

Comments on WA/2019/0796, Loxley Well Site - Land South of Dunsfold Road and East of High Loxley Road, Dunsfold, Surrey

From Cllr Jonathan Essex and Kirsty Clough, Godalming resident, June 2020

While a thorough analysis of the application, the Officer's Report contains some crucial factual errors, raises some very important issues in a misleading and sometimes incorrect way, and misquotes the Environment Agency. It is important that decision makers are aware of the full information, particularly where there is policy, legislation, science and data that are not being properly presented.

In light of these failings, and the substantive issues about the environmental impacts of the proposal, the application should be rejected.

Comments on application – these are under three headings:

- 1. Flawed assessment of the need for oil and gas**
- 2. Risks: unconventional extraction and financial bond**
- 3. Conditions regarding risk, resident amenity and local environment**

These points are set out in more detail below.

1. Flawed assessment of the need for oil and gas

i. The reducing need for oil and gas

The Officer's Report acknowledges the weight of objections to this proposal, including on the topics of reducing need for oil and gas in the transition to a low carbon economy and on climate change grounds, but disregards them. The National Planning Policy Framework (chapter on sustainable development) requires a balance to be found between competing interests, including the protection of the environment¹. The Officer's Report does not reflect this balance.

The summary (p9 – 3rd paragraph) suggests that great weight is given to the benefits of mineral extraction, including to the economy. Similar weight is not given to the climate impacts of oil and gas developments, although the UK carbon budgets should constrain developments that will lead to significant upstream or downstream greenhouse gas emissions in order that we are able to deliver net zero by 2050 at the latest. The report notes the need to “manage reliance” on [fossil fuels]. In the light of the UK's new net zero climate change target, one of the best ways to do this is to reduce dependence on them by reducing demand and by greater diversification into renewable energy sources.

Assessing 'need' for oil and gas must take into account both a) the timeframe over which need is considered and b) the constraints on carbon emissions during that timeframe to meet that demand arising from the UK's legislated commitment to be net zero carbon by 2050.

1

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

The Officer's Report (paragraph 167) relies on data from the Government's 2012 Energy Security report which forecast that the UK would be net importers of 43% of UK oil demand and 53% of gas demand in 2020. The UK Government calculates the import dependency by calculating the difference between UK production and UK demand. Updated projections from the Oil and Gas Authority which were published in February 2020 show revised oil and gas production figures based on a slowing rate of decline in UK reserves². Extrapolating from the figures given, these new estimates show a forecast import dependency (using the Government's methodology) of 26% for oil in 2020 and 48% for gas. Both figures are significantly below the 2012 forecasts. Given the current impact on demand for fossil fuels due to the ongoing Covid-19 pandemic, even this 2020 forecast is likely to be an over-estimate of our true import dependency this year.

The current global crisis has reduced demand dramatically, leading to a fall in prices so that only the most cost-efficient operations may survive. These are likely to be large scale operations on a solid financial footing. The result is that there is currently an oversupply of fossil fuels and an upsurge in interest in alternatives which will provide clean, secure long-term sources of renewable energy, such as wind, wave and solar.

The reference to the Government's 2012 Energy Security report also only considers the levels of oil and gas imports in 2020, whereas the timeframe for which 'need' is surely best considered is during any commercial production phase. Given that the current application is for exploration and appraisal over 3 years, should the site generate any commercially viable oil and/or gas and an application for production be submitted, any production well(s) would likely not come onstream before the mid to late 2020s.

Although the current planning application states that the primary target is for the exploration of gas from the Portland Sandstone Formation and that their secondary target is oil from the Kimmeridge, it is clear that UK Oil & Gas (UKOG) is primarily interested in exploiting unconventional 'tight' oil plays³. A report undertaken for UKOG by Ernst and Young in 2016 suggested that wells of this type would have a production life of 43 years⁴. The current Oil and Gas Authority projections to 2035

² <https://www.ogauthority.co.uk/data-centre/data-downloads-and-publications/production-projections/>

³ As the Officer's Report notes in paragraph 72 - *"The applicant states that the near identical reservoir geology between the Loxley Well Site and the exploration and appraisal sites at Broadford Bridge, West Sussex and Horse Hill, Surrey indicates that the Kimmeridge and Portland reserves may be linked. Therefore, the most important technical goal of the exploration and appraisal work at Loxley is the confirmation of the Kimmeridge/Portland 'Geological Concept', namely the presence of an open and continuous natural network of hydrocarbon deposits capable of flowing to surface without stimulation. The need to 'confirm the nature and extent' of this regional system will be key to the future commercial recovery of deposits across the wider Weald Basin formation"*.

