

**APP/M1900/W/21/3278097**  
**WITNESS STATEMENT**

**Flooding matters significant to  
The proposed quarrying activity at the Hatfield Aerodrome**

By:	John Jackson - Member of Ellenbrook Area Residents Association
Date:	17 October, 2021
Use:	Appeal <b>APP/M1900/W/21/3278097</b> (Nov. 2021) on rejection of proposed quarrying activity, Hatfield Aerodrome
Witness called by:	Ellenbrook Area Residents Association (EARA) and Smallford Residents Associations (SRA)

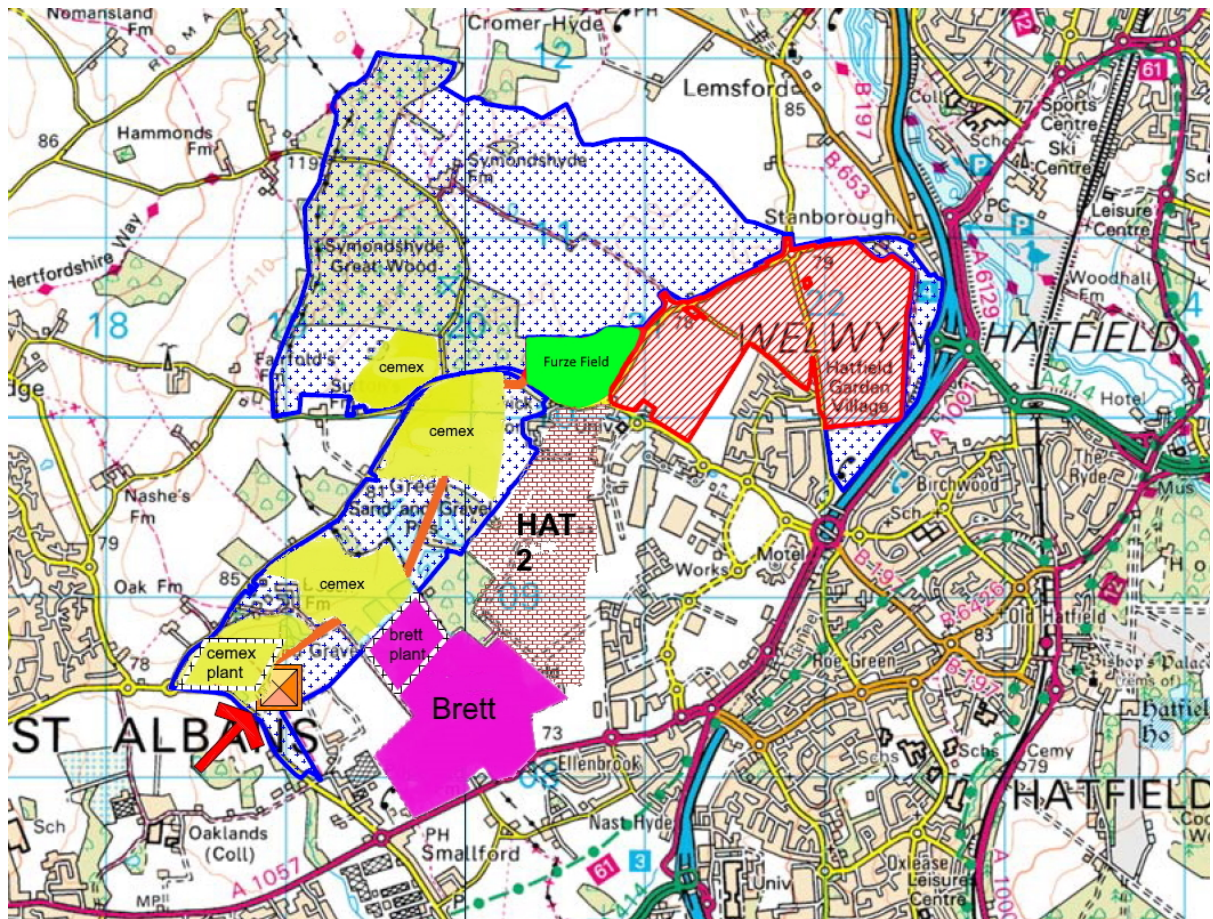
## 1. Summary

- 1.1 This document relates to the flood risk to this area and the reasons we believe this quarry application if approved would increase the risks of groundwater flash flooding to our local infrastructure, residential, educational, and commercial premises on the boundaries of this site.
- 1.2 We believe that the authorities have not taken the following into account -
- The effect of the climate emergency we are facing,
    - with hotter weather and increased rainfall leading to drought in summer and flooding in wetter months
    - the 'Adapt or die' report recently published by the Environment Agency (EA)
    - previous warnings from the Head of EA and Affinity Water regarding shortage of drinking water
    - The cumulative impact from all the current, historic, and proposed quarrying in the immediate vicinity of this site turning permeable land into non-permeable land, altering the areas hydrology including increasing run off of large quantities of surface water along with the loss of open areas of land taken by developments such as:
      - The Hatfield Business Park and the ongoing expansion of this with more and more huge buildings going up concreting over what was once grassland and part of the Hatfield Aerodrome open space.
      - Salisbury Village again previously grassland and part of the Hatfield Aerodrome open space
      - The housing developments either completed, under construction and proposed, bordering and in the local area
  - The SLR plan to divert groundwater from running onto the dig site along the northern boundary of the site to flow along the eastern boundary which will flow south towards Ellenbrook
    - N.B. The site is highest in the northwest and slopes to the south with the lowest area to the southeast around the Ellenbrook Lane roundabout j/w with A1057 and the residential housing of Ellenbrook. The land slopes from 80m AOD (80' above sea level) in the N.W to 73m AOD in the S.E. as a result natural surface water runs into the NAST, an ephemeral brook crossing the site where it eventually joins the Ellenbrook River just south of the A1057 road
  - The use of the rivers to carry away excess water in extreme weather conditions including overflows from the lagoons which will end up leaving the site and travelling through the residential area of Ellenbrook via the Ellen Brook, an open but confined stream which runs along Ellenbrook Lane and is already at full capacity during normal wet weather conditions.

