

**Appendix A: Progress update on the recommendations made by the Director of Public Health and Wellbeing to address the potential health impacts of the proposed shale gas exploration sites in Lancashire**

Abbreviations used: LCC - Lancashire County Council; EA - Environment Agency; HSE - Health and Safety Executive; DECC - Department of Environment and Climate Change; PHE - Public Health England; DH - Department of Health; UKOOG - United Kingdom Onshore Oil and Gas; LGA - Local Government Association; ADPH - Association of Directors of Public Health; DPH - Director of Public Health.

	<b>Theme</b>	<b>Recommendations</b>	<b>Organisation(s) this applies to</b>	<b>Progress to date 26/06/2015</b>
R1	Community understanding	LCC as the mineral planning authority, along with the EA, DECC and the Applicant should jointly seek to address the issues raised by the local residents through the community engagement workshops conducted as part of this HIA.	LCC, EA, DECC, Applicant	It has been agreed by all (EA, PHE, and LCC) to work together and co-ordinate future community engagement. Two mechanisms now exist for formal collaboration, these are a bi weekly teleconference and the Shale Gas regulation forum that meets quarterly. Local communities will be actively involved. Response from the DECC is awaited.
R2	Community understanding	LCC in partnership with DECC/EA/PHE/DH, and the Applicant should establish a local public information and assurance programme to communicate and address the local health risks associated with shale gas exploration. Local communities should be actively involved in developing such a programme through existing liaison meetings.	LCC, DECC, EA, PHE, DA, Applicant	It has been agreed by all (EA, PHE, and LCC) to work together and co-ordinate future community engagement. Two mechanisms now exist for formal collaboration, these are a bi weekly teleconference and the Shale Gas regulation forum that meets quarterly. Local communities will be actively involved. Response from the DECC is awaited.
R3	Community understanding	LCC, along with EA, DECC, HSE, and the Applicant should publish statements of adherence on the planning and regulatory regime to the local communities at regular intervals.	LCC, EA, DECC, HSE, Applicant	It has been agreed by DPH, LCC, EA and HSE to publish statements of adherence to the local communities at regular intervals. Awaiting response from the DECC.
R4	Community understanding	The Applicant should have an effective, swift and consistent process for handling complaints. Local communities should be involved in designing this process.	Applicant	Ongoing.

R5	Community understanding	A multiagency protocol should be developed between the national and local agencies to deal with any health related complaints arising from the development.	LCC, DECC, EA, PHE, DA, HSE	This will be explored through the Lancashire Shale Gas Regulators Forum.
R6	Air quality	LCC should ensure through the planning process that during the project, the cumulative levels of air pollution do not exceed the national air quality objective thresholds during the peak activity period. Specifically, the cumulative PM <sub>10</sub> , 24 hour mean levels from the flare, generators, drilling and vehicles should not exceed 50 µg/m <sup>3</sup> 24 hour mean (not to be exceeded more than 35 times a year).	LCC	The applicant has assessed air quality impacts in Chapter 6 and Appendix E of the Environmental Statement (ES). Lancashire County Council Scientific Services (LCCSS) carried out a review of the air quality chapter (including radon) of the ES. The review concluded that the documents provide sufficient detail to show that the applicant has carried out the assessment in a satisfactory manner and that the conclusions drawn from the assessment are valid. Ongoing review of emerging scientific evidence is in place.
R7	Air quality	An agreement should be reached with the Applicant to monitor ambient air quality on site measuring all the common air pollutants representative of the activity at the site, including PM <sub>10</sub> and combustion gases. The results should be reported to LCC and Fylde Borough Council on a regular basis.	LCC, Fylde Borough Council, Applicant	The EA permit requires, through the Waste Management Plan, monitoring of 13 ambient air quality parameters including PM <sub>2.5</sub> and PM <sub>10</sub> . This will be done prior to operations commencing to establish a baseline, during operations and after operations have ceased. Four sampling positions will remain constant at the perimeter of the site. The parameters are: methane, carbon monoxide, hydrogen sulphide, nitrogen dioxide, nitrogen monoxide, sulphur dioxide, ozone, total petroleum hydrocarbons, VOCs, BTEX, PM <sub>2.5</sub> and PM <sub>10</sub> , dust. Results will be published monthly and submitted to the EA for check and verification (see Development Control Committee Public Reports Pack p.166)
R8	Air quality	The Applicant should demonstrate to LCC that best available techniques are being used to keep air pollution due to the development as low as reasonably possible.	Applicant	Ongoing review of best available techniques is being planned.

