

# Southampton to London Pipeline Project

## Deadline 2

Response to the Examining Authority's First Written  
Questions Flood Risk, Water Resources and  
Geology (FR)

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Southampton to London  
Pipeline Project



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# 1 Response to the Examining Authority's Written Questions – Flood Risk, Water Resources and Geology (FR)

Table 1.1: Applicant response to Question

ExQ1	Question:	Applicant response to Question:
FR.1.1	<p>Requirement 9 of the draft DCO [AS-059] requires the submission and approval of a Surface and Foul Water Drainage System (SFDS) in accordance with the REAC, which is contained within Chapter 16 of the ES [APP-056]. No Outline document is before the Examination, and the ExA finds this questionable given the Applicant's reliance on it as means to mitigate drainage matters.</p> <p>i) Justify the approach that no outline submission is before the ExA, particularly as it must be approved by numerous</p>	<p>1.1 In answer to i), the mitigations and commitments relating to surface water and foul water drainage and reflecting the conclusions of the Environmental Statement are set out in the Register of Environmental Actions and Commitments (REAC) (<b>Application Document APP-056</b>). These commitments provide the subjects that would be covered within the Surface and Foul Water Drainage System (SFDS).</p> <p>1.2 The Applicant considers that a sewerage and/or drainage authority or, where applicable, the Environment Agency is the appropriate body to consider the local impacts and mitigation that will be set out in an SFDS. Given the subject matter, an SFDS is location-specific and not capable of universal adoption along the pipeline route. In addition, at this stage in the project there is no meaningful detail that can be included in an outline SFDS as detailed design has not taken place and so the exact pipeline route, and therefore the necessary details for inclusion in the SFDS (or even an outline SFDS), are not known. The design of surface water management systems during the construction of a pipeline would usually be developed by the contractor, as they are dependent on where topsoil and subsoil bunds are aligned relative to the pipeline alignment. It is accepted that a final SFDS would need to be approved by the sewerage and/or drainage authorities (and the Environment Agency), but the Applicant does not consider that provision of an outline document for examination would reduce that requirement or assist at the discharge stage. This is consistent with the approach adopted by other Development Consent Orders (DCOs).</p> <p>1.3 In answer to ii), commitments in respect of potential discharges and risks to surface waters are set out in the REAC (which also signposts which commitments would be included in the SFDS). As per requirement 9(1) of the draft DCO (<b>Document Reference 3.1 (3)</b>), the SFDS for each stage must be in accordance with the REAC, which, as part of the Environmental Statement,</p>



ExQ1	Question:	Applicant response to Question:
	<p>relevant planning authorities.</p> <p>ii) Explain how the ExA, host local authorities and National Park Authority can be satisfied, and take any confidence that its measures would be capable of adequately mitigating traffic matters.</p> <p>iii) Provide an Outline SFDS listing measures that would be secured; drawings to be prepared; and detailing consultation that would be undertaken and with whom.</p> <p>iv) If an Outline SFDS is to be provided, explain whether it should form a Certified Document in Schedule 11 of the draft DCO [AS-059] and update accordingly.</p>	<p>would be a certified document. As set out in the relevant requirement, the relevant authority would need to approve the SFDS, and any concerns they have over the delivery of the mitigation can be resolved as part of the approval process. Part 2 of Schedule 2 of the draft DCO (<b>Document Reference 3.1 (3)</b>) governs this process, and if necessary, the relevant authority can request further information as part of its deliberations. Ultimately, if the Applicant and the relevant authority disagree over whether the SFDS should be approved with or without amendments, an appeal process is provided for with an appeal to the Secretary of State. This is consistent with the approach adopted by other DCOs.</p> <p>1.4 In answer to iii and iv), as noted above, the Applicant does not consider it necessary or appropriate to provide an outline SFDS.</p>



ExQ1	Question:	Applicant response to Question:
FR.1.4	<p>Mitigation ref. G39 in the REAC [APP-056], which is contained within Chapter 16 of the ES [APP-056], states that “appropriate buffer zones would be established within Order Limits adjacent to identified watercourses”.</p> <p>Explain how “appropriate” buffer zones would be determined and secured through the DCO.</p>	<p>1.1 Appropriate buffer zones would be determined dependent on the individual site conditions surrounding the individual watercourse and the construction activities specific to that location. Determination would therefore not be finalised until completion of the detailed design and setting out of the construction activities.</p> <p>1.2 Buffer zones would be subject to the requirements of permits and licences agreed with either the Environment Agency or Lead Local Flood Authority.</p> <p>1.3 In addition to commitment G39, the Applicant has included a number of other commitments in relation to buffer zones and works adjacent to watercourses, which are included within the Code of Construction Practice (CoCP) (<b>Document Reference 6.4 Appendix 16.1 (2)</b>):</p> <ul style="list-style-type: none"> <li>• G123: <i>‘All works within or adjacent to watercourses would be carried out in accordance with the requirements of permits and licences agreed with either the Environment Agency or relevant Local Lead Flood Authority or in accordance with the provisions of the DCO’;</i></li> <li>• G142 <i>‘Fuels, oils and chemicals would be stored responsibly, away from sensitive water receptors. They would be stored &gt;15m from watercourses, ponds and groundwater dependent terrestrial ecosystems (GWDTE)’;</i></li> <li>• G184: <i>‘Stockpiles would not be located within 10m of any main rivers or ordinary watercourse crossings’;</i></li> <li>• G125 <i>‘With the exception of the Thames flood plain, all construction compounds would be located outside of flood zone 3’;</i> and</li> <li>• W7: <i>‘Stockpiles would not be stored within Ively Brook Flood Zone 3, east of A327’.</i></li> </ul> <p>1.4 Additional commitments have been made by the Applicant since the submission of the application for development consent. The new commitments are set out in the updated version of the CoCP (<b>Document Reference 6.4 Appendix 16.1 (2)</b>) submitted at deadline 2:</p>

ExQ1	Question:	Applicant response to Question:
		<ul style="list-style-type: none"> <li>W15: <i>'Construction Compound 33 (DCO Works No CO5A) would be sized and located so that it does not sit within FZ3 or within 8m of the top of bank of the watercourse'.</i></li> <li>W17: <i>'The project would locate any temporary buildings outside of FZ3 at the Shepperton Road North Construction Compound'.</i></li> </ul> <p>1.5 Commitments in the CoCP are secured through Requirement 5 in the draft Development Consent Order (<b>Document Reference 3.1(3)</b>): <i>'The authorised development must be undertaken in accordance with the code of construction practice, or with such changes to that document as agreed by the relevant planning authority'.</i></p>
FR.1.5	Confirm the extent to which the assessment of impacts to groundwater resources is robust having regard to assumptions in relation to highest winter groundwater levels. The response should address the potential for shallower groundwater levels than those reported, having regard to limitations in establishing the highest winter groundwater levels.	<p>1.1 The assessment has used several sources of data to assess groundwater levels. This includes project-specific boreholes, although the data from these are limited to relatively short time periods and may not include a 'winter high' period. Therefore, other data have also been used to assess variation in groundwater level and likely highest seasonal groundwater levels. These data are based on long-term monitoring results which would include 'winter highs'. These data comprised the following:</p> <ul style="list-style-type: none"> <li>longer-term groundwater level monitoring data have been obtained from the Environment Agency. Although the boreholes used for monitoring may not necessarily be directly within the Order limits or groundwater study area, the data show anticipated annual variations in groundwater levels within the area;</li> <li>groundwater modelling data have been obtained from the Environment Agency for the Chalk aquifer. The highest groundwater levels predicted by these models have been used in the assessment where appropriate; and</li> <li>groundwater flooding potential data obtained from the British Geological Survey have been used to show where groundwater levels may be shallowest (i.e. where groundwater flooding is most likely to occur).</li> </ul>