- The plan to infill the gravel pits having removed the permeable sand and gravel with materials that are non-permeable or at best much less permeable and changing the hydrology not only of the upper and lower aquifers flow regime but altering the flow and amount of run-off water that will only exacerbate the flood risk to our area. Pushing all excess ground water to one point.
- The fact that the site and surrounding areas are an important and vulnerable water location already designated by the EA
  - To be in ground and river flood zones, with substantial parts of the residential areas in flood zone 3 – the highest probability for flooding.
  - Parts of the site are in Source Water Protection Zone 2 (SPZ 2) – this is not flood related and is covered by others

## 2. Cumulative impact on flooding

- 2.1 As you know we have had quarries in this area since the 1930s,
- the existing CEMEX quarry permissions (yellow on map) have been further extended to at least 2025
  - CEMEX have additional plans to quarry land set aside in the local mineral plan for housing on Stanboroughbury (hashed red area) which when commenced will be a ten + year project
  - CEMEX also have plans for Furze Field (green on map), another development that needs quarrying first
  - With proposals for a new village at Symondshyde Wood (north of Furze Field)
- 2.2 The map below clearly shows the unacceptable concentration of quarries in one small area of the county along with housing developments under proposals.



- 2.3 This map does not show the newly built and in construction housing developments between the CEMEX Plant and Brett's application site along Oaklands Lane. It does not reflect the continued expansion and concreting over with new builds on the Hatfield Business Park (East of HAT 2 as shown on map above). None of which will reduce the water run-off and alleviate the flood risk to this area.
- 2.4 The impact of all these quarries is that we have much less permeable land in this area to soak away rainfall, we do not believe that the cumulative impact of these quarries and the proposed developments including the business park and local housing developments which have been completed and are currently proposed, have been fully considered when deciding if this application will increase the flood risk to our area.
- 2.5 It is accepted that HCC are responsible for ensuring that the road infrastructure and property are not flooded, however it must not be the case that the applicant can take actions that will affect an area and overpower the current flood defences in place, then apportion any blame or responsibility for any consequential flooding on others. As we have mentioned the existing flood defences are already at full capacity and will struggle to cope with the climate emergency we are facing, yet alone any interference with volume from this proposal.



2.6 All the reports and supposition do not reflect the reality of the situation as is described in the following photographs





Picture 3 & 4 – Outside Popefield Farm on A1057





Picture 5 & 6 - Brook in Ellenbrook Lane near capacity (adjacent to residential housing as shown by fence)



6a - Full capacity Feb 2020 - Close to Overflowing

6b- 75% Full Sept 2020 - Little spare capacity





Picture 7 - Balance Pond on Ellenbrook Fields – full.







