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HERTFORDSHIRE COUNTY COUNCIL

DEVELOPMENT CONTROL COMMITTEE

THURSDAY 24 SEPTEMBER 2020 AT 10:00AM

WELWYN HATFIELD BOROUGH COUNCIL

APPLICATION FOR THE ESTABLISHMENT OF A NEW QUARRY ON LAND AT THE FORMER HATFIELD AERODROME, INCLUDING A NEW ACCESS ONTO THE A1057, AGGREGATE PROCESSING PLANT, CONCRETE BATCHING PLANT AND OTHER ANCILLARY FACILITIES, TOGETHER WITH THE IMPORTATION OF INERT FILL MATERIALS FOR THE RESTORATION OF THE MINERALS WORKING
LPA REF: 5/0394-16

Report of the Director of Environment & Infrastructure

Contact: Chay Dempster Tel: 01992 556211

Local Members: Margaret Eames- Peterson, Hatfield North
John Hale, Colney Heath & Marshalswick

Adjoining Member: Paul Zukowskyj, Hatfield South

1. Purpose of report

1.1 To determine the planning application (5/0394-16) for the establishment of a new sand and gravel quarry at the former Hatfield Aerodrome, including a new access onto the A1057, aggregate processing plant, concrete batching plant and other ancillary facilities, together with the importation of inert fill materials for the restoration of the mineral working.

2. Background

2.1 The planning application was first reported to committee on 25 January 2017[1] when the committee resolved to grant planning permission subject to the completion of a new section 106 agreement in addition to a deed of variation to the original section 106 related to the re-development of the former British Aerospace site. The purpose of the deed was to insert new timescales for the delivery of Ellenbrook Park and associated clauses. The application was again reported to committee on 18 December 2019[2] but at the Applicant's request the

[1] https://democracy.hertfordshire.gov.uk/CeListDocuments.aspx?CommitteeId=157&MeetingId=571&DF=25%2f01%2f2017&Ver=2

[2] https://democracy.hertfordshire.gov.uk/ieListDocuments.aspx?CId=157&MId=1459&Ver=4

application was deferred in order for them to undertake additional work to fulfil the requirements of the original s106 agreement.

2.2 The planning application proposes the extraction of up to 8 million tonnes of sand and gravel in parallel with the importation of inert waste material to infill the mineral workings in order to re-instate original ground levels and facilitate restoration of the site to a beneficial after use, combining recreation and nature conservation.

2.3 The application site is located to the west of Hatfield between Ellenbrook and Smallford. The land is within the Metropolitan Green Belt. The application site is shown on the site location plan (Appendix 1). The location of the haul road, processing plant, concrete batching plant, and screen bunds are indicated on site layout plan (Appendix 2). The proposed phasing and extent of the mineral extraction area is shown on the Phasing Plan (Appendix 3).

2.4 The application includes detailed plans for a processing /washing plant, a concrete batching plant, two freshwater lagoons, three silt lagoons, haul road and new junction with the A1057.

2.5 The initial site establishment works comprise the construction of the haul road, processing plant, concrete batching plant and the perimeter soil bunds. The top and subsoils would be stripped and placed into perimeter bunds around the processing plant and alongside the southern boundary of the site around Popefield Farm and the University sports fields. These bunds would be retained for the duration of the mineral working. At the commencement of each phase temporary soil bunds would be constructed around the edge of the working.

2.6 The mineral working is proposed to take place over 7 sequential phases each lasting approximately 4 years. The sand and gravel would be exported from the site at a rate of 250,000 tonnes per annum. The duration of the proposed mineral working is 32 years, to include restoration. The Environmental Permit already granted for the site limits the volume of inert material for disposal at the site to 250,000 tonnes in each year.

2.7 All vehicle movements to/from the site would take place via a new junction with the A1057 situated approximately 250m to the east of the junction with Oaklands Lane, as shown on the site location plan. The total movements relating to the export of sand and gravel, operation of the concrete plant and import of infill material would be 174 movements (87 in/87 out). The junction details have been the subject to the Safety Audit and are acceptable in principle to the Highway Authority and will in due course be subject to separate consent under s278 of the Highways Act. The new s106 includes a financial bond to cover maintenance of the highway surface for the duration of the workings.

2.8 The mineral deposit at the site exists in two distinct deposits comprising an upper and a lower mineral horizon separated by a clay interburden. The proposal is to work the mineral deposit to a depth of up to 16 and 18m and 1m above the underlying chalk geology.

2.9 The proposal is for the importation of inert waste and infilling to take place in each phase following mineral extraction, limiting the overall area of mineral working taking place at any one time and to ensure the restoration will be completed the earliest opportunity.

2.10 The restoration would include the replacement of inter and overburden material from the site plus imported inert waste material from construction excavations and demolition sites. The Environmental Permit stipulates that reclamation of the mineral void shall incorporate a geological barrier on the base and sides and imposes conditions that control the barrier construction.

2.11 The restoration will incorporate the replacement of the indigenous soils, together with extensive new tree and grass planting, hedges and fencing to create a restoration scheme compatible with the proposed afteruse of the land as a Park, as shown on the Indicative Restoration Plan (Appendix 4). In addition, a network of extensions to the rights of way network have been agreed with Countryside Access Officers which will deliver the aims of the Rights of Way Improvement Plan for the area. The new routes are indicated in Appendix 5.

2.12 The proposed condition will control the restoration of each phase to ensure high environmental standards[3] are achieved in accordance with Policy 13 (Reclamation) of the Hertfordshire Minerals Local Plan Review.

2.13 The application is accompanied by an Environmental Statement[4] which assesses the potential impact of the proposed mineral workings under the following headings: water environment, transport, landscape and visual impact, air quality, noise, ecology, cultural heritage, cumulative impact, alternatives

New section 106

2.14 The new Section 106 provides for

(a) a sustainable transport contribution of £92,000 (index linked) as a contribution towards improvements of the Hatfield Road and Ellenbrook Road junctions and improvements of the Hatfield Road and Ellenbrook Road junction;
(b) a sum of £30,000 for maintenance of the highway should any

[3] The NPPF Paragraph 205 (e) requires mineral planning authorities to 'provide for restoration and aftercare at the earliest opportunity, to be carried out to high environmental standards' when determining applications for mineral development
[4] The application has been the subject of an Environmental Impact Assessment. The application was submitted in 2016 prior to the introduction of the revised EIA Regulations in 2017.

deterioration be identified following a condition survey prior to the commencement of development (for each five year period of the development)

(c) the mineral operator to enter into a Section 278 agreement under the Highways Act 1980 relating to the improvements; and

(d) provision of a network of extensions to the Rights of Way network throughout the site in accordance with the routes and specifications prescribed in the definitions section of the s106

2.15 The new s106 is agreed between with all parties and will be sealed once there is a resolution to grant planning permission

Deed of variation

2.16 The deed of variation will provide for:

- The establishment of Ellenbrook Park
- The creation of the Ellenbrook Park Trust; and
- The payment of the Ellenbrook Park Contribution

2.17 The landowner has submitted a detailed proposal to fulfil the above points which is being considered by the other parties.

2.18 The applicant has proposed a unilateral undertaking with the county council not to implement the minerals permission until the deed of variation has been completed with an 18-month expiry period. This should give all parties sufficient time to agree the terms of the deed of variation. With this provision officers are satisfied the minerals permission will deliver the Park in accordance with the original obligation.

3. Summary

3.1 In accordance with the National Planning Policy Framework (NPPF)[5] great weight is given to the benefits of mineral extraction and the duty to maintain an adequate landbank. There is a need for the minerals at the site necessary to ensure that adequate supplies are available to meet the county's agreed apportionment of regional supply. The proposal accords with Minerals Policy 1 (Aggregates supply) and Policy 2 (Need for mineral working) of the Her Majesty's Local Planning (HMLP) Review.

3.2 The site falls largely within an identified area for mineral working[6] in the HMLP Review. The relatively small parcel of land outside of Preferred Area 1 would be worked as an integral part of the overall working and so would not prejudice the timely working of the preferred area. The proposal would accord Minerals Policy 3 (Sites for sand and gravel extraction and the working of preferred areas) and Policy 4

[5] Paragraph 205
[6] Preferred Area 1

(applications outside of preferred areas). Further, the proposal conforms to the specific considerations for the site brief for Preferred Area 1 as shown on Inset Map No. 6 of the HMLP Review.

3.3 The importation of inert waste for restoration is needed in order to deliver restoration of the site at the earliest opportunity. The indigenous soils would be replaced for each phase of the restoration combined with significant new landscaping to create the Park. Public access to the site will continue throughout the workings and permanent extensions will be created to the rights of way network through the s106. The proposal therefore complies with Minerals Policy 12 (Landscape), Policy 13 (Reclamation scheme), Policy 15 (Landfill), and Policy 18(x) of the HMLP Review.

3.4 The proposal would generate a maximum of 174 HGV movements (87 in/ 87 out) on the local road network. The transport of minerals from the site will be via the shortest possible route to the primary road network. The impact on the local road network have been considered in the Transport Assessment and the Highway Authority is satisfied that the proposed development would not have a severe or unacceptable impact on the local road network, having regard to the provision of vehicle access to the site, vehicle movements within the site, residential amenity and the local environment. The proposal complies with Minerals Policy 16 (Transport) of the HMLP Review and the NPPF[7].

3.5 The NPPF[8] provides that certain forms of development are not inappropriate in the Green Belt provided they preserve its openness and do not conflict with the purposes of including land within it. These include mineral extraction. The mineral working would be phased to limit the area affected by mineral workings at any one time and will limit the impact upon openness. The screen bunds, processing/wash plant, and the concrete batching plant are regarded to be inappropriate development and would not preserve openness. However, the co-location of these facilities with mineral extraction would limit the distances travelled in order to process minerals for secondary use. The restoration would reinstate the original levels and therefore openness would be preserved in the longer term. The proposal would not conflict with the NPPF in respect of the Green Belt[9] provided there are very special circumstances.

3.6 The delivery of the Park, establishment of the Trust, and payment of the financial contribution will be secured via the deed of variation prior to the commencement of mineral development in order to deliver the obligations set out in the original S106 agreement for development on the former Hatfield Aerodrome site.

[7] Paragraph 109
[8] Paragraph 146
[9] Paragraphs 143, 144, 145 and 146

3.7 In terms of the operational effects of the mineral working, the proposal will maintain appropriate buffer distances to the nearest sensitive uses by providing a minimum of 60m to any residential properties surrounding the site. The proposal includes measure to minimise visual intrusion and any adverse impacts on the local landscape, to prevent significant noise intrusion arising from the development, and prevent any significant degradation of air quality through the construction of perimeter bunds around the workings and processing plant will be retained in-situ throughout the development. The proposal complies with Policy 18 (iv) (vii) (viii) and (ix) of the HMLP Review.

3.8 In terms of the potential cumulative impacts of two large active quarry sites affecting the local area[10] with regards to the impact of HGV traffic on the local highway network the Highway Authority has assessed the numbers of HGV movements that would be generated by each development and the combined impact of both developments operating concurrently, and concluded the impact upon the local road network would not be severe.

3.9 The mineral extraction currently taking place at Hatfield Quarry is approximately 1.7km to the north of Hatfield Aerodrome, and although the processing plant are sited within 500m of each other, the cumulative impacts of both sites operating concurrently is considered unlikely to lead to any significant adverse effects in terms of noise, air quality, landscape.

<u>Recommendation</u>

3.10 The report recommends that planning permission be granted subject to:

- the conditions set out in section 10 of this report; and
- completion of the new s.106 agreement to provide for
  - the new site access and related highway works on the A1057;
  - extensions to the rights of way network; and
- completion of a unilateral undertaking to the effect that the mineral operator will not permit the implementation of the planning permission (subject to an 18-month expiry clause) until the deed of variation has been signed to deliver Ellenbrook Park, creation of the Ellenbrook Trust, and payment of the Ellenbrook Park Contribution,; and
- referral of the application to the Secretary of State

[10] Potentially for 10 years should planning permission be granted for the current application for land adjoining Coopers Green Lane PL\0963\18

4. Site and surroundings

4.1 The application site is located on the west side of Hatfield between Ellenbrook and Smallford, approximately 1.1km to the east of Oaklands College.

4.2 The application site area is approximately 87.1 hectares. The land is within the Metropolitan Green Belt. The large majority of the site is within the Colney Heath division. The lagoons and part of Phase 1 of the mineral extraction are located within Hatfield Villages division.

4.3 The surrounding land uses are:

- land at Hatfield Quarry (north)
- Hatfield Business Park and Salisbury Village (east)
- houses on Oaklands Lane (west); and
- The A1057 Hatfield Road and Wilkins Green (south)

4.4 Home Covert Wood adjoins the northern boundary and is a County Wildlife Site. Three areas of ancient woodland are all located to the north of the site, namely, Oak Wood (700m), Hook Wood (880m) and Symmondshyde Green (1.6km).

4.5 Public footpath (Colney Heath 014) runs along the west boundary and connects Hatfield Road with Coopers Green Lane.

4.6 The boundary between St Albans District Council and Welwyn Hatfield Borough Council runs from north to south through the site from Home Covert to Hatfield Road.

4.7 The current land uses comprise a mix of enclosed grazing compartments on the east side of the site with large expanses of open land in the north and west. The land between Home Covert and the University campus sports pitches is enclosed by stock proof fencing. The land north and west has uninterrupted public access.

5. Planning history

5.1 The application site forms part of the former Hatfield Aerodrome (British Aerospace) site which has outline planning permission [S6/1999/1064/OP] for redevelopment involving demolition of existing (unlisted) buildings, removal of the runway, and development including residential, retail, office and warehouse development and the University of Hertfordshire Campus. The subsequent reserved matters applications were approved and the development has been constructed.

6. Planning law and policy

6.1 The legal duties in relation to the determination of planning applications considerations are:

Town and Country Planning Act 1990 section 70(2) –[11]

- In dealing with an application for planning permission … the authority shall have regard to the provisions of the development plan, so far as material to the application, … and any other material considerations

6.2 Planning Compulsory Purchase Act 2004 Section 38 (6) Development Plan –[12]

- If regard is to be had to the development plan for the purpose of any determination to be made under the planning Acts the determination must be made in accordance with the plan unless material considerations indicate otherwise

6.3 Planning (Listed Buildings and Conservation Areas) Act 1990[13]

- In considering whether to grant planning permission for development which affects a listed building or its setting, the local planning authority or, as the case may be, the Secretary of State shall have special regard to the desirability of preserving the building or its setting or any features of special architectural or historic interest which it possesses (section 66(1)).

6.4 The development plan for the area comprises:

- Hertfordshire Minerals Local Plan 2002- 2016 ([14]Adopted 2007)
- Waste Core Strategy & Development Management Policies DPD 2011 – 2026 Adopted November 2012 [15]
- Welwyn Hatfield District Plan 2005[16]; and
- St Albans Local Plan 1994[17]

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[11] https://www.legislation.gov.uk/ukpga/1990/8/contents
[12] https://www.legislation.gov.uk/ukpga/2004/5/section/38/enacted
[13] https://www.legislation.gov.uk/ukpga/1990/9/contents
[14] https://www.hertfordshire.gov.uk/media-library/documents/environment-and-planning/planning/planning-in-hertfordshire/minerals-planning/minerals-local-plan-2002-2016/mineral-local-plan-review-2002-2016-adopted-march-2007.pdf
[15] https://www.hertfordshire.gov.uk/media-library/documents/environment-and-planning/planning/planning-in-hertfordshire/waste-local-plan/waste-core-strategy-and-development-management-policies-document.pdf
[16] https://www.welhat.gov.uk/article/463/Welwyn-Hatfield-District-Plan

[17] https://www.stalbans.gov.uk/sites/default/files/documents/publications/planning-building-control/district-local-plan-review-1994/District%20Local%20Plan%20Review%201994.pdf

6.5 Relevant Minerals Plan policies

Hertfordshire Minerals Local Plan 2007

1 - Aggregates supply; 2 - Need for mineral working; 3 - Sites for sand and gravel extraction and the working of preferred areas; 4- Applications outside preferred areas; 5 - Mineral sterilisation; 7 - Secondary and recycled aggregates; 8 - Recycling facilities on mineral sites; 9 - Contribution to bio-diversity; 11 - Cumulative impact; 12 - Landscape; 13 - Reclamation scheme; 14 - Afteruse; 15 - Landfill; 16 - Transport; 17 - Criteria for the control of mineral development to protect critical capital and environmental assets; 18 – Operational criteria for the control of mineral development

6.6 The adopted plan covers the period 2002-2016. Hertfordshire is in the process of reviewing the adopted MLP. The Plan has reached the proposed submission (Regulation 19) stage. On adoption the Plan will cover the period to 2031.

6.7 *National Planning Policy Framework 2019 (NPPF)* [18]

11- Facilitating the sustainable use of minerals(paraphrased so far as applicable)

203.
'It is essential that there is sufficient supply of minerals to provide the infrastructure, buildings, energy and goods that the country needs. Since minerals are a finite natural resource, and can only be worked where they are found, best use needs to be made of them to secure their long-term conservation

204.

Planning policies should:

- provide for extraction of mineral resources
- take account of the contribution secondary or recycled materials
- safeguard mineral resources by defining Mineral Safeguarding Areas
- set out criteria to ensure permitted operations do not have an unacceptable adverse impact on the natural and historic environment or human health taking into account the cumulative impacts of individual sites and/or number of sites in a locality;
- and ensure that land is reclaimed at the earliest opportunity

205.

When determining planning applications, great weight should be given to the benefits of mineral extraction, including to the economy. In

[18] https://www.gov.uk/government/publications/national-planning-policy-framework--2

considering proposals for mineral extraction, mineral planning authorities should:

- as far as practicable provide for the maintenance of landbanks
- 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
- ensure that any unavoidable noise, dust and particle emissions are controlled, mitigated or removed at source, and establish appropriate nose limits for extraction in proximity to noise sensitive properties
- provide for restoration and aftercare at the earliest opportunity, to be carried out to high environmental standards through the application of appropriate conditions

207.

Mineral planning authorities should plan for a steady and adequate supply of aggregates by:

- preparing an annual Local Aggregate Assessment either individually or jointly to forecast future demand
- using landbanks of aggregate mineral reserves principally as an indicator of the security of aggregate minerals supply and to indicate additional provision that needs to be made for new aggregate extraction and alternative supplies in mineral plans
- maintaining landbanks of at least 7 years for sand and gravel; and
- ensuring that large landbanks bound up in very few sites do not stifle competition

6.8 *Inset Map No. 6 - Preferred Area 1 – Land at the former Hatfield Aerodrome*

The Inset Map (site brief) identifies the site should be accessed via the A1057 and ideally the site should ideally be worked at a very early in the Plan period.

The site brief for Preferred Area 1 sets out the site specific considerations:

- The reclamation of any extraction area should clearly demonstrate that it is consistent with the principles set out in the Supplementary Planning Guidance and planning permission for the BAe site as a whole to deliver the proposed Country Park

- Any proposals to exclude extraction from parts of the preferred area should be fully justified to avoid unnecessary sterilisation.

- Appropriate buffer zones will be required to protect the amenity of residents at Ellenbrook, Smallford and Popefield Farm.

- A landscaped buffer zone incorporating Ellenbrook Linear Park shall be provided to the eastern part of the site with the boundary to the redeveloped area of the BAe site (non-Green Belt land) and the University playing fields.

- The site lies within the Watling Chase Community Forest, and so there is potential for restoration to include extensive new woodland combined with suitable amenity use.

- Appropriate measures shall be incorporated to ensure that Home Covert is not adversely affected.

- The site is a possible area of archaeological interest and any proposals should include provision for archaeological investigations.

Environment Agency advice

- The Ellen Brook runs along the eastern edge of the preferred area in a north to south direction. The Environment Agency would seek to ensure that a buffer strip, a minimum of 30m wide between any excavation and the top of the riverbank. Additionally, 20 metres of the buffer strip should be vegetated and free from any development between the working area and the bank of the Ellen Brook. The purpose of the buffer strip would be to protect both the integrity of the watercourse and the ecology associated with the watercourse, and the river corridor.

- The River Nast currently runs in a culvert through the preferred area. It may be acceptable to temporarily divert this culverted watercourse during the operational phase but on final restoration the watercourse should be reinstated in open channel through the site and appropriate buffer strips defined on each side of the watercourse.

- The proposed site lies over an area contaminated with a plume of Bromate. A more robust risk assessment may be required at this site in order to determine the risk of impact on the Three Valleys Water source at the public water source at Bishops Rise.

- The area lies over both groundwater protection zones II and III. The Environment Agency will object to the use of landfill for restoration in zone II unless it can be demonstrated that the waste used will be non-polluting matter such as inert, naturally excavated material. The Agency will not usually object to landfilling in zone III, provided it can be proved that the risk of pollution of groundwater can be mitigated. Proposals for individual landfills will be determined in detail at the application stage.

6.9 *Waste Core Strategy & Development Management Policies DPD 2011 – 2026 Adopted November 2012*

1 – Strategy for the provision of waste management facilities; 1A – Presumption in favour of Sustainable Development; 2 – Waste Prevention and Reduction; 4 – Landfill and Landraise; 6 – Green Belt; 7 – General Criteria for assessing planning applications outside of identified locations; 9 – Sustainable Transport; 10 – Climate Change; 11 – General Criteria for Assessing Waste Planning Applications; 12 – Sustainable Design, Construction and Demolition; 13 – Road Transport & Traffic; 14 – Buffer Zones; 15 – Rights of Way; 16 – Soil, Air and Water; 18 – Protection of Regional and Local designated sites and areas; 19 – Protection and mitigation

6.10 *Hertfordshire Waste Development Framework Waste Site Allocations Development Plan Document 2011 – 2026*[19]

Site Allocations Policies

1A – Presumption in favour of Sustainable Development; 2 – Applications for Waste Management Development on Allocated Sites and Employment Land Areas of Search; Inset Map 07 – AS008 land off Birchall Lane, Cole Green.

6.11 *Welwyn Hatfield District Plan Adopted 2005 (saved policies)*

SD1 - Sustainable Development; R2 - Contaminated Land; R5 - Waste Management; R7 - Protection of Ground and Surface Water; R11 - Biodiversity and Development; R17 - Trees, Woodland and Hedgerows; R18 - Air Quality; R19 - Noise and Vibration Pollution; R20 - Light Pollution; R29 - Archaeology; M2 - Transport Assessments; M5 - Pedestrian Facilities; M6 - Cycle Routes and Facilities; D1 - Quality of Design; D2 - Character and Context; D8 - Landscaping; HATAER1- Hatfield Aerodrome: Sustainable Development of the Site; HATAER3 - Hatfield Aerodrome: Requirement for a Master Plan; HATAER4 - Hatfield Aerodrome: Land Use Proposals; RA11 - Watling Chase Community Forest; RA25 - Public Rights of Way

6.12 *St Albans City & District Plan Adopted 1994 (saved policies)*

1 - Metropolitan Green Belt; 69 - General Design and Layout; 74 - Landscape and Tree Preservation; 86 - Buildings of Special Architectural or Historic Interest; 91 - Location of Leisure Facilities; 93 - New Areas of Public Open Space; 97 - Existing Footpaths, Bridleways and cycleways; 104 - Landscape Conservation; 106 Nature Conservation

[19] https://www.hertfordshire.gov.uk/media-library/documents/environment-and-planning/planning/planning-in-hertfordshire/waste-local-plan/the-waste-site-allocations-document-2.pdf

Other relevant policy documents

6.13 *Local Transport Plan 4 for Hertfordshire adopted May 2018* [20]
Policy 1 – Transport User Hierarchy; Policy 2 – Influencing land use planning; 5 – Development Management; Policy 7 – Active Travel - Walking

Supplementary Planning Guidance

6.14 *Hatfield Aerodrome Supplementary Planning Guidance ("SPG")* [21]

The Hatfield Aerodrome SPG (Adopted November 1999) provides the policy framework to consider proposals for development. The document includes a landscape masterplan framework strategy and indicative layout sketch (Figure 7) to guide restoration post-mineral extraction, illustrating woodland planting, open water bodies, re-establishment of the River Nast, and large grazing compartments.
The SPG sets principles for landscape, Green Belt and mineral extraction:

Landscape
- creation of landscape corridors for cycleways and footpaths
- opportunities to greatly improve natural landscape
- provision of a mosaic of copses, tree belts, hedgerows and naturally-shaped bodies of water (subject to appropriate hydrological conditions)
- creation of a visually attractive landscape
- potential to introduce significant improvements to the site's biodiversity

Green Belt
- maintenance of the current Green Belt boundary
- secure public access to the Green Belt
- provide opportunities for outdoor sport and recreation uses
- improve the nature conservation of the land as appropriate
- the objective to increase woodland cover by up to 30% across the De Havilland Plateau should be considered

Mineral extraction
- opportunities to use materials as part of the construction process
- opportunities to incorporate materials arising for the creation of landscape features, such as lakes
- the most economically viable reserves are located primarily toward the southern part of the site
- proposals for mineral extraction to strike a balance between:
  - maximising the use of mineral resource
  - protecting the amenity of existing residents at Ellenbrook and Smallford and other existing occupiers/users

[20] https://www.hertfordshire.gov.uk/media-library/documents/about-the-council/consultations/ltp4-local-transport-plan-4-complete.pdf
[21] https://www.welhat.gov.uk/article/8606/Planning-Guidance-Documents

- protecting the amenity of existing and proposed development

The Hatfield Aerodrome SPG sets out the guiding principles to be taken into account for proposals for mineral extraction within the Green Belt:

- appropriate buffer zones, normally at least 60m in width, should be provided on all boundaries where adjoining land uses would be adversely affected
- the boundary between the future development land and the Green Belt should incorporate landscape planting and contouring prior to the extraction of any minerals to protect the amenity of existing and potential occupiers
- the mineral reserve should be worked at a reasonable rate to avoid a prolonged period of extraction but equally to restoration to keep pace. It is likely that reserves at the eastern part of the preferred area would be worked first
- access should be located to provide as direct a route as possible to the trunk road network to minimise the disturbance to local residents
- any processing plant should:
  - be well screened visually
  - be well screened for noise
  - minimise dust emissions
  - minimise the impact on sensitive surrounding occupiers, through careful attention to details of siting, design and hours of operation
- the setting of Grade II listed Astwick Manor and Popefield Farm should be respected and safeguarded
- areas of environmental sensitivity in the Green Belt, including areas of archaeological importance and ecologically valuable sites, should be respected and safeguarded

<u>Emerging local plans</u>

6.15 *The Hertfordshire Minerals Local Plan review*[22]

The initial consultation was in 2015. The call-for-sites was in 2016. The Proposed Submission Minerals Local Plan was published for consultation between 14 January 2019 and 22 March 2019. The proposed submission date is delayed due to the need to undertake further technical work.

The Proposed Submission Minerals Local Plan identifies three Specific Sites:

1- Hatfield Aerodrome
2- Hatfield Quarry, Furze Field
3- Hatfield Quarry, Land adjoining Coopers Green Lane

[22] https://www.hertfordshire.gov.uk/services/recycling-waste-and-environment/planning-in-hertfordshire/minerals-and-waste-planning/minerals-planning/minerals-local-plan-review/minerals-local-plan-review.aspx

And, one Proposed Preferred Area:

- Preferred Area 1 - The Briggens Estate (Olives Farm)

The Proposed Submission Minerals Local Plan is supported by the following assessments:

- Strategic Flood Risk Assessment
- Sustainability Appraisal
- Health Impact Assessment

6.16 *The Welwyn Hatfield Local Plan review*

The examination was initially scheduled to run from Autumn 2017 to Autumn 2018, however during the early sessions it was identified that a further call-for- sites consultation would take place. A further 140 sites were promoted. The consultation on these sites is taking place up to 18 June 2019.

6.17 *The St Albans Local Plan review*

Consultation on the draft local plan was between 4 September 2018 and 17 October 2018. The submission version of the local plan was submitted on 29 March 2019.

The emerging policies therefore carry relatively little weight at their current stages of the plan process.

6.18 Notwithstanding the above plans are further advanced than in January 2017, for the purposes of section 38(6) of the Planning and Compulsory Purchase Act, the relevant development plan policies are the same as when the application was first reported to committee in January 2017.

7. Statutory consultations

Advertisement of the application

7.1 The application has been advertised as follows:

(a) display of 6 no. site notices at the application site; and
(b) publishing a press notice in two local newspapers – i.e. Welwyn Hatfield Times & St Albans Review; and
(c) letters sent to 1,024 properties in the proximity of the site.

7.2 The application has been advertised as constituting EIA development affecting land in the Green Belt.

Further information

7.3 Further environmental information submitted in August 2016 consisted of:

(a) new access arrangements including a right turn lane;
(b) Transport Assessment addendum assessing HGV numbers and impacts on key junctions;
(c) a revised restoration concept drawing;
(d) details of the final three phases of mineral extraction

7.4 Further environmental information was submitted in January 2020 comprising:

(a) Groundwater Management Plan
(b) Borehole Monitoring Data 2013 - 2019

7.5 Further consultation was undertaken in September 2016 and February 2020 respectively in consultation was undertaken in accordance with The Town and Country Planning (Development Management Procedure) (England) Order 2015 Part 6 (33)[23]

(a) display of 6 no. site notices at the application site; and
(b) press notice in Welwyn Hatfield Times and St Albans Review

Representations

7.6 In response to consultation over 260 objection letters have been received. The summary of third party representations and statutory consultations are summarised in Appendix 6

Petitions

Ellenbrook Residents Association Petitions

7.7 There are two petitions from Ellenbrook Residents Association. The first has 1129 names and reads –

With regards to the proposed quarry application at the old Hatfield Aerodrome, also known as Ellenbrook Fields, Hatfield, Hertfordshire, we, the undersigned who reside and or work in Hertfordshire, petition Hertfordshire County Council to Save the St Albans and Hatfield Country Park at Ellenbrook Fields.

[23] "A local planning authority must, in determining applications for planning permission, take into account any representations received in response to a site notice, or to a notice served on the owner or occupier of adjoining land, within 21 days, and for a press notice within 14 days beginning upon the date when the information was published".

We ask that you: -

- Revoke the quarry application decision of a 'resolve to Grant' made by Hertfordshire County Council's (HCC) Development Control Committee (DCC) in January 2017 due to the time lapsed, the changes in circumstances and the unresolved issues some of which are listed below in the interests of Hatfield, Smallford and St Albans residents and to reject any further high-risk development on this site.
- Ensure that this application is heard in full by Hertfordshire County Council and:-

  - The risks associated with quarrying in the vicinity of the bromate pollution are fully investigated, by independent experts, of the potential risk of disturbing the bromate leak underground by the methods proposed by Brett Aggregates (with plans to dig a quarry deeper than 14 metres) and therefore the risk posed to the current Affinity Water
  - resources for Hatfield's public water supply through Tyttenhanger and Roestock pumping stations
  - the cumulative impact on the local infrastructure
  - the loss of Green Belt, the park preserves the green belt gap between Hatfield and St Albans.
  - the loss of open publicly accessible green space, the park is a unique public and important recreational and public health resource for Hatfield, St Albans residents and other visitors
  - the health and wellbeing, physically and mentally on the local population, workforce and visitors
  - the loss of important and scarce wildlife habitat and the impact this will have on the wildlife itself
  - the effect on the air quality of all the current applications along with those submitted and proposed to this authority, WHBC and St Albans District Council (as the area borders all these authorities) are all fully considered
  - a current up to date transport survey be undertaken to accurately reflect the true traffic flow through this area (A1057, Coopers Green Lane, Oakland Lane and Station Road).
  - acknowledgement that the area is not capable of being adjusted to cope with the additional traffic created by this and other proposed developments.

