

PINS References: APP/Y2003/W/17/3173530 & 3180606 & 3182879

Appeal by Egdon Resources U.K. Ltd

# Rebuttal Proof of Evidence of Mark A. W. Abbott on behalf of Egdon Resources U.K. Limited

Application for the retention of the existing Wressle-1 wellsite and access road and long-term production of hydrocarbons, Lodge Farm, Clapp Gate, Appleby, Scunthorpe, DN15 0DB

Town and Country Planning Act 1990 (as amended)

October 2017

**Rebuttal Proof of Evidence of Mark A W Abbott  
on behalf of Egdon Resources U.K. Limited**

Application for the retention of the existing Wressle-1 wellsite and access road and long-term production of hydrocarbons, Lodge Farm, Clapp Gate, Appleby, Scunthorpe, DN15 0DB

Proof of Evidence of: Mark A W Abbott  
Egdon Resources U.K. Limited  
98 High Street  
Odiham  
Hampshire  
RG29 1LP  
  
Tel: 01256 702292

Venue: Week 1:  
North Lincolnshire Council, Civic Centre, Ashby  
Road, Scunthorpe  
  
Week 2:  
Winterton Rangers Football Club, 54 West  
Street, Winterton, North Lincolnshire

Date of Inquiry: 7-10 and 14-18 November 2017

Inspector: Keri Williams

Planning Inspectorate Reference: APP/Y2003/W/17/3173530  
APP/Y2003/W/17/3180606  
APP/Y2003/W/17/3182879

References: First Application (to mean the application ref:  
MIN.2016/810 refused on 11 January 2017)  
  
First Appeal (to mean the appeal ref:  
APP/Y2003/W/17/3173530)  
  
Second Application (to mean the application  
ref: PA/2017/696 refused on 3 July 2017)  
  
Second Appeal (to mean the appeal ref:  
/APP/Y2003/W/17/3180606)  
  
Third Application (to mean the application ref:  
PA/2017/268 refused on 3 July 2017)  
  
Third Appeal (to mean the appeal ref:  
Y2003/W/17/3182879)  
  
Fourth Application (to mean the planning  
application ref PA/2016/808 which was  
granted by NLC on 11 January 2017)

Date: October 2017

## **CONTENTS**

	Page
1.0 Introduction	4
2.0 Aspects of North Lincolnshire Council's Proof of Evidence	5
3.0 Conclusion	15
4.0 Endorsement	15

# **1 INTRODUCTION**

## **1.1 Qualifications & Experience**

- 1.1.1 My name is Mark Anthony William Abbott. I am the Managing Director of Egdon Resources plc, the parent company of Egdon Resources U.K. Limited ("Egdon"), Operator of the Wressle project.
- 1.1.2 I am a highly experienced geoscientist and business manager with more than 32 years' of post-graduate experience.
- 1.1.3 Egdon is the appellant in this case.
- 1.1.4 I have personally been involved in all stages of the three planning applications including attendance at the public events and both Committee meetings.
- 1.1.5 I have detailed my Proof of Evidence and reviewed the North Lincolnshire Councils Proofs of Evidence. My knowledge of the Wressle site, and the proposed development, has informed the decision to rebut some of the points raised and as such develop this document.

## **1.2 Scope of this Document**

North Lincolnshire Council has submitted a Proof of Evidence compiled by Michael McDonald of JBA Consulting, which addresses contamination related aspects arising specifically from the development. This document will set out the aspects within this evidence that Egdon wishes to address by way of a rebuttal. It will set out:

- 1.2.1 The point/reference number within Dr McDonald's Proof of Evidence.
- 1.2.2 The relevant sentence, paragraph or text that Egdon seeks to challenge, clarify or refute.
- 1.2.3 Egdon's response to each of the points made.
- 1.2.4 For clarity, this Rebuttal Proof of Evidence relates to the following planning applications and appeals:-
  - "First Application" refers to planning application ref MIN/2016/810 which was refused by NLC on 11 January 2017"
  - "Second Application" refers to the planning application ref PA/2017/696 which was refused by NLC on 3 July 2017;
  - "Third Application" refers to the planning application ref PA/2017/268 which was refused by NLC on 3 July 2017;
  - "Fourth Application" refers to the planning application ref PA/2016/808 which was granted by NLC on 11 January 2017;
  - "First Appeal" refers to appeal ref APP/Y2003/W17/3173530
  - "Second Appeal" refers to appeal ref APP/Y2003/W/17/3180606
  - "Third Appeal" refers to appeal ref Y2003/W/17/3182879

