



Hornsea Project Three Offshore Wind Farm

Applicant Responses to the ExA's Further Information – Rule 17

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Front cover picture: Kite surfer near a UK offshore wind farm © Ørsted Hornsea Project Three (UK) Ltd., 2019.

Hornsea 3
Offshore Wind Farm.....

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1. Applicant's responses to the Further Information – Rule 17

1.1.1.1 Following the issue of Further Information by the Examining Authority outlined in the Rule 17 Letter of 19th March 2019 to the Applicant, the Applicant has subsequently responded to each of those questions. Details of Applicant's responses are set out within this document in subsequent sections below.

1.1 Further Information – Ornithology

PINS Ref. No.	Question is addressed to:	ExA Question	Draft Response
F3.1	Applicant	<p>There are differing views before the Examination on the appropriate parameters to use in collision risk modelling (CRM). The Examining Authority (ExA) has not concluded on these matters and will continue to consider all points of view. The request to re-run the CRM set out below may assist the ExA. The ExA will take any results into account together with all other evidence on this topic.</p> <p>Please run the CRM using the digital aerial survey data with the following species-specific parameters:</p> <p>Bird Length (m)</p> <p>Gannet 0.94 (Robinson 2017)</p> <p>Kittiwake 0.39 (Robinson 2017)</p> <p>Lesser black-backed gull 0.58 (Robinson 2017)</p> <p>Great black-backed gull 0.71 (Robinson 2017)</p> <p>Herring gull 0.60 (Robinson 2017)</p> <p>Wing Span (m)</p> <p>Gannet 1.72 (Robinson 2017)</p> <p>Kittiwake 1.08 (Robinson 2017)</p> <p>Lesser black-backed gull 1.42 (Robinson 2017)</p> <p>Great black-backed gull 1.58 (Robinson 2017)</p> <p>Herring gull 1.44 (Robinson 2017)</p> <p>Flight Type</p> <p>Gannet Flapping</p>	The requested collision risk modelling has been provided at Appendix 19 to the Applicant's Deadline 9 submission.

		<p>Kittiwake Flapping</p> <p>Lesser black-backed gull Flapping</p> <p>Great black-backed gull Flapping</p> <p>Herring gull Flapping</p> <p>Upwind Flights (%)</p> <p>Gannet 50</p> <p>Kittiwake 50</p> <p>Lesser black-backed gull 50</p> <p>Great black-backed gull 50</p> <p>Herring gull 50</p> <p>Flight Height Proportions</p> <p>Gannet Option 1</p> <p>Kittiwake Option 1</p> <p>Lesser black-backed gull Option 3 (observed – boat-based)</p> <p>Great black-backed gull Option 3 (observed – boat-based)</p> <p>Herring gull Option 3 (observed – boat-based)</p> <p>As in the original analysis [APP-109], the 35m band as well as the combined 35m and 30m band should be analysed from the boat-based surveys to provide a precautionary estimate.</p> <p>Flight Speed</p> <p>Gannet 14.9 m/sec (Pennycuick et al. 1987)</p> <p>Kittiwake 13.1 m/sec (Pennycuick et al. 1987)</p> <p>Lesser black-backed gull 13.1 m/sec (Alerstam et al. 2007)</p> <p>Great black-backed gull 13.7 m/sec (Alerstam et al. 2007)</p> <p>Herring gull 12.8 m/sec (Alerstam et al. 2007)</p> <p>Avoidance Rates</p> <p>Gannet 0.995 (Bowgen and Cook 2018)</p> <p>Kittiwake 0.990 (Bowgen and Cook 2018)</p> <p>Lesser black-backed gull 0.993 (Bowgen and Cook 2018)</p> <p>Great black-backed gull 0.993 (Bowgen and Cook 2018)</p> <p>Herring gull 0.993 (Bowgen and Cook 2018)</p> <p>Nocturnal Activity Factors</p> <p>Gannet 1-2 (Furness 2018/Garthe & Hüppop 2004)</p> <p>Kittiwake 2-3 (Furness 2018/Garthe & Hüppop 2004)</p> <p>Lesser black-backed gull 3 (Garthe and Hüppop 2004)</p> <p>Great black-backed gull 3 (Garthe and Hüppop 2004)</p>	
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		<p>Herring gull 3 (Garthe and Hüppop 2004)</p> <p>Please use the wind farm parameters, as defined in Table 1.4 of the ES [APP 109] for the initial analysis and then increase the rotor tip height to 37.5m and 40m above LAT for subsequent runs in order to evaluate the effect of the mitigation that was proposed at ISH7.</p> <p>Please use the results of the analyses to refine the population viability analysis for each species and conclude on whether the potential collision impacts would lead to an adverse effect on the integrity of the Flamborough and Filey Coast SPA either alone or in combination with other plans or projects for relevant species. This evaluation should be based on the following assumptions:</p> <p>Apportioning</p> <p>Gannet</p> <p>Post-breeding 4.8%</p> <p>Breeding 63.3%</p> <p>Pre-breeding 6.2%</p> <p>Kittiwake</p> <p>Post-breeding 5.4%</p> <p>Breeding 41.7%</p> <p>Pre-breeding 7.2%</p> <p>Seasonality</p> <p>Gannet – Breeding March-September (Furness 2015)</p> <p>Gannet – Non-breeding October-February (Furness 2015)</p> <p>Kittiwake – Breeding March-August (Furness 2015)</p> <p>Kittiwake – Non-breeding September-February (Furness 2015)</p> <p>Please set out whether the above parameterisation and assumptions alter the conclusions of the ES and the RIAA and to what extent the proposed increases in rotor tip height might mitigate any negative impacts.</p> <p>If the Secretary of State were to conclude that an increase in rotor tip height would represent appropriate mitigation, could that be secured by amending the dimension in Requirement 2(2)(c) and in the corresponding design parameters in the Deemed Marine Licences?</p> <p>Would any consequential amendments be required?</p>	
F3.2	Applicant	<p>You cite Wakefield et al. (2017), Coulson (2011) and Pearson (1968) in the RIAA [APP-054] to justify the kittiwake apportioning. Please provide copies of these publications.</p>	<p>For Wakefield et al (2017) and Pearson (1968)</p> <p>See appendices 15 and 17 to the Applicant's</p> <p>Deadline 9 submission. Regarding Coulson</p>

