East Anglia ONE North and East Anglia TWO Offshore Windfarms

Applicants' Comments on Submissions Regarding the Landfall Hydrogeological Risk Assessment (REP6-021)

Applicant: East Anglia TWO and East Anglia ONE North Limited
Document Reference: ExA.AS-26.D8.V1
SPR Reference: EA1N_EA2-DWF-ENV-REP-IBR-001018

Date: 25th March 2021
Revision: Version 01
Author: Royal HaskoningDHV

Applicable to East Anglia ONE North and East Anglia TWO

Revision Summary				
Rev	**Date**	**Prepared by**	**Checked by**	**Approved by**
01	25/03/2021	Paolo Pizzolla	Lesly Jamieson / Ian MacKay	Rich Morris

Description of Revisions			
Rev	**Page**	**Section**	**Description**
01	n/a	n/a	Final for submission at Deadline 8

Table of Contents

Glossary of Acronyms

BGS	British Geological Society
DCO	Development Consent Order
EMS	Environmental Management System
HDD	Horizontal Directional Drilling
ES	Environmental Statement
ESC	East Suffolk Council
OCoCP	Outline Code of Construction Practice

Glossary of Terminology

Applicant	East Anglia TWO Limited / East Anglia ONE North Limited
East Anglia ONE North project	The proposed project consisting of up to 67 wind turbines, up to four offshore electrical platforms, up to one construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
East Anglia TWO project	The proposed project consisting of up to 75 wind turbines, up to four offshore electrical platforms, up to one construction, operation and maintenance platform, inter-array cables, platform link cables, up to one operational meteorological mast, up to two offshore export cables, fibre optic cables, landfall infrastructure, onshore cables and ducts, onshore substation, and National Grid infrastructure.
Horizontal directional drilling (HDD)	A method of cable installation where the cable is drilled beneath a feature without the need for trenching.
Jointing bay	Underground structures constructed at intervals along the onshore cable route to join sections of cable and facilitate installation of the cables into the buried ducts.
Landfall	The area (from Mean Low Water Springs) where the offshore export cables would make contact with land, and connect to the onshore cables.
Onshore cable route	This is the construction swathe within the onshore cable corridor which would contain onshore cables as well as temporary ground required for construction which includes cable trenches, haul road and spoil storage areas.
Transition bay	Underground structures at the landfall that house the joints between the offshore export cables and the onshore cables.

1 Introduction

1. This document has been prepared by East Anglia TWO Limited and East Anglia ONE North Limited (the Applicants) in response to Deadline 7 Written Representations made by Interested Parties Richard Reeves and Tessa Wojtczak to the Examinations for the East Anglia TWO and East Anglia ONE North Development Consent Order (DCO) applications (the Applications).

2. This document is applicable to both the East Anglia TWO and East Anglia ONE North DCO applications, and therefore is endorsed with the yellow and blue icon used to identify materially identical documentation in accordance with the Examining Authority's procedural decisions on document management of 23rd December 2019 (PD-004). Whilst this document has been submitted to both Examinations, if it is read for one project submission there is no need to read it for the other project submission.

2 Applicants' Comments

3. Two Interested parties have made Deadline 7 submissions regarding the Applicants' ***Landfall Hydrogeological Risk Assessment*** (REP6-021). The Applicants have provided responses to these submissions as follows:

- ***Table 2.1*** provides responses to ***Comments on The Applicants' Deadline 6 Landfall Hydrogeological Risk Assessment*** (REP7-084) made by Richard Reeves; and
- ***Table 2.2*** provides responses to ***Comments on The Applicants' Deadline 6 Landfall Hydrogeological Risk Assessment*** (REP7-096) made by Tessa Wojtczak.

Table 2.1 The Applicants' Comments on Richard Reeves' Deadline 7 Submissions (REP7-084)

ID	Richard Reeves' Comments	Applicants' Comments
3 Proposed Works		
1	*10. The landfall HDD bores are likely to be located north of Thorpeness (approximately 750m south of the Wardens Trust site) with planned lengths of up to 2000m.* *12. The pilot hole will be steered and surveyed using a wireline guidance tool located behind the drilling bit. The HDD will be at approximately 11m below the base of the cliffs along the coas*t. **RR's response:** The distance quoted from Wardens site of landfall HDD bores is noted, although later in the same document a different, an even shorter, distance is quoted. In my previous submission I estimated the distance to be 1200m. The effect of this on my previous calculations regarding the depth below surface of the aquifer / water bearing stratum is to decrease its subterranean estimated depth, based on these recent actual measurements: To refresh memories from y D6 submission: " … the rest water level, ie the surface of the water in the well at Ness House, lies at no more than 2.1 m / 7ft above sea-level (calculation being ground elevation @13.8m minus depth below ground-level of surface of aquifer @ 11.7m) At the proposed Landfall point, the cliff edge at Thorpeness Point, this same differential between elevation above sea-level of ground surface and rest water level of the aquifer below ground surface, (6.3m minus 11.7 m) would place the aquifer at 5.4m below sea-level at the foot of the cliff / top of the beach. Again in my previous submission at Deadline 4, in the description of the Suffolk Chalk Aquifer quoted from Natural England, the chalk layer containing	Regarding the reference to an 'even shorter distance' than 750m being quoted, the Applicants assume Mr Reeves is referring to paragraph 30 of REP6-021 which states, *"It is understood that the Ness House well is located in a locked building within the bounds of the property over 400m north of the likely location of the HDD bores"*. This is not a measurement of the distance from the likely location of the horizontal directional drilling (HDD) bores to the Wardens Trust site, but to an approximate minimum distance to the assumed location of the Ness House well. The likely location of the HDD bores used for the risk assessment are shown in ***Appendix A*** of the ***HDD Verification Clarification Note*** (REP6-024) submitted at Deadline 6. The Applicants would note that an aquifer is a body of porous rock or sediment saturated with groundwater; Mr Reeves comments appear to be based a misconception that an aquifer is an underground body of water which is incorrect. The use of environmentally friendly drilling fluids and drilling with a minimum practical flow rate are key mitigation methods applied by the risk assessment. As noted in paragraph 15, any drilling fluid losses would be confined to a very limited area around the drill. The drilling fluid will fill in and stabilise fractures created during the drilling process so there will not be an impact on the wider aquifer or the groundwater it contains. These are routine practises when drilling through aquifers which it a regular requirement for construction projects.