## 2 ASPECTS OF NORTH LINCONSHIRE COUNCIL PROOF OF EVIDENCE

### First Application

- 2.1 Proof of Evidence point 5.7. *"...based upon the limited level of information provided within the Appellant's Planning Submission (including the report referred to above) and in particular the absence of any basic design or construction quality assurance (CQA) information I have a number of concerns relating to the long-term integrity of this layer to provide adequate long-term containment and protection against the possibility of leakage of contamination from the site into the underlying soils, shallow groundwater and surface waters"*

Over-arching site plans were supplied with the First Application that showed the general layout of the site for the different development phases. The First Application proposed to develop the Wressle site as a long-term production facility, therefore at the time of submission, plans to the level of detailed Dr McDonald refers to (i.e. construction drawings and CQA plans) submitted in support of planning applications would not ordinarily be developed for the following reasons:-

- Plans submitted with the planning application aid the MPA in the use of the land and provide a general overview of site layouts and environmental mitigation;
- The plans submitted with the First Application are appropriate in terms of the level of detail needed to enable assessment of the overall project by the Planning Authority;
- The site had already been constructed, and Planning Permission granted in 2013 for drilling and testing operations.

- 2.2 Proof of Evidence point 5.8. *"...there appears to have been no assessment of shallow ground conditions prior to installation of the liner through completion of an intrusive investigation in the information I have reviewed.....Normally, a ground investigation would be undertaken to establish the nature of the shallow soils beneath the site and their engineering properties to support the adopted design solution for the liner. I can see no evidence in the information I have reviewed to indicate that such an investigation was carried out in advance of construction of the lining to establish the engineering properties of the soils and therefore the adequacy of the proposed GCL layer design"*.

Proof of Evidence point 5.9. *"If settlement of the soil layers occurs this can place stress on the GCL membrane which can eventually lead to mechanical separation of the liner rendering it ineffective in providing containment"*.

Proof of Evidence point 5.10. *"..I believe that, in the absence of information to demonstrate otherwise and particularly the apparent absence of site specific ground investigation data to conform the nature of the shallow soils beneath the site and therefore the adequacy of the design, the long-term integrity over the life cycle of the wellsite may be adversely affected by repeated trafficking of vehicles across the area of the liner together with placement of temporary loads and undisclosed foundations across the wellsite"*.

The Wressle site was constructed in 2014 following the granting of Planning Permission in 2013 for site construction and exploratory drilling/testing phase. Its design and subsequent construction was managed by a highly experienced Chartered Structural and Civil Engineer. Whilst no geotechnical evaluation was undertaken in advance of the site construction works

commencing in 2014, ground investigation works were undertaken and an assessment of soil conditions carried out immediately prior to construction, which in turn fed in to the preliminary design of the site, including the effectiveness and long term use of the embedded environment mitigation. The preliminary design takes into consideration the installation specification of the proposed liner and liner protection, site trafficking and site loading (site load tests are applied before a drill rig is moved onto site).

In operational terms, the first activity undertaken after soils are stripped back is the installation of the well cellar. This involves excavation and installation of a 3.3m diameter, 3.3m depth, concrete-ring well cellar which is cemented into place. By the very nature of excavation, an ongoing assessment is made as to the stability of the shallow ground and therefore the adequacy, installation and protection of the impermeable membrane liner. If the underlying geology is not as expected and requires a change in material specification and quantity, such changes are identified, agreed and authorised prior to implementation. During construction, there were no unexpected and/or material geological conditions that warranted a deviation from the preliminary design. Had there have been, the design would have been amended to accommodate such change in geological condition.

The site has been designed appropriately by a competent person, using standard engineering principles. Given that the environmental protection, presented in the original 2013 planning application, was deemed adequate for use by virtue of granting planning permission and that drilling and testing operations have taken place under that permission - and separate environmental permits – details of ground assessments were not submitted with the First and Second Applications. Had the NLC Planning Officer or indeed any other statutory consultees requested further information on the geotechnical assessment of the underlying soils, this would have been requested and responded to by the applicant.