			(2011), this is a book that can be purchased for the ExA if required.
F3.3	Applicant	You cite Langston et al. (2013) in [ERP4-12] in an answer you gave to Q2.2.24 on breeding seasons. Please provide a copy of this publication.	See Appendix 18 to the Applicant's Deadline 9 submission

1.2 Further Information – Benthic ecology

PINS Ref. No.	Question is addressed to:	ExA Question	Draft Response
During Issue Specific Hearing 7, the ExA requested clarification on the vertical accuracy of the backhoe dredger (see paragraph 4.26 of REP7-009). The Applicant can confirm that the vertical control of backhoe dredger is the same as the training suction hopper dredger (i.e. 30 cm), as set out in section 6.4 of Annex 2 to the Rock Protection Decommissioning Methods.			
F3.4	Applicant	<p>The Examining Authority (ExA) understands that the assessments in the ES are on the basis that no more than 10% of the length of cables in any Marine Protected Area would require cable protection. However, this does not appear to be secured explicitly in the Deemed Marine Licences or in the Outline Cable Specification and Installation Plan.</p> <p>The drafting set out below may be one way of addressing this matter: In Schedule 11 Condition 3 insert new sub-paragraph: 3(3) No more than 10% of the length of the cables in Work No 1(c) falling within any European Site, European Protected Site or MCZ shall be subject to cable protection. (Equivalent wording could be included in Schedule 12). Please comment on the merits of this suggestion and on the suggested drafting.</p>	<p>The Applicant is content to accept this requirement, noting that this relates to remedial cable protection and therefore excludes crossings. The Applicant has proposed minor changes to the wording of the condition proposed by the ExA below. The Applicant can also confirm that similar wording has been applied to Markham's Triangle pMCZ (see Schedule 11, Part 2, condition 3(3) of the DCO provided at Deadline 9).</p> <p><i>3(3) No more than 10% of the length of the cables in Work No 1(c) falling within any European Site, European Protected Site or MCZ shall be subject to cable protection, unless otherwise agreed with the MMO.</i></p>
F3.5	Applicant	The Marine Management Organisation has submitted [REP7-104] that cable protection during the operational phase of the Proposed Development should be excluded from the Deemed Marine Licences.	Without prejudice to the Applicant's position, the Applicant is willing to accept this condition, if the Secretary of State considers this necessary.

		<p>The drafting set out below may be one way of addressing this matter: In Schedule 11 Condition 5 insert new sub-paragraph:</p> <p>5(4) Maintenance works do not include placement of cable protection on any section of cable that was not subject to cable protection before the commencement of use of that section of cable. [Subsequent sub-paragraphs renumbered accordingly]</p> <p>(Equivalent wording could be included in Schedule 12).</p> <p>Please comment on the merits of this suggestion and on the suggested drafting</p>	<p>However, as set out in the Applicant's response to the MMO's Deadline 6 response (see page 85 of REP7-007), the Applicant has sought to take a holistic approach to the assessment of the effects of cable protection for the lifetime of the project and to have the ability to install cable protection during construction or during the operation and maintenance phase. This was to remove the need for further marine licence applications post-consent for any potential cable protection required during the operation and maintenance phase and the associated increase in resource demands on MMO and SNCBs. The Applicant's position is that the Cable Protection Plan (Section 5 of the outline Cable Specification and Installation Plan; REP7-021) would be a live document which would be used both in the construction phase and the operation and maintenance phase of the project. This would provide the necessary mechanism whereby the MMO and relevant SNCBs would be consulted on and agree any cable protection measures to be deployed within designated sites throughout the project lifetime (as well as any other remedial burial operations which may be attempted prior to use of cable protection).</p> <p>The Applicant would propose the following draft condition, as stated above, on a without prejudice basis:</p> <p><i>Maintenance works do not include placement of cable protection on any section of cable that was not subject to cable protection before the commencement of use of that section of cable unless such cable protection placement relates to cable crossing repairs.</i></p>
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1.3 Further Information – Navigation and other offshore impacts – effects on oil and gas operations

