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## Penderfyniad ar yr Apêl

Ymchwiliad a gynhaliwyd ar 22&23/05/12  
Ymweliad â safle a wnaed ar 11/06/12

gan Emyr Jones BSc(Hons) CEng  
MICE MCMI

Arolygydd a benodir gan Weinidogion Cymru

Dyddiad: 06/07/12

## Appeal Decision

Inquiry held on 22&23/05/12  
Site visit made on 11/06/12

by Emyr Jones BSc(Hons) CEng MICE  
MCMI

an Inspector appointed by the Welsh Ministers

Date: 06/07/12

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**Appeal Ref: APP/Z6950/A/11/2167112**

**Site address: Unit 1 Llandow Industrial Estate, Cowbridge CF71 7PF**

**The Welsh Ministers have transferred the authority to decide this appeal to me as the appointed Inspector.**

- The appeal is made under section 78 of the Town and Country Planning Act 1990 against a refusal to grant planning permission.
  - The appeal is made by Coastal Oil and Gas Limited against the decision of The Vale of Glamorgan Council.
  - The application Ref 2011/00812/FUL, dated 13 August 2011, was refused by notice dated 21 October 2011.
  - The development proposed is to drill and test the insitu lower limestone and associated strata for the presence of gas.
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### Decision

1. The appeal is allowed and planning permission is granted to drill and test the insitu lower limestone and associated strata for the presence of gas at Unit 1 Llandow Industrial Estate, Cowbridge in accordance with the terms of the application, Ref 2011/00812/FUL, dated 13 August 2011, and the plans submitted with it, subject to the following conditions:
  - 1) The development hereby permitted shall begin not later than five years from the date of this decision.
  - 2) No operations authorised by this permission, with the exception of the site restoration works set out in Section 7.10 of the supporting statement submitted with the application, shall take place after a period of 10 weeks following the commencement of drilling operations on the site, unless otherwise agreed in writing with the local planning authority.
  - 3) The drill rig and all other items of plant and equipment to be used in the drilling operations hereby approved shall each have a typical noise level at 1 metre not exceeding 74 dB(A).
  - 4) No operations authorised by this permission shall take place until details of a scheme to mitigate noise impacts at the nearest residential and commercial properties, as well as the bat roost to the west of the site, has been submitted to and approved in writing by the local planning authority. All operations shall subsequently be carried out in accordance with the approved details.
  - 5) Notwithstanding the submitted documents, prior to any drilling taking place, a detailed working method statement for the drilling operation, to include methods

- to minimise the risk of the loss of drilling fluid to ground water resources during the drilling process and monitoring for any loss of drilling fluid, as well as measures for the collection and disposal of spilt drilling fluid, shall be submitted to and approved in writing by the local planning authority. All operations shall thereafter be carried out in accordance with the approved details.
- 6) Monitoring and assessment of vibration from the operations shall be carried out in accordance with the vibration methodology below unless otherwise agreed in writing with the local planning authority.
    - i) An acceptable datum level of vibration will be agreed with the local planning authority prior to drilling commencing.
    - ii) The inherent vibration of the drill rig will be monitored before transporting to site.
    - iii) Normal prevailing vibration over the drilling area will be measured at the nearest residential and commercial properties before drilling commences.
    - iv) From the commencement of the drilling operation, vibration will initially be continuously monitored without interruption; at times when the drill is both in use and not in use. Monitoring will take place at both the nearest residential and commercial properties. The duration of continuous monitoring will be agreed with the local planning authority once representative vibration data has been compiled and assessed.
    - v) Once the recorded vibration level approaches 10% below the agreed datum level, drilling will cease.
  - 7) Any facilities for the storage of oils, fuels and chemicals shall be sited on impervious bases and surrounded by impervious bund walls. The size of the bunded compound shall be at least equivalent to the capacity of the tank plus 10%. If there is multiple tankage, the compound shall be at least equivalent to the capacity of the largest tank plus 10%. All filling points, vents and sight glasses shall be located within the bund. There shall be no drain through the bund floor or walls.
  - 8) Full details of a scheme for the disposal of foul and surface water drainage shall be submitted to and approved in writing by the local planning authority and the approved scheme shall be fully implemented prior to any drilling operations or site preparation taking place. The submitted scheme shall include proposals for the treatment and disposal of suspended solids from surface water runoff and shall include emergency procedures to be implemented where any failure results in the pollution of controlled waters.
  - 9) Within three months of the completion of drilling and testing operations, all plant, machinery, buildings and the bund compound shall be removed from the site and the site shall be restored in accordance with the details set out in Section 7.10 of the statement entitled Accompanying information submitted with the application or any alternative scheme that may first be agreed in writing with the local planning authority.
  - 10) The works to prepare the site for drilling, construct and dismantle the drill and equipment, and restore the site shall not take place outside the hours of 08:00 to 18:00.
  - 11) Any lighting shall be in accordance with details previously submitted to and approved in writing by the local planning authority.
  - 12) Any drilling shall only be carried out between the months of October to March inclusive.