- 2.3 Proof of Evidence point 5.12. *"I have obtained from a UK supplier of GCL based products an outline design for this type of liner system...assuming that the site is underlain by soft soils (soft clays and peat) and is trafficked by HGV's. Their suggested outline design....is significantly different to that proposed by the Appellant and includes a 600mm to 700mm protective stone layer, including a protective layer beneath the membrane....the supplier also recommended multiple layers of geogrids are deployed below and above the membrane....A ground investigation could reveal the requirement for such measures but there is no evidence to indicate that such an investigation has been undertaken by the Appellant".*

Proof of Evidence point 5.13. *"It is clear from visual observation that the layer of stone which is currently visible on the site surface includes a proportion of oversized material and unless a cushioning geotextile has been incorporated into the construction to protect the GCL such stone gradings can over time pierce the GCL. Use of an inappropriate grade of stone will therefore limit the overall effectiveness and longevity of the GCL liner".*

The Wressle site was designed to include a German GCL product, which was subsequently installed in accordance with the installation specification, with 300mm of compacted stone above a geotextile that provides protection of the GCL, preventing any piercing of the liner. It should be noted that the specification of installation of a specific GCL liner may differ, however, I accept there is significant reliance upon a suitably specified product and its installation in accordance with that specification. It is for this reason, Egdon employs a competent Structural and Civil Engineer to design and manage its construction works. It is not appropriate to reference a GCL liner that has different installation specifications and use such

information to support assertions that the GCL liner used in the construction of the Wressle site may not be adequate. It should be noted that the design of the site, including the GCL liner, was accepted by NLC for the original planning application in 2013, and was accepted by the Environment Agency under the permitting regime.

- 2.4 Proof of Evidence point 5.14. *"...it is very difficult, if not impossible, to prevent all accidental spillages during the routine operation over the entire lifespan of such facilities. Such spillages could lead to contamination of the ground surface which will permeate the layer of stone above the GCL layer. This will mean that the stone layer could act as a long-term secondary contamination source for surface waters on the wellsite".*

It is accepted that there may be accidental spillages from operations; this is the reason Egdon and indeed other companies incorporate a GCL liner in to the design and subsequent construction of a site– to prevent any accidental spillages outside of any secondary bunding from permeating to the underlying soils and surface waters. The stone can attenuate spillages and will hold any contamination in place, enabling remediation through the site Management Procedures, which include removal of any contaminated stone for cleaning and reuse and/or disposal. In addition, the containment ditch around the perimeter of the site prevents any escape of fluids from the site itself.

Egdon is proud of its environmental record, and all sites operate under an established Environmental Management System, as I have referenced in my main Proof of Evidence.

- 2.5 Proof of Evidence point 5.15. *"It appears that there will be very little attenuation provided for surface water collecting across the site.....I believe that over time there is the possibility that the stone layer will become contaminated because of day to day operations (e.g. through accidental spillages of hydrocarbons, entrained clays and silts on vehicles and equipment which are brought onto the wellsite. There is no vehicle wheel wash facility at the entrance to the wellsite shown on site drawings and access to the site is via an un-made farm track) and as such it can act as a secondary source of contamination for surface water discharged from site. Given the un-made nature of the access road leading onto the site I would have expected to see some provision for cleaning of vehicle wheels prior to entry onto the wellsite".*

As detailed in my response to 5.14 above, the fact that the stone may act as attenuation for any contaminants is of benefit, enabling clean-up and remediation under Management Procedures. During drilling and testing operations, the containment ditch remains a fully contained system, so any surface water run-off which migrates into the ditches cannot leave the confines of the site. The technical reports prepared by R E Associates clearly provide the details of the attenuation volume for incident rainfall, which is sufficient for a >1 in 100 year storm event. The attenuation storage is not reliant on the volume of pore space within the stone layer, although it will provide an additional benefit.

In terms of wheel wash facilities, the site was constructed under the original Planning Permission granted in 2013, with no Planning Condition requiring or referencing wheel washing. In addition, there were no such conditions proposed in respect of the First or Second Planning Applications, which would be the usual mechanism applied in respect of mitigating this concern. I should also note that the use of wheel-washing would actually generate significant volumes of waste water that would then have to be contained and transported off site to a licenced waste facility, thus increasing vehicle movements and waste volumes.