PINS Ref. No.	Question is addressed to:	ExA Question	Draft Response
F3.6	Applicant	<p>Spirit Energy has proposed protective provisions which may restrict the ability to construct wind turbine generators in parts of the Order limits [REP7-093].</p> <p>Please provide plans showing the effect of the suggested provisions in relation to the proposed Order limits.</p> <p>Please comment on the likely effects on the number of wind turbine generators that could be constructed and on the generation capacity of the Proposed Development for each of the following scenarios.</p> <p>The scenarios are that the Secretary of State decides to impose:</p> <ol style="list-style-type: none"> The suggested obstacle-free helicopter flight volume (but not the suggested vessel exclusion area) The suggested vessel exclusion area (but not the suggested obstacle-free helicopter flight volume) The suggested obstacle-free helicopter flight volume and the suggested vessel exclusion area 	<p>The Applicant has provided plans illustrating both parties' protective provisions in relation to the Order limits in Annexes 1 and 2 of this document. Annex 1 shows the Protective Provisions submitted by Spirit Energy at deadline 7 (REP7-093) (as interpreted by the Applicant in absence of a plan being provided by Spirit Energy) which include:</p> <ol style="list-style-type: none"> An Obstacle Free Helicopter Zone comprising a radius of 6 nm extending from the centre points of the Chiswick and Grove helidecks, respectively, A Vessel Exclusion Area <i>"means in so far as relevant, the volumes extending from the sea surface at mean sea level down to the sea bed (i) bounded to the east by a notional loxodrome drawn through and extending beyond the centres of the Chiswick and Grove Platforms, to the west by a loxodrome parallel to that loxodrome and at all times 2 nm to the east of it, to the north by the loxodrome of latitude passing through the northernmost point on the perimeter of the windfarm array, to the south by the loxodrome of latitude passing through the southernmost point on the perimeter of the windfarm array and (ii) bounded by a circle of radius of 2 nautical miles centred on the centre point of each of the Relevant Sub-Sea Well Heads."</i> Although not captured in the definition of the Obstacle Free Helicopter Zone Spirit Energy state that the, <i>"Protective Provision still reflects the continuing need for helicopters to be able to operate under a variety of weather conditions to and from the NUIs and rigs or vessels over subsea infrastructure, whereby any wind turbines will require to be offset from the NUIs and C6 and C7 by at least 6nm"</i> (REP7-093). As such, the Applicant has included a radius of 6nm extending from each of the speculative C6 & C7 wells (based on interpreted well locations in absence of confirmation of actual well locations being provided by Spirit Energy) in the plan and this has been considered as a separate likely effects scenario.

			<p>Spirit Energy's Protective Provisions' likely effects on the number of wind turbine generators that could be constructed and on the generation capacity of the Proposed Development are provided under the following scenarios and are based on indicative layouts A and B provided in the Project Description chapter of the Environmental Statement (ES) (APP-058). The Applicant has estimated the likely effects on the number of wind turbine generators (WTGs) and on the generation capacity of the Proposed Development, assuming the indicative positions given in Layout A. The Applicant has also assumed, for the purposes of this question, the use of a WTG with a nameplate capacity of 8MW. Given these assumptions, the impacts of implementing the protective provisions proposed by Spirit Energy are given below. It should be noted that these effects may vary based on the outcome of detailed design and especially the choice of WTG and are presented here as indicative impacts only. The figures presented for the generation capacity are also approximate and assume that the total generation capacity of the wind farm, without any restrictions on areas of construction, would be approximately 2400MW.</p> <p>Notwithstanding these indicative impacts – the Applicant considers that due weight can be applied by the ExA. The likely effects on the number of WTGs that could be constructed and on the generation capacity of the Proposed Development for each of the scenarios described below is presented in Table 1.1 and as follows:</p> <p>a) The suggested obstacle-free helicopter flight volume (but not the suggested vessel exclusion area):</p> <p>Given the inconsistent wording of the Protected Provisions provided by Spirit Energy in their post-hearing submission at deadline 7 (D7-093) the Applicant has interpreted this scenario in two ways.</p> <p><u>Scenario 1.</u> Implementation of 6nm buffers around the existing platforms, <u>but not</u> the proposed wells: This scenario would lead to a reduction in the array area of 168 km², which would correspond to 24% of the array area being unusable for WTG construction.</p> <p>Noting the above assumptions, i.e. an 8MW WTG and indicative layouts A (or B) this is likely to limit the generation capacity <u>to</u> approximately 1820MW.</p>
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Table 1.1: Effects on the number of wind turbine generators that could be constructed and on the generation capacity of the proposed development based on different scenarios of Spirit Energy Protective Provisions

	Application (Order Limits)	Applicants Interpretation of Spirit Energy PPs (as issued at deadline 7 (REP7-093))				Applicants Interpretation of Spirit PPs including 6 nm around speculative wells (C6 + C7*)	
		Scenario 1 6nm radius around Chiswick & Grove	Scenario 3(i) 2 nm Vessel Exclusion Zone	Scenario 3(ii) 2 nm Vessel Exclusion Zone + 2nm around speculative wells (C6 + C7)	Scenario 1 + 3 6nm radius around Chiswick & Grove + 2 nm Vessel Exclusion Zone	Scenario 2 6nm radius around Grove, Chiswick + 6 nm radius around speculative wells (C6 & C7)	Scenario 2 + 3 6nm radius around Grove, Chiswick + 6nm radius around speculative wells C6 & C7 + 2 nm Vessel Exclusion Zone
Order Limits (km ²)	696	528	679	653	527	463	463
% Order Limits effectively Removed by Protective Provisions**		24%	2%	6%	24%	33%	34%
% Order Limits Retained		76%	98%	94%	76%	67%	66%
Project maximum design scenario: Turbines (Most numerous turbines)*	300	215	292	278	215	186	186
Project maximum design scenario: Turbines (largest turbine)*	160	115	156	149	115	99	99
Number of homes powered**	2,000,000	1,517,000	1,950,000	1,878,000	1,515,000	1,331,000	1,329,000
Number of homes powered – lost by imposition of Protective Provisions		483,000	50,000	122,000	485,000	669,000	671,000

