

Welwyn Hatfield Borough Council,  
The Campus,  
Welwyn Garden City,  
Herts.  
AL8 6AE

Reference: 6/2023/2173/COND

30<sup>th</sup> November 2023

Dear Madam/Sir

**DESCRIPTION:** Submission of details pursuant to condition 8 (Piling/Other Foundation Designs) on planning permission 6/2020/3222/MAJ

**LOCATION:** Beadles Volkswagen Van Centre, Harpsfield Broadway, Hatfield, AL10 9TF

Thank you for notification with regards to the supplementary information relating to planning application 6/2023/2173/COND.

We have reviewed the documents referenced 'Technical note – Foundation Piling Depths' that were supplied on 25<sup>th</sup> October 2023 in support of discharging condition 8.

Affinity Water is still **unable to recommend discharge of condition 8**. This is due to the development foundations exceeding the piling depth limit recommended by Affinity Water (62mAOD), referenced in the planning application 6/2022/2300/COND. Additional documentation was submitted by the applicant for condition 8 and was refused discharge by the case officer on 16<sup>th</sup> August 2023.

Our concern as mentioned in our initial response (dated 1<sup>st</sup> November 2022) is that the proposed piling depth finishes at the top of the Lower Gravel aquifer, which is hydraulically connected with the underlying Chalk aquifer (principal aquifer). These geological units have recorded elevated levels of Bromate linked to historic contamination which is currently controlled by scavenging activities undertaken by Affinity Water. The piling depth originally proposed, would penetrate the Boulder Clay layer that separates the Upper Gravel aquifer (secondary aquifer) from the principal aquifer (Chalk and Lower Gravels), potentially creating a pathway that would hydraulically link the two aquifers and allowing the Bromate to bypass active scavenging activities and affect local third-party groundwater abstractions (from the secondary aquifer) and any groundwater-dependent ecosystems.

The technical note submitted in support of the discharge of condition 8, mentioned that the connection between the Upper Gravels of the Lowestoft Formation and the Principal Aquifer is improbable due to the piling technique providing seal, limiting the interaction between the two aquifers.

The piling technique (Continuous Flight Auger), can (in principle) provide a seal in the form of a cement or grout, thereby not connecting the aquifers during penetration. However, there is no formal documentation proving the case, but only guidance demonstrating that in

theory there is a seal (Guidance reference: Piling into contaminated sites; Environment Agency, 2002). In addition, since the piling activity was undertaken prior to discharge of the condition, there was no formal sign off agreeing for the appropriate technique to be followed.

Groundwater level fluctuation was also observed at a nearby observation borehole and highlighted in the Technical note – Foundation Piling Depths. However, the groundwater level data covers only one year and is not representative of the long term fluctuation in groundwater levels to demonstrate that no aquifer mixing has taken place from the foundation works. It is possible that under above average groundwater level conditions in the principal aquifer may allow mixing with the secondary aquifer, hence allowing for hydraulic connection.

In order for us to be able to recommend discharge of condition 8, we require the developer to undertake groundwater level monitoring and sampling for Bromate in both the shallow Upper Gravel (Secondary) aquifer and the Principal aquifer on site, to identify if any link has been created and therefore potential cross-contamination a predetermined period of time in agreement with Affinity Water.

Thank you for your consideration.

Yours sincerely

Laurence Chalk  
Catchment Adviser  
Catchment Management

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