



fields, and residential, farm, and commercial buildings. The village of Kelvedon is located south and southeast of the Site. The Site would be accessed using the existing access from the A120 and the internal haul road would be extended. 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	Amber /Green	Red/ Amber	Amber /Green	Amber	Green	Green	Red/ Amber	Green	Amber	Green	Amber	Amber	Red/ Amber	Green	Green

### Landscape and Visual Sensitivity

The RAG Assessment highlights that:

*The Site possesses few characteristic features of the Blackwater/Brain/Lower Chelmer Valleys (C6) Landscape Character Area (LCA), which includes the predominantly arable farmland and well hedged fields. The River Blackwater and associated valley features has limited presence within the immediate landscape, and therefore reduces the sensitivity of the Site to minerals extraction.*

*There are few important landscape designations within the surrounding landscape, with the exception of a few Priority Habitats (Deciduous Woodland and Woodpasture/Parkland) within the wider landscape.*

Based on the above, the RAG Assessment for Landscape and Visual Sensitivity of Amber is fair and reasonable.

### Biodiversity

The RAG Assessment highlights that:

*The Site is graded Amber /Green because ecological impacts are likely to be minor and likely to require low levels of mitigation to make the Site acceptable. The Site could have a moderate impact upon the natural environment including and Priority habitats and species due to the loss of a number of Hedgerows and watercourses and potential hydrological impacts to retained habitats.*

*The access route for the haul road is not provided but it could require cutting through Pantling's Lane, which would dissect this important wildlife corridor and this should be avoided if at all possible. Dewatering would be required which could have an impact on the surrounding habitats.*

*Mitigation is likely to include prevention of hydrological changes to retained habitats, appropriate buffers between the Quarry and retained habitats; and prevention of deterioration of water quality to watercourses. In addition, phasing to minimise impacts and rapid restoration and creation of new replacement habitats. Adequate and appropriate compensation may be required for the loss of Hedgerows, the watercourse, and losses of habitat for Priority farmland species.*

It should be noted that the access route for the haul road would not cross Pantlings Lane and would run within the Site Boundary of Site A47 to enter the eastern side of Site A7, at least 120m to the north of Monks Farm.

However, based on the above, the RAG Assessment for Biodiversity of Amber/Green fair and reasonable.

### **Historic Buildings**

The RAG Assessment highlights that:

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

- *Monks Farm Cottages, Pantlings Lane (Grade II, List UID: 1171147)*
- *Pound Farmhouse, Coggeshall Road (Grade II, List UID: 1123812).*

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

*The effect on Monks Farm Cottages will be higher than the effect on the significance of Pound Farmhouse, due to the location of the Site. Whilst the Site is part of the wider setting of Pound Farmhouse, the Site is part of the immediate setting of Monks Farm Cottages and will all but entirely encircle this heritage asset. The Site will affect the setting of Monks Farm Cottages 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 Pound Farm is at the lower end of less than substantial.*

*The undeveloped, agrarian landscape of the Site contributes to the setting and significance of these assets and the fundamental change in land use and land character would undermine the ability to understand and appreciate their significance.*

#### **Monks Farm Cottages** (Medium significance)

Monks Farm is shown on the 1605 map of the Felix Hall Estate and possibly has medieval origins. It sits on Pantlings Lane which continues beyond the farm as an unpaved/grassed track. The extant farm buildings are not designated assets but 'Monks Farm Cottages' are Grade II Listed and described as:

*House, now 3 attached cottages. Late C16, altered in C17 and C20. Timber framed, roughcast rendered, roofed with machine-made red plain tiles. 4 bays facing W, with axial stack one bay from left end, and CL9 external stack at right end. 2 early C20 rear wings, each with internal stack at end. Small lean-to extension -to rear of left rear wing, roofed with corrugated asbestos. 2 storeys.*

The key components of the historic setting and significance of the heritage assets at Monks Farm can be summarised as: Age; and, Architectural value.

Monks Farm would be located at least 120m to the northeast of the Site A47 mineral extraction area and screened by intervening commercial buildings and mature hedgerow and tree lined field margins.

Monks Farm is a historic building within a working area which includes a number of more recent buildings linked to a commercial seed supply business (Kings Seeds). Its historic significance of the Cottages lies in their age and architectural value and have a functional relationship with the wider agricultural landscape.

The proposed mineral extraction operations across Site A47 will represent a degree of change to this existing asset. However, none of the factors from which the asset derives its significance would be impacted.

#### Pound Farmhouse (Medium Significance)

Pound Farm is situated to the east of the Site A47 Site Boundary on the Coggeshall Road. It is possible the Farmhouse, like the other farms across Essex, may well have medieval origins. The farmhouse has, in the past, been split into three properties and is now a single property again. It is set within private gardens which include a duck pond. The extant building is Grade II Listed and described as:

*House. Circa 1590, extended in C17, C18 and C20. Timber framed, plastered, roofed with handmade red plain tiles. 4 bays facing SE, with external stack at left end and axial stack in second bay from right end, forming a lobby-entrance. C17 wing behind internal stack, and C18 closet extension in rear right angle. C20 extension to right of main range, forming a symmetrical elevation. 2 storeys (with attics originally, now disused).*

The key components of the historic setting and significance of the heritage assets at Pound Farm can be summarised as: Age; and, Architectural value.