R9	Greenhouse gas emissions	EA should consider requiring the Applicant to measure the levels of fugitive emissions and establishing conditions on the maximum permissible levels for fugitive emissions.	EA, Applicant	Addressed in the EA permit. Ongoing discussions around maximum permissible levels for fugitive emissions for the whole site. No single agency would be regulating the site and that it would be a collaboration of a number of agencies each with their own speciality. The EA would work closely with other agencies to conduct joint site visits. This would be co-ordinated via the bi weekly teleconference and Shale Gas Regulators forum. Long term monitoring would be in place although no specific timescale is given.
R10	Greenhouse gas emissions	EA should consider requiring substantial permit variation when the Applicant applies for extended flow testing period.	EA, Applicant	Covered in EA permit - the permit covers 90 days and then an extended period of 24 months after that a variation would need to be applied for.
R11	Emergency preparedness	LCC should seek further guidance from HSE to establish whether the site and the associated developments at the connection point to the gas grid during the extended flow testing period is within any zone of a consultation distance from the pipeline.	LCC, HSE	This has been addressed in the planning officer's report.
R12	Emergency preparedness	DECC should consider pipeline safety risk assessment during the extended flow testing period to be included in ERA before giving consent to drill.	DECC	Awaiting response from DECC.
R13	Emergency preparedness	HSE should confirm that the requirements for land use including the associated developments at the connection point to the gas grid during the extended flow testing period, can be met with the two proposed sites.	HSE	This has been addressed in the planning officers report

R14	Noise	LCC should consider further noise assessment and require that mitigation measures are in place to keep the night time outdoor noise to below 40dBnight, outside.	LCC	The applicant has provided information on the additional noise mitigation measures and a further period of public consultation has taken place. This has been addressed in the planning officer's report.
R15	Induced seismicity	The Applicant should demonstrate to LCC that liability/compensation arrangements are put in place to cover the structural damages to properties due to any unlikely event of induced seismicity.	Applicant, LCC	Liability / compensation arrangements have been put in place to cover any structural damages to properties in this unlikely event. This has been addressed in the planning officer's report.
R16	Induced seismicity	The Applicant and DECC should confirm how the risk of minor tremors that might be perceived will be communicated with the local communities. This should be established before DECC provides the consent to drill.	Applicant, DECC	Awaiting response from the DECC.
R17	Waste	EA should establish whether remaining fracking fluid left in the wells will be considered as waste and how they will be monitored in the long term following the surrender of the permit.	EA	It has been established that the hydraulic fracturing fluid left underground will become waste once it no longer serves a useful purpose. Any permit can only be surrendered when EA no longer consider ongoing monitoring is required.
R18	Waste	EA and LCC should satisfy themselves that there are adequate waste treatment facilities available for safe storage, transport and disposal of the waste generated before the permit is granted.	EA, LCC	This is covered by the EA permit.
R19	Waste	EA should establish the maximum additional storage for flow back fluid and ensure that the site's spill containment capacity takes into account additional capacity.	EA	This is covered by the EA permit. EA guidance on spill capacity will normally be a minimum capacity of either 110 per cent of the capacity of the largest tank, or 25 per cent of the total capacity of all the tanks within the bund, whichever is the greater.