UKOG's Annual Report for the year ended 30 September 2016 said:

*"UK Oil & Gas Investments PLC ("Group", "Company" or "UKOG") is an oil and gas investment company which specialises in finding and producing oil from previously unrecognised naturally fractured rocks in the Weald Basin of southern England. **Our prime focus is upon a new type of oil deposit within Kimmeridge Limestone rocks which we are pushing towards commercial production.**"* - [https://www.ukogplc.com/ul/UKOG%20AR%20-%20Final%20\(CLEAN\)%202017-02-27.pdf](https://www.ukogplc.com/ul/UKOG%20AR%20-%20Final%20(CLEAN)%202017-02-27.pdf)

⁴ 'Kimmeridge Limestone Oil: The UK opportunity'

<https://www.ukogplc.com/ul/Kimmeridge%20Limestone%20Oil%20->

show that the reduction in demand for oil will not keep pace with the projected decline in UK oil production and hence import dependency will likely increase over this timeframe. However, crucially, beyond 2035 and looking out to 2050, assuming the UK delivers on its commitment to be net zero carbon as enshrined in the Climate Change Act, oil demand will radically fall. Indeed, the Committee on Climate Change's net-zero scenarios result in oil consumption falling to 12 million tonnes of oil equivalent (Mtoe) in 2050 (it was 76Mtoe in 2019)⁵. UK oil production is projected to continue its decline such that by 2050 its output is around 11Mtoe. Over this period, therefore, import dependency of oil could fall to just 8%⁶.

Similarly the National Grid modelling of Future Energy Scenarios Zero Carbon (July 2019⁷) shows a dramatic reduction in oil and gas demand and no increase in import dependency should the UK transition to zero carbon by 2050, as is now legislated.

Put simply, an argument for this application on the basis of 'need' is not clear cut and must take into account both the timeframe over which need is considered and the likely constraints on carbon emissions during that timeframe which would impact both demand for energy and the carbon intensity of the energy supplied to meet that demand.

In addition, given its current contribution of around only 2% to UK production, if onshore oil were **to make any meaningful contribution to even the residual need for oil in 2050 under a net zero carbon scenario, it would require a massive ramping up of production across southern Surrey, Sussex and the Isle of Wight and the industrialization of the countryside. This would be unacceptable.**

ii. The carbon footprint of UK versus imported oil

Another issue raised in a summary of supporters' statements, and by the applicant, is that oil produced in the UK has a lower carbon footprint than imported oil (para 201) when transportation is taken into account. It is unclear where the evidence is for this claim, as there is no attempt to assess the carbon footprint of developing new onshore oil extraction sites and the HGV emissions associated with them long term. Norway is the single largest exporter of oil to the UK and that oil is piped directly to Teesside from a long-established oil field in the North Sea. There are similar established supply lines for gas. Further research would be needed to establish whether industrialising the South of England and using HGVs for transportation, even if the end destination of the hydrocarbons could be guaranteed to be in the UK (see below), has a lower carbon footprint than, say, North Sea oil delivered by pipeline.

This is also relevant to paragraph 186 of the Officer's Report, which implies some certainty that indigenous oil and gas will actually be used within the UK. There is no such certainty. The UK is both an importer and an exporter of oil⁸. There is no guarantee that oil from Dunsfold would be confined to the domestic market as oil is bought and sold internationally. Planning officers continue to repeat this myth of local

[%20The%20UK%20opportunity%20-%20Final%20Approved%20-%2015%20April%202016.pdf](#)

⁵ Converted from Terawatt-hour figures given in the CCC's Net Zero report.

⁶ Authors own calculations based on extrapolation of figures from the CCC's net zero report.