That the entrance proposed on to the A1057 is not agreed to, as this will cause further traffic issues on this and surrounding roads We ask therefore that at any future hearings:-

- The application by Brett Aggregates or any other agents on behalf of the land owners currently Arlington's to quarry this land is dismissed due to, but not restricted to, the following

  - the high risks posed by the Bromate pollution to irreversibly

contaminate the water course from which Affinity Water draw our drinking supplies.
- the unsustainable cumulative impact on the infrastructure
- the detrimental and potentially dangerous impact on residents and frequenters health and well being
- the negative impact this will have on the wildlife habitat and wildlife itself
- the damage to the environment by the cumulative impact of air pollution

7.8 The second petition totalling 160 names presented to the Development Control Committee on 27 June 2019 invites the County Council to:

- defer making the decision regarding the application by Brett Aggregates to quarry on Ellenbrook Fields until information is provided to the Committee is current and up to date. We expect that an informed decision should be made on relevant information that has been collated and gathered recently, including but not limited to, up to date traffic surveys, current studies of air pollution, and a study undertaken on the cumulative impact of this and other plans submitted or proposed in the surrounding areas on these issues and local residents and frequenters of this area

7.9 Hatfield Town Council[24] objects to the application requesting that the County Council reject the application, or at least defer this proposed, until:

a) the Ellenbrook Park Preservation Trust lease is signed conforming to s106 legal requirements
b) consideration has been given to the independent expert hydrogeological advice and a full investigation of all boreholes on the site has been conducted. NPPF and Environment Agency (EA)guidelines on contaminated should be followed. The current definition of the extent of the plume should be acknowledged. The implications of continued remedial pumping at Bishops Rise necessary to reduce bromate concentrations to an acceptable level on borehole bromate concentrations within the site need to be considered
c) all measures to preserve safe future drinking water for Hertfordshire should be paramount
d) an air quality monitor for PM 2.5 particles should be put in place on the A1057 near to the bus stop (rather than within the application site close to the boundary) in order to protect sensitive receptors

Comments

Ellenbrook Park

[24] The full response from Hatfield Town Council is appended to this report (Appendix 9)

- The Town Council together with the other three local councils feel strongly that the Trust lease must be signed before the application is reported to committee. The requirement to establish the Trust has been in place for some 20 years
- Residents feel aggrieved by failure to deliver on the Park and Contribution for the last 20 years
- The houses that have been built at Salisbury village have small back gardens on the understanding they would have access to the adjoining Park land;
- Residents will lose the access this valuable area of greenspace and important public health amenity for Hatfield if the quarry goes ahead

Bromate plume

- As a consequence of the higher rate scavenge pumping at the Bishops Rise (BR) pumping station over the last 10 years the bromate plume appears to have been pulled permanently southward beneath the quarry, such that the Environment Agency condition 1 is already being breached at the application site
- Remedial pumping is still required to protect the public drinking water sources at Essendon (the water supply for Hatfield) and the New River (water source for London) from higher concentrations of bromate. The requirement for continued remedial pumping at the BR pumping station will continue to draw bromate plume (and higher concentrations of bromate) towards these public water sources.
- There is currently no alternative option to continued remediation pumping at BR Rise pumping station, which has for the last 10 years failed to remediate the Bromate Plume at a cost of over £2M
- Ellenbrook fields is an optimum location for a second scavenge pumping site close to the narrow neck of the plume to the North of Ellenbrook fields and could cut off the source of the bromate and accelerate remediation of the plume for the next 10 years
- The remediation pumping at the BR pumping station has drawn the plume across the north east corner of the quarry site corner (acknowledged by Affinity Water) but Brett Aggregates claim the plume has not moved over the last 5 years
- Affinity Water has increased public sewer capacity at the BR pumping station thus enabling an increase in the remediation pumping rate to increase to 4M litres per day. Although Affinity Water has since reduced the pumping rate (in the last year) they appear intent on increasing the rate in future. It will still take 10 more years for the bromate plume to be remediated. Affinity Water has admitted remedial pumping considerably interferes with the quarry groundwater bromate levels
- It would appear therefore that EA condition 3 is already being breached and conditions 1 and 2 are almost certainly to be breached if mineral extraction takes place at the application site

Monitoring data

- The data shows evidence of bromide and bromate contaminated ground water already in the quarry site
- Experts consider there is a risk is significant risk of widespread contamination of bromide in the quarry site 11/14 boreholes
- Two boreholes within the site (BH 104 and BH301) have bromate concentrations above 2µg/l and there is there is evidence that higher concentrations may have been recorded in these boreholes when remediation pumping at the higher rate [4M litres per day]. Therefore at least part of the application site falls within the bromate plume[25] and therefore mineral extraction would be in conflict with EA Condition 1
- The data has been provided for only 1 out of 3 boreholes within the main dig site with most being around the perimeter. Dr Rivett considers are needed for the remainder of the boreholes within the site, most particular in the north east corner of the site [borehole BH109] before any mineral extraction takes place
- There are anomalies in the borehole data and data is missing or recorded as “w/o”.
- Bromate increases with increasing bromide concentrations, such that bromate can be predicted from the level of bromide. This appears to be variable within the quarry boreholes. However, many of the boreholes where bromide is present in high concentration record “less than detectable” levels of bromate. These anomalies should be investigated and explained by SLR .
- The Bromate Plume to the north of Ellenbrook fields [>1000µg/l] is the highest concentration and 100 times above the safe limit for drinking water

Site location and method of working

- The chosen site is a uniquely bad location for a quarry site anywhere in the UK in the worst pollution of any chalk aquifer anywhere in Europe and the requirement to continue Bromate remediation to protect the public drinking water supply for Hatfield at Essendon Water pumping station
- Affinity Water considers the proposed method of working involving breaching the protective interburden layer of clay in order to extract mineral from the LMH to be a risky activity and could cause the Bromate and Bromide Plume to be drawn into the mineral workings

Public health

- The health effect of previous Bromate not fully explored: Hatfield Residents were unaware of the drinking water contamination before 2003 and probably consumed contaminated water for some 30 years (between 1973 and 2003). There is some evidence of raised thyroid and renal pathology in the Hatfield population. An investigation is need into the effects of Bromate contaminated drinking water on the affected population. Residents trusted their drinking water was safe and should

[25] The Environment Agency define the extent of the bromate plume as bromide concentrations above 125µg/l and bromate concentrations above 2µg/l

not be exposed to repeated exposure to contaminated drinking water when such high levels of bromate contamination are present within the proposed quarry site

- The EA should meet with Hertfordshire County Councillors ahead of the committee to discuss the bromate plume in order so that the location and method of remediation of the bromate plume are and implications for the public drinking water supply are understood and there is a proper balance between public health and the need for mineral working in Hertfordshire

Transport

- Access to the quarry on the A1057 is a highly dangerous location at a bottleneck between Notcutts agricultural nursery, a roundabout and the Busy Bees pre-school facility
- Lorries turning into the site will cause congestion and accidents are likely
- The A1057 is single carriageway and already congested, there are frequent queues of traffic behind buses at stops at peak times and this will be made worse by HGVs accessing the quarry

Air quality

- Fumes from idling traffic will expose children walking to school to dangerous fine particles [<PM2.5]
- The additional HGV traffic generate by the quarry will adversely affect air quality, generate noise and exhaust fumes for the residents on Hatfield Road
- The A1057 is a residential road at Ellenbrook. Residents will be exposed to air pollution from the extra 420 HGV per day generated by the quarry
- Air pollution levels are likely to exceed the WHO limit for PM2.5 in the vicinity of Howe Dell Primary school. PM10 and NO2 levels will also increase
- Sand and gravel quarries generate airborne fine silica particles, in addition to PM2.5 and PM 10 particles and Nitrous oxide can impact harm lung health, cause respiratory disease, and increase the risk of coronary heart disease

Alternatives

- This is one of three quarries planned for Hatfield. The concentration of quarries in this part of Hertfordshire disproportionate and will widen health inequalities in the local area
- Hertfordshire does not need a quarry in this location. Mineral extraction is incompatible with remediation of the Bromate plume. The County Council should place protecting the public drinking water supply above the need for minerals from the application site

- The Briggens Estate land identified as a potential preferred area for mineral working in the future Minerals Local Plan would be less risky, produce more sand and gravel, is not located over a bromate plume, is not next to residential housing, or a University, is far safer, and could be provided with a more suitable access road for lorries to the adjacent A414

7.10 Hatfield Town Council commissioned Dr. Michael Rivett to assess the Groundwater Management Plan. His comments are reported in a paper dated 18th March 2020 which is appended to this report (Appendix 7). A summary of the 6 main points is set out below:

1. The most significant groundwater-related problems and risks arising from the development stem from the proposed excavation below the boulder clay of the lower mineral horizon (LMH) gravels overlying the Chalk. This activity compromises:

   - the protection of the Chalk aquifer groundwater resource;
   - optimal remediation of the > 20 km bromate/bromide groundwater pollution plume.

2. The Environment Agency has proposed three Conditions. It is predicted that these conditions would be breached as a consequence primarily of gravel extraction from the LMH.

3. EA Condition 2 states “any activities close to the plume must not change the existing hydrogeological flow regime”, this condition will be permanently breached during and post development by the proposed replacement of excavated LMH permeable sand and gravel aquifer formation with permanent insertion of roughly 4.4 million tonnes of low permeability clay backfill across the site. This will cause considerable changes to the existing LMH hydrogeological flow regime. Groundwater flows will be deflected around, rather than pass through the site with some groundwater flowlines previously extracted by the Bishop’s Rise plume remediation scavenger well no longer extracted (conceptualised in later Fig. 1).

4. As a consequence of failure to comply with EA Condition 2, it will not be possible to comply with EA Condition 3 which states “any activities close to the plume must not interfere with the remediation of the bromate and bromide pollution”. The proposed low permeability backfill of the LMH void will effectively ‘push’ parts of the very close by bromate/bromide plumes in the surrounding LMH gravel aquifer away from the site, potentially beyond the reach of the Bishop’s Rise scavenger well, thereby increasing the risk of diverted bromate/bromide plumes migrating to other public water supply wells (conceptualised in later Fig. 2).

5. EA Condition 1 states that “No mineral is extracted from within the existing plume of bromate and bromide groundwater pollution”. The occurrence of bromate groundwater contamination in the LMH and chalk underlying the Quarry Site is significantly controlled by the groundwater pumping rates of the Bishop’s Rise scavenger well (conceptualised in later Fig. 3). The conceptualisation indicates that the pumping rate of the Bishop’s Rise scavenger well exerts a significant, likely overwhelming, control on bromate occurrence in quarry Site LMH groundwater. The scavenger pumping rates of 4 – 5 Ml/d (megalitres per day) desirable to achieve optimal plume remediation will lead to greater bromate plume migration into the LMH aquifer gravels subject to extraction and increase the risk of breaching EA Condition 1. The recent low (but still significant) bromate at the Quarry site perimeter plus the very high bromate nearby are the result of lower scavenger pumping rates in recent years. However, bromate levels at the site may be expected to gradually increase as a result of the recent resumption of higher scavenger pumping rates. Therefore, the ability to meet EA Condition 1 is outwith the control of the mineral operation and will primarily be influenced by the operation of the Bishop’s Rise scavenger well.

6. The choice of site in a location inappropriate for mineral extraction situated between the bromate source and the only scavenger remediation well, and the requirement to comply with EA Condition 1 will necessitate lower scavenger pumping rates than are optimal for remediation and will conflict with remediation of the bromate and bromide pollution contrary to EA Condition 3. Given the severity of the groundwater pollution and the need to optimise the remediation of Europe’s largest groundwater plume and safeguard many public water supply borehole sources, such quarry development is not considered appropriate.

7.11 The Environment Agency responded to consultation on the Groundwater Management Plan and the bromate and bromide groundwater quality data (2013 – 2019) in their letter dated 03 July 2020 (Appendix 8) noting:

‘The applicant has provided a significant body of site-specific hydrogeological information, which includes periods of extreme low and high groundwater level. We have carefully considered the application as a whole and in the context of the wider information regarding the groundwater pollution and activities on neighbouring sites. We are satisfied that the recent monitoring results are in keeping with those presented as part of the initial planning application in 2016 and updated in 2019.

The Groundwater and Water Management Plan satisfies the previously recommended planning conditions for a Groundwater Management Plan. However, the Groundwater and Water Management Plan covers

the whole site and it recommends refining the water management plan for each phase of the development. We agree with this approach and have amended our previously requested condition (letter ref. NE/2016/124652/04-L01dated 10 October 2019) to the following condition to secure the revisions of the water management plan prior to commencement of each Phase of the development'.

Environment Agency position

Controlled waters are particularly sensitive in this location because the proposed development site lies close to groundwater pollution of bromate and bromide from an off-site source. As previously stated, we advise that:

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

The submitted information demonstrates that the applicant will be able to fulfil these points and manage the risks posed to controlled waters by this development. Further detailed information will however be required before each phase of development is undertaken. We believe that it would place an unreasonable burden on the developer to ask for more detailed information prior to the granting of planning permission but respect that this is a decision for the local planning authority.

In light of the above, the proposed development will be acceptable if it proceeds in line with the submitted documents referred to above, and a planning condition is included requiring the submission of a Water Monitoring & Management Plan for each phase. This should be carried out by a competent person in line with paragraph 178 of the National Planning Policy Framework.

Without this condition we would object to the proposal in line with paragraph 170 of the National Planning Policy Framework because it cannot be guaranteed that the development will not be put at unacceptable risk from, or be adversely affected by, unacceptable levels of water pollution.

<u>Condition</u>

Each phase of the development hereby permitted shall not commence until a Water Monitoring & Management Plan, including a timetable of monitoring and submission of reports to the local planning authority,

has been submitted to, and approved in writing by, the local planning authority. Reports as specified in the approved plan, including details of any necessary contingency action arising from the monitoring, shall be submitted to, and approved in writing by, the local planning authority.

Reason: To protect controlled waters and to not exacerbate the existing groundwater pollution; ensuring no deleterious impact to groundwater quality, in accordance with Policy 16 (Soil, Air and Water) of the Hertfordshire Waste Core Strategy 2012; to prevent development that would have an unacceptable risk or adversely affect water pollution; to minimise the risks associated the flow and quantity of surface and groundwater and migration of contamination from the site, in accordance with paragraph 143 of the NPPF.

The Water Monitoring and Management Plan for each phase shall refine the Groundwater and Water Management Plan. Final (Version 5). Prepared for: Brett Aggregates Limited by SLR consulting and shall include:

1. Details of construction and water management during construction of the two infiltration lagoons.
2. Clarification of the restored site discharge point for the UML back-drain.
3. A long-term groundwater monitoring plan to continue during and post the operational phase.
4. A mechanism for periodic review.

The plan should include monitoring and reporting programs, location of monitoring points including additional monitoring boreholes particularly in the vicinity of the infiltration lagoons, analytical suites, limits of detection and groundwater level monitoring. Details of contingency actions in the event of impact shall also be included. The two infiltration lagoons and back drain shall be constructed in accordance with the approved Groundwater Management Plan prior to the commencement of mineral extraction.

Groundwater monitoring shall be conducted by the Mineral Operator in accordance with the long-term groundwater monitoring plan for the lifetime of the development. Prior to mineral extraction in each Phase, the Groundwater Management plan shall be reviewed and an updated plan submitted and approved in writing by the Mineral Planning Authority.

The management of water shall be carried out in accordance with the approved Plan, or as otherwise agreed by the Mineral Planning Authority under the periodic review process, for the lifetime of the development.

8. Planning issues

8.1 The main planning issues in the determination of the planning application are:

- The need for mineral working and maintaining an adequate supply of minerals within Hertfordshire (Minerals Policies 1 & 2)
- The working of Preferred Areas (Minerals Policies 3 & 4)
- Conformity with the site brief for Preferred Area 1 (Inset Map No. 6)
- Green Belt
- Ellenbrook Park
- Environment effects in relation to:
  - groundwater pollution
  - transport
  - landscape and visual impact
  - residential amenity - noise and air quality
  - cumulative impact
  - ecological impact

Mineral supply

8.2 The NPPF[26] requires mineral planning authorities to plan for a steady and adequate supply of aggregates by preparing Local Aggregates Assessments based on a rolling average 10 years' sales data (and other relevant local information) and maintaining landbanks of at least 7 years for sand and gravel.

8.3 The HMLP Review sets out the policies in relation to minerals supply, need for mineral working, and the working of Preferred Areas for future sand and gravel extraction. Minerals Policy 1 (Aggregates Supply) supports the grant of planning permission for the extraction of proven economic minerals reserves only where it is necessary to ensure that adequate supplies are available and to meet the County's agreed apportionment of regional supply.

8.4 The Hertfordshire Local Aggregates Assessment (LAA) 2019 confirms:

- Sand and gravel sales at the end of 2018 stood at 1.21 million tonnes. An increase of 39,585.3 tonnes per annum
- The annual sales figure is higher than the ten year average sales figure (1.19MT) and above the three year average sales figure (1.18MT) at 31 December 2018
- Mineral reserves have declined in line with sales over the period
- The permitted reserves can supply aggregate for a period of 7.2 years based on Hertfordshire's agreed sub-regional apportionment figure of 1.39 million tonnes per annum and can supply aggregate for a period of 8.5 years based on the 10 year average sales data.

[26] Paragraph 207

8.5 The LAA 2019 confirms that the landbank was slightly above the minimum requirement[27] but that mineral reserves (landbank) have declined in line with annual sales. The LAA highlights the need to add to the supply of sand and gravel. This will necessitate the grant of planning permission either for extensions to existing sites or new sites.

Need for mineral workings

8.6 The NPPF states 'It is essential that there is a sufficient supply of minerals to provide the infrastructure, buildings, energy and goods that the country needs'[28], and 'When determining planning applications, great weight should be given to the benefits of mineral extraction, including to the economy, and, in considering proposals for mineral extraction, mineral planning authorities should 'plan for a steady and adequate supply of aggregates by maintaining landbanks of at least 7 years for sand and gravel'[29].

8.7 Minerals Policy 2 (Need for mineral working) sets out the factors to be considered when determining applications for new mineral working; comprising:

(i) the existing quantity of permitted reserves;
(ii) the rate at which the permitted reserves will be worked;
(iii) the proposed rate and timescale in the application for working the mineral deposit;
(iv) the existence of resources (preferred areas) identified as being desirably worked at an early stage of the Plan period; and
(v) the particular nature and qualities of the mineral deposit concerned.

8.8 The existing quantity of reserves and the rate at which the permitted reserves will be worked are an expression of the longevity of the landbank. The largest contributor to the landbank is Tyttenhanger Quarry, Nr London Colney. Planning permission was granted for the extraction of 7.1 million tonnes of sand and gravel from Tyttenhanger Quarry (Coursers Road) in February 2011. Tyttenhanger is also the principle source of the supply within Hertfordshire. Hatfield Quarry is also a contributor to the landbank, although the reserves there are close to being exhausted. Planning permission was granted for an extension of mineral working at Hatfield Quarry (Furzefield) for 0.45M tonnes of sand and gravel granted planning permission in 2018. There is a current application for an extension to Hatfield Quarry at land adjoining Coopers Green for the extraction of 3.5MT of sand and gravel. The supply of sand and gravel from Hatfield and Tyttenhanger Quarries combined make up the large majority of the current landbank. Taking into consideration the annual sales from these two sites the landbank is likely to fall below the minimum 7 years without additional new sources of supply in the future.

[27] NPPF Paragraph 207(f)
[28] Paragraph 203
[29] Paragraph 205

8.9 The extraction 8MT of sand and gravel from the application site at a rate of 250,000 tonnes per annum for 32 years would make a significant contribution to the landbank, equivalent to an additional 5.75 years to the landbank (based on the annual apportionment), which would increase the overall landbank to approximately 12.9 years.

Working of preferred areas

8.10 Minerals Policy 3 (Sites for sand and gravel extraction and the working of preferred areas) identifies the areas where mineral extraction is encouraged, for example, at current active sites, sites with planning permission for mineral working, and those areas defined on the Proposals and Inset Maps as Preferred Areas for future mineral working, these are:

1. Land at former British Aerospace, Hatfield
2. Land adjoining Rickneys Quarry, near Hertford
3. Land at Coursers Road, near London Colney (Tyttenhanger Quarry)

8.11 Minerals Policy 3 states proposals for mineral working within the Preferred Areas defined in the Plan will only be permitted when:

a) they contribute to maintaining the county's appropriate contribution to local, regional and national aggregate needs, including the maintenance of an appropriate landbank in accordance with Mineral Policy 1; and
b) the application fulfils the requirements of the proposals for the preferred area identified within the Inset Maps

8.12 The extraction of sand and gravel from a large deposit would maintain a consistent supply over a long lifetime and assist in meeting the aims of the NPPF[30] in terms of providing a steady and adequate supply of sand and gravel from within Hertfordshire. If granted planning permission the sand and gravel could make a contribution to annual sales within 18 months. The minerals from the site would contribute to continuity of supply and the maintenance of an appropriate landbank until other sources of supply through the Minerals Local Plan process.

8.13 Policy 4 of the adopted MLP states applications to develop land for aggregate extraction outside of Preferred Areas will be refused planning permission unless:

i. The landbank is below the required level and there is a need for the proposal to maintain the County's appropriate contribution to local, regional, and national need that cannot be met from the identified areas; and

[30] Paragraph 207

ii. It can be demonstrated that the proposals would not prejudice the timely working of Preferred Areas; or
iii. The sterilisation of resources will otherwise occur

8.14 The large majority of the application site falls within Preferred Area 1, however, part of the application site proposed for mineral extraction to the west of the processing plant, equating to less than 10% of the site area, is outside of the boundary for Preferred Area 1.

8.15 While the landbank is not currently below the minimum 7 years required by the NPPF, and therefore Policy 4(i) is not met, the relatively small part of the application site outside of Preferred Area 1 will be worked and restored as an integral part of the overall mineral working and will not prejudice the working of Preferred Area 1. The proposal complies with Minerals Policy 4(ii) and there is no significant conflict with the overall aims of the policy in respect of to the landbank.

8.16 The phased reclamation, restoration and aftercare will ensure that the land is returned to a suitable condition for the intended use as a country park. The proposal does not conflict with the purposes of Policy 4 of the HMLP Review.

8.17 The proposal is consistent with the NPPF in terms of maintaining an adequate and steady supply of sand and gravel from within Hertfordshire and the maintenance of an appropriate landbank above the minimum requirement. The proposal will assist in facilitating the sustainable use of minerals from within Hertfordshire.

Conformity with the site brief[31]

8.18 The restoration of the site to an appropriate mix of conservation, open space and public access will be compatible with use as a country park in accordance with the original s106 agreement for development of the former British Aerospace site.

8.19 The proposed new landscape planting proposed as part of the restoration complies with the landscape, Green Belt, and mineral extraction principles set out in the Hatfield Aerodrome Supplementary Planning Guidance.

8.20 The exclusion of the northern part of the site from the mineral extraction area has been justified as part of this application on the basis of the groundwater contamination in that area and the lower quantity of the mineral deposit available in that area as indicated by borehole data.

8.21 The proposal maintains adequate buffers of approximately 70m between the outer edge of the mineral working and the nearest

[31] The site brief for Preferred Area 1 – Land at the former Hatfield Aerodrome as shown on Inset Map 6 is included at section 6.8 of this report

residential properties (Ellenbrook, Smallford and Popefield Farm) which is slightly more than the 60m specified in the site brief

8.22 The proposal provides for significant additional tree planting (as indicated on the illustrative masterplan) to increase overall woodland cover and support an amenity use consistent with the aims of the site brief with regard to the Watling Chase Community Forest which was a consideration at the time the brief was written. Also, there would be no mineral working within, or in close proximity to, Home Covert to ensure this area of woodland is not adversely affected.

8.23 The Environmental Statement has considered the potential impact on archaeological interests through archaeological investigations. The Historic Environment Advisor advises the site is unlikely to contain significant archaeological remains given the level of past disturbance from previous land uses at the site and that a programme of archaeological investigations has been agreed and conditions will need to be imposed as part of the planning permission.

8.24 The proposal provides for temporary diversion of the River Nast which currently runs in a culvert through the site and for appropriate reinstatement as part of the illustrative restoration plan

8.25 The existing pollution of groundwater has been considered as part of the Environmental Statement and there have been detailed discussions with the Environment Agency and Affinity Water with regards to mitigation of the risks of mineral working in close proximity to the bromate plume. It has been demonstrated through the Groundwater Management Plan that these risks will be mitigated throughout the mineral workings.

8.26 With regards to the parts of the site falling within groundwater protection zones II wherein the brief states ‘the Environment Agency would normally object to the use of landfill for restoration unless it can be demonstrated that the waste used will be non-polluting matter such as inert naturally excavated material’, an Environmental Permit has already been granted for infilling of the mineral void using imported inert wastes. The groundwater environment will be protected via the construction methods set out in the Groundwater Management Plan and the conditions attached to the Environmental Permit

8.27 Access to the site would be via a new junction with the A1057 as required by the site brief.

8.28 The proposed mineral working is therefore consistent with the site brief (shown on Inset Map No. 6) and accords with Policy 3(d) of the HMLP Review

Deed of variation

8.29 The original S106 for the redevelopment of the former Hatfield Aerodrome signed in 2000 set out the detailed steps for the establishment of Ellenbrook Park, the creation of a Trust under a 125 year lease, and payment of a financial contribution to manage the Park for the duration of the lease.

8.30 In 2010 the borough council agreed interim landscape works after consultation with the county and district councils. The interim works included tree planting, grazing enclosures and sign posting. Public access to the land has continued throughout the period.

8.31 The other steps required by the original s106 [*inter alia*] the establishment of the Trust and payment of the contribution, were never completed. In addition, there is a requirement to vary the original S106 to introduce a new lease for mineral working. Therefore, the deed of variation will ensure that the original obligations are completed.

8.32 The heads of terms were submitted in December 2019 and subsequently the landowner has submitted detailed documents comprising the proposed deed of variation, proposed lease, and proposed call option agreement which would enable the Trust to decide whether or not to accept management responsibility for each phase of the restored mineral workings. There have been discussions between the county, borough and district authorities on the details of the proposed deed. There will be a need for further negotiations between the authorities and the landowner in the coming months to ensure that the terms of the agreement are acceptable and that the Trust is established on substantially the same basis as the original obligation.

8.33 It is envisaged that these negotiations may take a number of months before the deed is finalised and ready to be sealed. Understandably the applicant is keen to avoid any undue delay caused by a process which they have no control over. Therefore, the applicant has proposed a unilateral undertaking with the County Council to the effect that it will not implement the minerals planning permission until the deed of variation has been completed with an 18 month expiry clause. Officers consider this will provide sufficient time for the parties to conclude the deed of variation. This should assure members that the Park will be delivered in accordance with the original obligation.

8.34 Officers have taken advice regarding the ability for the county council to enforce the terms of the original obligation, and this will remain the fall-back position if the deed of variation is not concluded in due course.

Green Belt

8.35 The application site is within the Metropolitan Green Belt. The NPPF[32] states “Certain forms of development are not inappropriate in the Green Belt provided they preserve its openness and do not conflict with the purposes of including land within it” and sets out a list of such forms of development which includes mineral extraction.

8.36 The process of mineral extraction is not regarded to be inappropriate development and therefore very special circumstances are not required for this aspect of the development.

8.37 With regards to the construction and operation of a processing plant, the ready-mix concrete plant, and screening bunds, whilst these are not mineral extraction, they are ancillary to, and form an integral part of the overall development. The co-location of the processing and wash plant and concrete batching plant with mineral extraction will avoid unnecessary haulage to site for processing and secondary manufacturing processes. Whilst these aspects of the development are regarded to be inappropriate development in the green belt, there are benefits to their co-location with mineral extraction in this location related to facilitating the sustainable use of minerals and sustainable transport. These positive aspects of the development may be regarded as very special circumstances.

8.38 In addition, these aspects of the development will not preserve the openness of the Green Belt in this location throughout the development. Notwithstanding, they are temporary in nature and will removed as part of the restoration of the site and the openness of the Green Belt will be preserved in the longer term.

8.39 A decision on whether the potential benefits in terms of facilitating the most sustainable use of mineral resources clearly outweigh the harm by reason of inappropriate development, and other potential harm, and could therefore be considered very special circumstances. The planning balance section of the report reaches a conclusion on this point.

Water environment

[32] Paragraph 146

8.40 The NPPF[33] requires mineral planning authorities to give ensure that there are no unacceptable adverse impacts on the natural and historic environment in considering proposals for mineral extraction, and, to 'prevent new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality'[34].

8.41 Minerals Policy 17of the HMLP Review lists the criteria for the control of mineral development for the protection of environmental assets, including (iv) not to permit mineral extraction if the development and/or afteruse would have a negative qualitative and/or qualitative impact on the water environment, including main rivers, ordinary watercourses, and groundwater.

8.42 The groundwater resource is impacted by bromate contamination ("Bromate Plume") originating from the contamination source site, a former chemical works at Sandridge[35]. Since 2010 the bromate contamination has been the subject of a remediation notice which has required a series of 11 steps to be followed by the responsible persons to remediate the contamination. Principally this has involved pumping and treatment at the Bishops Rise water pumping station. Remediation continues under a second remediation notice in place since January 2019[36].

8.43 In preparing to submit the planning application the applicant drilled a series of new monitoring boreholes (in addition to the existing boreholes) and monitored bromate and bromide levels across the site quarterly between 2013 and 2019.

8.44 Due to the complex nature of method of working necessary to mitigate any potential impact upon the plume the applicant has since 2010 engaged in detailed discussions with the Environment Agency regarding their proposed strategy to mitigate any potential impacts of mineral working on the existing bromate contamination.

8.45 The Environment Agency has been consulted on the planning application (and the future Minerals Local Plan) and has raised no objections either to the mineral working proposed in the planning application or the potential inclusion of the site as a Preferred Area for mineral working in the future Hertfordshire Local Plan, subject to three criteria being met: i.e.

- no mineral extraction will take place from within the existing bromate/bromide plume

[33] Paragraph 205(b)
[34] NPPF Paragraph 170(e)
[35] The former Orchards works site (Holwell Court)
[36] The remediation notice is enforced by the Environment Agency

- any activities close to the plume must not change the existing hydrogeological flow regime; and
- any activities close to the plume must not interfere with the remediation of the bromate and bromide pollution

8.46 In response to consultation on the planning application the Environment Agency requested that the applicant should submit a Groundwater Management Plan (GMP) prior to the commencement of mineral working. The applicant submitted the GMP in January 2019 together with borehole monitoring data for 2013 – 2019. Following further consultation. The Environment Agency has confirmed that the GMP considers the site in the context of wider information on groundwater pollution and activities on neighbouring sites, the GMP covers the site as a whole, and it recommends refining the Plan for each phase of the development. Furthermore, the GMP demonstrates that the three criteria stipulated by the Environment Agency in their earlier consultation responses on the planning application and Minerals Plan are met. Accordingly, the Environment Agency accepts that the GMP provides adequate mitigation for the potential risks associated with the mineral working.

8.47 Affinity Water has entered into a formal agreement with Brett Aggregates, confirming 'We are satisfied that these arrangements will provide us as the appointed water undertaker with a direct ability to ensure that sources of water that we use for public water supply are protected during quarrying activity. We have considered the question of planning conditions and confirm that any new or amended condition is unnecessary. In our view, the Groundwater Management Plan condition proposed by and agreed with the Environment Agency is appropriate and adequate in accordance with the relevant Government guidance'.

8.48 Having taken into account the environmental information submitted with the application together with the submitted monitoring data from 2013 to 2019, and the contents of the submitted Groundwater Management Plan, it is considered the proposed development will meet the requirements of the NPPF[37] in preventing the new and existing development from contributing to, being put at unacceptable risk to, or being adversely affected by unacceptable levels of pollution in relation to the water environment.

Transport

[37] Paragraph 170

8.49 The strategic aim of the Hertfordshire Minerals Local Plan (MLP) is to ensure that the adverse impacts on the environment and people caused by mineral operations and the transport of minerals are kept, as far as possible, to an acceptable minimum. The impact on residential amenity should also be minimised.

8.50 Minerals Policy 16 only allows for mineral development where the provision for vehicle movement within the site, access to the site, and conditions of the local highways network from the traffic movements generated by the development (including afteruse) would not have an unacceptable impact on highway safety, the effective operation of the road network, residential amenity or the local environment.

8.51 The adopted MLP allows for the use of main distributor roads by HGVs for the transport of mineral but there is a presumption against the use of significant lengths of local roads to obtain access to quarries from the major road network.

8.52 The proposed development will generate 174 HGV movements per day comprising 116 movements for mineral export and 58 movements for waste material. The impact of these additional vehicle movements upon three key junctions have been assessed by the Highway Authority:

- the Comet Way / Hatfield Road junction;
- Albatross Way/Hatfield Road/Ellenbrook Lane; and
- Mosquito Way/ Hatfield Road;

8.53 The Highway Authority has confirmed that the impact on these junctions would not be significant and the use of the A1057 by HGVs generated by the development is an appropriate use for this status of road. Consideration has been given to the existing levels of traffic using the A1057, including HGV movements associated with the approved developments at Hatfield Quarry. The Highway Authority is satisfied that even allowing for the HGV movements generated by the development the increase would still be well within normal daily fluctuations. In order to mitigate the impact of the additional traffic using these junctions and appropriate financial contribution for highways improvements within the vicinity of the site has been agreed with the Highway Authority.

8.54 The location of the proposed new access on the A1057 is suitable and safe (demonstrated by the Stage 1 safety audit) and is not in close proximity to a large number of residential properties. Access via the A1057 is complaint with the site brief. The proposed access has been the subject of a Stage 1 safety audit and will be subject to technical approval under s278 of the Highways Act. The plans show that HGVs will only be able to turn left on exiting the site. This will require technical approval through the s278 process.

8.55 The proposed new access is located approximately 1.5km west of the junction of the A1057 from the A1001 Comet Way which is the shortest possible distance to the closest junction with the trunk road system. The HGVs would pass properties fronting the A1057 although these properties are set back from the highway by at least 25m. The impact on residential amenity will be very limited.

8.56 The location of the access and haul road on the western side of the site are approximately 150m from the nearest properties at Jove Gardens. It is proposed to construct an acoustic fence on the western site boundary as part of initial site establishment works in order to mitigate noise potentially affecting neighbouring properties. A new section of hedgerow is also proposed to the east of the haul road to screen views of lorry movements within the site.

8.57 The proposal complies with Policies 16 (Transport) and 18 (Operational criteria for the control of mineral development) of the adopted Hertfordshire Minerals Local Plan.