ID	Richard Reeves' Comments	Applicants' Comments
	the aquifer waters is described as lying on a gentle slope, running downward from NW to SE of the region, to continue its trajectory under the bed of the North Sea. The angle of this slope can be reasonably estimated by comparing the above / below sea-level figures quoted above, namely 2.1 m above sea-level at Ness House, sloping down by a net fall of 7.5m in the course of the approximately 1200m distance between Ness House and the proposed Landfall point, a gradient of 0.625m in 100m / 0.006 in 1." In short, given the much lesser distance from Wardens / Ness House quoted, the very slight gradient of the aquifer has a much lesser opportunity to have effect, and the aquifer is therefore lying at an even shallower level of elevation than estimated in my previous submission. Thus, the assumed depth of the rest-water in the aquifer at the cliff-base adjacent to Landfall must now be taken to be significantly less than the 5.4m previously used in my calculations. The Applicants' confirmation of an even greater depth of drilling level at the base of the cliffs – 11m as opposed to the 3m assumed in my previous calculation, is also noted. At such a depth, the Applicants themselves now confirm that drilling through the water-bearing strata that contain the aquifer is unavoidable, as will be drilling through the aquifer for a second time, from below, when rising through sea-bed strata to the "punch-out" point.	Additional pre-construction ground investigation is planned to refine the design. It will provide more detailed information on the ground conditions at the HDD alignment including confirmation of geology and soil properties.
2	*15. The HDD is expected to be within the Coralline Crag beneath the cliffs, and the strength of the Coralline Crag is expected to prevent any drilling fluid breakout at this point.* **RR's response:**	The Applicants would clarify that complete avoidance of the Coralline Crag has never been proposed by the Applicants. As stated in the ***Outline Landfall Construction Method Statement*** (an updated version has been submitted at Deadline 8, document reference ExA.AS-2.D8.V3), one of the reasons for using HDD at the landfall is to *"avoid direct physical disruption to the outcrop of Coralline Crag"*. By 'outcrop', the Applicants are clearly

ID	Richard Reeves' Comments	Applicants' Comments
	Over the whole course of these examinations the Applicant has gone to great lengths, from live hearings, through live and written consultations with Aps, Ips, and other residents, and in response to urgent queries for clarification from EDF, to demonstrate its assertion that the integrity of the coralline crag will not be compromised by the planned HDD works. Now, at this late stage of the Examinations, it is suddenly revealed that the HDD bore will in fact pass through the coralline crag. Furthermore, the Applicant is now relying absolutely on the (previously accepted as fragile) coralline crag to provide stable insulation against fluid loss. So, after going to such great lengths to assert that the coralline crag would be avoided, due to fragility, now it is apparently to be relied on, and bored through, because, at the tap of a desk-based key-stroke, it is convenient to describe it as being super-strong. It very much seems that this is yet another example of the Applicant simply attempting to bend reality to suit whatever its latest argument demands. Super-strong, or fragile – which is it?	referring to the parts of the Crag that are visible at the surface; the HDD bores as proposed pass through the Coralline Crag, but beneath its visible surface before 'punching out'. Regarding the priorities of the Coralline Crag, the Applicants would point to the ***HDD Verification Clarification Note*** (REP6-024) submitted at Deadline 6 and prepared by Riggall & Associates to provide a review of the feasibility of using HDD at the landfall; this is the report upon which the hydrogeological risk assessment has been based. To note, Riggall & Associates is an independent firm providing technical advice on HDD solutions. The company has worked on over 200 HDD projects and specialises in feasibility studies, hydrofracture modelling, drill force modelling, detailed design and planning.
4.1 Geology		
3	*21 The basal Chalk bedrock dips gently to the south-east, as do the Palaeogene strata which overlie it. In the east of the area, the Pliocene and Pleistocene Crag deposits dip eastward (Environment Agency, 1997).* *22. Existing BGS boreholes surrounding the landfall (see Figure 1 in Appendix 1) indicate that the London Clay is at approximately -50m Ordnance Datum Newlyn (ODN). However, this differs to the base of Crag contour map shown on the 1:50,000 series published map, which shows the base of the Crag.* **RR's response:**	As noted at ID1, the Applicants would highlight that an aquifer is a body of porous rock or sediment saturated with groundwater; Mr Reeves comments appear to be based a misconception that an aquifer is an underground body of water. The Applicants acknowledge that potable water supplies are taken from the aquifer through which the HDD bores will pass; this is the basis of the risk assessment. The use of environmentally friendly drilling fluids and drilling with a minimum practical flow rate are key mitigation methods applied by the risk assessment. As noted in paragraph 15, any drilling fluid losses would be confined to a very limited area around the drill. The drilling fluid will fill in

ID	Richard Reeves' Comments	Applicants' Comments
	In referencing London Clay at this depth, and the existence of a chalk layer underlying it, the Applicant seems to be suggesting that the non-porous nature, and extreme depth of the clay seals the chalk layer from any possible damage or pollution from the DHH process. While this is true, it is of no relevance. Having seized on the word "chalk", in connection with the aquifer, the Applicant implies that as there is a single basal level of chalk below the clay that contains the aquifer. However, as the Applicant admits, in the previous paragraph *20 In East Anglia, drift deposits are variable, including pebbly sand, gravels, silts, and clays. A chalky till, known as Lowestoft Till covers much of the area* **RR's Response:** Whether in Lowestoft Till, Red Crag, or a mixture of both combined with chalk, the aquifer does not lie under the London Clay layer referred to above. The numerous ponds, wells, and boreholes within the area of the works all attest to the fact that the feature we refer to as "the aquifer" – a vast underground lake or reservoir – lies very near the surface. Whether the HDD process does or does not penetrate the London Clay level at -50m is therefore of no consequence. By the time the drill-head reaches 11m below ground at cliff base, on its way to bore through the coralline crag (Applicant's own plan, please see above) it will already have passed through the aquifer-levels responsible for widespread water supply. Hence the seemingly much vaunted paragraph: *23 Pre-construction ground investigations will confirm the true depth to the London Clay, however, unless it is significantly shallower than expected, the HDD will not be drilling within the London Clay* **RR's response:**	and stabilise fractures created during the drilling process so there will not be an impact on the wider aquifer or the groundwater it contains. These are routine practises when drilling through aquifers which it a regular requirement for construction projects. Additional pre-construction ground investigation is planned to refine the design. It will provide more detailed information on the ground conditions at the HDD alignment including confirmation of geology and soil properties.