⁷ <http://fes.nationalgrid.com/media/1409/fes-2019.pdf>

⁸ See page 21:

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/875552/Oil_and_Oil_Products_Q4_2019.pdf

oil and gas being produced for use in the UK market in support of various planning applications and they should ask for guarantees from developers that they intend it to be carried through into practice. At present it remains a false claim and the more likely outcome is that, in the absence of a global cap on greenhouse gas emissions, any UK-produced oil and gas is added to the volume of hydrocarbons in the international market rather than substituting for it, resulting in an increase in global emissions.

iii. Climate Change policies

The report refers to the application for judicial review (CO Ref: CO/4441/2019) of Surrey County Council's decision on 27 September 2019 to grant planning permission for the retention and extension of an existing well site at Horse Hill and says it may be still be appealed under the Seismicity section. **This is incorrect.** An appeal against the failure to grant permission for a Judicial Review is pending, but for **climate change** grounds alone.

Furthermore, both the suggestion that the quashing of paragraph 209(a) of the NPPF is not considered to change Government planning policy in support of extraction of hydrocarbons and the overall order and tone of this report create a bias that places 'need' above 'climate change', the opposite of what is required by government.

The Officer's Report does not address the direct and indirect climate impacts of the development. It should. Surrey County Council has now approved its Surrey Climate Change Strategy, which sets out an intention to keep Surrey within a budget of 56 MtCO_{2e}.⁹

The Officer's Report misrepresents the status of the Surrey Climate Change Strategy and is selective in what it draws from it. Contrary to the Officer's Report, the Cabinet did not simply endorse the report – they commissioned and approved it. And while the Officer's Report draws more on the requirements to reduce organisational emissions by Surrey County Council than on its role, as a planning authority, to reduce the wider emissions across the county, the following commitments from the Strategy are more relevant to this application:

- "To ask the government to make explicit that planning authorities have the right to reject planning applications where there are identifiable and material climate change impacts (p18); and
 - "To expand renewable energy generation capacity across Surrey (p29)*"
- *There is no reference to expanding oil and gas production.*

2. Risks: unconventional extraction and financial bond

- As well as the conventional Portland Sandstone this proposal also targets an unconventional reservoir in the Kimmeridge Limestone¹⁰ potentially using unconventional techniques**

⁹ See page 10 of strategy, on page 58 of cabinet report - <https://mycouncil.surreycc.gov.uk/documents/g7259/Public%20reports%20pack%20Tuesday%2028-Apr-2020%2014.00%20Cabinet.pdf?T=10>.

¹⁰ http://www.searchanddiscovery.com/pdfz/documents/2018/11100palci/ndx_palci.pdf.html

The Officer's Report states that the Kimmeridge "limestone" reservoir is conventional. It is not. The application targets the conventional Portland sandstone and the unconventional Kimmeridge Clay Formation, the latter being a thick deposit of shale rock. **Shale is not a conventional formation, and often requires unconventional methods to release hydrocarbons at commercial levels because of its low permeability.** There is a longer explanation here:

<https://brockhamoilwatch.org/kimmeridge-clay-formation-kcf/>, which includes the comparison made by the Oil and Gas Authority of the Weald resources to the Bakken in North America, an area widely targeted for shale gas using hydraulic fracturing ("fracking") technology.

The application, as noted in the Officer's Report paragraph 18, makes clear that this development does not propose the use of high-volume fracturing to stimulate the well(s). However, it gives very little information on what drilling methods will be used. For example paragraph 657 notes that "*Side-track well L-1z will allow alternate completion methodology, new completion fluids and the possible use of small-bore radial drilling to be deployed in the search for higher sustainable recovery rates*" but there is no information about what these methods would actually entail, what chemicals will be used in the completion fluids, etc. The report goes on to say (in paragraphs 660 and 661) that "*the CPA is primarily concerned with whether or not the development and use of the land on the surface is acceptable in planning terms and whether any adverse impacts can be suitably mitigated. ...The drilling methodology to be used relates to sub-surface operations and any concerns about this aspect of the development is not considered to be a matter for the CPA to resolve, control or monitor*". This is not true of, for example, certain types of well stimulation methods which use acid which are likely to have above ground impacts. Indeed, concerns have been raised that such well stimulation methods may be used given the unconventional nature of part of the target geology.

How will the MPA know if adverse impacts can be suitably mitigated if it is not aware of what these adverse impacts are, given the absence of any detail on the drilling methods that will be used? Alongside hydraulic fracturing, for example, why has acid stimulation not also been explicitly ruled out by the applicant?