ExQ1	Question:	Applicant response to Question:
		<p>1.2 Furthermore, based on basic hydrogeological concepts, a good idea of annual variations in groundwater levels can be obtained. In the interfluves (areas between river valleys), groundwater levels may be anticipated to be deeper. Closer to the rivers, because groundwater is frequently in continuity with the river water, shallower levels may be expected. In many locations where deeper excavations are needed (particularly the trenchless crossings), project-specific data have been obtained, and for the assessments, allowances have been made for where the levels may be higher than measured based on the above principles.</p> <p>1.3 The most sensitive groundwater receptors, including groundwater dependent ecosystems and groundwater abstractions, have been subjected to assessment in the Environmental Statement (ES) Appendix 8.3 (<b>Application Document <a href="#">APP-104</a></b>) and ES Appendix 8.4 (<b>Application Document <a href="#">APP-105</a></b>), which considered groundwater levels in detail. Where there is the possibility of dewatering for trenchless crossings or where the trench may run parallel to watercourses, these locations have been subject to assessment in ES Appendix 8.2 (<b>Application Document <a href="#">APP-103</a></b>). In this appendix, where recorded groundwater levels in project-specific boreholes may not include a 'winter high', an allowance has been made to allow for this seasonal variation to estimate shallowest groundwater levels. Therefore, the locations where shallow groundwater is most likely to have an impact on receptors have been subject to robust assessment.</p> <p>1.4 Whilst there does remain the possibility of encountering shallow groundwater in the trench outside of the locations considered in ES Appendix 8.2 (<b>Application Document <a href="#">APP-103</a></b>), Appendix 8.3 (<b>Application Document <a href="#">APP-104</a></b>) and Appendix 8.4 (<b>Application Document <a href="#">APP-105</a></b>), given the relatively shallow depth of the trench, dewatering of the trench for pipe installation is unlikely to have a significant effect on the groundwater itself, or associated receptors. If 'winter high' groundwater levels mean that dewatering of the trench is required, then good practice commitment G132 within the Register of Environmental Actions and Commitments (<b>Application Document <a href="#">APP-056</a></b>) would further reduce the effects in vicinity of sensitive receptors:</p>





ExQ1	Question:	Applicant response to Question:
		<i>'The contractor(s) would ensure that the time the trench is open in the vicinity of certain features would only be as long as necessary for the installation of the pipeline. The required dewatering of the trench would be undertaken only as and when necessary to enable safe working and preparation for pipe installation'.</i>
<b>FR.1.6</b>	<p>Paragraph 1.2.18 of Appendix 8.6 [APP-107] states that due to site surveys being undertaken during prolonged hot dry weather worst case "conditions had to be inferred from site observations and using desk-based techniques".</p> <p>Describe the desk-based techniques, and any assumptions made and used, to develop the worst-case scenario conditions for Water Framework Directive (WFD) watercourses.</p>	<p>1.1 The desk-based techniques are outlined in paragraphs 1.2.8, 1.2.9 and 1.2.10 of the Environmental Statement Appendix 8.6 (<b>Application Document <a href="#">APP-107</a></b>).</p> <p>1.2 The assumptions relate to watercourses not just being dry in the summer but flowing all year round and, therefore, would have geomorphological processes functioning and potential ecological flora and fauna if the weather had not been as dry as at the time of survey. Further assumptions are set out within Paragraphs 1.2.17-1.2.19 of Environmental Statement Appendix 8.6 (<b>Application Document <a href="#">APP-107</a></b>).</p>



ExQ1	Question:	Applicant response to Question:
FR.1.7	Direct the ExA to the assessment of the potential impacts arising from silt discharge, as requested within the Scoping Opinion ID 4.2.6 [AS-018] or provide confirmation that the impact from silt discharge would not result in significant effects.	<p>1.1 Scoping Opinion ID 4.2.6 (<b>Additional Submission <a href="#">AS-018</a></b>) relates specifically to groundwater effects during construction.</p> <p>1.2 As noted in the Environmental Statement (ES) Chapter 8, paragraph 8.5.14 (<b>Application Document <a href="#">APP-048</a></b>), in most instances, surface drainage and groundwater from dewatering of excavations would be discharged to local surface watercourses. However, for a small number of locations, there is potential that water would need to be discharged to ground. Table 8.5.4 in ES Appendix 8.5 (<b>Application Document <a href="#">APP-106</a></b>) provides the assessment of the potential significance of effects on groundwater quality, including sediment (silt), as a result of discharge to ground where there are no suitable watercourses to receive the drainage.</p> <p>1.3 Paragraph 8.5.14 in ES Chapter 8 (<b>Application Document <a href="#">APP-048</a></b>) refers to Table 8.5.4 and notes that no significant effects were identified with respect to discharges to ground, including water with a high silt content: <i>'Where water with a high silt content is discharged to the ground this could also impact on groundwater quality. No likely significant effects were identified in this respect'</i>.</p>
FR.1.8	Explain how the assessment of the effects has addressed impacts associated with potential spills and leakages to groundwater as requested within the Scoping Opinion ID 4.2.7 [AS- 018] or provide confirmation that the impact from spills and leakages to groundwater	<p>1.1 Scoping Opinion ID 4.2.7 relates specifically to effects on groundwater during construction.</p> <p>1.2 Table 8.5.6 in Environmental Statement (ES) Appendix 8.5 (<b>Application Document <a href="#">APP-106</a></b>) assesses the potential significance of effects for changes to groundwater quality from leaks and spills from chemicals, fuels and oils during construction on the most sensitive groundwater-specific receptors (groundwater dependent terrestrial ecosystems and licensed and unlicensed groundwater abstractions). The assessment in ES Appendix 8.5, Table 8.5.6 (<b>Application Document <a href="#">APP-106</a></b>) draws upon more detailed work presented in ES Appendix 8.3 (<b>Application Document <a href="#">APP-104</a></b>) and Appendix 8.4 (<b>Application Document <a href="#">APP-105</a></b>). These assessments are based on a consideration of sensitivity combined with magnitude of effect, as described in paragraph 8.3.2 in ES Chapter 8 (<b>Application Document <a href="#">APP-048</a></b>).</p>



ExQ1	Question:	Applicant response to Question:
	would not result in significant effects.	<p>1.3 The likely significant effects are identified in Table 8.13 in ES Chapter 8 (<b>Application Document APP-048</b>): <i>'The potential significance of effects for changes to groundwater quality from leaks and spills from chemicals, fuels and oils from construction plant or materials used in the installation of the pipeline'</i> (page 46). This concludes that the significance of effects could range from negligible to moderate for private water supplies (PWSs). As stated in paragraph 8.6.2 in ES Chapter 8 (<b>Application Document APP-048</b>), mitigation measure W12 has been proposed to reduce the potential significant effects for PWSs. With these measures in place, it has been assessed that the residual significance of effect would be reduced to negligible (Table 8.20 in ES Chapter 8 (<b>Application Document APP-048</b>)).</p>
FR.1.9	Provide the thresholds and criteria used to classify the risk to groundwater abstraction from flow and infiltration rates as "low", "moderate", "high" and "very high" as stated in Table 8.4.1 of Appendix 8.4 [APP-105].	<p>1.1 The assessment criteria used to define the risk are listed in Environmental Statement Appendix 8.4 (<b>Application Document APP-105</b>) in paragraphs 1.2.2 (infiltration risks) and paragraph 1.2.3, (flow risks). In summary, the following have been considered for infiltration and flow risks with further explanation as to how the risks vary with each criterion.</p> <p>1.2 Infiltration Risk</p> <ul style="list-style-type: none"> <li>• <b>Geology:</b> The presence or absence and nature of superficial (drift) cover has been considered. Where drift cover is absent, there is a higher risk of infiltration. Where low permeability drift cover is present then there is lower risk. Where data were available, the thickness of drift was also considered with a thinner drift deposit leading to a higher risk (information on superficial deposit thickness was obtained from British Geological Survey (BGS) logs, project-specific ground investigation and general BGS lexicon descriptions). Where high permeability bedrock is present at the surface, there is a higher risk of infiltration than if there were a low permeability bedrock.</li> <li>• <b>Soil assemblage:</b> Where the soil association maps describe a thin, high permeability soil then this would have higher risk than a soil described as a thick, low permeability soil.</li> </ul>