### Application for costs

2. At the Inquiry an application for costs was made by Coastal Oil and Gas Limited against The Vale of Glamorgan Council. This application is the subject of a separate Decision.

### Main Issue

3. I consider the main issue in this case to be the effect of the proposal on the quantity and quality of groundwater supplies in the vicinity of the site.

### Preliminary matters

4. A significant number of objectors raise concerns as to possible future proposals for gas extraction and the process known as hydraulic fracturing in particular. Whilst I understand these concerns, the proposal before me does not include extraction, whether by hydraulic fracturing or otherwise. Any extraction proposals would require a further application and the *Vale of Glamorgan Unitary Development Plan* (UDP) makes it clear that the grant of planning permission for mineral exploration will not indicate a presumption in favour of future exploitation of any minerals found. I cannot, therefore, take these concerns into account in my determination of the appeal.
5. It was suggested that UDP mineral policies do not apply to gas as no reference is made to it. However, the UDP notes that surveys for hydrocarbon resources were carried out over much of the western Vale in the early 1990's and one of its objectives is to encourage the best and most efficient use of all available resources. It acknowledges that, in the event of renewed exploration activity, it will clearly be necessary to address the policy issues raised in a review of the plan. In the meantime, it recognises that the existing policies will provide an adequate framework for decision-making.
6. The UDP safeguards land at the Llandow Trading Estate for uses falling within Use Classes B1, B2 and B8. Nonetheless, the proposal relates to a temporary development lasting no more than 10 weeks, including contingencies, such that there would be no real conflict with the underlying objective of securing adequate provision of employment land. Interested persons draw attention to lease clauses which may preclude exploratory drilling on the site, but this is essentially a private matter between the appellants and the landlord.
7. Some objectors questioned the need to explore for gas reserves at all. Nevertheless, the Welsh Government's *Energy Wales: A Low Carbon Transition* states that gas will be a key transitional fuel because green house gas emissions from gas are significantly less than coal subject to the method of extraction. It goes on to note that gas is a flexible, responsive and reliable source of energy which can play a key role in the transition to a genuinely low carbon energy system. Likewise, the Department of Energy and Climate Change's *Overarching National Policy Statement for Energy EN-1* indicates that fossil fuel power stations will continue to play an important role in our energy mix as the UK makes the transition to a low carbon economy.
8. It has also been suggested that the proposal should have been subject to Environmental Impact Assessment (EIA), but it was screened by the Council and it was determined that EIA was not required. The proposal does not fall within any of the descriptions given in Schedule 1 of *The Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999*, as amended. Whilst Schedule 2 of the same regulations includes deep drillings, the site is not in a sensitive area and the applicable thresholds and criteria refer to the area of the works exceeding 1 hectare which would not be the case here.