+ Source: Table 3.6 Project Description							
++ Sources: Ørsted, BEIS DUKES (2018), BEIS ECUK (2018)							
						*As identified by the Applicant from Spirit Energy's Written Representation at D3 (REP3-057) in absence of confirmation from Spirit Energy	
<p>** This table is limited to a high-level summary of impact associated with the imposition of Spirit Energy Protective Provisions. The associated imposition on turbine locations (either most numerous or largest turbine) is also subject to a range of other constraints across the array – including, but not limited to:-</p> <ul style="list-style-type: none">- Array layout principles (likely to further increase the degree of imposition imposed by the PPs)- Site conditions (already impedes array outside of proposed PP limits, therefore likely to further increase the degree of imposition imposed by the PPs where site conditions may not be a restriction)- Existing assets in the array – such as cables (already impedes array outside of proposed PP limits, therefore likely to further increase the degree of imposition imposed by the PPs where existing assets may not be located)- Geotechnical and ground conditions (full impact can only be determined as part of ground investigations post consent – therefore could further increase the degree of imposition imposed by the PPs)- Archaeological Exclusion Zones (full impact can only be determined as part of investigation post consent – therefore could further increase the degree of imposition imposed by the PPs). <p>The true imposition of PPs on Hornsea Three generation capacity imposed by Spirit Energy could therefore increase further as the detailed design is taken forward post consent.</p>							

PINS Ref. No.	Question is addressed to:	ExA Question	Draft Response
F3.7	Applicant	<p>You have suggested protective provisions for Spirit Energy [REP7-055].</p> <p>Please comment on the likely effects on the number of wind turbine generators that could be constructed and on the generation capacity of the Proposed Development if your suggested protective provisions were adopted.</p>	<p>The Applicants plan showing its protective provisions was provided in Appendix 36 at Deadline 7 (REP7-055) and is included in Annex II. The Applicants protective provisions comprise:</p> <ol style="list-style-type: none"> 1. A restricted zone extending in a 2.8 nm radius from the Chiswick Platform 2. A protected area extending in a 2.8 nm radius from the Grove Platform 3. Protected areas extending in a 1 nm radius from each of the speculative C6 and C7 wells. <p>The same assumptions applied for evaluating Spirit Energy Provisions are used to evaluate the likely effects of the Applicants provisions. The likely effects on the number of WTGs that could be constructed and on the generation capacity of the Proposed Development for each of the scenarios described below is presented in Table 2.1 and as follows.</p> <p>a) The 2.8 nm restricted area around Chiswick Platform</p> <p><u>Scenario 1:</u> This scenario would lead to a reduction in the array area of 16 km², which would correspond to 2% of the array area being unusable for WTG construction. With the above assumptions, this is likely to limit the generation capacity to approximately 2340MW.</p> <p>b) The 2.8 nm restricted area around Chiswick Platform and 2.8 nm protected area around Grove Platform</p> <p><u>Scenario 2:</u> 2.8nm restricted area around Chiswick and Grove Platforms: This scenario would lead to a reduction in the array area of 18 km², which would correspond to 3% of the array area being unusable for WTG construction. With the above assumptions, this is likely to limit the generation capacity to approximately 2330MW.</p> <p>3) The 2.8 nm restricted area around Chiswick Platform, 2.8 nm area around Grove Platform and 1 nm buffer areas around speculative C6 & C7 wells.</p> <p><u>Scenario 3:</u> 2.8nm restricted area around Chiswick and Grove Platforms and 1nm buffer around speculative wells C6 and C7. This scenario would lead to a reduction in the array area of 20 km², which would correspond to 3% of the array area being</p>

			<p>unusable for WTG construction. With the above assumptions, this is likely to limit the generation capacity to approximately 2320MW.</p>
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Table 2.1: Effects on the number of wind turbine generators that could be constructed and on the generation capacity of the proposed development based on different scenarios of Hornsea Three Protective Provisions

Hornsea Three's Protected Provisions: Spirit Energy Assets				
	Current Status (Order Limits)	Scenario 1 2.8nm radius from Chiswick Platform	Scenario 2 2.8nm radius from Chiswick Platform + 2.8 nm radius from Grove Platform	Scenario 3 2.8nm radius from Chiswick Platform + 2.8 nm radius from Grove + 1 nm radius buffer from speculative wells
Area (km ²)	696	680	678	676
% area unusable		2%	3%	3%
% area remaining		98%	97%	97%
Number of Positions – Layout A	300	292	291	290
Number of Positions – Layout B	160	156	155	155
Number of homes powered	2,000,000	1,955,000	1,948,000	1,942,000

Number of homes powered - lost	45,000	52,000	58,000
<p>** This table is limited to a high-level summary of impact associated with the imposition of Spirit Energy Protective Provisions. The associated imposition on turbine locations (either most numerous or largest turbine) is also subject to a range of other constraints across the array – including, but not limited to:-</p> <ul style="list-style-type: none"> - Array layout principles (likely to further increase the degree of imposition imposed by the PPs) - Site conditions (already impedes array outside of proposed PP limits, therefore likely to further increase the degree of imposition imposed by the PPs where site conditions may not be a restriction) - Existing assets in the array – such as cables (already impedes array outside of proposed PP limits, therefore likely to further increase the degree of imposition imposed by the PPs where existing assets may not be located) - Geotechnical and ground conditions (full impact can only be determined as part of ground investigations post consent – therefore could further increase the degree of imposition imposed by the PPs) - Archaeological Exclusion Zones (full impact can only be determined as part of investigation post consent – therefore could further increase the degree of imposition imposed by the PPs). <p>The true imposition of PPs on Hornsea Three generation capacity imposed by Spirit Energy could therefore increase further as the detailed design is taken forward post consent.</p>			

As noted at the foot of each table, these estimates are limited to a high-level summary of impact associated with the imposition of Protective Provisions. The associated imposition on turbine locations (either most numerous or largest turbine) is also subject to a range of other constraints across the array – including, but not limited to:-

- Array layout principles (likely to further increase the degree of imposition imposed by the PPs)
- Site conditions (already impedes array outside of proposed PP limits, therefore likely to further increase the degree of imposition imposed by the PPs where site conditions may not be a restriction)
- Existing assets in the array – such as cables (already impedes array outside of proposed PP limits, therefore likely to further increase the degree of imposition imposed by the PPs where existing assets may not be located)
- Geotechnical and ground conditions (full impact can only be determined as part of ground investigations post consent – therefore could further increase the degree of imposition imposed by the PPs)
- Archaeological Exclusion Zones (full impact can only be determined as part of investigation post consent – therefore could further increase the degree of imposition imposed by the PPs).