Noise and air quality

8.58 The NPPF[38] requires that planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development.

8.59 In terms of noise, the application has given consideration to the need to mitigate and reduce to a minimum any potential adverse impacts resulting from noise from new development and avoid noise giving rise to significant adverse impacts on health and the quality of life, in accordance with Policy 18 of the HMLP Review.

8.60 In terms of air quality, the NPPF[39] requires consideration should be given to sustain and contribute towards compliance with national objectives for pollutants and the cumulative impacts from individual sites in local areas. Opportunities to improve air quality or mitigate impacts should be identified, such as through traffic and travel management, and green infrastructure provision and enhancement.

8.61 The strategic aim of the Hertfordshire Minerals Local Plan is to ensure that the adverse impacts on the environment and people caused by mineral operations and the transport of minerals are kept to an acceptable minimum by protecting residents from noise, dust, visual intrusion and other amenity effects of mineral extraction. Minerals Policy 18 requires ‘all proposals for mineral extraction and related development to demonstrate that no significant noise intrusion will arise from the development’.

[38] Paragraph 180
[39] Paragraph 181

8.62 The NPPF[40] requires that in determining applications local planning authorities should ensure that any unavoidable noise, dust and particle emissions are controlled, mitigated or removed at source, and establish appropriate noise limits for extraction in proximity to noise sensitive properties. Mineral planning authorities should take account of the prevailing acoustic environment and in doing so consider whether or not noise from the proposed operations would give rise to a significant effect; give rise to an adverse effect; and enable a good standard of amenity to be achieved. Proposals should carry out a noise impact assessment in order to identify all sources of noise and, for each source, take account of the noise emission, its characteristics, the proposed operating locations, procedures, schedules and duration of work for the life of the operation, and its likely impact on the surrounding neighbourhood.

8.63 Mineral planning authorities should aim to establish a noise limit, using planning conditions, so that noise should not exceed the background noise level (LA90, 1h) at the noise-sensitive property that by more than:

- 10dB(A) during normal working hours (0700-1900); total noise from operations should not exceed 55dB(A)LAeq, 1h (free field) in any event.
- 55dB(A) LAeq, 1hr (free field) in the evening 1900-2200;
- 70dB(A) LAeq, 1h (free field) (maximum eight weeks per year) for essential activities to allow for soil stripping, the construction and removal of baffle mounds, soil storage mounds and spoil heaps, and the construction of new permanent landforms and aspects of site road construction and maintenance.

8.64 The planning application is accompanied by a noise impact assessment which provides measures to minimise noise emissions primarily using screen bunds close to noise sensitive properties at Popefield and an acoustic fence on the west boundary of the site. The noise impact assessment predicts that the noise at eth nearest noise sensitive receptor will not exceed the maximum noise limits in the NPPF.

8.65 The County Council commissioned a noise consultant to assess the noise impact assessment submitted as part of the application. The noise consulted report concluded that –

i. An acceptable noise situation should occur for residents of all of the nearby residential dwellings during the construction phase of the proposed sand and gravel quarry, when assessed in accordance with British Standard BS: 5528-1;
ii. [provided the noise mitigation measures are implemented] an acceptable noise situation should occur for residents of all nearby

[40] Paragraph 144

residential dwellings during the operational phase of the proposed sand and gravel quarry, when assessed in accordance with NPPG; and

iii. [provided the noise mitigation measures are implemented] an acceptable noise situation should occur for residents of all nearby residential dwellings when assessing the cumulative impacts of the proposed site operations in accordance with the Guidelines for Environmental Noise Impact Assessment.

8.66 The consultant report also recommends –

a. construction of the proposed earth bunds as designed; and
b. construction of an additional section of earth bund on the western side of the site between Phase G and Ellenbrook Meadows west of the proposed site. The suggested dimensions are 4m in height plus a 3m high close boarded fence on top.

8.67 Subject to the mitigation measures being implemented prior to the extraction and processing of minerals an acceptable noise environment should be maintained. The proposals have demonstrated that no significant noise intrusion will arise from the development. The proposal complies with Policy 18 (Operational criteria for the control of mineral development) of the adopted Hertfordshire Minerals Local Plan.

8.68 In terms of air quality, the site is not within an air quality management zone and there is no local air quality monitoring data for existing levels of pollutants. The local Environmental Health Unit advised that background air quality monitoring should be undertaken for a sixth month period prior to the commencement of mineral extraction. This scheme forms part of the planning conditions. Monitoring locations have been agreed with the Environmental Health Unit.

8.69 The traffic generated by the development forms a relatively small proportion of the overall traffic using the A1057. The proposal provides for air quality monitoring. The proposal has demonstrated that it will not give rise to significant degradation to air quality. The proposal complies with Policy 18 (Operational criteria for the control of mineral development) of the adopted Hertfordshire Minerals Local Plan in respect of air quality.

Cumulative Impact

8.70 The Environmental Impact Assessment Regulations 2017 (Schedule 3(3)(g)) requires the likely significant effects of development on the environment must be considered in relation to the cumulation of the impact with the impact of other existing and/or approved development.

8.71 Policy 11 of the adopted Hertfordshire Minerals Local Plan states ‘Development which would result in an unacceptable cumulative impact on the environment of an area either in relation to an individual

proposal having regard to the collective effect of different impacts, or in relation to the effects of a number of minerals developments occurring either concurrently or successively will not be permitted'.

8.72 The NPPF[41] requires minerals planning authorities to 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 when considering proposals for mineral extraction.

Traffic

8.73 The traffic survey data submitted with the Transport Assessment covered a 1- week period in April 2015. This can be compared with existing data held by the Highway Authority for this section of the A1057 for a week in April 2015 and March 2019 as shown in Table 1.

Table 1						
Time begin	Eastbound 5-day Ave.		Westbound 5-day Ave.		Total flow	
	2015	**2019**	**2015**	**2019**	**2015**	**2019**
08:00	492.8	570.7	606.6	528.3	1099.4	1099
09:00	449.4	512.7	489.4	600	938.8	1112.7
15:00	625.8	546.7	674.8	550.7	1300.6	1097.3
16:00	745.2	611.7	733.4	649.7	1478.6	1261.3
17:00	597.6	682	656.8	568.3	1254.4	1250.3

8.74 A simple comparison shows a modest decrease in traffic between 2015 and 2019 with some exceptions, notably in the eastbound AM flow (8-10am) and westbound AM flow (9-10am) manifest in an increase in total flows between 9 and 10am. There is a marked decrease in flows east and westbound in the PM peaks manifest in a decrease in total flows during the PM peak (3-6pm) with the exception of a modest increase eastbound (5-6pm)

8.75 The flow of traffic from the application site is likely to be steady throughout the day. The increase in the number of HGVs using this section of the A1057 will be approximately 20 HGVs per hour in both directions. At this level the impact of HGV traffic on the section of the A1057 to the A1(M) is unlikely to be significant.

8.76 Having considered the potential cumulative impacts of the operation of the proposed new quarry and the continued operation of Hatfield Quarry for the duration of the current permission on the environment of the local area is unlikely to be significant.

Hatfield Quarry

[41] Paragraph 205

8.77 The land between Hatfield and St Albans has been subject to successive periods of mineral extraction over several decades resulting from the continued operation of Hatfield Quarry. Initially the minerals workings were based close to the processing site on Oaklands Lane but the workings have extended to land north of Coopers Green Lane at Suttons Farm, Symmondshyde Farm, and Furzefield.

8.78 Completion of mineral extraction and restoration at Suttons Farm was in 2007[42]. Completion of mineral extraction and restoration at Symmondshyde Farm is due on 31 October 2020[43] to complete by the end of 2019. Mineral extraction is yet to commence at Furzefield. The application anticipated mineral extraction at Furzefield would commence in 2020 and the land restored by 2023.

8.79 A new application for mineral extraction at land adjoining Coopers Green Lane as an extension to Hatfield Quarry to cover a 10 year period was submitted in November 2018 proposing a phased mineral extraction and restoration with continued operation of the existing processing plant on Oaklands Lane site and importation of infill material via Coopers Green Lane and a new site access on Green Lanes.

8.80 Hatfield Quarry also has a concrete batching plant and a sand bagging facility operating from the site. The total number of HGV movements from Hatfield Quarry for these activities is restricted by condition to 250 (125 in/125 out).

8.81 There are controls in place by condition for controlling emissions to air and noise at operations at Hatfield Quarry and a condition requires the submission of baseline air quality monitoring data prior to the commencement of mineral extraction at Furzefield.

8.82 Subject to the proposed conditions being in place for the application site, the operation of both quarries concurrently should not have any unacceptable cumulative impact on the environment of the area.

8.83 The proposal has demonstrated that there will not be any significant noise intrusion or significant degradation to air quality. The HGV traffic generated by the development will not have a severe impact on the road network and the Highway Authority accepts that the increase in traffic will be within the daily fluctuation of the road, in accordance with Policy 11 of the adopted Hertfordshire Minerals Local Plan and the NPPF[44].

<u>Landfill</u>

[42] with the exception of Phase 2 which remains to be restored
[43] An application to extend mineral workings at Symmondshyde was submitted in August 2020
[44] Paragraphs 181, 204(f), 205(b)

8.84 Policy 15 (Landfill) of the HMLP Review permits restoration of mineral workings using inert infill only where it is demonstrated to the disposal of waste is necessary to achieve the restoration proposals, that restoration can be achieved within an appropriate timescale, and where it is demonstrated there is sufficient quantity of fill material available to achieve restoration in accordance with the proposed timescales. The NPPF[45] requires mineral planning authorities to ensure that worked land is reclaimed at the earliest opportunity

8.85 In terms of the quantity of material required to complete the reclamation, infill material would be imported and placed into the mineral void in parallel with mineral extraction in the subsequent phase. This will minimise the overall area of land affected by mineral working at any one time. The extraction of mineral over an extended lifetime will require a steady supply of infill material. Current development within the catchment of the site indicates sufficient volumes of reclamation material are available within the market. The levels of growth planned across Hertfordshire in current draft local plans will likely generate additional sources of reclamation material. The daily HGV movements bring waste to the site are relatively modest and unlikely to divert waste from other mineral restoration sites in Hertfordshire, and therefore it is likely that the restoration will be achieved within an appropriate timescale.

8.86 In terms of the quality of restoration the Environment Agency has issued an Environmental Permit[46] for infilling the mineral void with inert waste. The Permit restricts material for disposal at the site to inert wastes where all relevant waste acceptance criteria have been met. The Permit covers operating techniques, landfill engineering, waste acceptance, closure and aftercare, emissions and monitoring.

8.87 The Permit requires full details of the construction of the landfill to be submitted for approval, and for the construction to be in accordance with the approved details. The Operator is required to: submit a Construction Quality Assurance (CQA) validation report; to visually inspect waste on arrival and at the point of deposit; and to retain waste samples for investigation for one month and retain the test results for two years.

8.88 The Permit requires the operation to be free from noise and vibration outside of the site. The Operator is required to monitor groundwater, surface waters, and landfill gas in accordance with the schedule set out in the Permit, and to retain records for 6 years. The Permit limits the total volume of waste to be deposited into the landfill to be in accordance with pre-settlement drawing 005A. The maximum volume of inert waste to be deposited at the site is 250,000 tonnes in any one year. The Permit requires an annual topographic survey of landfill levels.

[45] Paragraph 204(h)
[46] Permit number EPR/EB3808HD

8.89 The controls in place via the planning conditions and the environmental permit will ensure that high standards of restoration are achieved and the restoration is completed at the earliest opportunity.

Historic Environment

8.90 The strategic aim of the Minerals Local Plan is to preserve or enhance the overall quality of the environment and promote biodiversity, including protecting the County's cultural heritage by ensuring sensitive working, reclamation and aftercare practices.

8.91 The NPPF[47] requires: (a) the applicant to describe the significance of any heritage assets affected, including any contribution made by their setting and (b) local planning authorities to identify and assess the particular significance of any heritage asset that may be affected by a proposal.

8.92 The potentially affected listed buildings are Popefield Farm and Astwick Manor both Grade II listed. Popefield Farm is more immediately affected because the listed buildings are approximately 100m from the mineral workings. Astwick Manor is some 850m away from the workings and therefore the impact will be negligible.

8.93 Popefield Farm comprises a group of buildings consisting of the farmhouse and the three timber barns. The visual impact assessment considers the potential impact on Popefield Farm from two viewpoints.

1 - The impact during operations is assessed as 'low adverse' because the 'listed buildings create a courtyard which prevent views to the north and east'. The most significant impact would be while the perimeter screen bunds are being constructed to a height of 5m, however construction would last only for a matter of months. The bunds are proposed to be retained in situ to preserve the setting of Popefield Farm during mineral extraction. The potential impact has been assessed for each phase of the mineral working. In Phases A, D and F the mineral workings would be between 75m and 100m of Popefield Farm. In Phase A the views from the farmhouse towards the application site would be partly screened by trees. In Phases D and F, views north from the farmhouse would largely be blocked by the timber frame barn. Views of the most southern end of Phase F are likely to be unobstructed

2 - The magnitude of the change is described as "medium adverse" because some filtering of views is provided by trees. There would be clear views to the application site, particularly from upstairs windows. However, the clearer views would be oblique. The effect upon the view is therefore described as "minor adverse".

[47] Paragraphs 128 & 129

8.94 It is proposed to plant trees on the screen bunds and the land between the mineral extraction and Popefield Farm to screen views of the mineral working. There will be no mineral extraction within 75m of the boundary with Popefield Farm. These measures will provide an appropriate buffer to screen views and protect the setting of the Popefield Farm.

8.95 Post restoration, the character and appearance of Ellenbrook Fields would be restored and enhanced with a broad area of conservation grassland divided by hedgerows, and wetland pond features. The restoration of the site, including significant areas of native woodland planting and an area of nature conservation, will likely produce biodiversity enhancements in the long term. The proposed restoration would be consistent with the aims of the NPPF48 and Minerals Policy 9 with regards to long-term overall enhancement to local biodiversity through restoration. In determining the application special regard is given to the desirability of preserving the listed buildings at Popefield Farm, including its setting and features of special architectural or historic interest.

Ecology

8.96 Minerals Policy 9 requires proposals for mineral development to provide opportunities to contribute to the delivery of the national, regional, and local biodiversity action plan targets. The minerals planning authority will seek long-term overall enhancement to local biodiversity through restoration or by other means such as by the attachment of conditions or planning obligations.

8.97 The NPPF[49] requires the planning system to contribute and enhance the natural and local environment by minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.

9.98 The short term impacts of mineral extraction will significantly affect existing habitats including the areas of managed and unmanaged grasslands, however, the creation of new habitat as part of the restoration of the site is likely to produce long term net biodiversity gains with significant new habitat areas including woodland, conservation and grassland areas which will to compensate the short term biodiversity impact during mineral workings. Long term management of the restored site is proposed to be secured via the Landscape Management Document. The proposed restoration would be consistent with the aims of the NPPF[50] and Minerals Policy 9 with

[48] Paragraphs 109, 114 & 118
[49] Paragraph 109
[50] Paragraphs 109, 114 & 118

regards to long-term overall enhancement to local biodiversity through restoration.

9. Conclusion and planning balance

9.1 The NPPF[51] requires great weight to be given to the benefits of mineral extraction, including to the economy, when determining planning applications. Minerals are a finite resource and can only be worked where they are found.

9.2 In terms of the supply of minerals within Hertfordshire and the need for additional mineral workings to maintain an appropriate landbank, the current landbank is slightly above the minimum requirement however there is a need for additional supplies in order to maintain the landbank at an appropriate level. The site is largely within an area identified for mineral working necessary

9.3 The minerals from the site would contribute to maintain a steady and adequate supply of minerals in Hertfordshire and will meet a demonstrated need for minerals within Hertfordshire necessary to maintain an appropriate landbank. The application site falls largely within Preferred Area 1 for mineral working, and the smaller part of the site outside the preferred area will be worked as an integral part of the overall working. The importation of inert waste for reclamation of the mineral void is necessary to ensure the site is restored within an appropriate timescale. The proposal is therefore in compliance with Policies 1, 2, 3, 4 and 15 of the adopted Hertfordshire Minerals Local Plan and accords with the specific considerations for the site brief for Preferred Area 1 (Inset Map No. 6).

9.4 In terms of the Green Belt, mineral extraction is not inappropriate development and very special circumstances are not required, however, the related bunds, processing plant and concrete plant are inappropriate development and would not preserve openness, therefore very special circumstances are required for these parts of the development. Mineral working is a temporary activity. The related bunds, processing and concrete plants will be removed on completion and openness restored in the longer term. The process of washing and using minerals on site for secondary use would avoid unnecessary transport and contribute to the sustainable use of minerals.

9.5 In terms of the water environment, the site sits at the edge of the bromate plume to the north of the site. The existing contamination of groundwater by bromate and the potential effect of quarrying activity in close proximity to the plume has been considered carefully by the Environment Agency and Affinity Water. The additional borehole monitoring data and Groundwater Management Plan has demonstrated that the potential risks are capable of being managed throughout

[51] Paragraph 205

mineral extraction and restoration via the condition recommended by the Environment Agency and operation of the Environmental Permit.

9.6 Restoration of the site on a phased basis would deliver an appropriate land use capable of being used as a Park consistent with the planning obligations within the original section 106 for the redevelopment of the former Hatfield Aerodrome. The proposal is consistent with the objectives of Policy 13 (Reclamation Scheme) of the 14 (Afteruse) of the Hertfordshire Minerals Local Plan.

9.7 The proposal would deliver long term environmental benefits in terms of appropriate restoration of the site including the creation of new woodland and grassland habitats for conservation. The proposed restoration will achieve an acceptable balance between conservation and public access via extensions to the rights of way network as part of the new section 106 agreement.

9.8 In terms of amenity, the proposal maintains appropriate buffer distances to the nearest residential properties in excess of the 60m minimum distances recommended in the Hatfield Aerodrome SPG. The proposals include noise attenuation bunds when minerals are being worked close to residential properties and perimeter bunds will be retained throughout the development around the processing plant and Popefield Farm. The use of perimeter bunds will ensure that there are no significant adverse visual or noise impacts will result from the mineral workings. The proposal is consistent with the objectives of Policy 18 (Operational criteria for the control of mineral development) of the Hertfordshire Minerals Local Plan.

9.9 The total number of HGV movements generated by mineral extraction, infilling and operation of the concrete plant is 170 per day (85 in/85out). All HGVs will use the section of the A1057 between the new site access east of Smallford via the most direct route to the A1001 and A1(M). This section of the A1057 is also used to access Hatfield Quarry which is restricted to 250 (125 in/125 out) HGV movements per day. The total number of HGV movements associated with the proposal would equate a small proportion of current traffic levels using this section of the A1057. In terms of the cumulative impact of quarrying activities on the road network the Highway Authority is satisfied the road will continue to operate within capacity. There is no other reasonable alternative options to the transport of mineral over the use of the local road network. The proposal complies with the site brief and Policy 16 of the Hertfordshire Minerals Local Plan.

9.10 In terms cumulative impact and potential impact of concurrent or successive mineral workings affecting the local area, mineral working has taken place at Hatfield Quarry over many decades and the land has been restored to beneficial use. The continued operation of Hatfield Quarry is controlled by conditions to minimise adverse impacts. The proposed mineral working would be closer to larger areas of population,

however any potential adverse impacts (visual and landscape, noise and air quality) would be minimised by perimeter bunds and the conditions to limit noise and dust emissions and provide long term air quality monitoring. The operation of the new quarry in parallel with the continued operation of Hatfield Quarry would not have significant adverse cumulative impact on the local area.

9.11 The report and recommendation has had regard to and taken into consideration all of the environmental information submitted as part of the application within the Environmental Statement in accordance with the Environmental Impact Assessment Regulations.

Planning balance

9.12 In terms of the negative impacts (during operations) the development would result in

- low adverse and minor adverse visual impact upon the setting of Popefield Farm;
- short -term significant adverse impact on grassland habitats;
- minor (not significant) adverse impact in terms of noise and air quality;
- minor (not significant) adverse traffic impact on the local highway network
- minor (not significant) adverse cumulative impact

9.13 In terms of the positive impacts, the proposal provides for:

- restoration compatible with use of the land as Park
- permanent extensions to the rights of way network
- long term enhancement to the setting of Popefield Farm
- potential net biodiversity enhancements from restoration
- continued public access to the land during operations via permission paths

9.14 In terms of balancing positive and negative weight

- Great (positive) weight is given to the benefits of mineral extraction;
- Moderate (positive) weight is given to the benefits of restoration compatible with a Park;
- Substantial (negative) weight is given to the inappropriate development and impact on openness of the Green Belt;
- Moderate (negative) weight is given to the minor adverse impacts upon Popefield Farm, habitats, air quality and noise emissions, landscape and visual amenity;
- Moderate (negative) weight to delay in the provision of the country park for the area of the mineral workings

9.15 It is considered that the positive benefits of the development, including making the most sustainable use of minerals from the site, clearly

outweigh the harm to the Green Belt and other harm. It is considered that very special circumstances exist for the development.

9.16 It is therefore recommended that the planning permission should be granted, subject to:

- the conditions set out in section 10 of this report; and
- completion of the new s.106 agreement to provide for
  - the new site access and related highway works on the A1057;
  - extensions to the rights of way network; and
- completion of a unilateral undertaking to the effect that the mineral operator will not permit the implementation of the planning permission (subject to an 18-month expiry clause) until the deed of variation has been signed to deliver Ellenbrook Park, creation of the Ellenbrook Trust, and payment of the Ellenbrook Park Contribution; and
- referral of the application to the Secretary of State

10. Conditions

Time limit for implementation

1. The development hereby permitted shall be commenced within three years of the date of the date of this notice.

Reason: to comply with the terms of the Town and Country Planning Act.

Notice of commencement

2. Not less than 21 days prior to the commencement of development[52] the Mineral Operator shall write to the Mineral Planning Authority stating the intended start date. The development shall not commence until the Mineral Planning Authority has confirmed in writing that all of the pre-commencement requirements set out in conditions 8 – 36 below have been complied with.

Reason: to ensure all matters that require attention prior to the commencement of development have been carried out in order to comply with the planning permission.

Time limit for completion

3. The development hereby permitted shall be completed[53] not later than 32 years from the commencement of development under Condition 2, and shall include restoration, soil placement, cultivation, seeding, and any other land management necessary to restore the land in accordance with the approved restoration scheme to an appropriate condition to enter aftercare.

Reason: to ensure that the development is completed in accordance with the expected timescales specified in the application, to comply with the aims, objectives and policies of the Hertfordshire Minerals Local Plan 2007.

Removal of quarry infrastructure

4. The quarry use shall be discontinued not later than 32 years following the commencement of development, as specified in Condition 2, and the land shall be restored in accordance with the approved plans pursuant to Condition 5. All plant, machinery, buildings, waste material and hardstanding areas shall be removed and the land reinstated in accordance with the approved restoration plan and provision shall be made for an access road and car park to serve the use of the land as

[52] For the purpose of Condition 2, the commencement of development will include any part of the works shown on drawing HQ 3/6 Initial Site Preparation Dec 2015
[53] For the purpose of Condition 3, completion of development shall include mineral extraction and restoration, but not aftercare

a Park in accordance with the indicative restoration plan.

Reason: to ensure the land is restored to the proposed afteruse at the earliest opportunity and to high environmental standards, in accordance with Minerals Policies 13 (Reclamation) and 14 (Afteruse) of the Hertfordshire Minerals Local Plan Review 2007 and the NPPF 2019 (paragraphs 204 and 205)

Approved plans

5. The development is restricted to the development shown on the plans, drawings, and documents listed in the schedule of approved drawings below, or as may be subsequently amended under section 73 or 96A or the Town and Country Planning act 1990. The development shall be carried out in accordance with the planning conditions set out in this notice:

Plans		
HQ 2/1	Site Location Plan	Nov 2015
HQ 2/3	Topographic Survey	Nov 2015
HQ 3/1	Overall Phasing/General Layout	Nov 2015
HQ 3/2	Entrance Design	Nov 2015
HQ 3/3	Plant Site (Masterplan)	Nov 2015
HQ 3/4	Processing Plant Detail	Nov 2015
HQ 3/5	Plant Elevations	Nov 2015
HQ 2/2	Application Site Layout	Nov 2015
HQ 3/6	Initial Site Preparation	Dec 2015
HQ 3/7	Phase A – Illustration	Dec 2015
HQ 3/8	Phase B – Illustration	Dec 2015
HQ 3/9	Phase C – Illustration	Dec 2015
HQ 3/10	Phase E – Illustration	Dec 2015
HQ 3/11A	Illustrative Restoration Concept	Aug 2016
HQ 3/12	Illustrative Sections	Dec 2015
HQ 3/13	Phase D – Illustration	Aug 2016
HQ 3/14	Phase F – Illustration	Aug 2016
HQ 3/15	Phase G – Illustration	Aug 2016

Documents	
Environmental Statement	Feb 2015
Transport Chapter Addendum	Aug 2016

Reason: (1) to ensure the development complies with the planning application, (2) to ensure effective monitoring progress of mineral extraction and restoration in accordance with the timescales set out in the application, and (3) to comply with section 96A of the Town and Country Planning Act 1990.

Processing plant and buildings

6. Prior to the commencement of mineral extraction, fully specified drawings of the processing plant and buildings, to include cross section drawings, shall be submitted to and approved in writing by the Mineral Planning Authority. The cross section drawing shall clearly show proposed site levels for all plant, machinery and buildings, including:

- maximum height of footings level (finish floor level)
- maximum height of all plant, machinery and buildings
- the maximum depth of excavations for the lagoons.

The maximum height of plant and buildings for the processing plant and concrete batching plant shall not exceed 14 metres.

Reason: to minimise the visual impact of the development and in the interests of the openness of the Green Belt

Storage bunds and stockpiles

7. The maximum heights of storage bunds and stockpiles shall not exceed:
   - 3m - top soil
   - 4m - sub soil
   - 5m – stockpiles (minerals)

Reason: in the interests of visual amenity and the openness of the Green Belt.

Details of additional bunding and landscaping

8. Prior to the commencement of mineral extraction full details of additional bunding and landscaping shall be submitted to and agreed in writing by the Mineral Planning Authority for the following locations:

(i) adjacent to Popefield Farm;
(ii) on the western boundary and
(iii) immediately to the south of the processing plant

Full details shall be provided of the height, grading and relationship with adjoining land levels/ contours and existing vegetation on the boundary of the site. Development shall be carried out in accordance with the approved details.

Reason: in the interests of appropriate landscaping of the site and to protect exiting trees, in the interests of residential amenity, and to protect the setting of Popefield Farm; in accordance with Minerals Policy 12 (Landscape) and 13 (Reclamation) of the Hertfordshire Minerals Local Plan Review 2007, and Policies 70 and 74 of the St. Albans District Local Plan Review 1994.

Phasing plans

9. Prior to the commencement of mineral extraction in each Phase, a detailed working plan shall be submitted to show:

(a) the extent of the extraction area
(b) the location of screen bunds
(c) the location of soil stockpiles
(d) identification of top soil and sub soil storage areas
(e) description and illustration of measures for noise and dust mitigation
(f) the location of haul roads

The mineral extraction in each Phase shall take place in accordance with the plans submitted with the application listed in Condition 5 unless otherwise agreed under the terms of this condition.

The detailed restoration works shall be carried out in accordance with the programme agreed with the Mineral Planning Authority.

Reason: to ensure the extraction is carried out on a phased basis to ensure the land is restored at the earliest opportunity to high environmental standards in accordance with Policies 13 (Reclamation) and 14 (Afteruse) of the Hertfordshire Minerals Local Plan Review 2007 and the NPPF 2019 (paragraphs 204 and 205)

Construction Management Plan

10. Prior to the commencement of development, including the works shown on drawing HQ 3/6 Initial Site Preparation Dec 2015, a detailed construction management plan shall be submitted to and agreed in writing by the Mineral Planning Authority, to include details of:

- vehicle routing
- phasing - including timescales
- construction of the access ramp
- noise and dust mitigation measures

The Construction Management Plan shall be implemented as agreed in full for each Phase for the duration of the development.

Reason: to ensure any adverse impacts of development are mitigated

Access – enabling works

11. Prior to the commencement of the development hereby permitted detailed drawings to show the proposed means of access during the

site enabling works, as indicated on drawing HQ 3/6 Initial Site Preparation Dec 2015, shall be submitted to and approved in writing by the Mineral Planning Authority. The site shall be accessed via the approved means of access only throughout the period of the enabling works, unless otherwise agreed in writing by the Mineral Planning Authority.

Reason: in the interests of highway safety and residential amenity

New access

12. Prior to the commencement of mineral extraction, the site access onto the A1057, as indicated on drawing 402.01009.00064.14.H002 R4, shall be provided in accordance with the technical approval of the Highway Authority. The approved means of access shall be the only means of access for the purposes of mineral extraction and infilling for the duration of the development.

Reason: To ensure the provision of safe access in the interest of highway safety and amenity.

Visibility splays

13. Prior to the commencement of the site preparation works, as shown on drawing HQ 3/6 Initial Site Preparation Dec 2015, visibility splays measuring 4.5 x 120 metres shall be provided on both sides of the proposed site access on Hatfield Road where it meets the highway. The visibility splays shall be maintained free from any obstruction between 600mm and 2m above the level of the adjacent highway carriageway at all times.

Reason: In the interests of highway safety.

HGV routing

14. Prior to the commencement of mineral extraction, an HGV Routing Plan shall be submitted to and approved in writing by the Mineral Planning Authority that shall provide for vehicles exiting the site left only east bound to the A1001. The HGV Routing Plan shall include:

- a plan illustrating the route between the site and Comet Way/ A1(M) via the A1057
- measures to ensure all vehicles exit the site left only and travel eastbound on the A1057/Comet Way (A1001)/A1(M);
- means to ensure compliance with the routing plan; and
- enforcement measures

The site shall be operated in accordance with the approved HGV routing plan throughout the operation of the development[54] and shall apply to all HGV movements related to (a) the export of minerals from the site, and (b) the importation of inert material for restoration, and (c) operation of the concrete batching plant

Reason: In the interests of highway safety and amenity.

Traffic Management Scheme

15. Prior to the commencement of the development, as shown on drawing HQ 3/6 Initial Site Preparation Dec 2015, a Traffic Management Scheme shall be submitted and approved in writing, to include:

- a detailed plan to show the site layout between the junction with the public highway and the weighbridge to, include sufficient provision for queuing vehicles to stand clear of the highway and a loop road to return HGVs to the public highway
- a clear protocol for managing HGV arrivals and departures at peak times, including a managed system for HGV arriving at the site;
- haul road signage
- schedule of cleaning and maintenance of the haul road;
- operation of a wheel washing facility

The approved Traffic Management Scheme shall be implemented and operated in throughout each phase of the mineral working

Reason: In the interests of maintaining highway efficiency and safety.

Public highway - condition survey

16. Prior to the commencement of mineral extraction, and subsequently for each calendar year over the lifetime of the development, the mineral operator shall carry out a condition survey of the section of public highway between the site access and the access to Popefield Farm. The condition survey shall assess any abnormal wear and include proposals to remedy any damage to the highway surface, as may be necessary. The condition survey shall be carried out by a highway engineer and submitted in accordance with a timetable to be agreed with the Mineral Planning Authority. Any works necessary to remedy abnormal wear and tear identified by the condition survey shall be remedied in accordance with a timetable approved by the Mineral Planning Authority.

Reason: in the interest of highway safety.

[54] For the purpose of condition 14 this means mineral extraction and restoration

Provision of parking and servicing areas

17. Prior to the commencement of mineral extraction, sufficient space shall be provided within the site to enable HGVs to park, turn and re-enter the highway in a forward gear. A detailed scheme showing the levels, surfacing and drainage of these areas shall be submitted to and approved in writing by the Mineral Planning Authority. The parking and turning space within the site shall be provided in accordance with the approved scheme and maintained for the lifetime of the development.

Reason: In the interests of satisfactory development and highway safety

Right of Ways – detailed plans

18. Prior to the commencement of mineral extraction, detailed plans to include cross section drawings to show the detailed design and construction for public rights of way shall be submitted to and approved in writing by the Mineral Planning Authority. The details plans shall indicate:

    i. Proposed improvements to the width and surfacing of the footpath opposite the site access between nos. 403 and 616 St Albans Road West;
    ii. upgrading / surfacing for the new public bridleways, in accordance with the Rights of Way Good Practice Guide Surfacing Specifications for Hertfordshire;
    iii. provision of safe and level access, width and design suitable for wheelchair users, cyclists and horse riders for new public bridleways within the site.

    The detailed design shall have regard to the Good Practice Guide for Rights of Way Hertfordshire

    The new rights of way implemented under this condition shall accord with the approved detailed design

    Reason: In the interests of sustainable travel, to ensure that all pedestrians and cyclists can conveniently travel to and from the development.