ExQ1	Question:	Applicant response to Question:
		<ul style="list-style-type: none"> <li>• <b>Thickness of unsaturated zone:</b> Where the groundwater level data show groundwater is likely to be shallow, then there is a higher risk of infiltration. The depth to groundwater was obtained from a variety of sources including BGS borehole logs, project-specific investigations, Environment Agency monitoring, Environment Agency modelling results and BGS groundwater flooding maps.</li> <li>• <b>Karst features:</b> Where individual karst features have been mapped, there is a higher risk of infiltration than areas where there are no mapped karst features. In addition, the BGS solubility rating was considered as showing the potential for unmapped karst features.</li> </ul> <p>1.3 Flow risk</p> <ul style="list-style-type: none"> <li>• <b>Geology:</b> This considered the permeability of the geological deposit and the flow mechanism (fracture or intergranular flow). Where there is high permeability with fracture flow then this is higher risk than low permeability, intergranular flow.</li> <li>• <b>Source Protection Zones (SPZs)/Flow Source zones:</b> Where the pipeline crossed an SPZ or Flow Source zone, it was considered higher risk if it were in SPZ2/70% catchment zone than SPZ3/Total Catchment Zone and in turn if not in any of these zones.</li> <li>• <b>Regional groundwater flow from models:</b> If the modelled regional groundwater flow showed that groundwater flow was towards the abstraction, this was considered as a higher risk than if the model showed flow away from the abstraction.</li> <li>• <b>Degree of karstification from rock solubility class:</b> Where the rock solubility classification showed higher solubility, then this was considered a higher risk than where there was a lower rock solubility classification.</li> <li>• <b>Borehole construction:</b> If a borehole construction log showed that the groundwater was abstracted from shallow depth, then this was considered to be a higher risk than a borehole</li> </ul>

ExQ1	Question:	Applicant response to Question:
		<p>abstracting from deeper in the mapped geological horizon or from a different geological horizon to that mapped on the surface.</p> <p>1.4 Based on the criteria above, technical judgement has been used to determine the level of infiltration and flow risks. The infiltration risk is shown graphically for the Order limits in Figure A8.4.1 in ES Appendix 8.4 (<b>Application Document <a href="#">APP-105</a></b>), with the flow risk for each abstraction shown in Figure 8.4.2 in ES Appendix 8.4 (<b>Application Document <a href="#">APP-105</a></b>). All figures are annotated to document and justify the level of risk recorded. The data derived from these two figures is stated in the text for each abstraction and then taken to determine the overall highest risk using the matrix in Table 8.4.1 of ES Appendix 8.4 (<b>Application Document <a href="#">APP-105</a></b>).</p>
<b>FR.1.10</b>	Provide the thresholds and criteria used to classify the risk of WFD water bodies deterioration as “low”, “medium” or “high” as stated in paragraph 1.5.11 of Appendix 8.6 [APP-107].	<p>1.1 The assignment to the categories was based on professional judgement (using an understanding of the biological, physico-chemical and hydromorphological quality elements and potential impacts) and qualitative information (developed from the site walkover and desk-based information). This combined approach allowed for the assessment of whether mitigation would be required to meet the WFD requirements and prevent the deterioration now or in the future of each individual quality element status. The level of potential impact was then assessed based on the scale of the required mitigation.</p> <p>1.2 The following text further explains the wording of each of the bullets in paragraph 1.5.11 of Appendix 8.6 (<b>Application Document <a href="#">APP-107</a></b>) to demonstrate this requirement for mitigation:</p> <ul style="list-style-type: none"> <li>• for Black – no mitigation would be required at all;</li> <li>• for Green – there would be the need for good practice mitigation measures to be implemented to make the impact compliant or not cause a deterioration;</li> <li>• for Orange – there would need to be specific mitigation outlined to make the impact compliant or not cause a deterioration; and</li> </ul>

ExQ1	Question:	Applicant response to Question:
		<ul style="list-style-type: none"> <li>for Red – no mitigation identified or put forward would mitigate for the impact.</li> </ul>
<b>FR.1.11</b>	Confirm what timescale has been used with regards to the short-term impacts on groundwater and surface water and whether this timescale applies to all activities that could result in impacts to surface water.	<p>1.1 In the assessment of impacts on groundwater and surface water, a duration of less than six months, which includes mobilisation and reinstatement, is considered short term. This is based on the project-wide definition as outlined in paragraph 6.2.7 of Environmental Statement (ES) Chapter 6 (<b>Application Document <a href="#">APP-046</a></b>) <i>'The environmental assessment uses defined temporal scales to characterise the duration of potential effects. Short term is used in some chapters to reflect the transient nature of the construction works. For the purposes of assessment, short term is assumed to be less than six months and includes mobilisation and reinstatement. In some chapters, different temporal scales have been applied and these are explained where relevant'</i> and as outlined in paragraph 8.2.34 of ES Chapter 8 (<b>Application Document <a href="#">APP-048</a></b>) <i>'Short term is used in this chapter to reflect the transient nature of the construction works. For the purposes of assessment, short term is assumed to be less than six months and includes mobilisation and reinstatement'</i>.</p> <p>1.2 In relation to impacts to surface waters, the key activities which would have the greatest potential to impact on any individual watercourse, such as open cut crossings and dewatering at trenchless crossings of watercourses, are expected to be of less than six months duration for any specific watercourse.</p>
<b>FR.1.12</b>	Paragraph 8.5.29 of Chapter 8 of the ES [APP-048] states "with the implementation of good practice measures, no significant effects are anticipated on receiving watercourses". However,	<p>1.1 Paragraph 8.5.29 in Environmental Statement (ES) Chapter 9 (<b>Application Document <a href="#">APP-048</a></b>) relates to sediment discharges.</p> <p>1.2 In addition to the use of trenchless crossings at the nine watercourses crossed by the pipeline route identified as being of high (five watercourses) or moderate (four watercourses) sensitivity, the Register of Environmental Actions and Commitments (REAC) (<b>Application Document <a href="#">APP-056</a></b>) includes the following commitments relevant to silt discharge:</p>



ExQ1	Question:	Applicant response to Question:
	<p>no assessment to determine the efficacy of the best practice measures has been included within the ES.</p> <p>State what confidence can be given to the efficacy of the mitigation measures stated in Paragraph 8.5.29 [APP-048].</p>	<ul style="list-style-type: none"> <li>• G116: <i>'An Erosion and Sediment Control Plan would be produced by the contractor(s) prior to the start of the construction phase';</i></li> <li>• G11: <i>'Runoff across the site would be controlled by the use of a variety of methods including header drains, buffer zones around watercourses, on site ditches, silt traps and bunding';</i></li> <li>• G12: <i>'There would be no intentional discharge of site runoff to ditches, watercourses, drains or sewers without appropriate treatment and agreement of the appropriate authority (except in the case of emergency)';</i></li> <li>• G122: <i>'For open cut watercourse crossings and installation of vehicle crossing points, mitigation measures would include to...use and maintain temporary lagoons, tanks, bunds, silt fences or silt screens as required...';</i> and</li> <li>• G128: <i>'The contractor(s) would comply with all relevant consent conditions or DCO provisions regarding dewatering and other discharge activities. This would particularly be with regard to volumes and discharge rates and would include discharges to land, waterbodies or third-party drains/sewers'.</i></li> </ul> <p>1.3 The measures described above are standard procedures for pipeline construction projects and align with well-established industry guidance such as CIRIA C532 Control of Water Pollution from Construction Sites. The Applicant is therefore confident of the efficacy of these procedures.</p> <p>1.4 With trenchless crossing techniques for all watercourse crossings designated as of moderate sensitivity or higher, combined with the commitments outlined above, the Applicant is confident that these measures would be effective in controlling sediment discharges and assessed that the works would not result in any significant effects from silt discharge.</p>