The true imposition of PPs on Hornsea Three generation capacity imposed by Spirit Energy could therefore increase further as the detailed design is taken forward post consent.

1.4 Further Information – Transport and highway safety

PINS Ref. No.	Question is addressed to:	ExA Question	Draft Response
F3.8	Applicant	Table 3.2 of Appendix 27 (Development of the Cawston Traffic Intervention Scheme) [REP7-047] states that alternative routing is being explored whereby vehicles returning to the main construction compound would turn north in the centre of Cawston, utilising Chapel Street. Please provide an update on this proposed alternative, including an assessment of the highway and environmental impacts that would result along the alternative route	<p>The Applicant maintains its position that, in line with the NCC route hierarchy, the B1145 has been identified as suitable for HGVs and that with the mitigation measures proposed in place, no significant effects would occur on the local road network, or residential amenity within Cawston.</p> <p>The Applicant has explored alternate HGV routing with NCC, which would result in vehicles entering Cawston along B1145, travelling through Cawston to the onshore cable corridor, but on the return journey, vehicles would turn north in the centre of the village, utilising Chapel Street to avoid the narrow carriageway immediately to the west of the delicatessen in the centre of the village.</p> <p>However, following discussions with NCC, it has been determined that this route is not a feasible alternative to the use of the B1145 through Cawston. The primary reasons for Chapel Lane not being considered feasible are as follows:</p> <ul style="list-style-type: none"> Chapel Street is not identified as an HGV access route within NCC's route hierarchy but rather it has a lower status. Whilst this alone does not preclude its use by HGV traffic, NCC have indicated that as HGVs are already utilising the route for commercial access to property (Broadland Wineries) NCC would not support any increase in HGV use; Chapel Street is unsuitable for additional HGV movements due to its narrow width and alignment, such that the proposed increases in HGV movements which would be associated with Hornsea Three re-routing vehicles along this route would be resisted by NCC. There are a number of residential properties immediately adjacent to the highway along significant sections of Chapel Street. To re-route vehicles associated with Hornsea Three along Chapel Street would merely displace the potential impacts to residential properties in the centre of the village to these residential properties.
F3.9	Applicant	Residents of Cawston have suggested alternative routes for HGV traffic. Table 3.2 of Appendix 27 (Development of the Cawston Traffic Intervention Scheme) [REP7-047] sets out why the Applicant does not consider Heydon Road to be a suitable alternative to the B1145 through Cawston. Please explain in more detail why you have come to this view. What highway intervention works and consequential impacts on trees and hedgerows do you consider would be necessary?	

