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**Site A48 - Bradwell - Grange Farm**

<i>Candidate Site Reference</i>	<i>Candidate Site Name</i>	<i>District</i>	<i>Existing use</i>	<i>Site Area (ha)</i>	<i>Potential Yield (million tonnes)</i>
<b>A48</b>	<b>Bradwell - Grange Farm</b>	<b>Braintree</b>	<b>Agricultural</b>	<b>143.15</b>	<b>12.2</b>

The Site is promoted as an extension to existing mineral site (Bradwell Quarry) and is located to the northeast of Bradwell Quarry. The Site area is approximately 143.15 ha and is proposed for 12.2 million tonnes of sand and gravel extraction which would be processed through the existing on-Site washing and screening plant located within Bradwell Quarry. The submission notes that the Site’s mineral extraction operations would commence in a planned and systematic manner consecutively to the existing mineral site. The adjoining uses include agricultural fields, residential and farm buildings and Bradwell Quarry. The small town of Coggeshall is located northeast of the Site. The Site would be accessed using the existing access from the A120 and the internal haul road would be extended, crossing Cuthedge Lane. See Appendix J for a detailed map of the Site.

**Summary of RAG Assessment**

The results of the technical and desktop RAG assessment are detailed below.

Landscape and Visual Sensitivity	Biodiversity	Historic Buildings	Archaeology	Flooding	Transport	Access	Public Rights of Way	Geo-Environmental	Hydrology, Hydrogeology and Drainage	Air Quality	Soil Quality	Services & Utilities	Health & Amenity	Green Belt	Airport Safeguarding Zones
Amber	Red/Amber	Red/Amber	Amber	Amber/Green	Green	Red/Amber	Red/Amber	Green	Red/Amber	Green	Amber	Amber	Red	Green	Green

**Landscape and Visual Sensitivity**

The overall character of LCA C6 is described as follows:

*“The Brain and the Upper Blackwater valleys are relatively narrow with moderate slopes. By contrast, the Lower Chelmer and the Blackwater, south of Langford, have wide floodplains with gentle valley sides and are more open in character. Medium scale, arable farmland dominates throughout their length, with a predominantly strong pattern of hedgerow boundaries with frequent hedgerow trees. Tree cover is high along the banks of the rivers with willow and poplar plantations common as well as pockets of wet alder/willow woodland. Small settlements are dispersed along valley sides or cluster around a few key bridging points. The towns of Braintree, Witham and Maldon occupy valley side locations, but along with the major roads that cross the area have a limited impact on character.”*

The assessment makes the following observations in regard to landscape condition:

*‘Farmland hedgerows are generally in good condition, although there are localised areas of fragmentation.*

*The condition of the settlements is mixed. Some of the towns such as Braintree and Witham have intrusive industrial and housing development and some modern out of character infill tends to occur in the villages close to them.*

*Gravel workings are locally visually prominent’.*

LCA C6 is described as being of medium sensitivity to future mineral extraction with key landscape sensitivity and accommodation of change issues relating to: the integrity of the valley floor; some visually exposed valley sides / open valley floors; and, tranquil character in parts.

Given the proximity and linkage of Site A48 to the former quarrying operations across Bradwell Quarry and Coggeshall Quarry which have created a more varied and attractive landscape, providing greater biodiversity value than the existing arable landscape with large open fields, the restoration works across Site A48 would result in improvements to the quality and character of the landscape within LCA C6.

Public Right of Way (PRoW) Footpath 35 (Coggeshall) cuts through the Site from north to south, connecting to Footpath 34 (Coggeshall) ‘The Essex Way’ which runs along the northern site boundary. Footpath 39 (Coggeshall) also runs across the Site towards the eastern edge.

As the quarrying operations progress across Site A48, the existing public rights of way will be temporarily diverted around the working area. The interconnection of the various public rights of way which provide north, south, east or west access will be maintained throughout the works, albeit through temporary diversion. They will be reinstated to either their original, or an agreed alternative definitive alignment, as the restoration works progress across the site.

In addition, Site A48 also offers the opportunity for new permissive routes to be created across the site (and surrounding land).

In terms of Landscape and Visual Sensitivity, Site A48 has been assessed as having Medium sensitivity. The RAG Assessment of Amber for Landscape and Visual Sensitivity is fair and reasonable.

### **Biodiversity**

The RAG Assessment highlights that:

*There is a veteran Oak tree located just beyond the northern boundary of the Site A48. Veteran trees are irreplaceable habitat.*

It should be noted that the veteran Oak is protected by a Tree Preservation Order (TPO), is located outside the Site Boundary and would at least 35m from the edge of Site A48's excavation area.

The TPO tree is a mature oak, 24m in height and 1500mm in girth. It has multiple open, decaying wounds to the basal, lower and mid trunk to a height of approximately 4 metres. The canopy is receding and contains significant levels of suspended deadwood.

The root plate of the tree is subject to regular intrusion through annual ploughing operations to the north, east and west sides, to within 2m of the root collar. The southern side of the root plate is compromised by compaction from the proximity of agricultural vehicles tracking past it on the Essex Way.

The level of cavities within the trunk is significant, with a high percentage, particularly to the basal area showing soft, decaying timber when augered. Historically, the tree has also been subject to significant levels of unsympathetic pruning of major limbs and canopy reductions, as can be seen by its irregular and suppressed form (Figure A48-01).

**Figure A48-01: TPO Veteran Oak Tree**



The TPO tree will be retained along with an existing tree lined hedgerow on the southern side of the Essex Way. Root Protection Areas and/or an appropriate buffer of at least 15m would be established to prevent damage to the TPO tree (similar to those previously applied by the Site-specific issues to be addressed within the existing Minerals Local Plan for the protection of Storeys Wood for Site A5 and Site A6).