Archaeology

19. Prior to the commencement of the works shown on drawing HQ 3/6 Initial Site Preparation Dec 2015, the mineral operator shall submit an Archaeological Written Scheme of Investigation for approval in writing by the Mineral Planning Authority. The scheme shall include an

assessment of archaeological significance and research questions; and:

i. The programme and methodology of site investigation and recording;
ii. The programme and methodology of site investigation and recording as suggested by further archaeological evaluation;
iii. The programme for post investigation assessment;
iv. Provision to be made for analysis of the site investigation and recording;
v. Provision to be made for publication and dissemination of the analysis and records of the site investigation;
vi. Provision to be made for archive deposition of the analysis and records of the site investigation;
vii. Nomination of a competent person or persons/organisation to undertake the works set out within the Archaeological Written Scheme of Investigation.

Reason: to ensure that adequate opportunity is provided for archaeological research on this likely historically important site.

The minerals workings shall be undertaken in accordance with the approved written scheme of investigation for the lifetime of the development

Dust suppression scheme

20. Prior to the commencement of mineral extraction, the mineral operator shall submit a dust suppression scheme to demonstrate how dust will be controlled at source during each Phase and for the duration of the development. The scheme shall provide measures aimed at removing and reducing dust emissions at source, and appropriate mitigation measures, to include (but not limited to):

- the use of water to dampen haul roads and stockpiles,
- installation of air quality monitoring equipment in locations to be agreed as part of the approved scheme;
- review of air quality monitoring data by an air quality monitoring professional;
- action plan for managing dust; including a protocol for restricted working when the wind speed/direction may result in dust being carried from the site affecting nearby properties
- The measures comprising the scheme shall be fully implemented at all times when the site is operational.

The development shall be undertaken in accordance with the approved dust suppression scheme for the lifetime of mineral extraction and restoration

Reason: in the interest of public amenity; to protect the living conditions of the neighbouring properties; to ensure that the development does not have an adverse impact upon human health; and to comply with the NPPF 2019 (paragraph 204) and Policy 70 of the St. Albans District Local Plan Review 1994.

Landscaping and planting scheme

21. Prior to the commencement of mineral extraction, a detailed landscaping scheme for advance planting within the site and on site boundaries shall be submitted to and approved in writing by the Minerals Planning Authority. The scheme shall include:

    a) provision of permanent woodland planting south of the plant area;
    b) plant specifications, species, size, spacing and number of trees and shrubs to be planted and measures to protect and maintain the trees and shrubs in accordance with good practice;
    c) plans to show the position, species type and size of all existing trees, shrubs and hedgerows to be retained, and the proposals for their protection throughout the operations;
    d) details of hard landscaping, entrances gates other means to secure the site, to include the location, type and height of proposed fencing to prevent public access to operational areas;
    e) a programme to implement the scheme

    The approved scheme shall be implemented in full within the first available planting season for each phase of the restoration in accordance with British Standards.

    Reason: to provide for appropriate landscaping of the site in accordance with Policy 12 (Landscape) of the Hertfordshire Minerals Local Plan Review 2007

Ecology - Biodiversity and Habitat Management Plan

22. Prior to the commencement of enabling works, as shown on drawing HQ 3/6 Initial Site Preparation Dec 2015, a Biodiversity and Habitat Management Plan shall be submitted to the Mineral Planning Authority. The Plan shall include detailed proposals to achieve a net enhancement to biodiversity during mineral extraction and restoration and upon completion of the development. The Plan shall include a schedule of management proposals and long term biodiversity objectives, and set out responsibilities and mechanisms to achieve the long term objectives

    The development shall be undertaken in accordance with the approved biodiversity and habitat management plan for the lifetime of mineral extraction and restoration

Reason: to ensure appropriate compensation and enhancement of habitats in accordance with the NPPF (paragraph 109)

Ecology - Habitat Management Plan – Great Crested Newts

23. Prior to the commencement of mineral extraction a Habitat Management Plan for Great Crested Newt populations within the site shall be submitted to and approved in writing by the Mineral Planning Authority, to include habitat areas on adjoining land at Home Covert, and measures to safeguard populations of Great Crested Newts during mineral extraction through safeguarding areas and exclusion fencing, and measures to translocation populations on a phased basis. The measures contained within the Plan shall be implemented prior to the commencement of development.

Reason: to ensure the favourable conservation status of the species is maintained.

Ecology - habitat licence

24. Prior to the commencement of the enabling works shown on drawing HQ 3/6 Initial Site Preparation Dec 2015, the necessary licences required under the Wildlife Acts and Habitats Directive shall be obtained.

Reason: to ensure that any works having the potential to affect protected species are carried out under the appropriate licence to maintain the favourable conservation status of the species.

Ecology - mitigation

25. Prior to the commencement of the enabling works shown on drawing HQ 3/6 Initial Site Preparation Dec 2015, and subsequently prior to soil stripping in each Phase, the mitigation measures detailed in the ecological survey shall be carried out in accordance with a programme to be agreed in writing with the Mineral Planning Authority.

Reason: to mitigate the impact on habitats and protected species and to provide appropriate contribution of nature conservation; in accordance with the NPPF (paragraph 109) and Policies 74 and 106 of the St. Albans District Local Plan Review 1994.

Groundwater

26. Each phase of the development hereby permitted shall not commence until a Water Monitoring & Management Plan, including a timetable of monitoring and submission of reports to the local planning authority, has been submitted to, and approved in writing by, the local planning authority. Reports as specified in the approved plan, including details of

any necessary contingency action arising from the monitoring, shall be submitted to, and approved in writing by, the local planning authority.

Reason To protect controlled waters and to not exacerbate the existing groundwater pollution.

- **ensuring no deleterious impact to groundwater quality, in accordance with Policy 16 (Soil, Air and Water) of the Hertfordshire Waste Core Strategy 2012;**
- **To prevent development that would have an unacceptable risk or adversely affect water pollution;**
- **To minimise the risks associated the flow and quantity of surface and groundwater and migration of contamination from the site, in accordance with paragraph 143 of the NPPF.**

The Water Monitoring and Management Plan for each phase shall refine the Groundwater and Water Management Plan. Final (Version 5). Prepared for: Brett Aggregates Limited by SLR consulting and shall include:

1. Details of construction and water management during construction of the two infiltration lagoons.
2. Clarification of the restored site discharge point for the UML back-drain.
3. A long-term groundwater monitoring plan to continue during and post the operational phase.
4. A mechanism for periodic review.

The plan should include monitoring and reporting programs, location of monitoring points including additional monitoring boreholes particularly in the vicinity of the infiltration lagoons, analytical suites, limits of detection and groundwater level monitoring. Details of contingency actions in the event of impact shall also be included. The two infiltration lagoons and back drain shall be constructed in accordance with the approved Groundwater Management Plan prior to the commencement of mineral extraction.

Groundwater monitoring shall be conducted by the Mineral Operator in accordance with the long-term groundwater monitoring plan for the lifetime of the development. Prior to mineral extraction in each Phase, the Groundwater Management plan shall be reviewed and an updated plan submitted and approved in writing by the Mineral Planning Authority.

The management of water shall be carried out in accordance with the approved Plan, or as otherwise agreed by the Mineral Planning Authority under the periodic review process, for the lifetime of the development.

<u>Public access strategy</u>

27. Prior to the commencement of mineral extraction, and subsequently

prior to mineral extraction in each Phase, detailed proposals for managed public access shall be submitted to and approved in writing by the Mineral Planning Authority.

The proposals shall clearly define areas where public access is allowed and exclusion zones for each Phase. The Access Strategy shall provide an appropriate level of public access to un-worked and restored areas of the site during the lifetime of the quarry. Footpaths shall be clearly sign posted. Fencing of an appropriate height and design shall be provided to deter unauthorised or unintended access to the mineral workings and plant site. Warning signs shall be erected to clearly indicate working areas.

The Access Strategy shall comprise a plan and a written statement.

Reason: to ensure the maximum opportunity for public access to areas non-worked and restored areas; to protect members of the public from exposure to risk from quarrying activities; in the interests of visual and public amenity; to protect and enhance public rights of way in accordance with the NPPF (paragraph 74) and Policy 74 of the St. Albans District Local Plan Review 1994.

Air Quality monitoring – baseline conditions

28. Prior to the commencement of the development the mineral operator shall undertake a minimum of 6 months continuous air quality monitoring, in locations to be agreed with the local Environmental Health department, to measure existing baseline air quality. Air quality measurements shall be recorded for a minimum of 12 months following the commencement of sand and gravel export from the site. A report of air quality information gathered by the monitoring equipment shall be submitted to the Mineral Planning Authority for each day of the 12 month period

Reason: to establish an accurate baseline reading of existing conditions, and demonstrate fluctuations in air borne particles related to vehicle emissions from the site in the interests of human health.

Noise monitoring

29. Prior to the commencement of mineral extraction, and subsequently prior to mineral extraction in each phase of development, a noise management strategy shall be submitted to and agreed in writing by the Mineral Planning Authority. The strategy shall indicate locations for noise monitoring equipment on the site boundary nearest to sensitive receptors and include mitigation measures such as soil bunds and acoustic barriers as may be necessary to ensure compliance with maximum noise standards in the National Planning Practice Guidance.

The strategy shall be implemented in full as approved for the lifetime of the development.

Reason: to ensure compliance with accepted noise standards

Water Management Plan

30. Prior to the commencement of mineral extraction in each Phase, a water management plan shall be submitted and approved in writing by the Mineral Planning Authority. The water management plan shall detail measures to manage water from the lagoons, including an exceedance route for discharge of water from the lagoons as surface water under exceptional circumstances, and include a mechanism for periodic review. The management of water shall be carried out in accordance with the approved Plan, or as otherwise agreed by the Mineral Planning Authority under the periodic view process, for the lifetime of the development.

Reason: to minimise the risk of surface water flooding and in the interests of water quality.

Landscape Management Plan

31. Prior to the commencement of development a landscape management plan, including long-term design objectives, management responsibilities and maintenance schedules for all landscaped areas shall be submitted to and approved in writing by the local planning authority. The landscape management plan shall be carried out as approved and any subsequent variations shall be agreed in writing by the local planning authority.

The scheme shall include the following elements:

- details extent and type of new planting
- details of maintenance regimes
- details of any new habitat created on site
- details of treatment of site boundaries and/or buffers around water bodies
- details of management responsibilities

Reason: to contribute to enhancement of biodiversity by establishing ecological networks; to protect wildlife and their habitats and secure opportunities for the enhancement of the nature conservation value of the site (NPPF, paragraph 109); and to take the opportunities to incorporate biodiversity in and around developments (NPPF, paragraph 118).

Overburden handling - method statement

32. Prior to the commencement of mineral extraction in each Phase, a method statement for the handling of overburden material shall be submitted to and approved in writing by the Mineral Planning Authority. The method statement shall include plans and cross sections as necessary showing the height and location of stockpiles, indicate the maximum duration for bunds and stockpiles to be retained in-situ, and provide for the removal of stockpiles upon completion of restoration in each Phase.

Reason: to ensure the excavated volumes of material are managed effectively within the site and to in the interests of public and visual amenity.

Gas Pipeline – safeguarding

33. Prior to the commencement of development a Gas Pipeline Management Plan shall be submitted to and agreed in writing by the Mineral Planning Authority to include plans and cross sections and clearly indicate minimum working distances between the haul road and mineral extraction areas and the gas pipeline. The minimum working distances, as agreed with energy infrastructure company (National Grid), shall be maintained at all times during the workings.

Reason: to ensure the integrity of the energy infrastructure.

Controlled Access

34. Prior to the commencement of development, including the works shown on drawing HQ 3/6 Initial Site Preparation Dec 2015, the Mineral Operator shall submit details of a barrier controlled access within 100m of the site access junction with the A1057, to include:

- weighbridge
- raised viewing platform to view loads;
- a double gate security system
- a loop route for vehicles to return to the public highway at the weighbridge
- gates to secure the site access outside operational hours;
- signage setting out conditions of entry
- advance signage to indicate when the site is open / closed

The Mineral Operator shall keep accurate records of each HGV entering the site to deposit waste, to include: the waste carrier licence; the type of waste; the origin of the waste, vehicle weight; registration of the vehicle, and company name, for each Phase for the lifetime of the development.

Reason: in the interest of highway safety, condition of the highway and the free flow of traffic.

Wheel cleaning facilities – for construction vehicles

35. Prior to the commencement of the works shown on drawing HQ 3/6 Initial Site Preparation Dec 201, and subsequently prior to the commencement of mineral extraction in each Phase of the development, wheel washing facilities shall be provided and maintained in a usable condition. HGVs shall not be permitted to exit the site until the wheels and chassis are free from mud and debris.

Reason: To prevent mud and debris from the site being deposited on to the highway.

TIME LIMITED CONDITIONS

Landscaping scheme for restoration

36. Within 12 months of the commencement of mineral extraction, a detailed landscaping scheme shall be submitted for approval; to include: a written statement and detailed illustrations for each phase of the mineral workings, illustrated as Phases A-G on the approved plans, to include the following information:

a) The provision of woodland planting within the site in accordance with Landscape Management Document principles 20-30%;
b) the maintenance and defects liability period should be minimum 5 years;
c) details of removal / retention of tree planted mounds / buffer planting;
d) details of footpaths design to conserve and enhance the rural character and visual amenity;
e) clear strategy for the siting and design of interpretation boards;
f) siting and design of car park;
g) provision of security fencing;
h) details of the treatment of Nast Culvert;
i) timescales for implementation

The approved scheme shall be implemented within 12 months of soil placement in each phase.

Reason: to provide for satisfactory landscaping of the site in accordance with best practice and in accordance with Minerals Policy12 Landscaping.

Phased restoration scheme

37. Within 6 months of completion of mineral extraction in each Phase of the development, a detailed restoration scheme shall be submitted for approval to include:

a) calculation of the volume of fill material required to complete restoration;
b) cross section drawing to show:
- the depth of the mineral void; and
- the depth and final levels of:
  - fill material
  - sub soil
  - topsoil
  - final restored contours

The scheme shall be approved in writing by the Mineral Planning Authority prior to the commencement of infilling. Each Phase of the development shall be restored in accordance with the approved phased restoration scheme for that Phase.

Reason: to ensure a satisfactory restoration is achieved

Marker levels

38. Prior to the infilling within 1m of the finish levels in each phase, marker levels shall be erected to show the final fill levels, sub soil and top soil levels. The site operator shall give the Minerals Planning Authority not less than 3 working days notice in writing that filling within any area of the site is approaching 1 metre of final levels.

Reason: to ensure the restoration levels are suitable for the proposed restoration in accordance with the approved plan, and in accordance with Policies 13 (Reclamation Scheme) and 14 (Afteruse) of the Hertfordshire Minerals Local Plan Review 2007.

Restoration Programme & Monitoring

39. Within 12 months of the commencement of mineral extraction in each Phase, the Mineral Operator shall submit a detailed restoration programme setting out:

- progress with restoration in each Phase;
- progress with mineral extraction for the preceding 6 months;
- groundwater monitoring
- management of water storage volumes de-watering regime monitoring over the preceding 6 months;
- proposals for de-watering in the following 6 months;
- groundwater (levels and quality) from monitoring boreholes over the preceding 6 months;
- surface water quality monitoring for the UMH/LMH lagoons;
- proposals for biodiversity enhancements;
- management of the restored land;
- arrangements with the Ellenbrook Park Trust

The Mineral Operator shall provide a written report of the preceding 6 months monitoring, to include illustrations as appropriate, and proposals for the following 6 months.

The Mineral Planning Authority will provide an annual monitoring programme at the start of each calendar year and provide the Mineral Operator with a written report after each meeting setting out any agreements and actions for the following 6 months.

Reason: to ensure a satisfactory programme of progressive restoration in each Phase and to provide for restoration and aftercare at the earliest opportunity to be carried out to high environmental standards in accordance with the National Planning Policy Framework 2012 (paragraph 144) and in accordance with Minerals Policy 13 Restoration Scheme of the Hertfordshire Minerals Local Plan Review 2002-2016 Adopted March 2007;

Aftercare

40. Within 6 months of the date of this planning permission, and subsequently prior to the commencement of mineral extraction in any subsequent phase, an aftercare scheme requiring such steps as may be necessary to bring the land to the required standard suitable for the proposed conservation afteruses shall be submitted for the written approval of the Minerals Planning Authority. The scheme shall specify the steps as may be required to achieve and maintain the standards required for the proposed conservation afteruses:

a) cover a five year period;
b) specify all practical steps and periods during which they are to be taken;
c) contain provision for the submission of an annual report to be submitted to the Minerals Planning Authority;
d) contain provision for site meetings on at least an annual basis with officers of the Minerals Planning Authority and any relevant consultee in order to assess the progress to date, any remedial action required, and the management of the site for the following year.

The approved aftercare scheme shall be implemented in full on completion of restoration or completion of restoration of any working phase, and shall be carried out for a period of ten years following restoration or restoration of each phase (as appropriate).

Reason: to ensure the proposal meets the aftercare requirements set out in Policy 14 (Afteruse) of the Hertfordshire Minerals Local Plan Review 2007, and in particular (i) enhances the character of the local area ensure (ii) is a benefit to the local community (iii)

provides for increased public access and (iv) enhances biodiversity.

Air quality monitoring scheme

41. Prior to the commencement of soil stripping within each Phase, the mineral operator shall submit proposals comprising an air quality monitoring scheme to the Mineral Planning Authority for approval, to include:

- proposals for siting air quality monitoring equipment adjacent to the site boundary, including a plan showing their location
- details of the type, make, model, and specification;
- a programme of monitoring air quality on a weekly and/or monthly basis;
- a monthly report of NOx and PM10 levels for each working day

The air quality monitoring scheme shall be approved in writing prior to the commencement of soil stripping in each Phase.

The air quality monitoring equipment shall be installed prior to the commencement of soil stripping in each Phase.

The monthly air quality monitoring report shall be submitted for each in accordance with a programme to be agreed with the Mineral Planning Authority.

Reason: to assess real-time changes in air quality related to air borne dust emissions from the site in the interests of human health.

42. The development shall take place in accordance with the programme of archaeological works set out in the approved Written Scheme of Investigation. The site investigation and post investigation assessment shall be completed in accordance with the programme set out in the Written Scheme of Investigation within 12 months of the commencement of mineral extraction in each Phase. Provision shall be made for analysis and publication where appropriate.

Reason: to ensure that adequate opportunity is provided for archaeological research on this likely historically important site; to comply with Policy 111 of the St. Albans District Local Plan Review 1994.

43. No tree or hedge removal shall take place during the bird breeding season (March to August inclusive)

Reason: to protect breeding birds, their nests, eggs and young.

Noise – maximum levels

44. The maximum noise levels generated by the operations at the site shall not exceed 55dB LAeq (1 hour) measured at the boundaries of the site. During temporary operations, including soil stripping, bund construction, and soil placement, noise levels measured at the boundary of the site shall not exceed 70dB LAeq (1 hour). At all other times noise shall not exceed 10dB LAeq (1 hour) above the background levels measured at the nearest sensitive receptor.

Reason: in the interests of residential amenity in line with Policy 70 of the St. Albans District Local Plan Review 1994; to comply with maximum noise levels specified in the National Planning Policy Guidance.

Noise - vehicle maintenance

45. All vehicles, plant and machinery operated within the site shall be maintained in accordance with the manufacturer's specification at all times, and shall be fitted with and use effective silencers.

Reason: in the interests of residential amenity.

Hours of operation

46. The hours of operation of the site, where mineral extraction and processing is permitted are limited to:

- 07:00 to 18:00 hours Monday to Friday; and
- 07:00 to 13:00 hours on Saturdays

There shall be no operations, including the use of machinery, mineral processing and waste disposal outside of the above hours. No working is permitted on Sundays or Bank Holidays, unless otherwise agreed in writing by the Mineral Planning Authority under exceptional circumstances. For the purposes of this condition operations shall include vehicle movements connected with the importation of waste.

Reason: to limit the disruption caused by mineral working and processing and HGV movements upon the local area; in the interests of residential amenity; to comply with Policy 70 of the St. Albans District Local Plan Review 1994.

HGV movements

47. There shall be not more than 174 HGV movements (87 in, 87 out) on each day from Mondays to Fridays, and not more than 108 HGV movements (54 in, 54 out) on Saturdays unless otherwise agreed in writing in advance with the Mineral Planning Authority. The above

maximum figures shall be applied to all operations at the site, to include all HGV movements related to:

- sand and gravel export,
- operation of the concrete batching plant, and
- waste importation.

The Mineral Operator shall keep written records of all HGVs entering and exiting the site for the lifetime of the development. The written records shall be made available upon request for inspection by the Mineral Planning Authority.

Reason: In the interests of highway safety and local amenity.

Single access

48. Upon commencement of mineral extraction and thereafter at all times, HGVs shall enter / exit the site only via the approved access onto A1057 St Albans Road West, as indicated on drawing 402.01009.00064.14.H002 Revision R0. No other vehicular access shall be provided to the site.

Reason: in the interest of highway safety

HGV routing

49. The junction design shall include measures so that all HGVs exit the junction with Hatfield Road (A1057) left only (eastbound) and are routed to Comet Way (A1001). The junction design shall be implemented in accordance with the approved plans. The left only arrangement shall be maintained for the lifetime of the development.

Reason: in the interests of highway safety and amenity. .

Mud on highway

50. The operator shall take steps to ensure that mud and debris is prevented from being carried out of the site and deposited onto the public highway. No Heavy Goods Vehicle shall exit the site and join the public highway unless and until their wheels and chassis have been thoroughly cleaned.

Reason: to prevent the deposit of mud onto the road; in the interest of highway safety and amenity.

Extent of working

51. With the exception of enabling works, including construction of the silt lagoons and ecological mitigation works, no mineral extraction shall take place -

a) within the processing plant area, as shown on drawing Aggregate Processing Plant on drawing on drawing HQ 3/3 - Plant Site (Masterplan) - November 2015; and
b) outside the maximum extent of the mineral extraction area shown on drawing HQ 3/6 - Initial Site Preparation - December 2015.

Reason: to minimise the environmental impacts of mineral working.

Mineral extraction method

52. Unless otherwise agreed in writing mineral extraction shall take place in accordance with the methods proposed in the planning application based on the use of excavators and dumpers.

Reason: to minimise the environmental impacts of mineral extraction.

Inert waste only

53. No material shall be disposed of at the site other than inert waste within the waste types specified in the Environmental Permit issued by the Environment Agency.

Reason: to minimise the risk of pollution to land and water and to ensure the material used in reclamation is appropriate for the proposed afteruse

Waste volumes

54. The maximum volume of waste imported and disposed of at the site shall not exceed the volume necessary to achieve the approved restoration contours.

Reason: to ensure the site is restored in accordance with the planning permission and to limit the impact to the highway network.

Weighbridge records

55. The weighbridge shall be maintained in a working condition through the lifetime of the development. The mineral operator shall keep accurate weighbridge records of the volume of waste material imported to the site. All HGVs entering the site must be weighed on before entering the site and weighed off before exiting the site. The Mineral Operator shall keep daily records of the volumes of waste imported to the site during each phase of the restoration.

Reason: to ensure the volume of waste imported and disposed of at the site is the minimum necessary to achieve the approved development.

Waste storage, sorting and processing

56. With the exception of engineering material required for the construction of the landfill barrier/buttress, no importation, storage, sorting, processing, or stockpiling of waste or other material is permitted at the site. No engineering material for use in the construction of the landfill barrier/ buttress shall be imported or stored on site until detailed plan(s) to show the volume, location and height of stockpiles has been submitted to and agreed in writing by the Mineral Planning Authority. Storage of engineering material shall only take place in accordance with the approved plan(s). On completion of restoration all engineering material shall be removed from site and the land restored in accordance with the approved restoration plans.

Reason: in the interests of amenity and to maintain the purposes of the Green Belt.

Water resources and groundwater protection

57. Operations shall not be carried out in such a way as to cause any adverse change in flows or levels in any rivers, streams, ditches, springs, lakes or ponds in the vicinity of the site.

Reason: to avoid having an adverse impact on the water environment

Storage of liquid fuel, oil or chemicals

58. All fuel, oil and other liquid chemicals used or stored on site shall be kept in bunded storage tanks or bowsers. No fuel, oil, or other chemical likely to cause pollution to surface or groundwater shall be deposited at the site.

Reason: to minimise the risk of pollution of soils and groundwater.

59. Any storage tank for oil or other potentially polluting liquid used on site shall be located on an impervious base and surrounded by oil tight bund walls or within another liquid container, which shall be capable of containing 110% of the volume of the storage tank and shall enclose all fill and draw pipes and sight gauges. The vent pipe shall be directed downwards into the bund.

Reason: to contain any fuel spills minimise pollution risks

Chalk Aquifer protection

60. No excavations shall take place at the base of the quarry within 1m of the chalk aquifer.

Reason: to protect the aquifer and minimise the risk of groundwater contamination.

Groundwater protection

61. No solid matter shall be deposited so that it passes or is likely to pass into any watercourse.

Reason: to prevent contamination of groundwater.

Groundwater monitoring

62. Real-time monitoring of groundwater levels in boreholes adjoining the mineral workings shall be undertaken at all times throughout the lifetime of the development. No dewatering of the mineral workings shall take place if the groundwater levels are within 0.5m of surface levels of the adjoining land. No de-watering of the mineral working shall take place unless and until it has been demonstrated that it would not increase the risks of groundwater flooding to areas adjoining the site, and where it has been agreed in writing by the Mineral Planning Authority.

Reason: to minimise the risks associated with groundwater flooding.

Discharge of groundwater to surface water

63. No water shall be discharged from the storage lagoons to other storage facilities, or to any ordinary watercourse, including The Ellenbrook and The Nast, unless otherwise agreed in writing by the Mineral Planning Authority.

Reason: to ensure surface and ground waters are managed appropriately; in accordance with best practice for Sustainable Drainage Systems (SuDS).

Minimum working distances to boundaries

64. A minimum distance of 10m shall be maintained between the edge of perimeter bunds and the site boundary and no operations including mineral extraction shall take place within 10m of the site boundary.

Reason: to protect the root systems and viability of established trees and hedgerows along the site boundary in compliance with Policy 18 (v) of the Minerals Local for Hertfordshire 2002-2016 adopted in November 2007.

Hedgerows

65. All hedgerows removed as a result of the development shall be compensated for within the site through:

- advance screen planting, and
- boundary hedge and tree planting, and
- final restoration of the site

All new hedgerows shall:

- maximise the opportunities to create wildlife corridors;
- use appropriate native species and planting density;
- establish and define a pattern of enclosures within the site; and
- provide links to existing hedgerows and woodland adjoining the site.

All new hedgerows shall be planted in each Phase in accordance with the landscaping scheme approved under Condition 37.

Reason: to ensure appropriate compensation and enhancement of habitats; to contribute to the establishment of coherent ecological networks which are more resilient to current and future pressures, and thereby halting the overall decline in biodiversity, in accordance with the NPPF (paragraph 109)

Soil stripping

66. No soil stripping shall take place outside of the following times 01 March and 30 September in any calendar year without the prior written approval of the Mineral Planning Authority. Any request to strip soils between 01 March and 31 August shall be accompanied by a soil handling method statement

Reason: to protect soil condition and minimise soil degradation.

Soil handling

67. No indigenous soils (topsoil and subsoil) are to be removed from site or disposed as waste.

Reason: to ensure that soil resources for use in restoration are managed and retained on site in an appropriate condition for use in restoration and aftercare in accordance with Mineral Policies 13 (Reclamation Scheme) and 14 (Afteruse) of the Hertfordshire Minerals Local Plan Review 2002-2016

Pre-settlement Levels

68. On completion of all infilling the pre-settlement levels shall not exceed those shown on the approved Illustrative Restoration Concept drawing HQ 3/11A Aug 2016. After allowing for soil placement, the maximum height of the final landform shall not exceed 76 metres AOD.

Reason: to ensure that the final levels are appropriate and comply with the planning permission; to minimise the impact of the development upon the openness of the Green Belt

Notice prior to soil placement

69. The Mineral Operator shall provide the Minerals Planning Authority with a minimum of seven days notice prior to the commencement of works involving the movement, replacement or cultivation of topsoil or subsoil resources.

Reason: to ensure the Mineral Planning Authority has an opportunity to inspect the soil conditions and agree the method of working

Soils content for the 1m top layer of soils

70. Upon completion of infilling operations to the levels shown on drawing HQ 3/11A the final (top) 1m of soils shall be kept free from any material which may damage cultivation machinery or interfere with the subsequent conservation uses. Prior to topsoiling, the area shall be thoroughly ripped with a winged subsoiler at a depth of 300mm at a tine spacing of no more than 450mm and then at a depth of 600mm. All rocks, stones and other solid objects in excess of 75mm diameter on the surface following ripping shall be removed.

Reason: to ensure that soils are constituted of material suitable for the proposed afteruse.

Removal of permitted development rights

71. Notwithstanding the provisions of the Town and Country Planning (General Permitted Development) Order 1995 (as amended), or any Order amending, replacing or re-enacting that Order, planning permission shall be obtained for the erection of any building, fixed plant, fixed machinery or fixed structures on the land and the written agreement of the Minerals Planning Authority shall be obtained prior to the placing on site of any buildings or structures in the nature of portable plant.

Reason: in the interest of the openness of the Green Belt.

Public Right of Way

72. Other than the works necessary to facilitate the upgrade and legal

dedication of the new public rights of way as outlined above, all public right of way routes shall remain undisturbed and unobstructed at all times unless legally stopped up or diverted prior to the commencement of the development hereby permitted. The alignment of any public right of way shall be protected by temporary fencing/signing in accordance with details first submitted to, and approved in writing by, the Local Planning Authority throughout the course of the development.

Reason: To safeguard the rights of the public and in the interest of pedestrian safety.

Informatives

Section 278 Agreement (Highways Act)

- Any works within the highway boundary (including the proposed site access and removal of existing vegetation on highway land) will need to be secured and approved via a s278 Agreement with the HCC.
- A S278 Agreement will be required for improved pedestrian facilities along Hatfield Road (A1057) and for improved pedestrian links between the site and Alban Way.

S106 Agreement

- A s106 Agreement will be required to secure a Condition Survey prior to commencement of the use, in order to assess the condition of the highway within the vicinity of the site before the construction of the development and an updated version will be required at the completion stage. Where the development as a result of construction is likely to increase road degradation a highway bond of £30,000 should be secured via a Section 106 agreement prior to commencement on site.
- Herfordshire County Council will seek contributions via a S106 for improvements to both the Hatfield Road / Ellenbrook junction and the Hatfield Road / Comet Way junction. Contributions will be sought for an amount to be determined, based on Hertfordshire County Councils Planning Obligations Guidance Toolkit. The toolkit specifies that non-residential charges will be calculated at a rate of £1000 per one peak hour two-way trip. Based on 46 PCU's per peak hour, this equates to £46,000 towards the Hatfield Road / Ellenbrook junction and £46,000 towards the Hatfield Road / Comet Way junction. The financial contributions will need to be secured through a legal S106 agreement, with exact triggers for payment to be agreed between the parties.

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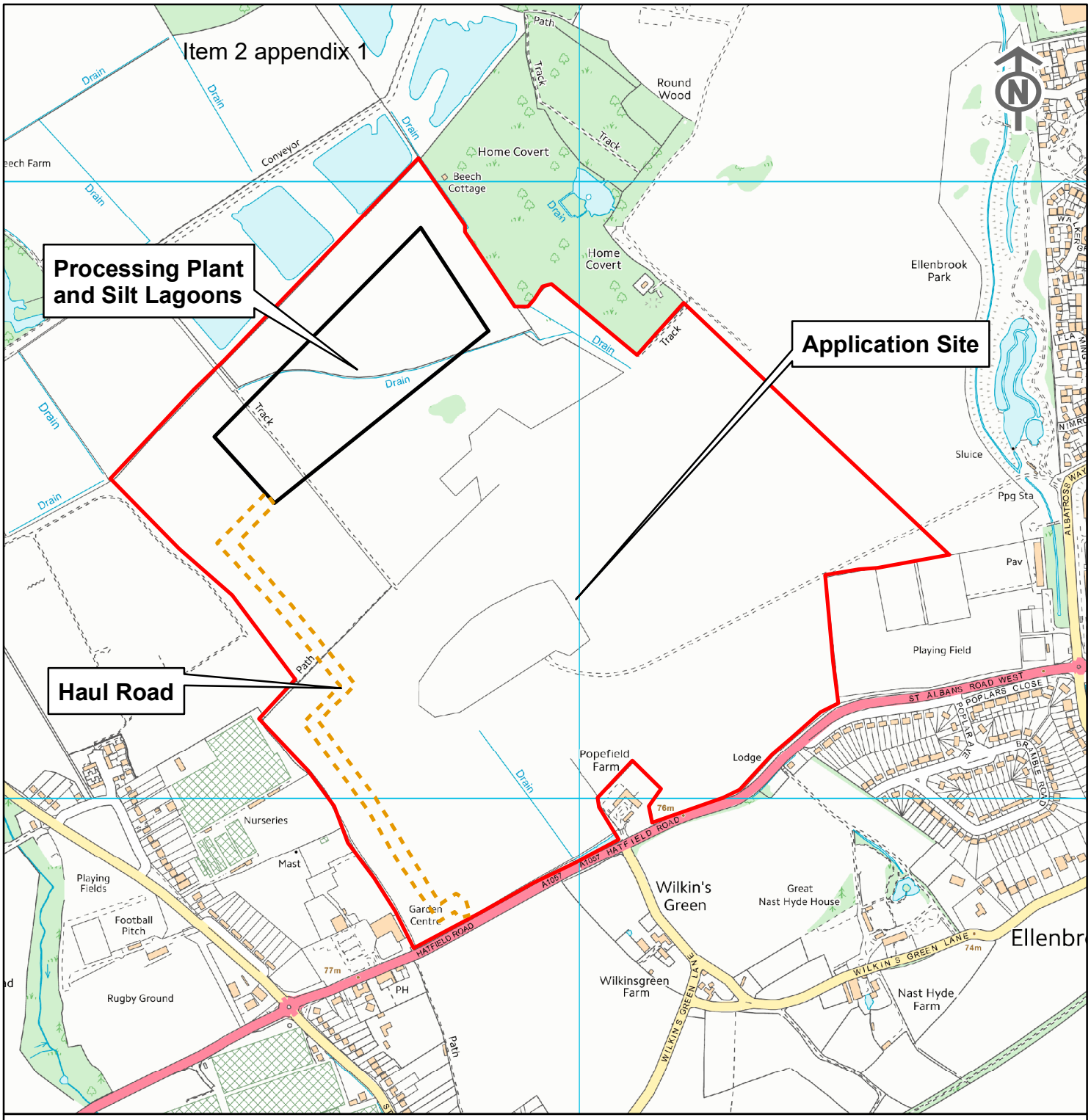

Hertfordshire

DEVELOPMENT CONTROL COMMITTEE
24th September 2020

Application for the establishment of a new quarry on land at the former Hatfield Aerodrome, including a new access onto the A1057, aggregate processing plant, concrete batching plant and other ancillary facilities together with the importation of inert fill materials for the restoration of the minerals working at land at Hatfield Aerodrome, Off Hatfield Road.

