

Below is the response from Frack Free Ryedale (FFR). It is appreciated that the Planning Inspector is looking for technical detail in some of the questions. The aim of FFRs response is to provide additional evidence that relates to the various points covered that we have collated from FFRs experiences (incl Community monitoring) in Ryedale mainly from 2014 onwards. Reference to previous submission of evidence is made as footnote reference only.

1. The main purpose of these sessions is for me to hear evidence on whether the Hydrocarbon Development Policy M17 is sound in light of the Written Ministerial Statement on Energy Policy of 17 May 2018 (WMS).

FFR make no responseto Q1 and refer to their previous response to Additional Questions following the Written Ministerial Statement

2. The WMS says, amongst other things, that applications must be assessed on a site by site basis, having regard to their context. Plans should not set restrictions or thresholds across their plan area that limit shale development without proper justification. Policies should avoid undue sterilisation of mineral resources (including shale gas).

2.1 FFR considers the legal case dealt with under Q16 is highly relevant to the Written Ministerial Statement (WMS18). While the permission hearing was specific to the 'definition' issue more generally it was very clear that the WMS18 is guidance and not policy. It is FFRs opinion that the evidence submitted throughout the whole consultation and examination process has informed the plans content and that the case put by the Joint Authorities provides proper justification for the approach taken in the plan.

2.2 FFR has provided evidence to the inquiry that demonstrates that policy setting should be taken in the context of this being a new and novel onshore industry. There is provision for the policy to be safeguarded by review once there is evidence from sites actually being operational in the plan area as was suggested and accepted as a sound way forward at previous hearing sessions relating to hydrocarbons. It has to be remembered that the cumulative effects of the industry will (as it develops) include multi-borehole wellsites as well as the associated infrastructure, access roads, pipelines and processing buildings and equipment across the plan area which includes many national designations for its special landscape features and historic importance alongside multiple scattered communities and individual farmsteads. This is fact not fear-mongering.

2.3 FFR refer later in this response to evidence<sup>1</sup> (evidence is cited at Q5) that shows that there were actual effects and exceedances of noise conditions based on operations in the Vale of Pickering at KM8 where no fracking or drilling has taken place as part of the approved 'fracking application' development to date. Equipment was moved onto site and then subsequently removed from site as no hydraulic fracturing consent was forthcoming from the Secretary of State. After equipment was set up some testing was carried out along with working over the borehole.

FFR consider this evidence clearly demonstrates noise is extremely difficult to mitigate for and that great care must be taken in the policy setting for this novel industry if our communities are to be protected from adverse effect of such development.

#### 500m Buffer Zone

3. It is proposed by the Mineral Planning Authorities (MPAs) that there be a main modification to the 500m buffer zone in Policy M17, 4) i) so that development in this zone "*will only be permitted where it can be demonstrated in site specific circumstances that a high level of protection will be provided*". The policy sentence that referred to only permitting development in exceptional circumstances is proposed to be removed.

3.1 At the Examination in Public it was left (in April 2018) that the plan would be subject to modification to be agreed by the Joint authorities and others. FFR restate their position that a distance of 500m is not a large enough distance to afford communities suitable protection when Written Ministerial Statements have previously provided guidance promising 'the highest level' of protection<sup>2</sup>

3.2 FFR have considered the meaning of 'a high level of protection' and considers this will leave any application subject to some form of planning condition (or conditions) being related to site specific factors. It is clear that the community is seeking as great a protection as possible, for example Kevin Hollinrake MP considers this distance should be 1 mile. FFR have made their position clear in previous representations and consider that the community is best protected by making it clear in the policy what distance of separation is expected of any developer.

3.3 FFR considers that in the community's experience of planning conditions they have been proven to be unenforceable. As far as the community is concerned such conditions appear to give the industry the chance to operate without any sanction<sup>3</sup>.

4. The main issue for discussion is: ***Whether the 500m zone in Policy M17, 4) i) as modified is properly justified and consistent with the WMS. If not, could a smaller zone be properly justified or should any stand-offs be determined on a site by site basis at the application stage? What is meant by "a high level***

<sup>1</sup><https://onlineplanningregister.northyorks.gov.uk/Register/DisplayImage.aspx?doc=cmVjb3JkX251bWJlcj05NzYxP2ZpbGVuYW1lPVxcY291bnR5Lm55Y2MuaW50ZXJlYXVxcRGF0YVxcRVVMtREFUQVxBcHAATWFzdGVyR292XHBsYW5uaW5nXE5ZLTlwMTUtMDIzMy1FTlZcMjQgUG9zdCBEZWNPc2lvblxOb2lzZSBnb25pdG9yaW5nXDE3MTEyOV9QcmVTdGltWxhdGlvbGlBoYXNlX05vaXNlTW9uaXRvcmluZ1JwdF9yZXYyX3JlZGFjdGVkLnBkZj9pbWFnZV9udW1iZXI9ODg1LjAwMDA/aW1hZ2VfdHlwZT1wbGFubmluZz9sYXN0X21vZGlmaWVkcXZyY21fZGlzaz0wNy8xMi8yMDE3IDExOjU0OjQy>

<sup>2</sup> <https://www.parliament.uk/business/publications/written-questions-answers-statements/written-statement/Commons/2015-09-16/HCWS202/>

<sup>3</sup> See point 4.5

*of protection” in the proposed schedule of modifications or the alternative wording “protect local communities”, which is now being suggested?*

4.1 WMS18 has been established to be guidance not policy – FFR considers there has been sufficient evidence presented to the examination/inspector showing the distance of 500m is justified. There is other case law to support that the NPPF and WMS are guidance and that it is up to the LPA/MPAs to set specific policy through the Development Plan.