ID	Richard Reeves' Comments	Applicants' Comments
	- far from demonstrating that the HDD process will leave the aquifer levels unaffected because the London Clay will not be impacted, in fact only serves to underline the fact that the water-bearing mix of till, crag, and chalk above the London Clay will be unavoidably compromised.	
4.2 Hydrogeology		
4	*25 The Crag and the Chalk are designated by the Environment Agency as 'Principal Aquifers', which can provide a high level of water storage and support water supply and base river flows on a strategic scale. However, In the study area, the Chalk groundwater below the London Clay is highly saline and potable supplies are taken only from the Crag.* **RR's response:** Again, the chalk groundwater below the London Clay is of no relevance as it is from the levels above the clay that drinking water is extracted or collected. It is noted that these upper levels of mixed crag are classified as a "Principal Aquifer"	Paragraph 25 of REP6-021 is contained with ***Section 4 Environmental Setting***. The purpose of this section is to demonstrate that the risk assessment has been based on a thorough professional review of all available information. In paragraph 25 the Applicants are acknowledging that potable water supplies are taken from the Crag and the Chalk through which the HDD bores will pass.
5	*30 It is understood that the Ness House well is located in a locked building within the bounds of the property over **400m** north of the likely location of the HDD bores. The well supplies five properties at and around Ness House, including Wardens Trust.* **RR's response:** My bold emphasis above – earlier in the document 750m was quoted. One wonders what figures will be plucked out of the air next by the Applicant. Ness House, Wardens, Ilex House, Ness House Cottages are at the same location. The locked building referred to is in the courtyard of my home. All of this would have been clear to the Applicant had their	As noted at ID1, the 400m quoted is an approximate minimum distance between the likely location of the HDD bores and the assumed location of the Ness House well, while the 750m quoted is an approximate measurement from the likely location of the HDD bores to the Wardens Trust site. This is clearly stated within REP6-021. The likely location of the HDD bores used for the risk assessment are shown in ***Appendix A*** of the ***HDD Verification Clarification Note*** (REP6-024) submitted at Deadline 6.

ID	Richard Reeves' Comments	Applicants' Comments
	representatives attended the recent site visit to which they had been cordially invited.	
Hydrology		
6	*31 The landfall is not located within a catchment of any permanent surface water features and could only be affected by surface runoff.* **RR's response:** Again, are we to assume landfall is at 400m, 750m, or another as yet unspecified distance from Wardens / Ness House site? And the extent of landfall, predicted to require plots 4, 10 12, 13, 14 amongst others, remains unspecified as to total land area required. In terms of the statement regarding permanent surface water, this is factually inaccurate. Plots 4 and 12 contain permanent ponds, where aquifer supplied water table sits just below ground level, and there are several boreholes and taps located in these areas which testify to permanent surface or near-surface aquifer presence. Again, had the Applicant attended the site inspection referred to above, it could have witnessed these features, rather than rely on inadequately informed speculation.	As noted at ID1, the 400m quoted is an approximate minimum distance between the likely location of the HDD bores and the assumed location of the Ness House well, while the 750m quoted is an approximate measurement from the likely location of the HDD bores to the Wardens Trust site. The landfall as referred to in REP6-021 is located within Work No. 8 as shown on sheet 1 of the ***Works Plans (Onshore) – Rev 5*** (REP7-005); this correlates with plot 7 as shown on sheet 1 of ***Land Plans (Onshore)*** (REP7-004). The HDD bores will then pass through Work No. 6 on sheet 1 of REP7-005, which correlates with plots 6, 5, 2 and 1 on sheet 1 of REP7-004. The likely location of the HDD bores used for the risk assessment are shown in ***Appendix A*** of the ***HDD Verification Clarification Note*** (REP6-024) submitted at Deadline 6. The Applicants would note that they requested to attend the Access Required Site Inspections but were advised by the Planning Inspectorate that they could not due to COVID-19 restrictions.
7	*34 Table 4.2* **RR's response:** The table is factually inaccurate in that it fails to represent multiple species of protected flora and fauna present in all the areas it reports on: Some examples: In Important Hedgerows 3 and 4 (scheduled for demolition) and the associated hedgerows linking and bordering plots	The purpose of ***section 4.4*** of REP6-021 is to determine if there are sensitive land uses in the area around the landfall that could be adversely impacted by the proposed HDD bores passing through the aquifer / local hydrogeology (i.e. whether or not their integrity is linked to the aquifer / local hydrogeology in the location of the HDD bores). It is considered that there is no risk of such impacts on the designated sites identified in ***Table***

ID	Richard Reeves' Comments	Applicants' Comments
	10;12;13;14 more than 40 species of wild flower have been recorded (cf my earlier submissions which include species recorded by Wardens volunteers and trustees over several decades). Amongst these flora are Red Valerian; Honeysuckle; Petunia; Sloe; Hawthorn; and numerous nectar-rich flowers. The species I name here are of particular relevance to several rare and protected species; three examples: the Hummingbird Hawk Moth; Lampyris Noctiluca (the Glowworm); Elephant Hawk Moth. These and the numerous other species of insects, moths, and butterflies, as well as being vital pollinators, are also part of the extending food-chain. As the aquifer feeds the soil, which grows the vegetation, which fees the insects, so the insects feed the birds - and the bats. This is how nature works. Remove one link and the whole chain fails. <u>Bats</u> Not appearing in the "suite of surveys" undertaken by the Applicant in plots 10;12;13;14 (because the "suite" did not come here) are the local bats – in the main they are recorded as Common Pipistrelle. These roost, feed, breed, and hibernate in the coppices, hedgerows, stables, and field shelters of the area. On balmier evenings following warmer days even as early as next month (March 2021 at time of writing) they will emerge to feed on the first hatchings of air-born insects. I will be observing them, as I have for over 13 years, caught in the shafts of moonlight against the naturally dark skies above my own garden. These super-sensitive protected mammals will suffer potentially catastrophic consequences not only from the interference to their food-supply caused by the demolition of environment, but also from the light, air, noise, and ground pollution resulting from SPR's industrialisation of the AONB. <u>Birds</u>	***4.2*** and therefore it is not necessary to present further information on their features. The Applicants direct Mr Reeves to the various application documents and representations submitted to the Examinations specifically regarding onshore ecology. The Applicants would also reiterate that across 2018 and 2019 the entire onshore development area was subjected to the suite of ecological surveys required in order to make the Applications. All these surveys were undertaken by suitably qualified ecologists within the optimal surveying windows and in accordance with industry guidance. As is standard for such projects, a full suite of pre-construction surveys will also be undertaken to account for the passing of time as set out within the ***Outline Landscape and Ecological Management Strategy*** (document reference 8.7).