Whilst Pound Farm sits 100m to the east of the Site A47 Site Boundary, it would be located at approximately 640m to the northeast of the mineral extraction area.

The house is situated within gardens, and trees and shrubs screen it from the road and, in part, from the agricultural land to the north and west. The existing vegetation provides screening from Blackwater Aggregates' existing quarrying operations within Site A7, and the Site A47 mineral extraction area. None of the factors from which the asset derives its significance would be impacted from the mineral extraction operations within Site A47. Given its distance from Site 47 and the extant screening it is considered that the any impacts on the historic setting of Pound Farm would be negligible.

#### Summary

Due to the separation distances of Monks Farm and Pound Farmhouse from the Site A47 mineral extraction area and intervening screening provided by commercial buildings, and mature hedgerow and tree lined field margins, the RAG Assessment of Red/Amber for Historic Buildings is considered to be overly conservative.

Impacts will be confined to the operational phase of quarrying and restoration operations across Site A47 mineral extraction area.

The works across Site A47 would be of a limited duration (approximately 4 to 5 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 Historic Buildings assessment for Site A47 should be reassessed as Amber/Green.

#### Archaeology

The RAG Assessment highlights that:

*The Site lies within an area of archaeological features as identified through aerial photographic evidence. The Site contains evidence for an historic field boundary of unknown date and historic landscape features.*

*There is potential for evidence for Medieval and later settlement along Pantlings Lane.*

*No archaeological investigation has taken place within the Site however nearby archaeological investigations have revealed prehistoric, Late Iron Age, Roman and postmedieval activity including burial, industrial and settlement sites.*

*Based on current evidence the Site is likely to have a moderate/low impact on archaeology and is likely to require medium/low levels of mitigation to make the Site acceptable.*

In terms of the archaeological sensitivity of Site A47, the RAG Assessment for Archaeology of Amber/Green 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 'medium' 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 1 as: Land having a less than 1 in 1,000 (0.1%) annual probability of river flooding. Shown as clear on the Flood Map – all land outside Flood Zones 2 and 3.

Table 4-1 identifies Flood Zone 1 as being of Very Low Risk of Flooding from Surface Water (RoFSW)

The Site A47 restoration scheme would create a low-level restoration scheme that will reinstate an agricultural landscape which will include biodiverse and wetland features that will improve the character, diversity and quality of the landscape compared to its existing setting.

Based on the above, the RAG Assessment of Amber for Flooding is considered conservative given the site's setting within Flood Zone 1 and the proposed low level restoration profile, it is considered that Site A47 should be reassessed as Amber/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 of Green for Access reflects the fact that Bradwell Quarry has established crossing points over Church Road and Ash Lane have operated in a controlled and safe manner for many years and do not suffer from a poor Personal Injury Accident (PIA) record.

### **Public Rights of Way**

The RAG Assessment identifies that:

*3 Public Rights of Way cross the Site. 2 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.*

There are only two Public Rights of Way (PROW) within the footprint of the Site Boundary, Footpath 5 (Kelvedon) and Footpath 2 (Kelvedon).

Footpath 5 (Kelvedon) is the only PROW that crosses the footprint of the proposed Site A47 extraction area in a northerly direction.

As the quarrying operations progress across Site A47, Footpath 5 (Kelvedon) would be temporarily diverted around the working area to maintain its interconnection with other public rights of way, such as Pantlings Lane (Footpath 1 (Kelvedon)) and Footpath 2 (Kelvedon). Footpath 5 (Kelvedon) would be reinstated to either its original, or an agreed alternative definitive alignment, as the restoration works progress across the site.

Whilst Footpath 2 (Kelvedon) runs along the northern Site Boundary, it sits outside the footprint of the mineral extraction boundary and its alignment would be unaffected by the proposed quarrying operations within Site A47.

Pantlings Lane, Footpath 1 (Kelvedon), sits outside the Site A47 Site Boundary and mineral extraction boundary.

Based on the above, the RAG Assessment of Red/Amber for Public Rights of Way is considered to be overly conservative and should be reassessed as Amber.

### **Geo-Environmental**

The RAG Assessment of Green for Geo-Environmental reflects the fact that Site A47 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). No water course was identified within less than or equal to 200m of the Site. No water body is present within the Site boundary. No water body is present within the Site boundary. The Site is likely to have a moderate impact on hydrology, hydrogeology and drainage and is likely to require medium levels of mitigation to make the Site acceptable.*

The Site is within Zone III - Total Catchment Groundwater SPZ and has low groundwater vulnerability and there are records of two licensed groundwater abstractions within a 5 km radius of Site A47.

Blackwater Aggregates' existing quarrying operations across the Bradwell Quarry have demonstrated that the 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.

The depth of the groundwater above the underlying London Clay within the sand and gravels along the northern boundary of the Site A7 extraction vary from 2.7m to 2.1m.