0 90 180 270 360 450 540 630 720 810 Meters

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EPHEMERAL RIVER NAST TO BE DIVERTED AROUND LANDSCAPE AND ECOLOGICAL CORRIDOR AROUND SITE BOUNDARY

PLANT SITE, STOCKPILES AND LAGOONS

TO BE STRIPPED OF TOPSOIL AND SUBSOIL TO A DEPTH OF 1m AND PLACED INTO TEMPORARY STORAGE AROUND PERIMETER. FORMATION LEVELS TO THEN BE BUILT UP TO EXISTING USING SUITABLE AS-DUG UMH FROM RECHARGE LAGOONS, AVERAGE 1.5m THICKNESS.

REFER TO DRAWING HQ 3/3 FOR PLANT SITE LAYOUT

PROPOSED ADVANCE HEDGEROW AND TREE PLANTING ALONG ECOLOGICAL CORRIDOR

NORTHERN PART OF PUBLIC RIGHT OF WAY DIVERTED AROUND SITE PERIMETER, ALONG ENHANCED LANDSCAPE AND ECOLOGICAL CORRIDOR

INTERNAL HAUL ROAD

TO BE STRIPPED OF TOPSOIL AND SUBSOIL TO A DEPTH OF 1m AND PLACED INTO TEMPORARY STORAGE AROUND PERIMETER.

ROAD TO THEN BE BUILT UP TO EXISTING USING AS-DUG FROM UPPER MINERAL LAGOON.

CROSSING POINT FOR PERMISSIVE PATH

UPPER AND LOWER MINERAL RECHARGE LAGOON AND ADJACENT STRIP TO SOUTH

TO BE STRIPPED OF TOPSOIL AND SUBSOIL TO A DEPTH OF 1m AND PLACED INTO TEMPORARY STORAGE AROUND PERIMETER.

THEN TO BE STRIPPED OF OVERBURDEN AND USED TO FORM PERIMETER SEALS AROUND LAGOONS, WITH SURPLUS PLACED INTO PERIMETER STORAGE MOUNDS ADJACENT.

IF SUITABLE, AS-DUG MINERAL TO BE USED TO BUILD FORMATION LEVELS IN PLANT SITE, STOCKING AREA AND INTERNAL ROADS.

INTERBURDEN TO BE STRIPPED FROM LMH LAGOON AND PLACED INTO PERIMETER STORAGE MOUNDS FOR LATER REUSE IN RESTORATION, EXPOSING LMH TO BE TAKEN TO PLANT SITE.

UMH RECHARGE LAGOON

LMH RECHARGE LAGOON

N:208500

N:208000

NEW INTERNAL ROAD TO BE CONSTRUCTED AT 10m STANDOFF TO GAS PIPE, AND TO INCORPORATE NEW DRAINAGE CHANNEL TO INTERCEPT SURFACE WATER AND STOCK-PROOF FENCE ON BOUNDARY.

TO BE STRIPPED OF TOPSOIL AND SUBSOIL TO A DEPTH OF 1m AND PLACED INTO TEMPORARY STORAGE AROUND PERIMETER.

SUBJECT TO SUITABILITY, FORMATION LEVELS TO THEN BE BUILT UP TO EXISTING USING AS-DUG UMH FROM RECHARGE LAGOONS, AVERAGE 1.5m THICKNESS.

SUBSEQUENT WEARING COURSE TO BE DETERMINED.

NAST TO BE DIVERTED TO STANDOFF TO EAST, TO CONNECT TO EXISTING CULVERT AT EDGE OF SITE

EXTRA PLANTING ON BUND

EXISTING NAST CULVERT. INVERT AT MONITORING POINT ALONG THE SIDE OF THE ROAD AT 71.78m AOD.

PERMISSIVE ROUTE TO CONNECT TO ROADSIDE PATH

ACOUSTIC FENCE TO BE CONSTRUCTED ALONG PART OF WESTERN SITE BOUNDARY, AS REQUIRED, TO INCLUDE CLIMBING PLANTS ON OUTSIDE FACE. ALIGNMENT TO BE AT 10m STANDOFF TO GAS PIPE

ROAD ACCESS

ACCESS POINT OVER BUND FOR PERMISSIVE PATH LEADING FROM ROADSIDE PATH

PROPOSED PERIMETER BUND

BUNDS TO INCLUDE SOILS FROM RECHARGE LAGOONS, ROADS AND PLANT SITE, WITH OVERBURDEN AND INTERBURDEN TO BE PLACED ALONGSIDE RECHARGE LAGOONS FOR BACKFILLING UMH LAGOON AS PART OF FINAL RESTORATION.

3m HIGH ALONG HATFIELD ROAD, 4m HIGH ELSEWHERE. 1:3 OUTER SIDE SLOPES ALONG PROW TO NORTH, HATFIELD ROAD TO SOUTH AND PLAYING FIELD TO SOUTH-EAST AND 1:2 SLOPES ELSEWHERE. 5M STAND OFF FROM TOE OF BUND TO EXTRACTION AREA AND SITE BOUNDARY.

TOPSOIL TO BE STRIPPED FROM BENEATH INTERBURDEN, OVERBURDEN AND SUBSOIL STORAGE BUNDS IN ADVANCE AND PLACED OVER THE TOP AS FINAL COVER. ALL BUNDS TO BE GRASS SEEDED. CONTRASTING UNITS TO BE SEPARATED BY GEOTEXTILE

0 50 100 150 200m 300 400 500

Metres 1:5000

LEGEND

- SITE BOUNDARY
- PROPOSED CONTOURS (2m INTERVALS)
- GAS PIPELINE ROUTE TAKEN FROM NATIONAL GRID DRAWING EA_TE_Z6_2S_16351
- MINERAL EXTRACTION AREA
- PUBLIC RIGHT OF WAY (INC DIVERTED SECTION)
- PERMISSIVE RIGHT OF WAY (INC DIVERTED SECTION)
- NAST CULVERT AND SURFACE WATER MONITORING POINT
- PROPOSED AREA OF DISTURBANCE FROM SITE PREPARATION WORKS
- PROPOSED PERIMETER STORAGE BUNDS
- PROPOSED PERIMETER SEALS
- LANDSCAPE AND ECOLOGICAL CORRIDOR
- UNDISTURBED LAND WITHIN APPLICATION SITE
- ADVANCE HEDGEROW AND STANDARD TREE PLANTING
- EXISTING VEGETATION

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HATFIELD AERODROME

PLANNING APPLICATION

INITIAL SITE PREPARATION

HQ 3/6

Scale	Date
1:5,000 @ A3	DEC 2015

160107_01009.00132.29.000_HQ3-6_SITEPREP1_SM.dwg

Agenda Pack Page 133
Item 2 Appendix 2

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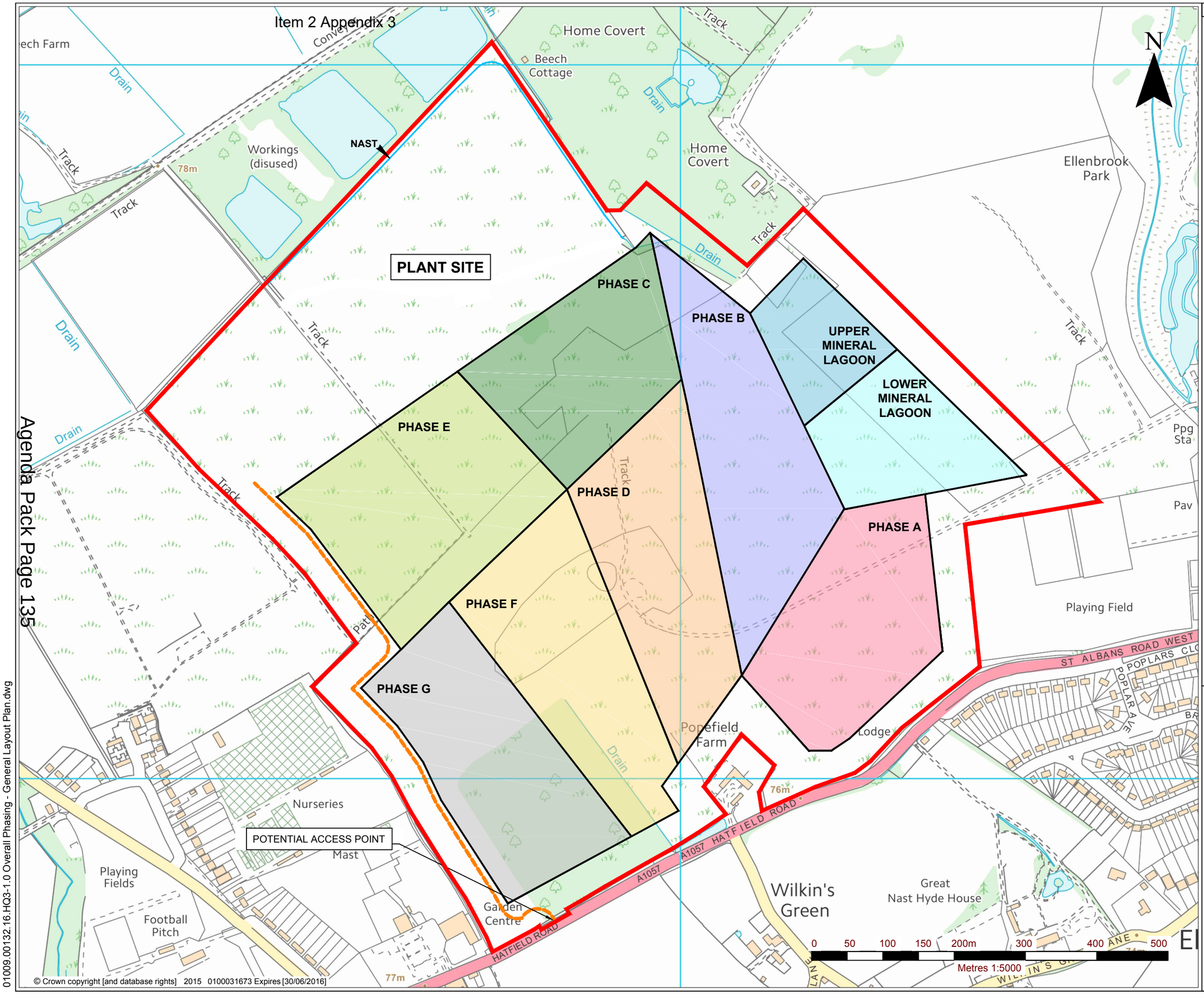

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LEGEND

- APPLICATION SITE BOUNDARY
- PHASE BOUNDARY
- ACCESS ROAD

PHASES

- PHASE A
- PHASE B
- PHASE C
- PHASE D
- PHASE E
- PHASE F
- PHASE G
- PHASE UPPER MINERAL LAGOON
- PHASE LOWER MINERAL LAGOON

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HATFIELD AERODROME

PLANNING APPLICATION

OVERALL PHASING / GENERAL LAYOUT

HQ 3/1

Scale	Date
1:5000 @ A3	NOVEMBER 2015

01009.00132.16.HQ3-1.0 Overall Phasing - General Layout Plan.dwg

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LEGEND

- MULTI PURPOSE PATH
- OTHER PATH
- INTERPRETATION BOARD
- EXTENT OF NATURE CONSERVATION AREA
- MARGINAL VEGETATION/ REEDBEDS

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HATFIELD AERODROME

PLANNING APPLICATION

ILLUSTRATIVE RESTORATION CONCEPT

HQ3/11A

Scale	Date
NTS @ A3	AUGUST 2016

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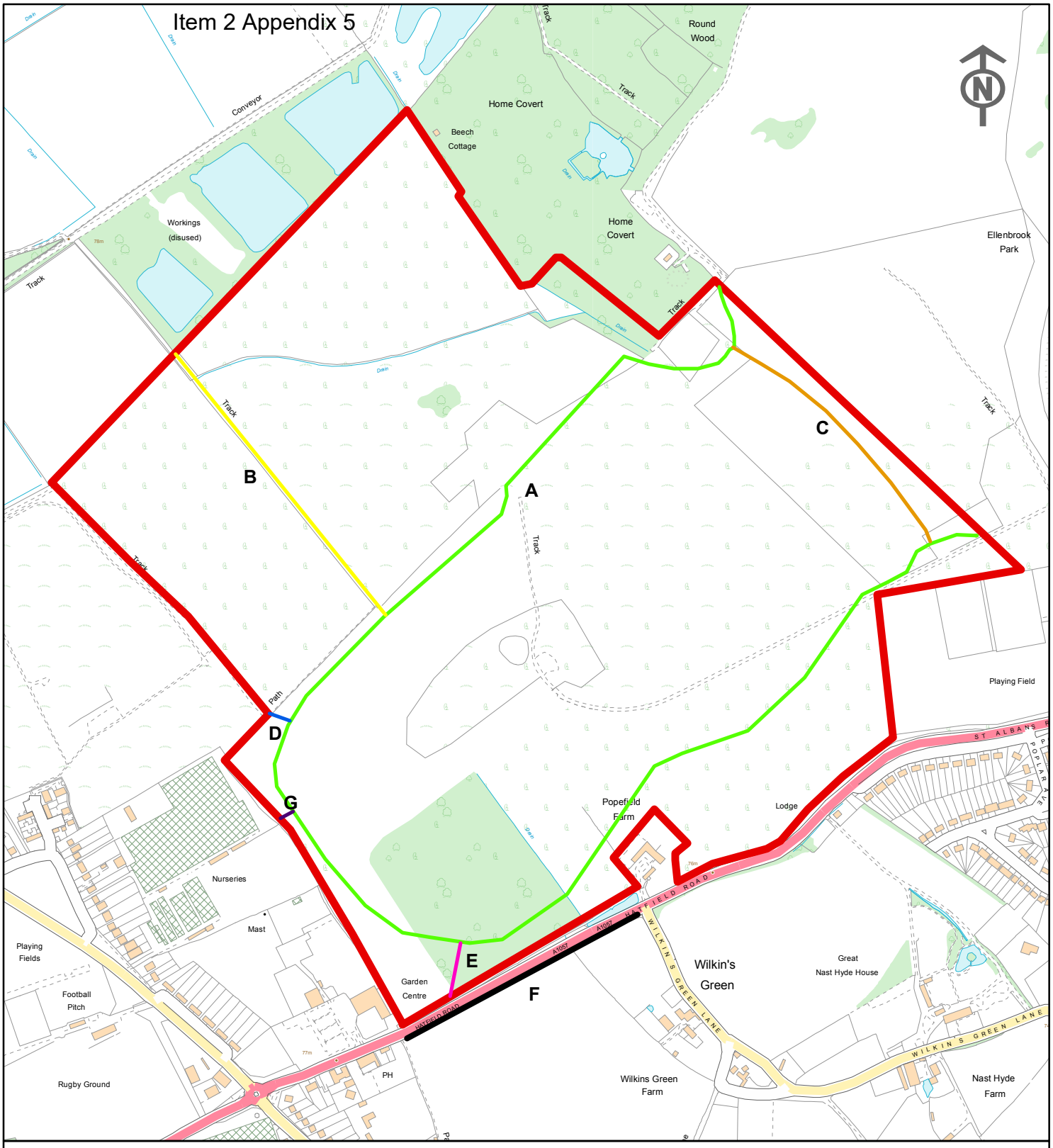

Plan 1:
Title: Former British Aerospace _Proposed rights of way

0 75 150 225 300 375 450 525 600 675 Meters

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APPENDIX 13 – Statutory consultations and third party representations

Welwyn Hatfield Borough Council raises no objections

- The proposed mineral extraction site lies within a Preferred Area for mineral extraction, as identified in the Hertfordshire Minerals Local Plan (1998), and as such an application for the extraction of minerals has long been anticipated by WHBC.
- Policy HATAER3 of the Welwyn Hatfield District Plan 2005 contains the requirement for development at the former Hatfield Aerodrome site to proceed in accordance with a Masterplan. That Masterplan is contained within the Hatfield Aerodrome SPG, adopted in November 1999, which recognises mineral extraction from the Green Belt part of the Aerodrome site as a legitimate part of the site's future use (see Section 9 of the SPG). The guidance on mineral extraction within the SPG remains a material consideration.
- Accordingly, the principle of mineral extraction at the application site is accepted by WHBC, however this council is keen to ensure proper environmental safeguards during the periods of extraction and restoration, also that there is provision of a high quality scheme of restoration and after-use. This is particularly significant in that the site lies within the larger area of Ellenbrook Fields which is an informal country park established under the provisions of a Section 106 agreement dated 29th December 2000 and attached to the original outline permission for the redevelopment of the Aerodrome site (ref: S6/1999/1064/OP).
- Both the Hatfield Aerodrome SPG and the Section 106 agreement (especially at Schedule 21) contain details relevant to the restoration, landscape and after-use of the mineral extraction area. WHBC would encourage HCC to have regard to these in determining this application, also to the fact that WHBC is currently consulting on its Green Corridor Strategic Framework Plan Stage 1 Report [this can be accessed via the WHBC planning consultation portal at on the councils website. The application site forms an important part of this corridor.
- Recent discussions between the applicant, the County Council, WHBC and St Albans District Council have resulted in revised restoration and after-use proposals being submitted as part of the current application, and WHBC is broadly supportive of those proposals, which strike a balance between the needs of nature conservation and public recreational access. More detail of the restoration proposals and the landscape management and public access regimes to be applied both during and after extraction is required in the event of permission being granted, and WHBC anticipates that HCC will impose suitable planning conditions or enter into suitable planning obligations to this effect.
- As part of a recent submission of additional information for this application, the landowner Goodman has proposed arrangements for the creation and endowment of an Ellenbrook Park Trust, which are an amended version of the arrangements contained in the existing Section 106 Agreement dated 29th December 2000. WHBC would urge that the provisions of that agreement should not be amended as part of this minerals application, as the existing S106, and the Trust relate to a wider area. WHBC is however prepared to discuss with the landowner, HCC and St Albans District Council (as parties to the original S106) the implications of any minerals permission at this site for the

wider Ellenbrook Park and to consider proposals for any amendments to the Trust arrangements on their merits.

- It may be appropriate for the proposed planting around the perimeter of the site to be put in place (and ideally allowed to mature a little) prior to any extraction taking place as this will provide an important landscape, noise and dust screen. Dense hedgerow planting and trees would be ideal.
- The phasing plans identify the Public Right of Way around the north and eastern sides of the site as permissive but given that this will not encroach on the operational area this should really be definitive. Making the path definitive will offer greater reassurance to local people and provide a basis for HCC management and maintenance.
- Subject to there being adequate parking controls in and around the Ellenbrook area, it may be worth exploring the option of a pedestrian/cycle only access point on the south eastern corner of the site to allow local residents easy access to the country Park.
- There is a concern regarding the location and size of the proposed visitor car park. The original S106 agreement (Schedule 21, 2.10) notes the potential for the Country Park to provide a small car park for up to 20 cars. The one proposed is much bigger and as an estimate, at the current size, would have the capacity to accommodate about 150 cars. This would encourage rather than discourage greater levels of car use and visitors from a wide area. WHBC is of the view that the restored land should provide a sustainable resource essentially for local people, as originally envisaged. The car park is also located in quite an isolated area away from natural surveillance. It has been noted that such car parks can sometimes be subject to fly tipping and anti-social behaviour. Locating them in an area that is more visible can help to discourage such activity. Barrier control at night may also be helpful here.
- The potential vehicle movements associated with mineral extraction operations at this site have given rise to concerns amongst local residents and councillors.

St Albans City & District Council raises no objections subject to conditions.

- The District Council raises no objections subject to a suitably worded legal agreement to secure the reversion to the agreement and provisions contained in the legal agreement attached to approval S6/1999/10640P to provide a country park following mineral extraction and that conditions are attached to any grant of planning permission:
- the site is within the Green Belt and the proximity of Popefield Farm which is a Grade II listed building;
- there is currently public access to the former Aerodrome site;
- the proposal involves mineral extraction over a significant scale and duration over a number of phases with progressive restoration
- outline planning permission (S6/1999/1064/OP) for the development of the former Hatfield Aerodrome site approved 29/12/00);
- the legal agreement provides for the creation of the Ellenbrook Park Trust, however the lease was never completed and Ellenbrook Park has not yet been established;
- NPPF provision for protection of the Green belt (paragraph 89) "other forms

of development are also not inappropriate in Green Belt provided they preserve the openness of the Green Belt and do not conflict with the purposes of including land in Green Belt, including mineral extraction";

- St Albans City & District Local Plan Review 1994 Policy 1 permission will not be given for development (within the Green Belt) for purposes other than that required for including mineral extraction;
- the application site forms part of Preferred Area 1 - Land at Former British Aerospace in the Hertfordshire Minerals Local Plan Review 2002-2016 (Adopted 2007) designated a number of Preferred Areas;
- The outline planning permission anticipated that mineral extraction would take place as part of implementation of the country park
- the proposed use of the site for mineral extraction would therefore be an appropriate form of development in principle in the Metropolitan Green Belt as it would comply with both national and local Green Belt policy.

The Highway Authority raises no objections on the basis the proposed development would have no unreasonable impacts upon the local highway network or the safety and operation on the highway network

Traffic generation

- The current HGV flows on the A1057 Hatfield Road as a proportion of overall traffic is 5% (AM peak) and 3% (PM peak);
- The proposed change to traffic flows on Hatfield Road (based on 46 two-way peak movements) would represent a 2.5% increase (AM peak) and 2.3% (PM peak). This is considered to be minimal impact;
- The applicant has applied a growth factor to the observed traffic to account for any growth in background traffic that may occur between 2014 and 2023;
- The applicant has identified the CEMEX Site, Hatfield Quarry as a committed development (for the purposes of assessing cumulative impact);

Routing

- The applicant has stated that the majority of HGV movements will travel east and pass through Comet Way to connect to the A1 (see conditions);

Junction

- The applicant undertook a sensitivity test for the proposed junction which included 2022 traffic conditions combined with the proposed trip generation multiplied by a factor of ten. The results indicate that the proposed junction would operate within capacity;
- The application has undertaken a PICADY assessment of the proposed junction modelled to 2022; for weekdays (AM/PM peak) and Saturday (AM peak);
- The proposed new access on Hatfield Road has been the subject of a Stage 1 Road Safety Audit. The details raised in the Stage 1 Road Safety Audit can be dealt with at the detailed design stage;

Pedestrian Access

- A pedestrian crossing will be required from the existing footway on Hatfield Road into the proposed site access.

- St Albans road network west of the site has a weight restriction of 7.5
- tonnes; therefore, a routing agreement (and monitoring) is required to ensure that HGV's are directed towards Comet Way and not to pass through St Albans, to be secured via condition;
- The HCC DM Implementation Team has been consulted and responded they have no issue with the design of the revised proposed access arrangement in principle. However, minor adjustments to the radii may be required to facilitate turning movements;
- The applicant has provided a visibility splay of 4.5m x 120m for the proposed access junction consistent with DMRB Standard for a 40mph road and is acceptable;
- The application provides no information on the provision of car parking, based on the proposal 10 full-time staff would be employed at the site and parking provision will be required in line with parking standards set out in the local plan;
- The applicant has not provided any detailed information on the internal layout of the development proposals. This will be secured via condition
- HCC request that a Banksman is at the gate to ensure the safe arrival and departure of the vehicles and this will be secured via condition;

Section 106

- a condition survey and bond will be required to be secured via a S106 agreement;
- The HGV movements associated with the development will create long-term highway maintenance expense to the County Council. Therefore, a s106 Agreement will be required to secure a Condition Survey in order to assess the condition of the highway within the vicinity of the site before the construction of the development and an updated version will be required at the completion stage;
- Where the development as a result of construction is likely to increase road degradation a highway £30,000 bond should be secured via a Section 106 agreement prior to commencement on site;
- HCC will seek contributions via a S106 for improvements to both the Hatfield Road / Ellenbrook junction and the Hatfield Road / Comet Way junction;
- Contributions will be sought for an amount to be determined, based on Hertfordshire County Councils Planning Obligations Guidance Toolkit. The toolkit specifies that non-residential charges will be calculated at a rate of £1000 per one peak hour two-way trip. Based on 46 PCU's per peak hour, this equates to £46,000 towards the Hatfield Road / Ellenbrook junction and £46,000 towards the Hatfield Road / Comet Way junction. The financial contributions will need to be secured through a legal S106 agreement, with exact triggers for payment to be agreed between the parties;
- the footway located on the southern side of Hatfield Road will need to be a widened due to the increase HGV vehicle movements generated by the development;

Section 278

- Any works within the highway boundary (including alterations to the footway and the proposed site access) will need to be secured and approved via a s278 Agreement with HCC;

- A S278 Agreement will be required for improved pedestrian facilities along Hatfield Road (A1057) and for improved pedestrian links between the site and Alban Way;
- Any works within the highway boundary (including alterations to the footway and the proposed site access) will need to be secured and approved via a s278 Agreement with the HCC;
- The visibility splays includes some substantial highway trees that would need to be removed to be secured through a S278 agreement

Highways England raises no objection confirming 'Highways England was consulted about the application as a statutory consultee. 'Highways England reviewed the HGV trip generation towards the A1(M) and the forecast is that there will be 174 HGV trips per day. Based on the proposed working hours for the site this will result in 18 HGV's per hour going towards the A1(M). There would then be a spread of northbound and southbound trips. This level of increase is within the advisory thresholds classified as slight and in real terms is a minor increase.'

The Environment Agency response raises no objections, subject to conditions for:

(1) The submission of management plan providing:
- details of construction and water management during construction of the two infiltration lagoons.
- clarification of the restored site discharge point for the UML back-drain.
- a long-term groundwater monitoring plan to continue during and post the operational phase.

(2) The submission of a landscape management plan to include details of:
- the extent and type of new planting (NB planting to be of native species)
- maintenance regimes
- any new habitat created on site
- treatment of site boundaries and/or buffers around water bodies
- management responsibilities

Advice
- *Environmental Permitted (England and Wales) Regulations 2010 (as amended)* the development will be a waste disposal operation (landfill) based on the information provided, and would need to comply with the and will require an Environmental Permit to be issued by the Environment Agency;
- This development will also require a permit under from the Environment Agency for any proposed works or structure, in, under, over or within eight metres of the top of the bank of the River Nast, designated a 'main river'.
- *Extractive Waste (Mining Waste)* - The Operator must submit an Extractive Materials Management Statement (EMMS) to the Environment Agency for assessment.

The Lead Local Flood Authority raises no objections and comments:

- The proposed drainage strategy is based upon infiltration and infiltration tests have been carried out to ensure the feasibility of the proposed scheme. The access road will be constructed from gravel therefore it will drain freely. The remaining roads will be constructed of tarmac and will be drained via swales/ditches.
- Complex works are proposed to the ordinary watercourses located on-site. This will require ordinary watercourse consent prior to any works beginning onsite. As details in relation to the work to the ordinary watercourses have yet to be provided, we recommend the following planning conditions to the LPA should planning permission be granted.

(1) The development shall be carried out in accordance with the approved Flood Risk Assessment and the mitigation measures therein detailed:
   a. limiting the surface water run-off generated by the 1 in 100 year + climate change critical storm so that it will not exceed the run-off from the undeveloped site and not increase the risk of flooding off-site.
   b. providing attenuation to ensure no increase in surface water run-off volumes for all rainfall events up to and including the 1 in 100 year + climate change event.
   c. implementing appropriate drainage strategy based on infiltration.

(2) The development shall not be commenced until the submission of a detailed surface water drainage scheme based on:
   a. the Drainage Strategy and sustainable drainage principles and
   b. an assessment of the hydrological and hydro geological context of the development
   c. demonstrate surface water run-off generated up to and including 1 in 100 year + climate change critical storm will not exceed the run-off from the undeveloped site following the corresponding rainfall event.

(3) Submission of detailed engineered drawings of the proposed SuDS features including their size, volume, depth and any inlet and outlet features including any connecting pipe runs.
   a. detailed ground investigations and record the level of groundwater.
   b. detailed surface water run-off and volume calculations to ensure that the site has the capacity to accommodate all rainfall events up to 1:100 year plus climate change

(4) The submission of a scheme of modifications to the ordinary water courses

The County Ecologist raises no objection:

- the Illustrative Restoration Concept would appear to be acceptable at this stage, subject to appropriate details being provided by condition;
- The site will be restored to provide a mix of habitats and amenity use, including lakes, ponds, open drains, marshy grassland scrapes, acid

grassland, unimproved (neutral) grassland, wide hedgerow belts, scattered scrub and woodland blocks. This mixture of features will provide a diverse landscape and should encourage a range of biodiversity, although in places this will be tempered by the recreational use of the site;

- There will be a designated 'nature conservation area' to the north of the site and should provide an area of less disturbance where habitats could be created;
- There will be local biodiversity interest in the form of ponds, wetlands and unimproved grassland, which should have beneficial ecological gain, with one area is set aside for more sensitive species. The presentation of this approach needs to be improved.
- The overall approach to restoration and site function will reflect the likely reality and pressures of expected use of the site.
- The original intention for the Ellenbrook site was to create a more open parkland character to the north and more rural, pastoral landscape to the south, within which a more traditional countryside character and management could be developed in contrast to the more amenity driven land-use on the parkland;
- Ideally all open grassland areas should be grazed, there may be some conflict with the Country Park ethos where hay cutting or gang mowing might be favoured;
- The 'conservation area' must be grazed to provide for the full range of ecological benefits;
- More detail will be required on some of these aspects before a final plan can be implemented - regarding the nature of the habitats to be created, their seeding mixes and site infrastructure, as well as practical management proposals – such as any cutting or grazing regimes;
- Whilst essential, such details do not need to be determined at this stage as circumstances may change. However their consideration and implementation does remain fundamental to the successful restoration of the site in order to deliver the landscape, ecological and amenity benefits;
- It is also important to consider how some progressively restored areas are to be managed as the working quarry progresses around the site in Phases, particularly if some public access is proposed for these areas.
- Any interim management could seek to progressively establish and secure the habitats and site uses as proposed and if acceptable can be continued, but the current details are wholly insufficient to provide any such confidence or guidance that this will be achieved.
- There needs to be a mechanism whereby all of the final management principles for the whole site can be agreed as part of the planning process;
- A Management Plan document should be provided as a condition of approval and a Management Agreement as part of the s106 to enable the implementation

The <u>County Landscape Officer</u> raises no objections, noting:

- the operational stage would result in adverse landscape and visual effects due to the introduction of an intrusive industrial activity;
- The proposed landscape and visual mitigation measures, such as

phased operation and screening bunds, are fully supported;

- The proposed restoration strategy is fully supported and should conserve and enhance landscape character and visual amenity.
- The proposed restoration strategy is broadly consistent with the agreed principles as set out in the Section 106 Landscape Framework Document;
- The following issues should be addressed by condition as part of the
- provision of a Landscape Management Scheme:
- Increase provision of woodland planting within the site in accordancewith Landscape Management Document principles 20-30%;
  - the maintenance and defects liability period should be minimum 5 years;
  - details of removal / retention of tree planted mounds / buffer planting;
  - details of footpaths design to conserve and enhance the rural character and visual amenity;
  - clear strategy for the siting and design of interpretation boards
  - siting and design of car park
  - provision of security fencing
  - details of the treatment of Nast Culvert
  - provision of advanced permanent woodland planting to south of plant area
- The site lies within the proposed 'Woodland Arc' and 'Reconnect' strategy areas of the Hertfordshire Strategic Green Infrastructure Plan.
- The site lies within the 'De Havilland Plain' landscape character area as defined within the current local Landscape Character Assessment.[1] where the strategy for managing change is to improve and restore.
- the 'Illustrative restoration concept' (HQ3\11A) was updated and re- submitted for consultation following a stakeholder meeting in May 2016.
- The proposed restoration strategy is broadly consistent with the agreed principles as set out in the LFD and illustrated on the Ellenbrook Park-Framework Document, Agreed Key Drawing

The Countryside Access Officer comments –

- Further to discussion with our consultees and noting the detail of the Rights of Way Improvement Plan (ROWIP) we have identified the need for the following additional routes shown on the amended map attached:-
  - A to B from Hatfield Road to be dedicated as Definitive Footpath.
  - C to D (east of the lakes) to be dedicated as a new Definitive Bridleway.
  - E to F dedicated as a Definitive Bridleway to connect with Colney Heath Bridleway 62.
  - The remaining black dotted lines/ multi-purpose paths should be dedicated as at least Definitive Bridleways for now although our preference for the future would be for Definitive Restricted By status.
- We have consulted with the St Albans Access Forum (STAAF) which includes the British Horse Society, St Albans Cycle Campaign and the Ramblers as well as other groups including the Hertfordshire Association forthe Disabled (HAD). Their preference is for Restricted By way status where possible to allow access to all non-motorised path users.
- For the Bridleway we would seek a dedicated minimum width of 5 meters with 2 meter surfaced in a granular stone.