ExQ1	Question:	Applicant response to Question:
FR.1.13	Explain what measures are in place to avoid impacts which result in the loss of riparian vegetation which may undermine riverbank stability in the long term.	<p>1.1 The following commitments are included within the Code of Construction Practice (<b>Document Reference 6.4 Appendix 16.1 (2)</b>) to avoid impacts which would result in the loss of riparian vegetation:</p> <ul style="list-style-type: none"> <li>• O1: <i>'Commitment to only utilise a 10m width when crossing through boundaries between fields where these include hedgerows, trees or watercourses'</i>;</li> <li>• G116: <i>'An Erosion and Sediment Control Plan would be produced by the contractor(s) prior to the start of the construction phase'</i>; and</li> <li>• G131: <i>'River bank and in-channel vegetation would be retained where not directly affected by installation works'</i>.</li> </ul>
FR.1.14	Clarify how the likely significance of effect has been determined, in light of the methodology described, for the Caker Stream receptor considering it is assigned a "medium" sensitivity/value and a "medium" magnitude of change (for sediment process, flow process, knickpoint formation, and bed and bank disturbance) but the likely significance of	<p>1.1 As per the significance matrix outlined in Illustration 6.1 in Environmental Statement (ES) Chapter 6 (<b>Application Document APP-046</b>), merging bands were used to reflect the role of professional judgement when allocating significance. Paragraph 6.4.8 of ES Chapter 6 (<b>Application Document APP-046</b>) states:</p> <p><i>'The matrix shown in Illustration 6.1 has been used as the basis for assigning significance to an effect. It uses merging bands to reflect the role of professional judgement when allocating significance. This is of particular relevance where the assessment is based on a qualitative approach and the significance of effect is a matter of judgement rather than a quantified outcome'.</i></p> <p>1.2 For the Caker Stream, the potential significance of the effect was considered to lie close to the boundary of minor and moderate significance. A minor significance was agreed as a result of the relatively short duration of the works, proposed implementation of good practice measures and reinstatement of riparian vegetation (as outlined in Paragraph 8.5.42 in ES Chapter 8 (<b>Application Document APP-048</b>)). The channel at the location of the crossing showed signs of re-adjusting following historical modifications, but the rate of channel change is considered to be low and</p>





ExQ1	Question:	Applicant response to Question:
	effects is stated as "minor".	therefore modifications for a crossing and channel reinstatement is unlikely to lead to any significant changes or impacts on the channel.
<b>FR.1.15</b>	<p>With regards to the unknown location of water abstraction at Beech Farm (1110), the Applicant states a "worst case scenario" will be assumed but no further details are provided.</p> <p>Provide a detailed description of the worst-case scenario characteristics.</p>	<p>1.1 The location of the Beech Farm borehole was identified within land parcel 1110. As the exact location of the abstraction was unknown, Environmental Statement Appendix 8.4 (<b>Application Document APP-105</b>) assumed a worst case, which was that the location of the borehole was assumed to be within the Order limits.</p>
<b>FR.1.16</b>	<p>i) Provide an update on whether the request for the location of Private Water Supplies (PWS) have been provided to the Applicant.</p> <p>ii) Provide a view on how the absence of this information might affect the Applicant's assessment in ES Chapter</p>	<p>1.1 In answer to i), on 2 March 2018 the Applicant contacted all relevant local planning authorities to request a wide range of baseline data including information on private water supplies (PWS). The Applicant also obtained information about PWSs from the Environment Agency. The data were provided to the Applicant in a range of formats and different levels of quality and completeness.</p> <p>1.2 In relation specifically to Hart District Council and East Hampshire District Council, to date the Applicant has received information on one PWS from East Hampshire District Council, although correspondence from the council indicated that others may be located close to the project. No response has been received from Hart District Council to date.</p> <p>1.3 In answer to ii), paragraph 8.2.30 in the Environmental Statement (ES) Chapter 8 (<b>Application Document APP-048</b>) acknowledges that the dataset is likely to be incomplete. As such,</p>

ExQ1	Question:	Applicant response to Question:
	8 [APP-048] and ES Appendix 8.4: Groundwater Abstraction Assessment [APP-105].	<p>commitment G144 states that <i>'As part of negotiations with landowners within the Order Limits which are affected by the project, active private water supplies (PWSs) would be identified with the landowner. Appropriate mitigation would be considered during construction.'</i></p> <p>1.4 Commitment W12 in ES Chapter 8 (<b>Application Document <a href="#">APP-048</a></b>) applies to PWSs which were not identified within the ES as well as those which were:</p> <p><i>'To protect active PWSs, including any not identified in the ES, the following would be put in place (W12):</i></p> <ul style="list-style-type: none"> <li><i>• In the event of a landowner or tenant complaining that installation activities have affected their PWSs, an initial response would be provided within 24 hours.</i></li> <li><i>• Where the installation works have affected a PWS, an alternative water supply would be provided, as appropriate.</i></li> <li><i>• In the event of a significant spill during construction:</i> <ul style="list-style-type: none"> <li><i>➢ all landowners/tenants would be contacted within 24 hours, within 250m of the spill, to determine if there are any PWSs that might be affected;</i></li> <li><i>➢ an assessment of the likelihood of groundwater contamination supplying identified PWSs would be undertaken;</i></li> <li><i>➢ where requested by the relevant landowner, monitoring of well water would be undertaken for a determined period of time, taking into account pollution travel time in groundwater, to determine whether pollution has occurred; and</i></li> <li><i>➢ where a PWS is affected, an alternative water supply would be provided, as appropriate.'</i></li> </ul> </li> </ul> <p>1.5 Table 8.20 (page 64) of ES Chapter 8 (<b>Application Document <a href="#">APP-048</a></b>) includes an assessment on unlicensed groundwater PWSs which may not have been identified. With Commitment W12 in</p>



ExQ1	Question:	Applicant response to Question:
		place, the impact on these PWSs would not be significant. Therefore, the absence of the council's data is not considered to affect the assessment.
<b>FR.1.17</b>	<p>The mitigation measures proposed to prevent significant effects arising to PWS in the event of a "significant spill during construction" are outlined in Paragraph 8.6.2 of ES Chapter 8 [APP-046]. However, no information on what constitutes a significant spill has been outlined.</p> <p>Provide the clarification for the circumstances under which the mitigation measures would be implemented and/or provide a definition of what is meant by the term "significant spill" given that the term is not defined in the ES.</p>	<p>1.1 Professional judgement would be used to identify when mitigation measure W12 (paragraph 8.6.2 in Environmental Statement Chapter 8 (<b>Application Document <a href="#">APP-048</a></b>)) needs to be implemented. The decision to implement the mitigation measure would be based on information about the nature of the spill (e.g. volume and type of chemical spilt) and location-specific factors such as the geological and hydrogeological setting to determine whether the spill has the potential to reach groundwater.</p>