The irreplaceable habit would not be lost and would be integrated into the restoration scheme for Site A48.

*The closest Local Wildlife Site (LoWS) is Blackwater Plantation (Bra186) which is 80m to the north, downhill in the Blackwater valley. This forms an important wildlife corridor along the Blackwater valley and comprises a variety of valuable of habitats. There is hydrological and habitat connectivity between Site A48 and the LoWS. There are a number of other designated sites downriver, which are designated for their riparian/ valley habitats; Upney Wood LoWS is c.355 metres to the south and is an ancient woodland, and therefore irreplaceable habitat.*

The LoWS are all located significant distances outside the Site Boundary and would be offset at least a further 24m from the edge of Site A48's excavation area. Both the LoWS and Upney's Wood would be at considerable separation distances from Site A48 and will be unaffected by the proposed quarrying operations across the site. There would be no loss of the off-site irreplaceable habitats nor impact associated with the proposed quarrying operations across Site A48 due to the separation distance(s) from the site.

*This Site comprises a number of arable fields with numerous boundary and internal Hedgerows and lines of mature trees and associated (predominantly dry) ditches and ponds, which are Priority habitats. There is a patch of deciduous plantation woodland and two small clusters of mature trees within the Site. A number of Priority species are present on Site.*

Whilst Site A48 comprises a number of arable fields with numerous boundary and internal Hedgerows and lines of mature trees and associated (predominantly dry) ditches and ponds, these are not Priority habitats.

Ecological surveys have been carried out across Site A48 and impacts on habitats are known to include: the temporary loss of arable habitats and associated hedgerows. Bat use of the area has been demonstrated to be fairly low with limited roosting opportunities noted. Impacts on bats may occur during the quarrying and restoration operations by the temporary loss of hedgerows and potential changes in dust and noise that may arise from the site. Any lighting that may be required in or around temporary compounds would be controlled by the hours of the site operations and screened from foraging habitats. Great Crested Newts could be impacted by the works along the western boundary, as they are within a pond located inside the footprint of the former Coggeshall Quarry. However, the works across Site A48 would be carried out under a District Level Licence.

Mobile species such as birds will move around Site 48 and into adjacent areas as each phase of the mineral extraction works proceeds and has been proven across the former quarrying operations across Bradwell Quarry and Coggeshall Quarry. Stag Beetles, a Priority Species, which are significantly less mobile, are likely to be impacted by the temporary loss of hedgerows, however, as larvae spend at least two years within the dead wood, it is possible to move the resource prior to each phase of the excavation works to create refuge areas.

Ecology surveys across Site A48 have shown that in terms of Biodiversity the site is dominated by poor quality habitats arising from the large open arable field scape.

*The Site is graded Red/Amber because it could have a serious impact upon the natural environment including local designations and priority habitats and species; this includes potential impacts to the River Blackwater and its associated riparian habitats which have been designated as Local Wildlife Sites. In addition, the Site could have moderate impacts upon irreplaceable habitats, i.e. the veteran tree situated just beyond the northern boundary.*

*There would also be a direct loss of a number of Hedgerows, mature trees and watercourses and potential hydrological impacts to retained habitats and loss of, and disturbance to, habitats for Priority farmland species.*

*Mitigation is likely to include prevention of hydrological changes to the River Blackwater and its associated habitats, and to retained habitats; adequate and appropriate buffers between the Quarry and the veteran tree, Hedgerows and LoWS; and prevention of deterioration of water quality to watercourses. In addition, phasing to minimise impacts and rapid restoration and creation of new replacement habitats, ensuring that hedgerows and other newly created habitats connect with existing and historic habitat networks. Adequate and appropriate compensation would be required for the loss of Hedgerows, trees, woodland, watercourses, and loss of habitat for Priority farmland species.*

Site A48 is dominated by poor quality habitats arising from the large open arable field scape. Restoration works would reinstate agricultural land and will include new and enhanced hedgerows, areas of native broad-leaved woodland, areas of species-rich grassland, and agricultural habitats. Linkages around and across the site merging with adjacent restored habitats will provide opportunities for a variety of species including Great Crested Newts and Stag Beetles to move around and (re)colonise worked areas. New surface water fed ponds will be created which will hold water at crucial periods of the year for amphibians. The proposed enhancements will complement the 'B-line' which runs along the eastern site boundary and contribute significant invertebrate habitat enhancement in that area.

Based on the ecological setting of Site A48, the RAG Assessment of Red/Amber is considered to be conservative and unreasonable for a site that is dominated by poor quality habitats arising from the large open arable field scape that are known to be of low ecological value. The assertion that irreplaceable habitats, located outside the site may be affected by the works is misleading because they will either be retained or protected by their separation distances from Site A48.

As a minimum, Site A48 should be reassessed as Amber for Biodiversity.

### **Historic Buildings**

The RAG Assessment highlights that:

*The allocation will affect the setting of the following designated heritage assets of:*

- *Curd Hall (Grade II, List UID: 1123140)*
- *Scrip's Cottage At Rear of Scrip's House (Grade II, List UID: 1169367)*

*The Site will have no direct impact to any heritage assets; the impact will be indirect, due to a change in the assets' setting.*

*Due to the proximity of the Site to the listed buildings identified above, and the contribution the Site makes to the significance of these buildings, the proposed Site is considered to cause either a mid or a low level of harm to their significant.*

*The effect on Curd Hall will be higher than the effect on the significance of Scrip's Cottage, due to the location of the Site. Whilst the Site is part of the wider setting of Scrip's Cottage, the Site is part of the immediate setting of Curd Hall and will immediately abut the southern extent of the listed building's curtilage. The Site will affect the setting of Curd's Hall in a way which is considered to cause a mid-level of less than substantial harm to the significance of the asset. The harm to the significance of Scrip's Cottage is at the lower end of less than substantial.*

## Curd Hall

Whilst the Site Boundary for Site A48 abuts the curtilage of Curd Hall the extraction boundary will be at least 140m from Curd Hall.