ID	Richard Reeves' Comments	Applicants' Comments
	Again, as a small exemplifying selection of the many species I have previously listed, in the same hedgerows, coppices, woodlands, fields, stables and field-shelters of plots 10;12;13;14 are memorable species in addition to the rich and diverse population of familiar British Field and Garden Birds. In particular, swallows, nesting through many generations, for as far back as local memory stretches, in the same stables, fieldshelters, eaves, as the bats, and similarly completely reliant on the abundance of insect life supported by the vegetation. These join other summer and winter visitors which rely on the continuity and abundance of the local environment, amongst their number, Lapwing; Redwing; Martins; Nightingale; Swift; Fieldfare; Warblers including Garden and, only last year returning, Cetti's. Plot 13 also, with its pond, provides a respite site for migrating geese. In the last 5 years, since the land was returned to arable use, particularly rare species have returned to inhabit the skies, hedgerows, coppices, fields, and woodlands of 10;12;13;14. Marsh Harrier; Wood Lark; and a much remarked on rarity, Firecrest. <u>Reptiles and Amphibians</u> As with bats and birds, so with the local population of reptiles and amphibians – species dependent on the successful continuing functioning of the natural environment; from soil to tree-top this is one interdependent bio-system. Part of this environment are the frequent, naturally occurring ponds and seasonal water features, a result of the self-same underlying chalk aquifer layer. Increasingly rare and protected species are present. Common Frog; Common Toad; Natterjack Toad (very rare); Grass Snake; Adder; Common and Sand Lizard; Slow-Worm; and, easily viewable during breeding season in the now threatened wildlife pond at Wardens Centre, Newt, including Great Crested. The same pond, and those naturally occurring in plots	

ID	Richard Reeves' Comments	Applicants' Comments
	10;12;13;14 also host multiple species of Dragonfly and Damselfly, reliant on the viability of the pond-water, and hence aquifer, for both food supply and location of eggs and subsequent larvae. Reptile and Amphibian mitigation measures, which we heard much of back when the Applicant was seeking to acquire Broom Covert for industrialisation, has not been planned – for the simple reason, it seems to me, that, as I have indicated above, the "suite of surveys" referenced by the Applicant did not include Plots 10;12;13;14.	
8	*36 As noted in Section 2, the landfall HDD bores are likely to be located approximately 750m south of the Wardens Trust site* **RR's response:** 750m …. 400m … 750m …as previously noted, this seems to be either indecisive or a result of a lack of detailed planning of any kind. Can the Applicant be encouraged to select a location please?	As noted at ID1, the 400m quoted is an approximate minimum distance between the likely location of the HDD bores and the assumed location of the Ness House well, while the 750m quoted is an approximate measurement from the likely location of the HDD bores to the Wardens Trust site. The likely location of the HDD bores used for the risk assessment are shown in ***Appendix A*** of the ***HDD Verification Clarification Note*** (REP6-024) submitted at Deadline 6.
9	*38 Existing contamination sources can include neighbouring land uses and historical activities within the onshore development area and in its surroundings. From the desk-based information and the findings of a site walkover (July 2018, see Appendix 20.4 Geomorphological Baseline of the ES (APP-498)), potential sources of contamination have been identified within the onshore development area and include:* *Agricultural land, which can be associated with some contaminative activities including use/storage of pesticides and herbicides and burial of wastes; and • A number of historical sand and gravel pits (including Thorpe Sand Pit) present in various locations within the onshore development area have been infilled and may contain unknown and potentially contaminated fill material.*	***Appendix 20.4 Geomorphological Baseline*** of the Environmental Statement (ES) (APP-498) identifies theoretical sources of contamination that the Projects may interact with. This is to inform an assessment of the Projects' potential to disturb / spread existing contaminants so that the appropriate preventative measures can be determined, it is not meant as an evaluation of the existing environment or potential receptors.

ID	Richard Reeves' Comments	Applicants' Comments
	RR's response: This is pure, groundless speculation, without a scrap of actual evidence. The implication, as seen previously in the Applicant's attempt to characterise rural areas as "suburban", is that the area of the landfall and proposed cable-corridor route are already contaminated – the implied conclusion being that it would therefore not matter if they were contaminated further. What and where are the "various locations?" – and if infilled with "unknown" material, what possible knowledge could inform the assumption that the material is "contaminated"?	
10	*39 & 40* *There are considered to be two key groundwater receptors linked to the landfall:* *• Lowestoft Sand and Gravel and any associated private water supplies (including the Ness House well); and • Crag aquifer.* *The Chalk aquifer is not considered as a receptor in this assessment due to presence of isolating layer of London Clay and due to depth of the proposed activities* **RR's response:** Again, this appears to be a wilful obfuscation of facts. The chalk underlying the London Clay is of no relevance. The crag, till, and mixed chalk elements bearing the aquifer that lies close under the ground level at Ness House and throughout the area of the proposed works is the source of drinking and irrigation waters, and, as has been previously identified by information provided by the Applicant above, is considered to be a "Principal Aquifer"	Paragraphs 39 and 40 of REP6-021 are contained with ***Section 5 Conceptual Site Model***. This considers the thorough professional review of all available information presented in ***Section 4*** (see ID4) in order to identify and assess the potential risks posed by the Projects. By doing this it follows a logical process that identifies the Lowestoft Sand and Gravel and any associated private water supplies (including the Ness House well) as the key groundwater receptor to be considered in the risk assessment. The Applicants acknowledge that potable water supplies are taken from the aquifer through which the HDD bores will pass; this is the basis of the risk assessment.

