creating a better place

Environment Agency

South Oxfordshire District Council
Development Control
135 Eastern Avenue
Milton Park
Abingdon
OX14 4SB

Our ref: WA/2024/131698/01-L01
Your ref: P24/S2642/FUL

Date: 20 November 2024

Dear Sir/Madam

ENGINEERING OPERATIONS ASSOCIATED WITH GROUND STABILISATION WORKS. THAMES FARM, READING ROAD, LOWER SHIPLAKE, RG9 3PH

Thank you for consulting the Environment Agency on this proposal. We apologise for the delay in responding.

We have reviewed the following documents submitted by the applicant:

Documents reviewed:
Hydrogeological impact assessment for ground stabilisation works, Lower Shiplake. Date: 14/08/2024 Status: Final. Reference: 30438R6. © H Fraser Consulting Ltd 2024
FLOOD RISK ASSESSMENT AND DRAINAGE STRATEGY. A253-R010 v4 14 August 2024. Appendix 5 - Outline Project Method Statement Revision E - FINAL 12th August 2024

In accordance with paragraph 180 (e) of the National Planning Policy Framework (NPPF), the Environment Agency **objects** to the proposed development due to its unacceptable risk to the environment. We recommend that planning permission is refused for the following reason:

Reason
The risks to groundwater from the development are unacceptable. The applicant has not supplied adequate information to demonstrate that the risks posed to groundwater can be satisfactorily managed. We recommend that planning permission should be refused on this basis in line with paragraph 180 of the National Planning Policy Framework.

Explanation
The Environment Agency's approach to groundwater protection is set out in 'The Environment Agency's approach to groundwater protection'. In implementing the position statements in this guidance, we will oppose development proposals that may pollute groundwater especially where the risks of pollution are high and the groundwater

Cont/d..

asset is of high value. In this case position statements A and B apply. Groundwater is particularly sensitive in this location because the proposed development site:

- is within source protection zone 1
- is located upon principal aquifer

To ensure development is sustainable, applicants must provide adequate information to demonstrate that the risks to groundwater posed by development can be satisfactorily managed. In this instance the applicant has failed to provide this information, and we consider that the proposed development may pose an unacceptable risk of causing a detrimental impact to groundwater quality because of two broad aspects of concern:

1. The use of grout in a sensitive groundwater location and need for monitoring, and
2. the implications of the proposed surface water disposal mechanism.

We are not satisfied that either of these broad areas have been adequately assessed at this stage.

1. PFA used in the grout:

The Hydrogeological Impact Assessment (HIA) (H.Fraser 18.8.2024) states that:
99 The exact extent of the encountered soft ground is still unknown and is therefore speculatively positioned on the cross section. It can be seen that even if grouting is well above the structured Chalk and the water table, there is a small possibility that grout could be forced through the soft ground to below the water table.

We are unclear regarding the intentions for the grout composition. The HIA (H.Fraser 18.8.2024) states that:
101 The grout will consist of sulphate resisting Portland Cement, pulverised fuel ash (PFA), sand, pea gravel, and a thixotropic admixture of bentonite.
AND
133 The components of the compaction grout mix will be Sulphate Resisting Portland Cement (SRPC), sand, pea gravel, pulverised fuel ash (PFA), and a small admixture of bentonite.
Whereas: **Appendix 5 - Outline Project Method Statement Revision E** states:
Constituent materials for grouting
The grout will consist of a mixture of Sulphate Resisting Portland Cement (SRPC), sand, pea gravel and bentonite. The grout will not contain any ingredients that have the potential to contaminate the groundwater (e.g., no Pulverised Fuel Ash (PFA)). The full composition is detailed in the grouting composition certificate in Appendix D.
AND
Grout injection works will not be undertaken within 2.0m of the mapped groundwater surface. However, it should be noted that the groundwater will be continually assessed throughout the works to ensure any seasonal fluctuations are considered.
To provide a full understanding of groundwater depth, monitoring positions have been installed across the site and have been regularly monitored.
As previously outlined, the grout will comprise only natural components (i.e. no materials such as PFA).

Please confirm the intended grout composition, and, if PFA is to be used, how this waste product can be deposited in line with the relevant regulations:

Quality Protocol Pulverised Fuel Ash (PFA) End of waste criteria for the production of pulverised fuel ash (PFA) and furnace bottom ash (FBA) for use in bound and grout applications in specified construction and manufacturing uses LIT_8272_420835.pdf (publishing.service.gov.uk) states: *Grout applications g Follow*

the advice given in the 2009 edition of Stabilising mine workings with PFA grouts – environmental code of practice (BR488) published by BRE.

STABILISING MINE WORKINGS WITH PFA GROUTS Environmental Code of Practice Second Edition BR509 states*: PFA grout is not permitted in groundwater source protection zone SPZ 1.*
The presence of List I substances means that PFA grouts should not be used in an area designated SPZ 1.

