



**BALCOMBE PARISH COUNCIL OBJECTION  
TO WEST SUSSEX COUNTY COUNCIL  
ON THE PLANNING APPLICATION  
BY ANGUS ENERGY WEALD BASIN NO 3 LTD  
APPLICATION NO: (WSCC/045/20)**

# Balcombe Parish Council response to Angus application WSCC/045/20

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## Notes

This document was prepared in draft by Balcombe Parish Council's Energy Working Group. It has been adopted by the full Parish Council at an extra Parish Council meeting on September 23<sup>rd</sup> 2020.

The appendices to this document provide additional and detailed information in support of the Parish Council's specific grounds for objecting.

In replying to this application BPC will rely on:

- The National Planning Policy Framework
- The Town and Country Planning Act 1990,
- The Environment Act 1995,
- The West Sussex Plan,
- the Joint Minerals Local Plan 2018,
- the BPC Neighbourhood Plan, and
- Environmental Permitting Regulations 2008.

# Balcombe Parish Council response to Angus application WSSC/045/20

## Introduction

This is the considered response of Balcombe Parish Council (BPC) to Angus Energy's planning application (WSSC/045/20) to begin production at the site known as Lower Stumble, London Road, RH17 6JH, situated in the High Weald Area of Outstanding Natural Beauty (AONB).

The site has been subjected to several unsuccessful attempts at oil extraction in the last decade, and this latest application is no less contentious, following closely on the heels of the application (WSSC/071/19) which was withdrawn following adverse comments from the Planning Officers.

Historically, applications from Angus Energy have demonstrated a high degree of wishful thinking based on only a modicum of evidence and questionable statements presented as fact. As shall be demonstrated, this application is no different. In WSSC/045/20 Angus had a marvellous opportunity to address the areas of concern that had been highlighted in previous applications. It has failed to do so, regenerating the same errors as previous attempts. Thus, much of our objection will be made by reference to our previous submission to WSSC/071/19 – referred to as Annex A and Annex B – with additional comments made on this document.

In general, it should be noted that this application is not in keeping with the overall target of 'Net Zero' as specified by the Climate Change Act 2008. It would be a grave error of judgement to be taken in by the hyperbole of Angus Energy. Lower Stumble is not the panacea to the National Strategic Reserve they would have investors believe. If there is any useable liquid down there at all, it is in tiny amounts and extremely difficult to extract. With current technology, this is simply not a cost-effective site to drill.

## Objections

### **The Need for the Development**

At paragraph 8 the NPPF sets out three objectives for a sustainable development: economic, social, and environmental. Quite simply this application can only ever meet the economic criteria, and only for the company. It will not help the local economy and will have no impact on the national economy. There is no way this will enhance a *strong, vibrant, and healthy community* in any way shape or form. Finally, this certainly will not *protect or enhance our natural land, improve biodiversity, use natural resources prudently, minimise waste and pollution, mitigate or adapt to climate change, or assist us in moving to a low carbon economy.*

It continues at paragraph 170 that *"Planning policies and decisions should contribute to and enhance the natural and local environment by: a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan); b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland..."*

It then continues at paragraph 172 *"Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to these issues."* Before concluding *"Planning*

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*permission should be refused for major development<sup>55</sup> other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest."*

In simple terms, it is BPC's contention that there is no demonstrable need for this development, either locally or nationally. On the contrary, in a post Covid19 world, the need for fossil fuel has dropped dramatically and is unlikely to recover over the term of this application. It is likely to have a great detrimental impact to the local environment and the recreational opportunities around the local area. At this point in a global climate emergency, there is no possible justification for a development of this type.

### **Impact on the Landscape**

The application is situated within the High Weald Area of Outstanding Natural Beauty (AONB), so great weight must be given to conserving the landscape and scenic beauty. The application is contrary to the stated aims of the JMLP which states at 2.2 *"Will be a place which seeks to meet its own needs for mineral and encourage the sustainable use of natural resources, whilst striving to source more and more minerals from alternative to primary extraction, and from areas outside the South Downs National Park and Areas of Outstanding Natural Beauty."*

It continues *"Will ensure minerals have been produced in a manner that protects and enhances the historic and natural environment, delivers net gains to natural capital, and contributes to a low carbon, circular economy."*

This application does not do that.

### **Highway safety, Adequacy of parking/loading/turning, Traffic generation**

There is a staggering 4171% increase in vehicle movements under the current application from previous times. This represents an unacceptable level of industrialisation to an AONB.

The current application now includes traffic movements for the plugging and decommissioning of the well resulting in an additional 520 two way movements, as well as mobilisation and demobilisation of civil engineering relating to the Bund (180 two way movements) which were not highlighted in previous applications.

As noted on page 9 of the previous objection at Annex A, the assumptions on traffic contained within the RSK report were factually incorrect and cannot be relied upon as the basis on which to decide this application.

None of our objections to the previous application have been addressed in this one. On the contrary, Angus have sought to make a bad situation worse by the exponential and unexplained increase in site traffic.

The WSCC Transport Assessment Methodology at section 2 defines 'Significant movements per day' as 20 or more one-way HGV movements. This means that, in all but four stages of the Angus proposal, there are 'significant' movements of HGV's proposed through the village of Balcombe.

Our infrastructure is not equipped for this level of industrial traffic. As has been seen historically, the site is not geared up to accept any level of HGV traffic. This results in exceptionally large lorries making dangerous turns into the site and parking on a 'fast road' waiting for a space on-site to clear. There have already been 'near misses' along the B2036 close to the site because of this. With the incredible increase in industrial traffic, a profoundly serious accident is inevitable.

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This is a massive increase in site-related traffic and cannot possibly be accommodated by the tiny village of Balcombe.

### **Impact on Amenity and Public Health**

At 8.4.1 of their application, Angus correctly state Policy M7a and M18 of the West Sussex Joint Minerals Plan.

They then provide no evidence of how they will meet this requirement in respect to the increased levels of work, traffic, and associated activity at the site under their new application. Their application simply restates the observations from previous applications. With the introduction of new equipment and new working practices, there should be new reports and investigations demonstrating their veracity. This has not been done and the integrity of their assertions are therefore undermined.

At 8.4.11 Angus admit that the noise levels will be above the stipulated criteria, even by their own figures, they then seek to minimise this by stating that they 'expect' the levels to be lower. This level of assumption and paucity of thought is unacceptable in an application of this magnitude. It is indicative of the general lack of attention to detail that runs throughout the application and is personified in the working practices that residents have witnessed at the site.

These proposals are contrary to the JMLP Strategic Objectives 6 *"To protect, and where possible enhance, the health and amenity of residents, businesses and visitors."* and Strategic Objective 11 *"To protect the environment and local communities in West Sussex from unacceptable impacts of any proposal for oil and gas development, whilst recognising the national commitment to maintain and enhance energy security in the UK"*.

BPC have drawn attention to the assumptions and contradictions contained with the previous application. Angus have repeated these errors in this application. Angus' observations at 8.4.14 and 8.4.15 are therefore invalid, and BPC would seek to draw the committee's attention to their previous objections on page 16/17 of Annex A.

### **Impact on the Water Environment**

Angus Energy previously commissioned RSK to perform a Hydrological Risk Assessment (RSK HRA), and Zetland Group to prepare a Design Philosophy Statement setting out the basis for the design of an impermeable subbase system for Stage 2.

Frack Free Balcombe Residents Association commissioned a review from hydrologist Trevor Muten BSc, MSc, MPhil, FGS, CGeol, CSci, CEnv, C.Wem MCIWEM, EurGeol, of Tapajós Ltd. The Tapajós report has been sent to the EA, WSCC and to Balcombe Parish Council.

BPC has also obtained the Weatherford Interpretation of Cement Bond Log 2013, and The Final Well Report Conoco (UK) Ltd, Balcombe #1 1986. These reports are referred to by RSK in their Risk Assessment.

All these documents have previously been disclosed to WSCC for the previous application. A comparison of their findings is attached at Annex B.

In summary it concludes that the risk to groundwater has not been accurately assessed. Throughout the report from RSK there are misleading and subjective statements characterised by a lack of

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information and oversimplification of any issues addressed. RSK fails to demonstrate how any risk to the water environment can be adequately addressed to mitigate its consequences.

This patently does not meet the requirements of the JMLP and should therefore be rejected.

### Compensation and awards of costs against the council

As has been previously demonstrated, the site at Lower Stumble has evoked a passionate level of protest due to the nature of the exploration and the situation of the site itself. It can be reasonably anticipated that, should permission be granted, every avenue at reversal will be explored. With the capricious nature of government opinion on the matter, any future settlement is likely to prove costly and difficult to defend. On the 19th June 2020 Kwasi Kwarteng, MP - Minister for Business, Energy and Clean Growth, observed that the government had '*moved on*' and was looking to more sustainable forms of energy generation. BPC would invite WSCC to do the same.

### Proposals in the development plan

Duration - by Angus' own admission at 4.1.4 of their Planning Statement, the total duration they are asking for is 30 months. Even though they have tried to camouflage this by splitting it into phases, it represents an unprecedented amount of time for an extended well test and, in reality, is an attempt at production by the back door without the prerequisite scrutiny or permissions.

Phase Three of the proposal is a 12-month EWT. The Oil & Gas Authority (OGA), in their document "*Consolidated Onshore Guidance*", state that EWTs "*are usually issued for 90 days to allow for operational delays. The duration may be extended if there is a technical justification, but it should be noted that EWTs are not an alternative to production under a Field Development Plan*". There appears to be an unexplained nine months discrepancy in Angus' figures.

Air Emissions and Flare - at section 3.3.4 Angus are proposing to have a new (second) flare on site. This flare does not appear in the site plan. The flare stack position of the second flare is only 1m west and north of the first flare (Air Quality Assessment Table 3.1 & 3.2), which is physically impossible. It appears to be an alternative option and Angus seem to be attempting to cover all the bases in case they are unable to procure the first flare after Phase one. The new AEREON flare is an ultra-low emission ground flare, it produces half the NO<sub>x</sub> and 16 times less CO than the first flare (Air Quality Assessment Table 3.1 & 3.2). Concerns were raised about the first flare in 2019, as Igas Energy data from their Ellesmere Port application showed that the efficiency may be as low as 65%. As a far superior flare is available, why are Angus still proposing to use the first one? The first flare should be replaced altogether, as it is not Best Available Technology.

The air emission figures Angus have presented in this application have inexplicably changed from the last failed application. Their NO<sub>x</sub> figures have risen despite only considering one generator, some CO figures have gone up and some decreased. It is illogical and casts doubt upon the veracity and integrity of their calculations.

Angus have omitted emissions to air from the tank vents from the Air Quality Assessment. Emissions from the tank vents can be very substantial and will include VOCs (such as benzene, a carcinogen) and potentially H<sub>2</sub>S. Angus has to report "*point source emissions to air, specifically the oil storage vessel vent line*" to the Environment Agency (Gas Management Plan, CORP-HSE-GMP-001). It is misleading to omit these from the Air Quality Assessment.

Acidisation - In section 4.4.5 of the Planning Statement Angus states "*To improve the flow of petroleum within the formation, an acid [...] is applied to the formation. The operation is very much*

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*akin to acidization of boreholes in the water well industry...*” This is undeniably well stimulation, however the Environment Agency clearly stated in the Application Variation Decision document that *“these methods [matrix acidization, acid squeezing and fracture acidization] are not proposed or permitted to take place at this site.”*

Carbon Intensity - Angus argue that *“by supporting indigenous oil production rather than a reliance on imports, the UK can displace suppliers whose carbon intensity is greater than that of the UK’s own indigenous production”*. However, the UK’s carbon intensity is only average. Norway’s carbon intensity is much better than the UK’s (almost 50% of UK crude oil imports are from Norway). So is Saudi Arabia’s, Kuwait’s, and most other Middle Eastern countries. Thus, the UK could improve its carbon intensity by simply swapping imports from the USA and Canada to the Middle East.