The County Archaeologist raises no objections subject to conditions:

A. that no development takes place until a written scheme of investigation is submitted and approved;
B. the development shall take place in accordance with the approved WSI;
C. the site investigation and post investigation assessment has been completed in accordance with the programme set out in the WSI.

- We have recommended and subsequently monitored a pre-determination archaeological trial trench evaluation of the site and are currently waiting for the applicant to submit a revised report of the archaeological investigations.
- However we can say that these archaeological investigations have revealed that much of the site has been disturbed in the latter part of the 20th century, including activity connected with use as an airfield and also later filming on the site. This is likely to have been for the movie Saving Private Ryan.
- There were three areas of archaeological interest. Two are likely to represent Iron Age and Roman activity nearby and the third was a trench containing pottery from the Anglo-Saxon period. Evidence for this period is rare in Hertfordshire so this may be significant.

WHBC Environmental Health Unit recommends refusal of planning permission on the following grounds:

Noise from onsite operations

- The ES report assessed noise levels using the standard comparison in terms of LA90 (BS4242:2014). With the likelihood of tonal emissions, impulsive noise and regular intermittency, there could be an argument for an additional correction of up to 9dB for impulsivity alone;
- If such a correction was for Popefield Farm the difference over background would be 7.3dB, applying any sort of correction would indicate that complaints would be likely. Experience has shown that complaints are sometimes received due to new noise sources when they are at background noise level. This highlights the importance of tonality and the character of the noise. These type of noise levels would amount to a loss of amenity and potentially a statutory nuisance;
- Under the NPPG up to 10dB over the background noise level would be seen as acceptable, however the long term nature of the site, along with it effectively being a new noise source, this level of increase would be seen as unacceptable.

Noise from additional road traffic

- HGV traffic - current average hourly movements on a weekday during peak times are around 55 per hour in the morning and 37 per hour in the evening and around 31 per hour on Saturdays.
- Around 18 new HGV movements are expected per hour, which is a large percentage increase, especially on a Saturday (over 50% more);
- this would be seen as an overall increase below 3dB LEq, however this figure then ignores the impact of each single event.

Contaminated Land

- The reports shows the potential sources of contamination which may be of concern for workers at the proposed quarry;
- the previous use (aerospace) highlight the potential for contamination e.g. asbestos, chemicals, fuel etc.
- If the application were to be permitted, a phased risk assessment would need to be conducted.

Air Quality

- The report states that impacts from vehicle emissions will be negligible; however we consider that air quality will be affected by the traffic associated with the site and would ask that the applicant monitors air quality for a 12 month period prior to construction to provide a good evidence database of the impacts on air quality and to put in place appropriate mitigation.

- If the application is approved, we would want a condition put in place so that:
  'The applicant shall undertake or cause to be undertaken at least 12 months continuous monitoring of background air quality prior to development and continuous monitoring of air quality during the construction and operational phase using an air quality monitoring programme as agreed in writing with the LPA within 1 month of approval of the planning application'.
- As a minimum the programme should consist of an appropriate number of NOx tubes placed around the boundary of the site and at the boundaries of closest receptors with results independently analysed and the reports sent to WHBC quarterly and with a yearly total assessment

Third Party representations

Anne Main MP for St Albans raised the following points –
Many residents are concerned about HGV movements on a busy road, and the import of inert materials that may have a lasting damage to the site.
Below is a list of concerns that residents have expressed to me:

- Loss of green belt land
- Loss of green open space
- Loss of footways and bridleways
- Damage to wildlife and the environment
- Traffic disruption and congestion
- Air pollution

I strongly believe that any extraction must come with a contract with the community to restore the land to its previous state, and in the meantime undertake any mitigation necessary in such circumstances. There needs to be a firm and binding commitment with the operator and the community.
I trust that any decision about this application will be weighed against resident's concerns, and will be fully considered.

Comments from members of the public & interest groups

In response to the first and second consultation over 260 letters have been received from residents and members of the public raising a wide range of points. The main objections are summarised below.

Traffic congestion, capacity and safety issues

- The proposal would considerably increase traffic volumes by 174 HGV movements per day, 1 every three minutes, on an already congested single carriageway road;
- The application makes no provision for off-site infrastructure for the additional vehicular movements to and from the site;
- The existing road infrastructure is already inadequate and unable to cope;
- There are no proposals to upgrade the road network for additional traffic;
- The roads are too narrow and not designed for large lorries;
- The A1057 is a bus route unsuitable for such a large number of HGVs;
- The A1057 has bends, narrow pavements and bus stops and is on the edge of a residential area and is therefore unsuitable as a main route for HGVs;
- The proposal will increase the danger to pedestrians and cyclists;
- There are regularly long queues in and out of St Albans;
- Ellenbrook Lane is difficult to exit at peak times due to the constant traffic;
- Ellenbrook Lane / St Albans Road West roundabout is already dangerous;
- Additional traffic make congestion at Smallford roundabout worse;
- Smallford roundabout is too small to cope with HGVs;
- There is a 3.5T weight restriction on Station Road;
- Damage to road surfaces. HGVs do far more damage to roads than cars;
- The road is congested when the A414 or M25 is closed;
- The speed cameras are there because it is a dangerous section of road;
- The HGV estimates are questionable. The proposal is for 250,000 tonnes per annum. The proposal is 30M tonnes over 30 years which equates to 266,666tpa. This could add a further 7 lorry movements per day. HGV estimates do not account for compaction rates, clay is 1.75 tonnes per m3, sand and gravel is 2 tonnes per m3, if the same lorries are being used it could equate to 44 (22 in/22 out) additional HGV movements per day. The actual number of lorry movements could be 218 per day;
- The traffic survey was carried out in a single location over week in April / May 2015. This does not taken into account fluctuations in traffic;
- There is a weight restriction from the Comet roundabout to St Albans. Allowing almost 200 HGVs per day would be inconsistent with the weight restriction which would become unenforceable

Access

- The proposed access is in a dangerous location;
- The slowing down and turning of HGV's into the site (18 HGVs per hour) would prejudice road safety and convenience for other road users;
- A normal junction will be dangerous - a roundabout would be more suitable;
- No consideration has been given to access from Hatfield Business Park;

- The HGVs travel via the A1(M) so why is the access nearly in St Albans;

Cumulative

- The application fails to consider the cumulative impact with Hatfield Quarry;
- The proposed 174 HGVs in combination with the 300 HGV movements associated with infilling at Hatfield Quarry would affect traffic flow;
- The planning application for hundreds of homes at Oaklands College has not been considered;
- The proposal should be considered in combination with all other developments at Hatfield Quarry; Chester Nursery; potential residential development at Radio Nursey; Glinwell Nursery.
- The development of the former Aerodrome site has added significantly to traffic using the A1057, A1000 and A1(M);

Footpaths

- The footpath along A1057 is very narrow and dangerous to walk along;
- The footpaths along St Albans Road are narrow and unsafe – the increase in HGVs would place pedestrians and cyclists at greater risk;

Character, amenity, health and quality of life

- The increase in HGV traffic would have a negative impact upon the rural character of the A1057road.
- The number of lorry movements will affect peoples' quality of life in terms of noise and air quality, particularly those living along the A1057;
- The large section of hedgerow and mature trees that would need to be removed for the site access would change the character of the Hatfield – St Albans boundary;
- The large numbers of university students who walk or cycle along St Albans Road West would be exposed to air pollution and risk of collisions with HGVs
- The volume of traffic would bring mud residue on the road, the wash facilities would be able to cope however good they are and so the residual effect could not be completely mitigated;

Green Belt

- The quarry would industrialise Green Belt between Hatfield and St Albans;
- loss of a buffer (separation) between Hatfield and St Albans leading to coalescence of the two towns;
- valuable public open space for recreation would be lost for 30 years;
- The processing plant, bunds and haul roads are inappropriate development and harm openness;
- there are no very special circumstances;
- The development would encroach upon the houses on Oaklands Lane;
- The site would not be restored for 32 years which is too long;
- The recreational and wildlife value of the land would be lost ;

- The extraction would take place too close to houses on along the A1057;
- The proposed quarry would be obtrusive;
- The local area suffers from the effects of past quarry activities, at Suttons Farm (Phase 2) between Woodcock Hill and Symondshyde Lane where gravel extraction has long since ceased and land remains unrestored;
- The loss of Green Belt would be inconsistent with Policy CS19 of the Welwyn Hatfield Emerging Core Strategy which seeks to safeguard Ellenbrook Fields Country for high quality informal recreation and nature conservation as part of a wider green infrastructure belt;
- The St Albans Council corporate plan has stated they are committed to – protect the Green Belt, the District's environment and green spaces.
- Welwyn Hatfield Council, St Albans Council and the residents need to draw up a plan for the land between the two towns which is coming under constant pressure for development;
- the perimeter bunds adjoin the A1057 will affect strategic views onto the site contrary to the openness of the Green Belt;

Ellenbrook Fields Country Park

- The landowner should not be allowed to escape the obligation to provide the country park;
- the community were promised as country park as part of the aerodrome development;
- The country park is an essential space between Hatfield and St Albans.;
- The landowner now wants to develop the northern part of the country park for housing (Hat2), which would slice the park in half;
- If the housing and quarry go ahead Ellenbrook Fields will cease to exist;
- The excavation should over a smaller area to maintain public access to the majority of the, otherwise public access would be lost for 32 years;
- The public has been prevented from accessing the full extent of the country park due to the Ellenbrook Trust having not been formed;
- The lack of establishment works warrants investigation;
- The obligation to establish the country park should be concluded before the application is considered;
- The community should be involved in the future use of the land.
- The site is an important part of the Hertfordshire Green Infrastructure Plan;
- Welwyn and Hatfield and St Albans Councils rely on Ellenbrook Park in their emerging local plans;

Noise

- 174 per day would generate significant noise and vibration to the local environment and houses along the A1057;
- noise levels have already been affected by increased traffic levels on both the A1(M) and the A1057;
- Traffic noise is known to have an adverse effect on wellbeing;
- Noise from large machinery and HGV would impact quality of life;
- Adjacent areas of woodland would be adversely affected by noise and dust;

- The noise report says noise should be no material constraint up to 70dB, which would be unacceptable;
- The supporting documents for Noise (section 10) includes predictions based on 90% soft ground between sources and receptor locations, however the properties 389-403 St Albans Road have 24 – 37% of soft ground between them and the site boundary; the noise predictions need to be reconsidered to reflect the facts.

Air Quality

- The exhaust emissions from HGVs to the site (and to Hatfield Quarry) would adversely affect the quality of life of residents living along the A1057;
- dust from the quarry operations would impact wildlife
- The 'acceptable risk' conclusion in the Air Quality report is unconvincing;
- The effect on people's health and wellbeing would be unacceptable;
- There is insufficient evidence to show the impact would be acceptable;
- Diesel fuel particulates cause harm to human health;
- The operations would adversely affect the use of sports grounds;
- The background levels of air pollution from road traffic is significant;
- The quarry would create dust and debris;
- Concrete batching plants create air borne dust contamination;
- *Proximity to housing*
- The haul road should be further away from houses and footpaths;
- large scale industrial operations should not be placed close to houses;
- The haul road will be a barrier to people wanting to access Ellenbrook Fields.
- The Hertfordshire Minerals Local Plan Initial consultation document August 2016 gives only an amber classification to "sites that are adjacent or in close proximity to existing sites and within close proximity to the same settlement or sensitive receptors"

Buffer Zones

- Policy 18 of the adopted Hertfordshire Minerals Local Plan requires developments to 'incorporate an appropriately defined buffer zone in order to safeguard sensitive land-uses';
- The Hertfordshire Minerals Local Plan Aims and Objectives (Aim 3(9)) requires the impacts upon adjoining land uses, including residential areas, as a key constraint. The application site is larger than the preferred area which showed buffer zones to protect residential areas;
- The specific considerations for Preferred Area 1 refer to Appropriate buffer zones required to protect the amenity of residents at Ellenbrook, Smallford and Popefield Farm;
- Significant parts of the application site fall outside the Preferred Area 1 designation shown on Inset Map No6 – estimated to be 50% in Phase A;
- The site brief (Inset Map No.6) provides between 75m - 170m space between the Preferred Area 1 boundary and the properties on St Albans Road West. The actual distance proposed in the application is far less and similar requirements for Notcutts Nursery and Popefield Farm are ignored;

Ecology

- The restoration would not protect or enhance the local environment or provide any overall enhancement to local biodiversity required by Minerals Policy 9;
- The application does not make sufficient provision for enhancement of biodiversity over the 30 year lifetime of the project;
- The proposal would result in a loss of wildlife and habitat and loss of wildlife endangered species;
- The vibrations from operations and traffic and artificial lighting will all have a negative impact upon habitats and wildlife, particularly bats, and bird roosts anywhere within 500m of the workings;
- The wildlife habitats and movement of animals through the site has not been independently evaluated;
- The environmental statement only identifies further targeted work that is programmed. Further information should be required from the applicant prior to determination of the application. It is important that any important habitats are identified;
- habitats would be lost and access to protected woodland areas restricted;
- protected species at Cut Field which are potentially under threat;
- Such a large undisturbed area of grassland must be quite unusual in Hertfordshire and for that reason a valuable resource for wildlife;
- The land provides habitats for many species of many plants and animals;
- Mineral extraction pose a threat to local wildlife;
- Once extraction starts, whether in stages or not, we will lose endangered species such as barn owls and great crested newts.
- Local planning authorities must apply three tests –
  1. the activity must be for imperative reasons of overriding public interest or for public health and safety
  2. there must be no satisfactory alternative;
  3. favourable conservation status of the species must be maintained.

Landscape/ visual

- the application does not take account of landscape character nor maintain its distinctiveness, and would result in significant local landscape intrusion and loss of important landscapes or distinctive features. The proposal is contrary to Minerals Policy 12 (Landscape);
- Contrary to the aims of Minerals Policy 18; the proposals encroach within ten metres from the canopy spread of all periphery or other retained trees. The periphery bunds are placed within 5m of the boundary with St Albans Road West.
- There is no assessment of visual impact from properties along St Albans Road West which have open views over a flat plan to woodland beyond glimpsed through boundary vegetation. The placement of a 4m-5m high bund together with an industrial landscape for over 30 years would completely transform the landscape. The magnitude of visual change and the duration would be unacceptable;
- evergreen hedges and bushes should be placed between properties

opposite Phase A and St Albans Road West service road;

Need

- There is no valid reason under Minerals Policy 3 and Mineral Policy 4 for a grant of planning permission outside of the preferred area as the Local Aggregate Assessment 2015 identifies 11.3 years of reserves, which is in excess of the 7 years recommended;
- There is a sufficient supply of minerals and no need for this site;
- The Minerals Local Plan 2007 (plan period 2002-2016) says the site should preferably be worked at an early stage of the plan period. The current proposal does not fulfil this requirement;
- There is no current need for the development – the permitted reserve is around 14.4Mt, the landbank 10.4 years. The landbank requirement will continue to be above the minimum requirement for years without the need for the minerals at the BAe site;
- If local sites are allocated for housing they could contain substantial reserves of sand and gravel which would need to be extracted before any permanent development in accordance with Minerals Policy 5 (Minerals sterilisation). If other medium size sites come forward in the local area to be considered under current Minerals Policy 5 (Minerals sterilisation) such as Hat1(north west Hatfield), Hat4 (South of Ellenbrook); HAT5 (North of Roehyde); Hat 15 (Symondshyde Village)
- The cumulative effects of multiple impacts from individual sites and/or from a number of sites in a locality ned to be considered (NPPF, paragraph 144).
- The Environmental Statement fails to consider medium to large sites within a reasonable distance that may come forward under current Minerals Policy 5;
- The proposal does not fulfil Aim 3 of the Hertfordshire Mineral Local Plan document or follow the methodology outlined in the site selection methodology report;

Review of the Minerals Local Plan

- The suitability of the application site should be considered as part of the same process to assess the suitability of <u>all</u> the other potential sites as part of the new Minerals Local Plan;
- In the current circumstances an application should not be considered until there is a new Minerals Plan in place;
- The Hertfordshire Minerals Local Plan Adopted in 2007 is out of date and does not now represent the current site use and sensitivities;
- This area has changed beyond recognition since the last Mineral Plan was adopted and the site should be addressed against the new criteria taking into account the current surroundings, not out of date criteria and out of date evidence;
- The current Hertfordshire Minerals Local Plan is about to be superseded;
- The proposals are inconsistent with St Albans Core Strategic Objectives: – to seek to meet development needs;
- (but only) in so far as is consistent with sustainable development,

including maintaining effective Green Belt policy;

- Current local plans are out of date and draft local plans are still in consultation stage. The applicant should consider the plans once they are adopted;
- The proposal conflict with the Hertfordshire Minerals Local Plan Site Selection Methodology Reprot May 2015 (Criterion 4 – Local Nature Reserve) which says nature conservation and biodiversity loss, habitat loss and fragmentation of green infrastructure should be avoided.

Alternatives

- There is no need for the mineral from the site;
- there are alternative sites and sources of supply (e.g. recycled aggregates);
- there is no evidence provided the site is the most appropriate for a quarry;
- two other quarries on Hertfordshire have planning permission but are yet to commence which questions the commercial viability of the quarry and possible oversupply;
- Rickney's Quarry does not have as significant concerns with regard to archaeological and historic issues; district boundary/ green belt functions; coalition of settlements, loss recreation and wildlife, breaking a s106 legal agreement to establish Ellenbrook Park;
- We question the need for this quarry at this time and believe that there is currently a review of the Hertfordshire Minerals Plan the decision on this application should be delayed until the completion of that review;
- Extraction at Hatfield Quarry is due to cease in 2020, it should be possible to delay extraction and locate the new plant site at this location.

Flooding

- The Hatfield Road at St Albans Road West is already to be a known flood risk area
- There is no provision for the stream running adjacent to Popefield Farm continues to flow or how it will be managed;

Groundwater

- The site is affected by pollution by bromate in the groundwater;
- Washing the minerals risk pollution of drinking water supplies;
- The entire area is an aquifer / reservoir serving St Albans and London. We already have huge water shortages in this particular area of town. Destroying an aquifer will make this worse;
- The entire area is an aquifer serving St Albans and London. We already have huge water shortages in St Albans

Miscellaneous

- The excavation, siting of plant and access road does not have sufficient regard to the proximity to National Grid Gas Pipeline (1200mm);

- risk of unexploded bombs from former use as a WW2 airfield;
- consultation has been unsatisfactory;
- there is no benefit to local communities from the quarry;
- proposal will be of no employment benefit to the local community;
- quarry would blight local people's lives for 30 years;
- duration of 32 years is excessive;
- The design of the plant and quarry workings will be intrusive;
- loss of footpaths and no suitable alternatives are proposed;
- Loss of footpaths, bridleways and wildlife enjoyed by local people;
- HCC should require the proposal to be considerably scaled back;
- hours of working - 7am to 6pm Monday to Friday and 7am to 1pm Saturdays, will be unfair to residents;
- no working should be allowed on Saturdays;
- lighting will be a nuisance and generate light pollution;
- site is contaminated with Japanese knotweed;
- proposed quarry would create negative perceptions of the area for potential University students;

9.8 The following objections have been received from interest groups:

9.9 Ellenbrook Residents Association submitted a petition against the proposal with over 900 names. The main points are as follows:

The transport infrastructure is inadequate

- The area is already badly affected by congestion
- Highway capacity and access design in relation to Hatfield Road and Sandpit Lane is highlighted as a constraint any future development at Oaklands College;
- HGVs leaving Hatfield Quarry (CEMEX) early in the morning would combine with traffic from this site making conditions considerably worse; The suggestion that no congestions occurs during the weekday peak periods is incorrect;
- full transport infrastructure modelling should be undertaken taking account of all proposed developments in the area.
- *The proposed site access is unsuitable*
- in a busy location close to Smallford roundabout and a number of businesses just before a series of bends in the road which create accident blackspots;
- *St Albans Road West is unsuitable for additional HGV traffic*
- the speed cameras installed because of the sharp and unexpected bends;
- The footpath is poorly maintained, even though it is a busy route;
- Increases in HGV traffic and change in traffic flows
- effect on the health and safety of our residents
- *Local residents would suffer a significant loss of amenity in terms of the*

Country Park

- Ellenbrook Park is important and well overdue

- The Park remains an integral part of realising the objectives of the Hatfield Aerodrome SPG;
- The land should not be used for extensive gravel extraction or to provide more housing.

There has been inadequate consultation with local residents

- The Ellenbrook area has over 500 dwellings but only a limited number of properties received a postcard on 19/20 October 2015 notifying them of the exhibition a week later and so very few local residents were able to attend;
- Any application should be preceded by a full consultation with local residents, through a series of workshops, exhibitions and public meetings.

The application cannot be considered in isolation

- The area is in the midst of Local Plan preparation, with proposals close to the quarry for
  - 1,100 new dwellings east of the application site (HAT2) at Ellenbrook Country Park;
  - 1,200 dwellings at Symondshyde Farm and 1,600 at Stanboroughbury (HAT1)
  - 1,000 dwellings at Oaklands Broad Location for development (SLP13d).
  - Cemex proposed infilling at Hatfield Quarry will generate up to 300 vehicles per day, and
  - Goodman is requesting a release of Green Belt land for a science and logistics park near the A1(M) / A414 junction.
- In total nearly 5,000 new dwellings plus nearly 500 lorry movements;
- The applicant reasons that because the precise detail of these developments are not currently known it is not possible to assess cumulative impacts – the uncertainty is reason enough to delay consideration of this application.

Ellenbrook Country Park

- All conditions relating to the establishment of the Country Park should be concluded before consideration of the Application.
- The Trust has not been set up and the £1.36M contribution has not been paid;
- It even more important that the Trust and funding are implemented as a matter of urgency.
- The Application should not be considered until the current review of the Minerals Plan is concluded

The Local Aggregate Assessment 2015 states –

The permitted reserves can supply aggregate for a period of 11.3 years based on Hertfordshire's apportionment of 1.39 million tonnes.

- The reserves requirement is 7 years and so the requirement is met and there is no urgency for the mineral when the need is met from existing sources;
- The LAA 2015 says the deposit at BAe Preferred Area 1 will be considered as part of the site selection criteria / methodology in the Minerals Plan Review;
- Given this statement and the review of the Local Minerals Plan having already commenced, we would ask HCC to postpone the consideration of this Application;
- The site should be assessed under the methodologies and policies set out in the imminent Minerals Local Plan, using evidence regarding the current situation in the area, rather than the situation some 15 years ago.

9.10 The University of Hertfordshire has no objections but suggest a number of matters to be addressed by condition:

- Noise/ Visuals – the applicant has agreed to site the perimeter bund at least 5m from the sports pitch fences and provide additional netting. The University would request that the bund remains in place in the final restoration to provide wind shelter.
- Dust: human health – to ensure impacts are minimised it is anticipated the mineral company will be required to operate an appropriate dust management plan.
- Dust impact on sports pitches – Brett Aggregates has agreed to meet the costs of initial and final tests, as well as yearly tests, to include the cost of washing the rubber crumb if the tests deem it necessary. If the pitches deteriorate at a rate that would require them being changed more often than once every seven years. We will need to see the detail of this commitment within the draft S106 Agreement.
- Water Supply – the applicant committed to install a pump and system to transfer clean water from the lagoon (when available) to the University's reservoir to irrigate the sports pitches. This commitment should be lodged as a sustainability benefit in your Report and captured within the S106.
- Car Park - we have requested that the University have access to a car park close to the Sports Village, to accommodate the overspill during big events. We would still like to explore how this could be incorporated within the restoration proposals.

Expert Opinion

on:

Groundwater contamination aspects of the proposed quarrying activity at Hatfield Aerodrome,

specifically:

Response to the Hertfordshire CC consultation on the Groundwater Management Plan (GWMP) (Final v5) and SLR borehole data

Date: 18th March, 2020

Author: Dr Michael O. Rivett, Director, GroundH_2O Plus Ltd, Quinton, Birmingham.

Client: Hatfield Town Council

Preamble, report aim and disclaimer

This requested Expert Opinion (EO) is provided by Dr Michael Rivett of GroundH_2O Plus Ltd to Hatfield Town Council in support of their response to the Hertfordshire CC consultation on the Hatfield Aerodrome Groundwater Management Plan (GWMP) Version 5 and SLR borehole data.

Expert opinion is formed from Dr Rivett's critical review and discussions of the above and relevant supporting materials (e.g. previous planning consultation documentation, published PhD theses on the bromate plume, monitoring data). It raises technical issues of material concern to the proposed development relating to groundwater and groundwater contamination and provide Expert Opinion.

Expert Opinion is founded upon Dr Rivett's expertise and long experience in groundwater contamination research and practice dating from the mid-1980s. He has a significant experience and track record of published research per his CV or listing of publications: https://scholar.google.com/citations?user=8H8pUbUAAAAJ&hl=en.

This Expert Opinion may only be used in aspects directly relevant to determination of a planning decision on proposed quarrying activity at the Hatfield Aerodrome site. For any other purpose, permission in writing should be obtained from both Hatfield Town Council and GroundH_2O Plus Ltd.

Disclaimer: GroundH_2O Plus Ltd will not be responsible for any loss, however arising, from the use of, or reliance on, the information contained in this report, nor do they assume responsibility or liability for errors or omissions in this report.

Dr Michael Rivett
Director, GroundH_2O Plus Ltd

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Expert Opinion

Expert opinion is provided on Groundwater contamination aspects of the proposed quarrying activity at Hatfield Aerodrome, specifically: *Response to the Hertfordshire CC consultation on the Groundwater Management Plan (GWMP) (Final v5) and SLR borehole data*. It includes reference to supporting materials or responses on this consultation documents as indicated.

Summary bullet points are provided immediately below that are substantiated by the technical detail of the numbered points that follow, within which several figures provide useful conceptual illustration of key issues.

Summary points

A summary of key points is made below. To note these bullet points are not inclusive of all issues raised in the technical detail numbered point further below. These should be examined to allow more meaningful consideration and use of the following bullet points:

S1. The most significant groundwater-related problems and risks that arise from the proposed development described within the GWMP, stem from the proposed excavation below the boulder clay *of* the lower mineral horizon (LMH) gravels overlying the Chalk. These are focused on herein. This activity compromises:
   - the protection of the Chalk aquifer groundwater resource;
   - optimal remediation of the > 20 km bromate/bromide groundwater pollution plume.

S2. The Environment Agency has proposed three 'EA Conditions' that are predicted herein to be breached, primarily due to consequences arising from activities relating to gravel extraction from the LMH.

S3. Regarding EA Condition ii, "*any activities close to the plume must not change the existing hydrogeological flow regime*", this condition will be permanently breached post and during development by the proposed replacement of excavated LMH permeable sand and gravel aquifer formation with permanent insertion of roughly 4.4 million tonnes of low permeability clay backfill across the site. This will cause considerable changes to the existing LMH hydrogeological flow regime - groundwater flows will be deflected around, rather than pass through the current Site with some groundwater flowlines previously extracted by the Bishop's Rise plume remediation scavenger well no longer extracted (conceptualised in later Fig. 1).

S4. The knock-on impact of failure to meet EA Condition ii above, will be failure to meet EA Condition iii – "*any activities close to the plume must not interfere with the remediation of the bromate and bromide pollution*". The proposed low permeability backfill of the LMH void will effectively 'push' parts of the very close by bromate/bromide plumes in the surrounding LMH gravel aquifer away from the site, potentially beyond the reach of the Bishop's Rise scavenger well, thereby increasing the risk of diverted bromate/bromide plumes migrating to other public water supply wells (conceptualised in later Fig. 2).

S5. Regarding EA Condition i "*No mineral is extracted from within the existing plume of bromate and bromide groundwater pollution*", *O*ccurrence of bromate groundwater contamination in the LMH and chalk underlying the Quarry Site is significantly controlled by the groundwater pumping rates of the Bishop's Rise scavenger well (conceptualised in later Fig. 3). The conceptualisation indicates that the pumping rate of the Bishop's Rise scavenger well exerts a significant, likely overwhelming, control on bromate occurrence in quarry Site LMH groundwater. Higher abstraction rates of 4 – 5 Ml/d (megalitres per day) preferred for more optimal plume remediation will lead to greater bromate plume migration into the site LMH aquifer gravels to be quarried and increased risk of breaching EA Condition i. Recent observations of low, but still significant bromate at the Quarry site perimeter, with very high bromate nearby, likely arise from lower scavenger well pumping rates in recent years due to technical issues. However, Site bromate may be expected to gradually increase on Site with recent resumption of higher scavenger pumping rates. Hence the viability of meeting EA Condition i is not controlled by the Site developer primarily, but rather the operator of the Bishop's Rise scavenger well.

S6. Hence, primarily due to the inappropriate choice of quarry Site location between the bromate source and single scavenger remediation well, quarry development meeting EA Condition i would require scavenger well pumping rates to be sub-optimal for remediation. This is not appropriate and constitutes interference with the remediation of the bromate and bromide pollution, thereby breaching EA Condition iii. Given the severity of the groundwater pollution and the need to optimise the remediation of what is Europe's largest groundwater plume and safeguard many public water supply borehole sources, such quarry development is not considered appropriate.

Technical detail

The technical detail supporting the above includes the following. It should be noted that the depth of technical detail provided is 'light touch', hopefully seeking to convey understanding of issues of concern to a non-specialist (still, it may be 'hard-work'). As ever, opposing arguments to aspects below can be made and are sometimes indicated.

1. **The most significant groundwater related problems and risks that arise from the proposed development described within the GWMP, stem from the proposed excavation below the boulder clay *of* the lower mineral horizon (LMH) gravels overlying the Chalk.** This activity compromises the protection of the Chalk aquifer groundwater resource, the UK's 'No. 1 aquifer'. Moreover, the proposed activity interferes with the current scavenger well remediation of the > 20 km bromate/bromide groundwater pollution plume, by far Europe's largest groundwater plume in the chalk aquifer, if not any aquifer.

2. The fundamental need to avoid excavation below the natural boulder clay layer (in place for millennia) to protect the chalk aquifer below would be a position I anticipated the Environment Agency should have adopted in their duty to protect groundwater resources given the local bromate/bromide plume pollution management circumstance and Source Protection Zone 2 locality. Without very proactive intervention, the PhD thesis of Fitzpatrick (2010) "*predicts bromate concentrations to remain above regulatory limits for around 200 years*". The fundamental need to avoid excavation below the boulder clay does, however, form the critical substance of the original representation made by Affinity Water (AW) (24/01/18) to the Draft Minerals Plan specifically related to the Hatfield Aerodrome site Hatfield Aerodrome: "*This site falls within a Source Protection Zone 2, corresponding to our Roestock source. This is a public water supply, operated by Affinity Water.* ***Any mineral extraction work at this location should ensure that there is no excavation below the boulder clay, in order to retain the protection to the Chalk aquifer****. The plan references proposed workings into the "lower mineral horizon"; if this means the gravels overlying the Chalk and underlying the boulder clay,* ***then this would constitute a very high-risk activity in regards to groundwater***." Whilst it is recognised that the GWMP has put in place proposed measures to manage these 'very high risks', it remains wanting, as shown below.

3. Whilst it is recognised the GWMP contains proposed measures attempting to meet the three principal Environment Agency (EA) proposed 'EA Conditions' (below), **the proposed activity of excavation of LMH below the boulder clay will inevitably lead to breaching of EA Conditions ii and iii, and as such provides grounds for removal of such activity, i.e. excavation below the boulder clay**. The Environment Agency position and proposed 'EA Conditions' (their 10 Oct 2019 letter): "*Controlled waters are particularly sensitive in this location because the proposed development site lies close to groundwater pollution of bromate and bromide from an off-site source. As previously stated, we advise that:*
   - **i.** ***No mineral is extracted from within the existing plume of bromate and bromide groundwater pollution***
   - **ii.** ***any activities close to the plume must not change the existing hydrogeological flow regime***
   - iii. ***any activities close to the plume must not interfere with the remediation of the bromate and bromide pollution.***".