The Officer's Report, in citing the Environment Agency's factsheet on acidization from January 2018¹¹, erroneously states (paragraph 666) that "The factsheet confirms that in relation to the different types of 'acidisation', the EA does not consider an acid wash, matrix acidisation or fracture acidisation / acid fracturing to be a form of well stimulation". The factsheet clearly states "The Environment Agency **does consider matrix acidisation to be a form of stimulation." And "The Environment Agency **does** consider fracture acidisation to be a form of stimulation."**

The application and Officer's Report also refer to the use of "radial drilling" using small bore technology. This is an unconventional technique used all over the world to improve flow rates and access sub-commercial fossil fuels¹².

¹¹ https://consult.environment-agency.gov.uk/onshore-oil-and-gas/onshore-oil-and-gas-regulation-information-page/supporting_documents/Acidisation%20FAQs%20January%202018.pdf

¹² <http://www.ijstr.org/final-print/nov2014/Radial-Drilling-Technique-For-Improving-Recovery-From-Existing-Oil-Fields.pdf>

¹² <https://www.drillingcontractor.org/low-cost-radial-jet-drilling-helps-revitalize-40-year-old-oilfield-23377>

Approving this application would enable a potentially long-term unconventional operation which will be largely self-regulated. The Environment Agency, the Health and Safety Executive and the Oil and Gas Authority rely on a system of self-regulation as the Officer's Report makes clear (e.g. paragraphs 129 and 130).

ii. Financial Bond

The point about the need for a bond has been well made to the MPA by others and their concerns must be reflected as part of the decision-making process. There are significant risks involved and these cannot be mitigated without a financial bond to underwrite them. We support the recent letter with a number of signatories submitted to Councillor Hall on June 13th 2020.

3. Conditions Regarding Risk, Resident Amenity and the Local Environment

If the Committee is minded to approve the application, in order to safeguard the local environment and residents' quality of life we request the addition of conditions covering the following:

i. Water Environment

Condition 22 does not require calculation and approval of the capacity for the containment ditches. What is the storage capacity of the proposed containment ditch and is it sufficient? Is some kind of interceptor or holding tank required, as was the case in Horse Hill (condition no. 24: surface water management).

ii. Drilling Methodology

This application is for both the exploration and appraisal stages for the Loxley-1 and Loxley-1z boreholes. However, as discussed above, no details of the drilling methodology have been given either in the sections titled 'exploration and appraisal methodology' or 'drilling methodology' in the Officer's Report. The application should be refused based on this lack of clarity, or at least conditions should be set to ensure this information must be disclosed and approved prior to both the exploration and appraisal permission stages. The Officer's Report is unclear as to how effective regulation (and monitoring) will occur as to the addition of chemicals to the water put down the borehole. It provides a commentary on the Environment Agency factsheet on acidisation¹³ but provides no details as to how much of what acid is proposed to be used, or how. In the absence of this information, the MPA recommends giving blanket permission, ignoring the potential for wider impacts. In addition it appears to suggest that the Environment Agency and Health and Safety Executive could investigate potential migration of acid through geological formations – without any clarity as to whether this is possible, let alone feasible. This is unacceptable.

Dunsfold Parish Council and others made this point in their submissions but the Officer's Report appears to have ignored these important objections.

¹³ https://consult.environment-agency.gov.uk/onshore-oil-and-gas/onshore-oil-and-gas-regulation-information-page/supporting_documents/Acidisation%20FAQs%20January%202018.pdf

iii. Hours of operation (and associated hours of HGV movements)

The hours of operation proposed – 7am to 7pm – are too long. This is longer than the permitted hours at Horse Hill (8am – 6.30pm Monday-Friday) and is unacceptable noting the nearest homes are 330 metres away and the permitted Dunsfold Village 850 metres away.

Paragraph 70 suggests that these hours could be extended on an exceptional basis – this appears to be reflected in the list of exceptions in condition 6.

Proposed addition: The MPA should to be notified in advance of a request for exceptional hours of operation and the reasons for this.

iv. Dust, Air Quality (and Odour)

No requirements for **dust mitigation and/or management, air quality management or odour assessment** appear to be included in conditions (as requested by the Environmental Health consultee, paragraph 75, and the latter two by Dunsfold and Bramley Parish Councils). Odour could be a significant concern at this site due to the presence of sour gas. Odours at Horse Hill have given rise to public anxiety and there have been alleged health impacts to humans and animals. This is a serious matter which needs to be properly regulated.

This page is intentionally left blank