ExQ1	Question:	Applicant response to Question:
<b>FR.1.18</b>	<p>In its RR [RR-239] the EA notes that whilst the proposed pipeline would not pass through any Source Protection Zones (SPZ) mapped as SPZ1, it needs to be established that it would not have an adverse effect on private water supply abstractions. In addition, the pipeline would pass through areas of SPZ2, which are regarded as highly sensitive to the pollution of groundwater. Moreover, the EA raises concerns about the value/sensitivity assessments within Chapter 8 of the ES [APP-048] and other concerns about the effect on groundwater. Respond.</p>	<p>1.1 The relevant representations of the Environment Agency in relation to groundwater have been responded to in the Applicant's Comments on Relevant Representations (<a href="#">REP1-003</a>). The following identifies the paragraphs where the response has been made.</p> <p><b>Private Water Supplies</b></p> <p>1.2 The responses to the Environment Agency's relevant representations on Private Water Supplies have been addressed in (<a href="#">REP1-003</a>) in the following paragraphs:</p> <ul style="list-style-type: none"> <li>location of Private Water Supply abstractions: paragraphs 18.3.36 to 18.3.37 (<a href="#">REP1-003</a>); and</li> <li>groundwater protection around private water supplies: paragraph 18.3.38 (<a href="#">REP1-003</a>).</li> </ul> <p><i>Source Protection Zone 2 (SPZ2)</i></p> <p>1.3 The responses to the Environment Agency's relevant representations in relation to SPZ2 have been addressed in (<a href="#">REP1-003</a>) in the following paragraphs:</p> <ul style="list-style-type: none"> <li>default SPZ2 around Private Water Supply abstractions: paragraph 18.3.38 (<a href="#">REP1-003</a>); and</li> <li>the pipeline passing through contaminated land in SPZ2: paragraphs 18.3.55 to 18.3.57 (<a href="#">REP1-003</a>).</li> </ul> <p><b>Sensitivity of groundwater receptors</b></p> <p>1.4 The Applicant considers that the approach adopted for ascribing the sensitivity of groundwater receptors is an approach adopted for many Environmental Impact Assessments similar in nature to the project and taking account of available guidance. The responses to the Environment Agency's relevant representations on this issue have been addressed in <a href="#">REP1-003</a> in the following paragraphs:</p> <ul style="list-style-type: none"> <li>Source Protection Zone sensitivity: paragraphs 18.3.39 to 18.3.44 (<a href="#">REP1-003</a>);</li> </ul>



ExQ1	Question:	Applicant response to Question:
		<ul style="list-style-type: none"> <li>• aquifer sensitivity for shallow or deep deposits: paragraphs 18.3.45 to 18.3.48 (<a href="#">REP1-003</a>); and</li> <li>• groundwater dependent terrestrial ecosystem sensitivity: paragraphs 18.3.49 to 18.3.54 (<a href="#">REP1-003</a>).</li> </ul>
<b>FR.1.19</b>	<p>Paragraphs 4.6.23 and 4.6.24 of the Planning Statement [APP-132] refer to the need to hydrostatic test the proposed pipeline.</p> <p>i) Confirm how much water would be required to carry out the hydrostatic test.</p> <p>ii) The Planning Statement refers to it being “sourced locally”. Provide further detail on what this means and confirm whether this would include the use of PWS.</p> <p>iii) Confirm that if water would be sourced locally that supply for other users would be maintained.</p>	<p>1.1 In response to i), the Applicant does not know at this stage how much water would be required as it is too early to finalise.</p> <p>1.2 In response to ii), no water company has raised any issue with water being abstracted from their mains for testing and commissioning subject to the quantity and flowrates being practically achievable to use local hydrants at suitable times in conjunction with the local supplier. The Applicant does not anticipate utilising PWSs.</p> <p>1.3 In response to iii), supply for other users would be maintained as the quantity of water is comparatively very small.</p> <p>1.4 In response to iv), the number of Heavy Goods Vehicles (HGVs) to be used, if water cannot be sourced locally, would be dependent on the section being tested and its length. An allowance (maximum 440 HGVs) for the need to provide water in HGVs has been allowed for within the assessed HGV numbers.</p>



ExQ1	Question:	Applicant response to Question:
	iv) If it cannot be sourced locally the Planning Statement states that it would be tankered in. Confirm how many tankers would be required and are these movements included in the Transport Assessment [APP-135] and if not, if they were included how would they affect the conclusions of the Transport Assessment.	
<b>FR.1.20</b>	<p>Reference G130 of Table 8.12 of the ES [APP-048] notes that the measures will be included within the CEMP but no further information within the Outline CEMP [APP-129] has been provided.</p> <p>i) If settlement lagoons are required, provide a plan/ figure illustrating the anticipated location and</p>	<p>1.1 In answer to i), the Applicant has no plans to use settlement lagoons. It may be the case that they are required but this would be on a task-specific basis for localised areas or activities and their location and dimensions would be determined during the detailed design phase. Any settlement lagoons would be located within the Order limits and their discharge would be managed via environmental permits once details are known.</p> <p>1.2 In answer to ii), commitment G130 states that '<i>the CEMP would follow the principles set out in the Outline CEMP and would set out the water mitigation and management measures and where they would need to be used. These measures would include, but not be restricted to, the following... details of mitigation measures for all work or compound areas located within flood risk areas...</i>'. The mitigation measures referenced within this commitment would be those relevant to work or compound areas located within flood risk areas, as described in Section 13 of the Flood Risk Assessment (FRA) (<b>Application Document <a href="#">APP-134</a></b>). The commitments specific to compounds</p>

ExQ1	Question:	Applicant response to Question:
	<p>dimensions of the settlement lagoons.</p> <p>ii) Provide a description of the “mitigation measures for all work or compound areas located within flood risk areas”, which is relied upon but not specified in the ES.</p> <p>iii) Regarding reference G39 of Table 8.12 [APP-048], provide further information on how the buffer zones would be established.</p> <p>iv) Provide a robust justification, with reference to the sequential test, for locating any construction compound or logistic hub in Flood Zone 2. For example, it is noted that the construction compound in proximity to the M3 junction 3 is situated in Flood Zone 2</p>	<p>and logistics hubs can be found in paragraph 13.2.5 of the FRA (<b>Application Document <a href="#">APP-134</a></b>). The following bullets are taken from paragraph 13.2.5 of the FRA and include the reference to where they are recorded (and relied on) within Environmental Statement (ES) Chapter 8 (<b>Application Document <a href="#">APP-048</a></b>).</p> <p>1.3 To minimise any impact upon flood risk, the following measures would be implemented at compounds located within Flood Zone 3:</p> <ul style="list-style-type: none"> <li>W2: ‘<i>Screening and fencing within logistics hubs and construction compounds would be designed to reduce impedance of flood water. Subject to any commitments regarding great crested newts</i>’. This is identified as additional mitigation relied on for the assessment as set out in paragraph 8.63 of ES Chapter 8 (<b>Application Document <a href="#">APP-048</a></b>);</li> <li>G126: ‘<i>Where new or additional surfacing is required on any access tracks and compound areas, these would be permeable surfaces where ground conditions allow</i>’. This is listed in Table 8.12 Good Practice Commitments with the REAC <b>Application Document <a href="#">APP-056</a></b>. These are relied on within the assessment documented in ES Chapter 8 (<b>Application Document <a href="#">APP-048</a></b>);</li> <li>W3: ‘<i>Temporary buildings within Flood Zone 3 and areas of high and medium RoFSW would be elevated above the 1 in 10 (10%) AEP event peak water level, or, a minimum of 300mm if this is not practicable</i>’. This is identified as additional mitigation relied on for the assessment as set out in paragraph 8.63 of ES Chapter 8 (<b>Application Document <a href="#">APP-048</a></b>); and</li> <li>G127: ‘<i>The contractor(s) would subscribe to the Environment Agency’s Floodline service which provides advance warning of potential local flooding events. The contractor(s) would implement a suitable flood risk action plan which would include appropriate evacuation procedures should a flood occur or be forecast</i>’. This is listed in Table 8.12 Good Practice Commitments with the REAC (<b>Application Document <a href="#">APP-056</a></b>). These are relied on within the assessment documented in ES Chapter 8 (<b>Application Document <a href="#">APP-048</a></b>).</li> </ul>