Curd Hall has high illustrative value as a substantial historic farmstead, comprising a 17th century dwelling and large complex of 19th century or earlier farm buildings, including a barn and animal sheds arranged around a central yard. The house has high aesthetic value as an imposing manorial building of some status. As a farmstead of presumed medieval origins, there is considerable potential to learn more about the development and social context of this site through time, lending it moderate evidential value.

In terms of setting, the farmhouse is enhanced by its setting within an extensive historic farmstead, with which it has a close spatial and functional relationship. The orchard adjacent to the house and the agricultural landscape which surrounds it likewise has a positive impact upon the significance of this heritage asset. Curd Hall is in a secluded location, set well away from modern development up a series of isolated tracks. This said, the functional link between this agricultural landscape and the farm has been reduced in more recent years by a shift towards a residential character, with the conversion of agricultural buildings to residential use permitted (e.g. 06/00688/LBC), this now includes almost all of the buildings within the complex.

The land to the west of the house (Coggeshall Quarry) was previously exploited as a gravel pit, but this has since been returned to grassland.

Based on the above, it is considered that the contribution that the present setting of the farm makes to its significance is Medium.

The Site A48 extraction boundary will be at least 140m from Curd Hall (the Site Boundary is 85m from Curd Hall), so will truncate the fieldscape to the south and east during the quarrying operations.

Curd Hall is partially shielded from by trees and hedges, but this will not obviate the visual impact of the extraction works. It will also not prevent the principal impact of these works upon the setting of this heritage asset, which is partially drawn from its historic relationship with its surrounding agricultural landscape.

The land adjacent to Curd Farm on its western side was previously worked as a gravel pit (Coggeshall Quarry), but this has since been returned to grassland. The impact of these earlier works upon the setting of this heritage asset would have been very similar to that of the proposed works across Site A48.

Overall, it is felt that the additional impact of Site A48 on the setting of Curd Hall would be Moderate, principally by eroding its historic agricultural setting. The resulting impact upon the overall significance of the heritage asset is therefore considered to be Moderate, over the lifetime of Site A48. This produces an overall effect of Moderate Adverse.

## Scrips Farm

Scrips Cottage is an early post-medieval dwelling of medium overall heritage significance. Its setting within a much-modernised farm complex contributes to its heritage value, by illustrating the agricultural history of this site. This is further enhanced by the landscape of fields, hedgerows and woodland which surround the farm on all sides.

The quarrying and restoration operations across Site A48 will be approximately 285m from the farm's north-western side, separated from it by a field. This will have a Moderate immediate impact upon the farm's agricultural landscape in this direction. Since this

landscape has a moderate contribution to the setting of the listed house, the resulting impact upon the overall significance on Scrips Farm is likewise therefore considered to be Moderate. The fact that the listed house is partially screened by hedgerows in this direction does mollify the degree of this impact. This produces an overall effect of Moderate Adverse.

### Summary

Due to the proximity of the Site A48 to the listed buildings, and the contribution the site makes to their significance, it is agreed that Site A48 would cause either a mid or a low level of harm to their significance. Therefore, the RAG Assessment of Red/Amber is considered to be overly conservative linked to the Moderate Adverse impacts that will be caused by the quarrying and restoration works across Site A48.

Impacts will be confined to the operational phase of quarrying and restoration operations across Site A48.

The restored landform will locally change the profile of the southern side slope of the existing valley; however, it will remain a valley with the river flowing within the natural floodplain.

The works across Site A48 will be of a limited duration (approximately 20 to 22 years), so its impact upon the heritage assets in its vicinity would be temporary. The subsequent restoration of the landscape means that the long-term impact of its allocation on the setting and significance of the affected heritage assets would be Neutral.

As a minimum, the RAG Assessment for Historic Buildings for Site A48 should be reassessed as Amber.

### Archaeology

The RAG Assessment highlights that:

*The Site lies within an area of archaeological features as identified through aerial photographic evidence and archaeological trial trenching evaluation, which has identified various concentrations of remains, indicative of archaeological sites of local to regional significance within the Site.*

*There are no identified sites within the area of archaeological evaluation which would require preservation in situ.*

Trial trenching has shown that there are known multi-period heritage assets of archaeological interest within Site A48, and it is considered that there is the potential for, as yet unknown, heritage assets of archaeological interest (i.e. archaeological remains) to be present.

Formal excavation across areas of known archaeological interest would 'clear' Site A48 in advance of quarrying operations, followed by a progressive strip, map and sampling techniques as the works progress.

Strip, map and sample, progressing with the phases of top soiling/subsoiling has been applied elsewhere across Bradwell Quarry and been effective in recovering archaeological information (preservation by record) and enabling that data to be understood within a wider context.

Strip, map and sample will provide the opportunity to better define and investigate the known heritage assets within the footprint of Site A48, to preserve them by record and, through post-excavation analysis, enable them to be set within their geographical, topographical archaeological and historical context. Archaeological investigation should culminate in publication of the results to an appropriate level in a suitable journal.

In terms of the archaeological sensitivity of Site A48, the RAG Assessment of Amber is fair and reasonable.

### **Flooding**

The RAG Assessment highlights that:

*The Site is assessed as having a 'medium' potential for surface water flood risk as identified within the SFRA.*

*The Site has been identified as having a 'low' groundwater flood risk.*

*The Site is entirely within Flood Risk Zone 1 and therefore is not at risk from fluvial flooding.*

The Core Strategy and Local Plan are supported by the Braintree District Strategic Flood Risk Assessment (SFRA). Within the SFRA, Table 3-2 identifies the fluvial flood zone definition of Flood Zone 2 as: Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding (between 1% and 0.1% annual probability of flooding each year), with a Medium probability of flooding.

