



Eight fold increase in aquifer impact posed by HS2 Tunnel Consent

It would appear the Environment Agency (EA) approved the HS2 tunnelling work on the 23rd April 2021 and work has now started. We have looked at the review process and find numerous mistakes and omissions. Here are some examples.

So why are we worried? The chalk aquifer supplies the flows in the rivers Colne, Misbourne and Chess. It also provides large volumes of our drinking water. Pollution or damage to a fundamental life source is serious.

We note that there is no evidence in any of the supporting documents of a method statement for the two critically sensitive River Misbourne crossings at Chalfont St Giles and Shardeloes Lake. A method statement would identify the risks and put forward mitigation work to reduce risk. The HS2 approach throughout this project is to hide the bad news until it is too late. This can be seen in everything they do. The article in <https://www.building.co.uk/news/hs2-outlines-plans-to-stop-chiltern-tunnelling-contaminating-local-water-supplies/5112132.article> is a case in point. Once they have the EA “approval” in the bag they come clean with the risks.

We are also missing critical borehole logs and redacted borehole log data for locations around the Misbourne Crossings. Some of these logs may further bring into question the EA's report on the Shardeloes Lake pollution incident back in May/June 2020 where they say they saw nothing. We have photographic evidence and water samples that point towards HS2 local boreholes drilling at the time being responsible for the pollution. Admitting that two small boreholes could cause widespread pollution to a lake and the River

Misbourne would make approving two 10.5m diameter 16km long tunnels more problematic.

So what are the EA and HS2 playing at? Trying to hide the truth in order to get the required approval?

We also note that the EA have only recently addressed the question on how far the grout/cement, that holds the tunnel lining in place, will penetrate the chalk aquifer. The response from HS2/Align is **"The current estimate is around 10m maximum travel from the tunnel."** Two things to note here, the worrying use of the word "current" and the fact that this makes the potential for cementing a 30.5 meter diameter area. With two tunnels this could mean a 60m+ cemented barrier through the chalk. This looks like new information and if so it dramatically increases the impact to the chalk aquifer from an area of 10.5m diameter to a diameter of 30.5m and this is just one tunnel. So taking two 16.7km long tunnels the volume impacted would move from 2.9 million cubic metres to 24.4 million cubic metres. That is an 8.4 fold increase in the volume of the chalk aquifer impacted by the HS2 Tunnel grouting operation. Being new information surely that should have required significant further investigation. As the EA state in their questions ***"Agree that presence of tunnel will cause permanent changes to groundwater movement. Changes to groundwater movement around boundaries between chalk units could be significant."*** so the larger the area impacted by grout the more ***"significant"*** the risk. This is a new tone from the EA. In the past they have always downplayed the risk. This is duplicitous behaviour on behalf of the EA and HS2.

We have been raising many important questions with the EA, including the cementing issue, over many years and it is only in the last 3 months the EA have seen fit to raise the very same questions with HS2. These are not the actions of a competent regulator. The nature of these questions are red flag items, which if raised in a timely fashion the project could have been stopped the project years ago and saved our water resource and billions of £ of public money.

The only thing the EA have been clear on with us is they will not be monitoring tunnelling operations on a real time basis. This will only lead to a catastrophe. The incentive for HS2/Align to cover up any environmental disaster and fill the chalk with grout is too great to allow this approach. HS2/Align have budgets and timelines to meet, trashing the aquifer, out of sight out of mind, is too big a temptation. We need to see the Environment Agency's detailed monitoring programme including their access to HS2 records and their attendance at HS2 tunnelling operational meetings.

The Environment Agency have denied us access to location details of public drinking water sources, (Affinity Water abstraction boreholes) which we require to assess the risk to these resources. This has been justified by the Environment Agency on the basis that it would compromise National Security. If these boreholes are so important to National Security how is it that they have "approved" two tunnels that put these sources at significant risk.

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