2.6 Proof of Evidence point 5.16. *"If this stone layer is to be relied upon for drainage it must be free draining. However, I noted during my site inspection visit that some open surface area are already supporting vegetation growth suggesting a considerable fines content and that the stone layer (which I understand was installed in 2014) is already retaining a volume of moisture".*

Proof of Evidence point 5.17. *"The retention of drainage water within the stone layer could also potentially lead to the deterioration of the running surface of the layer over time especially as road debris become increasingly deposited on to the stone and decreases drainage flow paths and leads to standing water".*

The site is within working farmland, and the topsoil was identified as being sandy and subject to erosion and wind carry. For this reason the topsoil bunds were very promptly grass-seeded to stabilise the bunds. Given that the surrounding farmland is agricultural, soil drift will occur and there will be deposits on the site surface, which will facilitate vegetation growth; – vegetation will establish wherever there may be moisture evident, and requires very little fines within the gravel for annual weeds to establish. However, the Wressle site (as with all Egdon sites) is subject to maintenance and control of site vegetation. Notwithstanding the above, if drainage flow paths are decreased, leading to standing water, then any hydrocarbon contamination is not likely to permeate down, as it will sit above water so there is even less likelihood of percolation down to the GCL liner.

2.7 Proof of Evidence point 5.18. *"For the reasons noted above, I consider that the development could under unfavourable circumstances have an adverse impact upon shallow groundwater and surface water due to the ineffective functioning of the tertiary containment measures which have already been part installed on the wellsite".*

Proof of Evidence point 5.19. *"The aquifer within the Blown Sands will be in my opinion highly vulnerable to any near surface contamination arising from the wellsite and because of the location of Ella Beck relative to the wellsite there would be very little attenuation on contaminants migrating into Ella Beck through shallow groundwater....I am also of the opinion that the current drainage proposals could lead to long term impairment of surface water quality in Ella Beck based upon the use of a stone drainage layer to provide a cover over the GCL liner. I believe that this surface layer will be susceptible to accidental spillages that may occur on the wellsite across the lifetime of the facility and may eventually act as a source of contamination....the primary function of the oil-water interceptor is to collect free phase oil from site discharges, however. It may not be effective in preventing the escape of a range of dissolved contaminants (which can include hydrocarbon compounds) into Ella Beck above a certain threshold".*

Dr McDonald does not provide an explanation of the term "unfavourable circumstances", an assessment of these circumstances or of the potential effects that may result. The GCL liner was installed, protected below and above with heavier-grade geotextiles (Fibretex F-600M and Fibretex F-400M). It was then covered with 300mm of surfacing stone, in accordance with the manufacturers specifications. In 5.16 of his Proof of Evidence Dr McDonald states that *"The retention of drainage water within the stone layer could also potentially lead to the deterioration of the running surface of the layer over time especially as road debris become increasingly deposited on to the stone and decreases drainage flow paths and leads to standing water".* This therefore indicates that the flow of potential contaminants both

vertically and laterally would be impaired, and therefore potential contaminants would not discharge into the containment system, or into shallow soils and groundwater. The stone acts to retain any potential contaminants – so these in effect “go nowhere” and any contaminated stone would, depending on the severity of the accidental spill, be either removed from site for cleaning and/or disposal or managed at site end-of-life in accordance with Egdon’s Site Restoration Management Procedure. It should be noted that the main potential for accidental spillages are associated with storage tanks areas and the area immediately around the wellhead, areas of which have been identified as requiring secondary containment, which was identified on the site plans submitted in support of the First and Second Applications.

In terms of the potential for escape of a range of dissolved contaminants into Ella Beck, the Environment Agency regulates the discharge of pollutants to surface water and will have regulatory oversight of the specification and management procedures associated with the discharge of clean water. Under the Environmental Permit issued in 2014 for drilling and testing, a scheme of surface water monitoring was undertaken from three Ella Beck locations before, during and after operations, and this demonstrated that there was no impact on water quality from the site. The Environmental Permit issued in 2017 again requires water quality monitoring, with an increased range of analysis parameters. As detailed within my Proof of Evidence, there will be no discharge of any fluids used on site into the Ella Beck;- the proposed installation of an Environment Agency approved interceptor is to manage clean surface water run-off from the site. The process to monitor water quality within the Ella Beck is to demonstrate that the environmental protection and mitigation measures are effective.