R20	Light	LCC should ask the Applicant to consider offering to fit blackout blinds in the bedrooms facing the site of the homes where impacts are expected.	LCC, Applicant	Planning officer's report concluded that it was not deemed appropriate to fit blackout blinds.
R21	Transport	The Applicant should demonstrate to LCC how the specific risks due to using the MoD site for transport will be addressed.	Applicant, LCC	The County Council's Strategic Highways Planning Manager has assessed the applicant's transport assessment. With consideration for all the information provided, he cannot support the application for Roseacre Wood in respect of the transport impacts. With consideration for all the information provided, he can support the application for Preston New Road in respect of the transport element as long as all necessary access works and associated measures are delivered and secured through appropriate conditions as necessary.
R22	Transport	LCC should establish that appropriate traffic management options to address the public concerns, particularly in Roseacre Wood, are available.	LCC	See update to R21. Application for Roseacre Wood in respect of the transport impacts is not supported.
R23	Transport	LCC should satisfy itself that appropriate actions can be taken to maintain road safety, particularly on the access routes to Roseacre Wood site and continue to monitor road safety related incidents on the access to both the sites.	LCC	See update to R21. Application for Roseacre Wood in respect of the transport impacts is not supported.
R24	Occupational health risks	Given this is a relatively new industry with a complex set of regulations, HSE should consider requiring the operator to undertake a comprehensive health surveillance of workers comprising of exposure to noise, air pollution, fugitive emissions, dust, silica, and handling waste.	HSE	Existing requirement in regulations (BSOR 1995) Regulation 10 requires suitable actions to be put into practice.

R25	Occupational health risks	The Applicant should share the data collected on occupational health surveillance of workers involved in shale gas exploration activities with LCC.	Applicant, LCC	Ongoing.
R26	Occupational health risks	HSE should consider sharing the information on RIDDOR incidents related to the shale gas exploration sites with the DPH.	HSE	HSE will share information on RIDDOR incidents with the DPH through the Shale Gas Regulators Forum.
R27	Baseline and ongoing monitoring	LCC should seek agreement with the Applicant to establish a baseline and ongoing monitoring of environmental and health conditions prior to beginning any activity on the sites. This is mainly to reassure local communities about the safety of shale gas exploration activities.	LCC, Applicant	Ongoing. This is also supported by Public Health England.
R28	Baseline and ongoing monitoring	The Applicant should consider establishing a baseline and monitoring as a community benefit and commit resources to enable this happen.	Applicant	In light of national guidance (NPPF paragraph 122) it is not appropriate to impose planning conditions or a section 106 legal agreement with respect to matters, such as longer term monitoring, that are within the remit of other regulatory regimes. It has been further clarified by the DPH that monitoring of health conditions is not within the remit of other regimes. Nevertheless, while there is a question around the appropriateness of using a planning condition or section 106 agreement to provide for such monitoring, the County Council would welcome a voluntary agreement with the applicant to provide for such in the event of a recommendation to grant permission. So far, the applicant has demonstrated to the County Council's Director of Public Health a willingness to support monitoring arrangements if planning permission is granted.
R29	Baseline and ongoing monitoring	HSE should consider publishing the findings from well integrity inspections on a regular basis.	HSE	HSE will continue to publish details of formal enforcement action taken against employers on its website.

R30	Baseline and ongoing monitoring	EA should ensure long term plans should be in place for monitoring any contamination.	EA	EA would not accept an application to surrender the permit unless they are satisfied. The operator would need to demonstrate that the necessary measures have been taken to avoid a pollution risk from the operation of the regulated facility and to return the site to a satisfactory condition, having regard to the state of the site before the facility was put into operation. The operator will keep records of the data collected, which must be submitted to the Environment Agency on a regular basis.
R31	Baseline and ongoing monitoring	DECC should confirm that operators have an open-ended liability to remedy any well leakage problems after permit surrender and site restoration. In the event an operator can no longer be identified, DECC should clarify who is liable for remediation.	DECC	Awaiting response from the DECC.
R32	Baseline and ongoing monitoring	LCC, EA, HSE and DECC should inform the DPH if there is a breach to the planning permission, environmental permit, consent to drill or any other regulatory control that relates to health and wellbeing of local residents.	LCC, EA, HSE, DECC	Agreed to inform the DPH if there is a breach that leads to formal action (regulatory intervention) via the Shale Gas Regulation Forum. However the consensus from the regulators is that they would expect the permit holder to take a proactive approach where this is concerned. Awaiting response from the DECC.
R33	Local policy and practice	The Lancashire Joint Advisory Committee for Strategic Planning should consider developing a shale gas spatial strategy to inform the future development of the industry in Lancashire.	LCC, BWD, Blackpool	This is being referred to the Lancashire Joint Advisory Committee for Strategic Planning.
R34	Local policy and practice	LCC should consider developing an integrated shale gas planning process through more closer working between EA, HSE, LCC planning and public health functions, PHE, Fylde Borough Council and DECC.	LCC, EA, HSE, PHE, Fylde Borough Council, DECC	Two mechanisms already exist for formal collaboration, these are a bi weekly teleconference and the Shale Gas regulation forum that meets quarterly. LCC's public health department invited to participate in both.