ID	Richard Reeves' Comments	Applicants' Comments
11	*43 From the 50m drilled length, up until 110m drilled length, the HDD is expected to be in the Crag Group deposits.* **RR's response:** The statement confirms that the HDD will pass through the strata bearing the aquifer to which we refer as the source of our water supply.	As noted at ID1, the strata is the aquifer, it does not bear it. The Applicants acknowledge that the HDD bores will be within the aquifer; this is the basis of the risk assessment.
12	*48. The HDD is likely to be within the Coralline Crag from 110m until 1,300m of the drilling distance. The Crag is expected to provide ideal conditions for HDD.* **RR's response:** Further to the comments recorded above regarding the sudden disclosure that far from protecting or avoiding the previously described as fragile and unstable coralline crag, here we see the massive scope of the planned HDD intrusion. 1190m – almost four fifths of a kilometre to be drilled through. Could the Inspectorate please ensure that EDF is informed of this intrusion into the geological feature which that company has expressed deep concern regarding its stability and integrity.	The Applicants have been engaging with EDF Energy on this matter and have included 'protective provisions for the benefit of EDF Energy' within Part 7 of Schedule 10 to the ***draft DCO*** (document reference 3.1).
13	*49. Previous studies for the area note the presence of vertical joints within the Coralline Crag. Some of the fractures appear to have remained open. These will not pose a problem for bore stability, being vertically oriented, but there might be temporary fluid losses as the drilling bit passes through them. When the bit has passed, the drilling fluid in the fractures will gel to seal the fractures. If persistent losses occur there is a wide range of stop-loss materials that can be added to the drilling fluid to seal the fractures.* **RR's response:**	The use of environmentally friendly drilling fluids and drilling with a minimum practical flow rate are key mitigation methods applied by the risk assessment. As noted in paragraph 15, any drilling fluid losses would be confined to a very limited area around the drill. The drilling fluid will fill in and stabilise fractures created during the drilling process so there will not be an impact on the wider aquifer or the groundwater it contains. These are routine practises when drilling through aquifers, which is a regular requirement for construction projects. Additional pre-construction ground investigation is planned to refine the design and ensure appropriate equipment selection. It will provide more

ID	Richard Reeves' Comments	Applicants' Comments
	Again, this is based on pure speculation as to the possible size and extent of the vertical joints referenced (and as always, in historical studies carried out by, here, un-named 3rd parties). How wide a gap can the gelling lost fluid (and here we see open admission of planned fluid loss) be expected to bridge? How wide are the fractures? Could escaping fluid gel successfully enough to bridge a gap of a metre? Has this ever been attempted? Are there any examples of this gelling process actually being attempted or successfully completed?	detailed information on the ground conditions at the HDD alignment including confirmation of geology and soil properties. The Applicants would point to the ***HDD Verification Clarification Note*** (REP6-024) submitted at Deadline 6 for further details on drilling fluids and the stop-loss materials use to bridge and seal larger voids in the geology and soils
14	*51 & 52 The Applicants propose to implement water quality and levels monitoring at the Ness House well during HDD activities to ensure no that the proposed mitigation is sufficient* **RR's response:** Monitoring as described above is already being carried out on a permanent, year round basis by industry professionals and council authority, as detailed by Dr Gimson in both oral and written representations and submissions. It is highly unlikely that the Applicant, with no experience or knowledge of this field, will be liable to provide a more expert or reliable service in this field. As for the "mitigation" referenced in the above quotation, and also in: *Table 5.2 Hydrological Risk Assessment. Provision of a temporary portable water supply tied into the well at Ness House during HDD activities at the landfall* **RR's response:** As both Dr Gimson and I have repeatedly pointed out, no specific form of mitigation for any adverse effect to our water supply has yet been evinced. Indeed, we have both predicted, correctly, that the Applicant would use terms of such generality as to be no more than an evasion of	The Applicants have considered all necessary information. The Applicants would note that any monitoring during construction would be undertaken by appropriately qualified specialist contractors who would only be appointed following a rigorous procurement process. 'Tied into the well' means that whatever source of alterative water supply is provided, it will be tied into the well system so there is no change to how the Wardens Trust or surrounding properties use the existing supply. It is noted that the Applicants are seeking to reassure the Wardens Trust and surrounding properties that an alternative supply is available, and that works such as those proposed at the landfall are regular occurrences on construction projects and through the application of well established mitigation measures there will be no degradation of water supplies as a result of the Projects' works.

ID	Richard Reeves' Comments	Applicants' Comments
	the question. "Tied into the well"? – What will be tied into the well? Pipeline from mains water supply? Has the Applicant approached Anglian Water about this? Bottled water? A water bowser? – both already declined as a viable or acceptable alternative by Dr Gimson. The only meaningful inference to be drawn from "mitigation" plans thus far put forward by the Applicant is that it seems clear that contamination of our water supply is openly expected.	

Table 2.2 The Applicants' Comments on Tessa Wojtczak's Deadline 7 Submission (REP7-096)

ID	Tessa Wojtczak's Comments	Applicants' Comments
Introduction		
1	In the Introduction to the Landfall Hydrogeological Risk Assessment (REP6-021), the Applicants refer, at 1.1.4 and 2.1.9, to my Deadline 1 submission (REP1-377). I'd also like to draw their attention to remarks made in my Deadline 2 submission, Comments on Written Responses at Deadline 1 (REP2-155), and in my Deadline 3 submission (REP3- 168) in relation to the aquifer, to which I will refer in this written representation. At 1.1.5, The Applicant states the purpose of this Risk Assessment: "i*n particular, consideration is given to HDD and its potential impact on the underlying aquifer, local hydrogeology and private water supplies to five properties north of the likely location of the bores".* (Please note that livestock is also dependent on the water supply at the site, as has been made clear in many earlier representations). Within the Risk Assessment, The Applicant confines remarks to the potential for harmful effects of HDD on the aquifer, and only on construction work specifically at the Landfall Location. I believe the risks assessed should cover wider aspects of construction and terrain where work is likely to interact with the aquifer. These interactions are not likely to be confined to Landfall, and may not be caused exclusively by HDD. 1. I believe that there may be risk of toxicity to the aquifer from Non Road Mobile Machinery at the HDD site discussed in ISH 4, Onshore Environment Construction Transport and Operational Effects. Furthermore, given the likely duration of works, (Landfall HDD works would have a duration of approximately up to 20 months, with a further 36 months for each project), consider the potential effects upon the aquifer of the operations of mechanical	The Applicants would note that Paragraph 4 of REP6-021 states it has been prepared in order address submissions that include, but are 'not limited to' REP1-377, REP4-167 and REP5-122. The Applicants have considered all information either provided directly or to the Examinations and would gratefully receive any further information that can be provided. Regarding water supplies to livestock, REP6-021 is based on the potential for impacts upon potable water supplies to human receptors and is therefore worst case; it is applicable to livestock receptors also. The Applicants would note that REP6-021 was prepared specifically to deal with the issue of having HDD bores pass through the aquifer that bears the water taken from the Ness House well. 1. It is highly unlikely that construction activities at the surface will adversely impact local hydrogeology and groundwater. Excavations along the cable route will typically be 1.2m (1.7m at jointing bays), with excavations for the transition bays being up to 3m deep). Across the onshore development area a suite of pollution prevention measures on-site during construction will work to prevent such events as the spillage of fuels or chemicals. These measures are set out in the ***Outline Code of Construction Practice*** (OCoCP) (document reference 8.1). Additionally, the Applicants will undertake pre-construction hydrogeological risk assessments for works requiring excavations below 1m within 250m of boreholes or springs (e.g. the sources of private water supplies). Where risks are identified the