Table 4-1 identifies Flood Zone 2 as being of Low to Medium Risk of Flooding from Surface Water (RoFSW); and, Flood Zone 1 as being of Very Low risk to RoFSW.

Based on the above, the RAG Assessment of Amber/Green is considered conservative given the site's setting within Flood Zone 1 and its existing and proposed landform (i.e. shallow graded valley side slope and agricultural after use), it is considered that Site A48 should be reassessed as Green.

### **Transport**

The RAG Assessment of Green for Transport reflects the fact that Bradwell Quarry has an established means of access to and from the strategic road network (A120 Coggeshall Road) and promotes the principles of sustainable transport, whereby HGVs have direct access to suitable route(s), optimise the efficient use of the main road network and apply the route hierarchy.

### **Access**

The RAG Assessment highlights that:

*The existing private haul road crosses two minor roads, Ash Road and Church Road that form part of the Local Highway Network for which Essex County Council are responsible.*

*The A120 Trunk Road forms part of the Strategic Road Network managed by National Highways. A RAG grade consistent with the Highway Access and Transport assessment work undertaken by Essex County Council for the Local Road Network has now been provided for this site in order to complete this stage of the Minerals Local Plan Site Assessment work. Whilst an initial conversation has taken place with National Highways to inform this RAG grade it is imperative that they are officially consulted at the appropriate time.*

*The highway transportation and access site assessments that have been carried out at this stage are based on limited supporting highway information. A Transport Assessment including access details accompanied by a Stage 1 Road Safety Audit and designers' response will typically be required at the appropriate stage. The scope of the Transport Assessment should be agreed in advance with the Highway Authority.*

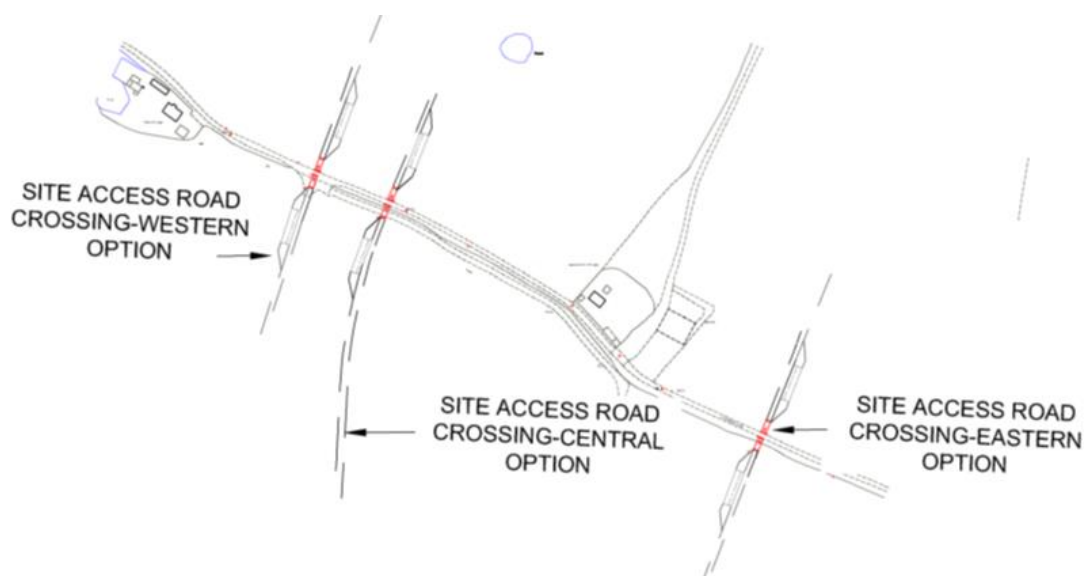
*To export materials by dump truck to the processing plant would require a crossing of the local road network (Cuthedge Lane). No details provided.*

To support the delivery of Site A48 an “at-grade” crossing point is required over Cuthedge Lane. This would provide a link between Blackwater Aggregates’ existing quarrying and restoration operations within Bradwell Quarry and Site A48.

Cuthedge Lane lies to the north of the existing Bradwell Quarry workings and is the eastward continuation of Church Road. It would form the third public highway crossing for the quarry workings (the main site access road into Bradwell Quarry already provides HGV access across Church Road and Ash Lane) although this crossing would be internal to the quarry road system and not form any part of the site access road. This crossing would be used by internal quarry traffic only, consisting mainly of Articulated Dump Trucks (ADT). Cuthedge Lane is approximately 3.3m wide close to the proposed haul road crossing and does not support footways on either side of the carriageway.

Three potential ‘at grade’ road level crossings have been considered which comprised western, central and eastern options (Figure A48-02).

**Figure A48-02: Potential ‘at grade’ road level crossing points.**



The central option crossing point, which is located midway between Deeks Cottage and Haywards, is the preferred location for the “at-grade” access route to and from Site A48.

As with Church Road and Ash Lane, Cuthedge Lane is subject to a 60mph national speed limit although again ATC surveys, undertaken in April 2019, demonstrated that actual vehicle speeds on the road are significantly below the posted speed limit. Two ATC counts have been undertaken along the site frontage onto Cuthedge Lane with recorded 85th percentile speeds being eastbound 34mph and 40mph and westbound 34mph and 39mph. On this basis, the design speed for visibility purposes was selected as 40mph and, using the equation contained in Manual for Streets 2 (MfS 2), visibility splays of 82m length are proposed in both directions and on both sides of Cuthedge Lane. There is no street lighting close to the proposed junction of the haul road with Cuthedge Lane and the junction would be configured to restrict turning movements to and from the public highway. There would also be advanced junction warning signs on both approaches to the proposed crossing on Cuthedge Lane.

