

Bromate contamination significant to The proposed quarrying activity at the Hatfield Aerodrome

My name is Mike Hartung and I am a member of Ellenbrook Residents Association. I have lived in the area for 39 years and am a regular user of Ellenbrook Fields for relaxation, cycling, and walking my dog. My career has centred around electronics, LED lighting design, video production and I have worked at the BBC and ITV.

I first became interested in the bromate plume back in 2015 just prior to when the planning application was first heard at Herts County Council planning committee. Although we were aware of the plume we had no idea of the potential impact it could have on our area and public water supply.

Initial research into the bromate plume brought my attention to the reports produced by Ciara Fitzpatrick and Simon Cook UCL PhD students and on reading these I became extremely concerned about the potential input on our area and public water supply.

I contacted Affinity Water who attended meeting at Herts County Council to discuss the bromate issue and at that meeting Affinity asked what the problem was and I reported that 1000 microgram per litre of bromate was detected within a few hundred metres of a proposed quarry site.

I also pointed out the fact that bromate cannot be filtered out and once it was in the water there was no way of removing it.

I also contacted the Environment Agency under Freedom of Information to ask for more information on the bromate plume.

So as you see I have spent a considerable amount of time over a number of years researching this topic.

Others have already talked about the origin of the bromate, the health issues and the risk to our public water resource so I won't go into that in detail here other than to emphasise that this contamination is the worst bromate pollution in Europe.

The levels of bromate in our drinking water is controlled by the World Health Organisation which states that bromate levels should be below 10 µg/l in our drinking water.

Bromate and bromide (which is a precursor to bromate) has been detected around the proposed dig site in levels greater than expected. Bromate levels are over 1000 µg/l on Ellenbrook Fields quite close to the quarry.

A remediation plan to deal with the bromate pollution was established 10 years ago by the Environment Agency but unfortunately the remediation plan has failed to significantly reduce the levels of bromate within the area.

A voluntary new remediation statement was signed in September 2020 and the actions in the statement are waiting to be addressed.

A report seen by the residents association produced by Affinity Water in 2017 regarding the aquifer remediation clearly demonstrates the difficulties managing the bromate.

The report accepts that there is a continuing source of both contaminants (bromate and bromide) upstream.

As residents' associations we are really concerned that despite this huge amount of remediation work, at significant cost, and at the loss of millions of gallons of water, the bromate shows no sign of being eradicated.

The EA have set three conditions in their response regarding quarrying on Ellenbrook Fields. These conditions are:

1. No mineral is extracted from within the existing plume of bromate and bromide groundwater pollution.
2. Any activities close to the plume must not change the existing hydrogeological flow regime.
3. Any activities close to the plume must not interfere with the remediation of the bromate and bromide pollution.

We are concerned that these conditions may not be met.

The residents association is concerned about a number of other issues associated with the plume as follows.

The site is very close to the bromate plume, less than 100m. Although a rough outline of the plume has been identified, clearly the bromate does not travel in straight lines and does not recognise map boundaries.

The bromate will travel through fissures and potentially could be anywhere. We would argue therefore that there is no absolute way to prove that the quarry site is not in fact over the bromate plume.

The EA would argue that the borehole data that is available provides sufficient information to give reasonable assurance that bromate is not under the dig site.

But we would argue that there is too much uncertainty about how bromate can spread underground to take the risk. If it is proven that the land is contaminated, then no quarrying can take place.

It is vital that data covering the whole site is available, not just boreholes around the edge of the dig site. There is about half mile gap between boreholes BH104 and BH106 on the northern perimeter, leaving a huge gap where bromate could travel through without being detected.

On a map provided by SLR in February 2019, localised plume contours show the modelled southern plume boundary in relation to the quarry site.

The map shows the plume skirting the quarry site and infers that there is no bromate beneath the proposed working area.

However using the borehole data taken in 2019 provided by SLR and shown in a tabular format it clearly shows that bromate was present at boreholes surrounding the dig site.

We believe that a more accurate representation of the plume shows the plume crossing the northern area of the dig site.

We believe that the EA's first condition "No mineral is extracted from within the existing plume of bromate and bromide groundwater pollution" cannot be guaranteed and will not be met and therefore quarrying should not be allowed on Ellenbrook Fields.

Bromide, which is a precursor to bromate, is clearly present on the site in much higher readings than can be easily explained.

There is a suggestion that the high levels of bromide could be caused by rock salt but we believe that the levels are so high that this is very unlikely. At the very least, this is just another alarm bell pointing towards the existence of bromate on the site.

I have tabulated an on-site bromide chart using the latest data from SLR (2019 – 2021) and the results are very alarming. Borehole BH302, on the northern edge of the quarry perimeter, is over 2000µg/l bromide.

We would argue that the bromate risk is significant regardless of any measures to manage it because the impact is so severe. Once bromate is detected on the site it is too late and clearly Affinity Water are also concerned about the risk having referred to it in their Statement of Case.

EARA and SRA are in complete agreement with HCC's fourth reason for refusal.

In conclusion we believe that:

- No one can absolutely guarantee that bromate is not under the dig site
- There are clearly numerous risks associated with managing the bromate and that once the site is polluted it is too late
- No quarrying should be allowed on Ellenbrook Fields until the bromate is fully eradicated