Natural Gas - Angus argue that gas will remain a vital part of the UK’s energy mix. This is irrelevant at Lower Stumble as the ‘waste’ natural gas that is extracted with the oil is being flared, not recovered. The flared gas could produce enough power in a gas engine to power the site, but Angus are using diesel generators instead.

Supply - Angus argue that the oil production at Lower Stumble will contribute to the UK’s energy security. The total oil production in the UK in 2018 was around 1 million barrels of oil per day (bopd). Oil consumption in 2018 was around 1.6 million bopd. Angus tells us that *“the UK onshore oil industry has the potential to meet 40% of the shortfall”*. That is 240,000 bopd in 2018. The oil produced from all onshore small operators (i.e. not including Wytch Farm) was around 3,000 bopd in 2018. Angus consider 300 bopd at Lower Stumble to be a good result and 50-200 bopd to be commercially viable. This means that despite Angus trying to portray Lower Stumble as a contributor to the ‘National Strategic Reserve’ it will only potentially produce somewhere in the region of 0.0625% of the national bopd should it even achieve viability. Thus, to try and paint a picture of this as some form of major contributor to the national energy needs is misleading at best.

The Future of Hydrocarbons - Angus referred to the UK Committee on Climate Change (CCC) and net zero. In 2019, the UK Government and the devolved administrations committed to the Net Zero target for greenhouse gas emissions by 2050. According to the CCC, this very ambitious target can be achieved by improving resource and energy efficiency, reducing demand for energy across the economy, extensive electrification, major expansion of renewable and other low-carbon power generation, development of a hydrogen economy and carbon capture and storage.

### Planning Balance

Benefits - Angus argues that *“exploring for hydrocarbons at Balcombe would progress the economic and environmental benefits associated with indigenous extraction and security of supply.”* As detailed above, there are much better ways to improve the carbon intensity of crude oil consumed in the UK and the Balcombe development would have an infinitesimally small effect on our energy production or reserves.

Angus argue that the proposed development will *“support local businesses such as road hauliers, suppliers of security and welfare facilities, restaurants, cafes, pubs, food stores and petrol stations, thereby supporting indirect employment and the local economy.”* This is patently false as no one from the village had been employed on the site to date, or by any of the associated businesses. There is no evidence to support any of these claims, in fact, on the contrary, Angus seem to ship in expertise from outside the area to ensure the security of its operation and prevent employees talking to the local community. With the threat posed by groups such as Extinction Rebellion for



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these types of climate destroying ventures, the potential security bill, both to the company and to the taxpayer via the police, is likely to be extremely high.

### Previous planning decisions

WSCC/071/19 – Withdrawn after Planning Officers recommendation to refuse.

### Nature conservation

M17 of the JMLP states that proposals for minerals development will be permitted provided that there is *“no significant harm to wildlife species and habitats, or that significant harm is effectively mitigated where it cannot be avoided. As a last resort, suitable compensation be arranged where there is still significant residual harm.”*

Angus again seek to rely on an outdated report by RSK, which has not undergone any substantial revisions to reflect the new conditions onsite in the proposed application.

WSCC/071/19 committee report, dated 24<sup>th</sup> March 2020 concluded *“the proposed development is adjacent to ancient woodland, and there are a number of Sites of Special Scientific Interest in the local area”* it continued *“A key concern relates to the potential impact on bats”*.

Angus’ latest proposal would severely impact on the local ecology and environment for all wildlife. Of particular concern for BPC are the Red Kites who breed near the site, as well as the bats which are native to the area. Red Kites are protected in the UK under the Wildlife and Countryside Act 1981 and listed as near Threatened on the global IUNC Red List of Threatened Species.

The light and noise pollution in the area because of this proposed development would severely impact on these protected species and represent a direct threat to their continuation in this area.

It is of particular concern to BPC that Angus fail to mention Red Kites anywhere in their submission. It would be obvious to anyone spending any time within the Parish that Red Kites are particularly active here. The fact that they have not been specifically considered in the application is indicative of the generic approach taken to the whole application.

BPC therefore contend that this application is contrary to JMLP policy M17.

### Safety

At 4.6.3 Angus briefly touch on their emergency procedures which, despite repeated requests have never been made available to the Parish Council.

Specifically, they state *“Site specific emergency response procedures are in place in consultation with the emergency services and tested prior to the commencement of any work”*

BPC checked this statement with the West Sussex Fire and Rescue Service. Their Premises Risk Manager confirmed that they held three documents relating to the site on their mobile data terminals.

However, these documents were last updated on 08/08/2013 by Cuadrilla.

WSFRS stated that they require updated versions of these documents and that no updates or addendums had been provided since the date stated.

Angus’ claims at 4.6.3 are therefore untrue.

### Community Engagement



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At 3.1.8 Angus give the impression that communication has been maintained with the Community Liaison Group (CLG), referring to a letter at appendix 2 (dated 11<sup>th</sup> August 2020). This is untrue - as of the time of writing, nobody in the village has received a copy of this letter.

Furthermore, Angus have scheduled their CLG Zoom meeting for 8<sup>th</sup> October – 10 days after the consultation period ends. This effectively silences any justified or informed criticism of their operation, making it appear that Angus wants to avoid any scrutiny prior to the closing date for objections.

Their three paragraphs on communication are misleading, deceptive and false.

### **Conclusion**

In summation we would like to echo the previous observations of the WSCC planners. This application would represent a major development in the High Weld AONB, for which there are no exceptional circumstances, and which is not in the public interest. There are other alternative sources of hydrocarbon supply, both indigenous and imported, to meet the national need. A need which is rapidly diminishing in any case. There would be minimal, if any, benefit to the local economy from the development, and there is scope for meeting the need in other ways, outside of destroying nationally designated landscapes.

The proposal is contrary to Policy M7a, M7b, M13 and M17 and Objective 13 of the West Sussex Joint Minerals Local Plan (2018) and paragraphs 170 and 172 of the National Planning Policy Framework (2019).

Balcombe Parish Council therefore object to this proposal on the grounds that it is poorly considered and has no merit to the local community or its environment. It cynically seeks to exploit our natural resources for private gain and has no benefit either nationally or locally.



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TO WEST SUSSEX COUNTY COUNCIL  
ON THE PLANNING APPLICATION  
BY ANGUS ENERGY WEALD BASIN NO 3 LTD  
APPLICATION NO: WSCC/071/19**

**Location:** Lower Stumble Hydrocarbon Exploration Site, London Road, Balcombe, Haywards Heath, West Sussex, RH17 6JH

**Proposal:** Remove drilling fluids and carry out an extended well test. This proposal is a two-stage activity:

- 1) Pumping out previously used drilling fluids to ascertain any oil flow (up to 4 weeks)
- 2) Should oil be seen to flow, an extended well test (EWT) would be carried out over a period of three years.

**NOVEMBER 11th 2019**

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## 2. NOTES

This document was prepared in draft by Balcombe Parish Council’s Energy Working Group. It has been adopted by the full Parish Council at an extra Parish Council meeting on November 11<sup>th</sup>, 2019.

The appendices to this document provide additional and detailed information in support of the Parish Council’s specific grounds for objecting.

## 3. EXECUTIVE SUMMARY

Balcombe Parish Council object to this application on the following grounds listed below:

### 1. Timing and Process

The time period for the extended well test is excessive at 3 years: Typically, the Oil and Gas Authority only allow extended flow testing for 90 days. If problems arise with impact on local residents, then 3 years is too long. It effectively allows Angus Energy to enter a production phase without having to apply for production application which would require more stringent conditions.

**EIA:** An Environmental Impact Assessment should be made as the overall site is over 1 ha in size. WSCC stated in their decision to not require an EIA was the existence of an impermeable membrane on the site. However, at the Community Liaison Meeting (CLG) of 4<sup>th</sup> November 2019, Angus confirmed that there was no impermeable membrane on the site.

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**Unconventional geology:** At the CLG, Angus stated that it was due to the unconventional geology that a longer than normal period of testing was required. They cited Horse Hill as being similar. The EA have confirmed that they have in fact given 76 days for extended well testing for Horse Hill.

### **2. Financial position and potential impact on Balcombe and West Sussex**

Angus Energy is a risk-taking exploration company. Its financial position is precarious. There is a risk that a significant failure in any one of the company's assets could cause bankruptcy.

This could lead to local communities having to find costs for the closure of the site, or if the failure occurred in Balcombe the clean up as well.

The company should deposit funds in escrow for the shutdown of the site, and have sufficient insurance or a performance bond against the serious adverse impacts in Balcombe

### **3. Climate Emergency**

In April 2019 WSCC and the Government recognised the climate emergency. Extraction of new sources of crude Oil is not compatible with this recognition.

In addition, the Lower Stumble site will rely on road tankering oil and produced water about 100 miles which will make it a carbon intensive method of production, as opposed to ship transport or pipelines. This is even less compatible with the recognition of the climate emergency by WSCC.

Lower Stumble's oil well is not a strategic reserve and is not in the public interest.

### **4. Impact on the village**

**Traffic:** The calculation of the increase in the traffic figures is incorrect and takes no account of the disparity in size of HGVs. The traffic plan routes all traffic through the village to the north, regardless of whether or not the ultimate destination of waste or production materials is in fact to the south.

**Air quality:** Not enough detail has been provided about the potentially toxic compounds in emissions and venting. The flare will produce toxic emissions. There should be an interim assessment, after three months, based on results from sorption tubes.

**Noise:** Absolute reassurance is needed that noise abatement measures will be in place from the beginning of operations.

**Drainage and pollution:** Accurate descriptions of drainage and protective measures should be given. Currently the documentation is inconsistent and confusing eg. there are three different conflicting descriptions of the bund. There is no longer an impermeable membrane across the whole site.

**Ecology:** Ecological impacts need to be updated and enforced.

**Disaster Recovery:** A disaster recovery plan should be in place.

**Conditions:** All the above should be set out as conditions which require to be rigorously enforced. The traffic plan should be amended to direct traffic to the most direct route to its final destination.

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### 4. OBJECTIONS

#### Time requested for extended flow test

Three years is an extraordinary length of time for an extended well test (EWT). The Environment Agency (EA) guidance is 'up to 90 days'. In the previous application, Cuadrilla was granted six months' work to be carried out during a two-year period.

#### Angus are applying for a test when they intend to produce

Lord Lucan, Managing Director of Angus Energy, said of Balcombe in an interview in October 2019: 'It is a test that more than pays for itself because you are able to produce most of the time.'

<https://drillordrop.com/2019/10/11/interview-angus-oil-man-backs-gas-for-the-future/>

The proposed infrastructure is of a standard that might be expected for a short flow test rather than production - for example the bund and drainage system are not of a standard suitable for production. Lord Lucan, managing director for Angus, confirmed at the CLG meeting on the 4th November 2019 that these are not up to the production standard at their Brockham site, nor of UKOG's Horse Hill site (where there is permission for production).

Angus argue in their application that they do not need to lay funds aside now for the restoration because they can set aside 15% of revenues from oil production from the well to cover restoration.

Production requires more stringent permitting, including an Environmental Impact Assessment and emissions monitoring.

The applicant states in the Planning Statement that if the extended well test is completed successfully, they will prepare and submit a new planning application for the production stage.