ID	Tessa Wojtczak's Comments	Applicants' Comments
	excavators, drill rigs, pumps, generators, office containers, welfare containers, transition bays, construction consolidation sites, lay-down, and all the machinery required to service the construction of the cable corridor across the entire area where groundwater drains into the water table which feeds the aquifer. 2. Concerns about toxicity arising from haul road construction and vehicle movement have been expressed by East Suffolk Council. (Draft SoCG ESC and SCC LA 02.15) 3. Richard Reeves, Dr. Alexander Gimson for Wardens Trust and I have made clear that the extent of the aquifer is such that risk is posed by Work undertaken along the Cable Corridor route and not only at Landfall. This is not addressed in the Risk Assessment. 4. What is the exact geographical definition of Landfall as described in this document ? It is not clear exactly how much land is being referred to here. To the many who are familiar with the locale, and those who live within it, it would be useful to know precisely what land the Applicant means to denote in using this term.	appropriate mitigation measures will determined before any on-site works proceed. For clarity, construction and reinstatement of the landfall for a single project would take up to 18 months. If both projects were constructed simultaneously, this would take up to 26 months, while if both projects were constructed sequentially, it would take up to 26 months for the first project and up to 10 months for the second. These periods are set out in ***Appendix 6.4 Cumulative Project Description*** of the ES (REP3-020). Additionally, ***Plate 6.33*** in ***Chapter 6*** of the ES (APP-054) provides an indicative illustration of onshore cable route construction sequencing and timing. 2. The Applicants note that representations made by East Suffolk Council (ESC) about haul road construction and vehicle movement relate to air quality and not the water environment. Several submissions have been made to the Examinations on this issue. 3. Please see the response to point 1 above. 4. The landfall as referred to in REP6-021 is located within Work No. 8 as shown on sheet 1 of the ***Works Plans (Onshore) – Rev 5*** (REP7-005); this correlates with plot 7 as shown on sheet 1 of ***Land Plans (Onshore)*** (REP7-004). The HDD bores will then pass through Work No. 6 on sheet 1 of REP7-005, which correlates with plots 6, 5, 2 and 1 on sheet 1 of REP7-004. The likely location of the HDD bores used for the risk assessment are shown in ***Appendix A*** of the ***HDD Verification Clarification Note*** (REP6-024) submitted at Deadline 6.

ID	Tessa Wojtczak's Comments	Applicants' Comments
Scope of Risk Assessment		
2	In my Deadline 3 Submission, (REP3-168) at Point 1, I address the Applicants Comments on Written Representations Volume 4 Land Interests ExAWR-4.D2.V1. (with reference to ExAQ1.7.17). (REP2- 018). In response to concerns raised about the aquifer on behalf of Elspeth Gimson, and by Christopher and Wendy Orme and Richard Reeves, the Applicant responds: " *with regard to the aquifer……..as outlined in the Draft Statement of Common Ground with the Environment Agency agency (REP 1–077), the applicants have committed to undertake a hydrological risk assessment for works that require excavations below 1 m within 250 m of boreholes or springs.* In The Draft Statement of Common Ground referred to, at EA109, (Wording of Requirements) , with reference to a " written scheme to mitigate the potential for release of contaminants," the Applicants agree that an updated CoCP will include: " *a commitment to undertake a hydrogeological risk assessment for works that could cause changes for aquifer flow or affect aquifer quality within 500m of groundwater dependant ecological sites…. "A screening exercise will be undertaken (utilising desk- based information such as BGS borehole records, solid and superficial geological mapping and OS mapping, site citations, Natural England's Priority Habitats Inventory and Phase 1 Habitat survey data where available) ,to determine whether or not ecological sites have features/ habitats that are likely to be groundwater fed. Where features/ habitats that are likely to be groundwater fed are*	As stated at ID1, REP6-021 was prepared specifically to deal with the issue of having HDD bores pass through the aquifer that bears the water taken from the Ness House well. It is not the only hydrogeological risk assessments that will be undertaken for the Projects. As noted, the Applicants have agreed with the Environment Agency through the Statement of Common Ground process that pre-construction hydrogeological risk assessments will be undertaken for works requiring excavations below 1m within 250m of boreholes or springs (e.g. the sources of private water supplies). Where risks are identified the appropriate mitigation measures will be agreed with the Environment Agency before any on-site works proceed.

ID	Tessa Wojtczak's Comments	Applicants' Comments
	within 500 m of works that require excavations below 1m, a hydrogeological Risk Assessment will be undertaken." The underlining here is mine. To my understanding, the undertakings made in the Draft Statement of Common Ground are entirely relevant to the question of potential contamination of the aquifer and should be included in this Hydrogeological Risk Assessment. The Risk Assessment before us does not address any of these issues. It does not address changes caused to aquifer flow, which would be significant for the water supply to Wardens, or groundwater contamination. To that extent it does not adequately answer the question of potential risk to the wider aquifer underlying the construction site.	
The Coralline Crag		
3	It has been my understanding that throughout this Examination, in response to representations outlining the sensitivity and significance of the Coralline Crag, the Applicants have undertaken to avoid the Crag when undertaking HDD. In the Outline Landfall Construction Method Statement, at 1.3.12, "Rationale for use of HDD at Landfall", one of the reasons given is to a*void direct physical disruption to the outcrop of Coralline Crag*. However, at 3.15 of the Risk Assessment, The Applicant states: *"The HDD is expected to be <u>within</u> the Coralline Crag beneath the cliffs, and the <u>strength</u> of the Coralline Crag is expected to prevent any drilling fluid breaking out at this point*." (my underlining). This appears to contradict undertakings made elsewhere by SPR.	The Applicants would clarify that complete avoidance of the Coralline Crag has never been proposed for the Projects. As Ms Wojtczak correctly identifies, the ***Outline Landfall Construction Method Statement*** (an updated version has been submitted at Deadline 8, document reference ExA.AS-2.D8.V3) states that one of the reasons for using HDD at the landfall is to *"**avoid direct physical disruption to the outcrop of Coralline Crag**"*. By 'outcrop', the Applicants are referring to the parts of the Crag that are visible at the surface. The 100m referred to by Paul Paterson of ESC relates to a buffer being applied to the *"outcrop of Coralline Crag"*. The HDD bores as proposed pass through the Coralline Crag, but beneath its visible surface before 'punching out'.

