Stages of development - Hydraulic Fracture Spread



Stages of Site Development - Production



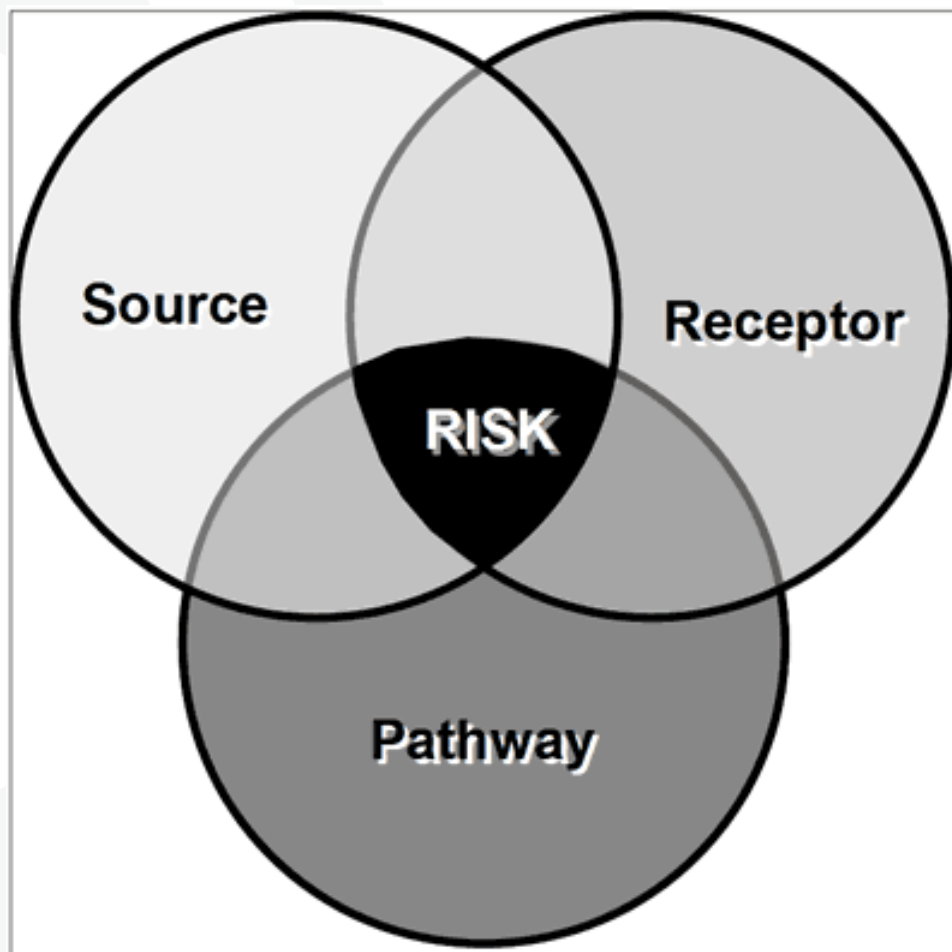
UK four-well gas production site – ground level view



Hazard and Risk

- A hazard is something with the potential to cause harm
- A risk is the likelihood of harm occurring
- A hazard does not by itself constitute a risk
- Three elements are required to constitute a **potential** risk to health or the environment
 - **Source** - hazardous substance or activity
 - **Pathway** - potential route for hazardous substance or activity to come into contact with a receptor where it could cause harm
 - **Receptor** - person or population

Risk diagram



Addressing Hazard and Risk

- The objective and outcome of the planning process is that the source-pathway-receptor linkage is either:
 - ✓ Removed by design, such that there is no health risk (avoidance), or where this is not possible,
 - ✓ The regulatory regime controls and minimises emissions in order to achieve a high level of protection for the environment and human health (mitigation)

Science and Consultation

A STEADY PROCESS OF SCIENCE AND CONSULTATION

ONGOING CONSULTATION WITH COMMUNITIES AND REGULATORS

Desktop Geology
and Environmental
Studies

Acquire and
interpret 2D and
3D Seismic data

Identification of
potential drill sites for
vertical coring wells

Land negotiations
and agreements

Planning
application(s) for
vertical core well(s)

Drill well & extract
'core' sample of shale
rock for lab analysis

Identify site(s) to drill
and frack horizontal
well(s) to test gas flow

Planning
application(s) for
horizontal well(s)