Note that the Ella Beck water quality monitoring processes were detailed within both Planning Applications, so the Planning Authority has been made fully aware of this.

- 2.8 Proof of Evidence point 5.36. *“Access onto the wellsite for plant, equipment and vehicles for all phases of development will be across the existing access over the Ella Beck via the unmade farm track, where there is some limited evidence of rutting caused by trafficking. This crossing point has clearly been used historically for access for agricultural vehicles and equipment used to form the site and undertake test drilling in 2014”.*

Dr McDonald is correct that the crossing point over Ella Beck is at an existing access, which has and continues to be used by agricultural vehicles, as well as Egdon. However, it would appear that Dr McDonald is not aware that the crossing had been assessed for suitability by the Appellant’s Chartered Structural and Civil Engineer prior to submitting the original planning application in 2013 for exploration activities. Enhancements were recommended and details of these were included within the original planning application.

- 2.9 Proof of Evidence point 5.37. *“...at the access Ella Beck is carried through an approximate 500 to 600mm diameter concrete pipe surrounded by backfill material of uncertain composition and uncertain compaction, with no evidence of any pipe bedding visible from the bank side. However no information is contained within the Appellant’s planning submission to indicate that there will be any improvements or upgrades of the existing entrance to the site over the Ella Beck....I am concerned that the current crossing point may not be suitable in the longer term to take heavy loads during future wellsite development and production phases. Also, pipes of this nature are in my experience susceptible to blockage from debris (such as fallen tree branches)”.*

Proof of Evidence point 5.38. *"If the pipe carrying Ella Beck is blocked or damaged during operations at the site this may lead to local flooding around the crossing point the magnitude of which will be dependent upon a number of factors. It is also not clear from the Appellant's assessment of flooding impacts that the pipe is of sufficient capacity to carry flow through Ella Beck during peak rainfall events, or in fact whether this has been assessed".*

Proof of Evidence point 5.39. *"While ultimate responsibility for maintenance of flow through Ella Beck rests with the Environment Agency I am concerned that localised flooding immediately around the crossing caused by blockage due to lack of maintenance, or accidental damage to the pipe through increased heavy traffic movements during development and production may lead to localised flooding of the area near the wellsite. Also, a number of facilities and properties including the unmade access track to the north which provides a means of access further east of the site to the Clapgate Pumphouse and outbuildings associated with Lodge Farm could be impacted by such flooding, were it to occur".*

The existing Ella Beck culvert was assessed for adequacy by Egdon's Chartered Civil and Structural Engineer in advance of the original Planning Application in 2013. As part of the site design and evaluation process, a full assessment was undertaken in relation to:-

- The condition and load-bearing capacity of the existing culvert
- The load-bearing capacity of the extension to the pipe culvert
- The effect of vehicle numbers on the culvert

There was no engineering or structural need to upgrade the existing concrete pipe (culvert) specification.

The original Planning Application did, however, include details of proposed enhancements to the crossing to facilitate the larger turning area needed for articulated trailers. There was no impact on the crossing from exploration activities, and vehicle loads during production will not exceed those from drilling-related vehicles. In terms of numbers of vehicles i.e. longevity, the structural evaluation concluded that this is immaterial as the vertical loading imparted on to the concrete pipes themselves is minimal given the weight distribution to the 1200mm depth of backfill cover above the pipes.

In terms of blockage of the culvert, the enhancements to the crossing did not alter the size of the culvert. Had the culvert not been of an appropriate size to accommodate the anticipated flow of water in Ella Beck and/or be liable to blocking, the Environment Agency would have requested improvements as part of the consultation process. No such requests for improvements were made. The necessary Environmental Permits and authorisations were obtained from the Environment Agency in respect of the culvert work.