4.2 FFR has submitted evidence previously that shows that this is a novel industry. Despite the numerous Government consultations since the last hearing sessions, this fact remains unchanged and the communities in affected areas still consider that despite being told one thing by the industry the facts are often different. For example the industry is the only party which does **not** consider the unconventional hydrocarbon industry onshore in the UK to be novel.

4.3 Based on the evidence to date what evidence justifies a lesser distance?

4.4 FFR considers that changing the distance or the wording will afford less protection to the community. Below in Q5 FFR provide evidence that shows a direct correlation of noise impact with distance even with the 9-10m high Noise attenuation Barrier (NAB) in place at KM8.

*How does this differ from the level of protection the industry would be required to demonstrate in any event?*

4.5 FFR considers previously submitted evidence relating to safety and site incidents (gas explosions etc.) elsewhere in the world is highly relevant.<sup>4</sup> It is important factor that a distance of 500m is built into policy and therefore across the plan area providing the protection the community expects. This in itself would provide some reassurance to the community in respect of the negative effects of the industry.

4.6 If this is not part of policy FFR consider it will become subject to a planning condition having been dealt with on a site by site basis which in reality does not protect the community in any way as we have seen permit conditions breached and planning conditions not fully complied with at KM8<sup>5</sup>

4.7 The level of protection provided by industry is always going to be judged by its cost. FFR's noise expert comments that predicting or modelling the noise effects of operations is always subject to error and unpredictable variations and attempts to mitigate the effects are less effective (for example using noise barriers) over longer distances. Ceasing such operations or phasing them in such a way as to not exceed limits is one way to ensure protection for local communities. It is however clear in the UK for example in Lancashire that noise can not be mitigated effectively as shown in Appendix 1 which show extracts from Noise data at the Cuadrilla site at Preston New Road. This shows many exceedances of the night time noise maximum levels.

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<sup>4</sup>[northyorks.gov.uk/sites/default/files/fileroot/Planning%20and%20development/Minerals%20and%20waste%20planning/Examination%20Library/Hearing%20Statements/For%2013%20April%202018/Additional\\_3684\\_FrackFreeRyedale.pdf](http://northyorks.gov.uk/sites/default/files/fileroot/Planning%20and%20development/Minerals%20and%20waste%20planning/Examination%20Library/Hearing%20Statements/For%2013%20April%202018/Additional_3684_FrackFreeRyedale.pdf) see appendix 4

<sup>5</sup> <https://drillordrop.com/2017/11/28/third-energy-warned-over-two-permit-breaches-at-kirby-misperton-fracking-site/>

4.8 It is also abundantly clear that whatever mitigation is provided on operational sites to date that the industry is unable to operate without breaches of regulation, another example would be seismicity at the fracking site at Preston New Road, Lancashire<sup>6</sup>. They operators have been unable to operate at that site without multiple triggering of the traffic light system for seismicity. The regulatory protection promised to communities should according to the industry (in regard to seismicity) now be changed to something more 'favourable' to the industry<sup>7</sup>. This understandably causes great concerns in communities living in PEDL licensed areas as to the effectiveness of such regulatory (and planning conditioned) protections.

4.9 FFR consider the above demonstrates clearly that communities can only be afforded the highest level of protection principally based on the distance from the source of noise, and this protection must be in policy.

5. I would like to get a better technical understanding of what the potential impacts of hydraulic fracturing might be on nearby sensitive receptors within this 500m zone. Information should be provided on whether there are reasonable prospects of mitigation measures being used to reduce impacts to an acceptable level within this zone.

5.1 FFR considers the industry already accepts that major mitigation is needed. Take the example of the NAB at KM8. This had to be provided based on sound modelling in order to provide adequate protection in respect of noise, however based on monitoring reports some of the closest receptors to that site were subjected to many exceedances of the noise maximum limits.

- Alma House (0.31 km from KM8, 'Alma Farm' on OS mapping) suffered in excess of **28 periods of exceedances (site related)**
- 5 Shire Grove (0.8km from KM8) suffered in excess of **15 periods of exceedances (site related)**<sup>8</sup>
- Quoting from p21 of the report 'the total number of actual breach periods at Alma House i.e. measurement location A was 39 no. total, and the number of breach periods at 5 Shire Grove i.e. measurement location B was 46 no. total.'

It is a simple unscientific correlation but a distance of 800m from a site has shown around half as many noise exceedances than if located a distance of 310m from the site.

5.2 FFR consider that KM8 enabled the reuse of a conventional site and therefore this is an unusual example of an entirely different process (to that previously consented – ie conventional gas extraction at a shallower depth) being allowed close to residential properties due to the fact a 'hole was already in the ground' to quote the planning committee chairman. It is acknowledged that this is not the ideal situation for a frack pad and given the exceedances to date any future wells within the plan area should not be so readily permitted. FFR would repeat that the KM8 well was only subject to a workover (the well itself was drilled some years ago) no fracking was carried out but there were still noise level exceedances.