Based on extensive experience of managing the groundwater beneath Bradwell Quarry it suggests that as the mineral extraction operations progress across Site A47 the quarry dewatering will not impact any off-site groundwater abstractions.

Surface water run-off will typically drain into the working area(s) of the quarry and any surface water accumulations or groundwater would be controlled and contained within the footprint of the Site A47 extraction boundary.

As the works progress across Site A47, any accumulations of groundwater or surface water would be managed in order to prevent any recirculation into the existing or proposed working areas.

The existing ponds and field ditches across Site A47 (and the surrounding area) are surface water fed and unconnected to any watercourse or groundwater source, and there are no ponds nor water features within the footprint of the Site A47 extraction boundary. Therefore, the existing ponds and field ditches around Site A47 would be unaffected by mineral extraction operations and would remain unchanged.

Based on the above, the RAG Assessment for Hydrology, Hydrogeology & Drainage of Amber could be considered slightly 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 A47, it should be reassessed as Amber/Green.

### **Air Quality**

The RAG Assessment of Green for Air Quality reflects the fact that Site A47 is more than 2km from an AQMA and therefore is likely to have no impact on an air quality that requires mitigation.

### **Soil Quality**

The RAG Assessment identifies that:

*The Site contains Grade 2 quality soil (very good quality agricultural land) which is BMV 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 A47, 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 11kV underground and overhead electricity cables as well as low voltage underground cables which supply the existing on site buildings. Multiple overhead and underground Openreach BT power lines are within the Site boundary. On site buildings are supplied by local Anglian Water mains which are within the Site boundary. Utilities supplying*

*existing onsite buildings that may be demolished will be disconnected. The Site is likely to have a moderate impact on utilities and is likely to require medium levels of mitigation to make the Site acceptable.*

*The Site is within 250m of a high pressure gas mains (National Grid Gas). 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.*

An 11kV overhead electricity supply crosses the Site A47 extraction boundary would require diversion under “lift and shift” Wayleave Agreement around the perimeter of the site or affected working area(s). The overhead supply would be diverted via underground ducts where possible.

Whilst other services and utilities are within the Site Boundary, they lie outside the extraction area and would be unaffected by the mineral extraction operations within Site A47.

The high-pressure gas mains (National Grid Gas) runs along Coggeshall Road and is located 100m from the Site Boundary and over 700m to the east of the Site A47 extraction boundary.

There will be no significant impacts associated with the diversion of the 11kV overhead electricity supply around Site A47 and no significant impact on services and utility supplies within the Site Boundary or surrounding area.

Based on the above, the RAG Assessment for Services and Utilities of Amber is considered conservative and considering that “lift and shift” Wayleave Agreement that is in place for the diversion of the 11kV overhead electrical supply, it should be reassessed as Amber/Green.

### **Health & Amenity**

The RAG Assessment identifies that:

*One commercial building is located 10m north east, two commercial buildings and a farm building are 20m north of the Site. One commercial building is 30m north, one residential building is 40m north, one farm building is 50m north, one farm building is 40m north of the Site. One farm building is 60m north, five residential buildings are 80m east, seventeen residential buildings are 90-210m north east, five residential buildings are 110-180m east and one residential building is 220 south west of the Site. The Site is likely to have a major impact on health and amenity and is likely to require high levels of mitigation to make the Site acceptable.*

In submitting information associated with Site A47 a site-specific requirement was that of identifying the “Extraction boundary” to support the assessment of the site.

The closest residential building to the Site A47 is Monks Farm which will be located at least 120m to the northeast of the mineral extraction boundary and screened by intervening commercial buildings and mature hedgerow and tree lined field margins.

At the closest point an existing greenhouse and a commercial building within the Kings Seeds site would be located at least 35m to 75m from the edge of the quarry, respectively.

The residential properties that are located along Coggeshall Road would be at least 635m to the east of the Site A47 mineral extraction area.

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 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 A47 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.

Furthermore, based on Blackwater Aggregates' quarrying operations across Bradwell Quarry the following should be noted:

#### 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 A47.

A minimum of a 100m 'buffer zone' from Site A47 to the façade of a residential property, such as Monks Farm, 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, and mineral processing operations across Site A47 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 the site to demonstrate compliance with any noise conditions.

#### Dust

Dust will be managed and controlled within Site A47 so there will be little impact on neighbouring residential properties. The quarrying operations would operate at least 120m

from Monks Farm and 635m from residential properties located along Coggeshall Road, with screening and dust suppression to reduce any potential dust impact.

To control and minimise dust 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 A47.

Routine dust monitoring and management measures would continue to be applied within and around Site A47 in line with a Dust Management Plan.

### Lighting

Site A47 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 A47, 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 originated.

Works across Site A47 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 A47 would be at least 120m from Monks Farm and at least 635m from residential properties located along Coggeshall Road.

Both 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 A47 is not within a Green Belt. The nearest Green Belt is 18.4km 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 A47 is not within an Airport Safeguarding Zone. The nearest Airport Safeguarding Zone is 8.2km 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.

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