ExQ1	Question:	Applicant response to Question:
	(as shown on the Flood Risk Assessment Figure A2 Sheet 11 of 14 [APP-134]).	<p>1.4 In summary, all measures outlined within paragraph 13.2.5 in the FRA (<b>Application Document <a href="#">APP-134</a></b>), under compounds and logistics hubs drainage, are set out in ES Chapter 8 (<b>Application Document <a href="#">APP-048</a></b>) and are relied on within the assessment.</p> <p>1.5 Since the submission of the FRA (<b>Application Document <a href="#">APP-134</a></b>) and ES Chapter 8 (<b>Application Document <a href="#">APP-048</a></b>) as part of the application, the Applicant has made further commitments relating to water through its discussions with the Environment Agency (EA). Further details can be found in the Applicant's response to the EA's relevant representation (<b><a href="#">RR-239</a></b>).</p> <p>1.6 In answer to iii), appropriate buffer zones would be determined dependent on the individual site conditions surrounding the individual watercourse and the construction activities specific to that location. Determination would therefore not be finalised until completion of the detailed design and setting out of the construction activities. Buffer zones would be subject to the requirements of permits and licences agreed with either the Environment Agency or Lead Local Flood Authority.</p> <p>1.7 In answer to iv), Appendix A of the project FRA (<b>Application Document <a href="#">APP-134</a></b>) demonstrates how the flood risk Sequential Test and Exception Test for the selection of the project route have been applied. In accordance with Section 5.7.13 of NPS EN-1, the selection of the final route for the pipeline sought to avoid areas of higher flood risk where practicable, however the final route has been influenced by many environmental, technical and economic factors of which flood risk is just one. No reasonably available route was technically or economically feasible that entirely avoids encroaching into Flood Zones 2 and 3. The exception test has been applied to demonstrate acceptability of the final project route.</p> <p>1.8 Once the final route was selected, temporary construction compounds and logistic hubs that would be required for construction of the pipeline, were sited at appropriate locations along the route. Only five are located in Flood Zone 3 (four partially and one fully) and five in flood Zone 2 as there are no other reasonably available sites within Flood Zone 1.</p>

ExQ1	Question:	Applicant response to Question:
		<p>1.9 The Applicant has sought to avoid Flood Zone 3 when locating compounds, with the exception of the River Thames floodplain where it has been necessary to locate one compound within Flood Zone 3 (Mead Lane – CO-5N). Locating all compounds outside the River Thames floodplain would be expected to result in an increased distance and number of plant, material and traffic movements for the project creating increased disruption. Locating the other compounds, Shepperton Road North and South (CO-50 and CO-51); Woodthorpe Road (CO-5Q); and Brett Aggregates Logistics Hub (CO-7C) outside of Flood Zone 2 was also not practicable for similar reasons.</p> <p>1.10 The compounds located within Flood Zones 2 and 3 outside of the River Thames floodplain are discussed below:</p> <ul style="list-style-type: none"> <li>Compound 30 – Cove Brook Path (CO-4AD): This compound is located wholly within Flood Zone 2. This location has limited ‘open’ areas that could be used as a compound location. West Heath Road is a bus route and a busy commuter route, therefore the use of this space allows materials, deliveries and welfare facilities to be local to the work front – where the replacement pipe passes beneath the railway and along the rear gardens of residential properties to the south side of West Heath Road – and therefore there is not a requirement to use any of the highway as a compound, which would be the other alternative in this location.</li> <li>Compound 33 (CO-5A) – Frimley Green Road: This compound is partially within Flood Zone 3 along its northern boundary. The footprint of encroachment into the flood zone is 17.5m<sup>2</sup>, which is 1% of the total compound area. The project recognises that the works plans submitted with the draft DCO (<b>Document Reference 3.1(3)</b>) application would allow for temporary construction compound 33 (DCO Works No CO5A) at Frimley Green to be partly located over Flood Zone 3. The project can confirm that Construction Compound 33 (DCO Works No CO5A) would be sized and located so that it does not sit within Flood Zone 3 or within 8m of the top of bank of the watercourse. This has been added to the updated Code of Construction Practice as a new commitment (W15) (<b>Document Reference 6.4 Appendix</b></li> </ul>



ExQ1	Question:	Applicant response to Question:
		<p><b>16.1 (2)).</b> Flood Zone 2 extends further across the compound covering an area of approximately 60m<sup>2</sup> (4% of the total compound area). This location has limited 'open' areas that could be used as a compound. Frimley Green Road is a bus route and a busy commuter route; therefore, the use of this space allows materials, deliveries and welfare facilities to be local to the work front which includes the construction of a buried valve pit and the replacement pipeline. Therefore, there is not a requirement to use any of the highway as a compound, which would be the other alternative in this location.</p> <ul style="list-style-type: none"> <li>• Compound 55 – Frimley Green: This location would not be used as a construction works compound but is identified in the draft DCO (<b>Document Reference 3.1(3)</b>) as an area of land that may be used as alternative temporary car parking for staff at the SC Johnson Factory, as part of their existing car park is being used by the project to facilitate trenchless crossing of the River Blackwater valley to the west.</li> <li>• Logistics Hub – M3 Junction 3 New Road (CO-7B): This logistics hub has very small areas of Flood Zone 3 within its boundary and the remainder of the compound is located within Flood Zone 2. This site has already been used as a compound by Highways England as part of its Smart Motorway Programme.</li> <li>• Compound 45 – Salesian School (CO-5L): This compound is partially located in Flood Zone 2 (approximately 350m<sup>2</sup> which is 18% of the total compound area) to the west side of Guildford Road. The project requires areas where plant and materials can be securely and safely left when not in use and which operatives can use as a welfare facility. This location has limited 'open' areas that could be used as a compound; this area places materials, deliveries and welfare facilities close to the work front for construction of two trenchless crossings and the replacement pipeline. The alternative would be to use part of the Guildford Road (a bus and busy commuter route) as a compound.</li> </ul>

ExQ1	Question:	Applicant response to Question:
FR.1.21	<p>It is noted that in the event of a significant spill event, if requested, monitoring of well water would be undertaken for a determined period of time as stated in the ES Chapter 8 at paragraph 8.6.2 [APP-048].</p> <p>Explain how the “determined period of time” will be determined and state the monitoring measures that would be included.</p>	<p>1.1 Mitigation measure W12, as shown in paragraph 8.6.2 of Environmental Statement (ES) Chapter 8 (<b>Application Document <a href="#">APP-048</a></b>), indicates the determined period of time for monitoring would ‘<i>take into account pollution travel time in groundwater</i>’. Travel times, i.e. how long it would take for a substance to move from the source of the spill to the well, are based on several factors. These include the distance to the abstraction, the depth to groundwater, aquifer permeability and the properties of the potential pollutant. The travel time can be estimated by a spreadsheet model or other modelling software which have been developed for the Environment Agency.</p> <p>1.2 The monitoring would involve collecting an initial water sample from the well as soon as practicable following the spill to act as a reference sample in parallel with undertaking a risk assessment as per mitigation measure W12. Based on the travel time estimation, a series of samples would be subsequently collected to cover the likely time period at which the contaminant may arrive at the water supply. The frequency of this sampling would depend on the likely travel time with short travel times requiring samples to be taken at a closer interval, but for a shorter overall time period. Approximately five samples would be taken over this time period, and if no impacts were identified, monitoring would be considered complete. If the monitoring did identify the need to cease abstraction, then remediation options would be considered which may include longer-term monitoring.</p> <p>1.3 The groundwater samples would be tested at an independent laboratory for the substance(s) which was spilled. Visual, odour and on-site measurement of water quality may also be appropriate, depending on the nature of the chemical spilt. For example, fuels may be apparent in the well by visual observations, or odour and other chemicals can result in a change in groundwater parameters such as the electrical conductivity which can be measured <i>in situ</i>.</p> <p>1.4 To determine the impact of the spill on the well’s water quality, results of the monitoring (i.e. chemical concentrations) would be compared to the reference concentration collected in the initial sample and to published drinking water standards or guideline values where these are available.</p>