Essex Highways, the Local Highway Authority have been provided with design drawings for the proposed Cuthedge Lane crossing point which has been approved (in principle). The crossing would be fully reinstated following the completion of the works across Site A48.

Based on the above, the RAG Assessment for Access of Red/Amber for Access is overly conservative and considering that a means of access across Cuthedge Lane has been approved by Essex Highways it should be reassessed as Green.

### **Public Rights of Way**

The RAG Assessment identifies that:

*4 Public Rights of Way cross the Site. 5 Public Rights of Way are within 100m of the Site. Appropriate consideration would be needed to mitigate potential impacts on these Public Rights of Way and high levels of mitigation may be required which is likely to include diversion especially with regard to those Public Rights of Way crossing the Site.*

Public Rights of Way (PRoW) Footpath 35 (Coggeshall) cuts through the Site from north to south, connecting to Footpath 34 (Coggeshall) 'The Essex Way' which runs along the northern site boundary. Footpath 39 (Coggeshall) also runs across the Site towards the eastern edge.

As the quarrying operations progress across Site A48, the existing public rights of way would be temporarily diverted around the working area. The interconnection of the various public rights of way which provide north, south, east or west access would be maintained throughout the works, albeit through temporary diversion. They would be reinstated to either their original, or an agreed alternative definitive alignment, as the restoration works progress across the site.

In addition, Site A48 also offers the opportunity for new permissive routes to be created across the site (and surrounding land).

In terms of Public Rights of Way, the RAG Assessment of Red/Amber is considered conservative given the overall size of Site A48 and the opportunity to maintain a safe means of pedestrian access the site (albeit along a temporary route).

As a minimum, the RAG Assessment for Public Rights of Way for Site A48 should be reassessed as Amber.

### **Geo-Environmental**

The RAG Assessment of Green for Geo-Environmental reflects the fact that Site A48 is more than remote from any Local Geological Sites (LoGS) and therefore is likely to have no impact on the geological environment that requires mitigation as geological features will be preserved and maintained.

### **Hydrology, Hydrogeology & Drainage**

The RAG Assessment identifies that:

*The Site within Zone III Total Catchment Groundwater SPZ and has medium to low groundwater vulnerability. The Site is within a Drinking Water Safeguard Zone (Surface Water) and is within Drinking Water Protection Areas (Surface Water). A water course (River Blackwater) is 180m north of the Site and four small water bodies are located within the Site boundary. The Site is likely to have a major impact on hydrology, hydrogeology and drainage and is likely to require high levels of mitigation to make the Site acceptable.*

Site A48 is located wholly within the catchment of the River Blackwater, which is classified by the Environment Agency as a Main River.

The only water features identified within the footprint of Site A48 comprise scattered ponds that are mostly connected to field ditches across existing agricultural fields, one of which is

an isolated pond within an existing field on high ground to the north of Haywards and Cuthedge Lane.

The ponds are surface water fed with levels varying on a seasonal basis and are typically dry during the late Spring, Summer and early Autumn months. Ordnance Survey mapping does not suggest that these features are connected to the wider hydrological regime and are likely to ultimately infiltrate to ground.

Across the wider area, surface water within Bradwell Quarry (to the south of the Cuthedge Lane) is managed either through the use of soakaways within previously worked areas of the site which are in continuity with the adjacent sands and gravels, or by the quarry surface water management system.

The Environment Agency monitors the flow in the River Blackwater at Appleford Bridge monitoring station (Station Number 37010), approximately 5km south of the site. The station reports a Q95 flow of 0.35 m<sup>3</sup>/s, a Q5 flow of 3.92 m<sup>3</sup>/s, a mean flow of 1.33 m<sup>3</sup>/s and a maximum recorded flow of 21.6 m<sup>3</sup>/s. The catchment area to the gauging station is 247.3km<sup>2</sup>.

#### Hydraulic Continuity of the River Blackwater and Surrounding Area to the Secondary Aquifer

Across the footprint of Site A48 the saturated sand and gravel layer (within the Kesgrave Formation) varies in its thickness (reducing in depth) towards the River Blackwater. Boreholes and Cone Penetration Tests indicate that along the toe of the Blackwater valley the sand and gravel deposits are not continuous; however, it is possible that at some locations the Kesgrave formation may be in connection with a thin seam of River Terrace Gravel approximately 0.8m to 1.2m in depth that extend beneath the River Blackwater.

The River Blackwater is 180m north of the Site A48 Site Boundary (and at least 200m from the edge of the extraction area).

As the quarrying operations progress across Site A48, mineral extraction will initially be undertaken without dewatering as, based on the groundwater monitoring, groundwater is generally encountered in the lower horizons of the sands and gravels from approximately 15m below ground level along Cuthedge Lane, 6m below ground level along the line of the Essex Way. However, excavation of the sands and gravels below these levels may require localised dewatering, particularly where hollows in the London Clay are encountered since this is where the greatest saturated thickness of sands and gravels are present.

From available information, and particularly experience gained from the quarrying operations across the extractive areas of Site R (71.6 ha), Site A2 (22.6 ha), Sites A3 and A4 (30 ha) and Site A5 (38ha), an area of 162.2 ha, the Kesgrave Formation sand and gravel deposits contain minor amounts of water; and, the variation in the groundwater depths (saturated thickness of the sand and gravel layer) above the London Clay indicate that groundwater conditions are likely to be influenced by natural variations on the surface of the London Clay and overlying (permeable) sand and gravel deposits.