- 2.7 Quarrying on this area, interfering with the water table, turning permeable land into non-permeable by digging out the porous subsoils and gravel and replacing with non-porous material by way of infill will not make our precarious flood position any better. Add climate change and increased levels of expected rainfall and the one in a hundred-year event is more likely to be every other year or so.

### 3. National Planning Policy Framework

#### 3.1 The NPPF states in paragraph 153.

*Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures. Policies should support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.*

And in paragraph 211

*211. When determining planning applications, great weight should be given to the benefits of mineral extraction, including to the economy<sup>71</sup>. In considering proposals for mineral extraction, minerals planning authorities should:*

- a) as far as is practical, provide for the maintenance of landbanks of non-energy minerals from outside National Parks, the Broads, Areas of Outstanding Natural Beauty and World Heritage Sites, scheduled monuments and conservation areas;*
- b) ensure that there are no unacceptable adverse impacts on the natural and historic environment, human health or aviation safety, and take into account the cumulative effect of multiple impacts from individual sites and/or from a number of sites in a locality;*

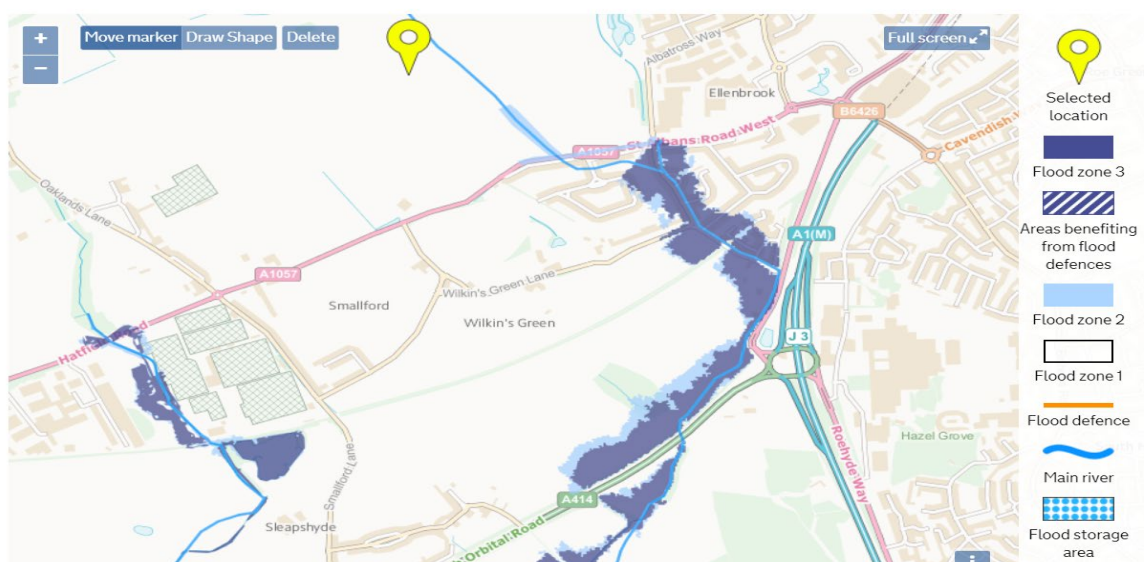
- 3.2 We do not believe that the impact of climate change has been considered sufficiently for the application, and we also believe that this application WILL have an adverse impact on the natural environment including flooding and DOES NOT take into account the cumulative effect from the number of quarries in the locality. This is discussed in more detail as follows.

4. Increased flood risk due to the impact of climate change (as highlighted by the EA Adapt or Die Report)



- 4.1 It is clear from recent weather events across England that there is no doubt that climate change is here, and that flooding is no longer a rare event but one that is increasingly occurring.
- 4.2 The area south of the proposed quarry site has already been identified as a flood risk by the Environment Agency. The map below shows the location of the quarry (selected location) and just south of the site flood zones 2 (medium probability light blue) and 3 (high probability dark blue) covering areas of Ellenbrook and Smallford.