FFR clearly state that the closest receptors were subject to the most exceedances (site related). FFR considers this evidence is highly relevant if there is to be proper consideration of the effects on the local community and must be reflected in the policy for the plan area

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<sup>6</sup> <https://www.desmog.co.uk/2018/10/29/fracking-company-cuadrilla-breached-environmental-regulations-seven-times-10-months>

<sup>7</sup> <https://www.bbc.co.uk/news/uk-england-lancashire-46390360>

<sup>8</sup> See reference 1 on page1



Figure 1 – KM8 Noise attenuation barrier from Habton Road – Alma Farm (chimneys) is visible behind the site and slightly to the left on the horizon line, an everyday country scene? Photo: P Andrews

5.3 FFR consider that it is almost impossible to provide mitigation to an acceptable level for the very closest receptors and in particular those within 500m of operations. Noise cannot be reduced without adverse impacts on visual amenity, as is clear from the NAB which was erected around KM8 see figure 1 above.

6. The MPAs should build on their *“Supplementary note about the 500m distance for hydrocarbons development”* (LPA/89) with more technical detail. I am particularly interested in noise and why the MPAs believe it is generally unlikely that noise could be mitigated to an acceptable level within this zone without creating other unacceptable impacts.

FFR – support the Joint Authorities but make no response to Q6

7. The MPAs should explain why technically a 500m zone was chosen as opposed to a smaller zone, and why any Plan-wide zoning is required at all rather than leaving it to a site by site assessment at the application stage.

FFR – support the Joint Authorities but make no response to Q7

8. I note at the Kirby Misperton site, the MPA granted permission for development at distances of 300m and 210m from the wellsite to Noise Sensitive Receptors. Does this indicate that a 500m zone across the Plan area is too great? If lesser distances were acceptable at Kirby Misperton, could lesser distances be acceptable for other applications and, if so, should the Plan be more flexible?

8.1 Explanation already given in LPA 89, but also a pragmatic approach taken by MPA as existing site for which some permissions already existed including the drilling of the borehole which was done c 4 years ago. FFR refer back to the response under Q5 and in particular point 5.2.

8.2 The MWJP will have to deal with the development of a new industry which will require multiple multi borehole well sites. This was not foreseen under the current plan.

8.3 Castle Consultancy noise report on noise level exceedances see FFRs response to Q5, 5.1.

8.4 The inspector accepted that this is a nascent industry and care should be exercised from the outset and any restriction could subsequently be reviewed (subject to the passage of time and experience of such development).

8.5 Other infrastructure will also be required when the industry reaches a certain stage of development; this must be taken into account in the plan.

9. Could the zonal issue be overcome by inserting a need for pre-permission testing? For example, might it be helpful to consider trial runs or field tests prior to planning permission being granted?

9.1 FFR considers that the 'zonal' issues will be experienced irrespective of any pre permission testing. HGVs will have to travel to and from the site, and the site will need to be constructed along with all necessary infrastructure. If we take the local example – KM8 - they set it up, did a workover and took it down and the closest receptors had many noise level exceedances – see FFRs response at Q5 point 5.1.

9.2 The zonal issue is also important for minimising the effects on air quality. For example at KM8 there were high Nox levels in a rural environment which became an urban one based on emissions from the site operations and associated traffic. No fracking operations were carried out only set up, a workover and then taking the equipment down<sup>9</sup>.

9.3 As for pre testing FFR has considerable concerns over how long such testing would need to be undertaken for particularly as the prevailing wind will have a major effect on any data reliability to cover all necessary 'on site' scenarios. This effect is particularly significant for unconventional oil and gas operations because the distances at which significant noise effects can occur are much greater than for conventional minerals and other operations, and weather effects are large at large distances.

10. The industry has produced an interactive map of the coverage of the 500m zone within the Petroleum Exploration and Development Licence areas. I invite the industry to demonstrate this map and to illustrate how the coverage changes as the zone decreases.

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<sup>9</sup> Ref BGS AQ page for KM



10.1 FFR have provided evidence previously<sup>10</sup>

10.2 FFR considers that the industry can not be allowed cherry pick what suits them - it is clear that they know little about what happens at 2-3Km below ground level so critical site location factors should be based on minimising any harmful/nuisance effects. I gas is an example at Tinker Lane, Nottinghamshire – where they could not locate the shale layer<sup>11</sup>. FFR considers that this demonstrates the industry have only limited knowledge of the subsurface geology irrespective of the survey work carried out to enable site selection. There must be an onus on the industry to explore and exploit responsibly.

10.3 The industry already has given oral evidence to the Planning Inspector at the inquiry that they can drill directionally up to 1.5-2.5km (plus to the depth of drilling to the targetted geology

10.4 The hydrocarbon bearing strata can be accessed over a significant radius by directional drilling underground for which there are NO limitations. The 500m separation zone from surface infrastructure is being sought as it is this that creates the loss of residential amenity for communities.

11. The WMS refers to the Government's desire to work with the industry on innovation to create a "UK Model" with the aim of being the world's most environmentally robust onshore shale gas sector. Would the industry explain how they might respond to this challenge?

FFR make no response to Q11

12. Is there any potential for reducing operational impacts such as by using radically quieter machinery or by using different working practices? For example, I understand that the sound power levels of dump trucks have reduced significantly in recent years. Are there any less noisy materials on the horizon for drilling (eg the use of ceramics) or any radically new technology (changes in drilling techniques or generator technology)? What is the reason for the height of drilling rigs? Is there potential for shortening them?

FFR make no response – but see Q14

13. Would the industry produce details of typical mitigation measures that might be employed to reduce the main impacts of development on receptors and with what potential effects? Whilst I appreciate that the application stage is the time for producing detailed assessments, it is nonetheless important at this stage to understand whether, in principle, there is potential for development to be made acceptable within this 500m zone.

