

RESPONSE TO STATEMENTS SUBMITTED BY HIGHWAYS ENGLAND WITHIN RESPECTIVE WRITTEN REPRESENTATIONS TO DEADLINE 2

M and R Hosier for Boreland and Westfield farms – Ref: 20020373

Highways England Response to Examining Authorities written questions 8.10.11 Flood risk, groundwater protection, geology and land contamination (Fg1) Deadline 2 [1]

We remain concerned that Highways England have not adequately addressed the concerns raised within the examining authority's questions [on the Flood risk, groundwater protection, geology and land contamination submission for the A303 Amesbury to Berwick Down (Deadline 2)]. Our concerns being:

Question Fg 1.5 Geology and soils

Response to point 4

We have concerns that as the tunnel boring machine will operate below groundwater level, any voids will require filling to provide an adequate seal. In order to achieve this grout will have to be sprayed at significant pressures onto the chalk surface. In doing so there is a high risk that grout will also be forced into the fissures that supply our farm borehole, potentially reducing the volume of water that is available to us. As far as we are aware, there have been no tests carried out to assess the distance that the grout will travel along the fissures when under pressure.

References to Crossrail C310 Thames Tunnel project through the chalk aquifer do not take into account that the aquifer is not used for a public water supply in London. There are both public and private drinking water abstractions drawing from the area surrounding the A303 project.

We note the intended use of grout and lubricating fluids that are non-contaminating to water supplies. But there is the potential for the grout lubrication mix to combine with the fine ground up phosphatic particles from the tunnel boring process and be carried along the fissures. As the grout sets in the fissures it will block the water flow.

See M & R Hosier Written Representation, Appendix 2 Groundwater Concerns – Report by Sweetwater Resources 2]

Page 2, the bullet points

Question Fg 1.8 Contaminated land

Response to point 2

We note that the Planning Authority and Environment Agency will be informed should previously unidentified contaminated land (including ground water) be found during the construction, but there is no note of when our business will be informed of any risk to our water supply and health. Our farm has no mains water supply and is solely reliant on boreholes to supply drinking water at farm properties as well as livestock. As such, it is important that we are informed of any situations

that have the potential to contaminate our drinking water. An alternative safe water supply would need to be provided if this was the case.

In discussions with HE, we note that groundwater will only be monitored quarterly in the surrounding area. As such, it is highly likely that we will be drinking contaminated water and become unwell before HE informs us that there may be a problem.

Having pointed out for over a year, that there is no monitoring of the farm drinking water supply, HE have now decided they will carry out surveys. However, the only monitoring offered is for water levels and chemical composition. There is no intention to carry out any water quality analysis to drinking water standards although we have raised their moral obligation to do so.

In addition HE have made no provision for any alternative source of safe drinking water for our farm or farm business. There seems to be no comprehension of the difficulties in providing us with an alternative water supply if this is needed.

Response to point 4

As it cannot be proved that there will be no impact on our water supply, HE has a responsibility to ensure that measures are in place should our water be compromised. We require a legal document from HE stating details of measures they guarantee to put into place to reinstate safe drinking water at Boreland and Westfield Farms. This would include temporary measures for immediate drinking water as well as provision of a long-term safe water supply. Our water engineers would need to advise on appropriate water provision as they have the necessary knowledge and experience of our farm supply that HE do not.

Question Fg 1.9 Land and groundwater contamination

Response to point 1

Meeting with the HE groundwater modelling team, we learned that even with the groundwater model assessing the impacts, there can be no certainty that groundwater levels will not be affected. In view of the fact that there are a number of farms and cottages that drink borehole water, it is surprising that HE have not carried out tracer tests within the proposed locations of the tunnel, to ascertain which boreholes are linked to the fissures located in the line of the tunnel. This information would give more confidence as to the accuracy of the water model used to assess the scheme's effects on groundwater.

We note that OEMP [APP-187] sets a requirement for the contractor to ensure that work operations do not affect the chalk aquifer. Throughout the documents there are references to contractors being responsible for various operations and not HE as the Applicant of the Scheme. As such, we believe that the contractors chosen must be assessed for adequate public liability insurance should there be a breach in the contractors' obligations. We would require a written clarification as to who is responsible for reinstating a safe like for like supply of water to our farm.

Question Fg 1.10 Combined effects

Response to point i) 8

Although dewatering or abstraction is not intended during the construction process, it has been stated that it may be necessary in some scenarios, in locations such as Stonehenge Bottom. This area is one of high faulting and fracturing through which most of the fissures supplying the region pass. So although the water model shows that dewatering “should not” significantly reduce aquifer levels, there is no certainty that the small reduction in water levels will not impact on our borehole supply. Water levels may be reduced to levels below the level where the fissures enters our borehole. As no surveys have been done on our boreholes to establish where the water enters there can be no certainty that this will not severely reducing water yields available to us.

See M & R Hosier Written Representation, Appendix 2 Groundwater Concerns – Report by Sweetwater Resources 2] See page 5 paragraph 12

Response to point ii) 9

We have concerns over the accuracy of the Conceptual site models used to assess the water movement within the geology of the Scheme landscape.

See M & R Hosier Written Representation, Appendix 2 Groundwater Concerns – Report by Sweetwater Resources 2]

Pages 2 to 6, Paragraphs 6.1 to 6.13

Paragraph 6.12 The model does not predict water levels to an accuracy which guarantees that there will not be a reduction of yield from boreholes during periods of low groundwater in summer, or that there will be no contamination. Therefore, HE is wrong to say there is zero risk to the water supply of Boreland and Westfield Farm.

Mortimore et al Proc. Geol Assoc 2017 Figure 26 notes presence of many high permeability sub-horizontal fissures (dipping to the south) in the location of Stonehenge Bottom. As the tunnel is below the water table in this location and the exact location of the fissures will never be known unless the whole of the area is surveyed by core samples every few meters, it is not possible to assess the full damming effects that a tunnel will cause. Claims that the water will flow round cannot be accurately known until the tunnel is in place. There is a massive potential for the tunnel to alter groundwater flows far beyond the survey area.

Question Fg 1.41

Response to point 2

HE inform us that there will be no impact on our groundwater supply as the Environment Agency (EA) are overseeing the project ensuring all areas of concern will be appropriately resolved prior to the Scheme going ahead. We disagree with this statement as EA will be assessing the Scheme in relation to the impacts on the River Avon and public water supplies. There is no legal obligation for EA to assess the impact on private abstraction licences. Indeed we believe that there has not been the necessary work carried out by HE on private abstraction boreholes for them to fully assess this criteria.

2] REP2-104: M & R Hosier WR: Groundwater Concerns – Sweetwater Resources Appendix 2:
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