Environment Agency flood map -South of the quarry site, affecting Ellenbrook, Smallford and abutting A1 and A414

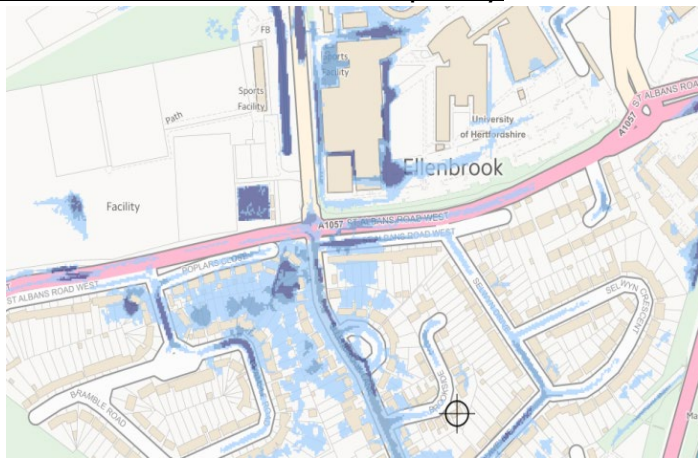


- 4.3 Data shows that the annual rainfall and the number of rainy days has increased dramatically over the last 3 years, threatening these flood zones in the area of Ellenbrook and Smallford.
- 4.4 In an area already identified as a significant flood risk any additional development which has the potential to increase the flood risk to the area should be approached from a very cautious position and no risks taken.
- 4.5 More intense rainfall causes greater surface runoff, increasing localised flooding and erosion. In turn, this can increase pressure on drains, sewers and water quality. Storm intensity in summer could increase even in drier summers, so we need to be prepared for this and recognise the future risks arising from unexpected flash flooding.
- 4.6 The local flood risk management strategy for Hertfordshire identifies that flooding from surface water, groundwater, rivers and ordinary watercourses is expected to increase in frequency and severity as a result of climate change.

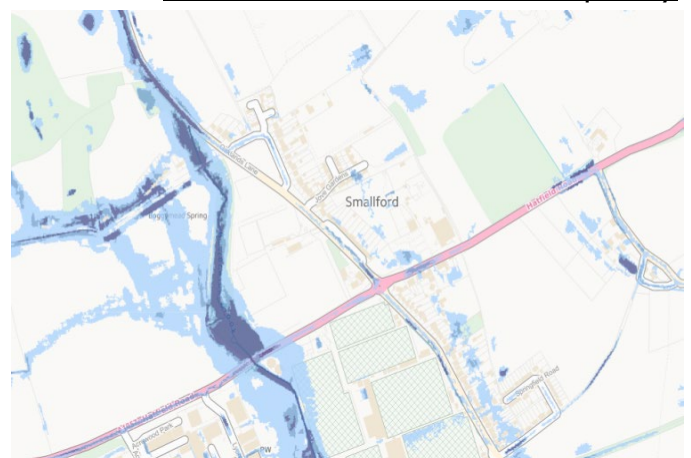
- 4.7 The EA suggest that the level of flood risk from this application will not increase, however parts of Ellenbrook and Smallford are already at the highest level of risk according to the EA flood maps for both surface and river water flooding, this is supported by the flood alert that was raised for this area on 28th August 2020. The current risk is demonstrated in the following maps.