13.1 Traffic Management Plan, mitigation and the effect on the community

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<sup>10</sup> Response to Additional Qs regarding the WMS May 2018

<https://www.northyorks.gov.uk/sites/default/files/fileroot/Planning%20and%20development/Minerals%20and%20waste%20planning/Examination%20Library/Hearing%20Statements/Written%20Ministeril%20Statement/3684%20Frack%20Free%20Ryedale%20response%20WMS.pdf>

<sup>11</sup><https://www.worksopguardian.co.uk/news/fracking-firm-draws-a-blank-at-tinker-lane-site-1-9501141>



Figure 2 – Low loader grounded on top of Grade II Bridge

Photo: KM Monitoring Group

13.2 HGVs unable to get from site without effects on the community due to everyday normal village life including; parked cars, delivery vans, huge HGV's, buses at timed bus stops, road diversions, etc.

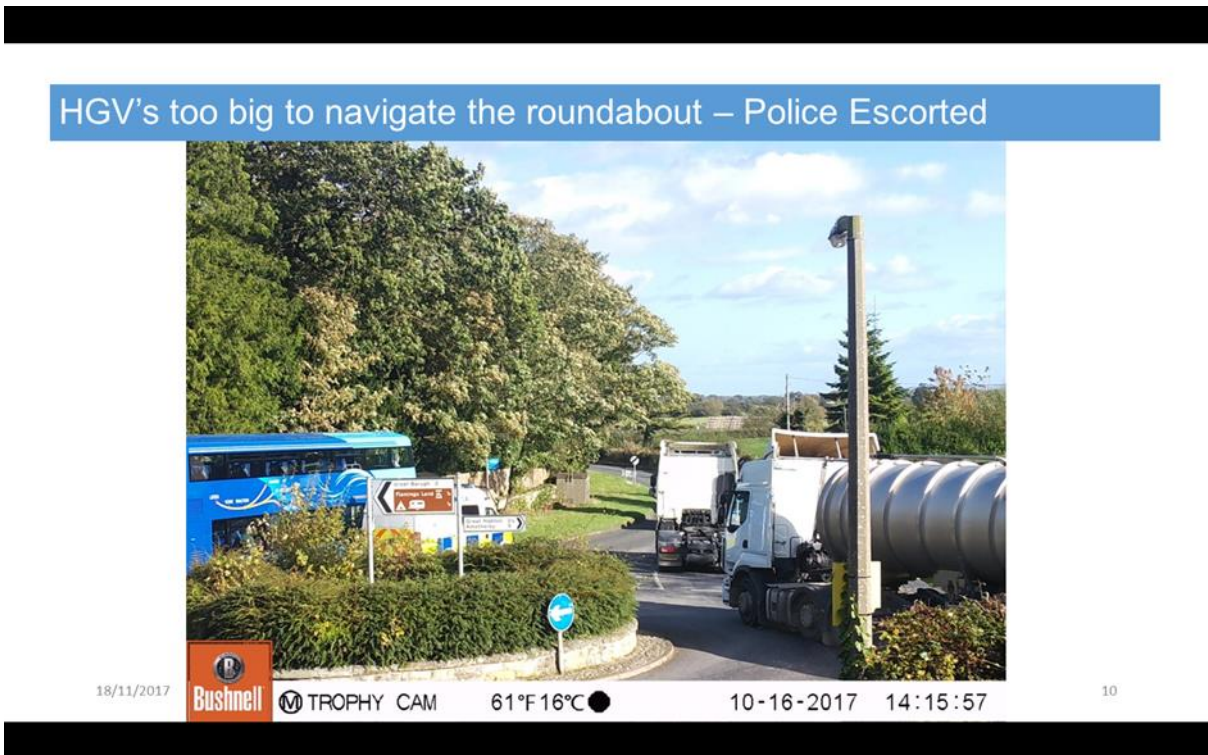


Figure 3 – Kirby Misperton village roundabout

Photo: KM Monitoring Group



13.4 Emissions to air – ref BGS turning of a rural environment into an area that in air quality terms is similar to an urban environment<sup>12</sup>. None of the air quality monitoring results have been above the recommended levels. Emissions have been kept within recommended limits both as individual events and as averages. Dr. Ruth Purvis said there was a significant increase in NO<sub>2</sub> and NO<sub>x</sub> levels, but again within recommended levels. However it must be understood that the levels are similar to the levels in Bootham in central York. So site operations and related activities have degraded the local ‘air’ to that of a central urban area.

13.5 Further to air quality impacts on local receptors, the key outcome from the BGS baseline survey is the increase in nitrogen oxides (NO<sub>x</sub>) that took place during the pre-operational phase at KM8 (Autumn 2017). This is attributed to the increase in traffic and on-site equipment such as diesel generators. The quote below summarises the BGS/WACL conclusions<sup>13</sup>:

"Whilst the change in NO<sub>x</sub> concentrations is clear, these are still well within national air quality limits. However, it does indicate that **the characteristics of KM site changed significantly as a result of the preparations being made for hydraulic fracturing-related activities. In terms of the impact on residents living in Kirby Misperton, these plots would suggest that after September 2017 (and until end of February 2018) the levels of NO<sub>x</sub> pollution at the site were more similar to living in an urbanised area, rather than a rural setting** with only a few major roads and industrial sources."

