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Maesgwyn Road
Wrexham
LL11 2AR

FAO Case Officer Rhys Rigby
The Planning Inspectorate
Crown Buildings
Cathays Park
Cardiff
CF10 3NQ

30th July 2014

Dear Sir,

Re: Appeal APP/H6955/A/14/2218276

Planning reference: P/2013/0660

Description: Part of field west of Commonwood Farm and south of Borrass Road, Commonwood, Holt, Wrexham.

I would like to support the position of Wrexham County Borough Council in their decision to reject the recent application by GP Energy Ltd at Part of Field West of Commonwood Farm, South of Borrass Road, Commonwood, Holt, Wrexham, LL13 9TF.

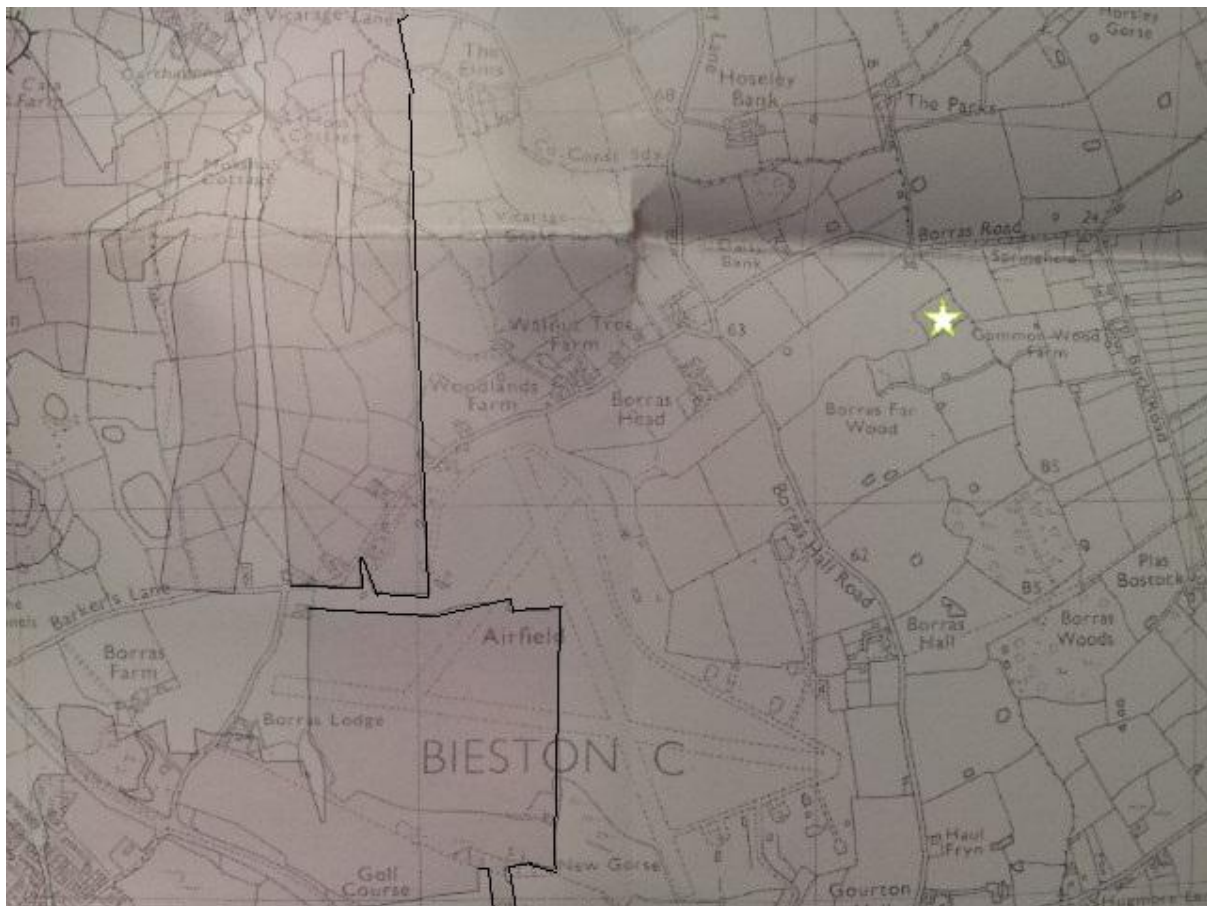
I have concerns regarding the extent to which the appellant has conducted a geological survey of the area. The sections I take issue with are mentioned in the GP Energy Ltd document titled: "Case in support of the Drilling of an Appraisal Borehole for the purpose of Mineral Exploration at land south of Borrass Road, Borrass Head, Wrexham," listed as Supporting Statement in the initial documents. In section 4.34, the following points are noted:

"The information reviewed for each site ensures the following:

- a high level of confidence that potential coal bearing strata is present at the required depths;
- an absence of structural features such as faulting and folding which may affect the target strata;
- the absence of a geological unconformity in close proximity to the top of the target strata which may indicate the potential for historical erosion of the target strata;
- an assessment of sub-surface hazards including deep coal mining, artesian water and the potential presence of swelling clays;
- an assessment of the potential impact of historical volcanism; and
- an analysis of the burial history and stress regime across the basin which may affect the methane content of coal seams."

Also from the same document, in Appendix 2 - Environmental Checklist, under the heading: Past mining activities/disused workings, GP Energy Ltd note that: No evidence of mine workings has been found within the site, though mining for aggregates is currently taking place in the area.

I would suggest this not to be the case, Wrexham County especially around the north is especially faulted. The British Geological Survey have produced a series of maps of this area, published as Technical Report WA/91/4 – Applied geological mapping in the Wrexham area: geology and land-use planning.



The next point regards the faulting present in this part of the county. GP Energy Ltd state they target areas absent of faulting and geological unconformity in close proximity to the site. However, this part of Wrexham is heavily faulted, figures 2 and 3 show the faults and geological boundaries present in the area, as published by the BGS. In figure 2, it is shown that 1 km to the West there is the geological boundary between the Kinnerton Sandstone and Erbistock formation and a little past this there is a fault present.

Closer to the site, there is another fault passing through the adjacent set of fields to the East; this is very near to the site of a water well. This water well, (labelled as “spring” towards the left of the site marking in figure 2), is 159 metres away from the proposed drill site as mentioned on page 88 of Questionnaire Part 6, in the section “Temporary Mineral Appraisal Well – Method Statement” prepared by DART Energy. Springs can sometimes be indicative of underlying geological faults, again also missed by the applicant. Figure 3 gives an overview of faulting in this area of Wrexham. I have not seen any of this noted in the documents submitted and the potential impacts it may have on the planned drilling work, the movement of gas and the potential to act as a path for water movement.

Figure 2: Fault lines and geological boundaries in the vicinity of the appeal site (marked with a star), grid square is 1 km, from BGS map.

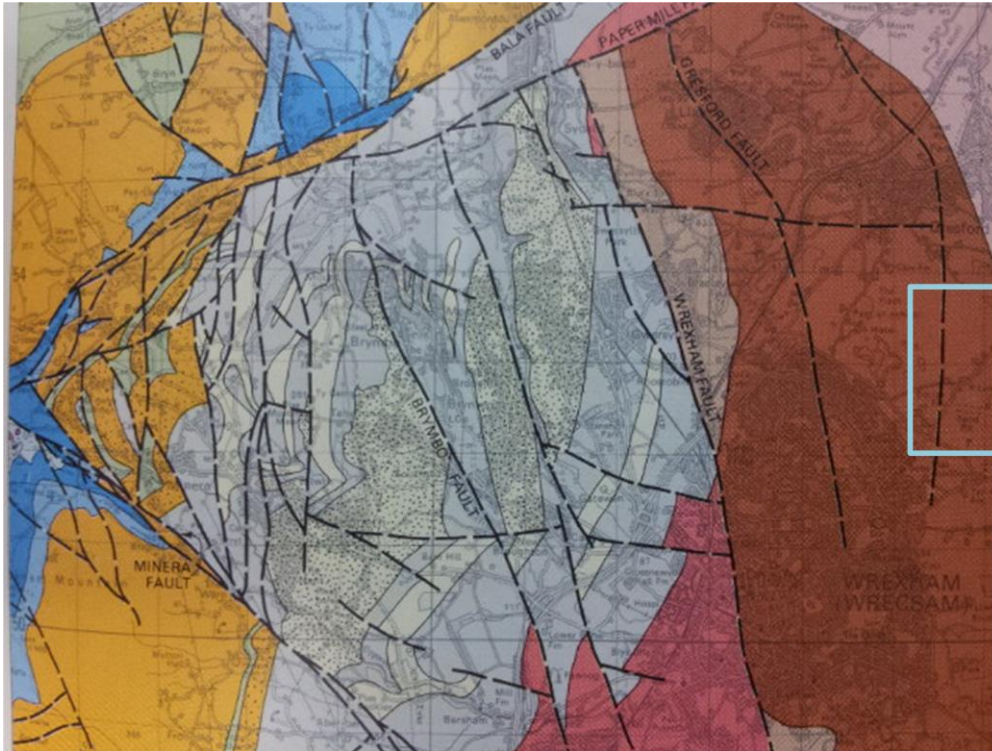


Figure 3: Faults and geological boundaries in the wider area, the appeal site is to the right of this image. Figure 2 begins in the annotated box