ID	Tessa Wojtczak's Comments	Applicants' Comments
	At ISH 4, Session 2, at around 35.03, SPR stated that HDD would be taking place under the Coralline Crag, and that they would be moving south to avoid the Coralline Crag. At 39.46 Caroline Jones queried, you do rely on HDD to avoid the Coralline Crag? At 1.40, Nick Cooper for SPR confirms that HDD enables the Coralline Crag to be avoided. At 1.08.10, Ms Abraham's for EDF requests that: *Protection afforded to the site offshore by the Coralline Crag between Sizewell and Thorpeness should not be compromised……..to ensure the continued safe operation of the Sizewell B Power Station.* This is picked up again by Paul Paterson of ESC. at 1.15.22, where he seeks to clarify that EDF are seeking an agreement from SPR that the Punch Out will be 100m away from the Coralline Crag. At that same session of ISH 4, Alison Andrews for the Alde and Ore Association drew attention to the fact that the Crag is not a solid rock formation, but: *A name given to a deposit of fossil shells and any Shelly sand or gravel (with) no strength against the crashing sea*. This same feature is now being presented as a robust, " strong" structure that will be utilised in preventing polluting drilling fluid from escaping. It may be a failure in my understanding of the terms used in this Risk Assessment, but the nature of the direct interaction with the Crag that is described within the document does not seem consistent with these undertakings.	

ID	Tessa Wojtczak's Comments	Applicants' Comments
Risks Posed During Construction		
4	At 5.41 The Applicant states: *No pollutant linkages have been identified for the projects during their operational phase. As such, there is not considered to be a risk to Groundwater during the operation of the Landfall.* Again, my concerns are not limited to the operational but also the construction phase, in respect of cable laying, high volumes of traffic, foul and other waste and chemical contamination. There is still no clear idea, with EA1 and EA2 potentially being constructed sequentially, how long these repeated periods of construction will be. In addition, the other energy projects, including Nautilus, which we believe are likely to engage with the coast at the same point, will potentially extend these periods of construction and their effects on the aquifer for an indefinite period of time. This is why we believe that the " foot in the door" effect of these projects should they obtain consent is so significant. At 5. 45 to 5.49 The Applicant outlines risks and " inevitable " losses of drilling fluid to the surrounding ground. At 5.48 – 5.49 it states: " *The HDD is likely to be within the Coralline Crag from 110m until 1300m of the drilling distance.* ***The Crag is expected to provide ideal conditions for HDD****….* *… Previous studies for the area note the presence of vertical joints within the coralline Crag. Some of the fractures appear to have remained open. These will not pose a problem for bore stability, being vertically oriented, but there might be temporary fluid losses as the drilling bit passes through them.When then it has passed, the drilling fluid in the fractures will gel to*	Please see response at ID1. It is highly unlikely that construction activities at the surface will adversely impact local hydrogeology and groundwater. For clarity, construction and reinstatement of the landfall for a single project would take up to 18 months. If both projects were constructed simultaneously, this would take up to 26 months, while if both projects were constructed sequentially, it would take up to 26 months for the first project and up to 10 months for the second. These periods are set out in ***Appendix 6.4 Cumulative Project Description*** of the ES (REP3-020). Additionally, ***Plate 6.33*** in ***Chapter 6*** of the ES (APP-054) provides an indicative illustration of onshore cable route construction sequencing and timing. Please also see the ***Project Update Note*** (REP2-007) which sets out the Applicants' commitment that should both the East Anglia ONE North project and the East Anglia TWO project be consented and built sequentially, when the first project goes into construction, the ducting for the second project will be installed along the whole of the onshore cable route in parallel with the installation of the onshore cables for the first project. This will include installing ducting using a trenchless technique at the landfall for both projects at the same time. Please see ID3 regarding the Coralline Crag. Regarding the priorities of the Coralline Crag, the Applicants would point to the ***HDD Verification Clarification Note*** (REP6-024) submitted at Deadline 6 and prepared by Riggall & Associates to provide a review of the feasibility of using HDD at the landfall; this is the report upon which the hydrogeological risk assessment has been based.

ID	Tessa Wojtczak's Comments	Applicants' Comments
	seal the fractures. If persistent losses occur there is a wide range of stop-loss materials that can be added to the drilling fluid or seal the fractures . (My emphases). Here we seem to have made a definitive move from an understanding of the Coralline Crag as a sensitive and fragile receptor to be protected and avoided, to one in which the Crag itself becomes a useful part of the engineering process, absorbing escaping fluids, whose existing fractures will usefully be mended with the application of additional chemical materials within the drilling fluids. Again, in earlier submissions put to the ExA, emphasis has been laid upon the importance of the stability of the Coralline Crag, not only for ecological reasons but in safety considerations around Sizewell B and C, as referenced above. How can it be certain that the utilitarian and invasive procedures as described in the Risk Assessment will not have a detrimental effect on the structure and operation of the Crag? Further, could the " previous studies " referred to above be identified? Moving on Table 5.2, "*Hydrological" Risk Assessment, I note that only one Risk is rated High; the significant one of "Fuel or oil spills from machinery on site*" . Within the terms of the Risk Assessment, **High Risk**, according to Table 5.1, constitutes the following: 1.Contaminants very likely to represent an unacceptable risk to identified receptors. 2.Site probably not suitable for current/future use 3.Enforcement action possible.	To note, Riggall & Associates is an independent firm providing technical advice on HDD solutions. The company has worked on over 200 HDD projects and specialises in feasibility studies, hydrofracture modelling, drill force modelling, detailed design and planning. REP6-024 demonstrates that boring within aquifers is a regular requirement for construction projects and the mitigation measures available are routine practices. It will only be possible to determine the exact locations of construction activities / facilities / storage during detailed design. Detailed design will ensure the locations are sensitively selected considering local receptors and in accordance with good practice guidance. Across the onshore development area a suite of pollution prevention measures during construction will prevent such events as the spillage of fuels or chemicals. These measures are set out in the ***OCoCP*** (document reference 8.1). As set out in the ***OCoCP*** (document reference 8.1), during the construction phase the Applicants will operate an Environmental Management System (EMS) based on the requirements of IS0 14001:2015, that describes the processes and procedures by which the Applicants identifies and manages significant risks associated with its operations and activities. The EMS is a primary mechanism by which environmental policy commitments, such as compliance with relevant legislation and standards, pollution prevention and continual improvement in environmental performance are measured, monitored and delivered. Through the EMS, contractors undertaking work on behalf of the Applicants are screened and selected using a variety of criteria that include environmental credentials. The EMS will, inter alia, provide for the preparation and implementation of a programme of environmental