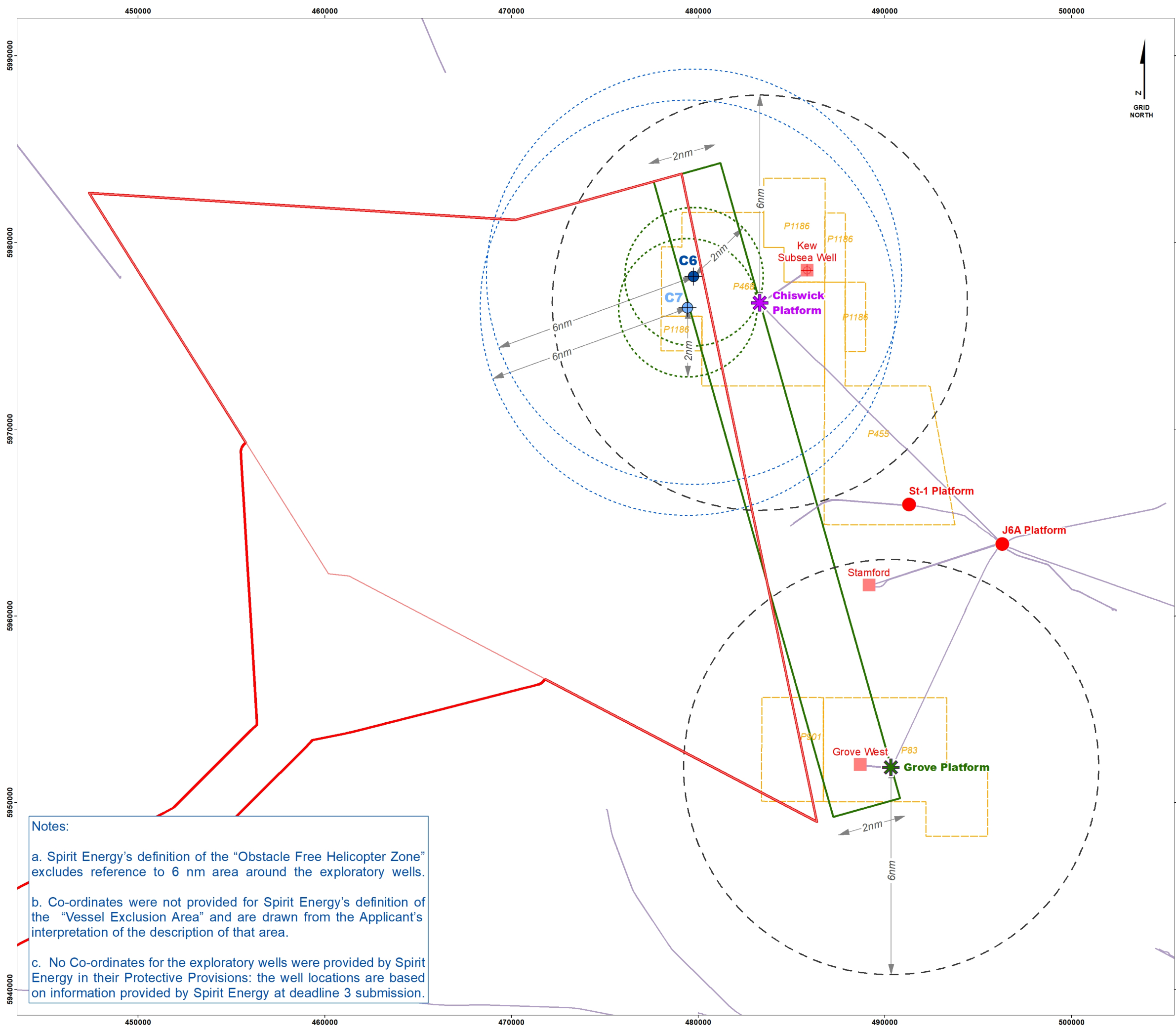
			<ul style="list-style-type: none"> • HGV traffic will already have travelled along sensitive parts of the route before reaching Chapel Street. Accordingly, NCC have indicated that any benefits arising from using this alternative route would be limited and would not outweigh the negative impacts. • A number of the residential properties on Chapel Street have no footway protection, with front doors opening directly onto the highway and therefore the potential impacts of HGVs has the potential to be greater than for those properties located in the centre of Cawston. <p>The Applicant has also explored other alternatives to HGV routing through Cawston, including the potential for traffic movements to utilise Heydon Road as an alternative to the B1145. This is a route which has already been identified for some construction traffic in order to access the northernmost section of cable section 9 and cable section 8. Heydon Road has been assessed as being capable of accommodating 229 daily movements for Hornsea Three of which 62 are HGV movements (as set out in Table 6.1 of the Outline CTMP submitted at Deadline 9). It has however, a number of limitations which the Applicant has noted below:</p> <ul style="list-style-type: none"> • Heydon Road cannot be used to access cable section 10 and therefore construction traffic will still need to use the B1145 through Cawston. There is no alternative means of access to cable section 10; • Heydon Road is not identified as an HGV access route within NCC's route hierarchy but rather it has a lower status; • The highway along Heydon Road reduces down to approximately 2.5 m in width at some locations, such that it would not be suitable (in its current condition) to support additional HGV movements, above those already proposed by Hornsea Three; • To facilitate additional movements above those already proposed, would require implementation of a suitable highway intervention scheme akin to that proposed along The Street. This would likely involve the construction of several passing places, with the potential to cause significant localised disruption (and/or diversions) to existing traffic utilising Heydon Road during construction of the intervention scheme as well as impact upon hedgerow and trees at potential passing place locations along Heydon Road. It is not known whether such passing places could be accommodated within the existing
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			<p>highway boundary, however, given the width of the road, it is likely that access to private land would be required. Hornsea Three has not applied for the necessary powers to utilise private land for this purpose, and no discussions with landowners have taken place. As there is a viable alternative along the B1145, which is designated as being suitable for HGVs, and the environmental impacts of the use of the B1145 have been assessed as not significant there would not be a compelling case for the use of temporary possession powers across private land (which would be required to ensure the project could ultimately be delivered);</p> <ul style="list-style-type: none"> • The junction of Heydon Road and the B1149 (Holt Road) is not currently of a sufficient standard to accommodate a greater level of HGV movements than those already proposed by Hornsea Three. Additional junction improvements would be required to facilitate additional movements along this link, with implications on adjacent vegetation. It is not known whether such junction improvements could be accommodated within the existing highway boundary, however, it is likely that access to private land would be required. Hornsea Three has not applied for the necessary powers to utilise private land for this purpose, and no discussions with landowners have taken place. As there is a viable alternative along the B1145, which is designated as being suitable for HGVs, and the environmental impacts of the use of the B1145 have been assessed as not significant there would not be a compelling case for the use of temporary possession powers across private land (which would be required to ensure the project could ultimately be delivered). <p>Notwithstanding the above, the Applicant has reconsidered the potential to utilise Heydon Road as an alternative to vehicles accessing cable section 9 via the B1145 Cawston and can provide the following update.</p> <p>The Applicant maintains that the Heydon Road can support the maximum levels as defined in the Outline CTMP (229 total movements of which 62 are HGV) without a need for a traffic intervention scheme. This has been agreed with NCC.</p>
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			<p>In light of concerns raised by Cawston Parish Council and residents of Cawston, the Applicant has added wording within the Outline CTMP which commits the Applicant to prioritising construction traffic along the Heydon Road up to the maximum level defined in the Outline CTMP where practicable. In practice, this would be achieved through construction programming and has the potential to reduce construction traffic flows through Cawston village associated with the construction of cable section 9. The Applicant has committed to provide within the detailed CTMP, the following:</p> <ul style="list-style-type: none"> - A construction programme specific to cable sections 8, 9 and 10 (which will be accessed via the B1145 and Heydon Road), including details of how this programme has been optimised to enable the prioritisation of traffic movements along Heydon Road where practicable; - Details of the estimated construction traffic flow variations during the construction programme for cable sections 8, 9 and 10 (i.e. identifying the level and duration of any peak traffic movements). <p>The Applicant considers that the above approach is reasonable and practicable in the circumstances and balances the concerns raised by NCC relating to the use of Heydon Road with the submissions made by residents of Cawston and Cawston Parish Council requesting a reduction in movements along the B1145.</p> <p>It is noted that although the traffic intervention scheme at Cawston has been agreed in principle with NCC (subject to review of a road safety audit), local residents and Cawston Parish Council still have concerns relating to the proposed intervention scheme. The Applicant considers that a number of these concerns may be resolved once the detailed construction programme has been confirmed. Therefore the Applicant has added wording within the Outline CTMP which commits to continued development of the access strategy for cable sections 8, 9 and 10, particularly where it relates to the use of the B1145 through Cawston and Heydon Road. This will enable the final CTMP to be developed in consultation with CPC and NCC prior to its approval by the relevant planning authority pursuant to requirement 18.</p>
F3.10	Applicant	Paragraph 9.2.1.3 of the Outline Construction Traffic Management Plan [REP6-015] states that there will be continued engagement between the Applicant and the Norfolk Vanguard project and that the	<p>The Applicant has included, within the Outline CTMP submitted at Deadline 9, cumulative traffic flow thresholds for Link 208, The Street and Link 88: B1145. These cumulative thresholds have been agreed by both Hornsea Three and Norfolk Vanguard, and therefore represent a commitment from both parties.</p>