It is suggested that the well is unlikely to produce commercial quantities of oil for much longer than 3 years. The extended well test seems to be an attempt to classify operations as "temporary" and avoid planning restrictions that apply to permanent installations to protect the environment and local population. In particular, the applicant wishes to flare excess gases rather than use them to generate electricity.

West Sussex Minerals Plan (policy M7a) states that proposals for exploration and appraisal for oil and gas should not be permitted unless it has been demonstrated that "there are exceptional circumstances and that it is in the public interest." It is not in the public interest to carry out this extended well test.

#### **Balcombe is opposed to the presence of an oil company in the village.**

Residents' views are a material consideration and should be taken into account. In three polls, the village has been shown to oppose by a simple majority, the presence of the oil and gas industry in Balcombe. This was confirmed by a February 2014 Balcombe Parish Council poll, conducted by Electoral Reform Services and sent to every Balcombe resident on the full electoral roll. Notably, hundreds of objections have been lodged to this application from local residents, underlining the strength of feeling.

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### Angus Energy's financial condition

Based on the latest available filings, Balcombe Parish Council believes that Angus Energy and its subsidiaries do not have sufficient equity in their own right to manage any unforeseen liabilities and to protect the local community should either their parent or ultimate parent company decide not to support them going forward. This would include potential costs associated with an environmental clean-up and any site restoration costs.

Financial statements filed at Companies House show that Angus Energy Weald Basin No 3 (AEWB No3) has reported operating losses and net liabilities for four out of the last five years. The financial statements for AEWB No 3 show that the business is not profitable and not currently generating cash. The company is reliant on funding from other group entities and continued support from the ultimate parent company.

The company was reliant on raising funding from shareholders in 2018 and 2017. In 2018 and 2017, proceeds from two share issues were £5.1m and £5.6m. A further £3m was raised in 2018 from an issue of convertible loan notes. These proceeds were used to purchase exploration assets and oil production assets. Angus Energy PLC meets its day-to-day working capital requirements and medium-term funding through shareholder injection.

Over the last year, the share price for Angus Energy PLC has dropped from 14.4 pence to 0.875 pence (less than one penny per share). The share price on 12th November 2019 is .90 pence and the company have a market capitalisation of £6m.

On October 25<sup>th</sup> 2019, Angus Energy PLC made a statement to the stock market in respect of their liabilities regarding decommissioning wells and restoring sites. The cost of restoration of the Balcombe site in its current state (before any of the work specified in the current planning application) was estimated at £400,000. They proposed that 15% of all future revenue from the Balcombe should be transferred to a dedicated bank account over the life of the asset. However, they also state that if no oil is produced, they will shut down the well and restore it.

At the Community Liaison Group meeting on the 4<sup>th</sup> November 2019, Angus Energy stated that they were closing down the Brockham well because it was not a viable proposition and would instead be relying on production from Balcombe. We do not have any confidence in the company's financial position.

### Balcombe Parish Council requests

- **That £400,000 should be placed in an escrow account immediately to cover the restoration of the Balcombe site, *whether or not* further work is undertaken at the site.**
  - **That, given the limited financial resources of Angus Energy PLC and its subsidiaries, they should also be required to take out appropriate insurance to cover any damage caused by the operation for a minimum period of 50 years beyond the life of the well. We ask that the level of indemnity be set to cover all eventualities.**
  - **That WSCC should consider whether Angus Energy is in a sufficiently sound position to undertake work of this nature.**
- 
- BPC believes that AEWB No. 3 and AEWB No.2 hold insufficient financial resources to protect the local community should its ultimate parent company decide not to support it going forward;
  - BPC believes that Angus Energy PLC holds insufficient financial resources to protect the local community should any environmental clean up and restoration activities be required;

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- BPC requires appropriate guarantees/indemnities or performance bonds are put in place by Angus Energy PLC to ensure there are sufficient resources available to return the site to a satisfactory state.

See “APPENDIX A: The applicant's financial condition” for a more detailed analysis.

### Environmental Impact Assessment (EIA)

An Environmental Impact Assessment is required on all sites exceeding one hectare. Members of the community, including a Parish Councillor, have measured the site in the past, and on this basis Balcombe Parish Council considers the site to be greater than one hectare when the access road is taken into account.

The Parish Council notes that the applicant has submitted an Ecological Preliminary Appraisal, Habitat Regulations Assessment and Bat Activity Report. Nonetheless, without a full EIA, it is not possible to determine the full extent of any impact on the environment.

Furthermore, the RSK reports highlight that steps need to be taken to ensure no contaminated water reaches the streams running into Lower Stumble Wood and Lower Beanham Wood. The WSCC screening report states that the site's impermeable membrane protects groundwater from contamination. However, Angus Energy confirmed at the recent CLG meeting that the site did not have such an impermeable membrane.

Balcombe Parish Council objects to the fact that this application does not include a full Environmental Impact Assessment (EIA).

WSCC suggested that an EIA was not required on the grounds that ‘in this case, taking into account the temporary period over which the operations would take place, the small scale of physical development, and the controls in place’, the proposed development does not have the potential to generate significant environmental effects within the meaning of the EIA regulations. Two to three years does not seem to Balcombe Parish Council to be a temporary period in the sense that the seven-day flow-testing carried out in September 2018 was a temporary period. It is an extremely lengthy period, through which there will be intermittent increases in HGV traffic through the village, the running of a flare (day and night), increased noise pollution, and disruption to village life and wildlife.

### Balcombe Parish Council requests:

- That, if this planning application were to be accepted, the length of this extended flow test period and size of the site means that an EIA should be required.

### Traffic

#### Inaccurate Baseline Calculations

RSK, the Angus Energy consultant, argue in this application that: *‘these vehicle movements are the same as previously consented, it is considered that the existing site access could accommodate the proposed development without any further improvements. It is also expected that the level of traffic generated by the proposed development would be likely to have a negligible impact on the local highway network.’*

Balcombe Parish Council disagrees with this statement. The additional heavy traffic through our village has been underestimated and based on incorrect data.



## **Balcombe Parish Council response to Angus application WSCC/045/20**

The projected percentage increases in traffic used in this application are based on a traffic survey done in 2012 on the northern part of London Road, north of the mini roundabout where Haywards Heath Road (B2036) and London Road merge. Northbound, this part of London Road carries the traffic joining from both roads, while in normal times, traffic arriving from the north forks left and right at the roundabout. The school and many houses lie to the south of this roundabout, on a normally quieter stretch of the London Road, which then continues down towards the oil site.

In addition, the methodology used to calculate HGV traffic figures conflates small lorries, vans and enormous six-axle HGVs. This is misleading.

Because the traffic movements used in the previous application were inaccurate (and Angus want to base this application on them), these traffic figures should be recalculated and resubmitted to the relevant statutory consultees.

WSCC Highways provides a table (see Appendix C) showing calculated percentage increases for different stages of the work. Apparently, the mobilisation week will generate a maximum of 20 two-way HGV movements, and the table says this equates to a 21% increase in HGV traffic. But each HGV movement is two-way, so actually this will mean 40 journeys through the village, and an increase of 42%, not 21%. Likewise, the other phases of the operation have understated the percentage HGV traffic increases by 100%. The actual percentage HGV traffic increases will be 42%, 48%, 42%, 48% and 4.1% (the latter for the shut-in period). These are much more significant increases than suggested by WSCC.

Forty one-way journeys through the village significantly exceed the WSCC Transport Assessment Guidance limit of 20 one-way movements as the baseline for production of a Transport Assessment.

The WSCC Highways response to the current application says that, from 2018 data collected on this section of the B2036, there are an average of 96 HGV movements per day, over a five-day period. It also sets out the number of expected two-way HGV movements for the current application, based on the traffic predictions from Angus Energy for the September 2018 flow-testing.

### **Previous Experience and Balcombe School**

When Angus attempted to flow test in Balcombe in September 2018, 30 community members organised a Traffic Watch Group logging traffic movements and HGV types. Site traffic exceeded the levels predicted. The Traffic Watch Group estimated the increase in traffic at 15 per cent (as opposed to the predicted 8 per cent), with a 30 per cent increase on the heaviest days.

They now want to bring the same materials and equipment back onto the site.

The increase in traffic (and the nature of the HGVs used) has a big impact on the school, and on traffic on the B2036.

Many of the vehicles entering the site were six- or seven-axle HGVs, which could span the whole length of the school. The average count for *that* size of HGV coming down that road past the school is not even one per day across a seven-day average. Yet on some days there were as many as 32 movements of these vehicles. The daily average for six-axle vehicles across the few days counted was 15! Worst still, the vehicles had a tendency to idle in front of the school because of the bottleneck caused by car parking further down the road.

## Balcombe Parish Council response to Angus application WSCC/045/20

It is of great concern that these huge HGVs will again passing within three metres of the school playground. Vehicle types are not specified, and so it is not possible to assess how many 'abnormal' or large loads make up the site HGV traffic stated.

Balcombe Parish Council notes that this application has mandated restrictions on travelling past Balcombe Primary School at drop-off and pick-up times (para 8.5.3 of the Environmental Report, last bullet point). This makes no allowance for children arriving for breakfast club or for after-school clubs.

### Size of vehicles

It is also worth noting that some of the vehicles are extremely high. Last time the vehicle used to convey the coiled tube had to stop so that the driver could get out and climb on the roof to check it would not catch on low-slung electricity cables that weave their way down the residential parked-up section of this road.

In this application special measures for abnormal loads (such as the crane and work over rig) are not discussed in the application. Nor is there any mention of how many loads of hazardous waste will be generated. There is no mention of the possible contents of HGVs.

### Southern Route

The application states that 'HGV traffic will be limited to accessing the site using B2036 London Road from the M23 motorway.' This is the road that runs past the village school and houses on both sides of the road until housing thins out south of the railway station.

There is, however, another route to the site from the A23, via Whitemans Green at the north end of Cuckfield but it includes a mini-roundabout that is too tight for vehicles of the largest size vehicles. The route via Whitemans Green is possible for normal-sized HGVs and tankers as this route has no weight restrictions and is used by many such vehicles at present. It also passes housing, but is much less densely populated than through Balcombe. There is no school on this route.

There is no reason why HGVs should not be shared between this southern route and the northern one, with smaller ones approaching from the south. Particularly for HGVs coming from or going to the south coast as this route is shorter.

### Balcombe Parish Council requests:

- **That the traffic calculations be redone, and the traffic table be redone, and the Transport Assessment re-examined, with the correct figures for percentage traffic increases, and that the consultees be informed so that they have the chance to review their responses. And that the consultation period should be lengthened to enable everyone to comment on the correct traffic calculations.**
- **That proper signage and a banksman be provided to avoid the problems of September 2018, when HGVs sometimes went through the village six times because they missed the site.**
- **That both Angus contractors and Sussex Police stick to this condition rigorously. There were occasions in 2013 when they did not.**
- **That a lower speed limit of 30mph be set on the road for the duration of any works, to enable vehicles to turn into the site safely. The normal speed limit on the stretch of B2036 that passes the site is 60mph, and vehicles travelling at this speed could be extremely dangerous, particularly in wet weather.**

## Balcombe Parish Council response to Angus application WSCC/045/20

- That HGV movements should not be allowed seven days per week as Appendix 8.2 seems to apply. The planning application mentions movements only Monday to Saturday.

### Traffic management plan and signage

Insufficient detail on Traffic Management is given in this application with much left for a post application Traffic Management Plan.