9. Schedule 3 of the Regulations refers to the need to consider the characteristics of the development having regard in particular to, amongst others, the cumulation with other development. However, it is only when development meets the threshold within Schedule 2 that one should go on to consider Schedule 3. The assessment of whether an application relates to a Schedule 2 application or not is to be decided by reference to the application for development consent applied for and not any development contemplated beyond that. I, therefore, conclude that the proposal is not EIA development.

## Reasons

### Groundwater

10. The application was refused planning permission on the basis of Dŵr Cymru/Welsh Water's (DCWW) belief at the time that there would be a very small risk of contamination of their reserve groundwater sites in the Vale of Glamorgan from the proposed exploratory drilling. They also indicated that, if there was an excessive loss of drilling fluid to the aquifer during the drilling procedure due to unforeseen geological features being met, then this level of risk would increase. However, DCWW have subsequently confirmed that they did not object to the planning application and, following further discussions with the appellants, now believe that there would be an insignificant risk of pollution of their sources given the nature of the drilling operation.
11. It is also of particular significance that DCWW indicated that they would expect the Environment Agency (EA) to consider the vulnerability of their groundwater sources and wider impact upon the water environment as part of the permitting process. The EA is the relevant regulatory authority insofar as groundwater pollution is concerned. The supporting text to UDP policy ENV 29 notes that advice will be sought from the relevant regulatory authorities, including the EA, and *Minerals Planning Policy Wales* emphasises the need to consult the EA. In this particular case, the EA did not object to the proposals, subject to the imposition of appropriate planning conditions.
12. The abstraction points for the reserve groundwater resource are some 7.8km and 8.6km from the appeal site and the nearest point of the resource's catchment is located over 3.7km away. Over this distance, the geology generally dips to the south (away from the resource) and then up and over a large anticline. Any drilling fluid lost would have to rise over the anticline, flow against the hydraulic gradient, and cross a series of faults with throws of at least 20-30m and around 1.5m of broken material between the fault planes, to reach the reserve groundwater resource. The most significant aquifer in the resource is the carboniferous limestone. This is known to have a low primary porosity with the flow being dominated by fracture/fissure flow and, because of overburden pressure, only the uppermost 100m or so is likely to be effective in transmitting water. As a result, I am satisfied that the risk of drilling fluid being transported towards the reserve groundwater sources, should there be any losses, would be negligible.
13. Furthermore, the risk of drilling fluid being lost to the formation in the first place would be minimised by using fluid of an appropriate density/viscosity and steel casing cemented in place in the carboniferous limestone forming the main aquifer. The use of a closed loop system would facilitate monitoring for any loss of drilling fluid through observation of the levels in the tanks, with excessive losses being addressed by the addition of materials that would swell and block the fractures where water was being lost.

14. The anticipated drilling fluid is a proprietary product known as 'Pure-Bore'. This is a biopolymer which biodegrades naturally within 8 to 52 weeks and is commonly used to drill water wells without contamination problems arising. It has been accredited by the Centre for Environment, Fisheries and Aquaculture Science (part of DEFRA) for use in the marine environment.
15. I have no reason to believe that bacteria, which would treat the product as a food source, are not found in the aquifer, particularly the uppermost layer which is likely to be effective in transmitting water. In any event, the manufacturer reports that it is still capable of breaking down in connate water (water trapped in sediment or rock at the time of deposition). Assessment using juvenile *Daphnia Magna* shows a minimal toxicity indistinguishable from the degree of error involved in the test at a 1:10,000 dilution. Whilst 42% of the organisms were immobile after 48 hours at a 1:1,000 dilution, this is likely to be due to the product's oxygen demand rather than any chemical toxicity.
16. Although not recorded on any public registers, there are private boreholes much nearer the site than DCWW's which are used to extract drinking water for consumption by humans and farm animals. Nevertheless, the process would be comparable to that used in the drilling of an additional water abstraction borehole. The monitoring would ensure that, if any fluid were to be lost, its volume would be extremely limited with high rates of dilution taking place within a limited radius of the borehole such that the risk to private water supplies would be minimal.
17. The site has a long history of military aviation and industrial use such that it is possible that some of the land is contaminated. Nevertheless, the top section of the borehole would be sealed after a day or so and before drilling progressed into the underlying limestone thereby preventing any contaminated groundwater near the surface from migrating downwards. I note that the concrete slab on the site is broken in places such that additional measures may be required to ensure that spilled drilling fluid can be collected and disposed of. Nonetheless, that is a matter of detail which could be adequately addressed by modifying the agreed condition relating to a detailed working method statement for the drilling operation.
18. The borehole would be sealed in accordance with guidelines published by the EA in *Decommissioning Redundant Boreholes and Wells* and I have no reason to believe that this would pose a threat to groundwater supplies. The density of the drilling fluid and the blow out preventer required to satisfy HSE guidance would provide adequate safeguards against gas escaping to the surface.
19. For the above reasons, I conclude that the proposal would not harm the quantity and quality of groundwater supplies in the vicinity of the site.