**Environment Agency Maps – High Risk areas shown in Dark Blue – Medium in Light Blue Surface Water flood zones**

Ellenbrook, Hatfield and the University to the South East of the quarry



Smallford, St Albans to the South West of the quarry

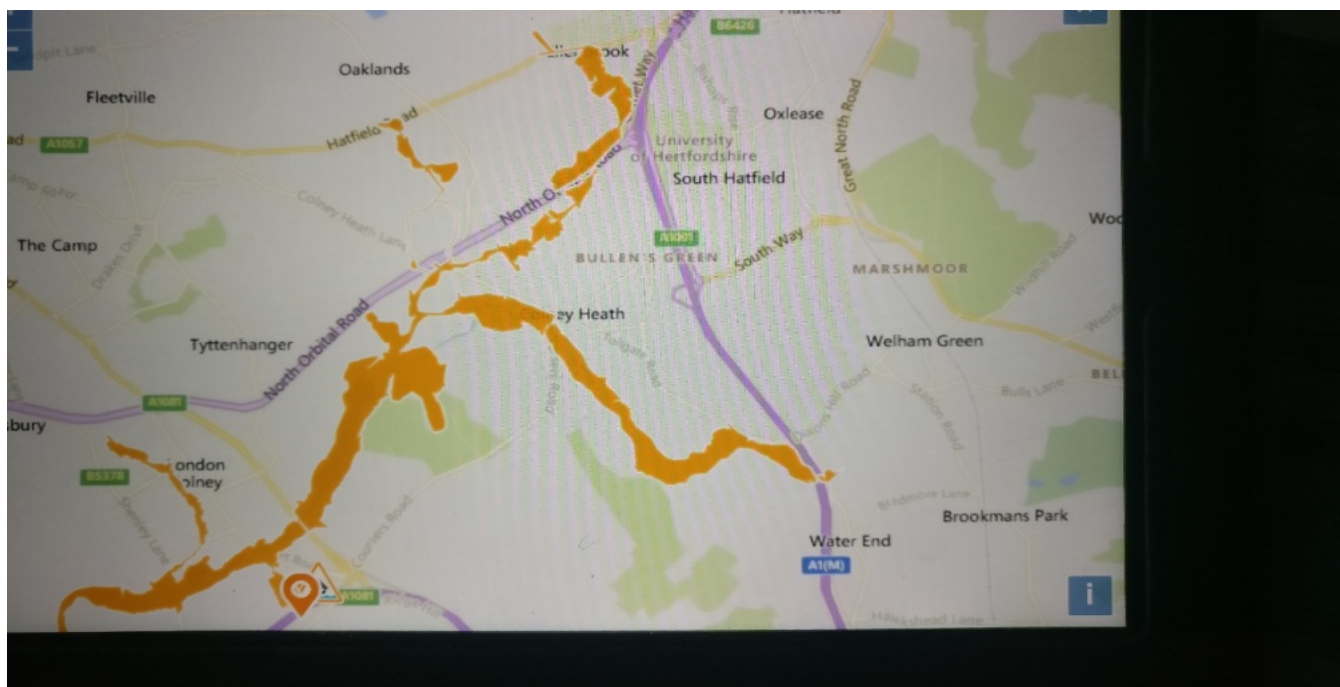


**River Flood Risk – Immediately South of the proposed quarry site**





## Environment Agency Flood Alert 28<sup>th</sup> August 2020



- 4.8 The current flood defences are at full capacity, any additional water coming as a result of the quarry process will mean that the high level of risk we are at already will be accompanied by an increase in occurrence, putting the area at a greater all-round risk of experiencing a severe flood. The onus of preventing any additional risk must be on the applicant not being allowed to take actions that will increase not only the risk but the frequency of flood events
- 4.9 We believe that there is a significant chance of flooding to the residential homes of Ellenbrook, Smallford, SW Hatfield, and to the University of Hertfordshire due to the impact of climate change and the removal of permeable land.
- 4.10 Where an area such as Ellenbrook is already identified as a Zone 3 flood risk and the level of rainfall has increased substantially over recent years then it would seem vital that landowners/quarry operators do not do anything that increases the run-off of surface water into the flood zone, thereby increasing the risk of property and environmental damage to the area.
- 4.11 In May 2016 the EA objected to planning permission for the quarry with concerns over downstream flooding and moving the NAST brook. This was later lifted on 5th September 2016, before the application came to the full DCC planning on 25th January 2017.

- 4.12 We believe that the following EA objections are more relevant than ever today, and these objections should not have been lifted. Extract from EA letter 25 May 2016.

**Environment Agency position**

In the absence of an acceptable Flood Risk Assessment (FRA) we object to the grant of planning permission and recommend refusal on this basis for the following reasons:

**Reason**

The FRA submitted with this application does not comply with the requirements set out in paragraph 9 the Technical Guide to the National Planning Policy Framework. The submitted FRA does not therefore, provide a suitable basis for assessment to be made of the flood risks arising from the proposed development. In particular, the submitted FRA fails to:

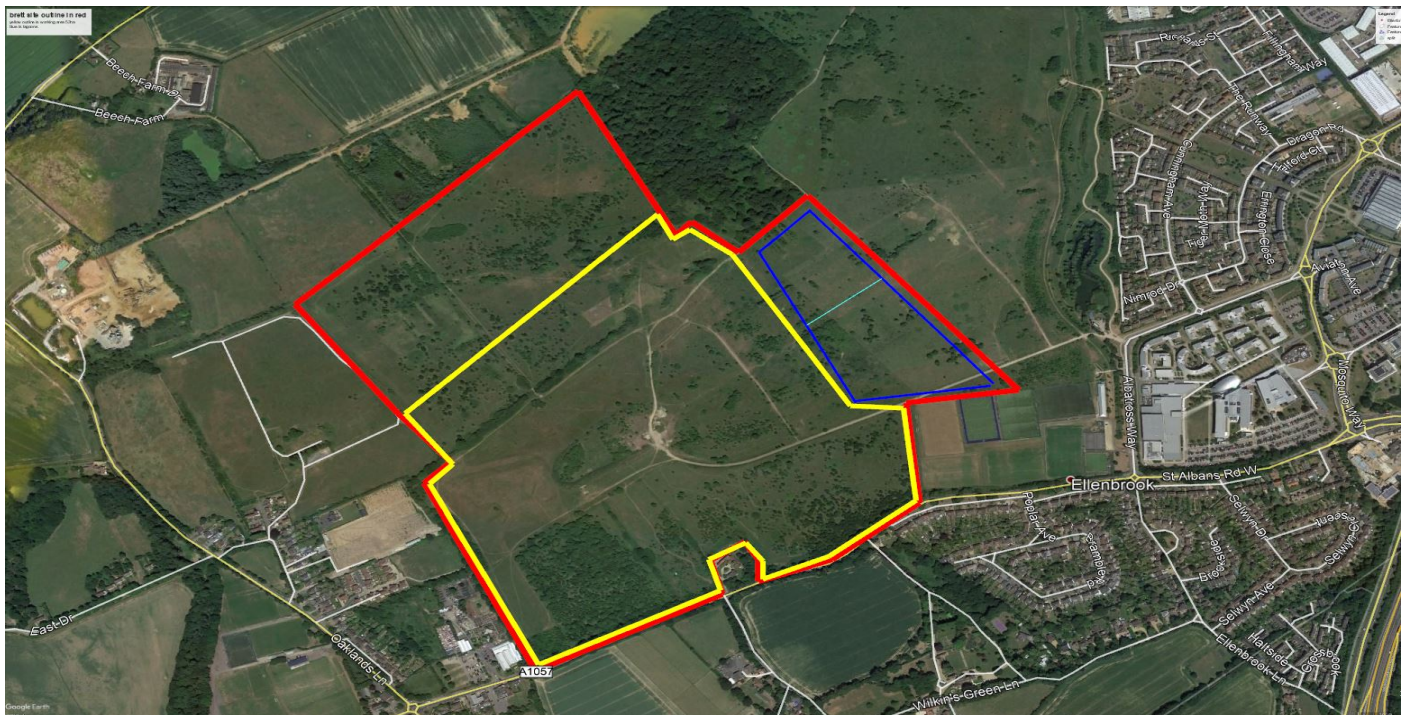
1. Ensure that any off-site flood risk from the development site does not increase the risk of flooding to downstream properties in extreme flood events.
2. Demonstrate that the diversion proposals for the River Nast will not increase the risk of flooding on the development site in extreme flood events.
3. Consider the temporary diversion of the River Nast in an open channel.
4. Consider an open channel watercourse on the proposed permanent line of the River Nast after restoration.