Drill and frack
horizontal well
conduct gas flow test

Plan a production
development using
multi-well pad

ONGOING CONSULTATION WITH COMMUNITIES AND REGULATORS

UK Shale Regime & Regulations

- Local Planning Approval
- Independent Well Verification



Department for
Business, Energy
& Industrial Strategy



Environment
Agency



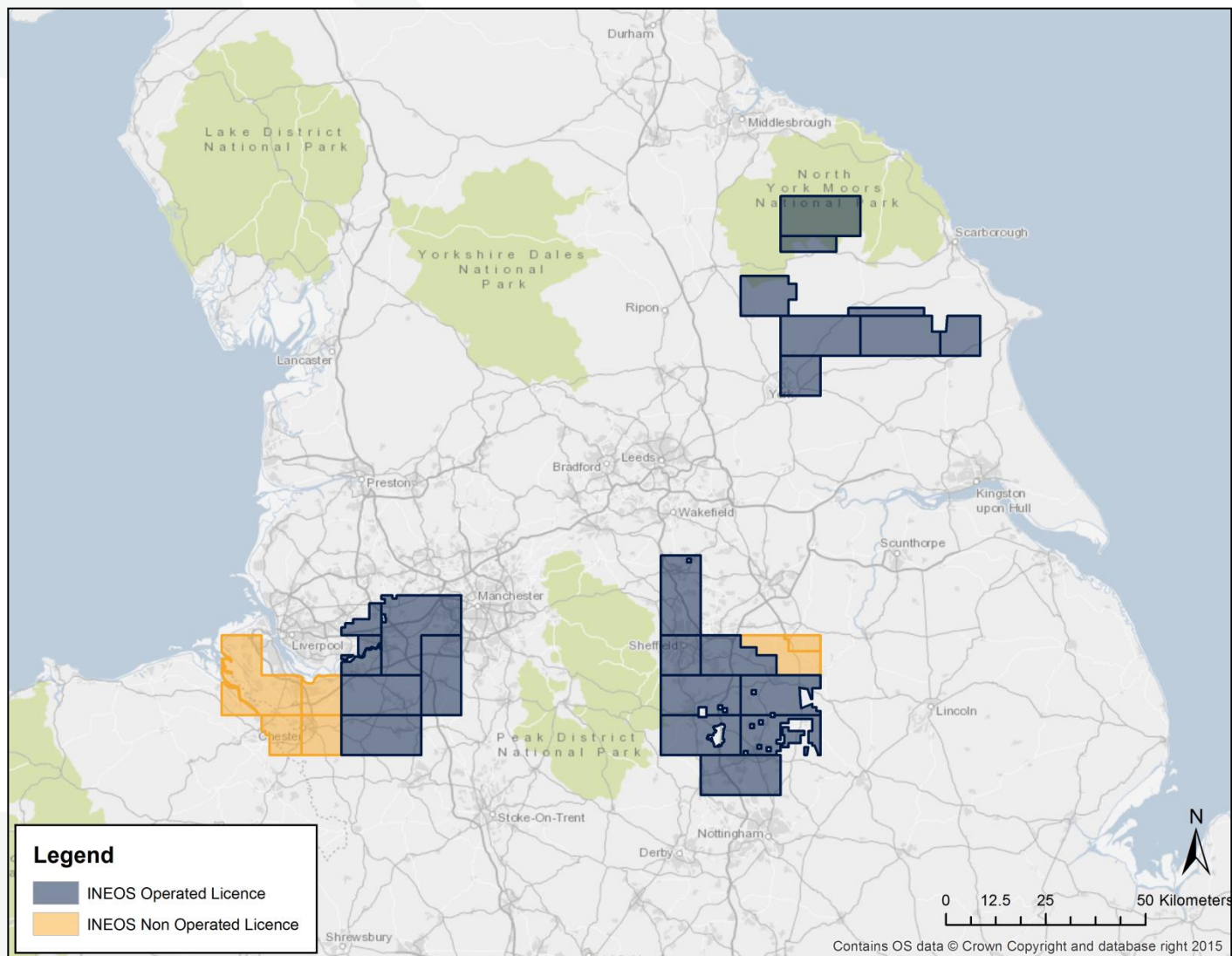
HSE

Health & Safety
Executive

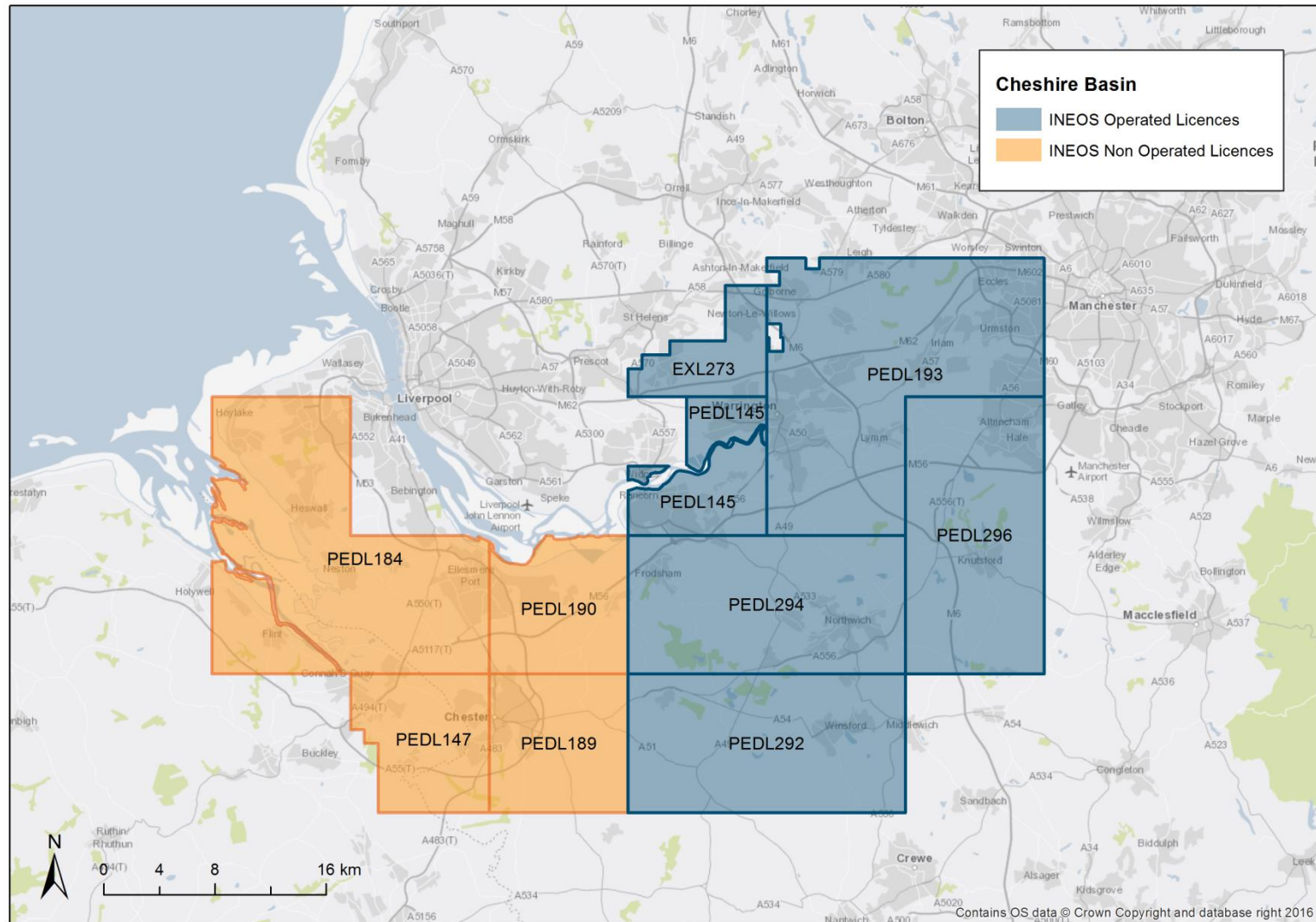
Independent Assessments

- Trusted and independent bodies have studied the evidence and concluded that Shale Gas development is safe provided it is subject to best practice and robust regulation
- These include;
 - The Royal Society
 - The Royal Academy of Engineers
 - The Health and Safety Executive
 - The Environment Agency
 - Public Health England
- Independent environmental campaigners also support Shale Gas development as a part of a balanced and transitional energy mix