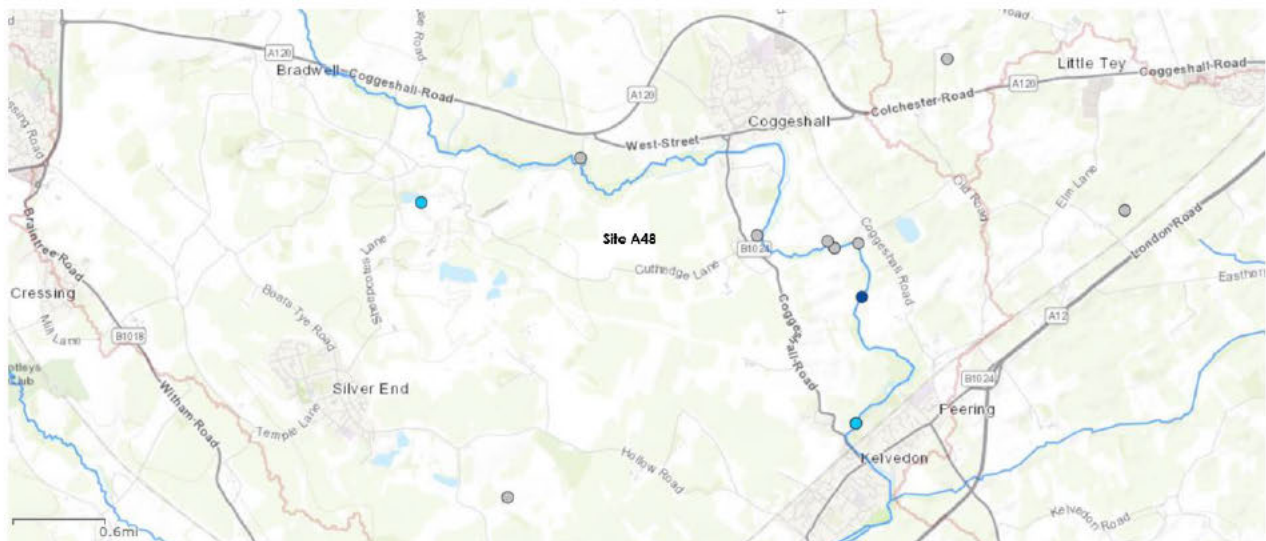
Groundwater monitoring has indicated that the saturated thickness of the sands and gravels across the footprint of Bradwell Quarry and surrounding land across the southern side of the Blackwater valley varies from approximately 0.0m to 4.53m with an average depth of 2.19m.

Blackwater Aggregates' groundwater abstraction records indicate that dewatering operations to support the quarrying operations vary on a monthly basis depending on the location of the mineral extraction works and the extent of the working area. The annualised records

indicate that groundwater abstraction rates have varied from 3,783m<sup>3</sup> to 11,775m<sup>3</sup> per annum (Average 7,277m<sup>3</sup>) until December 2023<sup>1</sup>.

Based on Blackwater Aggregates' operational experience across Bradwell Quarry, any Abstraction Licence Application for dewatering across the Site A48 would allow an annual abstraction of up to 12,500m<sup>3</sup> of groundwater from the site.

Estimates of the radius of influence of the mineral dewatering associated with the excavation of Site A48 indicate that the cone of depression resulting from the mineral dewatering will be limited to within approximately 30m to 53.5m (typically 45m) of Site A48. As such, no substantial impact on the licensed groundwater abstractions in the area is likely, with the nearest groundwater abstraction point located 0.75km to the northwest of Site A48 (operated by Blackwater Aggregates).



● Water Abstraction from Groundwater Sources ● Water Abstraction from Surface Water Sources

### Licensed Groundwater Abstractions within 5km of Site A48

Licence Holder	Licence Number	NGR	Purpose	Maximum Daily/Annual Abstraction (m <sup>3</sup> )	Distance and Direction from the Site
<b>Blackwater Aggregates</b>	8/37/31/*G/0115	TL 818 217	Make-up or top-up water	245/47,000	0.75km – NW
<b>G&amp;S Coode-Adams</b>	8/37/31/*S/0213A/R01+	TL 828 187	Spray irrigation.	382/12520	2km – S

<sup>1</sup> Blackwater Aggregates' quarrying operations within Site A7 commenced on the 22 August 2022. The groundwater abstraction records for 2023 of 30m<sup>3</sup> reflect the start of a new phase of the quarrying operations within Bradwell Quarry, and the limited quantities of groundwater encountered within the initial phase of these works. Including the 2023 annualised records, indicates the groundwater abstraction varies from 30m<sup>3</sup> to 11,775m<sup>3</sup> per annum (Average 6,674m<sup>3</sup>) until December 2024.

## Licensed Surface Water Abstractions within 5km of Site A48

Licence Holder	Licence Number	NGR	Purpose	Maximum Daily/Annual Abstraction (m <sup>3</sup> )	Distance and Direction from the Site
Gent Fairhead & Co Limited	AN/037/0031/001/R01	TL834 222	Make-Up or Top Up Water	8,640/250,000	0.35km - NE
G&S Coode-Adams	8/37/31/*S/0033	TL855 221	Spray Irrigation	327/22,730	0.45km – E
G&S Coode-Adams	AN/037/0031/005	TL860 214	Spray Irrigation - Anti Frost Storage	10,303/82,500	1.05km – E
G&S Coode-Adams	8/37/31/*S/0178	TL861 213	Spray Irrigation - Storage	3,600/45,460	1.2km – E
Feeringbury Holdings	8/37/31/*S/0221	TL863 214	Spray Irrigation - Storage	2,428/180,000	1.4km – E
G&S Coode-Adams	8/37/31/*S/0172	TL864 209	Spray Irrigation - Direct	382/2,270	1.5km - SE
G&S Coode-Adams	8/37/31/*S/0212A/R01	TL828 187	Spray Irrigation - Direct	3,456/22,730	2.2km – SE
*G&S Coode-Adams	8/37/31/*S/0213A/R01	TL 828 187	Spray Irrigation - Direct	382/12,520	2.2km – SE

\*J R Pearce Groundwater Licence 8/37/31/\*G/0187 Traded to Surface Water Abstraction 8/37/31/\*S/0213A/R01

All licenced groundwater and surface water abstraction points lie at least 350m from the site.