### Balcombe Parish Council requests:

- That a Traffic Management Plan and/ or Traffic/Transport assessment be provided owing to the presence of large and abnormal loads, the transport of hazardous materials and the proximity of the school to the route.
- That Balcombe Parish Council should be able to access Angus's lorries logs.
- That details of temporary traffic signage should be provided to avoid collisions with turning vehicles at the site entrance.
- That a speed restriction of 20 mph should be imposed on site HGV traffic travelling through the village.
- That there should be restrictions on times at which site HGVs may travel through the village, in addition to school times.
- That the restriction on access from the south should be removed for normal site HGV traffic, and access to and from the south of the village should be imposed for:
  - all traffic heading to or coming from the south,
  - all site HGV traffic at set-down and pick-up times from the school
  - all hazardous loads (including hydrochloric acid and material controlled by the Mining Waste Permit and the Radioactive Substances Regulations) during school hours, to avoid the possibility of an incident while children are in residence.

*See Appendix C for the chart of traffic movements given in the WSCC Highways response to the consultation.*

### Climate change

Our countryside is essential for our health and well-being. Without it, we cannot address the climate emergency. Ending fossil fuel extraction is vital as it is incompatible with the UK's climate change commitments. The negative climate change impacts from this fossil fuel extraction project must be considered.

The combustion of five tonnes of methane per day and emissions from generators over a three-year period would create approximately 10 to 20 thousand tonnes of CO<sub>2</sub>. This is equivalent to the emissions from several thousand households over the same period. To mitigate such CO<sub>2</sub> emissions 100,000 trees would have to be planted.

At times, Angus Energy would vent methane and other gases to the atmosphere if this application is passed. Methane is more than 80 per cent more powerful a greenhouse gas when considered in the 20-year time scale within which the climate crisis needs to be addressed. Many studies have shown fugitive methane from oil and gas sites to be a significant cause of global warming.

## Balcombe Parish Council response to Angus application WSCC/045/20

### Air quality

Official 'Best Available Technique' for disposing of the gas associated with the oil (associated gas) is recovering gas to be cleaned and burnt to make electricity. Angus Energy acknowledged this in the Gas Management Plan submitted to the Environment Agency (CORP-HSE-GMP-001, Rev 1.0, Nov 2017). Yet Angus Energy do not propose to recover the gas.

It would appear that the RSK air dispersal modelling document has not been given approval by the Environment Agency. The Environment Agency have not put the RSK document out for public consultation. Does this make the application invalid?

Balcombe Parish Council has reviewed the Air Dispersion Study with the help of members of the community who work or have worked in the sector.

Air pollution is a serious concern for residents of Balcombe. The site lies down a dip, and the top of the flare is planned to be below the height of the village. The lie of the land means that the prevailing wind would carry emissions from the flare into the heart of the village. Some residents live under half a mile from the site. Sulphur dioxide may accumulate at ground level on the B2036 road. In 2017, the flare emissions produced a repugnant and noxious odour on the B2036 road. The nearest 'receptor' is the B2036 road, and this should be considered in the dispersion analysis.

Further information is needed. Angus Energy have presented an air dispersion study of carbon monoxide (CO), oxides of nitrogen (NOx) and particulate matter from the flare. Other important toxic emissions from the flare have not been considered.

The flare is 'off the shelf', and has been used for well tests in other locations around the UK, crudely modified to limit the gas flow to 5,000 m<sup>3</sup>/day. If the flare does not operate efficiently, incomplete combustion of the gas can lead to the production of high levels of toxic emissions. This is much more likely when the combustion is done in equipment that is not specified for the correct gas composition and flowrate, such as the proposed flare.

Technical specifications of the flare are not given. There is no picture, nor are there adequate specifications for the flare. The model should be stated. The temperature of the exit gases and flare efficiency must be confirmed before an assessment can be made. Higher temperature flares produce more oxides of nitrogen than cooler flares. If the flare does not operate efficiently, high levels of toxic emissions can be produced.

We have reason to believe that Angus Energy will use, as last time, the PWWT shrouded flare, whose efficiency is about 65%. (Flare Technical Document, Igas Energy, 2016 Environmental Permit Application EPR/BB3708GN, Ellesmere Port). When the flare efficiency drops to such unacceptable levels as 65%, polyaromatic hydrocarbons and particulates are generated in large quantities and the flare emission parameters are not reliably known. Such an inefficient flare will generate large quantities of smoke and particulates. It is therefore crucial to monitor the flare efficiency during operation. Yet RSK say there is no need to mitigate emissions. This is not true. Constant monitoring of the efficiency of the flare is vital. If flare efficiency falls below 95%, the flare will start to emit

## Balcombe Parish Council response to Angus application WSCC/045/20

serious amounts of toxins such as volatile organic compounds and dioxins, which will be transported on the prevailing wind towards nearby houses and the village.

It is a condition of the EA Permit (EPR/AB3307XD) that 'the operator shall analyse the flare feed gas. The analysis shall include specification and concentration of organic substances, carbon monoxide, sulphur containing compounds, halogen containing compounds and moisture' and 'the operator shall by calculation determine the emissions of the substances identified in table S3.1, based on the most recent feed gas composition analysis, feed gas flow rate and combustion efficiency of the flare.'

The chemical composition of the gas entering the flare, obtained from chemical analysis in 2017, should be available and should be published. In particular, the sulphur-containing compounds (H<sub>2</sub>S, CoS, thiols and mercaptans) in the returned oil and gas should be identified and their concentrations reported. The results of any emissions monitoring undertaken in 2017 should also be made public. The gas flow rate and its composition should be available following the 2018 well test. Angus Energy note in Section 7 of their Planning Statement (Community Engagement) that they 'agreed to share monitoring reports with the community as operations progressed.' This has not happened.

The conclusions of the Air Quality Assessment are flawed. The applicant, in the Air Quality Assessment, has concluded that the impact of the operations on pollutant concentrations is negligible.

According to the Air Quality Assessment Technical Report, "the highest PC for the 99.79th percentile of the hourly mean NO<sub>2</sub> concentrations at the receptor locations, was predicted to be 36.21µg/m<sup>3</sup> at R2". Again according to the report, "The PC at R2 is 18% of the relevant AQS objective which would be classed as a 'moderate adverse' magnitude of change using the EPUK-IAQM criteria".

The report, however, dismisses this assessment as being conservative because "the results assume the plant (flare and two generators) are operational for an entire year as a worst-case scenarios, when in reality the flare will only operate when the well is flowing and only one generator is expected to be operational at any one time".

This argument is not sound as there is nothing stopping the applicant from flowing the well continuously throughout the 3 years. Further, the contribution of the flare (0.059 g/s) is very much less than the contribution of the generators (1.864 g/s). So, even if only one generator was running and the hourly mean NO<sub>2</sub> concentration was halved at R2, it would still be around 9% of the relevant AQS objective which would be classed as a 'slight adverse' magnitude of change using the EPUK-IAQM criteria. Not negligible then.

Therefore, there are absolutely no grounds for downgrading the impact on 1 hour mean NO<sub>2</sub> concentrations by two levels from 'moderate adverse' to 'of negligible significance'.

Rough estimates put the polyaromatic hydrocarbon concentrations in the vicinity of homes located within about 400 metres from the flare (at Kemp's House and Holts House) at around 6 ng/m<sup>3</sup>. This is 24 times the National Air Quality Objective for polyaromatic hydrocarbons (0.25 ng/m<sup>3</sup>) and so air dispersion calculations of this are necessary.

## Balcombe Parish Council response to Angus application WSCC/045/20

Angus Energy has not considered expected dioxin levels in the flare gas. Dioxins are amongst the most toxic chemicals known. They are formed when incinerating chlorine-containing organic substances. Dioxins are known human carcinogens and endocrine disruptors. As considerable amounts of hydrochloric acid have been pumped into the well, it is possible that the 'waste' gas will contain chlorinated hydrocarbons. The dioxin levels of the flare gas should be monitored, and contingency plans should be put in place should dioxins be detected in the flare gas.

Equipment should also be installed to remove hydrogen sulphide (H<sub>2</sub>S) from gases vented or extracted from tanks.

Angus Energy conclude in the Air Quality Assessment that the impact of the operations on pollutant concentrations is negligible. We disagree. And if emissions are not monitored, mitigation in an emergency situation is not possible. A strategy needs to be in place for continuous monitoring of all toxic emissions from the flare, at Kemp's Farm and Holts House. These houses are about 400 metres from the flare, down the prevailing wind. The method of monitoring should not be based on canisters or sorption tubes but on methods that can record spikes in emissions levels and reflect fluctuations in concentrations of emissions.

If it is found that any emissions levels breach safe limits, a strategy must be in place to remedy this situation immediately.

*See "APPENDIX B: Air quality assessment technical report, further details" for a more detailed analysis or air quality issues.*

### **Noise**

RSK (Angus Energy's noise consultant) has prepared a Noise Management Report dated September 2019. On page 16, RSK state that 'If regular exceedances of the project noise criteria are indicated in the results of any noise monitoring equipment at Kemp's Farm, long term noise mitigation measures to protect this receptor will be investigated. Long term noise mitigation is likely to be in the form of a noise barrier.' At the CLG meeting on November 4<sup>th</sup> 2019, managing director Lord Lucan agreed to install acoustic barriers from the start.

Included within the application (appendix 4.2) is the previous Spectrum Acoustic Consultant's noise assessment that states: 'Depending on the outcome of the testing, there may be a requirement for burning of produced gas, commonly referred to as flaring. Noise produced by flaring is variable, being dependent on gas flow rates. Should higher gas flows prevail, noise emission can be controlled by enclosing the flare, throttling back the flow during the sensitive night-time period, or a combination of both. As the flare noise is unpredictable, but is controllable at source, the potential contribution from this source has not been included in the prediction.'

Research suggests that the flare noise at source would be high (the flare will be operating for seven days a week, 24 hours a day), and as it is positioned 13.7m above ground level, will carry on the prevailing winds. Noise may create an unacceptable impact on the surrounding environment and homes and businesses in Balcombe. The predicted noise level within the application does not include the noise level that would be generated from the flare.

## Balcombe Parish Council response to Angus application WSCC/045/20

### Balcombe Parish Council requests:

- That sound barriers be installed before work starts, and that this should be a condition that is rigorously enforced.
- That the application is not considered until an accurately predicted noise level assessment is included, which assumes the flare is run at 100% capacity.

### Drainage and water pollution

#### Poor Documentation

Angus's documents are difficult to follow. There are three different and conflicting references to surface drainage in the application: in the Planning Statement, and the new document from RSK, which contains an appendix from August 2018 on discharge of previous condition 8 to the previous consent.

This appendix references the 2013 applications and the 2017 application and states that 'a new drainage system has been developed for the site' but it is unclear if this new drainage system is since 2017 or 2013.

In all cases there is a rather complex description of the arrangements for surface drainage of the site. None of the drawings clearly depicts the arrangement. However, all descriptions refer to two bunded areas. An oil interceptor is mentioned but it is not clear what it catches nor why it is in the description. When queried at the CLG, Angus stated that this had been removed but the documentation has not been updated.

There are discrepancies in all three references as in the table below.

Date	Document	Bunded dimension
25/09/2019	RSK doc - 890323-R1(0)-FRA (page 1)	28 x 18m, 0.73Ha overall site
	(page 8)	1 in 100 yr plus 30%
10/8/2018	Appendix D – RSK doc P661913 (discharge of Condition 8 to WSCC/040/17/BA granted sept 2017 and Refers to WSCC/063/13/BA)	62.5 x 40m at 300mm high, 750m <sup>3</sup> attenuation. Storage attenuation 475m <sup>3</sup> / 466m <sup>3</sup> required. Stones 90 x 55m
Sept 2019	Planning Statement (Heatons, no doc ref): Clause 8.5, page 16	CIRIA 176: 110% largest (88m <sup>3</sup> ) or 25% all tanks (52m <sup>3</sup> ) or 1 in 100 yr. 30 x 20 m x 0.45m high, effective vol 2400m <sup>3</sup> .