ID	Tessa Wojtczak's Comments	Applicants' Comments
	4.Urgent action required. These are clearly crucial topics within this Examination. However, after proposed mitigation this High risk is reduced to **Negligible**. The mitigation proposed is: 1. No refuelling in or in close proximity to Landfall site. What is " *close proximity* ? And what exactly is meant by the Landfall site? Should distances not be specified? Where then will refuelling take place? Is it likely to be moved closer to Ness House and other dwellings? I'd ask that certainty is given that it will not. And is there not a risk to Groundwater wherever refuelling takes place? Are vehicles to be deployed in this process, causing further pollutants? This seems a vague solution to a risk assessed by the Applicant themselves as High. 2. No storage of any potentially contaminative materials in or close Landfall site(sic). Again, please define " *close proximity* ".Where then **<u>are</u>** potentially contaminative materials to be stored? Again, will the Applicant undertake that they will not then be brought into closer proximity to Ness House, the dwellings, and Wardens? And is there not an equal potential risk to the Aquifer wherever they may be stored? 3. No welfare facilities in or in close proximity to Landfall sites. Again, what is "*close proximity* "? Is this realistic? Where are welfare facilities to be? I'd ask for a clear undertaking that all these measures taken to remove aspects of construction from the Landfall doesn't simply result in them being brought closer to Wardens and the dwellings. A **medium** risk of contaminated surface water is identified in Table 5.2, caused by over-pumping in the area of the entry pits. The mitigation	monitoring and auditing to ensure that the Applicants' environmental standards are being adhered to.

ID	Tessa Wojtczak's Comments	Applicants' Comments
	proposed to reduce this risk to **negligible** is " no *discharge to ground of any over- pumped water*" . How is this water to be disposed of? It is not clear. All of these measures suggest a great deal of unnecessary additional movement of machinery, vehicles and personnel, this increasing the ecological, noise and environmental damage and health risks of the construction work at this site. With the inevitable time pressure on contractors, I'd question the enforceability of these key proposals throughout construction. How is it proposed that they will be enforced? If these measures are deemed acceptable by the Panel, should they not be formalised in the CoCP or where appropriate, and subject to monitoring by an independent body? I believe that in addressing concerns that have been raised about danger to the aquifer posed by construction here merely in relation to HDD at the Landfall site, the Risk Assessment is offering inadequate mitigation to only a part of the problem.	
Boreholes		
5	At 4.1.22 The Applicant refers to existing BGS boreholes surrounding the Landfall. According to Figure 1 Appendix 1, two boreholes feature in varying proximity to Ness House. One of the boreholes marked TM46SE39 is 502 metres from Ness House Cottage (not Ness House, as identified on the map). This is a much shorter distance than the 750 metres suggested at 3.10: *The Landfall HDD bores are likely to be located north of Thorpeness (approximately 750 metres south of the Wardens Trust site*) ,	The British Geological Survey (BGS) boreholes referred to in REP6-021 are not used for the supply of potable water. They are not considered as receptors within the risk assessment, rather information from their logs is used to gain an understanding of the wider environmental setting upon which the risk assessment is based (e.g. to determine the depths of certain strata). The distances shown on Figure 1 within Appendix 1 of REP6-021 are there to demonstrate the degree to which information from the logs of the BGS boreholes is relevant to the Ness House well. Regarding the information contained within REP7-097, the Applicants understand the boreholes referred to by Ms Wojtczak to be pipes

ID	Tessa Wojtczak's Comments	Applicants' Comments
	and at 4. 4.36, which cites the same distance of 750 metres. The greater distance has no less significance for potential contamination. In fact TM46SE39 is only 2 metres in excess of the undertaking made in the Draft Statement of Common Ground with the EA (Rep1-077) (EA109): "*A commitment to undertake a hydrogeological risk assessment for works that could cause changes to aquifer flow or affect aquifer quality within 500m of Groundwater dependent sites"* At 4.2.30, The App states *It is understood that the Ness House well is located in a locked building within the bounds of the property over 400 m north of the likely location of the HDD bores*. I think the assessment of a 400 metre distance of the well from the likely location of the HDD bores that the Applicants supply at 4.2.30, is particularly significant in relation to the undertaking made in the Draft Statement of Common Ground with the Environmental Agency (Rep1-077) as referenced above. Given the disparity in these three sets of figures, 502, 750, and 400 metre distances and the fact that they all connect with the same aquifer, I'm not able to understand their significance within this Risk Assessment. I note also that at 3.10, the Applicant makes it clear that throughout this assessment, we are only considering the " likely " location of boreholes; which implies that, should locations change, the figures given here will have no relevance. I believe that there may be two additional boreholes in close proximity to Ness House and Wardens which do not appear on the map at Figure 1 of the Risk Assessment. I have indicated the locations on the same map and attached photos to aid identification in a separate WR at this Deadline 7.	associated with the landowners agricultural irrigation system, and is not a borehole. As noted at ID1, the 400m quoted is an approximate minimum distance between the likely location of the HDD bores and the assumed location of the Ness House well, while the 750m quoted is an approximate measurement from the likely location of the HDD bores to the Wardens Trust site. The likely location of the HDD bores used for the risk assessment are shown in ***Appendix A*** of the ***HDD Verification Clarification Note*** (REP6-024) submitted at Deadline 6. The Applicants assume that Ms Wojtczak means '250m' rather than '2m' when referring to REP1-077.

ID	Tessa Wojtczak's Comments	Applicants' Comments
	Their presence emphasises the significant and constant use to which the water supply here is put. If these are indeed boreholes, why have they not been marked? Given that they are directly adjacent to land sought for cable corridor construction, and in much closer proximity to Ness House, can the Applicant guarantee that there will be no significant interaction with them creating greater risk?	
Water Supply at Ness House and Wardens		
6	At 6.55 The Applicants: *Propose to implement a water quality and levels monitoring regime at the Ness House well, and a temporary portable water supply tied into the well will be provided for the duration of the HDD activities.* The Panel have seen the location of the well, which is situated within an old courtyard comprising part of one of the private residences . Bearing in mind that location, the extent of water required for a busy community resource, the possible duration of the HDD work over the two projects, and Dr Gimson's specific stipulation that bowsers should not be put forward as an alternative, I ask the Panel to recognise that this is not suitable or adequate mitigation.	The Applicants have made clear that the proposed temporary alternative water supply system will be tied into the existing well. This will ensure that users of the water supply will experience no change in how it works downstream of the 'tie-in'.