The current depth of groundwater beneath Site A48 suggests that the quarry dewatering is unlikely to affect nearby residential properties such as Curd Hall (which will be at least 140m outside the footprint of the mineral extraction area), or the River Blackwater (which will be more than 200m from the mineral extraction area).

Surface water run-off will typically drain into the working area(s) of the quarry and any surface water accumulations or groundwater will be controlled and contained within the footprint of the working area(s).

As the works progress across Site A48, water would typically be managed in order to prevent any recirculation into the existing or proposed working areas.

Based on the above, the RAG Assessment for Hydrology, Hydrogeology & Drainage of Red/Amber is overly conservative, and considering the operational understanding of the groundwater and surface water management works across Bradwell Quarry and those likely to be encountered within Site A48, it should be reassessed as Amber/Green.

### Air Quality

The RAG Assessment of Green for Air Quality reflects the fact that Site A48 more than 2km from an AQMA and therefore is likely to have no impact on an air quality that requires mitigation.

Furthermore, the local amenity can be protected by minimising work in sensitive areas and creating 'buffers' between residential areas and mineral workings. A minimum of a 100m

'buffer zone' from the extraction face to the wall of a residential property would be maintained to minimise the impact of working on local amenity.

### **Soil Quality**

The RAG Assessment identifies that:

*The Site contains Grade 2 quality soil (very good quality agricultural land) which is best and most versatile (BMV) agricultural land. The Site is likely to have a moderate impact on soil quality and agricultural land and is likely to require medium levels of mitigation to make the Site acceptable.*

In line with existing operational practices across Bradwell Quarry, the criteria for moving topsoil and subsoil will be based on the measurement of the Lower Plastic Limit.

Topsoil and subsoil stripping, storage and placement will be carried out in line with best operational practice to protect the structure and quality of the topsoil and subsoil as a material resource.

On a sequential basis, as the restoration works progress across Site A48, areas of restored land will enter into agricultural aftercare, whereby the restoration works will be cultivated and treated appropriately for up to 5 years to restore the structure and stability of the sub-soil, topsoil and landform to normal agricultural uses.

In terms of Soil Quality, the RAG Assessment of Amber is fair and reasonable

### **Services & Utilities**

The RAG Assessment identifies that:

*The Site contains 33kV electric overhead lines and 11kV overhead lines within the Site boundary. Openreach BT power lines are present within the Site boundary. Further investigation and consultation would be needed to determine appropriate mitigation measures to make the Site acceptable which may include diversion and/or protection of services and utilities.*

Enquiries have been made to Anglian Water, UKPN, National Grid (Cadent) and Open Reach relating to the presence of services that cross the footprint of Site A48.

UKPN has confirmed the route of existing overhead and underground 33kV electricity supplies, Anglian Water has confirmed the line of existing potable water supplies and Open Reach has confirmed the lines of overhead and underground telecommunications lines around the perimeter and within the footprint of Site A48.

National Grid (Cadent) has confirmed that no gas services are present within the footprint of Site A48.

All services within the footprint of Site A48 will be diverted under "lift and shift" Wayleave Agreement around the perimeter of the site or affected working area(s). Existing overhead supplies will be diverted via underground ducts where possible.

There will be no significant impacts associated with the diversion of the services around Site A48 and no significant impact on utility supplies.

Based on the above, the RAG Assessment for Services and Utilities of Amber is considered overly conservative and considering that "lift and shift" Wayleave Agreements that are in place, it should be reassessed as Amber/Green.

### **Health and Safety**

The RAG Summary notes that:

*The sites have been assessed using the site boundary as opposed to the mineral extraction area as this is subject to change.*

The RAG Assessment identifies:

*One farm building, one residential building and one sports facility (cricket ground) are present within the Site boundary. Two residential buildings and one sports facility (sports pavilion) are outside the Site boundary less than or equal to 20m from the Site. Four residential buildings are more than 20m and less than or equal to 50m from the Site. Ninety seven residential buildings and one community facility (allotments) are more than 50m but less than or equal to 250m from the Site. Given the proximity of sensitive receptors, mitigation would be required, however, the levels of mitigation required to ensure that there are no serious impacts on health and amenity would likely be difficult to achieve.*

In submitting information associated with Site A48 a site-specific requirement was that of identifying the “Extraction boundary” to support the assessment of the site.

At the point of closest approach, the edge of the proposed quarrying and restoration operations across Site A48 would be at least: 160m from Hylands, 125m from the residential properties directly to the east of the Coggeshall Electricity Sub-Station (by Coggeshall Cricket Club), at least 170m from residential properties on the western side of the Kelvedon Road, 140m from Curd Hall, 100m from Deeks Cottage, 100m from Haywards (which is under Blackwater Aggregates’ control) and 150m from Herons Farm.

During the 20-year construction period it is only in the final phase that the works are at their closest point, within 150m of two properties to the East of Coggeshall. Quarrying operations across Site A48 would only be carried out during the day on weekdays and Saturday mornings.