#### Inner Bund

There is an inner pad bunded area around the well head on which the main equipment sits, with storage of runoff and tankering away of fluids collected, lined and bounded by wooden sleepers with ACO "French drains" channelling runoff towards a buried tank or to the cellar. The bunded area is described in each document to various calculated sizes.



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### Outer Bund

The site itself is then stoned with an earth bund around the perimeter and another oil interceptor, which is closed during flow testing. Angus said at the CLG that they don't exactly know where this interceptor is so it might be hard to close the valve! One reference says that there is a membrane under the stoned area, one seems to indicate non(infiltration), one says a membrane will be installed if the EA require it. Again, a conflict of descriptions between the various sections of the application.

### Need for an impermeable membrane across the whole site

The current application specifies the bund suitable for a short duration such as the previous short duration flow test. Now that Angus Energy has applied for a three-year extended well test, a more robust bund is needed, with an impermeable membrane across the whole site.

#### Balcombe Parish Council requests:

- **Accurate descriptions of drainage and protective measures including clarification of the bund should be provided by the applicant.**
- **A more robust bund should be provided than for a short duration.**
- **The time for permitted testing be reduced to the absolute minimum in recognition of the inadequate drainage and protection.**
- **Confirmation that no work will be undertaken until the current membrane is replaced by an impermeable membrane to at least the current sizing. This in view of Angus Energy comments at the CLG.**

### Ecology

RSK (Angus Energy's consultant) has prepared a Preliminary Ecological Appraisal which concludes that the only protected species which may be affected by the works are reptiles, nesting birds and foraging and commuting bats. However, the report states that further actions and mitigations for these species is provided. It is important that these actions and mitigation become conditions of the planned activity.

The report states there will be no direct effects on nearby designated and non-designated sites, but indirect effects (such as run-off, light spill and effects to air quality) need to be considered and previous mitigation plans updated. The report specifically highlights the need to remove the possibility of light spill from the perimeter which can affect commuting bats which are known to use the habitat around the site. Furthermore, bat surveys should continue in the spring, summer and autumn, and that the lighting plan should be updated and agreed with the local authority.

The report highlights nearby streams and concludes that steps should be taken to ensure no contaminated water reaches these water bodies.

#### Balcombe Parish Council requests

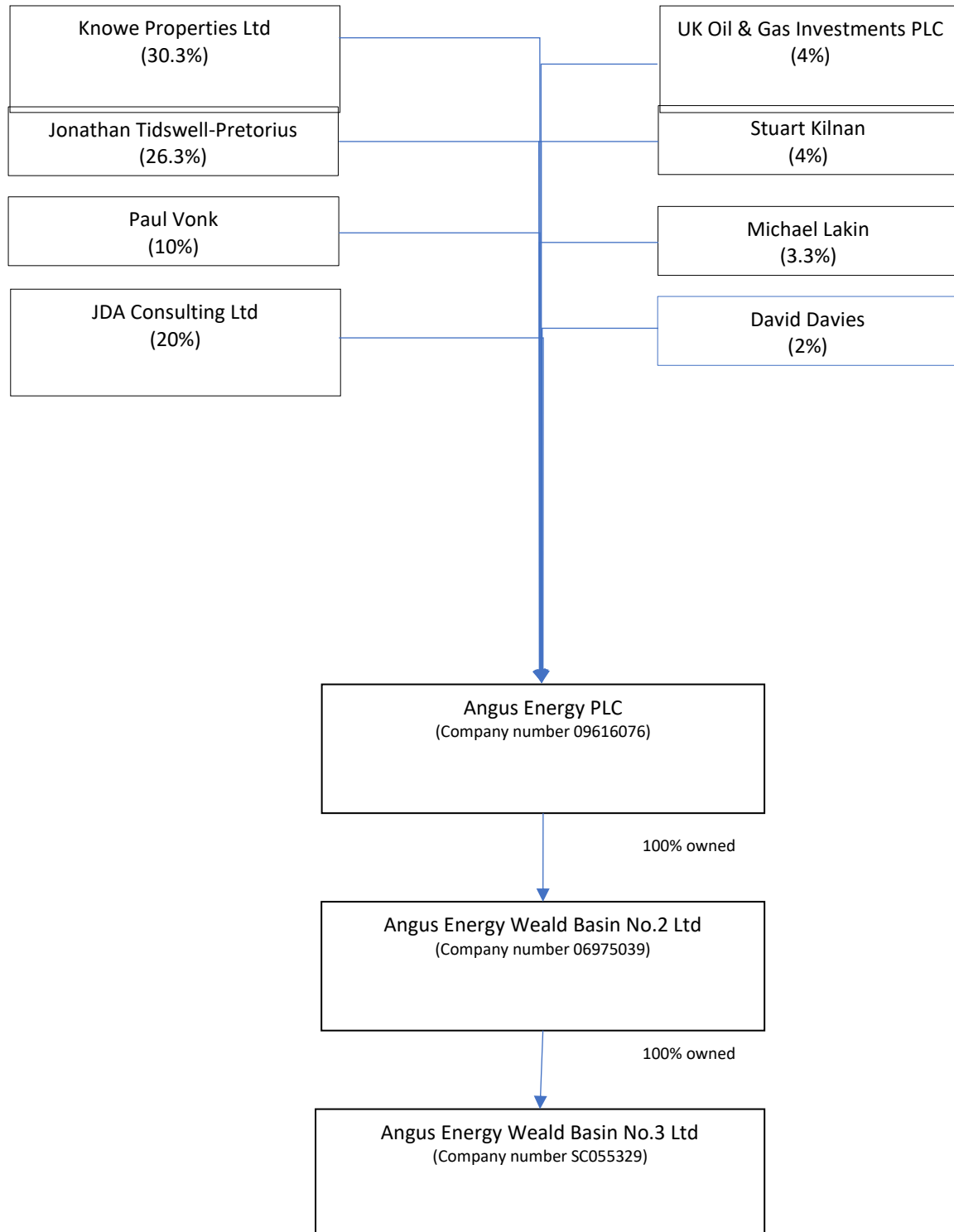
- **Confirmation that the lighting plan will prevent light spill.**
- **Confirmation that steps taken to prevent contamination of groundwater are in place to ensure protection for nearby streams, particularly if the site is not equipped with an impermeable membrane.**
- **Conditions that regular bat surveys be completed throughout the active season, with updates to the lighting plan if required.**

# Balcombe Parish Council response to Angus application WSCC/045/20

## 5. APPENDICES

### APPENDIX A: The applicant's financial condition

Below is a simplified structure of the Angus Energy PLC group :



Source: Angus Energy Annual return (dated 29 June 2016)

## Balcombe Parish Council response to Angus application WSCC/045/20

In assessing the financial capability of Angus Energy Weald Basin No3 Ltd (AEWB No3), Balcombe Parish Council has considered the financial viability and financial capacity of the business and its immediate and ultimate parents, Angus Energy Weald Basin No.2 Ltd and Angus Energy PLC.

Financial viability refers to the historic, current and future solvency of the three entities and the question of whether the companies are expected to remain solvent for the foreseeable future. Financial capacity refers the ability of the three entities to meet all known and anticipated future commitments in respect of licensed and other activities.

As can be seen from the financial statements filed at Companies House and the results summarised in the table below, AEWB No3 has reported operating losses for each of the last five years and net liabilities for four out of the last five years. In addition, AEWB No3's current ratio, an indication of the company's ability to meet its obligations in the short term, has been below one for each of the last four years.

Angus Energy Weald Basin No3 Limited					
£000	30-Sept-18	30-Sept-17	30-Sept-16	30-Sept-15	30-Sept-14
Operating loss	(927.6)	(1,142.6)	(958.9)	(1,070.4)	(354.2)
Accumulated loss	(6,454.9)	(5,527.3)	(4,384.7)	(3,435.6)	(2,351.2)
Net assets set against liabilities	(3,525.9)	(2,598.3)	(1,669.6)	(720.6)	363.8
Current ratio	0.05	0.11	0.32	0.71	1.95

The financial statements for AEWB No3 highlight that the business is not profitable or cash generative. The company is reliant on funding from other group entities, which is a significant and increasing element of the company's current liabilities. While the financial statements for each of the last five years have been prepared on a going-concern basis, the validity of this is dependent upon the continued support from its ultimate parent company, Angus Energy PLC.

AEWB No3's parent company, Angus Energy Weald Basin No2 Ltd (AEWB No2), also reported operating losses for three of the last five years. The company is an intermediate holding company and is neither revenue-generating nor cash-generating.

Angus Energy Weald Basin No2 Limited					
£000	30-Sept-18	30-Sept-17	30-Sept-16	30-Sept-15	30-Sept-14
Operating loss	-	-	(2,268.8)	(5.0)	(4.5)

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Accumulated profit	164.5	164.5	164.5	2,433.2	2,433.9
Net assets set against liabilities	164.6	164.6	164,6	2,433.3	2,434.0

Based on the latest available filings, this means that neither of these companies has sufficient equity in its own right to manage any unforeseen liabilities. This would include potential costs associated with an environmental clean-up and any site restoration costs.

The uncertain revenue stream and ongoing exploration expenses means that both companies are dependent for their working capital and medium-term funding on their ultimate parent company, Angus Energy PLC.

Financial statements for Angus Energy PLC for the last three years also highlight that the ultimate parent company is loss-making and not cash-generative. The consolidated cash flow forecast for the company highlights that the net cash outflow from operations was £1m in 2018 and £2m in 2017.

The company was reliant on raising funding from shareholders in 2018 and 2017. In 2018 and 2017, proceeds from the issuance of shares was £5.1m and £5.6m respectively. A further £3m was raised in 2018 from the issuance of convertible loan notes. These proceeds were used to purchase exploration and oil production assets. Angus Energy PLC meets its day-to-day working capital requirements and medium-term funding requests through shareholder injection.

Angus Energy PLC			
£000	30-Sept-18	30-Sept-17	30-Sept-16
Operating loss	(2,406)	(2,721)	(1,938)
Accumulated loss	(4,597)	(1,882)	(4,384.7)
Net assets set against liabilities	10,108	4,152	152
Current ratio	1.13	6.1	1.11

Standard disclosures included within the financial statements of AEWB No3 and AEWB No2 highlight that these companies are reliant on Angus Energy PLC for support. The directors of Angus Energy

## Balcombe Parish Council response to Angus application WSCC/045/20

PLC, having reviewed the Group's working capital requirements, believe they have sufficient cash and headroom within loan facilities for planned expenditure for the next 12 months.

### **APPENDIX B: Air quality assessment technical report, further details**

According to the Air Quality Assessment Technical Report, 'the highest PC for the 99.79th percentile of the hourly mean NO<sub>2</sub> concentrations at the receptor locations was predicted to be 36.21µg/m<sup>3</sup> at R2.' Again, according to the report, 'The PC at R2 is 18% of the relevant AQS objective which would be classed as a "moderate adverse" magnitude of change using the EPUK-IAQM criteria.'

The report, however, dismisses this assessment as conservative, because 'the results assume the plant (flare and two generators) are operational for an entire year as a worst-case scenarios, when in reality the flare will only operate when the well is flowing and only one generator is expected to be operational at any one time.'