R35	Local policy and practice	LCC should consider a site specific HIA to be conducted for future applications related to shale gas development. Where applicable, LCC should embed a full site specific HIA as part of the scoping for the EIAs.	LCC	Ongoing
R36	Local policy and practice	LCC should evaluate the implementation of the recommendations in the HIA report.	LCC	Ongoing
R37	National policy and guidance development	DECC should consider bringing the relevant regulations into a single onshore oil and gas specific regulatory framework to enable a safer and sustainable development of the industry. However, local planning control should be maintained. This is likely to support the developers in navigating the regulatory regime more easily and also protect the health and wellbeing of local residents.	DECC	Awaiting response from DECC.
R38	National policy and guidance development	DECC and EA should consider embedding public health impact assessment in their future policies and guidance related to shale gas.	DECC, EA	Awaiting response from DECC.
R39	National policy and guidance development	DECC and EA should consider producing policy, guidance and standards for fugitive emissions of greenhouse gases from shale gas exploration as soon as possible.	DECC, EA	Awaiting response from DECC.
R40	National policy and guidance development	EA should consider monitoring cumulative impact of all sources of emissions on ambient air quality and not just the flare emissions.	EA	These have been passed onto the EA National Programme Board to keep the DPH updated as and when developments take place.
R41	National policy and guidance development	EA, DECC, DH and PHE should consider establishing a national framework to monitor the health and environmental impacts of onshore unconventional oil and gas extraction.	EA, DECC, DH, PHE	These have been passed onto the EA National Programme Board to keep the DPH updated as and when developments take place.



R42	National policy and guidance development	UKOOG should work together with LGA and other national agencies in developing a risk communication framework to be used with the local communities.	UKOOG, LGA	DPH met with UKOOG representative and provided advice on developing an industry best practice guidance on HIA.
R43	National policy and guidance development	The LGA should consider establishing a network of local authorities involved in onshore oil and gas exploration to share examples of good practice and protect the health and wellbeing of local communities.	LGA	Ongoing
R44	National policy and guidance development	The LGA, ADPH and PHE should support the local authorities in developing a comprehensive HIA framework and promote its use in areas where shale gas exploration is being planned.	LGA, ADPH, PHE	PHE are clear that the potential health impacts of shale gas development need to be thoroughly assessed and that health impact assessment offers a tool for this purpose. PHE will continue to work with the Association of Directors of Public Health and Local Government Association to develop an appropriate framework for the assessment of impacts on public health and to provide specialist support to Local Authorities.
R45	Research	LCC, in partnership with PHE, EA and the DH, should lead the development of a research programme on shale gas and human health impacts. There should be a particular focus on long term effects and a community understanding of risk is needed in the UK context. This will inform the development of policies, regulation, industrial practice and risk communication with the public.	LCC, PHE, EA, DH	DPH having ongoing discussions, including with British Geological Society. Public Health England's report highlighted the opportunity, in advance of significant development of shale gas extraction, to consider appropriate environmental and epidemiological studies to strengthen the evidence base on potential health impacts from shale gas extraction emissions. Public Health England is considering the potential need and options for further research on the human health impacts of shale gas extraction, and is content to work with Lancashire County Council and the partners mentioned in this recommendation in doing so.