Within the existing Minerals Local Plan section 5.20 states that: *Local amenity can be protected by minimising work in sensitive areas and creating ‘buffers’ between residential areas and mineral workings. A minimum of a 100m ‘buffer zone’ from the extraction face to the wall of a residential property would normally be required to minimise the impact of working on local amenity.*

Similarly, within the Replacement Minerals Local Plan, Table 3 and sections 3.125, 3.132 and 3.134 highlight that “... extraction is not permissible less than 100m from the façade of a dwelling if impacts are demonstrably mitigatable.”; and section 5.9 states: *Local amenity can be protected by minimising work in sensitive areas and creating ‘buffers’ between residential areas and mineral workings. A minimum of a 100m ‘buffer zone’ from the extraction face to the wall of a residential property would normally be required to minimise the impact of working on local amenity.*

However, as noted within Section 3.1 of the Assessment of Candidate Sand and Gravel Sites “... *The sites have been assessed using the site boundary as opposed to the mineral extraction area as this is subject to change. ...*” therefore, in the event that the Replacement Mineral Local Plan increases the “buffer zone”, the mineral extraction area within Site A48 would be “*subject to change*” to protect local amenity in sensitive areas. However, any adjustment to the mineral extraction boundary would result in a loss of some of the mineral reserve.

Therefore, the RAG Assessment is misleading and is overly conservative in assessing the potential Health and Safety impacts.

The assessment also notes that:

*One farm building, one residential building and one sports facility (cricket ground) are present within the Site boundary. ...*

The farm building that lies within the footprint of Site A48 is a 635m<sup>2</sup> steel framed Grain Store, which would be removed and reinstated.

There are no residential buildings nor sports facility (cricket ground) within the footprint of either the Site A48 Site Boundary or the mineral extraction boundary.

#### Noise and Vibration Controls

Local amenity will be protected by minimising work in sensitive areas and creating 'buffers' between residential areas and mineral workings within Site A48.

A minimum of a 100m 'buffer zone' from Site A48 to the façade of a residential property is a recognised requirement to minimise the impact of working on local amenity.

Stand-offs or 'buffer zones' of 100m have previously been applied to heritage assets and residential properties around Bradwell Quarry, and in certain circumstances, where properties are either owned by, or under the control of Blackwater Aggregates, at their closest point the operational face of the quarrying operations has been within 35m.

The "buffer zones" provide (and have proven to provide) effective protection to the properties and heritage assets from noise and ground borne vibration.

All quarrying, restoration, mineral processing and construction operations across the site would follow existing and industry recognised best practice(s):

- All plant and vehicles within the site will have efficient exhaust silencers and acoustic enclosures to their engines, with plant undergoing regular maintenance.
- Any plant or vehicle which is considered to be excessively noisy, or poorly maintained, will not be permitted to operate on the site; and,
- Mineral washing, screening and processing will take place within the existing processing facilities located in Bradwell Quarry.

Routine noise monitoring would be carried out around Site A48 to demonstrate compliance with any noise conditions.

#### Dust

Dust will be managed and controlled within Site A48 so there will be little impact on neighbouring residential properties. The mineral extraction area within Site A48 would operate some distance away from properties with screening and dust suppression to reduce any potential dust impact.

To control and minimise dust within Site A48 the following operational control measures would be implemented in line with existing and industry recognised best practice(s), namely:

- Speed restrictions will apply to all vehicles on site to minimise the uplift of dust created by the vehicle draught.
- Throughout the summer months or periods of prolonged dry weather, dust suppression measures will be employed; and
- Quarrying and restoration works will be undertaken in a phased and systematic manner, adopting industry recognised best practice and the established operational principles that have been applied by Blackwater Aggregates.

Based on the above operational principles, dust is not anticipated to impact on areas surrounding Site A48.

Routine dust monitoring and management measures would continue to be applied within and around the site in line with a Dust Management Plan.

### Lighting

Site A48 is situated within a suburban/rural transition area (as defined in the Bortle Scale classification) and the proposed site will only be moderately affected by the current levels of sky glow and glare within the vicinity.

Any lighting that may be required in or around temporary compounds would be controlled by the standard hours of the site operations and would be screened from view.

As the quarrying and restoration operations progress across Site A48, no temporary or fixed lighting would be installed within the working areas or along any haul roads to and from the site. Headlamps fitted on the plant and equipment used within the quarry will provide safe levels of lighting between 07:00 and 18:30.

### Environmental Best Practice

The Minerals Working and Active Landfills Environmental Award Scheme is operated by Essex County Council to benchmark and assess the environmental standards achieved by operational sites. Since commencing quarrying operations on Rivenhall Airfield in 2000, Blackwater Aggregates have won the Gold Award, i.e. the highest score achievable reflecting a good standard in all aspects surveyed in respect of compliance with planning control and the commitment to minimising the potential environmental impact of the mineral and/or landfill operations at the site, every year since the scheme has originated.

Works across Site A48 would follow the established principles of environmental best practice, thereby minimising any impact of the site to local residents.

### Conclusion

Based on the above, the RAG Assessment for Health and Safety of Red is considered to be incorrect and overly conservative, by failing to recognise that the quarrying operations across Site A48 would be at least 100m from any residential property (and Haywards is under the control of Blackwater Aggregates). The existing Minerals Local Plan and Replacement Local Plan correctly recognises that: *Local amenity can be protected by minimising work in sensitive areas and creating 'buffers' between residential areas and mineral workings. A minimum of a 100m 'buffer zone' from the extraction face to the wall of a residential property would normally be required to minimise the impact of working on local amenity.*

Based on the above, the RAG Assessment for Health and Safety should be reassessed as Amber/Green.

### Green Belt

The RAG Assessment of Green reflects the fact that Site A48 is not within a Green Belt. The nearest Green Belt is 18.9km away. The Site is likely to have no impact on preservation of the openness of the Green Belt that requires mitigation and would not conflict with purpose of including land within it.

### Airport Safeguarding Zones

The RAG Assessment of Green for Airport Safeguarding Zones reflects the fact that Site A48 is not within an Airport Safeguarding Zone. The nearest Airport Safeguarding Zone is 6.4km

to the north of the site. The Site is likely to have no impacts on aircraft safety that require mitigation and would not increase the risk of bird strikes for aircraft.

**Next Steps**

1. Do you have any comments on this section?

Yes

No

Comment:

No Comment.