The crossing is used, on almost a daily basis, and as such, those utilising the crossing are very much aware of any abnormal height of water within the Beck which would indicate the possibility of a blockage within the culvert. In point 5.38 it is stated that *"It is also not clear from the Appellant's assessment of flooding impacts that the pipe is of sufficient capacity to carry flow through Ella Beck during peak rainfall events, or in fact whether this has been assessed"* but then in 5.39 it is stated that *"While ultimate responsibility for maintenance of flow through Ella Beck rests with the Environment Agency..."*. It is my assertion, in line with the comments within 5.39, that an assessment as to whether the existing culvert has the capacity to manage flow during peak rainfall events, has been undertaken by the Environment Agency. Had this not been the case, the Environment Agency, operating effectively, would

have identified the culvert as a potential flood risk and seek to mitigate this risk through planning condition. There was no such condition or intervention from the Environment Agency.

Egdon has clearly demonstrated, through both Planning Applications, that any future discharge of clean surface waters into the Ella Beck would be attenuated through an interceptor system to limit discharge rate to 5litres/second, which is deemed acceptable by the Environment Agency in terms of not contributing to over-capacity of Ella Beck flow i.e. it will not increase the risk of flooding.

- 2.10 Proof of Evidence point 6.6. *"I also disagree with the overall "Negligible" impact associated with the above migration pathways (i.e. contamination through leaks in the site membrane, leakage from the perimeter ditch and from discharge of surface water upon the blown sands).....This assessment of impact relies upon the functioning of the GCL membrane beneath the site and its ability to contain accidental spillages over the lifetime of the wellsite".*

Proof of Evidence point 6.7. *"...I am of the opinion that insufficient information has been presented in the form of site specific design details including provision of ground investigation data to give details of soil conditions and to give confidence that this system will function effectively over the lifetime of the development"*

Proof of Evidence point 6.8. *"I believe that, even with spill management measures in place there is the potential for the stone layer to become contaminated over time through accidental spillages and leaks and therefore the layer may act as a secondary contamination source, which will in turn lead to contamination of rainfall run-off. I also note that it is proposed to install a series of buried pipes around the perimeter of the wellsite above the GCL liner to collect run-off by gravity drainage to the site interceptor before discharge of water to Ella Beck. Ordinarily, it is good practice to install manhole covers along such pipes for future maintenance activities such as desilting, rodding etc but no details have been provided to establish how the perimeter drains would be maintained. Over the lifetime of the wellsite I believe that these drains will be susceptible to siltation and blocking thereby reducing the overall effectiveness of the measures proposed. Also, very little information is presented to explain how surface water will be prevented from leaving the wellsite at the eastern entrance".*

The GCL liner beneath the site surfacing is considered tertiary containment, which has maintained its functionality, and was tested in 2016 to demonstrate this. Repeat testing in accordance with Management Procedures will be undertaken through the lifetime of the site in order to ensure the continued integrity of the membrane. Secondary containment, in the form of concrete bunds is also proposed in areas where the potential for spills to occur are greatest, and this would be installed in accordance with CIRIA C736 *Containment Systems for the Prevention of Pollution*.

As set out in 2.7 above: In 5.16 of the Proof of Evidence it is stated that *"The retention of drainage water within the stone layer could also potentially lead to the deterioration of the running surface of the layer over time especially as road debris become increasingly deposited on to the stone and decreases drainage flow paths and leads to standing water"*. This therefore indicates that the flow of potential contaminants both vertically and laterally would be impaired, and therefore potential contaminants would not discharge into the containment system, or into shallow soils and groundwater. The stone acts to retain any potential

contaminants – so these in effect “go nowhere” and any contaminated stone would be either removed from site for cleaning and/or disposal or managed at site end-of-life in accordance with Egdon’s Site Restoration Management Procedure. It should be noted that the main potential for accidental spillages are associated with storage tanks areas and there area immediately around the wellhead, areas of which have been identified as requiring secondary containment, which was identified on the site plans submitted in support of the First and Second Applications.

In terms of the perimeter drains, and the proposal to enhance this system, there would indeed be drain entry points to enable maintenance activities, however, I consider this level of detail, including number of rodding points and their respective locations too detailed for the purpose of the MPA determining what is an acceptable use of land. We have clearly stated that the entrance area will be built up in order to maintain the bund system above the height of the site surface, at the location of the access into the lined area, on the eastern perimeter.