It is therefore the Environment Agency's understanding that PFA cannot be used in grout at this site as it is within a SPZ1.

Monitoring
There is not a clearly defined proposed plan for monitoring groundwater during any of the grouting works (or piling works), or even during the construction works in this sensitive location. This is essential if this development is to be taken forward. The HIA does not provide any information on this matter. The Environment Agency would need to review the monitoring schedule and outline, well in advance, as well as a detailed hydrogeological baseline. There will also need to be an assessment of control measures and any mitigations in case impacts are detected.

2. Groundwater concerns from the surface water discharge:
The proposal seeks to utilise an infiltration basin for the site's surface water runoff, not just for clean roof water. The proposed SuDs treatment is outlined in the FRA: *7.42. The proposed strategy includes various SuDS features such as the surface water containment bunds, a conveyance feature and potentially some storage at the infiltration areas.* However, this is not specific enough and needs to be expanded upon. Please see position statements including G4 - Trade effluent and other discharges inside SPZ1 and G13 - Sustainable drainage systems (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692989/Envirnment-Agency-approach-to-groundwater-protection.pdf).

The proposed infiltration basin to the east of the site is where there are low apparent conductivity values, possibly related to potential voiding within the underlying chalk. It is also noted to be a low-lying part of the site which has the most risk of flooding at present. The Environment Agency has concerns that the proposed infiltration of the site's surface water (from most, if not all, of the site) into a single concentrated area of the site will promote increased dissolution of the bedrock in this area of the site, and thus reduced attenuation of any contaminants before reaching the water table. It is also unclear how the infiltration will perform in an area that is proposed to be altered by the stabilisation works. It is not clear where the infiltration basin sits relative to the grouting areas. There is a potential that the bedrock remaining between the grouted areas will still be softened and could dissolve, and the increased infiltration may enhance this, leading to ground instability and rapid pathways to groundwater. There is also uncertainty surrounding the composition of the grout (even without PFA) and how physically and chemically stable this would be in those areas used for enhanced infiltration. The Environment Agency would generally endorse diffuse infiltration solutions rather than one focal point. Ground stability matters will need to be very seriously considered because of this proposal and we would need to have clarification on the assessment undertaken.

Overcoming our objection
In accordance with our approach to groundwater protection we will maintain our objection until we receive a satisfactory risk assessment and full supporting information

that demonstrates that the risks to groundwater posed by this development can be satisfactorily managed.

The possible requirement for an Environmental Permit at this site:

The HIA states that: *It can be seen that even if grouting is well above the structured Chalk and the water table, there is a small possibility that grout could be forced through the soft ground to below the water table.*

In this regard **there is a potential for this to proposal to qualify as a groundwater activity** and therefore an EPR permit would be required (this is irrespective of any planning decisions).

We therefore advise that this development **may** require a permit under the Environmental Permitting Regulations (England and Wales) 2016. The Environmental Permitting (England and Wales) Regulations 2016

At this stage, we do not have enough information to know if the proposed development can meet our requirements to prevent, minimise and/or control pollution.

The proposed development intends to place grout into the ground within an SPZ 1. In order to reduce the risks to people and the environment and in order to obtain a permit:

- the suitability of the location with respect to the protection of groundwater will need to be considered, and
- the method and grout composition and the depths of placement relative to groundwater elevations will need to be considered.

We will not be able to determine a permit application until this information has been provided. If the applicant believes that this proposal meets exemptions from the Environmental Permitting Regulations (England and Wales) 2016, they should indicate to us why this is the case.

We recommend that the developer considers parallel tracking the planning and permit applications as this can help identify and resolve any issues at the earliest opportunity. Parallel tracking can also prevent the need for post-permission amendments to the planning application. We would welcome a joint discussion with the applicant and planning authority to discuss this further.
Further guidance can be found at https://www.gov.uk/government/collections/risk-assessments-for-specific-activities-environmental-permits

Final Comments

Thank you again for consulting us on this application. Our comments are based on the best available data and the information as presented to us.

If you are minded to approve the application contrary to our objection, please contact us to explain why material considerations outweigh our objection. This will allow us to make further representations. Should our objection be removed, it is likely we will recommend the inclusion of condition(s) on any subsequent approval.

In accordance with the planning practice guidance (determining a planning application,

paragraph 019), please notify us by email within two weeks of a decision being made or application withdrawn. Please provide us with a URL of the decision notice, or an electronic copy of the decision notice or outcome.

Should you require any additional information, or wish to discuss these matters further, please do not hesitate to contact me.

Yours faithfully

Judith Johnson
Planning Specialist

Team e-mail: planning_THM@environment-agency.gov.uk

End