There is plenty of evidence to demonstrate that this change in air quality will have an adverse impact on the local population. FFR understand that the negative health impacts of NO<sub>x</sub> increase linearly as atmospheric concentrations go up, so any change - even if limits are not exceeded - will cause harm.

13.5 Also general health is affected in terms of stress and nuisance by noise. FFR would reference previous evidence submitted to Additional Questions - Suzanne Rayment<sup>14</sup> and also Joanne Bartlett (Appendix 2 of the same reference as footnote 13) and her additional words on noise

" It seems like an age ago now, but yes, the noise was horrible. It was shortly after I'd given birth to Evelyn and I was at home with the windows open in the heat. I could hear the noise very clearly. There was a lot of high pitch screeching and clanging as well as the more monotonous mechanical and generator noises. The screeching had a very similar impact to nails down a black board."

13.6 FFR also considers the following operationally associated effects on health an important consideration in terms of the importance of protecting communities

- The effects of noise and light pollution on health are referenced in the Medact 2016 report and in particular sections 188-191<sup>15</sup>
- However there are other areas in this report highly relevant to matters raised for example – well numbers/density and its observed effects on public health at point 176
- Health effects of living within close proximity of wellsites at point 182
- Other effects were noted relating to an increase in traffic accidents too, see point 187
- The effects of noise and light pollution are also fully referenced in the Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking<sup>16</sup> pp 126-131

<sup>12</sup><https://docs.google.com/viewer?a=v&pid=forums&srcid=MTY1Mjk4MDk4MDM2NjEzNjg1NzIbMDQ2NDc1ODI2MjlwODMwMDQ1NDYBcjRKamFwNHpEQUFKATAuMQEBdjl&authuser=0>

<sup>13</sup> [http://nora.nerc.ac.uk/id/eprint/517889/1/OR\\_17\\_049\\_\\_PhaseII\\_Final\\_Report\\_280917.pdf](http://nora.nerc.ac.uk/id/eprint/517889/1/OR_17_049__PhaseII_Final_Report_280917.pdf)

<sup>14</sup> [northyorks.gov.uk/sites/default/files/fileroot/Planning%20and%20development/Minerals%20and%20waste%20planning/Examination%20Library/Hearing%20Statements/For%2013%20April%202018/Additional\\_3684\\_FrackFreeRyedale.pdf](http://northyorks.gov.uk/sites/default/files/fileroot/Planning%20and%20development/Minerals%20and%20waste%20planning/Examination%20Library/Hearing%20Statements/For%2013%20April%202018/Additional_3684_FrackFreeRyedale.pdf) - Suzanne Rayment's evidence Appendix 3

<sup>15</sup> <https://www.medact.org/wp-content/uploads/2016/07/Medact-Notes-on-Shale-Gas-July-5.pdf>

13.7 Mitigation through planning condition can not deal with the increase in traffic numbers and the problems these create for the local community. The community monitoring group traffic survey found a greater increase in traffic numbers than expected. The effect of traffic on the local community is underestimated<sup>18</sup>. Essentially there is little chance of mitigation in respect of traffic matters and the approach of authorities (police or council) was a general approach of make alterations at will to suit the operational needs of the operator. These operational decisions were taken irrespective of what is in the traffic management plan, vehicles actually got stuck (see Figure 2 – grounded low loader) on the main approved transport route etc. This has been a common theme at both Preston New Road Lancashire and Kirby Misperton North Yorkshire.