- 2.11 Proof of Evidence point 6.9. *“The type of interceptor proposed...to treat surface waters, when functioning correctly will reduce the level of dissolved hydrocarbons in discharge waters to a particular level (generally less than 5 parts per million of dissolved oils). However no assessment is prepared to ascertain whether this is an acceptable level of discharge quality to Ella Beck, or whether the interceptor would deal with other potential contaminant types (in addition to dissolved oils) that might be stored on the wellsite in the event of a spillage.....no details are provided on how the site will be decommissioned and in particular how any residual contaminants that might be present within the 300mm stone layer will be dealt with”.*

Ella Beck water quality will be monitored in compliance with the requirements of the Environmental Permit, as it was in line with the requirements of the Environmental Permit that covered the drilling and testing phases. The EA sets the parameters for water quality analysis in line with the proposed fluids that may be used, and recovered, from Wressle production operations in order to ensure that water quality analysis covers the full suite of potential contaminants. It should be re-iterated that the water from the Ella Beck was sampled and analysed before, during and after drilling and testing operations and this demonstrated no impact on the Ella Beck from the Wressle operations or site.

In terms of decommissioning the site, the First Application provided an outline of the site restoration process that would be applied. Given the requirement for additional information with the Second Application, Egdon’s detailed operational procedure to cover Site Closure and Restoration was supplied as part of that application.

#### Second Application

- 2.12 Proof of Evidence point 7.2. *“Regarding these two documents (R Elliott Associates Ltd Assessment of Flood Risk, Hydrology and Pollution Control, and Envireau Water Hydrogeological Risk Assessment)...they do not appear to cross reference one another and therefor I am unclear which takes precedence in the event of conflicting opinions..”.*

This statement fails to recognise the two separate processes, that of the Planning Application, and that of the Environmental Permit Application. The rationale for the inclusion of the Hydrogeological Risk Assessment (and other documents), following the determination of the First Application, was clearly set out within the documents submitted with the Second Application, and within the Proofs of Evidence for this Appeal. The R Elliott document was

prepared with sufficient detail to support the Planning Application, submitted also in the knowledge that the Environment Agency are the statutory regulator to assess environmental risks and mitigation, which it regulates through the Environmental Permitting process. To my knowledge, the Council do not employ specialist hydrogeologists to assess the Planning Applications nor to progress the detailed assessments in relation to ground and surface waters; reliance, therefore, was on the Environment Agency, as Statutory Consultee, who raised no objection to the First Application or the Second Application. Had the NLC Planning Officer or indeed any other statutory consultees requested further information on flood risk or hydrogeology, a request for such information would have been requested and responded to by the applicant.

The Hydrogeological Risk Assessment was submitted in order to demonstrate the significant body of work that is undertaken through the Environmental Permitting process.

- 2.13 Proof of Evidence point 7.6. *"...I remain concerned that the overarching design solution for the tertiary containment relies upon the GCL layer and overlying 300mm layer only and as stated above no additional data is provided to support this design solution".*

The principle mechanism for containment on site would be the containment mechanism for produced fluids i.e. the storage tanks, pipelines and interconnection that enables the transfer of fluids from the wellbore to the storage tanks. The storage tanks will be housed within a constructed bund system built to CIRIA736, the transfer of produced oil to export tanker will take place on a concrete loading bay with retaining walls, and the wellhead is sited on a concrete platform with a concrete well-cellar. Details of the bund and loading bay construction were provided as Appendix 2 of CDA25 with the Second Application. The installed GCL liner, beneath the site surface, is a mechanism to contain any accidental spillages on the site area – it is not the principle mechanism to prevent pollution. It serves to ensure that, should any accidental spillage take place, then there will be no permeation through to sub-surface soils or ground and surface water.

In summary, the Wressle site was built in 2014 following the granting of Planning Permission in 2013 for the exploratory drilling/testing phases. Its design and subsequent construction was managed by an experienced Structural and Civil Engineer, and took into consideration the installation specification of the proposed liner and liner protection, site trafficking and site loading (site load tests are applied before a drill rig is moved onto site).

The sampling and analysis of Ella Beck water quality has demonstrated that the GCL liner is fit-for-purpose and that the Wressle operations have not had any impact on the water quality of the stream.