This objection is in line with your Waste Core Strategy Policy 16: Soil Air and

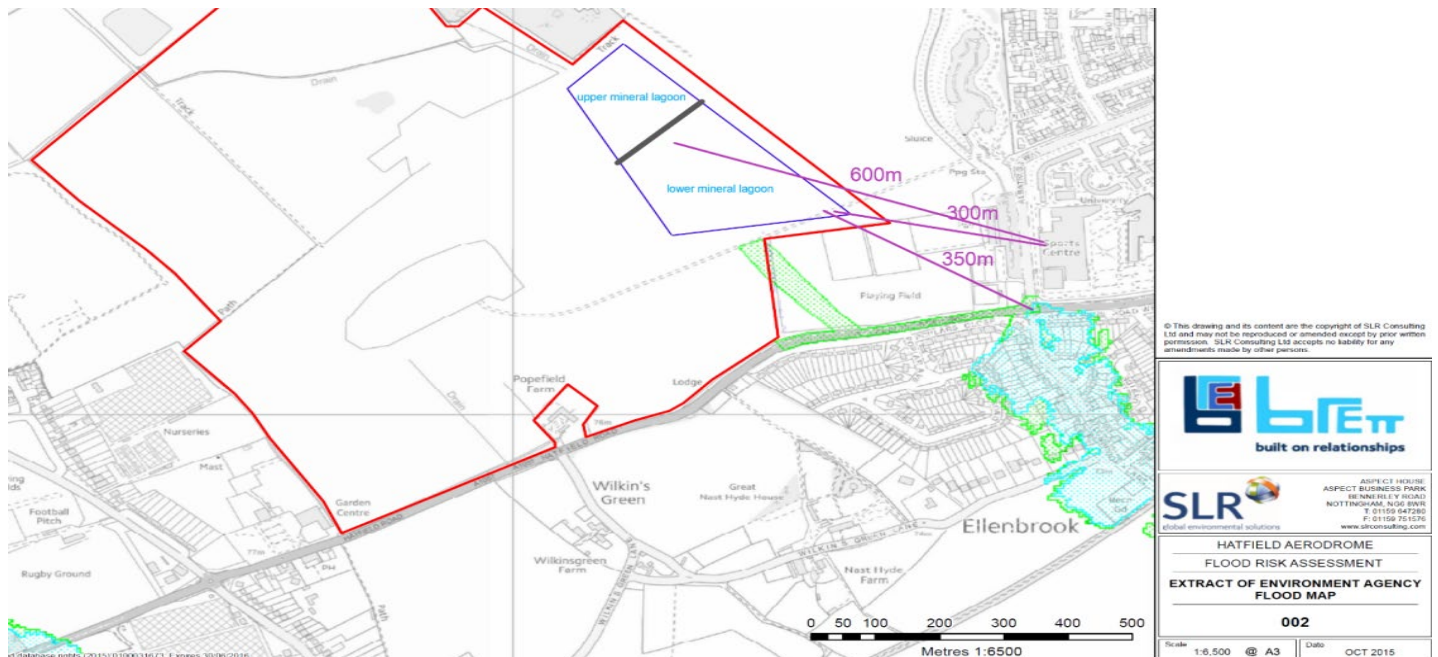
Environment Agency  
Apollo Court, 2 Bishops Sq Business park, Hatfield, Herts, AL10 9EX.

5. Flood risk to the surrounding area if the proposed lagoons overflow
- 5.1 For the quarry to operate, as the sand is dug out, so it needs to get rid of excess water. The proposal as we understand it, is that this excess water will be stored in specially constructed lagoons and the water will infiltrate back into the ground over time. The lagoons shown in blue on the map below are extremely close to the University of Hertfordshire and the residential area of Ellenbrook.
- 5.2 The quarry site is huge covering 86 hectares in total (shown in red) with a working area of 53 hectares (shown in yellow) which excludes the lagoons (blue) and plant site, as shown on the map below:





5.3 The quarry site is located very close to the University of Hertfordshire, a busy main road and housing. The land has a natural slope to the S.E and the map below shows the short distance of 300 metres to the university. It also shows how vulnerable we are to the lagoons and subsequent flooding from them.