		<p>two projects may commit to programme works so that each scheme's peak traffic on a given road does not overlap. Please explain how this would work in practice. How would the construction programme for each project be staggered to ensure that peak traffic flows do not overlap? How would any disagreement between Hornsea Project Three and Norfolk Vanguard be resolved? In relation to The Street and Cawston, what would be the threshold for the number of cumulative traffic movements, over which such measures would be introduced?</p>	<p>Norfolk Vanguard have advised that the same cumulative traffic flow thresholds will be included within their TMP by the end of their Examination period. Both the Applicant and NCC will be closely monitoring the development of the TMP throughout the Norfolk Vanguard Examination period to ensure that this commitment is included.</p> <p>Hornsea Three's peak traffic on all common highway links, with the exception of link 208 The Street (where flows are consistent throughout the construction phase), is driven by the construction of the haul road. Conversely, based on a review of the information provided by Norfolk Vanguard in their DCO Application, there are peak traffic flows at specific times of the construction (e.g. primary and secondary peaks). As such, both the Applicant and Norfolk Vanguard are proposing that, as more information becomes available on the respective projects during detailed design, it may be possible to minimise traffic flows on specific links through programming the most traffic flow intensive activities for Hornsea Three (i.e. haul road construction) and Norfolk Vanguard at differing times to ensure the cumulative traffic flow thresholds are not exceeded. This is achievable in part due to the linear nature of the works for both projects which facilitates flexibility in the programming of construction works at a given locations. It is likely that such measures would only be required for activities which are planned within a close vicinity.</p> <p>Both projects have been in close communication during the development phase in order to minimise conflicts wherever possible. Hornsea Three and Norfolk Vanguard are in advanced stages of entering into a co-operation Agreement. Whilst the terms of that agreement are commercially confidential, those matters pertinent to construction management and implementation are set out in the Statement of Common Ground between the parties submitted at Deadline 9. These matters highlight that it is in both project's interest to reach agreement on matters which may affect the construction of the other's project. Should a disagreement occur between Hornsea Three and Norfolk Vanguard, it will be resolved using the dispute resolution provisions within the co-operation agreement. Both the Applicant and Norfolk Vanguard must comply with their respective traffic management plans pursuant to the Requirements in their DCOs. Any breach by either party of the cumulative traffic flow thresholds would be an offence. It is therefore considered that there are sufficient safeguards in place through the Requirements of the DCO to ensure that the</p>
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			<p>cumulative traffic flow thresholds are complied with and to encourage the parties to work together to resolve any issues so as to ensure the deliverability of their respective projects.</p> <p>Cumulative thresholds for The Street, Cawston and Edgefield (as agreed by NCC) have been set out in the Outline CTMP submitted at Deadline 9.</p>
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Notes:

a. Spirit Energy's definition of the "Obstacle Free Helicopter Zone" excludes reference to 6 nm area around the exploratory wells.

b. Co-ordinates were not provided for Spirit Energy's definition of the "Vessel Exclusion Area" and are drawn from the Applicant's interpretation of the description of that area.

c. No Co-ordinates for the exploratory wells were provided by Spirit Energy in their Protective Provisions: the well locations are based on information provided by Spirit Energy at deadline 3 submission.

Hornsea Three

Order Limits

Array Area

Protective Provision Scenarios

Chiswick and Grove Platform 6 nm buffer (the "Obstacle Free Helicopter Zone")

Exploratory wells C6 and C7 6 nm buffer^a

Vessel Exclusion Area 2 nm rectangular area^b

Vessel Exclusion Area: C6 & C7 exploratory wells' 2 nm buffer^b

Spirit Energy Assets

C6 (Potential well)^c

C7 (Potential well)^c

Chiswick Platform

Grove Platform

Kew Subsea Well

Active Platforms (Spirit Energy)

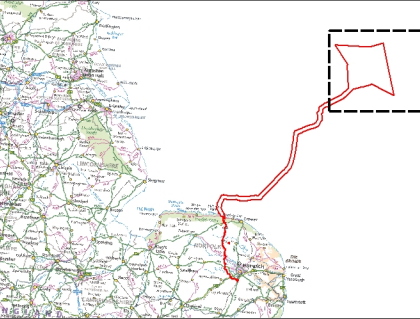
Active Sub Surface Infrastructure (Spirit Energy)