#### Other matters

##### *Noise and vibration*

20. The application proposes 24 hour working during the drilling, testing and restoration phases, but no justification was given for this. At the Inquiry, the appellants' geologist explained that the need arose from the significant extension in drilling time that would result from having to carry out additional operations at the start and end of each shift and the need not to compromise the structural integrity of the borehole.
21. The application was accompanied by a Noise Assessment which shows that the night time background noise level at the nearest dwelling (Six Wells Cottage) approximately

260m away is 20 dB(A) $L_{90}$ . This is well below the level at which it would be appropriate to use BS4142:1997 'Method for Rating Industrial Noise Affecting Mixed Residential and Industrial Areas' for assessment purposes. It also predicts that, taking account of distance and screening losses, the noise at Six Wells Cottage from the drilling rig would have an equivalent continuous level of 25 dB(A) $L_{Aeq}$  and, taking account of the characteristic features of the noise, a rating level of 30 dB(A) $L_{Ar,Tr}$ . Allowing for a 15dB loss through a partially open window, noise levels would, therefore, be well below the 30 dB(A)  $L_{Aeq,8hr}$  limit for sleep disturbance given in World Health Organisation (WHO) 'Guidelines for Community Noise - 1999'.

22. However, the Noise Assessment only considers the drilling rig whilst the operation would also require such items as a shaker screen, pump and generator. Nonetheless, I have no reason to doubt the evidence of the appellants' geologist that the drilling rig is by far the noisiest item of equipment. The drill rig used in the assessment generates a typical noise level of 74 dB(A) at 1m and an unshielded 30Kva generator has a rating of around 65 dB(A). Even if the shaker screen and pump were individually as noisy as the rig, overall noise levels at the site would only be a few dB(A)'s higher, and could be controlled by the good practice suggested in the assessment. Given that the predicted levels from the rig inside bedrooms with windows partially open are well below the WHO guidance figure for sleep disturbance, I am satisfied that the overall level would also be below the limit such that residential living conditions would not be materially harmed.
23. The nearest offices are around 60m away and the appellants' noise consultants predict that the noise from the drilling rig would be some 48 dB(A) outside the nearest office, with a 15dB reduction through a partially open window giving 33 dB(A) inside. This can be compared with the 40-50 dB(A) quoted for offices in *BS8233 Sound Insulation and Noise Reduction for Buildings*. For the same reasons as given for Six Wells Cottage above, I consider that overall levels would also be below the lowest figure quoted in BS8233 and there would not be an unacceptable impact on businesses on the business park/industrial estate. It has been suggested that some businesses would relocate if the appeal was allowed but, given that I have not identified an unacceptable impact, there would be no reason for such action.
24. I recognise that tents and caravans would not achieve the 15dB reduction through a partially open window previously referred to and that customers are attracted to the neighbouring Caravan Park by the relatively quiet night time environment. Nevertheless, the Caravan Park is in the region of 800m away with the Noise Assessment predicting an equivalent continuous level of 15 dB(A) $L_{Aeq}$  (which is lower than the minimum consistent  $L_{A90}$  background noise levels measured) and a rating level of 20 dB(A) $L_{Ar,Tr}$ . Even allowing for a slight increase to reflect the contribution from other plant and equipment, overall levels would still be relatively low such that there would be no material impact on the Caravan Park or tourism in general.
25. An interested person raised the issue of noise impacts on persons with brain and central nervous system conditions. Although they may well be more susceptible to noise, I have no evidence that would lead me to conclude that the noise generated would be sufficient to significantly harm the living conditions of any such persons living in the immediate vicinity of the site. I also note that the Council's Environmental Health Officer offered no objection on noise grounds.
26. Concerns were also raised as to vibration, but the appellants' geologist has never experienced any problems in that regard. In view of the intention to use rotary rather than percussive drilling methods and the existence of up to 5m of made ground and