4. **Regarding failure to comply with EA Condition *ii*,** *"any activities close to the plume must not change the existing hydrogeological flow regime"* - Whilst the GWMP makes efforts to reduce risks of temporary flow regime change by attempting to limit extraction of groundwater from the LMH, what appears overlooked, and of much more significance, is the **permanent change in the existing groundwater flow regime (with associated nearby bromate/bromide plume consequences) that will arise from the wide-scale removal of very permeable sand-gravel Lower Mineral Horizon aquifer material below the boulder clay and its subsequent replacement with near 'impermeable' backfill *"site won overburden and interburden material"*** (GWMP, Section 2.2.3 (LMA meaning Lower Mineral Aquifer has been replaced by LMH aquifer here and elsewhere for ease of reading) (Also, described in Brett Response to Hatfield Road Quarry, Consultation Questions and Statements (21 August 2019): "*The LMH within all phases will be backfilled with site won* ***clay forming a low permeability flow barrier*** …"). The net outcome of the proposed extraction of around 55% of the 8 million tonnes of sand/gravels by the development **is to replace some 4.4 million tonnes (~ cubic metres) of highly permeable sand-gravel LMH aquifer material over an area of ~ 500 m by 500 m that currently transmits significant groundwater flow, with a vast plug of aquitard, near**

impermeable, clay material; this will act as a "*low permeability flow barrier*" and fail to transmit barely any of the LMH aquifer flows continuing from upstream of the site – these flows will have to, forever post-development, divert around this vast near impermeable, permanent plug of aquitard. Ironically, the protective boulder clay aquitard has become the replacement aquifer, a very poor one at that. **The divergence in flow, and "*existing hydrogeological flow regime*" change constitutes a significant and permanent breach of EA condition ii, with knock-on breaching of EA Condition iii due to its influence on the nearby plume and consequent change in plume capture by the plume-remediation scavenger well.**

5. Expanding on the groundwater flow detail and breaching of EA Condition ii caused by aquifer excavation and backfill by "*site won overburden and interburden material*" - Impact of the backfill is briefly mentioned in the GWMP predicting "*As the filling proceeds and given the permeability of the LMH aquifer, it is expected that any resulting mounding of the groundwater surface created by the infilling process will be slight and short-lived and the groundwater equilibrium will quickly re-establish itself because of the hydraulic connection between the chalk and the LMH aquifer*." (GWMP, Section 2.2.3). Some process aspects are valid, however the outcome indicated is not. **The impact of the considerable volume of low permeability material used to fill the former aquifer void on the hydrogeological flow regime is long-term, permanent and significant.** Examination of the current groundwater flow field contouring in the GWMP (DWG No. 02 (page 32)) and reproduced in Fig. 1a below indicates a currently **unhindered** (even contoured) groundwater flow gradient through the site's sand/gravel LMH aquifer. Moreover, added groundwater flow direction arrows (approx.. ~ perpendicular to contours) confirm site groundwater currently convergent on the Bishop's Rise scavenger well. **The data strongly supports all current LMH aquifer groundwater flow across the site ultimately reaches and is extracted by the scavenger well. Hence, any perturbation of site flows must interfere with the extracted water scavenged by the well. The permanent insertion of roughly 4.4 million tonnes (~ cubic metres) of low permeability clay backfill across the site into the LMH has to cause considerable changes to the existing LMH hydrogeological flow regime; flow will simply not be able to easily migrate cross site post backfill within the LMH.** Whilst 3-D numerical flow modelling would be required to predict this accurately, **reasonable conceptualisation illustrated in Fig. 1b is that the majority of diverted LMH groundwater flow will laterally flow around the site's low permeability aquitard plug, moving more easily horizontally into the wider LMH aquifer** (flow may occur through ~20% of a porous gravel unit compared to just ~2% of the fractured chalk, recognising relative transmissivities are also influential). L**ateral spreading of groundwater will also be enhanced by the flow-restricting, capping boulder clay unit remaining beyond the Site boundary.** Whilst it could be argued some limited flow my still traverse site in the deep thin layer of LMH gravels not extracted, flows may be partly restricted due to partial plugging by **wash out of the backfilled over/interburden fine clay particles accumulating there**. Further wash out of backfill fine sediments and groundwater transport especially into wider chalk fissures, could also lead to **'Suspended sediment' problems at the Scavenger well** and reduce its efficiency. A complex 3-D integrated numerical model of both the LMH and Chalk would be required to predict the flow diversion created and the alteration of flowlines of groundwater arriving at the scavenger well. **Certainly though, the EA Condition *ii) any activities close to the plume* (it is, see following point(s)) *must not change the existing hydrogeological flow regime*, cannot be met.**

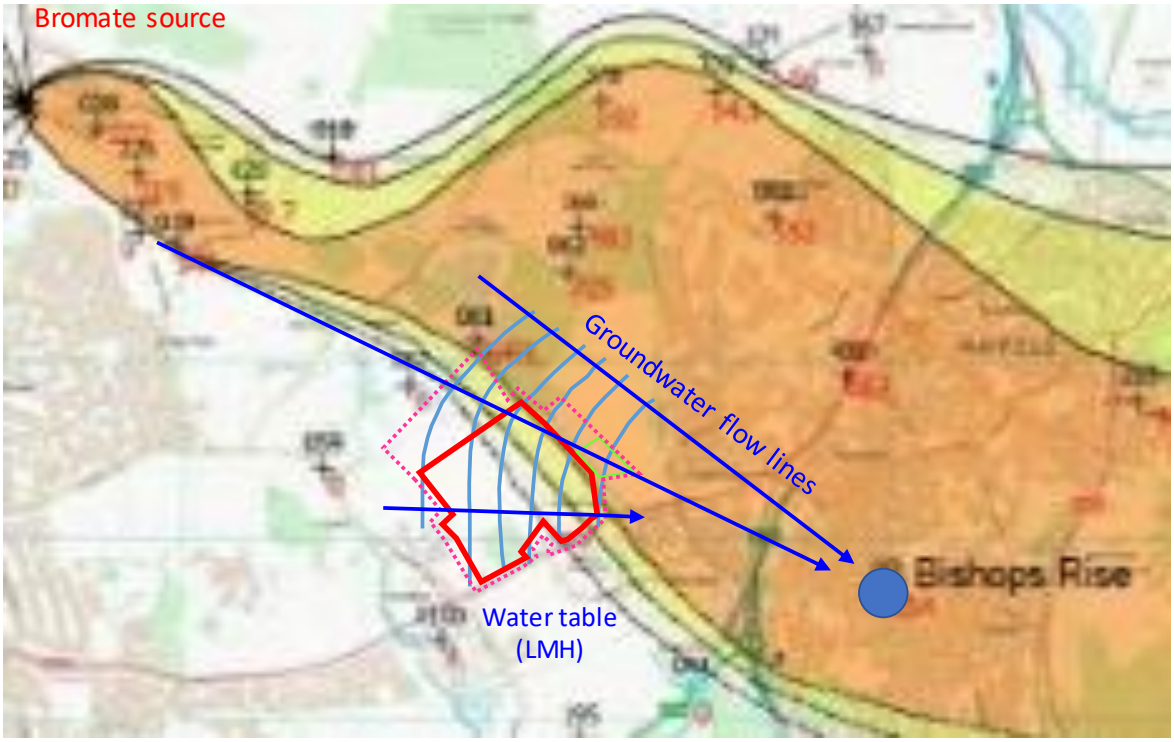

Fig. 1a. Current groundwater flow in LMH aquifer (using actual site hydraulic head contours obtained from GWMP DRW 02). The convergent contours support that groundwater flowing through the Site will be extracted by the Bishop's Rise scavenger well.

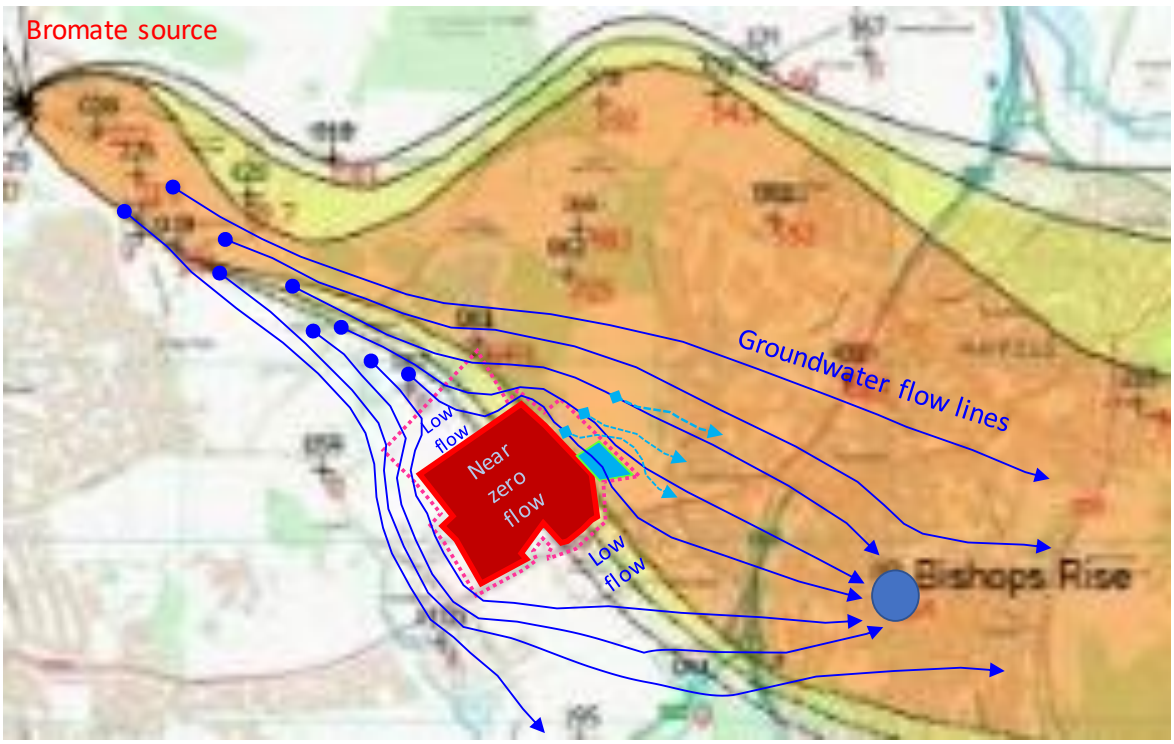

Fig. 1b. Conceptualised LMH aquifer groundwater flow being deflected around low permeability clay backfill of quarried LMH void with increased potential for flowlines to now evade capture by the Bishop's Rise scavenger well. Deflection (light blue pathlines) is also induced by temporary infiltration lagoon discharges to LMH. Distortion of flowlines will be influenced also by distribution of the gravels to some degree (not shown). The conceptualisation illustrates the permanent breaching of EA Condition ii.

6. **Failure to meet EA Condition iii (illustrated in Fig. 2) will be the knock-on effect of the failure to meet EA Condition ii arising from LMH aquifer material (gravel) removal and backfill with low permeability inter/overburden clays. This constitutes a significant activity close to the plume that will *"interfere with the remediation of the bromate and bromide pollution."*** It is clear from the Developer's (and other's) groundwater monitoring data that a significant proportion of the bromate/bromide plume resides in the LMH aquifer. Both high bromate/bromide concentrations occur, at minimum, immediately adjacent to the eastern boundary of the site, and arguably on site. **The central concern, overlooked in the GWMP, is that the proposed low permeability backfill of the LMH void will effectively 'push' parts of the bromate/bromide plume away from the site, potentially beyond the reach of the Bishop's Rise scavenger well, thereby increasing the risk of diverted bromate/bromide plumes migrating to other public water supply wells.** The impact may be overlooked in monitoring data later collected as **significant plume diversion may cause Bishop's Rise scavenger well plume concentrations to decline that is misconstrued as an improving situation. A false hope in that the plume components, previously captured are now missed by the scavenger well, deflected elsewhere.** Such impacts may take some time to manifest and LMH quarrying root cause potentially overlooked. **Conceptualisation of the difference in plume capture is shown in Fig. 2** (for simplicity, the detail of bromate/bromide plume discharge from the chalk up gradient into the gravels and control of the exact distribution of the gravels, extensive around the quarry Site, are not illustrated) **.** Before development, current groundwater flow through the site (Fig. 1a) is shown as a near straight flow line from the core of the bromate plume near the pollution source area to the Bishop's Rise scavenger well, with this flow line (long blue arrow Fig. 1a) just clipping, or immediately adjacent to the north-east corner of the site. **This is a critically important observation that shows the north-east corner edge of the Site is directly on the critical flow line connecting the main core of plume contamination near the source to the remediation scavenger well, a flow line that should not be interfered with.** This observation is consistent with current plume concentrations at this north-east site perimeter edge. **It is probable that the Bishop's Rise scavenger well has laterally pulled (aligned) any on-Site older plume contamination (map backdrop plume in Fig. 1a) on to the direct flowline shown, possibly helping to reduce the bromate contamination that had previously drifted on to the Development Site (see later Figure 3). The impact of blocking the groundwater flow field through the LMH aquifer on the Development site and diversion of the groundwater flow field in the LMH groundwater is conceptualised in Fig. 2b that shows stylised example red plume flow path-lines from the core of the source-plume area upstream. The fundamental problem with the low-permeability backfilled Site void groundwater flow defection is that it inhibits the scavenger well access to the upstream-from-Site plume contamination, to some extent shielding that contamination from a direct connection scavenger well access evident in Fig. 2a. Some plume flowlines previously captured by the scavenger well may no longer be captured and follow more northern routes, or perhaps less likely, split to a southern route and pose increased risks to Affinity Water public water supply wells at Tytenhanger and Roestock currently protected.** Again, a numerical model would be required to make plume predictions. It is recognised too, the plume movements indicated here do not apply to that contamination in the chalk that would remain largely unchanged. The impact though on the bromate/bromide plume in the LMH aquifer an important shallow flow horizon that transmits bromate contamination to the scavenger well area received from the deeper chalk upstream is significant with its extraction at the scavenger well also jeopardised. **Certainly, the EA Condition iii – "*any activities close to the plume must not interfere with the remediation of the bromate and bromide pollution.*" cannot be met due to the extraction and backfill of the Site's LMH below the boulder clay and consequent diversion arising of the shallow plumes.**

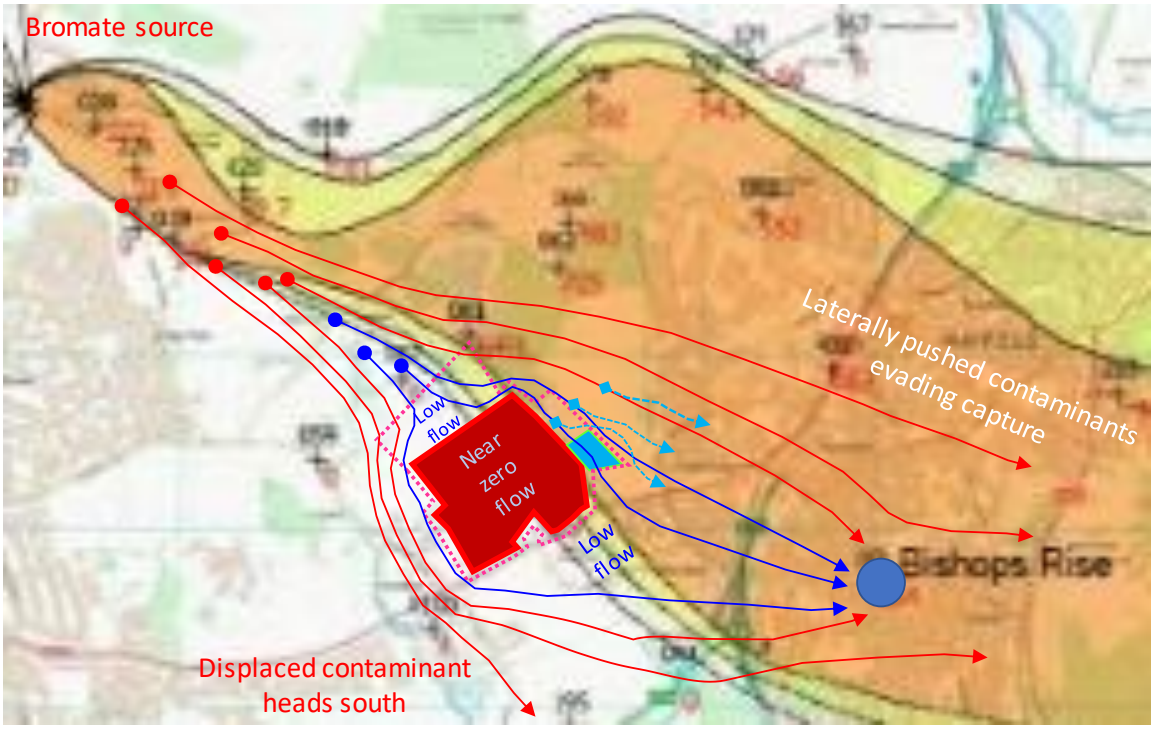

Fig. 2. Conceptualised LMH aquifer groundwater bromate plume stylised flowlines of contaminants (red lines, where particle start in the contaminant plume) being deflected around low permeability clay backfill of quarried LMH void with increased potential for contaminants to be pushed laterally away from site and increased risk of evading capture by the Bishops Rise scavenger well. Temporary deflection also shown from infiltration lagoon discharges to LMH. Note that the bromate plume in the deeper chalk would not be deflected in this manner. The schematic illustrates the processes that effectively cause breaching of EA conditions ii and iii by removal of the LMH aquifer gravel and backfill with low permeability material.

7. **Regarding EA Condition i - *No mineral is extracted from within the existing plume of bromate and bromide groundwater pollution*,** opinion indicated below is intended to add to the collated, excellent work on this aspect by the Ellenbrook Area Residents Association. I commend their tenacity driven by understandable local resident concerns – a Citizen's Science award should be given! Some opinion nonetheless follows, **the Fig. 3 conceptualisation developed under item i below is of key importance.**

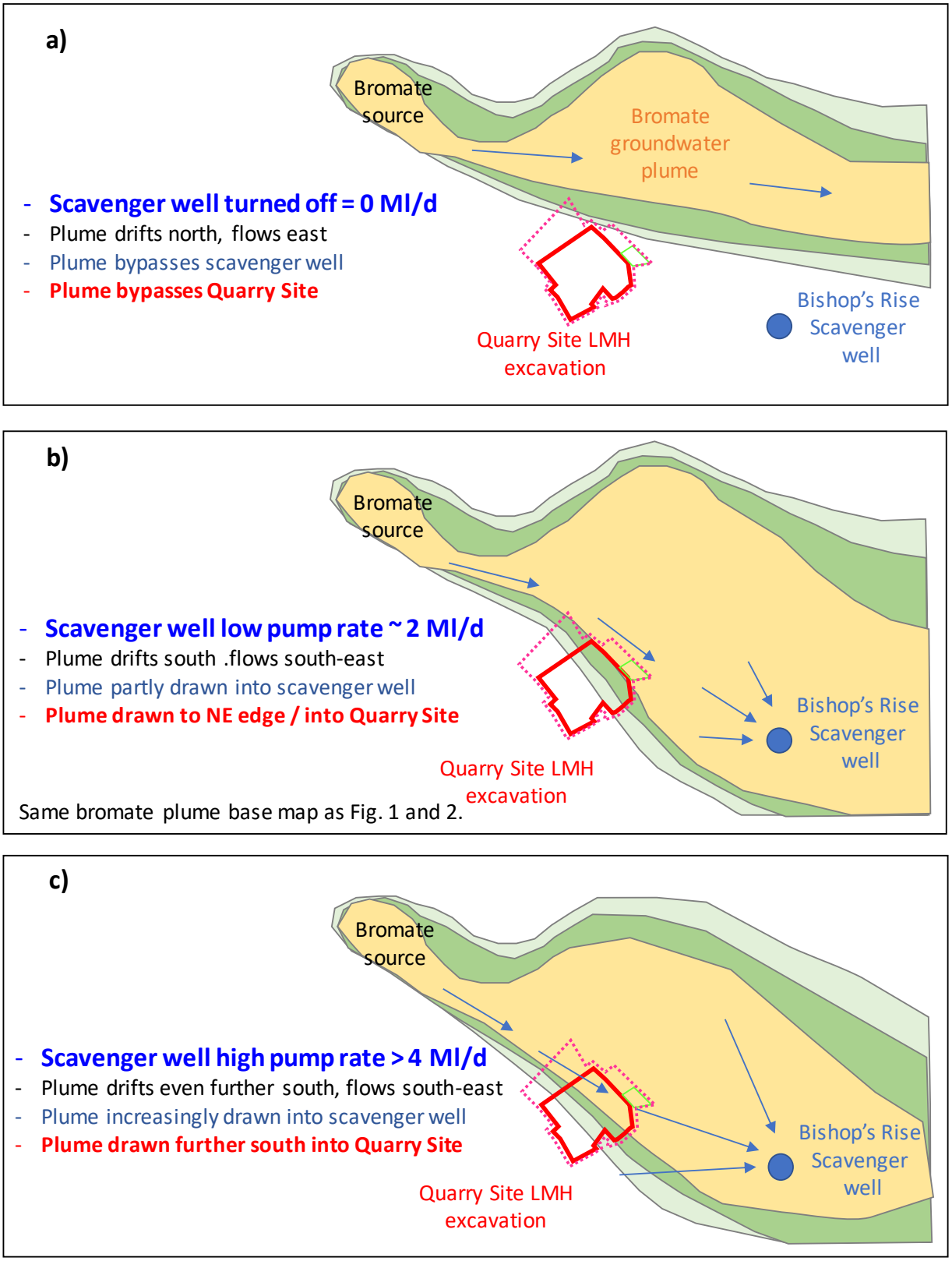

Fig. 3. Conceptualised sensitivity of bromate plume occurrence in Quarry Site LMH aquifer to Bishop's Rise scavenger well extraction rates. Increased pumping causes better plume capture and remediation, but progressive southwards plume movement, increasingly dragging the plume across Quarry Site, and increased risk of breaching EA Condition i.

i. **Occurrence of bromate groundwater contamination in the LMH and chalk underlying the Quarry Site is significantly controlled by the extraction rates of the Bishop's Rise scavenger well – this is conceptualised in Fig. 3. Fig. 3a conceptualises if the Bishop's Rise scavenger well is not operating** then the bromate plume would be expected to largely bypass both the scavenger well and the quarry Site, the latter facilitating EA Condition i to be more likely met (subject to draw in of the plume by the quarry groundwater abstraction). The plume pose threats to other public water supply wells, notably Essenden. **Fig. 3b conceptualises increased scavenger well pumping rates to say 2 Ml/d, quite low scavenger rates that are comparable to recent actual rates** (rates that have been lower than optimal due to effluent discharge constraints (sewer pipe partial blocking)), draws the plume southwards, capturing part of the plume in the scavenger well, but also causing the bromate plume to begin to encroach into LMH and chalk groundwater on the eastern side of Site. This would account for recent observations of a bromate plume very close to the north-east corner of the quarry Site. **Fig. 3c conceptualises yet further increased pumping to around 4 – 5 Ml/d more optimal plume remediation rates,** that have been recently implemented at Bishop's Rise (following rectification of the effluent discharge constraint above) would cause the plume to be drawn yet further south giving an increased bromate mass abstraction (i.e. improved remediation), but also increased draw of the bromate/bromide plume through the quarry Site groundwater. **The conceptualisation indicates that a significant and likely overwhelming control of bromate groundwater contamination occurrence in quarry Site groundwater is the pumping rate of the Bishop's Rise scavenger well. Higher abstraction rates of 4 – 5 Ml/d preferred for more optimal remediation (plume capture and protection of other supply wells) will lead to greater bromate plume migration into the quarry site LMH aquifer gravels and increased risk of breaching EA Condition i. Hence the viability of meeting EA Condition i is not controlled by the Site developer primarily, but rather the operator of the Bishop's Rise scavenger well, i.e. Affinity Water** (potentially influenced by other stakeholders, e.g. the EA, local community who may wish to see optimal plume remediation). **This sensitivity of the viability of meeting EA Condition i upon a third party's activity is a direct consequence of locating the quarry close to the high concentration gradient fringe of the bromate plume and directly in between the main bromate source area and the single scavenger well remediating the plume. The viability of extraction of the LMH gravel resource hence appears dependent upon the operation of the Bishop's Rise scavenger well at rates that may be sub-optimal to the remediation of the bromate plume. Development of the quarry and meeting of EA Condition i would hence require the scavenger well pumping rates to be sub-optimal for remediation – this does not seem appropriate - it constitutes interference with the remediation of the bromate and bromide pollution (i.e. breaching of EA Condition iii).** Most of the points that follow can be understood within the above conceptualisation.

ii. Regarding bromate groundwater contamination, the EA indicate bromate concentrations of concern are ≥ 2 µg/l (0.002 mg/l), consistent with application elsewhere. It appears at some time seven boreholes at the Site perimeter, have displayed bromate contamination with six above the 2 µg/l limit. This frequency of discovery points to bromate occurrence on site remaining a viable issue of concern, particularly as the **monitoring of the LMH appears sparse in the perimeter area most likely to be contaminated (the north-east to east side of Site) and extremely sparse on Site in the LMH areas to be quarried.** Regarding very near-to-Site monitoring wells to the immediate east, bromate is very elevated in the LMH at 14, 92 and 233 µg/l and slightly further away laterally at 563 µg/l (Borehole 12) in the plume core, **all very significantly above the EA threshold**. The current low, but above-limit, bromate concentrations on the site perimeter (and potentially on site – little data) but with the bromate plume very close by is attributed to quite low scavenger rates of Bishop's Rise in recent years along the lines of the Fig. 3b conceptual model. **The concern is that with the recent increase in Bishop's Rise pumping rates back to achieve more optimal plume remediation conditions will lead to southward drift of the plume and increases in bromate on site as the site scenario gradually evolves (will not be instantaneous) to a Fig. 3c conceptualisation and increased risk of breaching EA Condition i.**

iii. There is concern that the monitoring of the LMH in the east to north-east site perimeter where the bromate/bromide plume is most likely to enter the site is quite sparse. Within-Site monitoring of the LMH groundwater quality is extremely sparse. A**lthough internal-site boreholes in excavation areas would be sacrificed and lost in quarrying, this does not excuse limited monitoring internal to the quarry site prior to permission being granted and also allowing continual monitoring leading up to mineral resource abstraction. For instance even just least one monitoring well**

placed within each phase of operational area positioned towards the plume-side of phase area centre with quarry excavation on the opposing side initially could provide valuable monitoring of local groundwater before and during much of the excavation (until destroyed by excavation) and forewarn of problems prior to excavation, indeed problems would be potentially intercepted ahead of detection of problematic bromate concentrations being discharged to the lagoons as currently proposed). This would provide much more robust advanced assessment of the likelihood of EA Condition i being breached with time – clearly this is important in relation to the conceptualisation of Fig. 3 site contamination sensitivity to scavenger well extraction rates that may cause bromate to vary over time on site.

iv. **Taken together the sparseness of LMH monitoring internal to the site and in the perimeter boundary of site most likely to encounter the plume, the occurrence of elevated bromate very close to Site, plus the recognition the heterogeneous (variable) geological subsurface and typically complex bromate concentration distributions at the plume fringe may cause significant plume occurrence variability on site with preferential 'channelling' through the more discrete permeable gravel pathways, then the risks of breaching EA Condition i are significant. These risks should be better quantified ahead of development to better assess the risk of a stalled development part way through that arises from breaching of the EA Conditions. A stalled, part-completed quarry development is clearly problematic for all parties.**

v. The occurrences of high bromate plume concentrations very close to site are an important evidence supporting the significance of the above Fig. 2 conceptualised influence of the low permeability backfill of the LMH void and 'pushing' away of the plume from the Site. **These concentrations demonstrate conclusively there is a bromate plume very close to Site to push away that will decrease the capture potential of the scavenger well and hence the failure to comply with EA Condition iii.** Whilst these near-to-site plume concentrations would still likely be captured by the scavenging well, **it is the more laterally displaced plume core, higher concentrations, slightly further away form Site that may ultimately evade scavenger well capture leading to a decrease in scavenger well remedial performance. Combining both Fig. 2 conceptualisation of the diverted flow around the low permeability plug inserted in the LMH aquifer with the Fig. 3 conceptualisation of increased bromate in groundwater on the quarry site with increased scavenger well pumping rates may produce quite complex outcomes** that really require numerical modelling to assess. A key concern though at high scavenger rates is that the higher concentrations drawn down to the south side of site could deflect further southwards towards Tytenhanger and Roestock abstractions.

vi. Clearly there is some bromide contamination on site which is above the *background levels of bromide in groundwater indicated by the EA, in the Hatfield Area, at 50-100 ug/l*. The EA have in earlier letters indicated "If further evidence comes to light demonstrating that current background bromide concentrations near Hatfield in the groundwaters of the Lower Mineral Aquifer and the Chalk aquifer are higher than 125 ug/l then we will reconsider the bromide plume boundary definition.". Some concentrations in both the UMH and LMH on site do exceed this. The EA though point to the confounding problems of various sources of bromide in their letters. Whilst this is in true, and an issue, **the reasonable working assumption is that the bromide observed in this chalk aquifer is a bromide plume from the bromate/bromide source and the onus should be on the Developer to prove it is from another source (e.g. perhaps a nearby landfill?) and does, or does not require management under the conditions set).** Further, in their recent response (letter of 18 Dec 2019) to my earlier Expert Opinion, the EA reiterate the other sources issue and also indicate "*For the purposes of practicable regulation of the existing CEMEX Hatfield Quarry, we have taken the position that bromate concentrations of concern are ≥ 2 µg/l (0.002 mg/l). It is consistent to apply this definition to neighbouring planning and permit applications for mineral extraction and landfill*.". **Hence, the EA appear unwilling to set a bromide-of-concern threshold value unfortunately. This is mystifying given the specific mention of bromide groundwater pollution in the EA condition i, and hence should still be questioned.** There is some expected separation of the bromide and bromate plumes on site that may account for the separation of plumes, for instance at the plume lateral fringe, that may account for the bromate/bromide plume discrepancies at the current Site. This is endorsed by site and next-to-site observations that where just bromide is present then both bromate and bromide are invariably close by. Hence bromide over say 125 *µg/l* would be a good indicator that bromate is likely very close by. **The management/regulation of the site should, at minimum, more proactively use the bromide to**

forewarn of issues, e.g. unusual rises in bromide used as a trigger. How can the regulator specify bromide plume in a condition and then fail to specify any concentration to delimit that plume? Also, understanding of the bromide anomaly on site (high bromide relative to bromate) is likely to inform the bromate plume fringe understanding.

8. **Regarding extraction of groundwater from the LMH aquifer unit (GWMP, Section 2.2.2), the GWMP does not provide sufficient detail required of extracted groundwater volume estimates to establish the risks associated with what appear large daily extraction rates in the GWMP Table 2-3.** Although there would be some uncertainty in estimates, these appear quantifiable based on minimum and maximum groundwater levels (piezometric surface) existing (+ climate change allowance). For instance, a (hydro)geological section (XsectionCutv6) of the north-west face of the site indicated groundwater (piezometric) level range remained within (or perhaps just above) the interburden confining layer and would hence qualify for Method 2 (no groundwater removal) or Method 3 (with groundwater removal). It is unclear what controls which method is chosen and likelihood of more contentious Method 3 being used. It is unclear too as to what proportion of the Site Method 3 could at maximum apply to. Whilst Table 2-3 (Summary of Predicted Volumes of Water to be Managed) does provides an estimate of the LMH extraction and injection of 2,500-4,500 m^3/d (2.5 – 4.5 Ml/d (megalitres per day), it is unclear how many days per year / project would such a volume be extracted. **The extracted volume on a daily basis is quite large, actually greater than the Bishop's Rise scavenger well current (2017) rate of 1.9 Ml/d, but potentially now comparable to more recent rates of 4 – 5 Ml/d that may give a more optimal remediation performance**. **Hence if quarry abstraction rates are maintained at such high values for even a relatively short length of time then it will begin to interfere with the scavenging capture zone of the Bishop's Rise well, it will begin to draw the bromate/bromide plume in.** Whist the quarry's dewatering zone will be biased to some extent up gradient, the rate appears sufficient to cause lateral draw of the plume, based on the 'pull' laterally on the plume seemingly shown by the current and past public water supply well / scavenger pumping in the ~ 2 – 10 Ml/d range. The local influence of the quarry dewatering that will depend somewhat on the separation between the western groundwater extraction area (excavation phase dependent) and the eastern, near-plume, lagoon injection area, and also the degree of low permeability overburden material backfill of quarried voids. Although the applicant indicates the latter will limit the lateral draw of the plume, which it may in part, **it may also force high velocity groundwater flows along the side of the backfill wanting to draw any contamination from the north-east site corner, or accelerate flows laterally through the deepest gravel layer not quarried below the backfill – the latter could cause in fact an enhanced lateral interaction with the plume to the east of site.** It is recognised that the injection lagoon positioning and injection of similar volumes to that extracted will offset some of the above influences, however, it is effect on the flow regime will be complex. To make any quantitative judgement here on groundwater extraction/injection impacts, key information required would be approximate – expected volumes pumped and over what time duration would continual pumping be expected, overall annual volumes in a typical year, whole project volumes, and results (T, S etc) of the pumping test undertaken. **Overall, the combination of extraction of groundwater by the quarry with some risk of plume draw in and the insertion of low permeability backfill into an aquifer disrupting groundwater with a potential to 'push' plumes away from the scavenger well, will both together pose a complex and challenging scenario to effectively manage leading to risks of breaching all EA Conditions i, ii and iii.**

9. Groundwater reinjection to the lagoons (GWMP Section 2.3.4, Table 2) - It is recognised the injection lagoons are close to the bromate/bromide plume (east side of Site) which does offer hydrogeological – infiltration advantage. However, related arguments made by the Developer (Response to Hatfield Road Quarry, Consultation Questions and Statements (21 August 2019)) appear only partially accurate. Specifically, "*The LMH infiltration lagoon will create a local recharge mound that will serve as a hydraulic barrier to the lateral movement of the plume*" – the position of the lagoon to the south-east corner 'tailend' of site and flow off to the south east will mean this barrier effect is modest. Secondly, the argument "*The LMH within all phases will be backfilled with site won clay forming a low permeability flow barrier between the lagoons and the rest of the mineral site, thereby the risk of lateral movement of the plume is further reduced* ", is fair. **However, it should be recognised though that both of the above activities will combine to increase the lateral injected groundwater 'push' eastwards on the main off-site bromide core plume,**

increasing risks of the plume core being pushed further away eastwards from the scavenger well and evading capture by the well (i.e., the same problem outlined above in Fig. 2).