ExQ1	Question:	Applicant response to Question:
FR.1.22	<p>Chapter 8 of the ES [APP-048] concludes “following the implementation of the flood risk mitigation included in Section 8.6, there are considered to be no significant effects for flood risk, with all risks reduced to minor or negligible.” However, it also states that “while the project includes measures to mitigate against the exacerbation of existing levels of flood risk during its construction phase, a residual risk of flooding remains for extreme events, as explained the FRA” [APP-134]. The ExA considers the statements conflict with each other on the level of risk from flooding caused by the Proposed Development.</p> <p>Respond.</p>	<p>1.1 The applicant does not believe that these statements are contradictory.</p> <p>1.2 The assessment of flood risk set out in Section 4 of the Flood Risk Assessment (FRA) (<b>Application Document APP-134</b>) considered the likelihood of occurrence and severity of flood risk impact to determine risk prior to and after the implementation of mitigation measures. An important aspect of this is the differing likelihood of occurrence of a flood event over the duration of the operational stage of the project and during construction, with a lower likelihood being applied for a flood event of the same Annual Exceedance Probability during the shorter construction period.</p> <p>1.3 Following this approach for all sources of flood risk, the risks during construction and operation post mitigation have been assessed to be low or very low as summarised in Section 15 of the FRA (<b>Application Document APP-134</b>). Environment Statement Chapter 8 (<b>Application Document APP-048</b>) has used this assessment to determine likely significance of effects on flood risk with mitigation and there are considered to be no significant effects for flood risk, with all risks reduced to minor or negligible during construction and operation.</p> <p>1.4 As set out in Section 14 of the FRA (<b>Application Document APP-134</b>), while the project includes measures so that it does not exacerbate existing levels of flood risk during its construction phase, a residual risk of flooding always remains should an event of greater severity occur beyond the capacity of the mitigation measures included in the project. There are no residual risks during the operational phase as the majority of works are below ground.</p>



ExQ1	Question:	Applicant response to Question:
FR.1.23	Item 9 in the Applicant's letter of 29 July 2019 [AS-016] states that the EA and the Applicant has agreed that climate change allowances do not need to be factored into the assessment for fluvial and pluvial flood sources. It is indicated that this would be addressed in the Statement of Common Ground with the EA. In the EA's RR [RR-239] it is stated that climate change allowances do not need to be considered for short-term, temporary works subject to two conditions, namely that there would be no permanent structures or land raising and that sites would not be in place for longer than 18 months. The EA raises concerns that the FRA	<p>1.1 The project can confirm that there would be no land raising proposed on the project, either in the construction phase or in the operational phase.</p> <p>1.2 As stated in paragraph 3.4.2 of Environmental Statement (ES) Chapter 3 (<b>Application Document <a href="#">APP-043</a></b>) '<i>Works to install and commission the pipeline are expected to start from grant of DCO and be completed early 2023</i>'. Therefore, the whole 97km pipeline is due to be installed within the two-year period. The ES and Flood Risk Assessment (FRA) (<b>Application Document <a href="#">APP-134</a></b>) have assumed that the installation works in any given location would be short term, which is defined in paragraph 3.4.3 of ES Chapter 3: '<i>For purposes of assessment, a short-term duration is assumed to be less than six months... and includes mobilisation and reinstatement</i>'.</p> <p>1.3 As stated in paragraph 3.4.29 of ES Chapter 3 (<b>Application Document <a href="#">APP-043</a></b>) '<i>Approximately 52 temporary compounds would be established along the route of the new pipeline for the storage of pipe, materials, plant and equipment</i>'. The compounds would be at frequent locations along the Order limits and each compound would serve a small part of the working length. Each compound is assumed to be active (including setup, operation and reinstatement) for the full construction of its related pipeline section.</p> <p>1.4 The logistics hubs could be in place for the full two-year construction programme. However, as discussed in meetings with the Environment Agency, only M3 New Road Logistics Hub lies within Flood Zone 3.</p>

ExQ1	Question:	Applicant response to Question:
	<p>does not provide sufficient surety of these conditions.</p> <p>Provide evidence that these conditions can be met.</p>	
<b>FR.1.24</b>	<p>In respect of flood risk, the EA in its RR [RR-239] seeks details of the construction and detailed design method to be submitted prior to the commencement of works. In addition, concerns are raised about the adequacy of the flood risk assessments provided for haul roads, access roads, logistic hubs and construction compounds; consideration of Flood Zone 3b; watercourse crossing reports; open-cut</p>	<p><b>Construction and detailed design methods</b></p> <p>1.1 The Applicant has held a number of meetings with the Environment Agency which have included discussing the methodology and approach taken within the Flood Risk Assessment (FRA) (<b>Application Document <a href="#">APP-134</a></b>). Many of the points raised by the Environment Agency to date are already reflected within the embedded design measures and additional mitigation set out within the Register of Environmental Actions and Commitments (REAC) (<b>Application Document <a href="#">APP-056</a></b>). The Applicant is committed to continuing engagement with the Environment Agency as the details of construction and detailed design method become available. Proposals for the reinstatement of bed and/or banks would be developed during detailed design.</p> <p>1.2 The Outline Construction Environmental Management Plan (CEMP) (<b>Application Document <a href="#">APP-129</a></b>) was provided within the Environmental Statement (ES). The CEMP would be developed during detailed design and would reflect the Outline CEMP and the commitments set out within the REAC. As set out in ES Chapter 16 (<b>Application Document <a href="#">APP-056</a></b>), the CEMP would be submitted to the Local Planning Authorities for approval.</p> <p>1.3 The FRA (<b>Application Document <a href="#">APP-134</a></b>) was submitted as part of the application for development consent. This assessed the impacts of the proposed project including temporary</p>





ExQ1	Question:	Applicant response to Question:
	<p>crossings of culverted watercourses; and permitting issues.</p> <p>Respond.</p>	<p>logistics hubs, compounds, haul roads and access roads on flood risk. The following paragraphs outline where temporary works lie within Flood Zone 3 (FZ3). No land raising is required on the project for any part of the temporary (during installation) or permanent (during operation) works including FZ3.</p> <p><b>Haul Roads and Access Roads within Flood Zone 3</b></p> <p>1.4 As stated in paragraph 3.2.13 of the FRA (<b>Application Document <a href="#">APP-134</a></b>), <i>‘where soils are suitable, the haul roads would be formed from exposed subsoil’</i>. The project, therefore, does not anticipate any additional material would be used to form the haul roads and no land raising is required.</p> <p>1.5 As stated in paragraph 3.2.10 of the FRA (<b>Application Document <a href="#">APP-134</a></b>), <i>‘Temporary access tracks, of approximately 3.5m in width, would be provided to link the pipeline installation areas and haul roads to the local road network. Conservatively it has been assumed for this FRA that the access tracks would be retained throughout the construction duration. Where these temporary access tracks are across open ground, the topsoil would be stripped and the access track constructed by laying imported crushed stone on a geotextile membrane or some form of ground protection.’</i></p> <p>1.6 Topsoil removed to form haul and access roads would be stockpiled within the Order limits. The locations where the project could store material in FZ3, as a result of the haul and access road construction and topsoil stockpiling, are set out in Table 7.4 of the FRA (<b>Application Document <a href="#">APP-134</a></b>). This has assessed the severity of impact of any increase in flood risk as a result of stockpiling based on the nature of the receptors upstream of the pipeline route and the proposed haul/access road. The likelihood of flooding in all cases is medium as these locations are within FZ3. Based on the severity of impact and likelihood of flooding the unmitigated risk of increasing flood risk to receptors has been determined.</p>