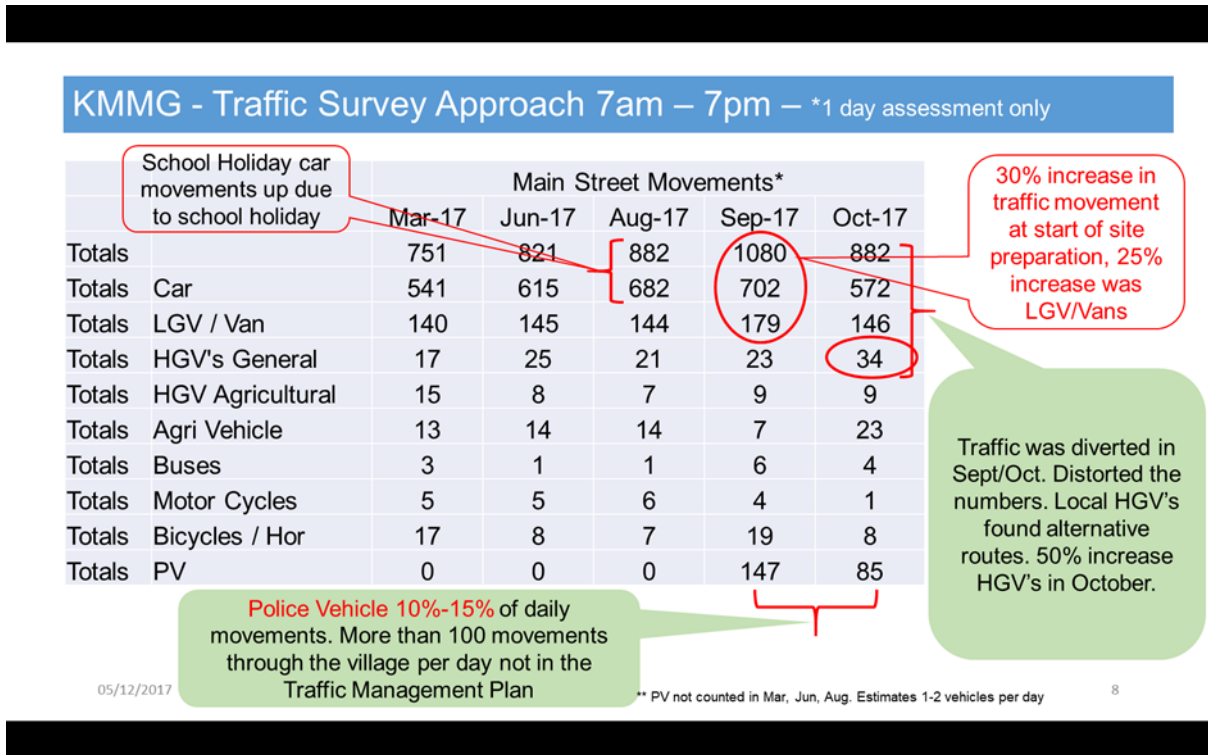


Figure 4 – Community monitoring traffic survey results 2017. The community monitoring group traffic survey found a greater increase in traffic than expected Source: KM Monitoring Group

14. Using typical scenarios, would the industry provide a brief technical assessment (explained in lay persons terms) of the potential range of noise impacts both with and without mitigation and at various distances from Noise Sensitive Receptors for the various stages of development and for the main noise sources. How would this test against national policy/guidance?

14.1 The noise levels during a number of the operations connected with fracking are considerable and would cause significant nuisance and loss of amenity to residential receptors at a distance less than 500m. The differences between some of the stages are demonstrated by the KM8 Noise Management and Monitoring Plan of 2016, this predicted noise levels at Shire Grove, some 800m from the site, of 31dB

<sup>16</sup><https://www.psr.org/blog/resource/compendium-of-scientific-medical-and-media-findings-demonstrating-risks-and-harms-of-fracking/>

<sup>18</sup> <https://drillordrop.com/2017/10/10/workover-rig-delivered-to-kirby-misperton-fracking-site-say-opponents/>

during the workover phase and 48dB during hydraulic fracturing and testing. No predictions are available for the drilling phase as this was completed previously.

The impact of the noise from the drilling phase of KM8 in 2013 caused considerable distress to some residents of Kirby Misperton and these have been documented previously, but no actual sound levels are recorded as far as FFR are aware.

Mineral Planning Practice Guidance 2014 states that a noise limit of 10dB above background noise levels should be set for day and evening operations and for night time operations they should not exceed 42dB LAeq 1h, free-field.

The question is then essentially, at what distance from the noise source an operator can ensure noise levels are kept well below that 42dB level at occupied receptors in line with planning practice guidance? The night time noise level is crucial because the operators claim a need to drill on a 24/7 basis and the well bore drilling can take several months per bore hole.

Sound wave pressure, like light and heat, diminishes over the distance from the source. The underlying relationship is governed by the Inverse Square Law, which for sound states that doubling the distance from the source reduces the sound pressure by 6dB, but over distances of several hundred metres there is also air absorption and effects due to the nature of the ground cover. The magnitude of these effects is highly weather dependent, as is the benefit of noise barriers, either dedicated fences, walls or bunds, or natural barrier effects associated with topographical features. Depending on weather conditions the maximum noise level of all sources combined should not exceed a source sound level of the order of 76 dB at 10m—a sound power level of 104 dB for an omnidirectional source—if the 42dB limit is to be achieved. There are several sources listed in the Environmental Assessment for KM8 (appendix 11.1 of chapter 16) that are substantially greater than this figure, indicating that in unfavourable weather conditions 42 dB would be significantly exceeded.

If some form of sound attenuation barrier was added this could provide an additional 5-10dB of reduction depending upon the height of any such barrier, subject of course to aesthetic appearance and landscape impact.

Given the 104dB figure above, can the operator achieve this for all phases of operation and taking full account of pumps, generators, compressors, HGVs etc in addition to the drilling rig itself? In unfavourable weather conditions or when there is soft ground cover noise barrier effects would be much less than 5-10 dB.

It is a matter for the operator to prove that they are able to meet this level. However the evidence from just the workover phase at KM8 would indicate this is unlikely. The report by Castle consultancy for the period 14 Oct to 1 Nov indicated 15 site related noise breaches at a location 800m from the site.

Whether or not this reduction would result in an acceptable noise pressure at a source, be this from a drilling operation, diesel pumps or HGVs or some combination of them all. Anything much above 100dB is unlikely to reduce to an acceptable level within 500m and so is likely to cause disturbance to sleep patterns.

What can be stated is that the WHO (Europe) has produced some guidelines for environmental noise levels above which there are associated adverse health impacts, accordingly strong recommendations (which can be adopted as policy) are made for night time noise levels of between 40dB and 45dB depending upon the nature of the source.

By way of comparison, for onshore wind farms the night time noise limit is 43dB, and at distances of 800m. FFR understand that this is a different type of noise to that produced from drilling operations.

The shale gas extraction industry is a novel one and as it develops considerable additional knowledge will be acquired and technology improved. It would therefore be a mistake to deviate from a precautionary approach at this stage but rather to set a policy which provides the highest degree of protection for communities and only relax that protection with the benefit of knowledge and field results over the 5 year period for the MWJP review.

The Inspector should satisfy herself that appropriate limits for noise are included in the plan to provide occupied receptors with the highest level protection and that suitable measures are available promptly to the relevant authorities to remedy the situation should breaches occur, which the evidence shows does happen with no effective remedy.