Geological faults can often not be identified from a single borehole, reasons as to why geological faults are important for this type of borehole assessment are noted by The Geological Society and The Petroleum Exploration Society Of Great Britain in their Submission To Royal Society/Royal Academy Of Engineering Inquiry Into Shale Gas and also by David Smythe, Emeritus Professor of Geophysics, University of Glasgow in his submission to the House of Lords Economic Affairs Select Committee on The Economic Impact on UK Energy Policy of Shale Gas and Oil in November 2013. The salient points from the House of Lords submission and applicable in the case of the exploratory well are:

- “Faults are often missed even when a vertical well is drilled. This is because the drilling process grinds up the rock, which is identified only by the cuttings coming back up with the returning drilling fluid. So it is not surprising that a fault, which is characterised in detail by ground-up, crushed and fractured rock, often cannot be seen. Even if the well is cored, which involves the taking of a solid intact cylinder of rock from the inner zone of the drilling, faults can be difficult to recognise with certainty.
- Permeability is a general term applied to fluids (liquids and gases); it is a measure of how easily a fluid can flow through the medium. There are dozens of academic research groups and oil-Industry service companies working on the problem of whether faults act as conduits or as barriers to fluid flow. The default position in the hydrocarbon industry is the conservative one, that faults do not act as seals; in other words, they are leaky (permeable) unless proved otherwise. In conventional oil or gas exploration, if a fault is wrongly judged to be a seal when in fact it is permeable, no damage is done, other than to the bank balances and share prices of companies and individuals. However, in the

case of shale gas exploitation, the consequences of assuming that faults act as seals may be extremely damaging to the environment.”

Faults can break up coal seams into discrete sections with variable gas content across each part. In this context it is hard to evaluate a single application as a one off on its own merits, without referring to the overall picture. The applicant refers to wells granted permission and drilled in the Wrexham/Cheshire area, these were both reported by DECC and located on the England side of the border, Churton1, Cheshire (approx. 6 km away) and Lesters Lane1 (approx. 9 km away), mapped on figure 4. In the geological context this should be argued as being part of the same development, with the new site being an extension of the plan. In this instance the references to the issues being only a temporary problem do not hold true, as many similar developments in the same area, undertaking the same activities, looking for the same thing, begin to resemble something of a more permanent nature. There will also be many places where the underlying aquifer has been punctured in a small area, which could cause problems, due to concrete failure, steel corrosion etc., if the abandoned wells are not subject to stringent monitoring for the remainder of their life.



Figure 4: Map showing previously drilled exploratory CBM boreholes in the area by DART Energy (Churton1) and Green Park Energy (Lesters Lane1). Does not include further planned sites, well locations from DECC.

In order to fully appraise a site, one would first need to have a thorough assessment of the underlying geology. I have not seen this addressed in the supporting documents or in documents so

far located for the other exploratory wells and therefore, from my own research, believe the application for an exploratory borehole to be located in an inappropriate position in this instance.

I would be very grateful if I could be informed of the decision when the appeal process is concluded.

Yours sincerely,

Mr Matthew Evans
BSc MSc PgCert AMRSC

References

1. BGS Technical Report WA/91/4 – Applied geological mapping in the Wrexham area: geology and land-use planning.
2. The Geological Society and The Petroleum Exploration Society Of Great Britain in the Submission To Royal Society/Royal Academy Of Engineering Inquiry Into Shale Gas. Available at: http://www.pesgb.org.uk/media/uploads/society/GSL-PESGB_shale_gas_submission_to_RS-RAE_final.pdf [Last accessed: 31st July 2014]
3. David Smythe, Emeritus Professor of Geophysics, University of Glasgow submission to the House of Lords Economic Affairs Select Committee on The Economic Impact on UK Energy Policy of Shale Gas and Oil in November 2013. Available at: <http://www.davidsmythe.org/fracking/Smythe%20shale%20gas%20submission%20to%20HoL%20v1.5.pdf> [Last accessed: 31st July 2014]
4. DEEC Landwells 25th July 2014
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[Last accessed 31st July 2014]