This argument is not sound, nothing prevents Angus Energy from flowing the well continuously throughout the three years. The absence of the second generator is unlikely to make much difference to the hourly mean, as the hourly and annual mean for the generator should be similar because it is running continuously.

There are therefore absolutely no grounds for downgrading the impact on one-hour mean NO<sub>2</sub> concentrations by two levels from 'moderate adverse' to 'of negligible significance'.

Further information is needed from Angus Energy on other toxic emissions not considered by the applicant and which may breach National Air Quality Objectives:

#### **(i) Sulphur dioxide (SO<sub>2</sub>)**

Angus Energy have excluded SO<sub>2</sub> from the air quality assessment on the understanding that no H<sub>2</sub>S is present in the gas being burned. No gas analysis has been produced, however. In 2018, a repugnant and noxious odour was detected at the nearest 'receptor', the B2036 road. An H<sub>2</sub>S level of 1.5% was measured at the well alongside this one in the 1980s. The applicant has declared a sulphur content of 50 mg/Nm<sup>3</sup> in the gas at their nearby Brockham site, producing a mean value of roughly 100 mg/Nm<sup>3</sup> of SO<sub>2</sub> in the flare emissions, with locally much higher values.

At room temperature, sulphur dioxide is a non-flammable, colourless gas with a very strong, pungent odour and is heavier than air. Inhalation is the major route of exposure to sulphur dioxide. Most exposures are due to air pollution, and this has both short-term and chronic health consequences for people with lung disease. Inhaled sulphur dioxide readily reacts with the moisture of mucous membranes to form sulphurous acid (H<sub>2</sub>SO<sub>3</sub>), which is a severe irritant. People with asthma can experience increased airway resistance with sulphur dioxide concentrations of less than 125 micrograms/m<sup>3</sup> when exercising.

## **Balcombe Parish Council response to Angus application WSCC/045/20**

The flare is at a level below Balcombe village and sulphur dioxide may accumulate at ground level in the vicinity of homes.

### **(ii) Polyaromatic hydrocarbons**

Polyaromatic hydrocarbons are by-products arising from incomplete combustion of organic matter. They are frequently released into our environment. They are produced in flares. Many polyaromatic hydrocarbons, for which there is no known safe threshold concentration or exposure time, are strong carcinogens and have been linked to increased incidences of various types of cancer in humans.

Rough estimates put the polyaromatic hydrocarbon concentrations in the vicinity of homes located within about 400 metres from the flare (at Kemp's House and Holts House) at around 6 ng/m<sup>3</sup>. This is 24 times the National Air Quality Objective for polyaromatic hydrocarbons (0.25 ng/m<sup>3</sup>) and so air dispersion calculations of this are necessary.

### **Dioxins**

Angus Energy has not considered expected dioxin levels in the flare gas. Dioxins are amongst the most toxic chemicals known. They are formed when incinerating chlorine-containing organic substances. Dioxins are known human carcinogens and endocrine disruptors. As the operator is pumping considerable amounts of dilute HCl into the well, it is possible that the 'waste' gas will contain chlorinated hydrocarbons.

The dioxin levels of the flare gas should be monitored and contingency plans should be put in place should dioxins be detected in the flare gas.

### **Volatile organic and inorganic chemicals and synergy of emissions from the flare**

Residents near to the flare will be exposed to benzene, ethyl benzene, xylene, toluene, pyrene, benzoanthracene, anthracene, NO<sub>x</sub>, sulphur dioxide, carbon monoxide, radon, soot, and many other combustion emissions. Neither WSCC nor the Environment Agency have any idea of the risk of simultaneous exposure to such a cocktail of chemicals.

Government emissions standards are typically based on the exposure of a grown man encountering relatively high concentrations of a chemical over a brief time period, for example during occupational exposure. They do not address low-level chronic exposure to many chemicals simultaneously - synergy. Laboratory investigations to determine safety limits typically measure exposure to one chemical at a time, while real-life conditions entail simultaneous exposure to

## **Balcombe Parish Council response to Angus application WSCC/045/20**

numerous volatile chemicals, whose affect cannot be predicted. Hence, the synergy of the components of flaring emissions needs to be considered.

Many of the compounds listed above are by-products arising from incomplete combustion of gases. They are much more likely to manifest themselves following combustion in inappropriate equipment such as the proposed flare.

### **Monitoring and mitigation of emissions**

The potential time for flaring to take place is three years. This is completely different from the 2017 application.

The Environment Agency permit EPR/AB3307XD requires monitoring of emissions. WSCC ruled in 2017 that emissions monitoring was not required due to the temporary nature of the 2017 flow test. The three-year flow test of the current application can hardly be considered as 'temporary'.

### **Air emissions from tank venting**

The oil storage tanks are open vented. Fugitive emissions from the tanks could include volatile organic compounds such as benzene, a carcinogen. They could include H<sub>2</sub>S if present in the gas. Fugitive emissions from the tanks are particularly important due to the site location relative to Balcombe village.

The Operator must report to the Environment Agency 'point source emissions to air, specifically the oil storage vessel vent line, in accordance with the Balcombe wellsite environmental permit (EPR/AB3307XD)' (Gas Management Plan, CORP-HSE-GMP-001). These emissions must not be omitted from the Air Quality Assessment.

Further, regular monitoring of the tanks should be undertaken and contingency plans should be put in place in case fugitive emissions from the tanks exceed anticipated levels, or H<sub>2</sub>S proves to be present.

### **Monitoring and mitigation of emissions**

The potential time for flaring to take place is three years. This is completely different from the 2017 application.

The Environment Agency permit EPR/AB3307XD requires monitoring of emissions. WSCC ruled in 2017 that emissions monitoring was not required due to the temporary nature of the 2017 flow test. This situation is very different in the current application. These conditions do not apply to the current application with a 3 year flow test.

If emissions are not monitored, mitigation in an emergency situation is not possible. The flare is 'off the shelf', used for well tests in other locations around the UK, crudely modified to limit the gas flow to 5000 m<sup>3</sup>/day. If the flare does not operate efficiently, incomplete combustion of the gas can lead to the production of high levels of toxic emissions. This is much more likely when



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the combustion is done in equipment that is not specified for the correct gas composition and flowrate, such as the proposed flare.

Constant monitoring of the performance of the flare is therefore vital, as toxic by-products of incomplete combustion will be transported on the prevailing wind towards nearby houses and the village.

A strategy needs to be in place for continuous monitoring of all toxic emissions from the flare at Kemps House and Holts House. These residences are about 400 metres from the flare in the direction of the prevailing wind.

The method of monitoring should not be based on canisters or sorption tubes but on methods which can record spikes in emissions levels and reflect fluctuations in concentrations of emissions.

If it is found that any emissions levels breach safe limits, a strategy must be in place to immediately remedy this situation.

## Balcombe Parish Council response to Angus application WSCC/045/20

### APPENDIX C: HGV Traffic frequency & percentage variation from normal

The following table replicates the information that which has been provided for previous applications on the site.

<b>Activity</b>	<b>Timescale</b>	<b>Total two way movements</b>	<b>Maximum Per Day (two way movements)</b>	<b>% increase in HGV flows</b>
Mobilisation / equipment set up	1 week	65	20	21
Pumping (removal of drilling fluid)	1 week	97	23	24
Mobilisation / equipment set up	1 week	65	20	21
Flow Test	52 to 156 weeks	When Flowing: Approximately 97 two-way movements. This equates to an average of 6 two-way vehicle movements per day. When Shut-in: Approximately 8 two-way movements. This equates to an average of 2 two-way vehicle movements per day.	23  4	24  Average 5  4

Source: WSCC Highways Consultation Response



**BALCOMBE PARISH COUNCIL COMMENTS  
TO WEST SUSSEX COUNTY COUNCIL  
ON THE PLANNING APPLICATION  
BY ANGUS ENERGY WEALD BASIN NO 3 LTD  
APPLICATION NO: WSCC/071/19**

**Location:** Lower Stumble Hydrocarbon Exploration Site, London Road, Balcombe, Haywards Heath, West Sussex, RH17 6JH

**Proposal:** Remove drilling fluids and carry out an extended well test. This proposal is a two-stage activity:

- 1) Pumping out previously used drilling fluids to ascertain any oil flow (up to 4 weeks)
- 2) Should oil be seen to flow, an extended well test (EWT) would be carried out over a period of three years.

**FEBRUARY 7th 2020**

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# Balcombe Parish Council response to Angus application WSCC/045/20

## 1. NOTES

This document was prepared by Balcombe Parish Council's Energy Working Group. It has been adopted by the full Parish Council at an extra Parish Council meeting on February 3<sup>rd</sup>, 2020.

## 2. Background

### Angus Planning Application WSCC/040/17/BA

In 2018 Angus Energy received planning permission (WSCC/040/17/BA) for exploration and appraisal comprising the flow testing and monitoring of the existing hydrocarbon lateral borehole at Lower Stumble, Balcombe. Included in this permission was a time limitation: *"Mobilisation, flow-test, pressure monitoring shall be completed and cease within a period of six months from the date of commencement of development."*

Work commenced in September 2018. Water ingress in the well forced Angus to stop flow testing after about a week. They then removed all the equipment and the bund from the site.

Angus has since analysed the water that flooded the well and have stated that it is fluids left over from previous drillings not water from the aquifer.

As a result of Angus informing WSCC [in error] that the operation had been completed and also due to the six-month time limit, planning permission WSCC/040/17/BA has expired.

### Angus Planning Application WSCC/071/19

The situation is that now Angus need new planning permission to return. Angus are asking permission for an extended well test of three years (a considerable increase from the previous seven days).

Angus assert that water left behind from drilling activity in 2013 is the source of water ingress that stopped their flow testing in 2018. They have therefore included in the borehole preparation stage a process of pumping out the water that has filled the well.

### Main Change between 2017 application and 2019

<u>2017</u>	<u>2019</u>
Flow Testing for seven days	Flow testing for three years.
Flare and Emergency Shut Down Equipment provided from commencement of pumping fluids/gases	No Flare or Emergency Shut Down Equipment provided for initial pumping of fluids. This to be provided for once the equipment is returned.
Impermeable membrane across the whole site built at the start of work	Partial Membrane provided for initial pumping of fluids (until dry oil starts to flow)
No mention of pumping out Borehole water	Borehole preparation includes pumping out water from well

## Balcombe Parish Council response to Angus application WSCC/045/20

<p>Equipment Movement brought onto site once, then removed at completion</p>	<p>Additional traffic movements/site works</p> <ul style="list-style-type: none"> <li>• All the equipment to be removed at the end of the initial pumping of fluids.</li> <li>• The partial membrane to be removed.</li> <li>• A higher quality membrane to be built across the whole site</li> <li>• All the equipment brought back onto site</li> <li>• Plus a flare and ESD installed for the second stage</li> </ul>
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The 2017 Planning Statement states:

### *3.5 Potential Future Production Stage*

*Should the borehole flow testing and pressure monitoring works reveal that there are hydrocarbon reserves that could viably be extracted in the future, then after stage 1 has been completed the borehole would be temporarily suspended, whilst a new planning application was prepared and submitted for the production stage. During this period all plant and machinery would be removed from the site and the land would effectively lie dormant pending the outcome of the planning application."*

2019 Planning Statement states

### *"8.10 Potential Future Production Stage*

*Should the borehole flow testing and pressure monitoring works reveal that there are hydrocarbon reserves that could viably be extracted in the future, then after stage 2 has been completed the borehole would be temporarily suspended, whilst a new planning application was prepared and submitted for the production stage. During this period all plant and machinery would be removed from the site and the land would effectively lie dormant pending the outcome of the planning application."*

The language is the same in both applications, but the 2017 application states a new planning application for the production stage to be prepared after 7 days of testing; whereas in the current one an application for production would be made after three years of testing.