- 2.14 Proof of Evidence point 7.7. *"...It appears that the buried pipe, which will take surface run-off from the perimeter drainage pipe to the interceptor, has a lateral run of approximately 6 to 7 metres scaled from the site plans. However, there is a lack of detailed supporting information showing the construction details of the pipe to demonstrate how it will prevent potential leakage into the surrounding soils during the lifetime of the site, or how the integrity of the pipe will be checked and how it will be sealed at connections to prevent possible leakage".*

At the time of submission, plans to the level of detailed Dr McDonald refers to (i.e. details of the containment and outfall pipe to the interceptor) submitted in support of planning applications would not ordinarily be developed. There has to be an acceptance that suitably

qualified and experienced civils management contractors prepare proper and robust designs, and that the installation of the interceptor, the pipework and connectivity through the GCL liner will take place in accordance with the appropriate supplier installation specifications, including pressure testing of pipework.

- 2.15 Proof of Evidence point 7.16. *"Therefore without detailed review of individual borehole construction details (which was not included within the Envireau Water report) I am of the opinion that the Great Oolite Group strata above the Lincolnshire Limestone could also provide a secondary source of water for nearby groundwater abstractions".*

In support of the Permit Application to the Environment Agency, Egdon submitted a Hydrogeological Risk Assessment, which included an outline scheme of groundwater monitoring. The outline scheme was agreed with the Environment Agency. In advance of constructing the monitoring boreholes, a Construction Quality Assurance Plan was submitted to the Environment Agency, which was subsequently accepted by it as being suitable for groundwater compliance monitoring required by any future Environmental Permit issued for the site. Following installation of the groundwater monitoring boreholes, Egdon submitted an As-Built Groundwater Borehole Report to the Environment Agency, who confirmed its acceptance of the report and that the works have been completed satisfactorily. Had the Environment Agency had any concerns over the suitability of the groundwater monitoring scheme, including the design and subsequent construction of groundwater monitoring boreholes, it would not have accepted the scheme as being suitable and satisfactory.

For clarity, the as-built installed borehole plans were included as Appendix 10 of CDA25, supplied with the Second Application.

- 2.16 Proof of Evidence point 7.29. *"...no additional data is presented within the Envireau Water report beyond that contained elsewhere within the Appellant's submission which sets out the basis for the design of the mitigation measures (and in particular the design basis for the tertiary containment system) as proposed by the Appellant...".*

I refer to my response within 2.13 above. The Second Application was accompanied by document CDA25, which set out the main process area containment system (storage tank bunds, tanker loading bay etc.) and the proposed enhancements to the perimeter ditch containment system. I again state that the site has already been constructed under previous Planning Permission and Environmental Permits and as such there is no requirement to submit significantly detailed information relating to the design of the tertiary containment system.

### **3 CONCLUSION**

- 3.1 Dr McDonald details a number of concerns in relation to the planned tertiary containment measures, and that no information has been submitted to demonstrate the consideration of underlying shallow soil conditions that feeds the proposed design solution. He also asserts that the proposed measures to contain accidental spillages from the site may not be sufficient to prevent adverse impacts upon surrounding water resources, including surface water and groundwater, and that the environmental protection measures as described are not adequate to mitigate the potential impacts arising from the proposed development.
- 3.2 From Egdon's perspective, it appears that Dr McDonald has not fully appreciated the fact that site has already been built under the original Planning Application granted in 2013. I have demonstrated through my responses to his evidence that ground conditions have been assessed and that this feeds into the design of the site at a very early stage, and that professional Structural and Civil engineers therefore designed and oversaw the construction of the site using proven materials and installation specifications.
- 3.3 It is my view that some of the phrases used within Dr McDonalds evidence, such as "unfavourable circumstances" have not been detailed or explained, and erroneous information has been introduced to reference a GCL liner that has different installation specifications to support assertions that the GCL liner used in the construction of the Wressle site may not be adequate..
- 3.4 Drilling and testing operations have already taken place, and monitoring of water quality from the nearby Ella Beck has demonstrated that the embedded environmental mitigation measures have proved to be effective. Dr McDonald also fails to recognise the significant body of work undertaken through the Environmental Permitting process, and the prescribed measures imparted through the Environmental Permits themselves that apply to site activities and which provide a robust mechanism to ensure that the proposed production activities will not give rise to a detrimental environmental impact.

### **4 CONCLUSION**

- 4.1 I confirm that the evidence I have prepared and provided for this appeal within this Rebuttal of Evidence, is true. I confirm that the opinions expressed are my true and professional opinions.

Mark Abbott  
31<sup>st</sup> October 2017