glacial till which would absorb surface vibrations, I have no reason to believe that vibration levels would pose any particular problems. The agreed condition would provide further safeguards in this respect.

*Protected species*

27. The Countryside Council for Wales notes that the site is within 800m of a known lesser horseshoe bat maternity roost site and in an area where great crested newts are known to occur. It indicates that the nature of the proposals and resultant effects such as noise, vibration and lighting have the potential to affect both species. The appellants Ecological Assessment demonstrates that the site has negligible potential as dispersal, foraging and hibernating grounds for great crested newts, and offers very low potential for supporting commuting and foraging bats - as confirmed by the results of the single night's survey undertaken. It is also noted that the high level of existing lighting on the industrial park is a contraindicative factor for foraging and commuting lesser horseshoe bats.
28. It states that the effect of noise on bats is very complicated and difficult to predict with numerous studies showing that noise levels decrease foraging efficiency and in some situations even very low changes in noise levels can lead to roost abandonment. Conversely, provided background levels are consistent, lesser horseshoe bats have been found roosting in large numbers beneath motorway bridges and in the middle of industrial complexes. There does not appear to be any published literature suggesting that great crested newts are particularly sensitive to increased noise levels and there is very limited published information documenting vibration impacts on bats or great crested newts.
29. The Noise Assessment predicts an equivalent continuous level of 15 dB(A) $L_{Aeq}$  (which is lower than the minimum consistent  $L_{A90}$  background noise levels measured) and a rating level of 20 dB(A) $L_{Ar,Tr}$  from the rig at the lesser horseshoe bat roost and great crested newt ponds. Even allowing for a slight increase to reflect the contribution from other plant and equipment, noise impacts would still be low, and vibration levels at these locations would not be significantly higher than background levels.
30. On the basis of the evidence before me, I am satisfied that the proposal would not harm protected species.

*Traffic, visual impact, and dust*

31. Interested persons are concerned as to the volume of traffic that would be generated. However, the site is on a business park/industrial estate which is likely to generate a substantial volume of traffic including HGVs, which would be further increased if all the plots/units were occupied. In contrast, the proposal would involve around 18 HGV movements to bring plant and equipment to the site at the start, a similar number to take them away at the end, together with around 8 regular HGV servicing movements per week. This is unlikely to be significant in the context of overall HGV movements to the business park/industrial estate.
32. The site is in relatively poor condition and is largely surrounded by industrial/commercial buildings. In such circumstances, the temporary siting of a 12m high rig and associated equipment would not have an unacceptable visual impact. Given the intention to use a drilling fluid, I have no reason to doubt the Council's view that there are no objections to the scheme on the basis of dust.