15. The above should include a range of typical sound power levels for typical plant and machinery and how this converts to sound pressure levels at various distances under typical conditions. Tonality, impulsivity, issues over mitigating low frequency/long wavelengths should be addressed. Besides "A" weighted sound pressure levels, I would like to know whether and in what circumstances "C" weighted sound pressure levels should be used and how this affects measurements. Cumulative effects should be covered. I am also interested in flaring, light pollution and odour. Reference should be made to typical timescales for development phases; typical working hours for these phases; and typical levels of lorry movements.

15.1 FFR consider there is the evidence of what was consented at KM8 and there were many exceedances at the closest receptors – see Q5 and in particular 5.1

15.2 The existing version of the MWJP is virtually silent on the matter of flaring, which should be restricted to use only in the rare event of a safety emergency and not as part of normal operations.

During the period when flow testing takes place, which can extend for a number of months, gas, together with produced water, returning Fracking fluid and other impurities arrive at the well head. These must be separated to leave waste fluid containing a number of toxic impurities and gas which has to be dealt with in some way.

The options available to the developer are venting to atmosphere, which would be unacceptable under any scenario, flaring the gas, or utilising the more advanced techniques currently used in the USA termed "reduced emissions completion."

This gas can be seen as an opportunity or a problem for the developer and the financially expedient default solution is often to resort to flaring. The developer regards this gas as waste because at that time and in that location it cannot be utilised and must be dealt with.

The process of flaring (burning gas to produce CO<sub>2</sub> and various particulates), impacting both atmospheric quality and climate also results in major visual impact from the flaring tower itself, the orange flame burning day and night for months, the noise which has been likened to a jet engine as well as the resulting emissions to atmosphere. FFR considers these are planning matters and, this places the issue under the remit of the MWJP which should define the policy on this and not be silent. Paragraph 112 of PPG-M clearly states that MPAs will need to consider issues of noise and visual amenities in relation to flaring.

If this problem is to be avoided here in North Yorkshire the developer must follow what is now common practice in the USA, and adopt a “green completion” regime (it is noteworthy that this form of BAT has not yet been incorporated into the UK’s purported gold standard regulations which presumably is because it is a novel industry over here). This involves separating the water, sand and other impurities and then storing the gas before transporting to existing infrastructure elsewhere where to be safely utilised. The economically expedient solution of flaring should not be the default position where this results in a negative impact for the community but also more widely for the environment and the long term impact on climate.

The policy should be clear in permitting a single flare stack on any well pad only to be used in the event of a safety emergency which is to be fully documented and not as a financially expedient solution to a waste disposal problem.

Failure to recognise the need to control this development in a way consistent with NY policy on climate change will inevitably lead to a proliferation of flares on every well pad thereby creating considerable nuisance to residents as well as making parts of North Yorkshire so unattractive that tourists would simply not visit. Any flaring will be highly visible in many parts of the plan area. In Ryedale itself the whole of the Vale of Pickering forms the setting not only for the North Yorkshire Moors but also the Yorkshire Wolds and the Howardian Hills. All of this area is an area known for its dark skies.

Noise is also linked with flaring and this would present unacceptable levels of noise along with unseen atmospheric degradation into the plan area many parts of which are renowned for their peaceful and tranquil ‘environment’.

#### **Definition of Hydraulic Fracturing – Case of *R (P Andrews) v SSBEIS & SSHCLG* [CO/3256/2018]**

16. I understand from the note of Marc Willers QC, who represented Mr Andrews at the permission hearing, that clarification has been given by Mr Justice Holgate on the definition of hydraulic fracturing. My understanding is that once the MPAs have recognised the statutory definition, they are free to adopt the wider Planning Practice Guidance definition (ID: 27-129-20140306) in their local plan provided they explain their reasons for doing so.

FFR consider that further to their response in Q2 above that there is proper justification for the approach in the plan relating to the definition of hydraulic fracturing not being subject to volumetric criteria.

17. Would the MPAs please provide the text of a main modification to reflect this requirement so that it may be discussed at the forthcoming hearing sessions?

FFR makes no response to Q17



**Timescales for representations**

18. Statement should be submitted to the programme officer, Carmel Edwards at [carmel.edwards@northyorks.gov.uk](mailto:carmel.edwards@northyorks.gov.uk) by 17.00 on Wednesday 9 January 2019.

19. Besides responses from the MPAs and industry, other participants may submit statements covering the above matters albeit I am looking for technical detail and do not simply want a repeat of etc etc

Appendix 1 – Cuadrilla Noise information from Preston New Road, Lancashire.