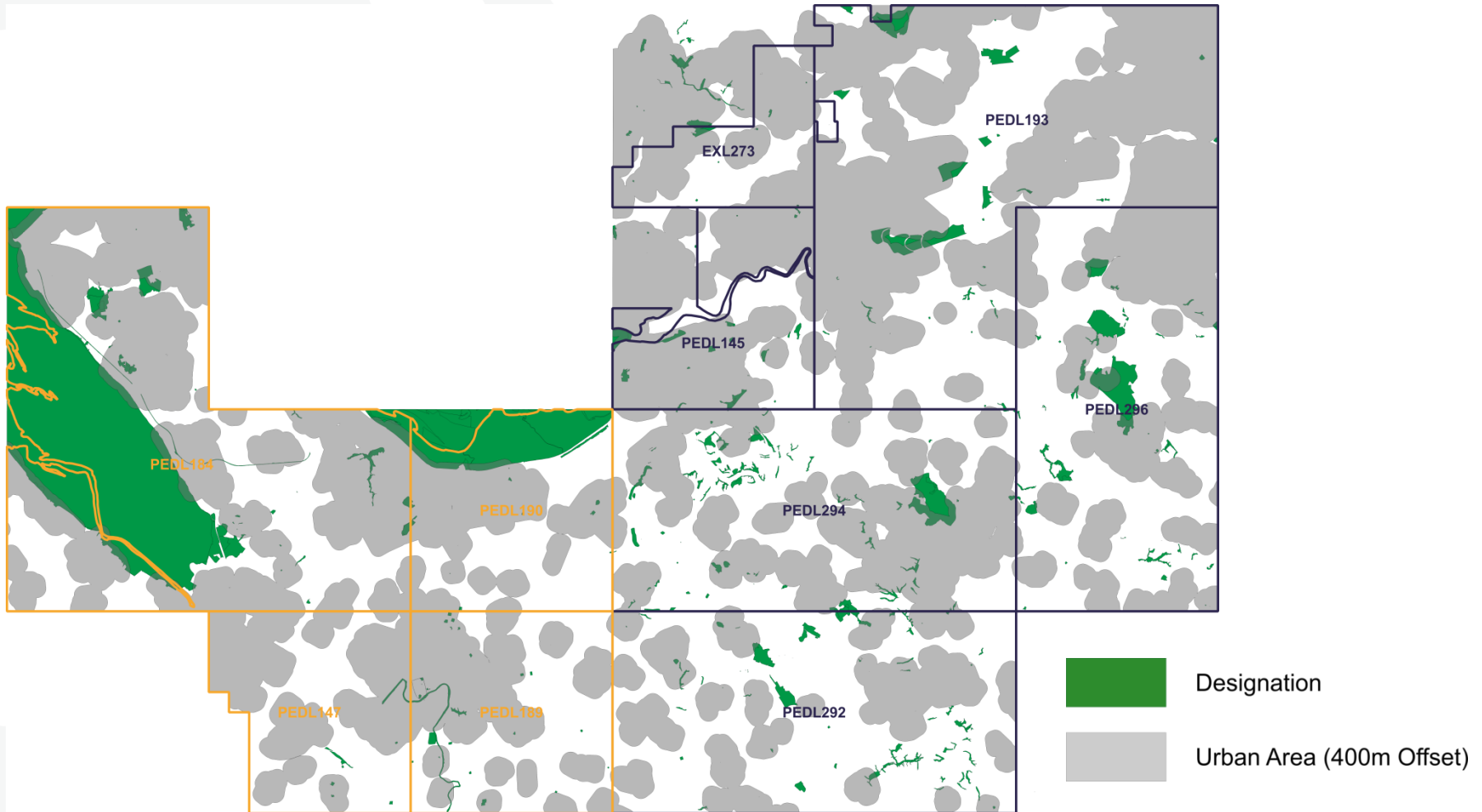
INEOS Licences



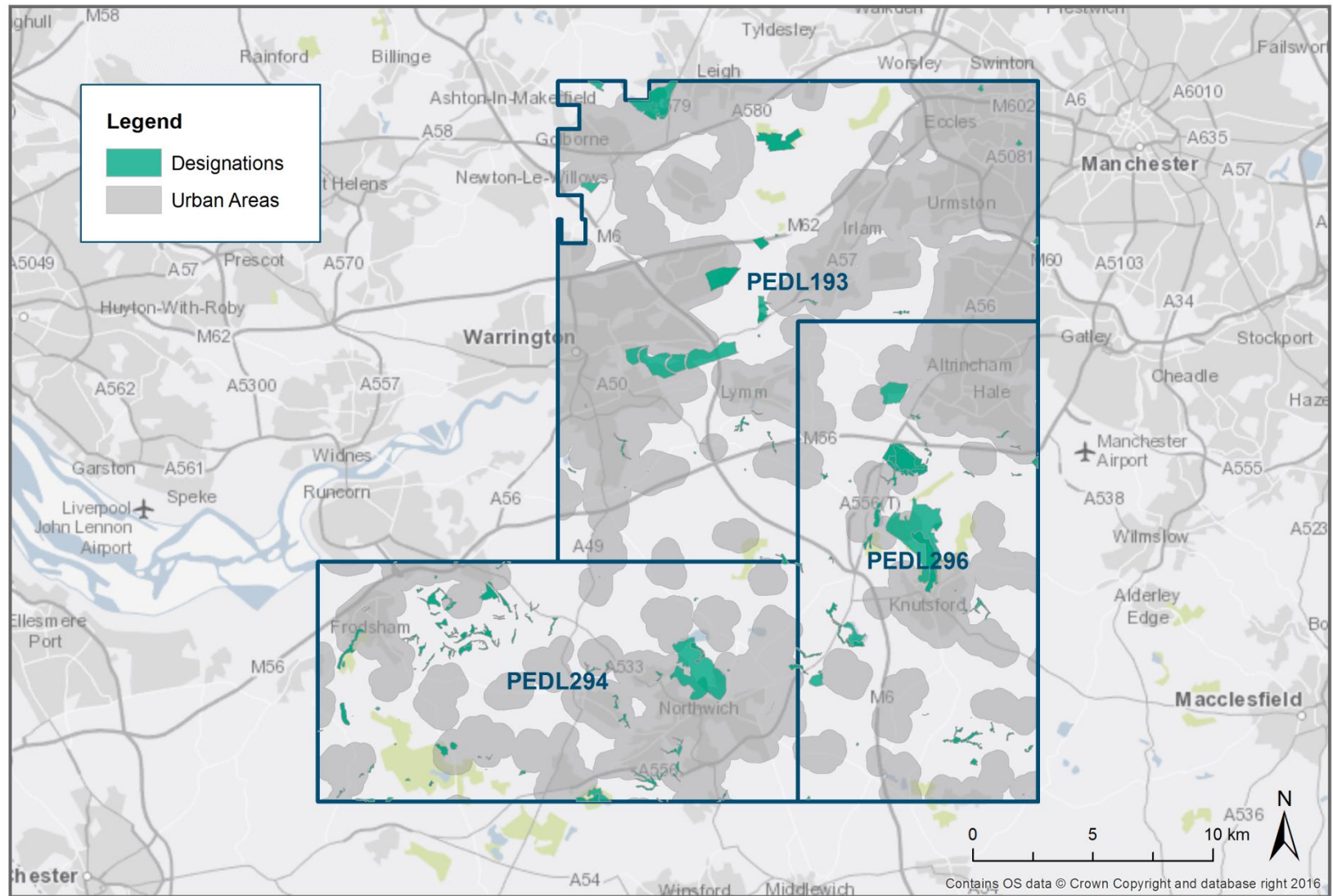
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Surface Assessment - Cheshire



Surface Assessment – near Lostock Gralam



INEOS Shale - Likely activities 2016 to 2020

- Currently reviewing existing seismic and other data
- Expect to undertake seismic data acquisition later this year and next
- Processing and interpretation of existing and new seismic data will inform planning applications for
 - Vertical coring wells to understand the gas content in the shale rock
- Results of core wells will inform planning applications for
 - Horizontal wells to be hydraulically fractured and flow tested
 - Further core wells
- Results of flow tests will tell us if commercial production is viable

Our Commitment To Communicate

- **We will** be open and honest in our dealings with stakeholders
- **We will** explain our plans in detail with local communities
- **We will** keep stakeholders informed and involved in our activities



Thank you

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