## Conditions

33. The Statement of Common Ground includes a list of conditions with reasons agreed between the Council and appellants. Subject to the specific matters addressed below and minor modifications in the interests of clarity and precision; I am satisfied that these are necessary and should be imposed for the reasons given.
34. *Minerals Planning Guidance Note: The Control of Noise at Surface Mineral Workings* (MPG 11) advocates setting limits at noise sensitive properties. However, given the very discrete area of the proposed operations, as compared to most mineral extraction sites, the Council's Environmental Health Officer favours setting limits on individual items of plant in this case. I accept his reasoning and agree that the limit should be set at that of the drilling rig used in the Noise Assessment.
35. I have already referred to good practice recommended in the Noise Assessment and adherence thereto, as well as measures such as acoustic enclosures, could be secured by an additional condition requiring a noise mitigation scheme to be subject to prior approval and thereafter complied with. I have also referred to the need to modify the agreed condition requiring the detailed working method statement for the drilling operation to incorporate measures to collect and dispose of spilt drilling fluid.
36. The agreed condition on transporting the rig, drill pipes, cabins and other equipment to the site conflicts with guidance in Circular 35/95 on *The Use of Conditions in Planning Permissions* to the effect that planning conditions are not an appropriate means of controlling the right of passage over public highways. Furthermore, the business park/industrial estate is likely to attract a substantial number of HGV movements throughout the day. Those associated with the proposal would be unlikely to result in a significant increase such that I see no reason to restrict these movements to night time.
37. The submitted Ecological Assessment includes a number of recommendations to mitigate the potential impacts on protected species. Those relating to lighting could be addressed by requiring lighting to be subject to prior approval, which would also control light pollution in general. Limiting drilling operations to the period between October and March to coincide with the period of lowest bat activity should be conditioned. This would also ensure that drilling operations would not coincide with the holding of the National Eisteddfod in the vicinity during August of this year and that they would take place when there is less likelihood of bedroom windows being left open at night and the Caravan Park being at its busiest. The six recommendations on operational procedures could be covered by the noise mitigation scheme previously referred to.
38. The suggested monitoring at the bat roost would require the agreement of the appropriate landowner and there is no guarantee that this could be obtained. In any event, the predictions are that noise levels at the bat roost would be very low with vibration not being significantly above background levels. Subject to limiting drilling to certain months and the noise mitigation scheme, monitoring is not necessary.
39. Because the proposed drilling fluid is a standard one accredited by DERFRA, the EA sees no need for it to be subject to an ecological assessment. As spent drilling fluid is to be treated as controlled waste and disposed of accordingly, the EA does not consider it necessary for it to be tested to see if mobilisation of hazardous substances from underlying strata has taken place. I accept the advice of the Agency and will not impose conditions relating to these matters.



Overall conclusion

40. For the reasons given above, I conclude that the proposal does not conflict with UDP policies MIN 1 and ENV 29 and that the appeal should be allowed.

*E Jones*

Inspector



## DOCUMENTS

- 1 Council's notification of Inquiry and list of those notified
- 2a-c Bundle of 3 late representations received by the Council
- 3 Council's Response to Appellants' Costs Application
- 4a-b E-mail trails re. submission of Messrs Patten & Taylor's Statements of Evidence
- 5 E-mail from Hunter Acoustics re. noise at closest offices
- 6 Noise Impact Assessment, Revision 1
- 7 Ecological Assessment
- 8 E-mail re. Pure-Bore Drilling Fluid
- 9 Appellants' Costs Application
- 10 Letter from Minister for Environment, Sustainability and Housing, submitted by Mr Cairns
- 11 Three Nooks Farm Timeline, submitted by Mr Chyba
- 12 Executive Summary of "Review of requirement for sealing investigation boreholes" by Prof. Robert Chaplow of R Chaplow Associates Ltd., submitted by Mr Chyba
- 13 Extract from The Wall Street Journal, submitted by Dr Pearce
- 14 Mr Clubb's further submission
- 15 Barry & Vale Friends of the Earth's Statement
- 16 Mr Benjuya's further statement
- 17 Mrs Thomas' Statement
- 18a-c Appellant's Inquiry Bundles 1-3

Documents 4 to 9 and 18a-c were submitted by the appellants