Licensed Blocks (Spirit Energy)

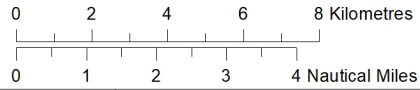
Pipelines Offshore

Active Pipeline

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Reference System : ETRS89
Projection : UTM31N
Scale@A3: 1:200,000
Vertical reference: LAT

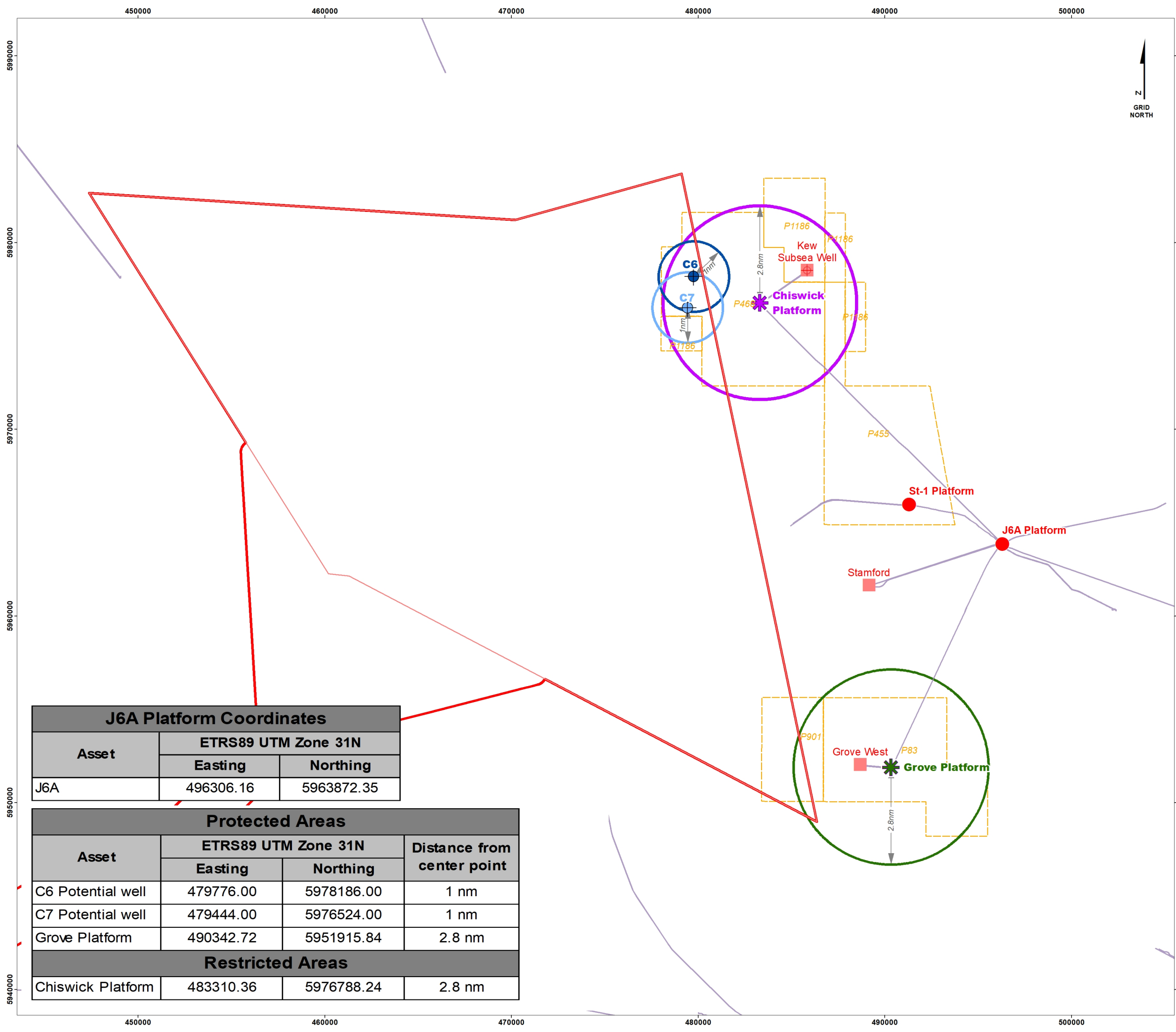


REV	REMARK	DATE
00	Initial Issue	25/03/2019
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Hornsea Three
Spirit Energy Protective Provisions
(REP7-093)

Doc no: HOW030332
Created by: XAMIJ
Checked by: NATMO/KALEY
Approved by: ANGUY





Hornsea Three

Order Limits

Array Area

Restricted Area

Chiswick Platform 2.8nm Restricted Area

Protected Area

Protected Area C6

Protected Area C7

Protected Area Grove Platform

Spirit Energy Assets

C6 (Potential well)

C7 (Potential well)

Chiswick Platform

Grove Platform

Kew Subsea Well

Active Platforms (Spirit Energy)

Active Sub Surface Infrastructure (Spirit Energy)

Licensed Blocks (Spirit Energy)

Pipelines Offshore

Active Pipeline

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Reference System : ETRS89
Projection : UTM31N

Scale@A3: 1:200,000
Vertical reference: LAT

02468 Kilometres

01234 Nautical Miles

REV	REMARK	DATE
00	Initial Issue	14/03/2019
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Hornsea Three
Spirit Energy Chiswick and Grove Assets
(REP7-055)

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Checked by: KALEY
Approved by: ANGUY