### **3. Objections**

- **Planning Matters**

#### **The application – production disguised as “flow testing”**

The 3-year flow testing period applied for is not a short one, compared with the lifespan of most unconventional wells. The Environment Agency has stated they ‘*would not regard more than 1 year of testing as a short term activity*’. By describing the work as “flow testing” for three years, the applicant is avoiding applying for a production licence. Regulations for a production licence are much stricter than those for flow testing. Angus Energy is trying to avoid applying for a production licence by disguising this application as a ‘flow test’. This should not be permitted.

In the RSK HRA 2019 4.1.2, the applicant states that: *“The EWT [Extended Well Test] will commence with the well being tested to ascertain whether commercial hydrocarbon rates can be achieved. The well test will involve several flowing and shut-in periods to enable full analysis of the reservoir.”*

## Balcombe Parish Council response to Angus application WSCC/045/20

### Balcombe Parish Council (BPC) Request:

- **As a condition to the application, the applicant should define the criteria for achieving commercial success. Without this in place the applicant can produce oil in commercial quantities without restriction and without a production license or planning permission.**
- **As a condition to the application, a similar time constraint as in WSCC/040/17/BA should be imposed on the flow testing stage (i.e. completion after six months of commencement).**

### Co-mingling of Planning Stages

After completion of removal of the formation water and commencement of oil flows, the applicant states that all the equipment will be removed from the site; the bund will also be removed. The fluids produced will be analysed. A decision will be made at this point as to carrying on with a flow test.

BPC believes that once all the equipment and the bund are removed this provides a natural end for the planning application. If the applicant wishes to carry out “testing” and monitoring for oil for three years once the initial oil flow is achieved, this should be in a subsequent application.

### BPC Request:

- **A separate application be submitted for conducting testing and monitoring for oil once the initial oil flow is achieved.**

### Emergency procedures

No site response plan has been seen by BPC. The details in respect of the emergency tank of water for fire-fighting are not clear.

If there is an accident involving hydrocarbons during Stage 1, there is no Emergency Shutdown (ESD) system. There should be an ESD during Stage 1 of the operation as well as in Stage 2. Balcombe Parish Council is not aware of any emergency procedures.

### BPC Requests:

- **An Emergency Shutdown (ESD) system be provided whenever fluids are being pumped from the well. An emergency site response plan should be provided to BPC including details of where the water for fighting the fire will come from.**
- **BPC should be aware of the emergency procedures.**

### Environment Agency Object due to Insufficient Information

On the 11th November 2019 the Environment Agency objected to the application by Angus. The basis of the objection by the Environment Agency was that there was “*insufficient information*” in the application.

Subsequent to the receipt of this objection from the EA, Angus Energy have commissioned RSK to perform an Hydrological Risk Assessment (RSK HRA 2019), and Zetland Group to prepare a Design Philosophy Statement setting out the basis for the design of an impermeable subbase system for Stage 2.



## Balcombe Parish Council response to Angus application WSCC/045/20

Frack Free Balcombe Residents Association has commissioned a review of the RSK HRA 2019 report and the Zetland Group Design Philosophy Statement from hydrologist Trevor Muten BSc, MSc, MPhil, FGS, CGeol, CSci, CEnv, C.Wem MCIWEM, EurGeol, of Tapajós Ltd. The Tapajos report has been sent to the EA, WSCC and to Balcombe Parish Council.

BPC has also obtained the Weatherford Interpretation of Cement Bond Log 2013, and The Final Well Report Conoco (UK) Ltd, Balcombe #1 1986. These reports are referred to by RSK in their Risk Assessment. They can be made available to West Sussex County Council by BPC.

### **Non Compliance with West Sussex Joint Mineral Plan**

The RSK HRA 2019 refers in Section 3.1 to the West Sussex Joint Mineral Plan as policy that is relevant to the assessment of ground water and soils. *“Policy M7a states that proposals for oil and gas exploration and appraisal, including extensions to existing sites will be permitted provided that:”*

*“iii) any unacceptable impacts including (but not limited to) those of air quality and the water environment, can be minimised, and/ or mitigated, to an acceptable level*

*iv) restoration and aftercare of the Site to a high quality would place in account in accordance with Policy M24 whether oil or gas is found or not”*

West Sussex Joint Mineral Plan in Policy M24 states that Proposals for mineral extraction will be permitted provided that they are accompanied by comprehensive restoration and after case schemes that *“make provision for high quality and practicable restoration, management, and aftercare.”*

The only reference to site restoration in the application is in the Angus Planning Statement *“8.9.1 Stage 3 involves removing all of the plant and equipment from the site and restoring the land back to its former use in accordance with best practice and the requirements of the extent environmental permit(s). This will happen at the End of the Extended Well Test.”*

This is insufficient detail.

### **BPC Objects**

- **To the current application as it does not meet the requirements of the West Sussex Joint Mineral Plan.**
- **The RSK HRA 2019 does not show how unacceptable impacts to the water environment can be minimised or mitigated. This is dealt with in the next section.**
- **Hydrogeology Issues**

### **RSK Hydrological Risk Assessment**

Lack of information, oversimplification and subjective misleading statements invalidate the RSK Hydrological Risk Assessment. As a result, it cannot be relied on as an assessment of possible risks to groundwater quality.

### **Contradiction between RSK Risk Assessments 2017 and 2019**

The two hydrological risk assessments prepared by RSK disagree in their description of the geology. The RSK HRA 2017 states that *“no superficial deposits are present in the [Lower Stumble Exploration] Site.”* However, the RSK HRA 2019 determines that the [Lower Stumble Exploration] Site is underlain by Head deposits” Head deposits are generally classed as *superficial deposits*.

## Balcombe Parish Council response to Angus application WSCC/045/20

### Incomplete information

RSK HRA 2019 states that the Head deposits present “beneath the site” are classified as a secondary (undifferentiated) aquifer” and this “*is typical of units that have a variable hydraulic conductivity and where it is has not been possible to fully characterise the rock*”. Trevor Muten in his report suggests that “*the absence of detailed site specific reference to the Head Deposit indicates that the RSK HRA 2019 may not be as thorough or complete as it should be and therefore, undermines some confidence in the assessment of risk*”.

RSK HRA 2019 simplifies the hydrogeology of the Wadhurst Clay by stating that the “*Wadstone Clay is understood to act as an aquiclude, confining groundwater within the underlying Ashdown Formation which is classified as a secondary aquifer at a regional scale*”. [presumably “the Wadstone Clay” is a misspelling.]

The decision to characterise the Wadhurst Clay as a homogeneous impermeable continuous clay has influenced the attitude to risk to the ground water and to their monitoring strategy. As a result, there has been no targeted ground water monitoring of the Wadhurst Clay. This is a significant absence because it means that the RSK HRA 2019 does not provide any understanding of whether or not there are potential pathways within and through the Wadhurst Clay which could provide risk to the ground water.

RSK HRA 2019 describes the “*hydrology of the Ashdown Formation as complex and not well understood*.” They state that the highly variable hydrology and the “*lack of correlation of water levels even between closely situated borehole is a further indication of a patchy, multi-layered aquifer, without a single water table*.” Furthermore, there are springs in the area – locally referred to as chalybeates. The presence of variable hydrology and complex recharging systems, including ephemeral and perennial springs makes understanding the hydrogeology of the Ashdown Beds challenging.

### BPC Requests:

- **A detailed field-based assessment be performed to determine the risks to the ground water including ground water monitoring of the Wadhurst Clay.**

### Misleading and Inadequate Ground Water Sampling

It is important that ground water samples are taken before any drilling activity in order that baselines can be established.

RSK HRA 2019 states

*“The Conoco well, drilled in 1986 (Balcombe 1) identified that the Ashdown Beds contained groundwater that has a relatively high methane and ethane concentration.*

*The following results were reported:*

*\* methane (CH<sub>4</sub>) – 54,000ppm (38.54 mg/l)*

*\* ethane (C<sub>2</sub>H<sub>6</sub>) – 1,335ppm (1.79 mg/l)*

*In addition, the BGS has undertaken a survey of UK groundwater to establish background dissolved methane concentrations. The reported concentrations for the Ashdown Formation are approximately*

## Balcombe Parish Council response to Angus application WSCC/045/20

*0.05mg/l (70ppm), which is less than the concentration reported from the Conoco boreholes and from GGS in 2013.”*

RSK use these results taken from the Conoco Well Report 1986 to argue that the Ashdown Beds (our aquifer) are poor quality for drinking.

However, the Conoco Well Report 1986, which has been obtained by BPC, stated:

*“Background gas averaged 1.25 units and consisted of C1 and C2 down to 540 ft below where only C1 was present. At 178 ft the well flowed 150 bbls of formation water and associated with this was a gas peak of 280 units consisting of 54910 ppm C1 and 1335 ppm C2”. Section 2. Ashdown Beds. 154 ft to 850 ft. Lower Cretaceous”*

RSK HRA 2019 incorrectly implies that the Conoco Well Report in 1986 found the whole of the aquifer has 54,000 ppm of methane (C1) and 1,335 ppm of ethane (C2).

Whereas, in fact the Conoco Well Report stated that these levels referred to a short peak of gas at 178 ft.

**The background gas reported by Conoco in 1986 in the formation water from the aquifer was on average 224 times less than stated in the RSK Risk Assessment.** And from 540 ft to 830 ft the amount of ethane (C2) was zero.

This shows that the water quality of the aquifer did not have high methane and ethane concentrations in 1986 when the first well was drilled on the site. This is contrary to the statement made by RSK in their risk assessment in which they have overstated the methane content by a factor of 224 times (22,400%).

The aquifer has a long history of supplying water to our area and we can find no evidence of methane related problems. The aquifer is now a secondary reserve for the area but this is due to its limited flow rate not its quality.

### **BPC Requests:**

- **Angus Energy and the Environment Agency revisit the Conoco Well Report from 1986 in order to correctly represent the baseline composition of gases in the aquifer.**

### **Longer Data Set Required**

The RSK HRA (2019) of groundwater quality is based on a fairly limited and infrequent groundwater monitoring and sampling from the Ashdown Beds aquifer by Ground Gas Solutions (GGS). GGS took ground water samples in 2013 four times over the period July 2013 to August 2013. This is not sufficient to account for seasonal variability. And they did groundwater monitoring comprising two rounds in 2015, one round in 2016, three rounds in 2017, four rounds in 2018 and three rounds in 2019.

### **BPC Requests:**

- **A much longer data set be obtained and then assessed before drawing conclusions about the baseline conditions.**

## Balcombe Parish Council response to Angus application WSCC/045/20

### Inadequate Water Sampling and Testing

The testing of water samples has not been sufficient to establish baseline figures for continuing water monitoring. There was no analysis of methane, CO<sub>2</sub> and ethane in 2015, 2016, 2017 and 2018. In 2019, water samples were taken only twice, which is insufficient for a meaningful range of figures to be presented in comparison with historic ones. However, the higher measurement of methane in the 2019 range is over 40% higher than in 2013, the CO<sub>2</sub> measurement in 2019 is almost three times the 2013 figure, and the ethane 2019 figure over twice the 2013 figure.

These increases are far beyond what might be expected from natural variation. This is almost certainly due to the well-drilling and associated operations started in 2013. If these unconventional operations have already had this effect on the ground-water samples, we are concerned about the impact of continuing pollution. The risks to groundwater are too great to allow these operations to continue.