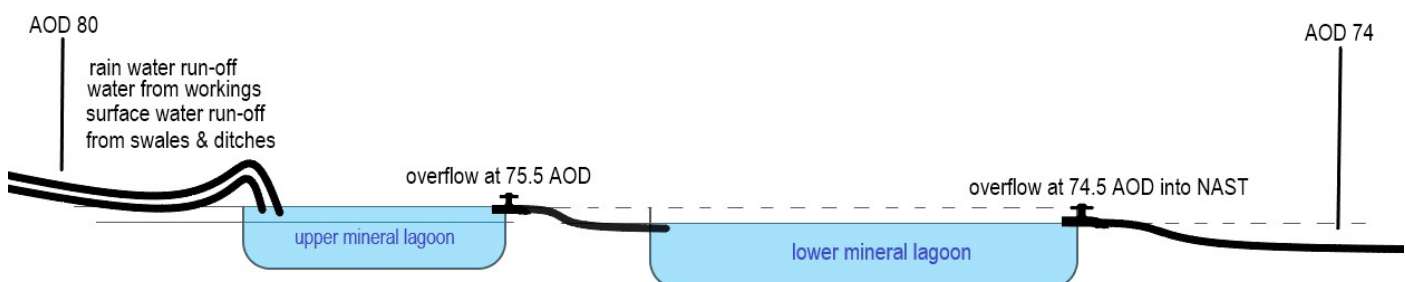


- 5.4 We are concerned that the lagoons may overflow in the event of heavy rainfall, occurring when the discharge rate into the lagoons exceeds the infiltration leaving the lagoons. We understand from the GWMP that there is only 1m headroom available. The consequence of the lagoons exceeding their discharge rate is that SuDs drainage system will fail. This will allow surface water on the site to travel downstream towards the lowest river system, in this case the Ellenbrook and the Nast.
- 5.5 During a weather event the rivers will have to take extra water capacity – as mentioned they are already designated a flood risk - the direct result is that we will see hugely impactful and damaging flooding in our urban areas.
- 5.6 Once the lagoon reaches full capacity, the surface water can no longer be pumped into the lagoons and will find its own way along the less permeable surface and run off increasing the risk of surface water flooding

## 6. The impact of changing large swathes of land from permeable to non / lower permeable land

- 6.1 EARA are very concerned about the statement from the Environment Agency that changing the composition of the quarry site will not cause any direct increase in flood risk down the Ellen Brook for the reasons previously mentioned and the changing of the porosity of the ground within the dig site. It appears to us that this alone must affect the run-off and increase the risks of flooding.
- 6.2 In the event that the lagoons overflow EARA and SRA are very concerned how this may impact the flow of water into the NAST brook. There is a lack of clarity how overflow between the lagoons will work and we would like assurance that excess water will not be dumped into the Nast and therefore cause flooding in the Ellenbrook area. The following diagram illustrates how the lagoons may overflow.

### 6.3 Overflow of the lagoons into the NAST brook





- 6.4 It is not clear to us if this connection (overflow 74.5 AOD into Nast) is now or in the restoration period, either way it increases the flow to the Ellen Brook and raises the risk of flooding, now or in the future.

## 7. In summary

- Climate change. More weight should be given to this issue when calculating the risk factor for the quarry application.
  - Climate change poses a real threat to flooding in our area, with extreme events occurring much more regularly than predicted
  - The Ellenbrook area is regularly the subject of a flood risk warning highlighting this real risk to the area from flooding
- Increased rainfall run-off is a direct result of quarrying on an open plan site. Defoliate from grass/brush to clay significantly increases the run-off.
- Geographic location. The proposed site is above Ellenbrook and parts of the university in terms of metres above sea level. The quarry site is up to 80m AOD, and flooding is shown to occur at 73m AOD including the A1057 roundabout and along the Ellen Brook.
- Too close. Ellenbrook area is in a vulnerable position too close to the lagoons.
  - The risks to urban properties from the closeness of the Brett lagoons has been undervalued. Only 350m separate the University, roads, and local housing, the quarry is too close and poses a significant risk to them.
  - These lagoons are man - made and subject to accidents, overflow, and blocking due to silt & algae.
  - They are extremely deep and carry vast amounts of water.
- Changing hydrogeological regime. Construction of the lagoons and the actual digging out of porous materials replaced with less permeable material will affect not only where but how the surface ground water flows.
- Flood plain. The EA state that the development is in Flood Zone 1, but do not mention that the adjacent areas at a lower level to and south of the quarry are in Flood Zone 3, so any additional run-off water will have consequences for the residential, commercial and educational establishments surrounding the site
- Lagoons overloading. The consequence of the lagoon overflowing the 1 metre headroom will be that no more excess water can be removed from the site by the Sustainable Drainage System (SuDS) method. The result is that surface water run-off, over impervious surface, will now travel towards the river systems; exceedance to Nast or Ellen Brook will cause extensive flooding to housing, university, A1057 and the flood zones reach to both the A414 and A1M.

- Complexities of the site. When you consider the complexity of any water management plan and attempts to control water along with the risk of any errors in judgement, working practice, human error and climate change we believe to dig here is a very high risk especially when you consider the potential implications and outcomes for the community and environment if it goes wrong.

We ask on behalf of the residents of Ellenbrook, Smallford, Salisbury Village and surrounding area that you reject this quarry application on the grounds of the unacceptable risks this poses to the local community and our environment.