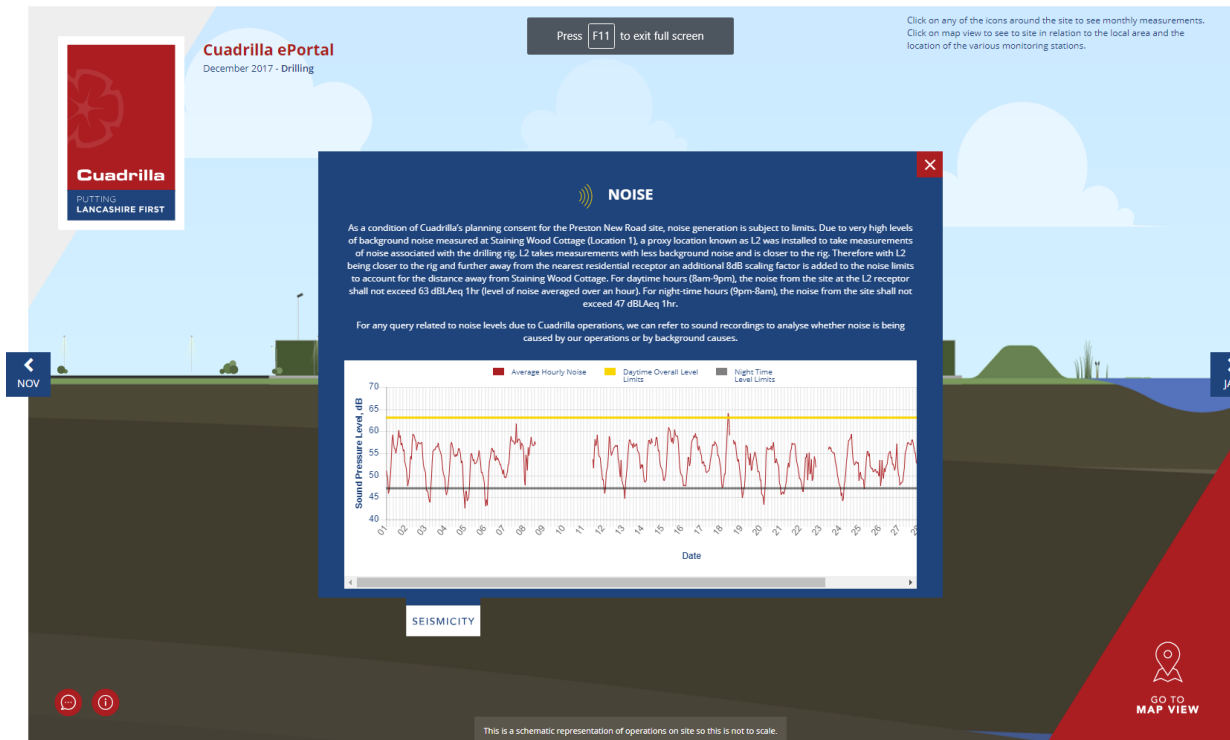


Figure 5 – Cuadrilla eportal – Noise Dec 2017 – Preston New

Road Source – [cuadrillaresourceportal.com](http://cuadrillaresourceportal.com)

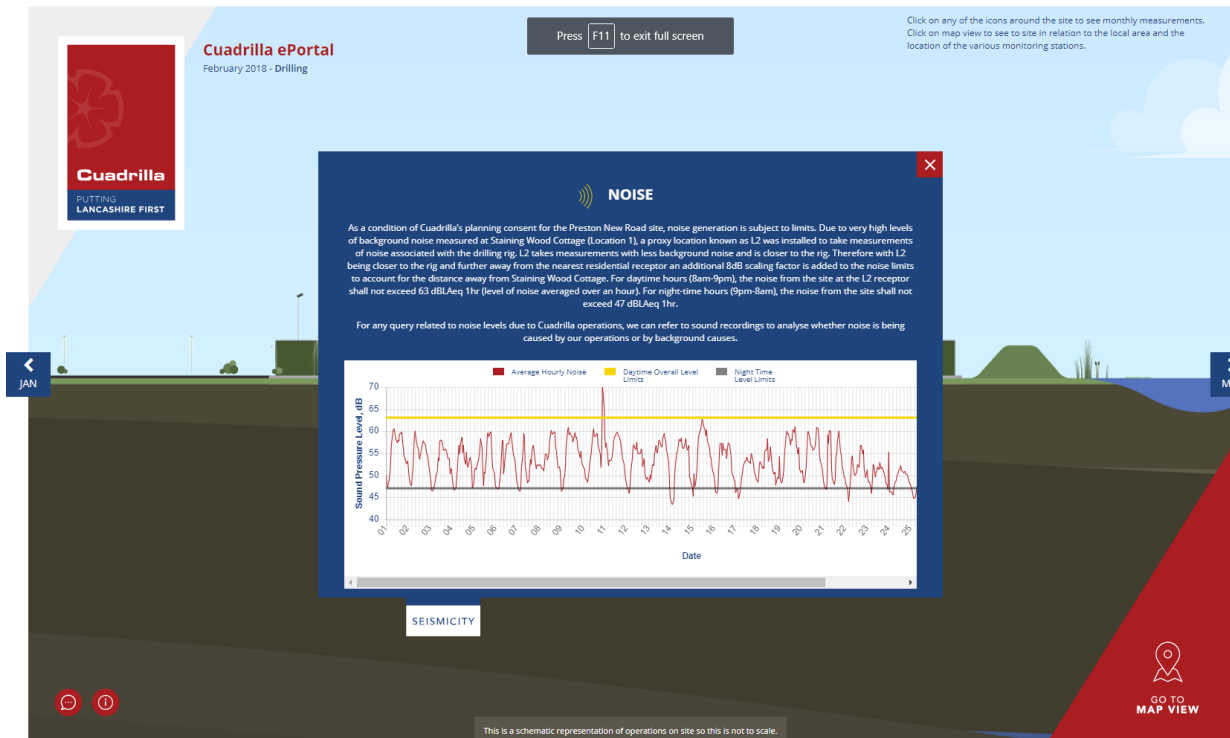


Figure 6 – Cuadrilla eportal – Noise Feb 2018 – Preston New Road

**Note – No data on Cuadrilla Site for Jan 2018 (in the middle of the main drilling period)**