The dissolved CO<sub>2</sub>, ethane and methane concentrations in the 2019 groundwater samples show that the change is outside the bounds of natural variation and that it has not recovered in the 6 years since the drilling operations.

Therefore, in Table 1 of the RSK HRA 2019 the impact to groundwater should have been classified as “moderate”. This is because *“A change outside the bounds of natural variation to a large area or an area remote from the development, which will recover over a medium period of time 5-10 years.”*

Water samples have never been tested for the presence of propane and butane, and an inverted Volatile Organic Analysis (VOA) sampling method was not used in 2019 (this was used in 2013). Without this VOA equipment, dissolved gases were allowed to escape. No wonder one of the 2019 samples found no methane or ethane present!

In addition, the isotopic analysis of the methane promised in 2013 has not been presented. This would permit enquirers to determine if the methane was formed biogenically (by the action of bacteria decomposing plant materials on the surface) or thermogenically (underground, from a hydrocarbon deposit formed millions of years ago).

This isotopic analysis must be done in order to determine if the methane present in the groundwater samples is the result of rotting plant materials at the surface or leaks from hydrocarbon reserves deep underground.

### BPC Requests:

- **More samples are taken as soon as possible using the correct method to obtain more data for methane, ethane and CO<sub>2</sub>. The data should be analysed, and the report revised.**
- **Engineering\_Matters**

### Flare

*The EA commented in their objection that “a surge tank appears on the list of equipment, but there are no details about any potential associated flare”.* Angus have now added a flare stack to the list of equipment in Stage 2. However, as the surge tank is present during both Stage 1 and Stage 2, the comment from the EA presumably applies to both stages.

## Balcombe Parish Council response to Angus application WSCC/045/20

However, Angus have stated in their response to the EA's objection that *"The flare stack will only be present for stage 2 operations as this is the only stage where we are hoping to produce oil and therefore when there may be associated gas produced."*

However, during both stages of the operation, fluids will be pumped from the well. Angus will not be able to stop oil or gas coming through with the water during Stage 1. They state that Stage 1 is completed "once the well has been cleaned up and oil begins to be seen". At this point large amounts of gas may be coming through with the oil and being released in the surge tank. There is no provision for routing the gas from the surge tank/ low pressure separator during Stage 1 with the current scheme. With no flare present, these gases will be vented to atmosphere. Operations without a flare pose safety risks as well as environmental risks and health risks to the local population. There is no provision for routing the vapour from the vapour recovery tank. Vapour recovery is meaningless, if the vapour recovered is vented to the atmosphere.

### **BPC Objects:**

- **No flare is provisioned for Stage 1 to burn gases**

### **Emergency Shut Down System**

Angus has not provisioned for an Emergency Shut Down (ESD) system during Stage 1 and so would not be able to shut in the well head instantly in case of fire.

The risks during Stage 1 seem to be largely underestimated. They will still be pumping fluids out of an oil/gas reservoir. The applicant has not explained why Stage 1 is being treated differently to Stage 2. In both Stages, fluids and gases will be pumped from the formation; the only difference is the length of time proposed.

### **BPC Objects:**

- **No Emergency Shutdown Down equipment is provisioned for Stage 1**

### **Impermeable Subbase**

Angus propose that should Stage 1 be successful, the partial bund and equipment will be removed. A fully engineered subbase would then be installed in accordance with the Design Philosophy document provided by Zetland. The equipment returned to the site. This time including a flare and ESD. A series of flow tests would then be run over a period of three years.

RSK HRA 2019 4.2.4 states that *"Key to the robustness of the proposed containment system and to provide protection for the underlying groundwater a construction quality assurance (CQA) plan will be prepared for the retrospective installation of a fully engineered impermeable subbase."*

Zetland have produced a "Design Philosophy Statement for Fully Engineered Impermeable Subbase". This appears to be an explanation of how they would prepare plans for an impermeable subbase. It describes what information would be required and what details would be included in the plan.

It is also noted that in 4.2.4 a containment ditch is mentioned but no details of its capacity are given. There is no mention of a sump or the capacity of a sump.

A promise to provide a plan in the future is not enough. These plans should be detailed and accompany the planning application.

## Balcombe Parish Council response to Angus application WSCC/045/20

Zetland states in section 5. *“Contingent upon the success of Stage 1 of the development (pumping out previously used drilling fluids to ascertain any oil flow (up to 4 weeks), a detailed civil and structural design will be prepared, informed by this Design Philosophy Statement, the geotechnical evaluation, chemical analysis and interpretative reporting.”*

### **BPC Objects:**

- **Application does not contain detailed plans for the containment system.**
- **If the development of a detailed design for Stage 2 cannot be started until Stage 1 is completed, then this is further evidence that these two stages should not be included in one planning application.**

For Stage 1 it is not clear what is the depth of the bund proposed. Section 5.8.1 of the planning statement states 45 cm. From the dimensions in section 5.8.1 and the site plan it seems to be the whole site. However, if that is the case, then it is not clear how loading/ unloading tankers will get into the bunded area. It is not clear from the description whether or not the diesel storage tanks are within the bund.

For Stage 2 there is no information about bunded area, or the dimensions of the liner. As in Stage 1, it is not clear whether or not the whole area is to be bunded, or whether there any lining in the tanker loading/ unloading area.

It is not clear how the interceptor and collection chamber will be emptied. The water is meant to be pumped out and removed by tankers. The documents do not make it clear whether or not there is an area designated for tankers for this purpose. Nor does it explain how spills would be contained. The Zetland diagram (Proposed Wellsite Platform Construction Details) shows a 150 mm pipe from the interceptor to a local stream.

There should be calculations (as the EA pointed out in their objection) showing that firewater (as well as stormwater) will be contained in the bund and the interceptor/ collection chamber, and not overflow and enter the ground. Instead the rainwater/stormwater (the 1 in 100 year rainfall) criterion has now been dropped from the liner description. The calculation they presented in section 5.8.1 does not consider rainwater/stormwater or firewater).

### **BPC is concerned that the intention is to discharge waste into the nearby stream.**

In their November 2019 objection, the EA required *‘calculations which account for all significant structures within the bunded area for both the phase 1 water lift and the extended well test as well’*. These are not included in the recent HRA. They must be given.

The Stage 1 membrane is proposed to contain *‘110% of the volume of the largest tank or 25% of the total capacity of all tanks whichever is the greater.’* This takes no account of stormwater, or firewater (water used to put out a fire). According to the “Discharge of Planning Condition 8” document (Appendix D of the earlier Qualitative Hydrology and Flood Risk Assessment dated 25<sup>th</sup> September 2019) the volume of water produced during the 1 in 100 year event is 466 m<sup>3</sup>. The Stage 1 bund volume is 240 m<sup>3</sup> according to Section 8.5.1 of the Planning Statement dated September 2019. The Stage 1 bund is not large enough to even retain stormwater.

In addition, if a flare is installed for Stage 1 (as it should be) there will also have to be a Test Separator Unit (~4.3m<sup>3</sup> in volume) and associated pipework.

For Stage 2, there are no details of the bunded areas on the plan in Appendix C of the recent HRA.

## Balcombe Parish Council response to Angus application WSCC/045/20

### BPC Requests:

- **Specific, detailed plans and calculations for the impermeable membrane and bund are prepared by the Applicant before planning is granted.**
- **A fully engineered impermeable membrane and perimeter bund proposed for Stage 2 should be provided from Stage 1.**
- **Calculations are presented for the membrane/liner/bund as requested by the EA. The calculations should demonstrate that the bund can accommodate 110% of the volume of the largest tank or 25% of the total capacity of all tanks as well as stormwater (a 1 in 100 year plus climate change event) and firewater runoff for both Stages.**
- **Waste water should not be discharged into the local stream**

### Acid Wash or Acidisation

There is considerable lack of clarity in the description of the use of acid in the applicant's reports. RSK 4.3 states *"stored chemicals will include fuel, hydrochloric acid (20m3)." ... "Acids are not presently found in the formations naturally so release from the test bore, should Contingency 2 be required, will have an immediate and direct impact to the surrounding rock – this is a planned and an intended interaction."* 20m3 is 5,280 gallons of acid and this statement implies they intend penetration of the rock. This contradicts the earlier statement in 4.2 which describes Contingency 2 as *"Acid Wash with CT [coiled tubing]. If an acid wash is required, this will be done with "HCl acid truck (on site only for the day)."*

It is unclear why the Zetland Plans show acid storage tanks when there is no mention of acid in Stage 2.

### BPC Requests:

- **Clarification as to the intended use of acid, the amount to be used and the amount expected to be stored on site.**

### Well Integrity

Our concern is that the RSK Risk HRA 2019 distorts the facts and cannot be relied on. The RSK HRA 2019 makes reference to Cement Bond Logs (CBL) for the Balcombe 2 well to support their conclusion that *"risks to groundwater from failed well integrity are considered to be very low."*

The only Cement Bond Logging was performed by Weatherford in 2013. The Weather CBL Report which BPC has obtained a copy of, describes much of the bonding as *"moderate to poor"*.

The Weatherford CBL was carried out in August 2013 shortly after the Balcombe 2 well was drilled. Since that time a short flow test of the well was carried out in 2018 but this was halted unexpectedly due to water ingress.

The RSK HRA 2019 misleads the reader by stating that the Weatherford CBL 2013 Report support their conclusion that *"all casing strings are cemented properly and provide sufficient isolation to the surrounding formations."* RSK Risk Assessment 4.2.2 *"Release of gas into the surrounding geology is unlikely to occur due to the mitigation from the well design (steel casing and cement sheaths), which have been proven to have good integrity from the results of CBL testing."* 4.3 RSK Risk Assessment *"The construction method and proven well integrity from the CBL shows that acid release into non-targeted formations is unlikely."*



## Balcombe Parish Council response to Angus application WSCC/045/20

The aquifer at Balcombe is at a depth of 153 ft to 830 ft which is precisely the depths where the CBL reveals problems.

The Weatherford CBL 2013 Report rates the cementing at these depths protecting the aquifer as mostly *“Moderate to Poor casing to cement bond and cement to formation”*, and one section (600ft depth to 708 ft depth) is rated as *“Poor casing to cement bond and cement to formation.”* The Weatherford CBL Report recommends that in order to assess the cement bond quality an URS Ultrasonic Radial Scanner (URS) log be performed.

The results of the Cement Bond Logs does not support RSK’s conclusion that the aquifer is protected.

### **BPC Requests:**

- **Further tests on the casing should be performed as recommended by the Weatherford CBL Report. If these further tests show poor casing results, then remediation work should be carried out.**

### **4. Conclusion**

BPC asks that WSCC to refuse this planning application.

BPC believe that the application should be refused on the grounds that the hydrological risk assessment is inadequate, incomplete and misleading.

More work is required including a detailed field-based assessment to determine the risks to the ground water including ground water monitoring of the Wadhurst Clay. The baseline results from 1986 Conoco Well Report should be correctly represented. A more comprehensive data set of water samples should be obtained and then assessed.

Further tests on the Balcombe 2 well casing should be performed. If these tests agree with the results of the CBL carried out in 2013 that the bonding to casing is poor to moderate, then remediation work should be carried out.

However, should the application be granted, we ask that Stage 1 and Stage 2 be treated as two separate planning applications and that full calculations should be made for both of them.

BPC requests that a flare, Emergency Shutdown (ESD) system and a fully engineered impermeable membrane and perimeter bund be provided for both stages.

BPC requests that calculations are presented for the membrane/liner/bund as requested by the EA.