10. The GWMP does indicate monitoring of bromate etc in the effluents / discharges at time intervals, it would be prudent to request, additional to this, that **when there are large volume throughputs to the injection lagoons, monitoring is stepped up** and monitored at a throughput of an agreed number of volumes, i.e. allows a sufficiently frequent monitoring of a large volume throughput.

Dr Michael O. Rivett

MA (Chem.) PhD (Hydrogeol.) FGS

rivett@groundh2oplus.co.uk

CURRENT POSITIONS

GroundH$_2$O plus Ltd,
Quinton, Birmingham
Director and founder, 2016 –
rivett@groundh2oplus.co.uk

GroundH$_2$O plus Ltd is an environmental consultancy specialising in research-informed hydrogeological assessment and technical review of groundwater contamination issues that are of topical concern to contaminated land, water-industry, nuclear, energy-development, groundwater regulation and developing-world sectors. Dr Rivett, has 30 years' experience in contaminant hydrogeology, 20 years as a university academic. He has a significant track record of published research and project experience serving these sectors.

University of Strathclyde
Department of Civil & Environmental Engineering
Research Fellow part-time (Birmingham based) 2016 –
michael.rivett@strath.ac.uk

Dr Rivett is a part-time Research Fellow focused on the delivery of published research from the Scottish Government funded Climate Justice Fund - Water Futures Programme. A research programme designed to support the Government of Malawi in meeting SDG 6. His 22 publications since 2014 may be downloaded from: https://strathprints.strath.ac.uk/view/author/1104214.html

SPECIALIST AREAS AND KEY EXPERIENCE

- Technical peer review and research-informed advice on groundwater contamination issues
- Groundwater research: university academic / applied research experience over 30 years
- Contaminated land assessment/remediation: specialising in groundwater, complex sites
- DNAPLs / LNAPLs, chlorinated solvents, VOCs, hydrocarbons, emerging organic contaminants
- Surface water impacts from groundwater plume discharges, highway de-icing salt runoff
- Innovative groundwater monitoring methods, e.g., multilevel monitoring, tracer tests
- Nuclear legacy/disposal sites: radiological contaminant fate - management in groundwater
- Onshore oil and gas: environmental baseline monitoring, groundwater protection
- Developing country hydrogeology: SDG-6 relevant groundwater development / protection
- Experienced BSc/MSc/CPD groundwater lecturer and university programme / PhD examiner
- Experienced author, presenter and reviewer of journal papers, technical guidance, etc.
- Experienced chair/member of professional bodies, industry advisory panels, conferences

PUBLICATIONS

- Rivett publication listing: https://scholar.google.com/citations?user=8H8pUbUAAAAJ&hl=en
- Google Scholar: 2393 citations received to Rivett's publications (>100), h-index 25

EARLIER CAREER & EDUCATION

- **1997-2016** Senior Lecturer / Lecturer in Contaminant Hydrogeology - Earth Sciences, University of Birmingham, School of Geography, Earth & Environmental Sciences
- **1996-97** Area Hydrogeologist, Environment Agency, Leeds
- **1994-96** Area Hydrogeologist, National Rivers Authority, Leeds
- **1989-93** Post Doctorate, Waterloo Centre for Groundwater Research, Univ. of Waterloo, Canada
- **1985-88** PhD Earth Sci. (Hydrogeology), Univ. of Birmingham with Water Research Centre (WRc)
- **1980-84** MA Hons. Chemistry, University of Oxford

CITIZENSHIP, MEMBERSHIPS, PROFESSIONAL BODIES, EXTERNAL POSITIONS - examples

- **2014-18 University of East Anglia (UEA)**, School of Environmental Sciences - External Examiner
- **2012-... International Association of Hydrogeologists**, British Chapter - Committee Member
- **2008-... CL:AIRE** - Technology & Research Group – Member of expert advisory group
- **2008-... Sellafield Ltd**, Land Quality Independent Peer Review Panel - Member (via NNL)
- **2006-... Journal of Contaminant Hydrology**, Editorial board member
- **PhD examiner** – 33 occasions at 13 universities in the UK and internationally
- **International Association of Hydrogeologists**, British Chapter – Chair, 2012-17
- **Geological Society** - Council of the Geological Society – Member 2006-09
- **Hydrogeological Group, Geological Society** - Chair 2004-06, Committee member 2001-06

RELEVANT / RECENT PROJECTS - a selection (**bolding** relevant personal / organisations / topics)

GroundH$_2$O plus Ltd (**Rivett**) – (2020) Consultant to **BGS** to provide expert technical groundwater input to the BGS led project on 'Monitoring and analysis of methane in groundwater' funded by the **Environment Agency**.

GroundH$_2$O plus Ltd (**Rivett**) – consultant to CL:AIRE (2018) to provide authoring and editing of a CL:AIRE report on 'Natural Source Zone Depletion (NSZD)' prepared for the **Environment Agency**.

GroundH$_2$O plus Ltd (**Rivett**) – consultant to **BGS** to provide expert technical groundwater input to the BGS led multi-university consortium project (Phase 4, 2018-19) (and Phases 1-3, 2015-18). Science-based environmental baseline monitoring associated with **shale gas development**, (funded by **BEIS**)

Rivett (2012-13) - Contracted by **Environment Agency** to act as Scientific Advisor to provide external peer review of the Birmingham Sherwood Sandstone groundwater modelling ESI Ltd (**Buss**).

RELEVANT / RECENT PUBLICATIONS - a selection

McMillan, L.A., **Rivett, M.O**., Wealthall, G.P., Zeeb, P., Dumble, P., **2018**. Monitoring well utility in a heterogeneous DNAPL source zone area: insights from proximal multilevel sampler wells and sampling capture-zone modelling. Journal of Contaminant Hydrology, 210, 15-30. https://doi.org/10.1016/j.jconhyd.2018.02.001

Tomlinson, D.**, Rivett, M.O.**, Wealthall, G.P., Sweeney, R., **2017**. Understanding complex LNAPL sites: Illustrated handbook of LNAPL transport and fate in the subsurface. *Journal of Environmental Management*, 204, 748-756 https://doi.org/10.1016/j.jenvman.2017.08.015

Rivett, M.O., Cuthbert, M.O., Gamble R., Connon, L.E., Pearson, A., Shepley, M.G., Davis, J., **2016**. Highway deicing salt dynamic runoff to surface water and subsequent infiltration to groundwater during severe UK winters. *Science of the Total Environment* 565, 324-338. http://dx.doi.org/10.1016/j.scitotenv.2016.04.095

Rivett, M.O., Dearden, R.A., Wealthall, G.P., **2014**. Architecture, persistence and dissolution of a 20 to 45 year old trichloroethene DNAPL source zone. *Journal of Contaminant Hydrology, 170, 95-115. http://dx.doi.org/10.1016/j.jconhyd.2014.09.008*

Rivett, M.O., Turner, R.J., Glibbery, P., Cuthbert, M.O., **2012**. The legacy of chlorinated solvents in the Birmingham aquifer, UK: Observations spanning three decades and the challenge of future urban groundwater development. *Journal of Contaminant Hydrology*, 140-141, 107-123. http://dx.doi.org/10.1016/10.1016/j.conhyd.2012.08.006

White, R.A., **Rivett**, M.O., Tellam, J.H., **2008**. Paleo-roothole facilitated transport of aromatic hydrocarbons through a Holocene clay bed. *Environ. Science & Technology*, 42(19), 7118-7124. http://dx.doi.org/10.1021/es800797u

Rivett, M.O., Chapman, S.W., Allen-King, R.M., Feenstra, S., Cherry, J.A., **2006**. Pump-and-treat Remediation of Chlorinated Solvent Contamination at a Controlled Field-Experiment Site. *Environmental Science & Technology*, 40, 6770-6781. http://dx.doi.org/10.1021/es0602748

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Environment Agency

Mr Chay Dempster
Hertfordshire County Council
Minerals & Waste Planning
County Hall Pegs Lane
Hertford
Hertfordshire
SG13 8DN

Our ref: NE/2016/124652/06-L01
Your ref: PL\0755\16

Date: 3 July 2020

Dear Chay

Land at Hatfield Aerodrome, Off Hatfield Road

Application for the establishment of a new quarry on land at the former Hatfield aerodrome, including a new access onto the a1057, aggregate processing plant, concrete batching plant and other ancillary facilities, together with the importation of inert fill materials for the restoration of the minerals working.

Thank you for consulting us on the additional information, we have now reviewed:

- HATFIELD ROAD QUARRY. Planning Permission [PL/0755/16]. Details required under Condition [26] and [30]. Groundwater and Water Management Plan. Final (Version 5). Prepared for: Brett Aggregates Limited by SLR consulting.
- HATFIELD ROAD QUARRY - Bromate and Bromide Groundwater Quality (Aug 2013 - Nov 2019).

The applicant has provided a significant body of site-specific hydrogeological information, which includes periods of extreme low and high groundwater level. We have carefully considered the application as a whole and in the context of the wider information regarding the groundwater pollution and activities on neighboring sites. We are satisfied that the recent monitoring results are in keeping with those presented as part of the initial planning application in 2016 and updated in 2019.

The Groundwater and Water Management Plan satisfies the previously recommended planning conditions for a Groundwater Management Plan. However the Groundwater and Water Management Plan covers the whole site and it recommends refining the water management plan for each phase of the development. We agree with this approach and have amended our previously requested condition (letter ref. NE/2016/124652/04-L01dated 10 October 2019) to the following condition to secure the revisions of the water management plan prior to commencement of each Phase of the development:

Environment Agency position
Controlled waters are particularly sensitive in this location because the proposed development site lies close to groundwater pollution of bromate and bromide from an off-site source.
As previously stated, we advise that:

- No mineral is extracted from within the existing plume of bromate and bromide

Cont/d..

INVESTOR IN PEOPLE

groundwater pollution
- any activities close to the plume must not change the existing hydrogeological flow regime
- any activities close to the plume must not interfere with the remediation of the bromate and bromide pollution.

The submitted information demonstrates that the applicant will be able to fulfil these points and manage the risks posed to controlled waters by this development. Further detailed information will however be required before each phase of development is undertaken. We believe that it would place an unreasonable burden on the developer to ask for more detailed information prior to the granting of planning permission but respect that this is a decision for the local planning authority.

In light of the above, the proposed development will be acceptable if it proceeds in line with the submitted documents referred to above, and a planning condition is included requiring the submission of a Water Monitoring & Management Plan for each phase. This should be carried out by a competent person in line with paragraph 178 of the National Planning Policy Framework.

Without this condition we would object to the proposal in line with paragraph 170 of the National Planning Policy Framework because it cannot be guaranteed that the development will not be put at unacceptable risk from, or be adversely affected by, unacceptable levels of water pollution.

Condition
Each phase of the development hereby permitted shall not commence until a Water Monitoring & Management Plan, including a timetable of monitoring and submission of reports to the local planning authority, has been submitted to, and approved in writing by, the local planning authority. Reports as specified in the approved plan, including details of any necessary contingency action arising from the monitoring, shall be submitted to, and approved in writing by, the local planning authority.

Reason
To protect controlled waters and to not exacerbate the existing groundwater pollution.
- ensuring no deleterious impact to groundwater quality, in accordance with Policy 16 (Soil, Air and Water) of the Hertfordshire Waste Core Strategy 2012;
- To prevent development that would have an unacceptable risk or adversely affect water pollution;
- To minimise the risks associated the flow and quantity of surface and groundwater and migration of contamination from the site, in accordance with paragraph 143 of the NPPF.

The Water Monitoring and Management Plan for each phase shall refine the Groundwater and Water Management Plan. Final (Version 5). Prepared for: Brett Aggregates Limited by SLR consulting and shall include:

1. Details of construction and water management during construction of the two infiltration lagoons.
2. Clarification of the restored site discharge point for the UML back-drain.
3. A long-term groundwater monitoring plan to continue during and post the operational phase.
4. A mechanism for periodic review.

The plan should include monitoring and reporting programs, location of monitoring

Cont/d..

points including additional monitoring boreholes particularly in the vicinity of the infiltration lagoons, analytical suites, limits of detection and groundwater level monitoring. Details of contingency actions in the event of impact shall also be included. The two infiltration lagoons and back drain shall be constructed in accordance with the approved Groundwater Management Plan prior to the commencement of mineral extraction.

Groundwater monitoring shall be conducted by the Mineral Operator in accordance with the long-term groundwater monitoring plan for the lifetime of the development.
Prior to mineral extraction in each Phase, the Groundwater Management plan shall be reviewed and an updated plan submitted and approved in writing by the Mineral Planning Authority.

The management of water shall be carried out in accordance with the approved Plan, or as otherwise agreed by the Mineral Planning Authority under the periodic review process, for the lifetime of the development.

Advice
Soils affected by contamination may be encountered at the start of the development (e.g. topsoil removal), owing to the site history as an aerodrome.
Contaminated soil that is (or must be) disposed of is waste. Therefore, its handling, transport, treatment and disposal are subject to waste management legislation, which includes:

- Duty of Care Regulations 1991
- Hazardous Waste (England and Wales) Regulations 2005
- Environmental Permitting (England and Wales) Regulations 2016
- The Waste (England and Wales) Regulations 2011

Developers should ensure that all contaminated materials are adequately characterised both chemically and physically in line with British Standard BS EN 14899:2005 'Characterization of Waste - Sampling of Waste Materials - Framework for the Preparation and Application of a Sampling Plan' and that the permitting status of any proposed treatment or disposal activity is clear. If in doubt, the Environment Agency should be contacted for advice at an early stage to avoid any delays.
If the total quantity of hazardous waste material produced or taken off-site is 500kg or greater in any 12 month period, the developer will need to register with us as a hazardous waste producer. Refer to the hazardous waste pages on gov.uk for more information.

Permit Advice
The proposed landfill activities on this site have been granted a permit (Case reference: EAWML 403832, Permit number: EPR/EB3808HD) under the Environmental Permitting Regulations (England and Wales) 2016.
We considered the following areas of potential harm when assessed and approved the permit application:

- Management - evidence that the operator has an environmental management system, will install site security and be adequately financed. We will consider implications for multiple operator installations and how the operator will deal with accidents.
- Operations - evidence that the operator has considered the entire landfill life cycle, including the landfill design and its construction (landfill engineering), the day to day operation of the site (including how they will confirm they are only accepting wastes appropriate for this site) and how they plan to close the site and manage it to prevent pollution during the aftercare phase once waste disposal stops.

- Emissions and monitoring - evidence that the operator will manage permitted emissions to water, air and land to prevent or where that is not possible, reduce pollution. Evidence that the operator has procedures in place to manage the impact of odour, noise and pests, and that emissions from the site will be monitored to confirm that mitigation measures are effective.

Yours sincerely

Mr Kai Mitchell
Sustainable Places Planning Specialist

E-mail HNLSustainablePlaces@environment-agency.gov.uk

End

Hatfield Town Council Response to HCC Consultation-March 2020

re: Extra Bromate and Bromide readings on the Aerodrome/Ellenbrook Quarry Site Supplied by SLR in January 2020

Summary points

A summary of key points regarding the new readings is made below. This is to be read with Appendix 1- ,and is based on the expert opinion of Hydrogeologist Dr.Michael Rivett, and Maps in Appendix 2, and the Summary of Dr.Rivett's short report submitted in Dec 2018 (Appendix 3 -Attached), and the context of the Mineral Plan (Appendix 4) Points referring to the 3 Environment Agency (EA) conditions outlined in Appendix 1 & 3 are in blue
Serious breaches or inability to comply with EA conditions or other serious points are in yellow.

S1. Significant groundwater-related problems and **risks arise from the proposed development described within the Brett Ground Water Management Plan. These stem from the proposed excavation below the boulder clay *of* the lower mineral horizon (LMH) gravels overlying the Chalk.** These are focused on in Appendix 1. Principally the proposed activity compromises:

- the protection of the Chalk aquifer groundwater resources ;
- optimal remediation of the > 20 km bromate/bromide groundwater pollution plume, to protect Hertfordshire drinking water.

S2. The Environment Agency (EA) has proposed three important 'EA Conditions' - but these are predicted by Dr.Rivett to be breached, primarily due to consequences arising from activities relating to gravel extraction from the LMH.

S3. Regarding EA Condition ii, *"any activities close to the plume must not change the existing hydrogeological flow regime"*, this condition will be permanently breached post and during development by the proposed replacement of excavated LMH permeable sand and gravel aquifer formation with permanent insertion of roughly 4.4 million tonnes of low permeability clay backfill across the site. This will cause considerable changes to the existing LMH hydrogeological flow regime - groundwater flows will be deflected around, rather than pass through the current Site with some groundwater flowlines previously extracted by the Bishop's Rise plume remediation scavenger well no longer extracted (conceptualised in later Fig. 1). (see Appendix 1)

S4. The knock-on impact of failure to meet EA Condition ii above, will be failure to meet EA Condition iii – *"any activities close to the plume must not interfere with the remediation of the bromate and bromide pollution"*. The proposed low permeability backfill of the LMH void will effectively 'push' parts of the very close by bromate/bromide plumes in the surrounding LMH gravel aquifer away from the site, potentially beyond the reach of the Bishop's Rise scavenger well, thereby increasing the risk of diverted bromate/bromide plumes migrating to other public water supply wells (conceptualised in later Fig. 2).
Perhaps equally disturbing is the fact that the plume is moving, and currently the activity of the Bishops rise scavenger pumping action, and need for remediation, is drawing the plume South, and has already drawn it over the North East Corner of the Quarry site. Whilst Scavenge pumping at Bishops is ongoing, there will be interference on the quarry site, and there is tension between the goals of remediation, and the goals of quarrying.

S5. Regarding EA Condition i *"No mineral is extracted from within the existing plume of bromate and bromide groundwater pollution"*, *O*ccurrence of bromate groundwater contamination in the LMH and chalk underlying the Quarry Site is significantly affected by the groundwater pumping rates of the Bishop's Rise scavenger well (conceptualised in later Fig. 3). The conceptualisation indicates that the

pumping rate of the Bishop's Rise scavenger well exerts a significant, likely overwhelming, control on bromate occurrence in quarry Site LMH groundwater. Higher abstraction rates of 4 – 5 Ml/d (megalitres per day) are necessary for more optimal plume remediation will lead to greater bromate plume migration into the quarry site LMH aquifer gravels and so breaching EA Condition i. Recent observations of low, but still significant bromate at the Quarry site perimeter, with very high bromate nearby, probably have arisen from the lower scavenger well pumping rates in recent years due to technical issues. However, Site bromate would be expected to gradually increase on Site, with recent resumption of higher scavenger pumping rates. Hence the viability of meeting EA Condition i is not under the control of the Site developer primarily, but rather the operator of the Bishop's Rise scavenger well, whose goal is to remediate the bromate plume optimally (if possible at the higher abstraction rate).

S6. In conclusion,this is inappropriate choice of quarry site located between the bromate source and single scavenger remediation well. For the quarry developer to meet the EA Condition i, they would require scavenger well pumping rates to be sub-optimal for remediation. This is not appropriate for safely controlling drinking water and constitutes interference with the remediation of the bromate and bromide pollution, thereby breaching EA Condition iii. Given the severity of the groundwater pollution in this Hertfordshire area and the need to optimise the remediation, of what is Europe's largest groundwater plume and to safeguard many public drinking water supply borehole sources, such quarry development is not considered appropriate.

The Tension, and choice between Bromate remediation and Quarry in Ellenbrook fields

S7. Dr.Rivett's report, and careful observation of bromate levels, during higher rate scavenge pumping at Bishops rise (BR), appears to show that EA condition i) is now being breached on the Ellenbrook quarry site. It appears that the plume has been pulled permanently Southwards under the quarry through 10 years of remedial pumping at that location.

S8. However this remedial pumping is still currently needed at Bishop's Rise for keeping East Herts, Essendon and the New River water, clear of higher concentration of bromate. Essendon and the New River are published drinking water sources for Hatfield and London respectively. Affinity Water need the pumping at BR to continue to bring the bromate concentration down in the East and to protect this drinking water.

S9. The Public Inquiry of 2008 requires bromate remediation. Nothing else is in place yet besides Bishops Rise scavenge pumping and seems is not likely to be for a year or more The cost of a new remedial pumping station as recommended, after the EA 2019 St Leonard's Court document reported failure of remediation of the Bromate Plume, after 10 years, in 2018, is considerable eg > £2 million.

S10. EA have stated since 2018 that they now realise they need an "extra" remedial facility, besides Bishops Rise. Experts now think this should be at the narrow neck of the plume in the North of Ellenbrook fields, as this could cut off the source of the bromate, and so accelerate the remediation under Hatfield, and in East Herts over the next 10 years.

S11. The plume moves underground and is pulled down under the quarry site across the NE Corner , when Affinity Water are pumping at Bishop's Rise. Affinity have confirmed this, despite Brett claiming the plume has not moved in the last 5 years.

S12. Affinity Water have spent time and resources clearing the ($FeBr_3$) clogged up sewer pipes at BR in the last year to enable the pumping rate at BR to go up to 4M litres per day . It was down to 2M litres per day last year. They appear to intend to keep the pumping rate up.

S13. We do not think Affinity Water have any intention of stopping pumping at Bishop Rise, for another 10 years and probably more, or until the bromate has gone, and it would still be part of the wider plan for remediation.

S14. However it has taken EA producing their three conditions in the last 2 years for quarrying to be questioned and an external independent hydrogeological consultant, before Affinity Water have admitted that the remedial pumping considerably interferes with the quarry groundwater bromate levels and vice versa, as shown in fig 3 in Appendix 1 of Dr.Rivett's March 2020 report.

S15. So that it appears now that EA condition iii is already being breached, and so are EA ii and EA i, almost certainly are going to be breached, if digging begins because remediation of the bromate plume is paramount, for Hertfordshire's water. Whilst BR is active, the plume lies under the quarry site .

S16. However Ellenbrook fields, is accessible as the future second scavenge pumping site and is unique optimum location for the safe and essential remediation of the bromate plume, for Herts drinking water for the sake of Herts residents. Hertfordshire does not need a quarry in this location, when there is a safe quarry site at Briggens in East Herts for the Mineral plan, but we do need more remediation.

S17. The quarry (abiding by EA conditions) and remediation appear now to be mutually exclusive in Ellenbrook fields in the quarry site. It is clear to residents that HCC should choose to protect the Herts drinking water, rather than quarry on this site.

S18. Olive farm, on Briggens estate, quarry site (Tarmac) should also be considered for planning permission before Ellenbrook as priority, for HCC to be able to consider planning a safe quarry with integrity for a coherent County Mineral plan. This would decrease the risk to our drinking water and share the burden of quarrying more equitably across Hertfordshire.

S19. This and a seminar from EA on the bromate plume, addressed to Hertfordshire County Councillors would help HCC, GrIPE and the Environment cabinet understand the importance of the method and location of remediation of the bromate plume in 2020, for the future safety of our drinking water, alongside the need for quarries in Hertfordshire. The specialised use of different locations in Herts for each purpose could then be discussed well before a DCC meeting, to appreciate the full picture in the best interests of Hertfordshire residents.

- **Other points raised by residents and HTC since December 2019**

H1. HTC have submitted an objection to the quarry, in October 2019 . They feel strongly with the 3 other local councils consulted, that the Ellenbrook Park Preservation Trust lease must be signed by Arlington, and Welhat BC before this Quarry returns to the DCC . This was part of the s106 agreement of 20 years ago, for UH Dehavilland Campus and 5000 houses and flats (>10,000 residents)in Salisbury village and the new Hatfield Garden village to be built on the disused BAe land and Aerodrome.

H2. Residents feel betrayed by Arlington, the quarry site promoter, and to some extent by WelHat BC in allowing them to breach their promise for over 20 years, to provide the first Public park for Hatfield, to be landscaped with £2.3 million set aside for this. Houses have been built in Salisbury village with very small back gardens -on the understanding they would have access to this park,

behind. Residents will lose the park, with park-run (used by 300 people every week) , and the greenspace, a leisure and important public health amenity for Hatfield if this quarry goes ahead.

H3. Because necessary Bromate remediation is needed for Hertfordshire drinking water (for Essendon Water pumping station) this is a uniquely bad location for a quarry site in the UK .It is located within and alongside the worst pollution of a chalk aquifer in Europe, well-known to hydrogeologists.

This plume has spread 20 km- to the New River, and Hoddesdon and is already an environmental catastrophe. Now the **SLR data shows** evidence of bromide and bromate contaminated ground water already in the quarry site,

H4. In the absence of any expert comment from EA on the bromate and bromide data provided, except their conditions stipulated in their Aug and October 2019 letter, HTC want to draw your attention to the report of Dr. Michael Rivett,of Ground Water Plus, (a Senior Lecturer from Birmingham and Strathclyde Universities) and an expert, independent hydrogeologist who has examined the SLR data recently submitted on bromate and bromide, and the proposed quarry activity at the site. This report has been prepared for March 2020

H5. Dr Rivett has plotted the borehole data (see fig 1-4 of his first report), and considered the risk which the quarry poses to spreading the plume further Southwards as non-negligable. In short: he considers this risk is not negligible given widespread contamination of bromide in the quarry site 11/14 boreholes (with data provided). The quarry site appears already be inside the plume (by the EA definition of the plume being where Bromide concentration is > 125µg/l, and bromate is > 2µg/l). Two boreholes in the quarry site, BH 104 and BH301 are contaminated at the plume level for bromate, but there is evidence some have previously been contaminated when Bishops Rise was pumping at the higher rate of abstraction.

H6. However with bromate data provided for only 1 out of 3 boreholes within the main dig site, (most being around the perimeter) he feels strongly that SLR /or an independent sampler must provide more data from the remaining boreholes within the site , especially near the NE corner, near BH109, if this is to go ahead. These are shown on the SLR map but w/o data. EA and HCC should have access to more data **Fig 4 of his Dec 2019 report also shows that there are anomalies in the data provided.** Whilst in the rest of Hatfield in the EA borehole shown in fig 3 , there is well behaved, polynomial relationship between the bromide and bromate.The bromate increases with increasing bromide concentrations and can approximately be predicted from the level of bromide. This appears to be variable within the quarry boreholes . Many of the boreholes with high bromide show “less than detectable- bromate” at 0.5 µg/l or less in Fig 4 of appendix 5.-This is odd, and should be investigated, or explained by SLR .

H7. The Bromate Plume Underground in the North of Ellenbrook fields is at the highest concentration in Herts at 1000µg/l: this is 100 times the limit for safe drinking water. This is a risky area for a quarry but a uniquely good location for remediation of the bromate plume in the future . It is an even riskier strategy by Brett (as Affinity Water have stated in Aug 2018) to breach the protective interburden layer of clay and dig into the LMH, unlike Cemex. It risks spreading the Bromate and Bromide Plume into most of the quarry,

and then to the West and South, to other currently clean sources of Hertfordshire's drinking water, and also compromises the best opportunity for remediation for Hertfordshire.

H8. Health effect of previous Bromate not fully explored

a) Hatfield Residents were unaware of the drinking water contamination before 2003 when they drank it probably for 30 years (between 1973 and 2003) and there is some evidence of raised thyroid and renal pathology in the Hatfield population now .This now needs to be investigated- among the exposed population, those living in Hatfield during the 1973-2003 period..

b) Residents have had enough. They trusted that their drinking water was safe. They feel HCC should not be taking this risk again, with knowledge of the high concentration of bromate so close to, and even within the quarry site, when there are other safer locations for a quarry.

H9. There are other health risks posed by the Quarry

1) **Quarry Access road is planned to open on to the A1057 at a dangerous place**

a. The access road is highly dangerous. Turning Lorries will cause congestion and accidents are likely.
b. The access road is at a bottleneck between Notcutts agricultural nursery, a roundabout and the Busy Bees pre-school facility.
c. The main Hatfield access road **A1057 is one lane** in each direction and **is *already congested,* with** cars queuing behind the bus **each morning**, when it stops (as was seen on the site visit). This queuing will be made worse by the extra Lorry traffic each day, for children walking from Ellenbrook to school each day, crossing the A1057 and subject to idling cars and dangerous PM2.5 fumes.

2) **The Quarry will affect Air Quality, through extra vehicle fumes on Hatfield Rd.**

The extra quarry lorries on the A1057 will produce extra noise and exhaust fumes for the residents living on Hatfield Road. The A1057 is a residential road at Ellenbrook- with residents vulnerable to the exhaust fumes from an extra 420 HGV per day to and from the quarry.. Air pollution is likely to exceed the WHO limit for PM.2.5, dangerous to asthmatics, those with CHD, and children walking to Howe Dell school. Levels of PM10 and NO2 will also increase.

3) **Air quality- the Quarry will produce Silica Dust causing lung disease**

The quarry sited is located:

a. Right next to student playing fields, and Sports Village.

b. Next to the University of Hertfordshire-De Havilland campus, halls of residents -2000 students, and Salisbury village with young families .

c. Silica dust particles from the quarry- increases risk of lung disease, (including cancer -silicosis), and alongside PM2.5 and PM 10 , Nitrous oxide, from the HGV, are likely to harm lung health, and increase Coronary Heart Disease , jeopardize the health of students , children, and the elderly and widen inequalities in health between Hatfield and Welwyn Garden city .

H10) The location of the Quarry is disproportionate for Hertfordshire, and will widen inequalities in health in Hertfordshire.

Finally this is one of three quarries planned for Hatfield, with two already proposed in Hatfield North, an urban area. To have all three quarries for Hertfordshire mineral plan in one residential area- is unfair and disproportionate for any local community, when sand and gravel lies right across a large swathe of rural Hertfordshire.

The back-up quarry (pref 1 in the plan) on Briggens Estate (East Herts) , Stansted Abbots, – is less risky, produces more sand and gravel ,is not located over a bromate plume, is not next to residential housing, or a University and is far safer. It has a more suitable access road for lorries – the A414 , next to it.

Hatfield Town Council asks the HCC to reject the Quarry application, or at least defer this proposed Quarry application until:

a) **the Ellenbrook Park Preservation Trust lease doc is signed conforming to s106 legal requirements.**

b) **The Independent, expert hydrogeological advice is heeded and full investigation of all boreholes on the Quarry site has been conducted. NPPF2019 and EA guidelines on Contamination followed. The EA definition of the plume, and it current true boundary need acknowledgement. The quarry borehole bromate concentrations are only likely to rise with necessary remedial pumping at Bishops Rise, and these implications must be considered.**

c) **All measures to preserve safe future drinking water for Hertfordshire are guarded as paramount.**

d) **An air quality monitor for PM 2.5 particles is put in place on the A1057, by the bus stop (rather than the one located inside Ellenbrook fields, near BH 108) to protect receptors..**

Hatfield Town Council, March 2020

Appendix 1: Dr.Michael Rivett, Hydrogeologist Expert Opinion (paper 2-March 2020) - on SLR Bromate and Bromide quarry-site readings, supplied in Jan 2020
Appendix 2: Where is BH107? (Maps showing the Borehole readings).
Appendix 3: MEP Summary of Dr.Rivett's paper Dec 2019)
Appendix 4: MEP response to the County draft Mineral Plan- with drinking water pumping stations- at Essendon, Tyttenhanger and Roestock shown on maps .