ExQ1	Question:	Applicant response to Question:
		<p>1.7 Table 7.5 of the FRA (<b>Application Document <a href="#">APP-134</a></b>) provides further assessment of the impact of material stored from haul roads and the trench arisings where the unmitigated risk of increasing flood risk to receptors has been assessed as either medium or high (i.e. the Ively Brook, Cove Brook, River Ash and River Thames as high risk and the Windle Brook as medium risk).</p> <p>1.8 In all cases commitment W5 '<i>Topsoil and subsoil would be stockpiled for as short a duration as practicable within FZ3 and areas of High and Medium RoFSW</i>' and W6 apply, the latter of which states that '<i>Stockpiles in FZ3 or areas of High and Medium RoFSW would not exceed 25m between breaks. Breaks in between stockpiles would be at least 5m. Breaks would be located opposite each other on either side of the excavation where practicable</i>'.</p> <p>1.9 In addition to the text above, the following information is pertinent to the assessment of impact for these four watercourses:</p> <ul style="list-style-type: none"> <li>Ively Brook: commitment W7 states '<i>Stockpiles would not be stored within Ively Brook Flood Zone 3, east of A327</i>';</li> <li>Cove Brook: A trenchless crossing is now proposed at Cove Brook Flood Storage Area (FSA) to cross the reservoir dam. The total excavated material stockpile (which includes haul road and pipeline trench) within the FSA is 2,600m<sup>3</sup> out of a total storage volume of 95,000m<sup>3</sup> which represents 3%;</li> <li>Windle Brook: any increase in flood risk would be to a minor road and the excavated soil stockpile is assessed to represent around 2% of the total floodplain volume; and</li> <li>River Thames/Ash floodplain: the volume of soil stored is likely to be insignificant when compared to the extensive floodplain volume and is unlikely to significantly increase flood levels. The topsoil stockpile has been assessed to be at most 0.1% of the total floodplain volume.</li> </ul>



ExQ1	Question:	Applicant response to Question:
		<p><b>Logistics Hubs and Compounds</b></p> <p>1.10 The assessment of construction compounds is set out in Appendix D of the FRA (<b>Application Document <a href="#">APP-134</a></b>) and is summarised in Section 7 and Section 13 in relation to the fluvial flood risk.</p> <p>1.11 For all compounds there is no land raising anticipated as part of the formation of any of the construction compounds. As stated in Section 3.2.8 of the FRA (<b>Application Document <a href="#">APP-134</a></b>), the project design is that existing permeable areas within the temporary compounds would remain permeable and would not include a positive drainage system. Topsoil would be stripped where necessary at compounds and stockpiled. The location of topsoil stockpiles has yet to be determined and will be developed as part of the detailed design phase that will develop layouts for the construction compounds.</p> <p>1.12 As stated in Section 13.2.3 of the FRA (<b>Application Document <a href="#">APP-134</a></b>), three construction compounds were identified to be located within FZ3 within Appendix D of the FRA – Mead Lane 47 (CO-5N), Shepperton Road North 49 (CO-5P) and Frimley Green Road 33 (CO-5A). In addition, as noted in the Environment Agency response, Construction Compound 55 (Frimley Green) and the M3 Junction 3 New Road Logistics Hub (CO-7B) were incorrectly identified as lying wholly outside of FZ3. Therefore, there are four construction compounds and one logistics hub identified as being located within Flood Zone 3, which are discussed below.</p> <p>1.13 Two of the four construction compounds are located within River Thames Flood Zone 3 (exceptions are identified in commitment G125: <i>‘With the exception of the Thames flood plain, all construction compounds would be located outside of flood zone 3’</i>). These are Construction Compound 47 Mead Lane (CO-5N) and Construction Compound 49 Shepperton Road North (CO-5P). The stockpiling of topsoil in these two compounds is an insignificant volume compared to the</p>

ExQ1	Question:	Applicant response to Question:
		<p>size of the River Thames floodplain and would not be expected to cause a noticeable loss of floodplain volume.</p> <p>1.14 There are two further construction compounds and one logistics hub located in FZ3:</p> <ul style="list-style-type: none"> <li>• Construction Compound 33 (CO-5A) – Frimley Green Road: This compound is partially within FZ3 along its northern boundary (17.5m<sup>2</sup> which is 1% of the total compound area). The Applicant recognises that the Works Plans submitted with the draft DCO (<b>Document Reference 3.1(3)</b>) would allow for temporary construction compound 33 (DCO Works No CO-5A) at Frimley Green to be partly located over FZ3. The Applicant can confirm that Construction Compound 33 (DCO Works No CO-5A) would be sized and located so that it does not sit within FZ3 or within 8m of the top of bank of the watercourse. This has been added to the updated Code of Construction Practice as a new commitment (W15) (<b>Document Reference 6.4 Appendix 16.1 (2)</b>).</li> <li>• Construction Compound 55 – Frimley Green: This location would not be used as a construction works compound but is identified in the draft DCO (<b>Document Reference 3.1(3)</b>) as an area of land that may be used as alternative temporary car parking for staff at the SC Johnson Factory, as part of their existing car park is being used by the project to facilitate trenchless crossing of the River Blackwater valley to the west.</li> <li>• Logistics Hub – M3 Junction 3 New Road (CO-7B): This logistics hub has very small areas of FZ3 within its boundary. This site has already been used as a compound by Highways England as part of its Smart Motorway Programme. The watercourses are culverted at the centre of the site beneath existing access roads. The remaining areas of FZ3 are at the very outer margins of the logistics hub and will not be used during the works. Therefore, there would not be any loss of floodplain storage or interruption or flows in the floodplain at this site.</li> </ul>



ExQ1	Question:	Applicant response to Question:
		<ul style="list-style-type: none"> <li>In addition, commitment W5 states 'Topsoil and subsoil would be stockpiled for as short a duration as practicable within FZ3 and areas of High and Medium RoFSW'. In addition, commitment W6 states that 'Stockpiles in FZ3 or areas of High or Medium RoFSW would not exceed 25m between breaks. Breaks in between stockpiles would be at least 5m. Breaks would be located opposite each other on either side of the excavation where practicable'.</li> </ul>
<b>FR.1.25</b>	<p>Paragraph 7.3.25 of the Planning Statement [APP-132] states that there has been extensive engagement with the EA and NE and also engagement with all of the relevant sewage and water undertakers.</p> <p>Provide evidence of this engagement with responses from these Statutory Parties.</p>	<p>1.1 The Consultation Report (<a href="#">AS-013</a>) identifies the pre-application engagement and consultation that has taken place, including with the Environment Agency, Natural England and with the relevant sewage and water undertakers. The relevant sewage and water undertakers for the project are Affinity Water, South East Water, Southern Water, Portsmouth Water and Thames Water.</p> <p>1.2 Statements of Common Ground (SoCGs) are being prepared between the Applicant and each of these organisations. Within each individual SoCG, Section 2 sets out a summary record of the engagement undertaken with the organisation, both pre- and post-submission of the application. For example, the signed SoCG between the Applicant and Natural England (<a href="#">REP1-005</a>) and the signed SoCG between the Applicant and South East Water (<a href="#">REP1-006</a>).</p> <p>1.3 The SoCGs record matters agreed, matters not agreed, and matters subject to ongoing discussion, reflecting the engagement and responses of the organisations.</p>



ExQ1	Question:	Applicant response to Question:
<b>FR.1.26</b>	Explain whether the Proposed Development would result in the disruption of any PWS that are used for agricultural purposes (including irrigation and water for animals). If so, what alternative arrangements (e.g. tankering) are proposed to ensure water supplies would be maintained for the duration of any disruption.	<p>1.1 An assessment of impacts to known private water supplies (PWSs) has been undertaken and the impact on known groundwater supplies (including for agricultural use) was considered in Appendix 8.4 (<b>Application Document <a href="#">APP-105</a></b>) and 8.5 (<b>Application Document <a href="#">APP-106</a></b>) of the Environmental Statement (ES). The potential significance of effects on known PWSs is assessed to be minor or negligible.</p> <p>1.2 The Applicant also recognises there is a small risk that there could be PWSs used for agricultural purposes which may be affected by the project.</p> <p>1.3 Commitment W12 in the Code of Construction Practice (<b>Document Reference 6.4 Appendix 16.1 (2)</b>) provides protection for agricultural or other groundwater supplies, including those not identified in the ES.</p> <p>1.4 It is not expected that the project would result in the disruption of any agricultural PWS. However, where works have affected an agricultural PWS then commitment W12 confirms that '<i>an alternative water supply would be provided, as appropriate</i>'.</p>